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VOLUME VI SLICE IV

Cincinnatus to Cleruchy

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CLEARFIELD
CLEARING-HOUSE
CLEAT
CLEATOR MOOR
CLEAVERS
CLEBURNE
CLECKHEATON

CINCINNATUS,[1] **LUCIUS QUINCTIUS**, (b. c. 519 B.C.), one of the heroes of early Rome, a model of old Roman virtue and simplicity. A persistent opponent of the plebeians, he resisted the proposal of Terentilius Arsa (or Harsa) to draw up a code of written laws applicable equally to patricians and plebeians. He was in humble circumstances, and lived and worked on his own small farm. The story that he became impoverished by paying a fine incurred by his son Caeso is an attempt to explain the needy position of so distinguished a man. Twice he was called from the plough to the dictatorship of Rome in 458 and 439. In 458 he defeated the Aequians in a single day, and after entering Rome in triumph with large spoils returned to his farm. The story of his success, related five times under five different years, possibly rests on an historical basis, but the account given in Livy of the achievements of the Roman army is obviously incredible.

See Livy iii. 26-29; Dion. Halic. x. 23-25; Florus i. 11. For a critical examination of the story see Schwegler, *Römische Geschichte*, bk. xxviii. 12; Sir G. Cornewall Lewis, *Credibility of early Roman History*, ch. xii. 40; W. Ihne, *History of Rome*, i.; E. Pais, *Storia di Roma*, i. ch. 4 (1898).

1 I.e. the "curly-haired."

CINDERELLA (*i.e.* little cinder girl), the heroine of an almost universal fairy-tale. Its essential features are (1) the persecuted maiden whose youth and beauty bring upon her the jealousy of her step-mother and sisters, (2) the intervention of a fairy or other supernatural instrument on her behalf, (3) the prince who falls in love with and marries her. In the English version, a translation of Perrault's *Cendrillon*, the *glass* slipper which she drops on the palace stairs is due to a mistranslation of *pantoufle en vair* (a *fur* slipper), mistaken for *en verre*. It has been suggested that the story originated in a nature-myth, Cinderella being the dawn, oppressed by the night-clouds (cruel relatives) and finally rescued by the sun (prince).

See Marian Rolfe Cox, *Cinderella; Three Hundred and Forty-five Variants* (1893); A Lang, *Perrault's Popular Tales* (1888).

CINEAS, a Thessalian, the chief adviser of Pyrrhus, king of Epirus. He studied oratory in Athens, and was regarded as the most eloquent man of his age. He tried to dissuade Pyrrhus from invading Italy, and after the defeat of the Romans at Heraclea (280 B.C.) was sent to Rome to discuss terms of peace. These terms, which are said by Appian (*De Rebus Samniticis*, 10, 11) to have included the freedom of the Greeks in Italy and the restoration to the Bruttians, Apulians and Samnites of all that had been taken from them, were rejected chiefly through the vehement and patriotic speech of the aged Appius Claudius Caecus the censor. The withdrawal of Pyrrhus from Italy was demanded, and Cineas returned to his master with the report that Rome was a temple and its senate an assembly of kings. Two years later Cineas was sent to renew negotiations with Rome on easier terms. The result was a cessation of hostilities, and Cineas crossed over to Sicily, to prepare the ground for Pyrrhus's campaign. Nothing more is heard of him. He is said to have made an epitome of the *Tactica* of Aeneas, probably referred to by Cicero, who speaks of a Cineas as the author of a treatise *De Re Militari*.

See Plutarch, *Pyrrhus*, 11-21; Justin xviii. 2; Eutropius ii. 12; Cicero, *Ad Fam.* ix. 25.

CINEMATOGRAPH, or KINEMATOGRAPH (from κίνημα, motion, and γράφειν, to depict), an apparatus in which a series of views representing closely successive phases of a moving object are exhibited in rapid sequence, giving a picture which, owing to persistence of vision, appears to the observer to be in continuous motion. It is a development of the zoetrope or "wheel of life," described by W.G. Horner about 1833, which consists of a hollow cylinder turning on a vertical axis and having its surface pierced with a number of slots. Round the interior is arranged a series of pictures representing successive stages of such a subject as a galloping horse, and when the cylinder is rotated an observer looking through one of the slots sees the horse apparently in motion. The pictures were at first drawn by hand, but photography was afterwards applied to their production. E. Muybridge about 1877 obtained successive pictures of a running horse by employing a row of cameras, the shutters of which were opened and closed electrically by the passage of the horse in front of them, and in 1883 E.J. Marey of Paris established a studio for investigating the motion of animals by similar photographic methods.

The modern cinematograph was rendered possible by the invention of the celluloid roll film (employed by Marey in 1890), on which the serial pictures are impressed by instantaneous photography, a long sensitized film being moved across the focal plane of a camera and exposed intermittently. In one apparatus for making the exposures a cam jerks the film across the field once for each picture, the slack being gathered in on a drum at a constant rate. In another four lenses are rotated so as to give four images for each rotation, the film travelling so as to present a new portion in the field as each lens comes in place. Sixteen to fifty pictures may be taken per second. The films are developed on large drums, within which a ruby electric light may be fixed to enable the process to be watched. A positive is made from the negative thus obtained, and is passed through an optical lantern, the images being thus successively projected through an objective lens upon a distant

screen. For an hour's exhibition 50,000 to 165,000 pictures are needed. To regulate the feed in the lantern a hole is punched in the film for each picture. These holes must be extremely accurate in position; when they wear the feed becomes irregular, and the picture dances or vibrates in an unpleasant manner. Another method of exhibiting cinematographic effects is to bind the pictures together in book form by one edge, and then release them from the other in rapid succession by means of the thumb or some mechanical device as the book is bent backwards. In this case the subject is viewed, not by projection, but directly, either with the unaided eye or through a magnifying glass.

Cinematograph films produced by ordinary photographic processes, being in black and white only, fail to reproduce the colouring of the subjects they represent. To some extent this defect has been remedied by painting them by hand, but this method is too expensive for general adoption, and moreover does not yield very satisfactory results. Attempts to adapt three-colour photography, by using simultaneously three films, each with a source of light of appropriate colour, and combining the three images on the screen, have to overcome great difficulties in regard to maintenance of register, because very minute errors of adjustment between the pictures on the films are magnified to an intolerable extent by projection. In a process devised by G.A. Smith, the results of which were exhibited at the Society of Arts, London, in December 1908, the number of colour records was reduced to two. The films were specially treated to increase their sensitiveness to red. The photographs were taken through two colour filters alternately interposed in front of the film; both admitted white and yellow, but one, of red, was in addition specially concerned with the orange and red of the subject, and the other, of blue-green, with the green, blue-green, blue and violet. The camera was arranged to take not less than 16 pictures a second through each filter, or 32 a second in all. The positive transparency made from the negative thus obtained was used in a lantern so arranged that beams of red (composed of crimson and yellow) and of green (composed of yellow and blue) issued from the lens alternately, the mechanism presenting the pictures made with the red filter to the red beam, and those made with the green filter to the green beam. A supplementary shutter was provided to introduce violet and blue, to compensate for the deficiency in those colours caused by the necessity of cutting them out in the camera owing to the over-sensitiveness of the film to them, and the result was that the successive pictures, blending on the screen by persistence of vision, gave a reproduction of the scene photographed in colours which were sensibly the same as those of the original.

The cinematograph enables "living" or "animated pictures" of such subjects as an army on the march, or an express train at full speed, to be presented with marvellous distinctness and completeness of detail. Machines of this kind have been devised in enormous numbers and used for purposes of amusement under names (bioscope, biograph, kinetoscope, mutograph, &c.) formed chiefly from combinations of Greek and Latin words for life, movement, change, &c., with suffixes taken from such words as σκοπεῖν, to see, γράφειν, to depict; they have also been combined with phonographic apparatus, so that, for example, the music of a dance and the motions of the dancer are simultaneously reproduced to ear and eye. But when they are used in public places of entertainment, owing to the extreme inflammability of the celluloid film and its employment in close proximity to a powerful source of light and heat, such as is required if the pictures are to show brightly on the screen, precautions must be taken to prevent, as far as possible, the heat rays from reaching it, and effective means must be provided to extinguish it should it take fire. The production of films composed of non-inflammable material has also engaged the attention of inventors.

See H.V. Hopwood, *Living Pictures* (London, 1899), containing a bibliography and a digest of the British patents, which is supplemented in the *Optician*, vol. xviii. p. 85; Eugène Trutat, *La Photographie animée* (1899), which contains a list of the French patents. For the camera see also PHOTOGRAPHY: *Apparatus*.

CINERARIA. The garden plants of this name have originated from a species of *Senecio*, *S. cruentus* (nat. ord. Compositae), a native of the Canary Isles, introduced to the royal gardens at Kew in 1777. It was known originally as *Cineraria cruenta*, but the genus *Cineraria* is now restricted to a group of South African species, and the Canary Island species has been transferred to the large and widespread genus *Senecio*. Cinerarias can be raised freely from seeds. For spring flowering in England the seeds are sown in April or May

in well-drained pots or pans, in soil of three parts loam to two parts leaf-mould, with one-sixth sand; cover the seed thinly with fine soil, and press the surface firm. When the seedlings are large enough to handle, prick them out in pans or pots of similar soil, and when more advanced pot them singly in 4-in. pots, using soil a trifle less sandy. They should be grown in shallow frames facing the north, and, if so situated that the sun shines upon the plants in the middle of the day, they must be slightly shaded; give plenty of air, and never allow them to get dry. When well established with roots, shift them into 6-in. pots, which should be liberally supplied with manure water as they get filled with roots. In winter remove to a pit or house, where a little heat can be supplied whenever there is a risk of their getting frozen. They should stand on a moist bottom, but must not be subjected to cold draughts. When the flowering stems appear, give manure water at every alternate watering. Seeds sown in March, and grown on in this way, will be in bloom by Christmas if kept in a temperature of from 40° to 45° at night, with a little more warmth in the day; and those sown in April and May will succeed them during the early spring months, the latter set of plants being subjected to a temperature of 38° or 40° during the night. If grown much warmer than this, the Cineraria maggot will make its appearance in the leaves, tunnelling its way between the upper and lower surfaces and making whitish irregular markings all over. Such affected leaves must be picked off and burned. Green fly is a great pest on young plants, and can only be kept down by fumigating or vaporizing the houses, and syringing with a solution of quassia chips, soft soap and tobacco.

CINGOLI (anc. *Cingulum*), a town of the Marches, Italy, in the province of Macerata, about 14 m. N.W. direct, and 17 m. by road, from the town of Macerata. Pop. (1901) 13,357. The Gothic church of S. Esuperanzio contains interesting works of art. The town occupies the site of the ancient Cingulum, a town of Picenum, founded and strongly fortified by Caesar's lieutenant T. Labienus (probably on the site of an earlier village) in 63 B.C. at his own expense. Its lofty position (2300 ft.) made it of some importance in the civil wars, but otherwise little is heard of it. Under the empire it was a *municipium*.

CINNA, a Roman patrician family of the gens Cornelia. The most prominent member was Lucius Cornelius Cinna, a supporter of Marius in his contest with Sulla. After serving in the war with the Marsi as praetorian legate, he was elected consul in 87 B.C. Breaking the oath he had sworn to Sulla that he would not attempt any revolution in the state, Cinna allied himself with Marius, raised an army of Italians, and took possession of the city. Soon after his triumphant entry and the massacre of the friends of Sulla, by which he had satisfied his vengeance, Marius died. L. Valerius Flaccus became Cinna's colleague, and on the murder of Flaccus, Cn. Papirius Carbo. In 84, however, Cinna, who was still consul, was forced to advance against Sulla; but while embarking his troops to meet him in Thessaly, he was killed in a mutiny. His daughter Cornelia was the wife of Julius Caesar, the dictator; but his son, L. Cornelius Cinna, praetor in 44 B.C., nevertheless sided with the murderers of Caesar and publicly extolled their action.

The hero of Corneille's tragedy *Cinna* (1640) was Cn. Cornelius Cinna, surnamed *Magnus* (after his maternal grandfather Pompey), who was magnanimously pardoned by Augustus for conspiring against him.

CINNA, GAIUS HELVIUS, Roman poet of the later Ciceronian age. Practically nothing is known of his life except that he was the friend of Catullus, whom he accompanied to Bithynia in the suite of the praetor Memmius. The circumstances of his death have given rise

to some discussion. Suetonius, Valerius Maximus, Appian and Dio Cassius all state that, at Caesar's funeral, a certain Helvius Cinna was killed by mistake for Cornelius Cinna, the conspirator. The last three writers mentioned above add that he was a tribune of the people, while Plutarch, referring to the affair, gives the further information that the Cinna who was killed by the mob was a poet. This points to the identity of Helvius Cinna the tribune with Helvius Cinna the poet. The chief objection to this view is based upon two lines in the 9th eclogue of Virgil, supposed to have been written 41 or 40 B.C. Here reference is made to a certain Cinna, a poet of such importance that Virgil deprecates comparison with him; it is argued that the manner in which this Cinna, who could hardly have been any one but Helvius Cinna, is spoken of implies that he was then alive; if so, he could not have been killed in 44. But such an interpretation of the Virgilian passage is by no means absolutely necessary; the terms used do not preclude a reference to a contemporary no longer alive. It has been suggested that it was really Cornelius, not Helvius Cinna, who was slain at Caesar's funeral, but this is not borne out by the authorities. Cinna's chief work was a mythological epic poem called *Smyrna*, the subject of which was the incestuous love of Smyrna (or Myrrha) for her father Cinyras, treated after the manner of the Alexandrian poets. It is said to have taken nine years to finish. A *Propempticon Pollionis*, a send-off to [Asinius] Pollio, is also attributed to him. In both these poems, the language of which was so obscure that they required special commentaries, his model appears to have been Parthenius of Nicaea.

See A. Weichert, *Poëtarum Latinorum Vitae* (1830); L. Müller's edition of Catullus (1870), where the remains of Cinna's poems are printed; A. Kiessling, "De C. Helvio Cinna Poëta" in *Commentationes Philologicae in honorem T. Mommsen* (1878); O. Ribbeck, *Geschichte der römischen Dichtung*, i. (1887); Teuffel-Schwabe, *Hist. of Roman Lit.* (Eng. tr. 213, 2-5); Plessis, *Poésie latine* (1909).

CINNABAR (Ger. *Zinnober*), sometimes written cinnabarite, a name applied to red mercuric sulphide (HgS), or native vermilion, the common ore of mercury. The name comes from the Greek κιννάβαρι, used by Theophrastus, and probably applied to several distinct substances. Cinnabar is generally found in a massive, granular or earthy form, of bright red colour, but it occasionally occurs in crystals, with a metallic adamantine lustre. The crystals belong to the hexagonal system, and are generally of rhombohedral habit, sometimes twinned. Cinnabar presents remarkable resemblance to quartz in its symmetry and optical characters. Like quartz it exhibits circular polarization, and A. Des Cloizeaux showed that it possessed fifteen times the rotatory power of quartz (see Polarization of Light). Cinnabar has higher refractive power than any other known mineral, its mean index for sodium light being 3.02, whilst the index for diamond—a substance of remarkable refraction—is only 2.42 (see Refraction). The hardness of cinnabar is 3, and its specific gravity 8.998.

Cinnabar is found in all localities which yield quicksilver, notably Almaden (Spain), New Almaden (California), Idria (Austria), Landsberg, near Ober-Moschel in the Palatinate, Ripa, at the foot of the Apuan Alps (Tuscany), the mountain Avala (Servia), Huancavelica (Peru), and the province of Kweichow in China, whence very fine crystals have been obtained. Cinnabar is in course of deposition at the present day from the hot waters of Sulphur Bank, in California, and Steamboat Springs, Nevada.

Hepatic cinnabar is an impure variety from Idria in Carniola, in which the cinnabar is mixed with bituminous and earthy matter.

Metacinnabarite is a cubic form of mercuric sulphide, this compound being dimorphous.

For a general description of cinnabar, see G.F. Becker's *Geology of the Quicksilver Deposits of the Pacific Slope*, U.S. Geol. Surv. Monographs, No. xiii. (1888).

(F. W. R.*)

CINNAMIC ACID, or Phenylacrylic Acid, $C_9H_8O_2$ or $C_6H_6.CH:CH.COOH$, an acid found in

the form of its benzyl ester in Peru and Tolu balsams, in storax and in some gum-benzoins. It can be prepared by the reduction of phenyl propiolic acid with zinc and acetic acid, by heating benzal malonic acid, by the condensation of ethyl acetate with benzaldehyde in the presence of sodium ethylate or by the so-called “Perkin reaction”; the latter being the method commonly employed. In making the acid by this process benzaldehyde, acetic anhydride and anhydrous sodium acetate are heated for some hours to about 1800 C, the resulting product is made alkaline with sodium carbonate, and any excess of benzaldehyde removed by a current of steam. The residual liquor is filtered and acidified with hydrochloric acid, when cinnamic acid is precipitated, $C_6H_5CHO+CH_3COONa = C_6H_5CH:CH.COONa + H_2O$. It may be purified by recrystallization from hot water. Considerable controversy has taken place as to the course pursued by this reaction, but the matter has been definitely settled by the work of R. Fittig and his pupils (*Annalen*, 1883, 216, pp. 100, 115; 1885, 227, pp. 55, 119), in which it was shown that the aldehyde forms an addition compound with the sodium salt of the fatty acid, and that the acetic anhydride plays the part of a dehydrating agent. Cinnamic acid crystallizes in needles or prisms, melting at 133°C; on reduction it gives *phenyl propionic acid*, $C_6H_5.CH_2.CH_2.COOH$. Nitric acid oxidizes it to benzoic acid and acetic acid. Potash fusion decomposes it into benzoic and acetic acids. Being an unsaturated acid it combines directly with hydrochloric acid, hydrobromic acid, bromine, &c. On nitration it gives a mixture of ortho and para nitrocinnamic acids, the former of which is of historical importance, as by converting it into orthonitrophenyl propiolic acid A. Baeyer was enabled to carry out the complete synthesis of indigo (*q.v.*). Reduction of orthonitrocinnamic acid gives orthoaminocinnamic acid, $C_6H_4(NH_2)CH:CH.COOH$, which is of theoretical importance, as it readily gives a quinoline derivative. An isomer of cinnamic acid known as *allo-cinnamic acid* is also known.

For the oxy-cinnamic adds see Coumarin.

CINNAMON, the inner bark of *Cinnamomum zeylanicum*, a small evergreen tree belonging to the natural order Lauraceae, native to Ceylon. The leaves are large, ovate-oblong in shape, and the flowers, which are arranged in panicles, have a greenish colour and a rather disagreeable odour. Cinnamon has been known from remote antiquity, and it was so highly prized among ancient nations that it was regarded as a present fit for monarchs and other great potentates. It is mentioned in Exod. xxx. 23, where Moses is commanded to use both sweet cinnamon (*Kinnamon*) and cassia, and it is alluded to by Herodotus under the name κιννάμωμον, and by other classical writers. The tree is grown at Tellicherry, in Java, the West Indies, Brazil and Egypt, but the produce of none of these places approaches in quality that grown in Ceylon. Ceylon cinnamon of fine quality is a very thin smooth bark, with a light-yellowish brown colour, a highly fragrant odour, and a peculiarly sweet, warm and pleasing aromatic taste. Its flavour is due to an aromatic oil which it contains to the extent of from 0.5 to 1%. This essential oil, as an article of commerce, is prepared by roughly pounding the bark, macerating it in sea-water, and then quickly distilling the whole. It is of a golden-yellow colour, with the peculiar odour of cinnamon and a very hot aromatic taste. It consists essentially of cinnamic aldehyde, and by the absorption of oxygen as it becomes old it darkens in colour and develops resinous compounds. Cinnamon is principally employed in cookery as a condiment and flavouring material, being largely used in the preparation of some kinds of chocolate and liqueurs. In medicine it acts like other volatile oils and has a reputation as a cure for colds. Being a much more costly spice than cassia, that comparatively harsh-flavoured substance is frequently substituted for or added to it. The two barks when whole are easily enough distinguished, and their microscopical characters are also quite distinct. When powdered bark is treated with tincture of iodine, little effect is visible in the case of pure cinnamon of good quality, but when cassia is present a deep-blue tint is produced, the intensity of the coloration depending on the proportion of the cassia.

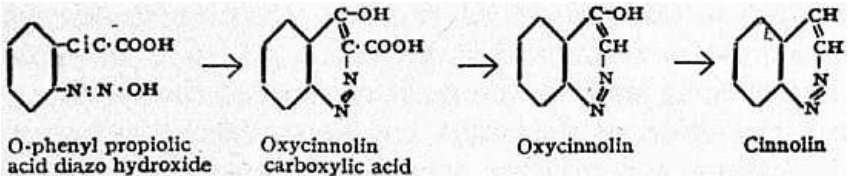
CINNAMON-STONE, a variety of garnet, belonging to the lime-alumina type, known also as essonite or hessonite, from the Gr. ἧσσων, “inferior,” in allusion to its being less hard and less dense than most other garnet. It has a characteristic red colour, inclining to orange, much like that of hyacinth or jacinth. Indeed it was shown many years ago, by Sir A.H. Church, that many gems, especially engraved stones, commonly regarded as hyacinth, were really cinnamon-stone. The difference is readily detected by the specific gravity, that of hessonite being 3.64 to 3.69, whilst that of hyacinth (zircon) is about 4.6. Hessonite is rather a soft stone, its hardness being about that of quartz or 7, whilst the hardness of most garnet reaches 7.5. Cinnamon-stone comes chiefly from Ceylon, where it is found generally as pebbles, though its occurrence in its native matrix is not unknown.

CINNAMUS [Kinnamos], **JOHN**, Byzantine historian, flourished in the second half of the 12th century. He was imperial secretary (probably in this case a post connected with the military administration) to Manuel I. Comnenus (1143-1180), whom he accompanied on his campaigns in Europe and Asia Minor. He appears to have outlived Andronicus I., who died in 1185. Cinnamus was the author of a history of the period 1118-1176, which thus continues the *Alexiad* of Anna Comnena, and embraces the reigns of John II. and Manuel I., down to the unsuccessful campaign of the latter against the Turks, which ended with the disastrous battle of Myriokephalon and the rout of the Byzantine army. Cinnamus was probably an eye-witness of the events of the last ten years which he describes. The work breaks off abruptly; originally it no doubt went down to the death of Manuel, and there are indications that, even in its present form, it is an abridgment. The text is in a very corrupt state. The author’s hero is Manuel; he is strongly impressed with the superiority of the East to the West, and is a determined opponent of the pretensions of the papacy. But he cannot be reproached with undue bias; he writes with the straightforwardness of a soldier, and is not ashamed on occasion to confess his ignorance. The matter is well arranged, the style (modelled on that of Xenophon) simple, and on the whole free from the usual florid bombast of the Byzantine writers.

Editio princeps, C. Tollius (1652); in Bonn, *Corpus Scriptorum Hist. Byz.*, by A. Meineke (1836), with Du Cange’s valuable notes; Migne, *Patrologia Graeca*, cxxxiii.; see also C. Neumann, *Griechische Geschichtsschreiber im 12. Jahrhundert* (1888); H. von Kap-Herr, *Die abendländische Politik Kaiser Manuels* (1881); C. Krumbacher, *Geschichte der byzantinischen Litteratur* (1897).

CINNOLIN, $C_8H_6N_2$, a compound isomeric with phthalazine, prepared by boiling dihydrocinnolin dissolved in benzene with freshly precipitated mercuric oxide. The solution is filtered and the hydrochloride of the base precipitated by alcoholic hydrochloric acid; the free base is obtained as an oil by adding caustic soda. It may be obtained in white silky needles, melting at 24-25°C. and containing a molecule of ether of crystallization by cooling the oil dissolved in ether. The free base melts at 39°C. It is a strong base, forming stable salts with mineral acids, and is easily soluble in water and in the ordinary organic solvents. It has a taste resembling that of chloral hydrate, and leaves a sharp irritation for some time on the tongue; it is also very poisonous (M. Busch and A. Rast, *Berichte*, 1897, 30, p. 521). Cinnolin derivatives are obtained from oxycinnolin carboxylic acid, which is formed by digesting orthophenyl propiolic acid diazo chloride with water. Oxycinnolin carboxylic acid on heating gives oxycinnolin, melting at 225°, which with phosphorus pentachloride gives chlorcinnolin. This substance is reduced by iron filings and sulphuric acid to dihydrocinnolin.

The relations of these compounds are here shown:—



CINO DA PISTOIA (1270-1336), Italian poet and jurist, whose full name was GUITTONCINO DE' SINIBALDI, was born in Pistoia, of a noble family. He studied law at Bologna under Dinus Muggelanus (Dino de Rossonis: d. 1303) and Franciscus Accursius, and in 1307 is understood to have been assessor of civil causes in his native city. In that year, however, Pistoia was disturbed by the Guelph and Ghibelline feud. The Ghibellines, who had for some time been the stronger party, being worsted by the Guelphs, Cino, a prominent member of the former faction, had to quit his office and the city of his birth. Pitecchio, a stronghold on the frontiers of Lombardy, was yet in the hands of Filippo Vergiolesi, chief of the Pistoian Ghibellines; Selvaggia, his daughter, was beloved by Cino (who was probably already the husband of Margherita degli Unghi); and to Pitecchio did the lawyer-poet betake himself. It is uncertain how long he remained at the fortress; it is certain, however, that he was not with the Vergiolesi at the time of Selvaggia's death, which happened three years afterwards (1310), at the Monte della Sambuca, in the Apennines, whither the Ghibellines had been compelled to shift their camp. He visited his mistress's grave on his way to Rome, after some time spent in travel in France and elsewhere, and to this visit is owing his finest sonnet. At Rome Cino held office under Louis of Savoy, sent thither by the Ghibelline leader Henry of Luxemburg, who was crowned emperor of the Romans in 1312. In 1313, however, the emperor died, and the Ghibellines lost their last hope. Cino appears to have thrown up his party, and to have returned to Pistoia. Thereafter he devoted himself to law and letters. After filling several high judicial offices, a doctor of civil law of Bologna in his forty-fourth year, he lectured and taught from the professor's chair at the universities of Treviso, Siena, Florence and Perugia in succession; his reputation and success were great, his judicial experience enabling him to travel out of the routine of the schools. In literature he continued in some sort the tradition of Dante during the interval dividing that great poet from his successor Petrarch. The latter, besides celebrating Cino in an obituary sonnet, has coupled him and his Selvaggia with Dante and Beatrice in the fourth *capitolo* of his *Trionfi d' Amore*.

Cino, the master of Bartolus, and of Joannes Andreae the celebrated canonist, was long famed as a jurist. His commentary on the statutes of Pistoia, written within two years, is said to have great merit; while that on the code (*Lectura Cino Pistoia super codice*, Pavia, 1483; Lyons, 1526) is considered by Savigny to exhibit more practical intelligence and more originality of thought than are found in any commentary on Roman law since the time of Accursius. As a poet he also distinguished himself greatly. He was the friend and correspondent of Dante's later years, and possibly of his earlier also, and was certainly, with Guido Cavalcanti and Durante da Maiano, one of those who replied to the famous sonnet *A ciascun' alma presa e gentil core* of the *Vita Nuova*. In the treatise *De Vulgari Eloquio* Dante refers to him as one of "those who have most sweetly and subtly written poems in modern Italian," but his works, printed at Rome in 1559, do not altogether justify the praise. Strained and rhetorical as many of his outcries are, however, Cino is not without moments of true passion and fine natural eloquence. Of these qualities the sonnet in memory of Selvaggia, *Io fui in sull' alto e in sul beato monte*, and the canzone to Dante, *Avegnachè di omaggio più per tempo*, are interesting examples.

The text-book for English readers is D.G. Rossetti's *Early Italian Poets*, wherein will be found not only a memoir of Cino da Pistoia, but also some admirably translated specimens of his verse—the whole wrought into significant connexion with that friendship of Cino's which is perhaps the most interesting fact about him. See also Ciampi, *Vita e poesie di messer Cino da Pistoia* (Pisa, 1813).

CINQ-MARS, HENRI COIFFIER RUZÉ D'EFFIAT, MARQUIS DE (1620-1642), French courtier, was the second son of Antoine Coiffier Ruzé, marquis d'Effiat, marshal of France (1581-1632), and was introduced to the court of Louis XIII. by Richelieu, who had been a friend of his father and who hoped he would counteract the influence of the queen's favourite Mlle. de Hautefort. Owing to his handsome appearance and agreeable manners he soon became a favourite of the king, and was made successively master of the wardrobe and master of the horse. After distinguishing himself at the siege of Arras in 1640, Cinq-Mars wished for a high military command, but Richelieu opposed his pretensions and the favourite talked rashly about overthrowing the minister. He was probably connected with the abortive rising of the count of Soissons in 1641; however that may be, in the following year he formed a conspiracy with the duke of Bouillon and others to overthrow Richelieu. This plot was under the nominal leadership of the king's brother Gaston of Orleans. The plans of the conspirators were aided by the illness of Richelieu and his absence from the king, and at the siege of Narbonne Cinq-Mars almost induced Louis to agree to banish his minister. Richelieu, however, recovered, became acquainted with the attempt of Cinq-Mars to obtain assistance from Spain, and laid the proofs of his treason before the king, who ordered his arrest. Cinq-Mars was brought to trial, admitted his guilt, and was condemned to death. He was executed at Lyons on the 12th of September 1642. It is possible that Cinq-Mars was urged to engage in this conspiracy by his affection for Louise Marie de Gonzaga (1612-1667), afterwards queen of Poland, who was a prominent figure at the court of Louis XIII.; and this tradition forms part of the plot of Alfred de Vigny's novel *Cinq-Mars*.

See Le P. Griffet, *Histoire de Louis XIII*; A. Bazin, *Histoire de Louis XIII* (1846); L. D'Astarac de Frontrailles, *Relations des choses particulières de la cour pendant la faveur de M. de Cinq-Mars*.

CINQUE CENTO (Italian for five hundred; short for 1500), in architecture, the style which became prevalent in Italy in the century following 1500, now usually called "16th-century work." It was the result of the revival of classic architecture known as Renaissance, but the change had commenced already a century earlier, in the works of Ghiberti and Donatello in sculpture, and of Brunelleschi and Alberti in architecture.

CINQUE PORTS, the name of an ancient jurisdiction in the south of England, which is still maintained with considerable modifications and diminished authority. As the name implies, the ports originally constituting the body were only five in number—Hastings, Romney, Hythe, Dover and Sandwich; but to these were afterwards added the "ancient towns" of Winchelsea and Rye with the same privileges, and a good many other places, both corporate and non-corporate, which, with the title of limb or member, held a subordinate position. To Hastings were attached the corporate members of Pevensey and Seaford, and the non-corporate members of Bulvarhythe, Petit Iham (Yham or Higham), Hydney, Bekesbourn, Northeye and Grenche or Grange; to Romney, Lydd, and Old Romney, Dengemarsh, Orwaldstone, and Bromehill or Promehill; to Dover, Folkestone and Faversham, and Margate, St John's, Goresend (now Birchington), Birchington Wood (now Woodchurch), St Peter's, Kingsdown and Ringwould; to Sandwich, Fordwich and Deal, and Walmer, Ramsgate, Reculver, Stonor (Estanor), Sarre (or Serre) and Brightlingsea (in Essex). To Rye was attached the corporate member of Tenterden, and to a Hythe the non-corporate member of West Hythe. The jurisdiction thus extends along the coast from Seaford in Sussex to Birchington near Margate in Kent; and it also includes a number of inland districts, at a considerable distance from the ports with which they are connected. The non-incorporated members are within the municipal jurisdiction of the ports to which they are attached; but the corporate members are as free within their own liberties as the individual ports themselves.

The incorporation of the Cinque Ports had its origin in the necessity for some means of defence along the southern seaboard of England, and in the lack of any regular navy. Up to

the reign of Henry VII. they had to furnish the crown with nearly all the ships and men that were needful for the state; and for a long time after they were required to give large assistance to the permanent fleet. The oldest charter now on record is one belonging to the 6th year of Edward I.; and it refers to previous documents of the time of Edward the Confessor and William the Conqueror. In return for their services the ports enjoyed extensive privileges. From the Conquest or even earlier they had, besides various lesser rights—(1) exemption from tax and tallage; (2) soc and sac, or full cognizance of all criminal and civil cases within their liberties; (3) tol and team, or the right of receiving toll and the right of compelling the person in whose hands stolen property was found to name the person from whom he received it; (4) blodwit and fledwit, or the right to punish shedders of blood and those who were seized in an attempt to escape from justice; (5) pillory and tumbrel; (6) infangentheof and outfangentheof, or power to imprison and execute felons; (7) mundbryce (the breaking into or violation of a man's *mund* or property in order to erect banks or dikes as a defence against the sea); (8) waives and strays, or the right to appropriate lost property or cattle not claimed within a year and a day; (9) the right to seize all flotsam, jetsam, or ligan, or, in other words, whatever of value was cast ashore by the sea; (10) the privilege of being a gild with power to impose taxes for the common weal; and (11) the right of assembling in portmote or parliament at Shepway or Shepway Cross, a few miles west of Hythe (but afterwards at Dover), the parliament being empowered to make by-laws for the Cinque Ports, to regulate the Yarmouth fishery, to hear appeals from the local courts, and to give decision in all cases of treason, sedition, illegal coining or concealment of treasure trove. The ordinary business of the ports was conducted in two courts known respectively as the court of brotherhood and the court of brotherhood and guestling,—the former being composed of the mayors of the seven principal towns and a number of jurats and freemen from each, and the latter including in addition the mayors, bailiffs and other representatives of the corporate members. The court of brotherhood was formerly called the brotheryeeld, brodall or brodhull; and the name guestling seems to owe its origin to the fact that the officials of the "members" were at first in the position of invited guests.

The highest office in connexion with the Cinque Ports is that of the lord warden, who also acts as governor of Dover Castle, and has a maritime jurisdiction (*vide infra*) as admiral of the ports. His power was formerly of great extent, but he has now practically no important duty to exercise except that of chairman of the Dover harbour board. The emoluments of the office are confined to certain insignificant admiralty droits. The patronage attached to the office consists of the right to appoint the judge of the Cinque Ports admiralty court, the registrar of the Cinque Ports and the marshal of the court; the right of appointing salvage commissioners at each Cinque Port and the appointment of a deputy to act as chairman of the Dover harbour board in the absence of the lord warden. Walmer Castle was for long the official residence of the lord warden, but has, since the resignation of Lord Curzon in 1903, ceased to be so used, and those portions of it which are of historic interest are now open to the public. George, prince of Wales (lord warden, 1903-1907), was the first lord warden of royal blood since the office was held by George, prince of Denmark, consort of Queen Anne.

Admiralty Jurisdiction.—The court of admiralty for the Cinque Ports exercises a co-ordinate but not exclusive admiralty jurisdiction over persons and things found within the territory of the Cinque Ports. The limits of its jurisdiction were declared at an inquisition taken at the court of admiralty, held by the seaside at Dover in 1682, to extend from Shore Beacon in Essex to Redcliff, near Seaford, in Sussex; and with regard to salvage, they comprise all the sea between Seaford in Sussex to a point five miles off Cape Grisnez on the coast of France, and the coast of Essex. An older inquisition of 1526 is given by R.G. Marsden in his *Select Pleas of the Court of Admiralty*, II. xxx. The court is an ancient one. The judge sits as the official and commissary of the lord warden, just as the judge of the high court of admiralty sat as the official and commissary of the lord high admiral. And, as the office of lord warden is more ancient than the office of lord high admiral (*The Lord Warden* v. *King in his office of Admiralty*, 1831, 2 Hagg. Admy. Rep. 438), it is probable that the Cinque Ports court is the more ancient of the two.

The jurisdiction of the court has been, except in one matter of mere antiquarian curiosity, unaffected by statute. It exercises only, therefore, such jurisdiction as the high court of admiralty exercised, apart from restraining statutes of 1389 and 1391 and enabling statutes of 1840 and 1861. Cases of collision have been tried in it (the "Vivid," 1 *Asp. Maritime Law Cases*, 601). But salvage cases (the "Clarisse," *Swabey*, 129; the "Marie," *Law. Rep. 7 P.D.* 203) are the principal cases now tried. It has no prize jurisdiction. The one case in which jurisdiction has been given to it by statute is to enforce forfeitures under the statute of 1538.

Dr (afterwards the Right Hon. Robert Joseph) Phillimore succeeded his father as judge of

the court from 1855 to 1875, being succeeded by Mr Arthur Cohen, K.C. As Sir R. Phillimore was also the last judge of the high court of admiralty, from 1867 (the date of his appointment to the high court) to 1875, the two offices were, probably for the first time in history, held by the same person. Dr Phillimore's patent had a grant of the "place or office of judge official and commissary of the court of admiralty of the Cinque Ports, and their members and appurtenances, and to be assistant to my lieutenant of Dover castle in all such affairs and business concerning the said court of admiralty wherein yourself and assistance shall be requisite and necessary." Of old the court sat sometimes at Sandwich, sometimes at other ports. But the regular place for the sitting of the court has for a long time been, and still is, the aisle of St James's church, Dover. For convenience the judge often sits at the royal courts of justice. The office of marshal in the high court is represented in this court by a serjeant, who also bears a silver oar. There is a registrar, as in the high court. The appeal is to the king in council, and is heard by the judicial committee of the privy council. The court can hear appeals from the Cinque Ports salvage commissioners, such appeals being final (Cinque Ports Act 1821). Actions may be transferred to it, and appeals made to it, from the county courts in all cases, arising within the jurisdiction of the Cinque Ports as defined by that act. At the solemn installation of the lord warden the judge as the next principal officer installs him.

The Cinque Ports from the earliest times claimed to be exempt from the jurisdiction of the admiral of England. Their early charters do not, like those of Bristol and other seaports, express this exemption in terms. It seems to have been derived from the general words of the charters which preserve their liberties and privileges.

The lord warden's claim to prize was raised in, but not finally decided by, the high court of admiralty in the "Ooster Ems," 1 *C. Rob.* 284, 1783.

See S. Jeake, *Charters of the Cinque Ports* (1728); Boys, *Sandwich and Cinque Ports*; Knocker, *Grand Court of Shepway* (1862); M, Burrows, *Cinque Ports* (1895); F.M. Hueffer, *Cinque Ports* (1900); *Indices of the Great White and Black Books of the Cinque Ports* (1905).

CINTRA, a town of central Portugal, in the district of Lisbon, formerly included in the province of Estramadura; 17 m. W.N.W. of Lisbon by the Lisbon-Caçem-Cintra railway, and 6 m. N. by E. of Cape da Roca, the westernmost promontory of the European mainland. Pop. (1900) 5914. Cintra is magnificently situated on the northern slope of the Serra da Cintra, a rugged mountain mass, largely overgrown with pines, eucalyptus, cork and other forest trees, above which the principal summits rise in a succession of bare and jagged grey peaks; the highest being Cruz Alta (1772 ft.), marked by an ancient stone cross, and commanding a wonderful view southward over Lisbon and the Tagus estuary, and north-westward over the Atlantic and the plateau of Mafra. Few European towns possess equal advantages of position and climate; and every educated Portuguese is familiar with the verses in which the beauty of Cintra is celebrated by Byron in *Childe Harold* (1812), and by Camoens in the national epic *Os Lusiadas* (1572). One of the highest points of the Serra is surmounted by the Palacio da Pena, a fantastic imitation of a medieval fortress, built on the site of a Hieronymite convent by the prince consort Ferdinand of Saxe-Coburg (d. 1885); while an adjacent part of the range is occupied by the Castello des Mouros, an extensive Moorish fortification, containing a small ruined mosque and a very curious set of ancient cisterns. The lower slopes of the Serra are covered with the gardens and villas of the wealthier inhabitants of Lisbon, who migrate hither in spring and stay until late autumn.

In the town itself the most conspicuous building is a 14th-15th-century royal palace, partly Moorish, partly debased Gothic in style, and remarkable for the two immense conical chimneys which rise like towers in the midst. The 18th-century Palacio de Seteaes, built in the French style then popular in Portugal, is said to derive its name ("Seven *Ahs*") from a sevenfold echo; here, on the 22nd of August 1808, was signed the convention of Cintra, by which the British and Portuguese allowed the French army to evacuate the kingdom without molestation. Beside the road which leads for 3½ m. W. to the village of Collares, celebrated for its wine, is the Penha Verde, an interesting country house and chapel, founded by João de Castro (1500-1548), fourth viceroy of the Indies. De Castro also founded the convent of Santa Cruz, better known as the Convento de Cortiça or Cork convent, which stands at the western extremity of the Serra, and owes its name to the cork panels which formerly lined

its walls. Beyond the Penha Verde, on the Collares road, are the palace and park of Montserrate. The palace was originally built by William Beckford, the novelist and traveller (1761-1844), and was purchased in 1856 by Sir Francis Cook, an Englishman who afterwards obtained the Portuguese title viscount of Montserrate. The palace, which contains a valuable library, is built of pure white stone, in Moorish style; its walls are elaborately sculptured. The park, with its tropical luxuriance of vegetation and its variety of lake, forest and mountain scenery, is by far the finest example of landscape gardening in the Iberian Peninsula, and probably among the finest in the world. Its high-lying lawns, which overlook the Atlantic, are as perfect as any in England, and there is one ravine containing a whole wood of giant tree-ferns from New Zealand. Other rare plants have been systematically collected and brought to Montserrate from all parts of the world by Sir Francis Cook, and afterwards by his successor, Sir Frederick Cook, the second viscount. The Praia das Maçãs, or "beach of apples," in the centre of a rich fruit-bearing valley, is a favourite sea-bathing station, connected with Cintra by an extension of the electric tramway which runs through the town.

CIPHER, or CYPHER (from Arab, *ṣifr*, void), the symbol 0, nought, or zero; and so a name for symbolic or secret writing (see CRYPTOGRAPHY), or even for shorthand (*q.v.*), and also in elementary education for doing simple sums ("ciphering").

CIPPUS (Lat. for a "post" or "stake"), in architecture, a low pedestal, either round or rectangular, set up by the Romans for various purposes such as military or mile stones, boundary posts, &c. The inscriptions on some in the British Museum show that they were occasionally funeral memorials.

CIPRIANI, GIOVANNI BATTISTA (1727-1785), Italian painter and engraver, Pistoiese by descent, was born in Florence in 1727. His first lessons were given him by an Englishman, Ignatius Heckford or Hugford, and under his second master, Antonio Domenico Gabbiani, he became a very clever draughtsman. He was in Rome from 1750 to 1753, where he became acquainted with Sir William Chambers, the architect, and Joseph Wilton, the sculptor, whom he accompanied to England in August 1755. He had already painted two pictures for the abbey of San Michele in Pelago, Pistoia, which had brought him reputation, and on his arrival in England he was patronized by Lord Tilney, the duke of Richmond and other noblemen. His acquaintance with Sir William Chambers no doubt helped him on, for when Chambers designed the Albany in London for Lord Holland, Cipriani painted a ceiling for him. He also painted part of a ceiling in Buckingham Palace, and a room with poetical subjects at Standlynch in Wiltshire. Some of his best and most permanent work was, however, done at Somerset House, built by his friend Chambers, upon which he lavished infinite pains. He not only prepared the decorations for the interior of the north block, but, says Joseph Baretti in his *Guide through the Royal Academy* (1780), "the whole of the carvings in the various fronts of Somerset Place—excepting Bacon's bronze figures—were carved from finished drawings made by Cipriani." These designs include the five masks forming the keystones to the arches on the courtyard side of the vestibule, and the two above the doors leading into the wings of the north block, all of which are believed to have been carved by Nollekens. The grotesque groups flanking the main doorways on three sides of the quadrangle and the central doorway on the terrace appear also to have been designed by Cipriani. The apartments in Sir William Chambers's stately palace that were assigned to the Royal Academy, into which it moved in 1780, owed much to Cipriani's graceful, if mannered, pencil. The central panel of the library ceiling was painted by Sir Joshua

Reynolds, but the four compartments in the coves, representing Allegory, Fable, Nature and History, were Cipriani's. These paintings still remain at Somerset House, together with the emblematic painted ceiling, also his work, of what was once the library of the Royal Society. It was natural that Cipriani should thus devote himself to adorning the apartments of the academy, since he was an original member (1768) of that body, for which he designed the diploma so well engraved by Bartolozzi. In recognition of his services in this respect the members presented him in 1769 with a silver cup with a commemorative inscription. He was much employed by the publishers, for whom he made drawings in pen and ink, sometimes coloured. His friend Bartolozzi engraved most of them. Drawings by him are in both the British Museum and Victoria and Albert Museum. His best autograph engravings are "The Death of Cleopatra," after Benvenuto Cellini; "The Descent of the Holy Ghost," after Gabbiani; and portraits for Hollis's memoirs, 1780. He painted allegorical designs for George III.'s state coach—which is still in use—in 1782, and repaired Verrio's paintings at Windsor and Rubens's ceiling in the Banqueting House at Whitehall. If his pictures were often weak, his decorative treatment of children was usually exceedingly happy. Some of his most pleasing work was that which, directly or indirectly, he executed for the decoration of furniture. He designed many groups of nymphs and *amorini* and medallion subjects to form 380
the centre of Pergolesi's bands of ornament, and they were continually reproduced upon the elegant satin-wood furniture which was growing popular in his later days and by the end of the 18th century became a rage. Sometimes these designs were inlaid in marqueterie, but most frequently they were painted upon the satin-wood by other hands with delightful effect, since in the whole range of English furniture there is nothing more enchanting than really good finished satin-wood pieces. There can be little doubt that some of the beautiful furniture designed by the Adams was actually painted by Cipriani himself. He also occasionally designed handles for drawers and doors. Cipriani died at Hammersmith in 1785 and was buried at Chelsea, where Bartolozzi erected a monument to his memory. He had married an English lady, by whom he had two sons.

CIRCAR, an Indian term applied to the component parts of a *subah* or province, each of which is administered by a deputy-governor. In English it is principally employed in the name of the Northern Circars, used to designate a now obsolete division of the Madras presidency, which consisted of a narrow slip of territory lying along the western side of the Bay of Bengal from 15° 40′ to 20° 17′ N. lat. These Northern Circars were five in number, Chicacole, Rajahmundry, Ellore, Kondapalli and Guntur, and their total area was about 30,000 sq. m.

The district corresponds in the main to the modern districts of Kistna, Godavari, Vizagapatam, Ganjam and a part of Nellore. It was first invaded by the Mahommedans in 1471; in 1541 they conquered Kondapalli, and nine years later they extended their conquests over all Guntur and the districts of Masulipatam. But the invaders appear to have acquired only an imperfect possession of the country, as it was again wrested from the Hindu princes of Orissa about the year 1571, during the reign of Ibrahim, of the Kutb Shahi dynasty of Hyderabad or Golconda. In 1687 the Circars were added, along with the empire of Hyderabad, to the extensive empire of Aurangzeb. Salabat Jang, the son of the nizam ul mulk Asaf Jah, who was indebted for his elevation to the throne to the French East India Company, granted them in return for their services the district of Kondavid or Guntur, and soon afterwards the other Circars. In 1759, by the conquest of the fortress of Masulipatam, the dominion of the maritime provinces on both sides, from the river Gundlakamma to the Chilka lake, was necessarily transferred from the French to the British. But the latter left them under the administration of the nizam, with the exception of the town and fortress of Masulipatam, which were retained by the English East India Company. In 1765 Lord Clive obtained from the Mogul emperor Shah Alam a grant of the five Circars. Hereupon the fort of Kondapalli was seized by the British, and on the 12th of November 1766 a treaty of alliance was signed with Nizam Ali by which the Company, in return for the grant of the Circars, undertook to maintain troops for the nizam's assistance. By a second treaty, signed on the 1st of March 1768, the nizam acknowledged the validity of Shah Alam's grant and resigned the Circars to the Company, receiving as a mark of friendship an annuity of £50,000. Guntur, as the personal estate of the nizam's brother Basalat Jang, was excepted during his lifetime under both treaties. He died in 1782, but it was not till 1788 that Guntur came under British administration. Finally, in 1823, the claims of the nizam over the

Northern Circars were bought outright by the Company, and they became a British possession.

CIRCASSIA, a name formerly given to the north-western portion of the Caucasus, including the district between the mountain range and the Black Sea, and extending to the north of the central range as far as the river Kuban. Its physical features are described in the article on the Russian province of KUBAN, with which it approximately coincides. The present article is confined to a consideration of the ethnographical relations and characteristics of the people, their history being treated under CAUCASIA.

The Cherkesses or Circassians, who gave their name to this region, of which they were until lately the sole inhabitants, are a peculiar race, differing from the other tribes of the Caucasus in origin and language. They designate themselves by the name of Adigheb, that of Cherkesses being a term of Russian origin. By their long-continued struggles with the power of Russia, during a period of nearly forty years, they attracted the attention of the other nations of Europe in a high degree, and were at the same time an object of interest to the student of the history of civilization, from the strange mixture which their customs exhibited of chivalrous sentiment with savage customs. For this reason it may be still worth while to give a brief summary of their national characteristics and manners, though these must now be regarded as in great measure things of the past.

In the patriarchal simplicity of their manners, the mental qualities with which they were endowed, the beauty of form and regularity of feature by which they were distinguished, they surpassed most of the other tribes of the Caucasus. At the same time they were remarkable for their warlike and intrepid character, their independence, their hospitality to strangers, and that love of country which they manifested in their determined resistance to an almost overwhelming power during the period of a long and desolating war. The government under which they lived was a peculiar form of the feudal system. The free Circassians were divided into three distinct ranks, the princes or *pshi*, the nobles or *uork* (Tatar *usden*), and the peasants or *hokotl*. Like the inhabitants of the other regions of the Caucasus, they were also divided into numerous families, tribes or clans, some of which were very powerful, and carried on war against each other with great animosity. The slaves, of whom a large proportion were prisoners of war, were generally employed in the cultivation of the soil, or in the domestic service of some of the principal chiefs.

The will of the people was acknowledged as the supreme source of authority; and every free Circassian had a right to express his opinion in those assemblies of his tribe in which the questions of peace and war, almost the only subjects which engaged their attention, were brought under deliberation. The princes and nobles, the leaders of the people in war and their rulers in peace, were only the administrators of a power which was delegated to them. As they had no written laws, the administration of justice was regulated solely by custom and tradition, and in those tribes professing Mahommedanism by the precepts of the Koran. The most aged and respected inhabitants of the various *auls* or villages frequently sat in judgment, and their decisions were received without a murmur by the contending parties. The Circassian princes and nobles were professedly Mahommedans; but in their religious services many of the ceremonies of their former heathen and Christian worship were still preserved. A great part of the people had remained faithful to the worship of their ancient gods—Shible, the god of thunder, of war and of justice; Tleps, the god of fire; and Seosseres, the god of water and of winds. Although the Circassians are said to have possessed minds capable of the highest cultivation, the arts and sciences, with the exception of poetry and music, were completely neglected. They possessed no written language. The wisdom of their sages, the knowledge they had acquired, and the memory of their warlike deeds were preserved in verses, which were repeated from mouth to mouth and descended from father to son.

The education of the young Circassian was confined to riding, fencing, shooting, hunting, and such exercises as were calculated to strengthen his frame and prepare him for a life of active warfare. The only intellectual duty of the *atalik* or instructor, with whom the young men lived until they had completed their education, was that of teaching them to express their thoughts shortly, quickly and appropriately. One of their marriage ceremonies was very strange. The young man who had been approved by the parents, and had paid the

stipulated price in money, horses, oxen, or sheep for his bride, was expected to come with his friends fully armed, and to carry her off by force from her father's house. Every free Circassian had unlimited right over the lives of his wife and children. Although polygamy was allowed by the laws of the Koran, the custom of the country forbade it, and the Circassians were generally faithful to the marriage bond. The respect for superior age was carried to such an extent that the young brother used to rise from his seat when the elder entered an apartment, and was silent when he spoke. Like all the other inhabitants of the Caucasus, the Circassians were distinguished for two very opposite qualities—the most generous hospitality and implacable vindictiveness. Hospitality to the stranger was considered one of the most sacred duties. Whatever were his rank in life, all the members of the family rose to receive him on his entrance, and conduct him to the principal seat in the apartment. The host was considered responsible with his own life for the security of his guest, upon whom, even although his deadliest enemy, he would inflict no injury while under the protection of his roof. The chief who had received a stranger was also bound to grant him an escort of horse to conduct him in safety on his journey, and confide him to the protection of those nobles with whom he might be on friendly terms. The law of vengeance was no less binding on the Circassian. The individual who had slain any member of a family was pursued with implacable vengeance by the relatives, until his crime was expiated by death. The murderer might, indeed, secure his safety by the payment of a certain sum of money, or by carrying off from the house of his enemy a newly-born child, bringing it up as his own, and restoring it when its education was finished. In either case, the family of the slain individual might discontinue the pursuit of vengeance without any stain upon its honour. The man closely followed by his enemy, who, on reaching the dwelling of a woman, had merely touched her hand, was safe from all other pursuit so long as he remained under the protection of her roof. The opinions of the Circassians regarding theft resembled those of the ancient Spartans. The commission of the crime was not considered so disgraceful as its discovery; and the punishment of being compelled publicly to restore the stolen property to its original possessor, amid the derision of his tribe, was much dreaded by the Circassian who would glory in a successful theft. The greatest stain upon the Circassian character was the custom of selling their children, the Circassian father being always willing to part with his daughters, many of whom were bought by Turkish merchants for the harems of Eastern monarchs. But no degradation was implied in this transaction, and the young women themselves were generally willing partners in it. Herds of cattle and sheep constituted the chief riches of the inhabitants. The princes and nobles, from whom the members of the various tribes held the land which they cultivated, were the proprietors of the soil. The Circassians carried on little or no commerce, and the state of perpetual warfare in which they lived prevented them from cultivating any of the arts of peace.

CIRCE (Gr. Κίρκη), in Greek legend, a famous sorceress, the daughter of Helios and the ocean nymph Perse. Having murdered her husband, the prince of Colchis, she was expelled by her subjects and placed by her father on the solitary island of Aeaea on the coast of Italy. She was able by means of drugs and incantations to change human beings into the forms of wolves or lions, and with these beings her palace was surrounded. Here she was found by Odysseus and his companions; the latter she changed into swine, but the hero, protected by the herb *moly* (*q.v.*), which he had received from Hermes, not only forced her to restore them to their original shape, but also gained her love. For a year he relinquished himself to her endearments, and when he determined to leave, she instructed him how to sail to the land of shades which lay on the verge of the ocean stream, in order to learn his fate from the prophet Teiresias. Upon his return she also gave him directions for avoiding the dangers of the journey home (Homer, *Odyssey*, x.-xii.; Hyginus, *Fab.* 125). The Roman poets associated her with the most ancient traditions of Latium, and assigned her a home on the promontory of Circei (Virgil, *Aeneid*, vii. 10). The metamorphoses of Scylla and of Picus, king of the Ausonians, by Circe, are narrated in Ovid (*Metamorphoses*, xiv.).

The Myth of Kirke, by R. Brown (1883), in which Circe is explained as a moon-goddess of Babylonian origin, contains an exhaustive summary of facts, although many of the author's speculations may be proved untenable (review by H. Bradley in *Academy*, January 19, 1884); see also J.E. Harrison, *Myths of the Odyssey* (1882); C. Seeliger in W.H. Roscher's *Lexikon der Mythologie*.

CIRCEIUS MONS (mod. *Monte Circeo*), an isolated promontory on the S.W. coast of Italy, about 80 m. S.E. of Rome. It is a ridge of limestone about 3½ m. long by 1 m. wide at the base, running from E. to W. and surrounded by the sea on all sides except the N. The land to the N. of it is 53 ft. above sea-level, while the summit of the promontory is 1775 ft. The origin of the name is uncertain: it has naturally been connected with the legend of Circe, and Victor Bérard (in *Les Phéniciens et l'Odyssée*, ii. 261 seq.) maintains in support of the identification that Αἰαίη, the Greek name for the island of Circe, is a faithful transliteration of a Semitic name, meaning "island of the hawk," of which νῆσος Κίρκης is the translation. The difficulty has been raised, especially by geologists, that the promontory ceased to be an island at a period considerably before the time of Homer; but Procopius very truly remarked that the promontory has all the appearance of an island until one is actually upon it. Upon the E. end of the ridge of the promontory are the remains of an enceinte, forming roughly a rectangle of about 200 by 100 yds. of very fine polygonal work, on the outside, the blocks being very carefully cut and jointed and right angles being intentionally avoided. The wall stands almost entirely free, as at Arpinum—polygonal walls in Italy are as a rule embanking walls—and increases considerably in thickness as it descends. The blocks of the inner face are much less carefully worked both here and at Arpinum. It seems to have been an acropolis, and contains no traces of buildings, except for a subterranean cistern, circular, with a beehive roof of converging blocks. The modern village of S. Felice Circeo seems to occupy the site of the ancient town, the citadel of which stood on the mountain top, for its medieval walls rest upon ancient walls of Cyclopean work of less careful construction than those of the citadel, and enclosing an area of 200 by 150 yds.

Circei was founded as a Roman colony at an early date—according to some authorities in the time of Tarquinius Superbus, but more probably about 390 B.C. The existence of a previous population, however, is very likely indicated by the revolt of Circei in the middle of the 4th century B.C., so that it is doubtful whether the walls described are to be attributed to the Romans or the earlier Volscian inhabitants. At the end of the republic, however, or at latest at the beginning of the imperial period, the city of Circei was no longer at the E. end of the promontory, but on the E. shores of the Lago di Paola (a lagoon—now a considerable fishery—separated from the sea by a line of sandhills and connected with it by a channel of Roman date: Strabo speaks of it as a small harbour) one mile N. of the W. end of the promontory. Here are the remains of a Roman town, belonging to the 1st and 2nd centuries, extending over an area of some 600 by 500 yards, and consisting of fine buildings along the lagoons, including a large open *piscina* or basin, surrounded by a double portico, while farther inland are several very large and well-preserved water-reservoirs, supplied by an aqueduct of which traces may still be seen. An inscription speaks of an amphitheatre, of which no remains are visible. The transference of the city did not, however, mean the abandonment of the E. end of the promontory, on which stand the remains of several very large villas. An inscription, indeed, cut in the rock near S. Felice, speaks of this part of the *promunturium Veneris* (the only case of the use of this name) as belonging to the city of Circei. On the S. and N. sides of the promontory there are comparatively few buildings, while, at the W. end there is a sheer precipice to the sea. The town only acquired municipal rights after the Social War, and was a place of little importance, except as a seaside resort. For its villas Cicero compares it with Antium, and probably both Tiberius and Domitian possessed residences there. The beetroot and oysters of Circei had a certain reputation. The view from the highest summit of the promontory (which is occupied by ruins of a platform attributed with great probability to a temple of Venus or Circe) is of remarkable beauty; the whole mountain is covered with fragrant shrubs. From any point in the Pomptine Marshes or on the coast-line of Latium the Circeian promontory dominates the landscape in the most remarkable way.

See T. Ashby, "Monte Circeo," in *Mélanges de l'école française de Rome*, xxv. (1905) 157 seq.

(T. As.)

CIRCLE (from the Lat. *circulus*, the diminutive of *circus*, a ring; the cognate Gr. word is κιρκος, generally used in the form κρίκος), a plane curve definable as the locus of a point which moves so that its distance from a fixed point is constant.

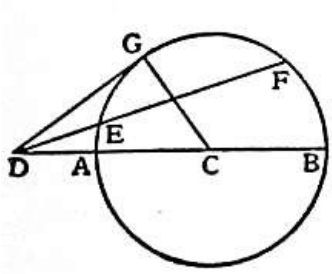


FIG. 1.

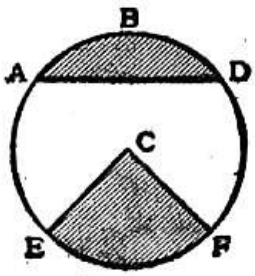


FIG. 2.

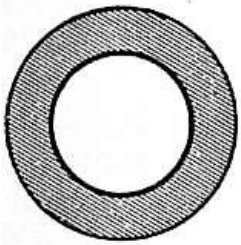


FIG. 3.

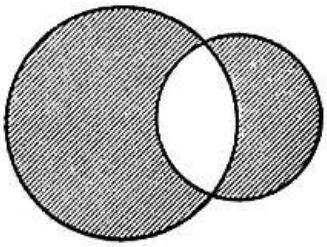


FIG. 4.

The form of a circle is familiar to all; and we proceed to define certain lines, points, &c., which constantly occur in studying its geometry. The fixed point in the preceding definition is termed the "centre" (C in fig. 1); the constant distance, *e.g.* CG, the "radius." The curve itself is sometimes termed the "circumference." Any line through the centre and terminated at both extremities by the curve, *e.g.* AB, is a "diameter"; any other line similarly terminated, *e.g.* EF, a "chord." Any line drawn from an external point to cut the circle in two points, *e.g.* DEF, is termed a "secant"; if it touches the circle, *e.g.* DG, it is a "tangent." Any portion of the circumference terminated by two points, *e.g.* AD (fig. 2), is termed an "arc"; and the plane figure enclosed by a chord and arc, *e.g.* ABD, is termed a "segment"; if the chord be a diameter, the segment is termed a "semicircle." The figure included by two radii and an arc is a "sector," *e.g.* ECF (fig. 2). "Concentric circles" are, as the name obviously shows, circles having the same centre; the figure enclosed by the circumferences of two concentric circles is an "annulus" (fig. 3), and of two non-concentric circles a "lune," the shaded portions in fig. 4; the clear figure is sometimes termed a "lens."

The circle was undoubtedly known to the early civilizations, its simplicity specially recommending it as an object for study. Euclid defines it (Book I. def. 15) as a "plane figure enclosed by one line, all the straight lines drawn to which from one point within the figure are equal to one another." In the succeeding three definitions the centre, diameter and the semicircle are defined, while the third postulate of the same book demands the possibility of describing a circle for every "centre" and "distance." Having employed the circle for the construction and demonstration of several propositions in Books I. and II. Euclid devotes his third book entirely to theorems and problems relating to the circle, and certain lines and angles, which he defines in introducing the propositions. The fourth book deals with the circle in its relations to inscribed and circumscribed triangles, quadrilaterals and regular polygons. Reference should be made to the article GEOMETRY: *Euclidean*, for a detailed summary of the Euclidean treatment, and the elementary properties of the circle.

Analytical Geometry of the Circle.

In the article GEOMETRY: *Analytical*, it is shown that the general equation to a circle in rectangular Cartesian co-ordinates is $x^2 + y^2 + 2gx + 2fy + c = 0$, *i.e.* in the general equation of the second degree the co-efficients of x^2 and y^2 are equal, and of xy zero. The co-ordinates of its centre are -g/c, -f/c; and its radius is $(g^2 + f^2 - c)^{\frac{1}{2}}$. The equations to the chord, tangent and normal are readily derived by the ordinary methods.

Cartesian co-ordinates.

Consider the two circles:—

$$x^2 + y^2 + 2gx + 2fy + c = 0, \quad x^2 + y^2 + 2g'x + 2f'y + c' = 0.$$

Obviously these equations show that the curves intersect in four points, two of which lie on the intersection of the line, $2(g - g')x + 2(f - f')y + c - c' = 0$, the radical axis, with the circles, and the other two where the lines $x^2 + y^2 = (x + iy)(x - iy) = 0$ (where $i = \sqrt{-1}$) intersect the circles. The first pair of intersections may be either real or imaginary; we proceed to discuss the second pair.

The equation $x^2 + y^2 = 0$ denotes a pair of perpendicular imaginary lines; it follows, therefore, that circles always intersect in two imaginary points at infinity along these lines, and since the terms $x^2 + y^2$ occur in the equation of every circle, it is seen that all circles pass through two fixed points at infinity. The introduction of these lines and points

constitutes a striking achievement in geometry, and from their association with circles they have been named the “circular lines” and “circular points.” Other names for the circular lines are “circulars” or “isotropic lines.” Since the equation to a circle of zero radius is $x^2 + y^2 = 0$, *i.e.* identical with the circular lines, it follows that this circle consists of a real point and the two imaginary lines; conversely, the circular lines are both a pair of lines and a circle. A further deduction from the principle of continuity follows by considering the intersections of concentric circles. The equations to such circles may be expressed in the form $x^2 + y^2 = \alpha^2$, $x^2 + y^2 = \beta^2$. These equations show that the circles touch where they intersect the lines $x^2 + y^2 = 0$, *i.e.* concentric circles have double contact at the circular points, the chord of contact being the line at infinity.

In various systems of triangular co-ordinates the equations to circles specially related to the triangle of reference assume comparatively simple forms; consequently they provide elegant algebraical demonstrations of properties concerning a triangle and the circles intimately associated with its geometry. In this article the equations to the more important circles—the circumscribed, inscribed, escribed, self-conjugate—will be given; reference should be made to the article Triangle for the consideration of other circles (nine-point, Brocard, Lemoine, &c.); while in the article Geometry: *Analytical*, the principles of the different systems are discussed.

Trilinear co-ordinates.

The equation to the circumcircle assumes the simple form $a\beta\gamma + b\gamma\alpha + c\alpha\beta = 0$, the centre being cos A, cos B, cos C. The inscribed circle is $\cos \tfrac{1}{2}A \sqrt{(\alpha)} \cos \tfrac{1}{2}B \sqrt{(\beta)} + \cos \tfrac{1}{2}C \sqrt{(\gamma)} = 0$, with centre $\alpha = \beta = \gamma$; while the escribed circle opposite the angle A is $\cos \tfrac{1}{2}A \sqrt{(-\alpha)} + \sin \tfrac{1}{2}B \sqrt{(\beta)} + \sin \tfrac{1}{2}C \sqrt{(\gamma)} = 0$, with centre $-\alpha = \beta = \gamma$. The self-conjugate circle is $\alpha^2 \sin 2A + \beta^2 \sin 2B + \gamma^2 \sin 2C = 0$, or the equivalent form $a \cos A\, \alpha^2 + b \cos B\, \beta^2 + c \cos C\, \gamma^2 = 0$, the centre being sec A, sec B, sec C.

The general equation to the circle in trilinear co-ordinates is readily deduced from the fact that the circle is the only curve which intersects the line infinity in the circular points. Consider the equation

$$a\beta\gamma + b\gamma\alpha + C\alpha\beta + (l\alpha + m\beta + n\gamma)(a\alpha + b\beta + c\gamma) = 0 \qquad (1).$$

This obviously represents a conic intersecting the circle $a\beta\gamma + b\gamma\alpha + c\alpha\beta = 0$ in points on the common chords $l\alpha + m\beta + n\gamma = 0$, $a\alpha + b\beta + c\gamma = 0$. The line $l\alpha + m\beta + n\gamma$ is the radical axis, and since $a\alpha + b\beta + c\gamma = 0$ is the line infinity, it is obvious that equation (1) represents a conic passing through the circular points, *i.e.* a circle. If we compare (1) with the general equation of the second degree $u\alpha^2 + v\beta^2 + w\gamma^2 + 2u'\beta\gamma + 2v'\gamma\alpha + 2w'\alpha\beta = 0$, it is readily seen that for this equation to represent a circle we must have

$$-kabc = vc^2 + wb^2 - 2u'bc = wa^2 + uc^2 - 2v'ca = ub^2 + va^2 - 2w'ab.$$

Areal co-ordinates.

The corresponding equations in areal co-ordinates are readily derived by substituting x/a, y/b, z/c for α, β, γ respectively in the trilinear equations. The circumcircle is thus seen to be $a^2yz + b^2zx + c^2xy = 0$, with centre sin 2A, sin 2B, sin 2C; the inscribed circle is $\sqrt{(x \cot \tfrac{1}{2}A)} + \sqrt{(y \cot \tfrac{1}{2}B)} + \sqrt{(z \cot \tfrac{1}{2}C)} = 0$, with centre sin A, sin B, sin C; the escribed circle opposite the angle A is $\sqrt{(-x \cot \tfrac{1}{2}A)} + \sqrt{(y \tan \tfrac{1}{2}B)} + \sqrt{(z \tan \tfrac{1}{2}C)}=0$, with centre - sin A, sin B, sin C; and the self-conjugate circle is $x^2 \cot A + y^2 \cot B + z^2 \cot C = 0$, with centre tan A, tan B, tan C. Since in areal co-ordinates the line infinity is represented by the equation $x + y + z = 0$ it is seen that every circle is of the form $a^2yz + b^2zx + c^2xy + (lx + my + nz)(x + y + z) = 0$. Comparing this equation with $ux^2 + vy^2 + wz^2 + 2u'yz + 2v'zx + 2w'xy = 0$, we obtain as the condition for the general equation of the second degree to represent a circle:—

$$(v + w - 2u')/a^2 = (w + u - 2v')/b^2 = (u + v - 2w')/c^2.$$

Tangential co-ordinates.

In tangential (p, q, r) co-ordinates the inscribed circle has for its equation $(s - a)qr + (s - b)rp + (s - c)pq = 0$, s being equal to $\tfrac{1}{2}(a + b + c)$; an alternative form is $qr \cot \tfrac{1}{2}A + rp \cot \tfrac{1}{2}B + pq \cot \tfrac{1}{2}C = 0$; the centre is $ap + bq + cr = 0$, or $p \sin A + q \sin B + r \sin C = 0$. The escribed circle opposite the angle A is $-sqr + (s - c)rp + (s - b)pq = 0$ or $-qr \cot \tfrac{1}{2}A + rp \tan \tfrac{1}{2}B + pq \tan \tfrac{1}{2}C = 0$, with centre $-ap + bq + cr = 0$. The circumcircle is a $\sqrt{(p)} + b \sqrt{(q)} + c \sqrt{(r)} = 0$, the centre being $p \sin 2A + q \sin 2B + r \sin 2C = 0$. The general equation to a circle in this system of co-ordinates is deduced as follows: If ρ be the radius and $lp + mq + nr = 0$ the centre, we have $\rho = (lp_1 - mq_1 + nr_1/(l + m + n)$, in which p_1, q_1, r_1 is a line distant ρ from the point $lp + mq + nr = 0$. Making this equation homogeneous by the relation $\Sigma a^2(p - q)(p - r) = 4\Delta^2$ (see Geometry: *Analytical*), which is generally written $\{ap, bq, cr\}^2 = 4\Delta^2$, we obtain $\{ap, bq, cr\}^2\rho^2 = 4\Delta^2 \{(lp + mq + nr)/(l + m + n)\}^2$, the accents being dropped, and p, q, r regarded as current co-ordinates. This equation, which may be more conveniently written $\{ap, bq, cr\}^2 = (\lambda p + \mu q + \nu r)^2$, obviously represents a circle, the centre being $\lambda p + \mu q + \nu r = 0$, and radius

$2\Delta/(\lambda + \mu + \nu)$. If we make $\lambda = \mu = \nu = 0$, ρ is infinite, and we obtain $\{ap, bq, cr\}^2 = 0$ as the equation to the circular points.

Systems of Circles.

Centres and Circle of Similitude.—The "centres of similitude" of two circles may be defined as the intersections of the common tangents to the two circles, the direct common tangents giving rise to the "external centre," the transverse tangents to the "internal centre." It may be readily shown that the external and internal centres are the points where the line joining the centres of the two circles is divided externally and internally in the ratio of their radii.

The circle on the line joining the internal and external centres of similitude as diameter is named the "circle of similitude." It may be shown to be the locus of the vertex of the triangle which has for its base the distance between the centres of the circles and the ratio of the remaining sides equal to the ratio of the radii of the two circles.

With a system of three circles it is readily seen that there are six centres of similitude, viz. two for each pair of circles, and it may be shown that these lie three by three on four lines, named the "axes of similitude." The collinear centres are the three sets of one external and two internal centres, and the three external centres.

Coaxal Circles.—A system of circles is coaxal when the locus of points from which tangents to the circles are equal is a straight line. Consider the case of two circles, and in the first place suppose them to intersect in two real points A and B. Then by Euclid iii. 36 it is seen that the line joining the points A and B is the locus of the intersection of equal tangents, for if P be any point on AB and PC and PD the tangents to the circles, then $PA \cdot PB = PC^2 = PD^2$, and therefore PC = PD. Furthermore it is seen that AB is perpendicular to the line joining the centres, and divides it in the ratio of the squares of the radii. The line AB is termed the "radical axis." A system coaxal with the two given circles is readily constructed by describing circles through the common points on the radical axis and any third point; the minimum circle of the system is obviously that which has the common chord of intersection for diameter, the maximum is the radical axis—considered as a circle of infinite radius. In the case of two non-intersecting circles it may be shown that the radical axis has the same metrical relations to the line of centres.

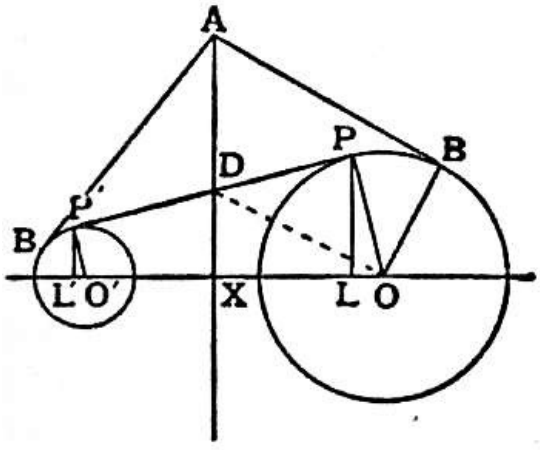


FIG. 5.

There are several methods of constructing the radical axis in this case. One of the simplest is: Let P and P′ (fig. 5) be the points of contact of a common tangent; drop perpendiculars PL, P′L′, from P and P′ to OO′, the line joining the centres, then the radical axis bisects LL′ (at X) and is perpendicular to OO′. To prove this let AB, AB^1 be the tangents from any point on the line AX. Then by Euc. i. 47, $AB^2 = AO^2 - OB^2 = AX^2 + OX^2 + OP^2$; and $OX^2 = OD^2 - DX^2 = OP^2 + PD^2 - DX^2$. Therefore $AB^2 = AX^2 - DX^2 + PD^2$. Similarly $AB'^2 = AX^2 - DX^2 + DP'^2$. Since PD = PD′, it follows that AB = AB′.

To construct circles coaxal with the two given circles, draw the tangent, say XR, from X, the point where the radical axis intersects the line of centres, to one of the given circles, and with centre X and radius XR describe a circle. Then circles having the intersections of tangents to this circle and the line of centres for centres, and the lengths of the tangents as radii, are members of the coaxal system.

In the case of non-intersecting circles, it is seen that the minimum circles of the coaxal system are a pair of points I and I′, where the orthogonal circle to the system intersects the line of centres; these points are named the "limiting points." In the case of a coaxal system having real points of intersection the limiting points are imaginary. Analytically, the Cartesian equation to a coaxal system can be written in the form $x^2 + y^2 + 2ax \pm k^2 = 0$, where a varies from member to member, while k is a constant. The radical axis is x = 0, and it may be shown that the length of the tangent from a point (0, h) is $h^2 \pm k^2$, *i.e.* it is independent of a, and therefore of any particular member of the system. The circles intersect in real or imaginary points according to the lower or upper sign of k^2, and the limiting points are real for the upper sign and imaginary for the lower sign. The fundamental

properties of coaxal systems may be summarized:—

1. The centres of circles forming a coaxal system are collinear;

2. A coaxal system having real points of intersection has imaginary limiting points;

3. A coaxal system having imaginary points of intersection has real limiting points;

4. Every circle through the limiting points cuts all circles of the system orthogonally;

5. The limiting points are inverse points for every circle of the system.

The theory of centres of similitude and coaxal circles affords elegant demonstrations of the famous problem: To describe a circle to touch three given circles. This problem, also termed the "Apollonian problem," was demonstrated with the aid of conic sections by Apollonius in his book on *Contacts* or *Tangencies*; geometrical solutions involving the conic sections were also given by Adrianus Romanus, Vieta, Newton and others. The earliest analytical solution appears to have been given by the princess Elizabeth, a pupil of Descartes and daughter of Frederick V. John Casey, professor of mathematics at the Catholic university of Dublin, has given elementary demonstrations founded on the theory of similitude and coaxal circles which are reproduced in his *Sequel to Euclid*; an analytical solution by Gergonne is given in Salmon's *Conic Sections*. Here we may notice that there are eight circles which solve the problem.

Mensuration of the Circle.

All exact relations pertaining to the mensuration of the circle involve the ratio of the circumference to the diameter. This ratio, invariably denoted by π, is constant for all circles, but it does not admit of exact arithmetical expression, being of the nature of an incommensurable number. Very early in the history of geometry it was known that the circumference and area of a circle of radius r could be expressed in the forms $2\pi r$ and πr^2. The exact geometrical evaluation of the second quantity, viz. πr^2, which, in reality, is equivalent to determining a square equal in area to a circle, engaged the attention of mathematicians for many centuries. The history of these attempts, together with modern contributions to our knowledge of the value and nature of the number π, is given below (*Squaring of the Circle*).

The following table gives the values of this constant and several expiessions involving it:—

	Number.	Logarithm.		Number.	Logarithm.
π	3.1415927	0.4971499	π^2	9.8696044	0.9942997
2π	6.2831858	0.7981799			
4π	12.5663706	1.0992099	$\frac{1}{6\pi^2}$	0.0168869	2.2275490
$\frac{1}{2}\pi$	1.5707963	0.1961199			
$\frac{1}{3}\pi$	1.0471976	0.0200286	$\sqrt{\pi}$	1.7724539	0.2485750
$\frac{1}{4}\pi$	0.7853982	1.8950899			
$\frac{1}{6}\pi$	0.5235988	1.7189986	$\sqrt[3]{\pi}$	1.4645919	0.1657166
$\frac{1}{8}\pi$	0.3926991	1.5940599			
$\frac{1}{12}\pi$	0.2617994	1.4179686	$\frac{1}{\sqrt{\pi}}$	0.5641896	1.7514251
$\frac{4}{3}\pi$	4.1887902	0.6220886			
$\frac{\pi}{180}$	0.0174533	2.2418774	$\frac{2}{\sqrt{\pi}}$	1.1283792	0.0524551
$\frac{1}{\pi}$	0.3183099	1.5028501	$\frac{1}{2\sqrt{\pi}}$	0.2820948	1.4503951
$\frac{4}{\pi}$	1.2732395	0.1049101	$\sqrt[3]{(\frac{6}{\pi})}$	0.2820948	1.4503951
$\frac{1}{4\pi}$	0.0795775	2.9097901	$\sqrt[3]{(\frac{3}{4\pi})}$	0.6203505	1.7926371
$\frac{180}{\pi}$	57.2957795	1.7581226	$\log_e \pi$	1.1447299	0.0587030

Useful fractional approximations are $\frac{22}{7}$ and $\frac{355}{113}$.

A synopsis of the leading formula connected with the circle will now be given.

1. *Circle.*—Data: radius = a. Circumference = $2\pi a$. Area = πa^2.

2. *Arc* and *Sector.*—Data: radius = a; θ = circular measure of angle subtended at centre by arc; c = chord of arc; c_2 = chord of semi-arc; c_4 = chord of quarter-arc.

Exact formulae are:—Arc = aθ, where θ may be given directly, or indirectly by the relation $c = 2a \sin \tfrac{1}{2}\theta$. Area of sector = $\tfrac{1}{2}a^2\theta$ = ½ radius × arc.

Approximate formulae are:—Arc = $\tfrac{1}{3}(8c_2 - c)$ (Huygen's formula); arc = $\tfrac{1}{45}(c - 40c_2 + 256c_4)$.

3. *Segment.*—Data: a, θ, c, c_2, as in (2); h = height of segment, *i.e.* distance of mid-point of arc from chord.

Exact formulae are:—Area = $\tfrac{1}{2}a^2(\theta - \sin\theta) = \tfrac{1}{2}a^2\theta - \tfrac{1}{4}c^2 \cot \tfrac{1}{2}\theta = \tfrac{1}{2}a^2 - \tfrac{1}{2}c\sqrt{(a^2 - \tfrac{1}{4}c^2)}$. If h be given, we can use $c^2 + 4h^2 = 8ah$, $2h = c \tan \tfrac{1}{4}\theta$ to determine θ.

Approximate formulae are:—Area = $\tfrac{1}{15}(6c + 8c_2)h$; = $\tfrac{2}{3}\sqrt{(c^2 + 8/5h^2)}\cdot h$; = $\tfrac{1}{15}(7c + 3\alpha)h$, α being the true length of the arc.

From these results the mensuration of any figure bounded by circular arcs and straight lines can be determined, *e.g.* the area of a *lune* or *meniscus* is expressible as the difference or sum of two segments, and the circumference as the sum of two arcs.

(C. E.*)

Squaring of the Circle.

The problem of finding a square equal in area to a given circle, like all problems, may be increased in difficulty by the imposition of restrictions; consequently under the designation there may be embraced quite a variety of geometrical problems. It has to be noted, however, that, when the "squaring" of the circle is especially spoken of, it is almost always tacitly assumed that the restrictions are those of the Euclidean geometry.

Since the area of a circle equals that of the rectilineal triangle whose base has the same length as the circumference and whose altitude equals the radius (Archimedes, Κύκλου μέτρησις, prop. 1), it follows that, if a straight line could be drawn equal in length to the circumference, the required square could be found by an ordinary Euclidean construction; also, it is evident that, conversely, if a square equal in area to the circle could be obtained it would be possible to draw a straight line equal to the circumference. Rectification and quadrature of the circle have thus been, since the time of Archimedes at least, practically identical problems. Again, since the circumferences of circles are proportional to their diameters—a proposition assumed to be true from the dawn almost of practical geometry—the rectification of the circle is seen to be transformable into finding the ratio of the circumference to the diameter. This correlative numerical problem and the two purely geometrical problems are inseparably connected historically.

Probably the earliest value for the ratio was 3. It was so among the Jews (1 Kings vii. 23, 26), the Babylonians (Oppert, *Journ. asiatique*, August 1872, October 1874), the Chinese (Biot, *Journ. asiatique*, June 1841), and probably also the Greeks. Among the ancient Egyptians, as would appear from a calculation in the Rhind papyrus, the number $(\tfrac{4}{3})^4$, *i.e.* 3.1605, was at one time in use.[1] The first attempts to solve the purely geometrical problem appear to have been made by the Greeks (Anaxagoras, &c.)[2], one of whom, Hippocrates, doubtless raised hopes of a solution by his quadrature of the so-called *meniscoi* or *lunes*.[3]

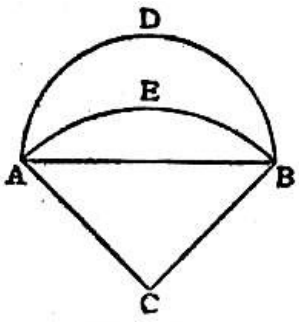


FIG. 6.

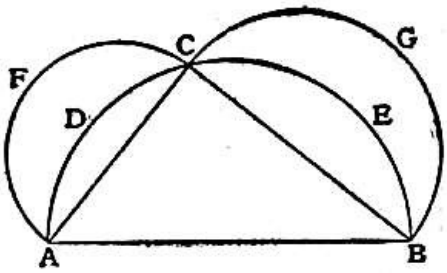


FIG. 7

[The Greeks were in possession of several relations pertaining to the quadrature of the lune. The following are among the more interesting. In fig. 6, ABC is an isosceles triangle right angled at C, ADB is the semicircle described on AB as diameter, AEB the circular arc described with centre C and radius CA = CB. It is easily shown that the areas of the lune ADBEA and the triangle ABC are equal. In fig. 7, ABC is any triangle right angled at C, semicircles are described on the three sides, thus forming two lunes AFCDA and CGBEC.

The sum of the areas of these lunes equals the area of the triangle ABC.]

As for Euclid, it is sufficient to recall the facts that the original author of prop. 8 of book iv. had strict proof of the ratio being < 4, and the author of prop. 15 of the ratio being > 3, and to direct attention to the importance of book x. on incommensurables and props. 2 and 16 of book xii., viz. that "circles are to one another as the squares on their diameters" and that "in the greater of two concentric circles a regular 2n-gon can be inscribed which shall not meet the circumference of the less," however nearly equal the circles may be.

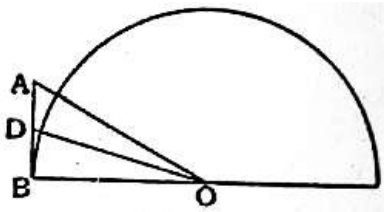


FIG. 8.

With Archimedes (287-212 B.C.) a notable advance was made. Taking the circumference as intermediate between the perimeters of the inscribed and the circumscribed regular n-gons, he showed that, the radius of the circle being given and the perimeter of some particular circumscribed regular polygon obtainable, the perimeter of the circumscribed regular polygon of double the number of sides could be calculated; that the like was true of the inscribed polygons; and that consequently a means was thus afforded of approximating to the circumference of the circle. As a matter of fact, he started with a semi-side AB of a circumscribed regular hexagon meeting the circle in B (see fig. 8), joined A and B with O the centre, bisected the angle AOB by OD, so that BD became the semi-side of a circumscribed regular 12-gon; then as AB:BO:OA::1: √3:2 he sought an approximation to √3 and found that AB:BO > 153:265. Next he applied his theorem[4] BO + OA:AB::OB:BD to calculate BD; from this in turn he calculated the semi-sides of the circumscribed regular 24-gon, 48-gon and 96-gon, and so finally established for the circumscribed regular 96-gon that perimeter:diameter < $3\frac{1}{7}$:1. In a quite analogous manner he proved for the inscribed regular 96-gon that perimeter:diameter > $3\frac{10}{71}$:1. The conclusion from these therefore was that the ratio of circumference to diameter is < $3\frac{1}{7}$ and > $3\frac{10}{71}$. This is a most notable piece of work; the immature condition of arithmetic at the time was the only real obstacle preventing the evaluation of the ratio to any degree of accuracy whatever.[5]

No advance of any importance was made upon the achievement of Archimedes until after the revival of learning. His immediate successors may have used his method to attain a greater degree of accuracy, but there is very little evidence pointing in this direction. Ptolemy (fl. 127-151), in the *Great Syntaxis*, gives 3.141552 as the ratio[6]; and the Hindus (c. A.D. 500), who were very probably indebted to the Greeks, used $\frac{62832}{20000}$, that is, the now familiar 3.1416.[7]

It was not until the 15th century that attention in Europe began to be once more directed to the subject, and after the resuscitation a considerable length of time elapsed before any progress was made. The first advance in accuracy was due to a certain Adrian, son of Anthony, a native of Metz (1527), and father of the better-known Adrian Metius of Alkmaar. In refutation of Duchesne(Van der Eycke), he showed that the ratio was < $3\frac{17}{120}$ and > $3\frac{15}{106}$, and thence made the exceedingly lucky step of taking a mean between the two by the quite unjustifiable process of halving the sum of the two numerators for a new numerator and halving the sum of the two denominators for a new denominator, thus arriving at the now well-known approximation $3\frac{16}{113}$ or $\frac{335}{113}$, which, being equal to 3.1415929..., is correct to the sixth fractional place.[8]

The next to advance the calculation was Francisco Vieta. By finding the perimeter of the inscribed and that of the circumscribed regular polygon of 393216 (*i.e.* 6×2^{16}) sides, he proved that the ratio was > 3.1415926535 and < 3.1415926537, so that its value became known (in 1579) correctly to 10 fractional places. The theorem for angle-bisection which Vieta used was not that of Archimedes, but that which would now appear in the form $1 - \cos\theta = 2\sin^2 \frac{1}{2}\theta$. With Vieta, by reason of the advance in arithmetic, the style of treatment becomes more strictly trigonometrical; indeed, the *Universales Inspectiones*, in which the calculation occurs, would now be called plane and spherical trigonometry, and the accompanying *Canon mathematicus* a table of sines, tangents and secants.[9] Further, in comparing the labours of Archimedes and Vieta, the effect of increased power of symbolical expression is very noticeable. Archimedes's process of unending cycles of arithmetical operations could at best have been expressed in his time by a "rule" in words; in the 16th century it could be condensed into a "formula." Accordingly, we find in Vieta a formula for the ratio of diameter to circumference, viz. the interminate product[10]—

$$\tfrac{1}{2}\sqrt{\tfrac{1}{2}} \cdot \sqrt{\tfrac{1}{2} + \tfrac{1}{2}\sqrt{\tfrac{1}{2}}} \cdot \sqrt{\tfrac{1}{2} + \tfrac{1}{2}\sqrt{(\tfrac{1}{2} + \tfrac{1}{2}\sqrt{\tfrac{1}{2}})}} \ldots$$

From this point onwards, therefore, no knowledge whatever of geometry was necessary in any one who aspired to determine the ratio to any required degree of accuracy; the problem being reduced to an arithmetical computation. Thus in connexion with the subject a genus of workers became possible who may be styled "π-computers or circle-squarers"—a name which, if it connotes anything uncomplimentary, does so because of the almost entirely fruitless character of their labours. Passing over Adriaan van Roomen (Adrianus Romanus) of Louvain, who published the value of the ratio correct to 15 places in his *Idea mathematica* (1593),[11] we come to the notable computer Ludolph van Ceulen (d. 1610), a native of Germany, long resident in Holland. His book, *Van den Circkel* (Delft, 1596), gave the ratio correct to 20 places, but he continued his calculations as long as he lived, and his best result was published on his tombstone in St Peter's church, Leiden. The inscription, which is not known to be now in existence,[12] is in part as follows:—

> ... Qui in vita sua multo labore circumferentiae circuli proximam rationem ad diametrum invenit sequentem—
>
> quando diameter est 1
> tum circuli circumferentia plus est
> quam 3141592653589793238462643383279502881000000000000000000000000000000000
> et minus
> quam 3141592653589793238462643383279502891000000000000000000000000000000000 ...

This gives the ratio correct to 35 places. Van Ceulen's process was essentially identical with that of Vieta. Its numerous root extractions amply justify a stronger expression than "multo labore," especially in an epitaph. In Germany the "Ludolphische Zahl" (Ludolph's number) is still a common name for the ratio.[13]

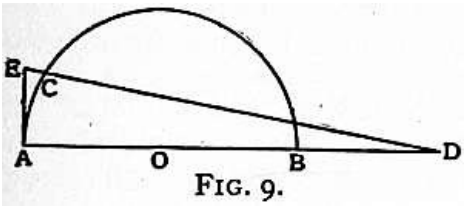


FIG. 9.

Up to this point the credit of most that had been done may be set down to Archimedes. A new departure, however, was made by Willebrord Snell of Leiden in his *Cyclometria*, published in 1621. His achievement was a closely approximate geometrical solution of the problem of rectification (see fig. 9): ACB being a semicircle whose centre is O, and AC the arc to be rectified, he produced AB to D, making BD equal to the radius, joined DC, and produced it to meet the tangent at A in E; and then his assertion (not established by him) was that AE was nearly equal to the arc AC, the error being in defect. For the purposes of the calculator a solution erring in excess was also required, and this Snell gave by slightly varying the former construction. Instead of producing AB (see fig. 10) so that BD was equal to r, he produced it only so far that, when the extremity D′ was joined with C, the part D′F outside the circle was equal to r; in other words, by a non-Euclidean construction he trisected the angle AOC, for it is readily seen that, since FD′ = FO = OC, the angle FOB = ⅓AOC.[14] This couplet of constructions is as important from the calculator's point of view as it is interesting geometrically. To compare it on this score with the fundamental proposition of Archimedes, the latter must be put into a form similar to Snell's. AMC being an arc of a circle (see fig. 11) whose centre is O, AC its chord, and HK the tangent drawn at the middle point of the arc and bounded by OA, OC produced, then, according to Archimedes, AMC < HK, but > AC. In modern trigonometrical notation the propositions to be compared stand as follows:—

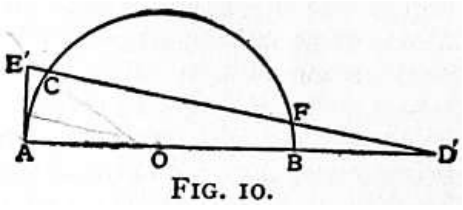


FIG. 10.

$$2\tan\tfrac{1}{2}\theta > \theta > 2\sin\tfrac{1}{2}\theta \qquad \text{(Archimedes);}$$

$$\tan\tfrac{1}{3}\theta + 2\sin\tfrac{1}{3}\theta > \theta > \frac{3\sin\theta}{2+\cos\theta} \quad \text{(Snell).}$$

It is readily shown that the latter gives the best approximation to θ; but, while the former requires for its application a knowledge of the trigonometrical ratios of only one angle (in other words, the ratios of the sides of only one right-angled triangle), the latter requires the

same for two angles, θ and ⅓θ.

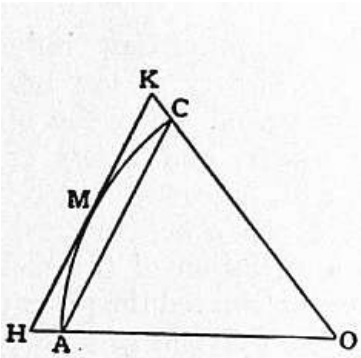


FIG. 11.

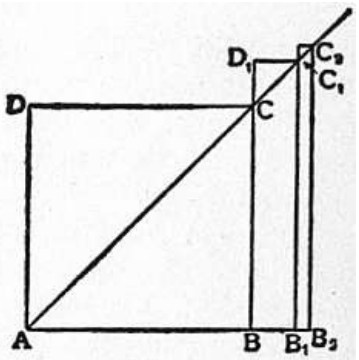


FIG. 12.

Grienberger, using Snell's method, calculated the ratio correct to 39 fractional places.[15] C. Huygens, in his *De Circuli Magnitudine Inventa*, 1654, proved the propositions of Snell, giving at the same time a number of other interesting theorems, for example, two inequalities which may be written as follows[16]—

$$\text{chd } \theta + \frac{4 \text{ chd } \theta + \sin \theta}{2 \text{ chd } \theta + 3 \sin \theta} \cdot \tfrac{1}{3}(\text{chd } \theta - \sin \theta) > \theta > \text{chd } \theta + \tfrac{1}{3}(\text{chd } \theta - \sin \theta).$$

As might be expected, a fresh view of the matter was taken by René Descartes. The problem he set himself was the exact converse of that of Archimedes. A given straight line being viewed as equal in length to the circumference of a circle, he sought to find the diameter of the circle. His construction is as follows (see fig. 12). Take AB equal to one-fourth of the given line; on AB describe a square ABCD; join AC; in AC produced find, by a known process, a point C_1 such that, when C_1B_1 is drawn perpendicular to AB produced and C_1D_1 perpendicular to BC produced, the rectangle BC_1 will be equal to ¼ABCD; by the same process find a point C_2 such that the rectangle B_1C_2 will be equal to ¼BC_1; and so on *ad infinitum*. The diameter sought is the straight line from A to the limiting position of the series of B's, say the straight line AB_∞. As in the case of the process of Archimedes, we may 386
direct our attention either to the infinite series of geometrical operations or to the corresponding infinite series of arithmetical operations. Denoting the number of units in AB by ¼c, we can express BB_1, B_1B_2, ... in terms of ¼c, and the identity $AB_\infty = AB + BB_1 + B_1B_2 + \ldots$ gives us at once an expression for the diameter in terms of the circumference by means of an infinite series.[17] The proof of the correctness of the construction is seen to be involved in the following theorem, which serves likewise to throw new light on the subject:—AB being any straight line whatever, and the above construction being made, then AB is the diameter of the circle circumscribed by the square ABCD (self-evident), AB_1 is the diameter of the circle circumscribed by the regular 8-gon having the same perimeter as the square, AB_2 is the diameter of the circle circumscribed by the regular 16-gon having the same perimeter as the square, and so on. Essentially, therefore, Descartes's process is that known later as the process of *isoperimeters*, and often attributed wholly to Schwab.[18]

In 1655 appeared the *Arithmetica Infinitorum* of John Wallis, where numerous problems of quadrature are dealt with, the curves being now represented in Cartesian co-ordinates, and algebra playing an important part. In a very curious manner, by viewing the circle $y = (1 - x^2)^{\frac{1}{2}}$ as a member of the series of curves $y = (1 - x^2)^1$, $y = (1 - x^2)^2$, &c., he was led to the proposition that four times the reciprocal of the ratio of the circumference to the diameter, *i.e.* $4/\pi$;, is equal to the infinite product

$$\frac{3 \cdot 3 \cdot 5 \cdot 5 \cdot 7 \cdot 7 \cdot 9 \ldots}{2 \cdot 4 \cdot 4 \cdot 6 \cdot 6 \cdot 8 \cdot 8 \ldots};$$

and, the result having been communicated to Lord Brounker, the latter discovered the equally curious equivalent continued fraction

$$1 + \frac{1^2}{2} + \frac{3^2}{2} + \frac{5^2}{2} + \frac{7^2}{2} \ldots$$

The work of Wallis had evidently an important influence on the next notable personality in the history of the subject, James Gregory, who lived during the period when the higher

algebraic analysis was coming into power, and whose genius helped materially to develop it. He had, however, in a certain sense one eye fixed on the past and the other towards the future. His first contribution[19] was a variation of the method of Archimedes. The latter, as we know, calculated the perimeters of successive polygons, passing from one polygon to another of double the number of sides; in a similar manner Gregory calculated the areas. The general theorems which enabled him to do this, after a start had been made, are

$$A_{2n} = \sqrt{A_n A'_n} \text{ (Snell's } \textit{Cyclom.}\text{)},$$

$$A'_{2n} = \frac{2A_n A'_n}{A_n + A'_{2n}} \quad \text{or} \quad \frac{2A'_n A_{2n}}{A'_n + A_{2n}} \text{(Gregory)},$$

where A_n, A'_n are the areas of the inscribed and the circumscribed regular n-gons respectively. He also gave approximate rectifications of circular arcs after the manner of Huygens; and, what is very notable, he made an ingenious and, according to J.E. Montucla, successful attempt to show that quadrature of the circle by a Euclidean construction was impossible.[20] Besides all this, however, and far beyond it in importance, was his use of infinite series. This merit he shares with his contemporaries N. Mercator, Sir I. Newton and G.W. Leibnitz, and the exact dates of discovery are a little uncertain. As far as the circle-squaring functions are concerned, it would seem that Gregory was the first (in 1670) to make known the series for the arc in terms of the tangent, the series for the tangent in terms of the arc, and the secant in terms of the arc; and in 1669 Newton showed to Isaac Barrow a little treatise in manuscript containing the series for the arc in terms of the sine, for the sine in terms of the arc, and for the cosine in terms of the arc. These discoveries formed an epoch in the history of mathematics generally, and had, of course, a marked influence on after investigations regarding circle-quadrature. Even among the mere computers the series

$$\theta = \tan - \tfrac{1}{3}\tan^3\theta + \tfrac{1}{5}\tan^5\theta - \ldots,$$

specially known as Gregory's series, has ever since been a necessity of their calling.

The calculator's work having now become easier and more mechanical, calculation went on apace. In 1699 Abraham Sharp, on the suggestion of Edmund Halley, took Gregory's series, and, putting $\tan\theta = \frac{1}{3}\sqrt{3}$, found the ratio equal to

$$\sqrt{12}\left(1 - \frac{1}{3\cdot 3} + \frac{1}{5\cdot 3^2} - \frac{1}{7\cdot 3^3} + \ldots\right),$$

from which he calculated it correct to 71 fractional places.[21] About the same time John Machin calculated it correct to 100 places, and, what was of more importance, gave for the ratio the rapidly converging expression

$$\frac{16}{5}\left(1 - \frac{1}{3\cdot 5^2} + \frac{1}{5\cdot 5^4} - \frac{1}{7\cdot 5^6} + \ldots\right) - \frac{4}{239}\left(1 - \frac{1}{3\cdot 239^2} + \frac{1}{5\cdot 239^4} - \ldots\right),$$

which long remained without explanation.[22] Fautet de Lagny, still using tan 30°, advanced to the 127th place.[23]

Leonhard Euler took up the subject several times during his life, effecting mainly improvements in the theory of the various series.[24] With him, apparently, began the usage of denoting by π the ratio of the circumference to the diameter.[25]

The most important publication, however, on the subject in the 18th century was a paper by J.H. Lambert,[26] read before the Berlin Academy in 1761, in which he demonstrated the irrationality of π. The general test of irrationality which he established is that, if

$$\frac{a_1}{b_1} \pm \frac{a_2}{b_2} \pm \frac{a_3}{b_3} \pm \ldots$$

be an interminate continued fraction, a_1, a_2, ..., b_1, b_2 ... be integers, a_1/b_1, a_2/b_2, ... be proper fractions, and the value of every one of the interminate continued fractions

$$\frac{a_1}{b_1 \pm \ldots}, \frac{a_2}{b_2 \pm \ldots}, \ldots$$

be < 1, then the given continued fraction represents an irrational quantity. If this be applied to the right-hand side of the identity

$$m \quad m \quad m^2 \quad m^2$$

$$\tan \frac{}{n} = \frac{}{n} - \frac{}{3n} - \frac{}{5n} \cdots$$

it follows that the tangent of every arc commensurable with the radius is irrational, so that, as a particular case, an arc of 45°, having its tangent rational, must be incommensurable with the radius; that is to say, π/4 is an incommensurable number.[27]

This incontestable result had no effect, apparently, in repressing the π-computers. G. von Vega in 1789, using series like Machin's, viz. Gregory's series and the identities

$$\pi/4 = 5 \tan^{-1} 1/7 + 2 \tan^{-1} 3/79 \text{ (Euler, 1779)},$$

$$\pi/4 = \tan^{-1} 1/7 + 2 \tan^{-1} 1/3 \text{ (Hutton, 1776)},$$

neither of which was nearly so advantageous as several found by Charles Hutton, calculated π correct to 136 places.[28] This achievement was anticipated or outdone by an unknown calculator, whose manuscript was seen in the Radcliffe library, Oxford, by Baron von Zach towards the end of the century, and contained the ratio correct to 152 places. More astonishing still have been the deeds of the π-computers of the 19th century. A condensed record compiled by J.W.L. Glaisher (*Messenger of Math.* ii. 122) is as follows:— 387

Date.	Computer.	No. of fr. digits calcd.	No. of fr. digits correct.	Place of Publication.
1842	Rutherford	208	152	*Trans. Roy. Soc.* (London, 1841), p. 283.
1844	Dase	205	200	*Crelle's Journ.*. xxvii. 198.
1847	Clausen	250	248	*Astron. Nachr.* xxv. col. 207.
1853	Shanks	318	318	*Proc. Roy. Soc.* (London, 1853), 273.
1853	Rutherford	440	440	Ibid.
1853	Shanks	530	..	Ibid.
1853	Shanks	607	..	W. Shanks, *Rectification of the Circle* (London, 1853).
1853	Richter	333	330	*Grunert's Archiv*, xxi. 119.
1854	Richter	400	330	Ibid. xxii. 473.
1854	Richter	400	400	Ibid. xxiii. 476.
1854	Richter	500	500	Ibid. xxv. 472.
1873	Shanks	707	..	*Proc. Roy. Soc.* (London), xxi.

By these computers Machin's identity, or identities analogous to it, *e.g.*

$$\pi/4 = \tan^{-1} 1/2 + \tan^{-1} 1/5 + \tan^{-1} 1/8 \text{ (Dase, 1844)},$$

$$\pi/4 = 4\tan^{-1} 1/5 - \tan^{-1} 1/70 + \tan^{-1} 1/99 \text{ (Rutherford)},$$

and Gregory's series were employed.[29]

A much less wise class than the π-computers of modern times are the pseudo-circle-squarers, or circle-squarers technically so called, that is to say, persons who, having obtained by illegitimate means a Euclidean construction for the quadrature or a finitely expressible value for π, insist on using faulty reasoning and defective mathematics to establish their assertions. Such persons have flourished at all times in the history of mathematics; but the interest attaching to them is more psychological than mathematical.[30]

It is of recent years that the most important advances in the theory of circle-quadrature have been made. In 1873 Charles Hermite proved that the base η of the Napierian logarithms cannot be a root of a rational algebraical equation of any degree.[31] To prove the same proposition regarding π is to prove that a Euclidean construction for circle-quadrature is impossible. For in such a construction every point of the figure is obtained by the intersection of two straight lines, a straight line and a circle, or two circles; and as this implies that, when a unit of length is introduced, numbers employed, and the problem transformed into one of algebraic geometry, the equations to be solved can only be of the first or second degree, it follows that the equation to which we must be finally led is a rational equation of even degree. Hermite[32] did not succeed in his attempt on π; but in 1882 F. Lindemann, following exactly in Hermite's steps, accomplished the desired result.[33] (See also TRIGONOMETRY.)

REFERENCES.—Besides the various writings mentioned, see for the history of the subject F. Rudio, *Geschichte des Problems von der Quadratur des Zirkels* (1892); M. Cantor, *Geschichte der Mathematik* (1894-1901); Montucla, *Hist. des. math.* (6 vols., Paris, 1758, 2nd ed. 1799-1802); Murhard, *Bibliotheca Mathematica*, ii. 106-123 (Leipzig, 1798); Reuss,

Repertorium Comment. vii. 42-44 (Göttingen, 1808). For a few approximate geometrical solutions, see Leybourn's *Math. Repository*, vi. 151-154; *Grunert's Archiv*, xii. 98, xlix. 3; *Nieuw Archief v. Wisk.* iv. 200-204. For experimental determinations of π, dependent on the theory of probability, see *Mess. of Math.* ii. 113, 119; *Casopis pro pïstováni math. a fys.* x. 272-275; *Analyst*, ix. 176.

(T. MU.)

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1 Eisenlohr, *Ein math. Handbuch d. alten Ägypter, übers. u. erklärt* (Leipzig, 1877); Rodet, *Bull. de la Soc. Math. de France*, vi. pp. 139-149.

2 H. Hankel, *Zur Gesch. d. Math. im Alterthum*, &c., chap, v (Leipzig, 1874); M. Cantor, *Vorlesungen über Gesch. d. Math.* i. (Leipzig, 1880); Tannery, *Mém. de la Soc.*, &c., *à Bordeaux*; Allman, in *Hermathena*.

3 Tannery. *Bull. des sc. math.* [2], x. pp. 213-226.

4 In modern trigonometrical notation, 1 + sec θ:tan θ::1:tan ½θ.

5 Tannery, "Sur la mesure du cercle d'Archimède," in *Mém....Bordeaux*[2], iv. pp. 313-339; Menge, *Des Archimedes Kreismessung* (Coblenz, 1874).

6 De Morgan, in *Penny Cyclop,* xix. p. 186.

7 Kern, *Aryabhattíyam* (Leiden, 1874), trans. by Rodet (Paris,1879).

8 De Morgan, art. "Quadrature of the Circle," in *English Cyclop.*; Glaisher, *Mess. of Math.* ii. pp. 119-128, iii. pp. 27-46; de Haan, *Nieuw Archief v. Wisk.* i. pp. 70-86, 206-211.

9 Vieta, *Opera math.* (Leiden, 1646); Marie, *Hist. des sciences math.* iii. 27 seq. (Paris, 1884).

10 Klügel, *Math. Wörterb.* ii. 606, 607.

11 Kästner, *Gesch. d. Math.* i. (Göttingen, 1796-1800).

12 But see *Les Délices de Leide* (Leiden, 1712); or de Haan, *Mess. of Math.* iii. 24-26.

13 For minute and lengthy details regarding the quadrature of the circle in the Low Countries, see de Haan, "Bouwstoffen voor de geschiedenis, &c.," in *Versl. en Mededeel. der K. Akad. van Wetensch.* ix., x., xi., xii. (Amsterdam); also his "Notice sur quelques quadrateurs, &c.," in *Bull. di bibliogr. e di storia delle sci. mat. e fis.* vii. 99-144.

14 It is thus manifest that by his first construction Snell gave an approximate solution of two great problems of antiquity.

15 *Elementa trigonometrica* (Rome, 1630); Glaisher, *Messenger of Math.* iii. 35 seq.

16 See Kiessling's edition of the *De Circ. Magn. Inv.* (Flensburg, 1869); or Pirie's tract on *Geometrical Methods of Approx. to the Value of π* (London, 1877).

17 See Euler, "Annotationes in locum quendam Cartesii," in *Nov. Comm. Acad. Petrop.* viii.

18 Gergonne, *Annales de math.* vi.

19 See *Vera Circuli et Hyperbolae Quadratura* (Padua, 1667); and the *Appendicula* to the same in his *Exercitationes geometricae* (London, 1668).

20 *Penny Cyclop.* xix. 187.

21 See Sherwin's *Math. Tables* (London, 1705), p. 59.

22 See W. Jones, *Synopsis Palmariorum Matheseos* (London, 1706); Maseres, *Scriptores Logarithmici* (London, 1791-1796), iii. 159 seq.; Hutton, *Tracts*, i. 266.

23 See *Hist. de l'Acad.* (Paris, 1719); 7 appears instead of 8 in the 113th place.

24 *Comment. Acad. Petrop.* ix., xi.; *Nov. Comm. Ac. Pet.* xvi.; *Nova Acta Acad. Pet.* xi.

25 *Introd. in Analysin Infin.* (Lausanne, 1748), chap. viii.

26 *Mém. sur quelques propriétés remarquables des quantités transcendantes, circulaires, et logarithmiques.*

27 See Legendre, *Eléments de géométrie* (Paris, 1794), note iv.; Schlömilch, *Handbuch d. algeb. Analysis* (Jena, 1851), chap. xiii.

28 *Nova Acta Petrop.* ix. 41; *Thesaurus Logarithm. Completus*, 633.

29 On the calculations made before Shanks, see Lehmann, "Beitrag zur Berechnung der Zahl π," in *Grunert's Archiv*, xxi. 121-174.

30 See Montucla, *Hist. des rech. sur la quad. du cercle* (Paris, 1754, 2nd ed. 1831); de Morgan, *Budget of Paradoxes* (London, 1872).

31 "Sur la fonction exponentielle," *Comples rendus* (Paris), lxxvii. 18, 74, 226, 285.

32 See *Crelle's Journal*, lxxvi. 342.

33 See "Über die Zahl π," in *Math. Ann.* xx. 213.

CIRCLEVILLE, a city and the county-seat of Pickaway county, Ohio, U.S.A., about 26 m. S. by E. of Columbus, on the Scioto river and the Ohio Canal. Pop. (1890) 6556; (1900) 6991 (551 negroes); (1910) 6744. It is served by the Cincinnati & Muskingum Valley (Pennsylvania lines) and the Norfolk & Western railways, and by the Scioto Valley electric line. Circleville is situated in a farming region, and its leading industries are the manufacture of straw boards and agricultural implements, and the canning of sweet corn and other produce. The city occupies the site of prehistoric earth-works, from one of which, built in the form of a circle, it derived its name. Circleville, first settled about 1806, was chosen as the county-seat in 1810. The court-house was built in the form of an octagon at the centre of the circle, and circular streets were laid out around it; but this arrangement proved to be inconvenient, the court-house was destroyed by fire in 1841, and at present no trace of the ancient landmarks remains. Circleville was incorporated as a village in 1814, and was chartered as a city in 1853.

CIRCUIT (Lat. *circuitus*, from *circum*, round, and *ire*, to go), the act of moving round; so circumference, or anything encircling or encircled. The word is particularly known as a law term, signifying the periodical progress of a legal tribunal for the purpose of carrying out the administration of the law in the several provinces of a country. It has long been applied to the journey or progress which the judges have been in the habit of making through the several counties of England, to hold courts and administer justice, where recourse could not be had to the king's court at Westminster (see Assize).

In England, by sec. 23 of the Judicature Act 1875, power was conferred on the crown, by order in council, to make regulations respecting circuits, including the discontinuance of any circuit, and the formation of any new circuit, and the appointment of the place at which assizes are to be held on any circuit. Under this power an order of council, dated the 5th of February 1876, was made, whereby the circuit system was remodelled. A new circuit, called the North-Eastern circuit, was created, consisting of Newcastle and Durham taken out of the old Northern circuit, and York and Leeds taken out of the Midland circuit. Oakham, Leicester and Northampton, which had belonged to the Norfolk circuit, were added to the Midland. The Norfolk circuit and the Home circuit were abolished and a new South-Eastern circuit was created, consisting of Huntingdon, Cambridge, Ipswich, Norwich, Chelmsford, Hertford and Lewes, taken partly out of the old Norfolk circuit and partly out of the Home circuit. The counties of Kent and Surrey were left out of the circuit system, the assizes for these counties being held by the judges remaining in London. Subsequently Maidstone and Guildford were united under the revived name of the Home circuit for the purpose of the summer and winter assizes, and the assizes in these towns were held by one of the judges of the Western circuit, who, after disposing of the business there, rejoined his colleague in Exeter. In 1899 this arrangement was abolished, and Maidstone and Guildford were added to the South-Eastern circuit. Other minor changes in the assize towns were made, which it is unnecessary to particularize. Birmingham first became a circuit town in the year 1884, and the work there became, by arrangement, the joint property of the Midland and Oxford circuits. There are alternative assize towns in the following counties, viz.:—On the Western circuit, Salisbury and Devizes for Wiltshire, and Wells and Taunton for Somerset; on the South-Eastern, Ipswich and Bury St Edmunds for Suffolk; on the North Wales circuit, Welshpool and Newtown for Montgomery; and on the South Wales circuit, Cardiff and Swansea for Glamorgan.

According to the arrangements in force in 1909 there are four assizes in each year. There are two principal assizes, viz. the winter assizes, beginning in January, and the summer assizes, beginning at the end of May. At these two assizes criminal and civil business is disposed of in all the circuits. There are two other assizes, viz. the autumn assizes and the

Easter assizes. The autumn assizes are regulated by acts of 1876 and 1877 (Winter Assizes Acts 1876 and 1877), and orders of council made under the former act. They are held for the whole of England and Wales, but for the purpose of these assizes the work is to a large extent "grouped," so that not every county has a separate assize. For example, on the South-Eastern circuit Huntingdon is grouped with Cambridge; on the Midland, Rutland is grouped with Lincoln; on the Northern, Westmorland is grouped with Cumberland; and the North Wales and South Wales circuits are united, and no assizes are held at some of the smaller towns. At these assizes criminal business only is taken, except at Manchester, Liverpool, Swansea, Birmingham and Leeds. The Easter assizes are held in April and May on two circuits only, viz. at Manchester and Liverpool on the Northern and at Leeds on the North-Eastern. Both civil and criminal business is taken at Manchester and Liverpool, but criminal business only at Leeds.

Other changes were made, with a view to preventing the complete interruption of the London sittings in the common law division by the absence of the judges on circuit. The assizes were so arranged as to commence on different dates in the various circuits. For example, the summer assizes begin in the South-Eastern and Western circuits on the 29th of May; in the Northern circuit on the 28th of June; in the Midland and Oxford circuits on the 16th of June; in the North-Eastern circuit on the 6th of July; in the North Wales circuit on the 7th of July; and in the South Wales circuit on the 11th of July. Again, there has been a continuous development of what may be called the single-judge system. In the early days of the new order the members of the court of appeal and the judges of the chancery division shared the circuit work with the judges in the common law division. This did not prove to be a satisfactory arrangement. The assize work was not familiar and was uncongenial to the chancery judges, who had but little training or experience to fit them for it. Arrears increased in chancery, and the appeal court was shorn of much of its strength for a considerable part of the year. The practice was discontinued in or about the year 1884. The appeal and chancery judges were relieved of the duty of going on circuit, and an arrangement was made by the treasury for making an allowance for expenses of circuit to the common law judges, on whom the whole work of the assizes was thrown. In order to cope with the assize work, and at the same time keep the common law sittings going in London, an experiment, which had been previously tried by Lord Cairns and Lord Cross (then home secretary) and discontinued, was revived. Instead of two judges going together to each assize town, it was arranged that one judge should go by himself to certain selected places—practically, it may be said, to all except the more important provincial centres. The only places to which two judges now go are Exeter, Winchester, Bristol, Manchester, Liverpool, Nottingham, Stafford, Birmingham, Newcastle, Durham, York, Leeds, Chester, and Cardiff or Swansea.

It could scarcely be said that, even with the amendments introduced under orders in council, the circuit system was altogether satisfactory or that the last word had been pronounced on the subject. In the first report of the Judicature Commission, dated March 25th, 1869, p. 17 (*Parl. Papers*, 1868-1869), the majority report that "the necessity for holding assizes in every county without regard to the extent of the business to be transacted in such county leads, in our judgment, to a great waste of judicial strength and a great loss of time in going from one circuit town to another, and causes much unnecessary cost and inconvenience to those whose attendance is necessary or customary at the assizes." And in their second report, dated July 3rd, 1872 (*Parl. Papers*, 1872, vol. xx.), they dwell upon the advisability of grouping or a discontinuance of holding assizes "in several counties, for example, Rutland and Westmorland, where it is manifestly an idle waste of time and money to have assizes." It is thought that the grouping of counties which has been effected for the autumn assizes might be carried still further and applied to all the assizes; and that the system of holding the assizes alternately in one of two towns within a county might be extended to two towns in adjoining counties, for example, Gloucester and Worcester. The facility of railway communication renders this reform comparatively easy, and reforms in this direction have been approved by the judges, but ancient custom and local patriotism, interests, or susceptibility bar the way. The Assizes and Quarter Sessions Act 1908 contributed something to reform by dispensing with the obligation to hold assizes at a fixed date if there is no business to be transacted. Nor can it be said that the single-judge system has been altogether a success. When there is only one judge for both civil and criminal work, he properly takes the criminal business first. He can fix only approximately the time when he can hope to be free for the civil business. If the calendar is exceptionally heavy or one or more of the criminal cases prove to be unexpectedly long (as may easily happen), the civil business necessarily gets squeezed into the short residue of the allotted time. Suitors and their solicitors and witnesses are kept waiting for days, and after all perhaps it proves to be

impossible for the judge to take the case, and a “remanet” is the result. It is the opinion of persons of experience that the result has undoubtedly been to drive to London much of the civil business which properly belongs to the provinces, and ought to be tried there, and thus at once to increase the burden on the judges and jurymen in London, and to increase the costs of the trial of the actions sent there. Some persons advocate the continuous sittings of the high court in certain centres, such as Manchester, Liverpool, Leeds, Newcastle, Birmingham and Bristol, or (in fact) a decentralization of the judicial system. There is already an excellent court for chancery cases for Lancashire in the county palatine court, presided over by the vice-chancellor, and with a local bar which has produced many men of great ability and even eminence. The Durham chancery court is also capable of development. Another suggestion has been made for continuous circuits throughout the legal year, so that a certain number of the judges, according to a rota, should be continuously in the provinces while the remaining judges did the London business. The value of this suggestion would depend on an estimate of the number of cases which might thus be tried in the country in relief of the London list. This estimate it would be difficult to make. The opinion has also been expressed that it is essential in any changes that may be made to retain the occasional administration by judges of the high court of criminal jurisdiction, both in populous centres and in remote places. It promotes a belief in the importance and dignity of justice and the care to be given to all matters affecting a citizen’s life, liberty or character. It also does something, by the example set by judges in country districts, to check any tendency to undue severity of sentences in offences against property.

Counsel are not expected to practise on a circuit other than that to which they have attached themselves, unless they receive a special retainer. They are then said to “go special,” and the fee in such a case is one hundred guineas for a king’s counsel, and fifty guineas for a junior. It is customary to employ one member of the circuit on the side on which the counsel comes special. Certain rules have been drawn up by the Bar Committee for regulating the practice as to retainers on circuit. (1) A special retainer must be given for a particular assize (a circuit retainer will not, however, make it compulsory upon counsel retained to go the circuit, but will give the right to counsel’s services should he attend the assize and the case be entered for trial); (2) if the venue is changed to another place on the same circuit, a fresh retainer is not required; (3) if the action is not tried at the assize for which the retainer is given, the retainer must be renewed for every subsequent assize until the action is disposed of, unless a brief has been delivered; (4) a retainer may be given for a future assize, without a retainer for an intervening assize, unless notice of trial is given for such intervening assize. There are also various regulations enforced by the discipline of the circuit bar mess.

In the United States the English circuit system still exists in some states, as in Massachusetts, where the judges sit in succession in the various counties of the state. The term *circuit courts* applies distinctively in America to a certain class of inferior federal courts of the United States, exercising jurisdiction, concurrently with the state courts, in certain matters where the United States is a party to the litigation, or in cases of crime against the United States. The circuit courts act in nine judicial circuits, divided as follows: 389
1st circuit, Maine, Massachusetts, New Hampshire, Rhode Island; *2nd circuit*, Connecticut, New York, Vermont; *3rd circuit*, Delaware, New Jersey, Pennsylvania; *4th circuit*, Maryland, North Carolina, South Carolina, Virginia, West Virginia; *5th circuit*, Alabama, Florida, Georgia, Louisiana, Mississippi, Texas; *6th circuit*, Kentucky, Michigan, Ohio, Tennessee; *7th circuit*, Illinois, Indiana, Wisconsin; *8th circuit*, Arkansas, Colorado, Oklahoma, Iowa, Kansas, Minnesota, Missouri, Nebraska, New Mexico, North Dakota, South Dakota, Utah, Wyoming; *9th circuit*, Alaska, Arizona, California, Idaho, Montana, Nevada, Oregon, Washington, and Hawaii. A circuit court of appeals is made up of three judges of the circuit court, the judges of the district courts of the circuit, and the judge of the Supreme Court allotted to the circuit.

In Scotland the judges of the supreme criminal court, or high court of justiciary, form also three separate circuit courts, consisting of two judges each; and the country, with the exception of the Lothians, is divided into corresponding districts, called the Northern, Western and Southern circuits. On the Northern circuit, courts are held at Inverness, Perth, Dundee and Aberdeen; on the Western, at Glasgow, Stirling and Inveraray; and on the Southern, at Dumfries, Jedburgh and Ayr.

Ireland is divided into the North-East and the North-West circuits, and those of Leinster, Connaught and Munster.

CIRCULAR NOTE, a documentary request by a bank to its foreign correspondents to pay a specified sum of money to a named person. The person in whose favour a circular note is issued is furnished with a letter (containing the signature of an official of the bank and the person named) called a letter of indication, which is usually referred to in the circular note, and must be produced on presentation of the note. Circular notes are generally issued against a payment of cash to the amount of the notes, but the notes need not necessarily be cashed, but may be returned to the banker in exchange for the amount for which they were originally issued. A forged signature on a circular note conveys no right, and as it is the duty of the payer to see that payment is made to the proper person, he cannot recover the amount of a forged note from the banker who issued the note. (See also Letter of Credit.)

CIRCULUS IN PROBANDO (Lat. for "circle in proving"), in logic, a phrase used to describe a form of argument in which the very fact which one seeks to demonstrate is used as a premise, *i.e.* as part of the evidence on which the conclusion is based. This argument is one form of the fallacy known as *petitio principii*, "begging the question." It is most common in lengthy arguments, the complicated character of which enables the speaker to make his hearers forget the data from which he began. (See Fallacy.)

CIRCUMCISION (Lat. *circum*, round, and *caedere*, to cut), the cutting off of the foreskin. This surgical operation, which is commonly prescribed for purely medical reasons, is also an initiation or religious ceremony among Jews and Mahommedans, and is a widespread institution in many Semitic races. It remains, with Jews, a necessary preliminary to the admission of proselytes, except in some Reformed communities. The origin of the rite among the Jews is in Genesis (xvii.) placed in the age of Abraham, and at all events it must have been very ancient, for flint stones were used in the operation (Exodus iv. 25; Joshua v. 2). The narrative in Joshua implies that the custom was introduced by him, not that it had merely been in abeyance in the Wilderness. At Gilgal he "rolled away the reproach of the Egyptians" by circumcising the people. This obviously means that whereas the Egyptians practised circumcision the Jews in the land of the Pharaohs did not, and hence were regarded with contempt. It was an old theory (Herodotus ii. 36) that circumcision originated in Egypt; at all events it was practised in that country in ancient times (Ebers, *Egypten und die Bücher Mosis*, i. 278-284), and the same is true at the present day. But it is not generally thought probable that the Hebrews derived the rite directly from the Egyptians. As Driver puts it (*Genesis*, p. 190): "It is possible that, as Dillmann and Nowack suppose, the peoples of N. Africa and Asia who practised the rite adopted it from the Egyptians, but it appears in so many parts of the world that it must at any rate in these cases have originated independently." In another biblical narrative (Exodus iv. 25) Moses is subject to the divine anger because he had not made himself "a bridegroom of blood," that is, had not been circumcised before his marriage.

The rite of circumcision was practised by all the inhabitants of Palestine with the exception of the Philistines. It was an ancient custom among the Arabs, being presupposed in the Koran. The only important Semitic peoples who most probably did not follow the rite were the Babylonians and Assyrians (Sayce, *Babyl. and Assyrians*, p. 47). Modern investigations have brought to light many instances of the prevalence of circumcision in various parts of the world. These facts are collected by Andrée and Ploss, and go to prove that the rite is not only spread through the Mahommedan world (Turks, Persians, Arabs, &c.), but also is practised by the Christian Abyssinians and the Copts, as well as in central Australia and in America. In central Australia (Spencer and Gillen, pp. 212-386) circumcision with a stone knife must be undergone by every youth before he is reckoned a full member of the tribe or is permitted to enter on the married state. In other parts, too (*e.g.* Loango), no uncircumcised man may marry. Circumcision was known to the Aztecs (Bancroft, *Native Races*, vol. iii.), and is still practised by the Caribs of the Orinoco and the Tacunas of the Amazon. The method and period of the operation vary in important particulars. Among the Jews it is performed in infancy, when the male child is eight days old. The child is named at

the same time, and the ceremony is elaborate. The child is carried in to the godfather (*sandek*, a hebraized form of the Gr. σύντεκνος, "godfather," post-class.), who places the child on a cushion, which he holds on his knees throughout the ceremony. The operator (*mohel*) uses a steel knife, and pronounces various benedictions before and after the rite is performed (see S. Singer, *Authorized Daily Prayer Book*, pp. 304-307; an excellent account of the domestic festivities and spiritual joys associated with the ceremony among medieval and modern Jews may be read in S. Schechter's *Studies in Judaism*, first series, pp. 351 seq.). Some tribes in South America and elsewhere are said to perform the rite on the eighth day, like the Jews. The Mazequas do it between the first and second months. Among the Bedouins the rite is performed on children of three years, amid dances and the selection of brides (Doughty, *Arabia Deserta*, i. 340); among the Somalis the age is seven (Reinisch, *Somalisprache*, p. 110). But for the most part the tribes who perform the rite carry it out at the age of puberty. Many facts bearing on this point are given by B. Stade in *Zeitschrift für die alttest. Wissenschaft*, vi. (1886) pp. 132 seq.

The significance of the rite of circumcision has been much disputed. Some see in it a tribal badge. If this be the true origin of circumcision, it must go back to the time when men went about naked. Mutilations (tattooing, removal of teeth and so forth) were tribal marks, being partly sacrifices and partly means of recognition (see Mutilation). Such initiatory rites were often frightful ordeals, in which the neophyte's courage was severely tested (Robertson Smith, *Religion of the Semites*, p. 310). Some regard circumcision as a substitute for far more serious rites, including even human sacrifice. Utilitarian explanations have also been suggested. Sir R. Burton (*Memoirs Anthrop. Soc.* i. 318) held that it was introduced to promote fertility, and the claims of cleanliness have been put forward (following Philo's example, see ed. Mangey, ii. 210). Most probably, however, circumcision (which in many tribes is performed on both sexes) was connected with marriage, and was a preparation for connubium. It was in Robertson Smith's words "originally a preliminary to marriage, and so a ceremony of introduction to the full prerogative of manhood," the transference to infancy among the Jews being a later change. On this view, the decisive Biblical reference would be the Exodus passage (iv. 25), in which Moses is represented as being in danger of his life because he had neglected the proper preliminary to marriage. In Genesis, on the other hand, circumcision is an external sign of God's covenant with Israel, and later Judaism now regards it in this symbolical sense. Barton (*Semitic Origins*, p. 100) declares that "the circumstances under which it is performed in Arabia point to the origin of circumcision as a sacrifice to the goddess of fertility, by which the child was placed under her protection and its reproductive powers consecrated to her service." But Barton admits that initiation to the connubium was the primitive origin of the rite.

As regards the non-ritual use of male circumcision, it may be added that in recent years the medical profession has been responsible for its considerable extension among other than Jewish children, the operation being recommended not merely in cases of malformation, but generally for reasons of health.

Authorities.—On the present diffusion of circumcision see H. Ploss, *Das Kind im Brauch und Sitte der Völker*, i. 342 seq., and his researches in *Deutsches Archiv für Geschichte der Medizin*, viii. 312-344; Andrée, "Die Beschneidung" in *Archiv für Anthropologie*, xiii. 76; and Spencer and Gillen, *Tribes of Central Australia*. The articles in the *Encyclopaedia Biblica* and *Dictionary of the Bible* contain useful bibliographies as well as historical accounts of the rite and its ceremonies, especially as concerns the Jews. The *Jewish Encyclopedia* in particular gives an extensive list of books on the Jewish customs connected with circumcision, and the various articles in that work are full of valuable information (vol. iv. pp. 92-102). On the rite among the Arabs, see Wellhausen, *Reste arabischen Heidentums*, 154.

(I. A.)

CIRCUMVALLATION, LINES OF (from Lat. *circum*, round, and *vallum*, a rampart), in fortification, a continuous circle of entrenchments surrounding a besieged place. "Lines of Contravallation" were similar works by which the besieger protected himself against the attack of a relieving army from any quarter. These continuous lines of circumvallation and contravallation were used only in the days of small armies and small fortresses, and both terms are now obsolete.

CIRCUS (Lat. *circus*, Gr. κίρκος or κρίκος, a ring or circle; probably "circus" and "ring" are of the same origin), a space, in the strict sense circular, but sometimes oval or even oblong, intended for the exhibition of races and athletic contests generally. The circus differs from the theatre inasmuch as the performance takes place in a central circular space, not on a stage at one end of the building.

1. *In Roman antiquities* the circus was a building for the exhibition of horse and chariot races and other amusements. It consisted of tiers of seats running parallel with the sides of the course, and forming a crescent round one of the ends. The other end was straight and at right angles to the course, so that the plan of the whole had nearly the form of an ellipse cut in half at its vertical axis. Along the transverse axis ran a fence (*spina*) separating the return course from the starting one. The straight end had no seats, but was occupied by the stalls (*carceres*) where the chariots and horses were held in readiness. This end constituted also the front of the building with the main entrance. At each end of the course were three conical pillars (*metae*) to mark its limits.

The oldest building of this kind in Rome was the *Circus Maximus*, in the valley between the Palatine and Aventine hills, where, before the erection of any permanent structure, races appear to have been held beside the altar of the god Consus. The first building is assigned to Tarquin the younger, but for a long time little seems to have been done to complete its accommodation, since it is not till 329 B.C. that we hear of stalls being erected for the chariots and horses. It was not in fact till under the empire that the circus became a conspicuous public resort. Caesar enlarged it to some extent, and also made a canal 10 ft. broad between the lowest tier of seats (*podium*) and the course as a precaution for the spectators' safety when exhibitions of fighting with wild beasts, such as were afterwards confined to the amphitheatre, took place. When these exhibitions were removed, and the canal (*euripus*) was no longer necessary, Nero had it filled up. Augustus is said to have placed an obelisk on the *spina* between the *metae*, and to have built a new *pulvinar*, or imperial box; but if this is taken in connexion with the fact that the circus had been partially destroyed by fire in 31 B.C., it may be supposed that besides this he had restored it altogether. Only the lower tiers of seats were of stone, the others being of wood, and this, from the liability to fire, may account for the frequent restorations to which the circus was subject; it would also explain the falling of the seats by which a crowd of people were killed in the time of Antoninus Pius. In the reign of Claudius, apparently after a fire, the *carceres* of stone (tufa) were replaced by marble, and the *metae* of wood by gilt bronze. Under Domitian, again, after a fire, the circus was rebuilt and the carceres increased to 12 instead of 8 as before. The work was finished by Trajan. See further for seating capacity, &c., Rome: *Archaeology*, § "Places of Amusement."

The circus was the only public spectacle at which men and women were not separated. The lower seats were reserved for persons of rank; there were also various state boxes, *e.g.* for the giver of the games and his friends (called *cubicula* or *suggestus*). The principal object of attraction apart from the racing must have been the *spina* or low wall which ran down the middle of the course, with its obelisks, images and ornamental shrines. On it also were seven figures of dolphins and seven oval objects, one of which was taken down at every round made in a race, so that spectators might see readily how the contest proceeded. The chariot race consisted of seven rounds of the course. The chariots started abreast, but in an oblique line, so that the outer chariot might be compensated for the wider circle it had to make at the other end. Such a race was called a *missus*, and as many as 24 of these would take place in a day. The competitors wore different colours, originally white and red (*albata* and *russata*), to which green (*prasina*) and blue (*veneta*) were added. Domitian introduced two more colours, gold and purple (*purpureus et auratus pannus*), which probably fell into disuse after his death. To provide the horses and large staff of attendants it was necessary to apply to rich capitalists and owners of studs, and from this there grew up in time four select companies (*factiones*) of circus purveyors, which were identified with the four colours, and with which those who organized the races had to contract for the proper supply of horses and men. The drivers (*aurigae, agitatores*), who were mostly slaves, were sometimes held in high repute for their skill, although their calling was regarded with contempt. The horses most valued were those of Sicily, Spain and Cappadocia, and great care was taken in training them. Chariots with two horses (*bigae*) or four (*quadrigae*) were most common, but sometimes also they had three (*trigae*), and exceptionally more than four horses. Occasionally there was combined with the chariots a race of riders (*desultores*), each rider having two horses and leaping from one to the other during the race. At certain of the races the proceedings were opened by a *pompa* or procession in which images of the gods and of the imperial family deified were conveyed in cars drawn by horses, mules or elephants, attended by the colleges of priests, and led by the presiding magistrate (in some

cases by the emperor himself) seated in a chariot in the dress and with the insignia of a triumphator. The procession passed from the capitol along the forum, and on to the circus, where it was received by the people standing and clapping their hands. The presiding magistrate gave the signal for the races by throwing a white flag (*mappa*) on to the course.

Next in importance to the Circus Maximus in Rome was the *Circus Flaminius*, erected 221 B.C., in the censorship of C. Flaminius, from whom it may have taken its name; or the name may have been derived from Prata Flaminia, where it was situated, and where also were held plebeian meetings. The only games that are positively known to have been celebrated in this circus were the *Ludi Taurii* and *Plebeii*. There is no mention of it after the 1st century. Its ruins were identified in the 16th century at S. Catarina dei Funari and the Palazzo Mattei.

A third circus in Rome was erected by Caligula in the gardens of Agrippina, and was known as the *Circus Neronis*, from the notoriety which it obtained through the Circensian pleasures of Nero. A fourth was constructed by Maxentius outside the Porta Appia near the tomb of Caecilia Metella, where its ruins are still, and now afford the only instance from which an idea of the ancient circi in Rome can be obtained. It was traced to Caracalla, till the discovery of an inscription in 1825 showed it to be the work of Maxentius. Old topographers speak of six circi, but two of these appear to be imaginary, the Circus Florae and the Circus Sallustii.

Circus races were held in connexion with the following public festivals, and generally on the last day of the festival, if it extended over more than one day:—(1) The *Consualia*, August 21st, December 15th; (2) *Equirria*, February 27th, March 14th; (3) *Ludi Romani*, September 4th-19th; (4) *Ludi Plebeii*, November 4th-17th; (5) *Cerialia*, April 12th-19th; (6) *Ludi Apollinares*, July 6th-13th; (7) *Ludi Megalenses*, April 4th-10th; (8) *Floralia*, April 28th-May 3rd.

> In addition to Smith's *Dictionary of Antiquities* (3rd ed., 1890), see articles in Daremberg and Saglio's *Dictionnaire des antiquités*, Pauly-Wissowa's *Realencyclopädie der classischen Altertumswissenschaft*, iii. 2 (1899), and Marquardt, *Römische Staatsverwaltung*, iii. (2nd ed., 1885), p. 504. For existing remains see works quoted under ROME: *Archaeology*.

2. *The Modern Circus.*—The "circus" in modern times is a form of popular entertainment which has little in common with the institution of classical Rome. It is frequently nomadic in character, the place of the permanent building known to the ancients as the circus being taken by a tent, which is carried from place to place and set up temporarily on any site procurable at country fairs or in provincial towns, and in which spectacular performances are given by a troupe employed by the proprietor. The centre of the tent forms an arena arranged as a horse-ring, strewn with tan or other soft substance, where the performances take place, the seats of the spectators being arranged in ascending tiers around the central space as in the Roman circus. The traditional type of exhibition in the modern travelling circus consists of feats of horsemanship, such as leaping through hoops from the back of a galloping horse, standing with one foot on each of two horses galloping side by side, turning somersaults from a springboard over a number of horses standing close together, or accomplishing acrobatic tricks on horseback. These performances, by male and female riders, are varied by the introduction of horses trained to perform tricks, and by drolleries on the part of the clown, whose place in the circus is as firmly established by tradition as in the pantomime.

The popularity of the circus in England may be traced to that kept by Philip Astley (d. 1814) in London at the end of the 18th century. Astley was followed by Ducrow, whose feats of horsemanship had much to do with establishing the traditions of the circus, which were perpetuated by Hengler's and Sanger's celebrated shows in a later generation. In America a circus-actor named Ricketts is said to have performed before George Washington in 1780, and in the first half of the 19th century the establishments of Purdy, Welch & Co., and of van Amburgh gave a wide popularity to the circus in the United States. All former circus-proprietors were, however, far surpassed in enterprise and resource by P.T. Barnum (*q.v.*), whose claim to be the possessor of "the greatest show on earth" was no exaggeration. The influence of Barnum, however, brought about a considerable change in the character of the modern circus. In arenas too large for speech to be easily audible, the traditional comic dialogue of the clown assumed a less prominent place than formerly, while the vastly increased wealth of stage properties relegated to the background the old-fashioned equestrian feats, which were replaced by more ambitious acrobatic performances, and by exhibitions of skill, strength and daring, requiring the employment of immense numbers of performers and often of complicated and expensive machinery. These tendencies are, as is

natural, most marked in shows given in permanent buildings in large cities, such as the London Hippodrome, which was built as a combination of the circus, the menagerie and the variety theatre, where wild animals such as lions and elephants from time to time appeared in the ring, and where convulsions of nature such as floods, earthquakes and volcanic eruptions have been produced with an extraordinary wealth of realistic display. At the Hippodrome in Paris—unlike its London namesake, a circus of the true classical type in which the arena is entirely surrounded by the seats of the spectators—chariot races after the Roman model were held in the latter part of the 19th century, at which prizes of considerable value were given by the management.

CIRENCESTER (traditionally pronounced *Ciceter*), a market town in the Cirencester parliamentary division of Gloucestershire, England, on the river Churn, a tributary of the Thames, 93 m. W.N.W. of London. Pop. of urban district (1901) 7536. It is served by a branch of the Great Western railway, and there is also a station on the Midland and South-Western Junction railway. This is an ancient and prosperous market town of picturesque old houses clustering round a fine parish church, with a high embattled tower, and a remarkable south porch with parvise. The church is mainly Perpendicular, and among its numerous chapels that of St Catherine has a beautiful roof of fan-tracery in stone dated 1508. Of the abbey founded in 1117 by Henry I. there remain a Norman gateway and a few capitals. There are two good museums containing mosaics, inscriptions, carved and sculptured stones, and many smaller remains, for the town was the Roman *Corinium* or *Durocornovium Dobunorum*. Little trace of Corinium, however, can be seen *in situ*, except the amphitheatre and some indications of the walls. To the west of the town is Cirencester House, the seat of Earl Bathurst. The first Lord Bathurst (1684-1775) devoted himself to beautifying the fine demesne of Oakley Park, which he planted and adorned with remarkable artificial ruins. This nobleman, who became baron in 1711 and earl in 1772, was a patron of art and literature no less than a statesman; and Pope, a frequent visitor here, was allowed to design the building known as Pope’s Seat, in the park, commanding a splendid prospect of woods and avenues. Swift was another appreciative visitor. The house contains portraits by Lawrence, Gainsborough, Romney, Lely, Reynolds, Hoppner, Kneller and many others. A mile west of the town is the Royal Agricultural College, incorporated by charter in 1845. Its buildings include a chapel, a dining hall, a library, a lecture theatre, laboratories, classrooms, private studies and dormitories for the students, apartments for resident professors, and servants’ offices; also a museum containing a collection of anatomical and pathological preparations, and mineralogical, botanical and geological specimens. The college farm comprises 500 acres, 450 of which are arable; and on it are the well-appointed farm-buildings and the veterinary hospital. Besides agriculture, the course of instruction at the college includes chemistry, natural and mechanical philosophy, natural history, mensuration, surveying and drawing, and other subjects of practical importance to the farmer, proficiency in which is tested by means of sessional examinations. The industries of Cirencester comprise various branches of agriculture. It has connexion by a branch canal with the Thames and Severn canal.

Corinium was a flourishing Romano-British town, at first perhaps a cavalry post, but afterwards, for the greater part of the Roman period, purely a civilian city. At Chedworth, 7 m. N.E., is one of the most noteworthy Roman villas in England. Cirencester (*Cirneceaster*, *Cyrenceaster*, *Cyringceaster*) is described in Domesday as ancient demesne of the crown. The manor was granted by William I. to William Fitzosbern; on reverting to the crown it was given in 1189, with the township, to the Augustinian abbey founded here by Henry I. The struggle of the townsmen to prove that Cirencester was a borough probably began in the same year, when they were amerced for a false presentment. Four inquisitions during the 13th century supported the abbot’s claims, yet in 1343 the townsmen declared in a chancery bill of complaint that Cirencester was a borough distinct from the manor, belonging to the king but usurped by the abbot, who since 1308 had abated their court of provostry. Accordingly they produced a copy of a forged charter from Henry I. to the town; the court ignored this and the abbot obtained a new charter and a writ of *supersedeas*. For their success against the earls of Kent and Salisbury Henry IV. in 1403 gave the townsmen a gild merchant, although two inquisitions reiterated the abbot’s rights. These were confirmed in 1408-1409 and 1413; in 1418 the charter was annulled, and in 1477 parliament declared that Cirencester was not corporate. After several unsuccessful attempts to re-establish the

gild merchant, the government in 1592 was vested in the bailiff of the lord of the manor. Cirencester became a parliamentary borough in 1572, returning two members, but was deprived of representation in 1885. Besides the “new market” of Domesday Book the abbots obtained charters in 1215 and 1253 for fairs during the octaves of All Saints and St Thomas the Martyr. The wool trade gave these great importance; in 1341 there were ten wool merchants in Cirencester, and Leland speaks of the abbots’ cloth-mill, while Camden calls it the greatest market for wool in England.

See *Transactions* of the Bristol and Gloucestershire Archaeological Society, vols. ii., ix., xviii.

CIRILLO, DOMENICO (1739-1799), Italian physician and patriot, was born at Grumo in the kingdom of Naples. Appointed while yet a young man to a botanical professorship, Cirillo went some years afterwards to England, where he was elected fellow of the Royal Society, and to France. On his return to Naples he was appointed successively to the chairs of practical and theoretical medicine. He wrote voluminously and well on scientific subjects and secured an extensive medical practice. On the French occupation of Naples and the proclamation of the Parthenopean republic (1799), Cirillo, after at first refusing to take part in the new government, consented to be chosen a representative of the people and became a member of the legislative commission, of which he was eventually elected president. On the abandonment of the republic by the French (June 1799), Cardinal Ruffo and the army of King Ferdinand IV. returned to Naples, and the Republicans withdrew, ill-armed and inadequately provisioned, to the forts. After a short siege they surrendered on honourable terms, life and liberty being guaranteed them by the signatures of Ruffo, of Foote, and of Micheroux. But the arrival of Nelson changed the complexion of affairs, and he refused to ratify the capitulation. Secure under the British flag, Ferdinand and his wife, Caroline of Austria, showed themselves eager for revenge, and Cirillo was involved with the other republicans in the vengeance of the royal family. He asked Lady Hamilton (wife of the British minister to Naples) to intercede on his behalf, but Nelson wrote in reference to the petition: “Domenico Cirillo, who had been the king’s physician, might have been saved, but that he chose to play the fool and lie, denying that he had ever made any speeches against the government, and saying that he only took care of the poor in the hospitals” (*Nelson and the Neapolitan Jacobins*, Navy Records Society, 1903). He was condemned and hanged on the 29th of October 1799. Cirillo, whose favourite study was botany, and who was recognized as an entomologist by Linnaeus, left many books, in Latin and Italian, all of them treating of medical and scientific subjects, and all of little value now. Exception must, however, be made in favour of the *Virtù morali dell’ Asino*, a pleasant philosophical pamphlet remarkable for its double charm of sense and style. He introduced many medical innovations into Naples, particularly inoculation for smallpox.

See C. Giglioli, *Naples in 1799* (London, 1903); L. Conforti, *Napoli nel 1799* (Naples, 1889); C. Tivaroni, *L’ Italia durante il dominio francese*, vol. ii. pp. 179-204. Also under Naples; Nelson and Ferdinand Iv. Of Naples.

CIRQUE (Lat. *circus*, ring), a French word used in physical geography to denote a semicircular crater-like amphitheatre at the head of a valley, or in the side of a glaciated mountain. The valley cirque is characteristic of calcareous districts. In the Chiltern Hills especially, and generally along the chalk escarpments, a flat-bottomed valley with an intermittent stream winds into the hill and ends suddenly in a cirque. There is an excellent example at Ivinghoe, Buckinghamshire, where it appears as though an enormous flat-bottomed scoop had been driven into the hillside and dragged outwards to the plain. In all cases it is found that the valley floor consists of hard or impervious rock above which lies a permeable or soluble stratum of considerable thickness. In the case of the chalk hills the upper strata are very porous, and the descending water with atmospheric and humous acids in solution has great solvent power. During the winter this upper layer becomes saturated

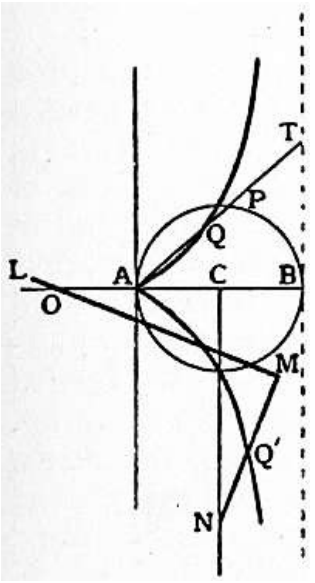
and some of the water drains away along joints in the escarpment. An underground stream is thus developed carrying away a great deal of material in solution, and in consequence the ground above slowly collapses over the stream, while the cirque at the head, where the stream issues, gradually works backward and may pass completely through the hills, leaving a gap of which another drainage system may take possession. In the limestone country of the Cotteswold Hills, many small intermittent tributary streams are headed by cirques, and some of the longer dry valleys have springs issuing from beneath their lower ends, the dry valleys being collapsed areas above underground streams not yet revealed. In this case the pervious limestone is underlain by beds of impervious clay. There are many of these in the Jura Mountains. The Cirque de St Sulpice is a fine example where the impervious bed is a marly clay.

The origin of the glacial cirque is entirely different and is said by W.D. Johnson (*Journal of Geology*, xii. No. 7, 1904) to be due to basal sapping and erosion under the *bergschrund* of the glacier. In this he is supported by G.K. Gilbert in the same journal, who produces some remarkable examples from the Sierra Nevada in California, where the mountain fragments have been left behind “like a sheet of dough upon a board after the biscuit tin has done its work”; so that above the head of the glaciers “the rock detail is rugged and splintered but its general effect is that of a great symmetrical arc.” Descending one of the bergschrunds of Mt. Lyell to a depth of 150 ft., Johnson found a rock floor cumbered with ice and blocks of rock and the rock face a literally vertical cliff “much riven, its fracture planes outlining sharp angular masses in all stages of displacement and dislodgment.” Judging from these facts, he interprets the deep valleys with cirques at their head in formerly glaciated regions where at the head there is a “reversed grade” of slope, as due to ice-erosion at valley-heads where scour is impossible at the sides of the mountain but strongest under the glacier head where the ice is deepest. The opponents of ice-erosion nevertheless recognize the very frequent occurrence of glacial cirques often containing small lakes such as that under Cader Idris in Wales, or at the head of Little Timber Creek, Montana, and numerous examples in Alpine districts.

CIRTA (mod. *Constantine*, *q.v.*), an ancient city of Numidia, in Africa, in the country of the Massyli. It was regarded by the Romans as the strongest position in Numidia, and was made by them the converging point of all their great military roads in that country. By the early emperors it was allowed to fall into decay, but was afterwards restored by Constantine, from whom it took its modern name.

CISSEY, ERNEST LOUIS OCTAVE COURTOT DE (1810-1882), French general, was born at Paris on the 23rd of September 1810, and after passing through St Cyr, entered the army in 1832, becoming captain in 1839. He saw active service in Algeria, and became *chef d’escadron* in 1849 and lieutenant-colonel in 1850. He took part as a colonel in the Crimean War, and after the battle of Inkerman received the rank of general of brigade. In 1863 he was promoted general of division. When the Franco-German War broke out in 1870, de Cissey was given a divisional command in the Army of the Rhine, and he was included in the surrender of Bazaine’s army at Metz. He was released from captivity only at the end of the war, and on his return was at once appointed by the Versailles government to a command in the army engaged in the suppression of the Commune, a task in the execution of which he displayed great rigour. From July 1871 de Cissey sat as a deputy, and he had already become minister of war. He occupied this post several times during the critical period of the reorganization of the French army. In 1880, whilst holding the command of the XI. corps at Nantes, he was accused of having relations with a certain Baroness Kaula, who was said to be a spy in the pay of Germany, and he was in consequence relieved from duty. An inquiry subsequently held resulted in de Cissey’s favour (1881). He died on the 15th of June 1882 at Paris.

CISSOID (from the Gr. κισσός, ivy, and εἶδος, form), a curve invented by the Greek mathematician Diocles about 180 B.C., for the purpose of constructing two mean proportionals between two given lines, and in order to solve the problem of duplicating the cube. It was further investigated by John Wallis, Christiaan Huygens (who determined the length of any arc in 1657), and Pierre de Fermat (who evaluated the area between the curve and its asymptote in 1661). It is constructed in the following manner. Let APB be a semicircle, BT the tangent at B, and APT a line cutting the circle in P and BT at T; take a point Q on AT so that AQ always equals PT; then the locus of Q is the cissoid. Sir Isaac Newton devised the following mechanical construction. Take a rod LMN bent at right angles at M, such that MN = AB; let the leg LM always pass through a fixed point O on AB produced such that OA = CA, where C is the middle point of AB, and cause N to travel along the line perpendicular to AB at C; then the midpoint of MN traces the cissoid. The curve is symmetrical about the axis of x, and consists of two infinite branches asymptotic to the line BT and forming a cusp at the origin. The cartesian equation, when A is the origin and AB = 2a, is $y^2(2a - x) = x^3$; the polar equation is $r = 2a \sin\theta \tan\theta$. The cissoid is the first positive pedal of the parabola $y^2 + 8ax = 0$ for the vertex, and the inverse of the parabola $y^2 = 8ax$, the vertex being the centre of inversion, and the semi-latus rectum the constant of inversion. The area between the curve and its asymptote is $3\pi a^2$, *i.e.* three times the area of the generating circle.



The term cissoid has been given in modern times to curves generated in similar manner from other figures than the circle, and the form described above is distinguished as the cissoid of Diocles.

A *cissoid angle* is the angle included between the concave sides of two intersecting curves; the convex sides include the *sistroid angle*.

See John Wallis, *Collected Works*, vol. i.; T.H. Eagles, *Plane Curves* (1885).

CIS-SUTLEJ STATES, the southern portion of the Punjab, India. The name, now obsolete, came into use in 1809, when the Sikh chiefs south of the Sutlej passed under British protection, and was generally applied to the country south of the Sutlej and north of the Delhi territory, bounded on the E. by the Himalayas, and on the W. by Sirsa district. Before 1846 the greater part of this territory was independent, the chiefs being subject merely to control from a political officer stationed at Umballa, and styled the agent of the governor-general for the Cis-Sutlej states. After the first Sikh War the full administration of the territory became vested in this officer. In 1849 occurred the annexation of the Punjab, when the Cis-Sutlej states commissionership, comprising the districts of Umballa, Ferozepore, Ludhiana, Thanesar and Simla, was incorporated with the new province. The name continued to be applied to this division until 1862, when, owing to Ferozepore having been transferred to the Lahore, and a part of Thanesar to the Delhi division, it ceased to be appropriate. Since then, the tract remaining has been known as the Umballa division. Patiala, Jind and Nabha were appointed a separate political agency in 1901. Excluding Bahawalpur, for which there is no political agent, and Chamba, the other states are grouped under the commissioners of Jullunder and Delhi, and the superintendent of the Simla hill states.

CIST (Gr. κίστη, Lat. *cista*, a box; cf. Ger. *Kiste*, Welsh *kistvaen*, stone-coffin, and also the other Eng. form “chest”), in Greek archaeology, a wicker-work receptacle used in the

Eleusinian and other mysteries to carry the sacred vessels; also, in the archaeology of prehistoric man, a coffin formed of flat stones placed edgeways with another flat stone for a cover. The word is also used for a sepulchral chamber cut in the rock (see Coffin).

"Cistern," the common term for a water-tank, is a derivation of the same word (Lat. *cisterna*; cf. "cave" and "cavern").

CISTERCIANS, otherwise Grey or White Monks (from the colour of the habit, over which is worn a black scapular or apron). In 1098 St Robert, born of a noble family in Champagne, at first a Benedictine monk, and then abbot of certain hermits settled at Molesme near Châtillon, being dissatisfied with the manner of life and observance there, migrated with twenty of the monks to a swampy place called Cîteaux in the diocese of Châlons, not far from Dijon. Count Odo of Burgundy here built them a monastery, and they began to live a life of strict observance according to the letter of St Benedict's rule. In the following year Robert was compelled by papal authority to return to Molesme, and Alberic succeeded him as abbot of Cîteaux and held the office till his death in 1109, when the Englishman St Stephen Harding became abbot, until 1134. For some years the new institute seemed little likely to prosper; few novices came, and in the first years of Stephen's abbacy it seemed doomed to failure. In 1112, however, St Bernard and thirty others offered themselves to the monastery, and a rapid and wonderful development at once set in. The next three years witnessed the foundation of the four great "daughter-houses of Cîteaux"—La Ferté, Pontigny, Clairvaux and Morimond. At Stephen's death there were over 30 Cistercian houses; at Bernard's (1154) over 280; and by the end of the century over 500; and the Cistercian influence in the Church more than kept pace with this material expansion, so that St Bernard saw one of his monks ascend the papal chair as Eugenius III.

The keynote of Cistercian life was a return to a literal observance of St Benedict's rule—how literal may be seen from the controversy between St Bernard and Peter the Venerable, abbot of Cluny (see Maitland, *Dark Ages*, § xxii.). The Cistercians rejected alike all mitigations and all developments, and tried to reproduce the life exactly as it had been in St Benedict's time, indeed in various points they went beyond it in austerity. The most striking feature in the reform was the return to manual labour, and especially to field-work, which became a special characteristic of Cistercian life. In order to make time for this work they cut away the accretions to the divine office which had been steadily growing during three centuries, and in Cluny and the other Black Monk monasteries had come to exceed greatly in length the regular canonical office: one only of these accretions did they retain, the daily recitation of the Office of the Dead (Edm. Bishop, *Origin of the Primer*, Early English Text Society, original series, 109, p. xxx.).

It was as agriculturists and horse and cattle breeders that, after the first blush of their success and before a century had passed, the Cistercians exercised their chief influence on the progress of civilization in the later middle ages: they were the great farmers of those days, and many of the improvements in the various farming operations were introduced and propagated by them; it is from this point of view that the importance of their extension in northern Europe is to be estimated. The Cistercians at the beginning renounced all sources of income arising from benefices, tithes, tolls and rents, and depended for their income wholly on the land. This developed an organized system for selling their farm produce, cattle and horses, and notably contributed to the commercial progress of the countries of western Europe. Thus by the middle of the 13th century the export of wool by the English Cistercians had become a feature in the commerce of the country. Farming operations on so extensive a scale could not be carried out by the monks alone, whose choir and religious duties took up a considerable portion of their time; and so from the beginning the system of lay brothers was introduced on a large scale. The lay brothers were recruited from the peasantry and were simple uneducated men, whose function consisted in carrying out the various field-works and plying all sorts of useful trades; they formed a body of men who lived alongside of the choir monks, but separate from them, not taking part in the canonical office, but having their own fixed round of prayer and religious exercises. A lay brother was never ordained, and never held any office of superiority. It was by this system of lay brothers that the Cistercians were able to play their distinctive part in the progress of European civilization. But it often happened that the number of lay brothers became excessive and out of proportion to the resources of the monasteries, there being sometimes as many as 200, or

even 300, in a single abbey. On the other hand, at any rate in some countries, the system of lay brothers in course of time worked itself out; thus in England by the close of the 14th century it had shrunk to relatively small proportions, and in the 15th century the régime of the English Cistercian houses tended to approximate more and more to that of the Black Monks.

The Cistercian polity calls for special mention. Its lines were adumbrated by Alberic, but it received its final form at a meeting of the abbots in the time of Stephen Harding, when was drawn up the *Carta Caritatis* (Migne, *Patrol. Lat.* clxvi. 1377), a document which arranged the relations between the various houses of the Cistercian order, and exercised a great influence also upon the future course of western monachism. From one point of view, it may be regarded as a compromise between the primitive Benedictine system, whereby each abbey was autonomous and isolated, and the complete centralization of Cluny, whereby the abbot of Cluny was the only true superior in the body. Cîteaux, on the one hand, maintained the independent organic life of the houses—each abbey had its own abbot, elected by its own monks; its own community, belonging to itself and not to the order in general; its own property and finances administered by itself, without interference from outside. On the other hand, all the abbeys were subjected to the general chapter, which met yearly at Cîteaux, and consisted of the abbots only; the abbot of Cîteaux was the president of the chapter and of the order, and the visitor of each and every house, with a predominant influence and the power of enforcing everywhere exact conformity to Cîteaux in all details of the exterior life—observance, chant, customs. The principle was that Cîteaux should always be the model to which all the other houses had to conform. In case of any divergence of view at the chapter, the side taken by the abbot of Cîteaux was always to prevail (see F.A. Gasquet, *Sketch of Monastic Constitutional History*, pp. xxxv-xxxviii, prefixed to English trans, of Montalembert's *Monks of the West*, ed. 1895).

By the end of the 12th century the Cistercian houses numbered 500; in the 13th a hundred more were added; and in the 15th, when the order attained its greatest extension, there were close on 750 houses: the larger figures sometimes given are now recognized as apocryphal. Nearly half of the houses had been founded, directly or indirectly, from Clairvaux, so great was St Bernard's influence and prestige: indeed he has come almost to be regarded as the founder of the Cistercians, who have often been called Bernardines. The order was spread all over western Europe,—chiefly in France, but also in Germany, England, Scotland, Ireland, Sweden, Poland, Hungary, Italy and Sicily, Spain and Portugal,—where some of the houses, as Alcobaça, were of almost incredible magnificence. In England the first foundation was Furness (1127), and many of the most beautiful monastic buildings of the country, beautiful in themselves and beautiful in their sites, were Cistercian,—as Tintern, Rievaulx, Byland, Fountains. A hundred were established in England in the next hundred years, and then only one more up to the Dissolution (for list, see table and map in F.A. Gasquet's *English Monastic Life*, or *Catholic Dictionary*, art. "Cistercians").

For a hundred years, till the first quarter of the 13th century, the Cistercians supplanted Cluny as the most powerful order and the chief religious influence in western Europe. But then in turn their influence began to wane, chiefly, no doubt, because of the rise of the mendicant orders, who ministered more directly to the needs and ideas of the new age. But some of the reasons of Cistercian decline were internal. In the first place, there was the permanent difficulty of maintaining in its first fervour a body embracing hundreds of monasteries and thousands of monks, spread all over Europe; and as the Cistercian very *raison d'être* consisted in its being a "reform," a return to primitive monachism, with its field-work and severe simplicity, any failures to live up to the ideal proposed worked more disastrously among Cistercians than among mere Benedictines, who were intended to live a life of self-denial, but not of great austerity. Relaxations were gradually introduced in regard to diet and to simplicity of life, and also in regard to the sources of income, rents and tolls being admitted and benefices incorporated, as was done among the Benedictines; the farming operations tended to produce a commercial spirit; wealth and splendour invaded many of the monasteries, and the choir monks abandoned field-work.

The later history of the Cistercians is largely one of attempted revivals and reforms. The general chapter for long battled bravely against the invasion of relaxations and abuses. In 1335 Benedict XII., himself a Cistercian, promulgated a series of regulations to restore the primitive spirit of the order, and in the 15th century various popes endeavoured to promote reforms. All these efforts at a reform of the great body of the order proved unavailing; but local reforms, producing various semi-independent offshoots and congregations, were successfully carried out in many parts in the course of the 15th and 16th centuries. In the 17th another great effort at a general reform was made, promoted by the pope and the king

of France; the general chapter elected Richelieu (commendatory) abbot of Cîteaux, thinking he would protect them from the threatened reform. In this they were disappointed, for he threw himself wholly on the side of reform. So great, however, was the resistance, and so serious the disturbances that ensued, that the attempt to reform Cîteaux itself and the general body of the houses had again to be abandoned, and only local projects of reform could be carried out. In 1598 had arisen the reformed congregation of the Feuillants, which spread widely in France and Italy, in the latter country under the name of "Improved Bernardines." The French congregation of Sept-Fontaines (1654) also deserves mention. In 1663 de Rancé reformed La Trappe (see TRAPPISTS).

The Reformation, the ecclesiastical policy of Joseph II., the French Revolution, and the revolutions of the 19th century, almost wholly destroyed the Cistercians; but some survived, and since the beginning of the last half of the 19th century there has been a considerable recovery. They are at present divided into three bodies: (1) the Common Observance, with about 30 monasteries and 800 choir monks, the large majority being in Austria-Hungary; they represent the main body of the order and follow a mitigated rule of life; they do not carry on field-work, but have large secondary schools, and are in manner of life little different from fairly observant Benedictine Black monks; of late years, however, signs are not wanting of a tendency towards a return to older ideas; (2) the Middle Observance, embracing some dozen monasteries and about 150 choir monks; (3) the Strict Observance, or Trappists (*q.v.*), with nearly 60 monasteries, about 1600 choir monks and 2000 lay brothers.

In all there are about 100 Cistercian monasteries and about 4700 monks, including lay brothers. There have always been a large number of Cistercian nuns; the first nunnery was founded at Tart in the diocese of Langres, 1125; at the period of their widest extension there are said to have been 900 nunneries, and the communities were very large. The nuns were devoted to contemplation and also did field-work. In Spain and France certain Cistercian abbesses had extraordinary privileges. Numerous reforms took place among the nuns. The best known of all Cistercian convents was probably Port-Royal (*q.v.*), reformed by Angélique Arnaud, and associated with the story of the Jansenist controversy. After all the troubles of the 19th century there still exist 100 Cistercian nunneries with 3000 nuns, choir and lay; of these, 15 nunneries with 900 nuns are Trappist.

Accounts of the beginnings of the Cistercians and of the primitive life and spirit will be found in the lives of St Bernard, the best whereof is that of Abbé E. Vacandard (1895); also in the Life of St Stephen Harding, in the *English Saints*. See also Henry Collins (one of the Oxford Movement, who became a Cistercian), *Spirit and Mission of the Cistercian Order* (1866). The facts are related in Helyot, *Hist. des ordres religieux* (1792), v. cc. 33-46, vi cc. 1, 2. Useful sketches, with references to the literature, are supplied in Herzog, *Realencyklopädie* (ed. 3), art. "Cistercienser"; Wetzer und Welte, *Kirchenlexikon* (ed. 2), art. "Cistercienserorden"; Max Heimbucher, *Orden und Kongregationen* (1896), i. §§ 33, 34. Prof. Brewer's discriminating, yet on the whole sympathetic, Preface to vol. iv. of the Works of Giraldus Cambrensis (Rolls Series of *Chronicles and Memorials*) is very instructive. Denis Murphy's *Triumphalia Monasterii S. Crucis* (1891) contains a general sketch, with a particular account of the Irish Cistercians.

(E. C. B.)

CITATION (Lat. *citare*, to cite), in law, a summons to appear, more particularly applied in England to process in the probate and divorce division of the high court. In the ecclesiastical courts, citation was a method of commencing a probate suit, answering to a writ of summons at common law, and it is now in English probate practice an instrument issuing from the principal probate registry, chiefly used when a person, having the superior right to take a grant, delays or declines to do so, and another having an inferior right desires to obtain a grant; the party having the prior right is cited to appear and either to renounce the grant or show cause why it should not be decreed to the citator. In divorce practice, when a petitioner has filed his petition and affidavit, he extracts a citation, *i.e.* a command drawn in the name of the sovereign and signed by one of the registrars of the court, calling upon the alleged offender to appear and make answer to the petition. In Scots law, citation is used in the sense of a writ of summons. The word in its more general literary sense means the act of quoting, or the referring to an authority in support of an argument.

CÎTEAUX, a village of eastern France, in the department of Côte d'Or, 16 m. S.S.E. of Dijon by road. It is celebrated for the great abbey founded by Robert, abbot of Molesme, in 1098, which became the headquarters of the Cistercian order. The buildings which remain date chiefly from the 18th century and are of little interest. The church, destroyed in 1792, used to contain the tombs of the earlier dukes of Burgundy.

CITHAERON, now called from its pine forests Elatea, a famous mountain range (4626 ft.) in the south of Boeotia, separating that state from Megaris and Attica. It was famous in Greek mythology, and is frequently mentioned by the great poets, especially by Sophocles. It was on Cithaeron that Aetaeon was changed into a stag, that Pentheus was torn to pieces by the Bacchantes whose orgies he had been watching, and that the infant Oedipus was exposed. This mountain, too, was the scene of the mystic rites of Dionysus, and the festival of the Daedala in honour of Hera. The carriage-road from Athens to Thebes crosses the range by a picturesque defile (the pass of Dryoscephalae, "Oak-heads"), which was at one time guarded on the Attic side by a strong fortress, the ruins of which are known as Ghyphto-kastro ("Gipsy Castle"). Plataea is situated on the north slope of the mountain, and the strategy of the battle of 479 B.C. was considerably affected by the fact that it was necessary for the Greeks to keep their communications open by the passes (see PLATAEA). The best known of these is that of Dryoscephalae, which must then, as now, have been the direct route from Athens to Thebes. Two other passes, farther to the west, were crossed by the roads from Plataea to Athens and to Megara respectively.

(E. GR.)

CITHARA (Assyrian *chetarah*; Gr. κιθάρα; Lat. *cithara*; perhaps Heb. *kinura, kinnor*), one of the most ancient stringed instruments, traced back to 1700 B.C. among the Semitic races, in Egypt, Assyria, Asia Minor, Greece and the Roman empire, whence the use of it spread over Europe. The main feature of the Greek *kithara*, its shallow sound-chest, being the most important part of it, is also that in which developments are most noticeable; its contour varied considerably during the many musical ages, but the characteristic in respect of which it fore-shadowed the precursors of the violin family, and by which they were distinguished from other contemporary stringed instruments of the middle ages, was preserved throughout in all European descendants bearing derived names. This characteristic box sound-chest (fig. 1) consisted of two resonating tables, either flat or delicately arched, connected by ribs or sides of equal width. The cithara may be regarded as an attempt by a more skilful craftsman or race to improve upon the lyre (*q.v.*), while retaining some of its features. The construction of the cithara can fortunately be accurately studied from two actual specimens found in Egypt and preserved in the museums of Berlin and Leiden. The Leiden cithara (fig. 2),

FIG. 1.—Nero Citharoedus (*Mus. Pio-Clementino*), showing back of a Roman Cithara.

which forms part of the d'Anastasy Collection in the Museum of Antiquities, is in a very good state of preservation. The sound-chest, in the form of an irregular square (17 cm. × 17 cm.), is hollowed out of a solid block of wood from the base, which is open; the little bar, seen through the open base and measuring 2½ cm. (1 in.), is also of the same piece of wood. The arms, one short and one long, are solid and are fixed to the body by means of wooden pins; they are glued as well for greater strength. W. Pleyte, through whose courtesy the sketch was revised and corrected, states that there are no indications on the instrument of any kind of bridge or attachment for strings except the little half-hoop of iron wire which passes through the base from back to front. To this the strings were probably attached, and the little bar performed the double duty of sound-post and support for strengthening the tail-piece and enabling it to resist the tension of the strings. The oblique transverse bar, rendered necessary by the increasing length of the strings, was characteristic of the Egyptian cithara,[1] whereas the Asiatic and Greek instruments were generally constructed with horizontal bars resting on arms of equal length, the pitch of the strings being varied by thickness and tension, instead of by length. (For the Berlin cithara see Lyre.)

The number of strings with which the cithara was strung varied from 4 to 19 or 20 at different times; they were added less for the purpose of increasing the compass in the modern sense than to enable the performer to play in the different modes of the Greek musical system. Terpander is credited with having increased the number of strings to seven; Euclid, quoting him as his authority, states that "loving no more the tetrachordal chant, we will sing aloud new hymns to a seven-toned phorminx."

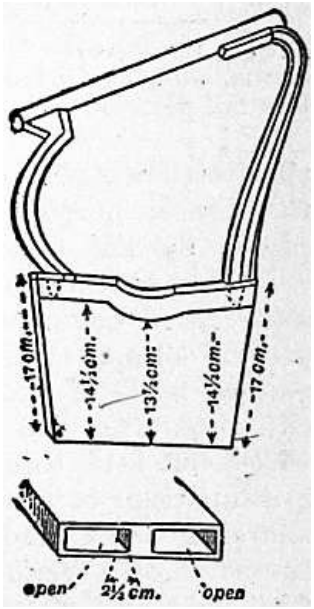


Fig. 2.—Ancient Egyptian Cithara from Thebes. Museum of Antiquities, Leiden.

What has been said of the scale of the lyre applies also to the cithara, and need therefore not be repeated here. The strings were vibrated by means of the fingers or plectrum (πλῆκτρον, from πλήσσειν, to strike; Lat. *plectrum*, from *plango*, I strike). Twanging with the fingers for strings of gut, hemp or silk was undoubtedly the more artistic method, since the player was able to command various shades of expression which are impossible with a rigid plectrum.[2] Loudness of accent and great brilliancy of tone, however, can only be obtained by the use of the plectrum.

Quotations from the classics abound to show what was the practice of the Greeks and Romans in this respect. The plectrum was held in the right hand, with elbow outstretched and palm bent inwards, and the strings were plucked with the straightened fingers of the left hand.[3] Both methods were used with intention according to the dictates of art for the sake of the variation in tone colour obtainable thereby.[4]

The strings of the cithara were either knotted round the transverse tuning bar itself (*zugon*) or to rings threaded over the bar, which enabled the performer to increase or decrease the tension by shifting the knots or rings; or else they were wound round pegs,[5] knobs[6] or pins[7] fixed to the zugon. The other end of the strings was secured to a tail-piece after passing over a flat bridge, or the two were combined in the curious high box tail-piece which acted as a bridge. Plutarch[8] states that this contrivance was added to the cithara in the days of Cepion, pupil of Terpander. These boxes were hinged in order to allow the lid to be opened for the purpose of securing the strings to some contrivance concealed therein. It is a curious fact that no sculptured cithara provided with this box tail-piece is represented with strings, and in many cases there could never have been any, for the hand and arm[9] are visible across the space that would be filled by the strings, which are always carved in a solid block.

Like the lyre the cithara was made in many sizes, conditioned by the pitch and the use to which the instrument was to be put. These instruments may have been distinguished by different names; the *pectis*, for instance, is declared by Sappho (22nd fragment) to have been small and shrill; the *phorminx*, on the other hand,

FIG. 3.—Apollo Citharoedus, showing Cithara with box tail-pieces.

seems to have been identical with the cithara.[10]

The Greek *kithara* was the instrument of the professional singer or citharoedus (κιθαρῳδός) and of the instrumentalist or citharista (κιθαριστής), and thus served the double purpose of (1) accompanying the voice—a use placed by the Greeks far above mere instrumental music—in epic recitations and rhapsodies, in odes and lyric songs; and (2) of accompanying the dance; it was also used for playing solos at the national games, at receptions and banquets and at trials of skill. The costume of the citharoedus and citharista was rich and recognized as being distinctive; it varied but little throughout the ages, as may be deduced from a comparison of representations of the citharoedus on a coin and on a Greek vase of the best period (fig. 4). The costume consisted of a *palla* or long tunic with sleeves embroidered with gold and girt high above the waist, falling in graceful folds to the feet. This *palla* must not be confounded with the mantle of the same name worn by women. Over one shoulder, or hanging down the back, was the purple *chlamys* or cloak, and on his brow a golden wreath of laurels. All the citharoedi bear instruments of the type here described as the cithara, and never one of the lyre type. The records of the citharoedi extend over more than thirteen centuries and fall into two natural divisions: (1) The mythological period, approximately from the 13th century B.C. to the first Olympiad, 776 B.C.; and (2) the historical period to the days of Ptolemy, A.D. 161. One of the very few authentic Greek odes extant is a Pythian ode by Pindar, in which the phorminx of Apollo is mentioned; the solo is followed by a chorus of citharoedi. The scope of the solemn games and processions, called *Panathenaea*, held every four years in honour of the goddess Athena, which originally consisted principally of athletic sports and horse and chariot races, was extended under Peisistratus (c. 540 B.C.), and the celebration made to include contests of singers and instrumentalists, recitations of portions of the *Iliad* and *Odyssey*, such as are represented on the frieze of the Parthenon (in the Elgin Room at the British Museum) and later on friezes by Pheidias. It was at the same period that the first contests for solo-playing on the cithara (κιθαριστύς) and for solo *aulos*-playing were instituted at the 8th Pythian Games.[11] One of the principal items at these contests for aulos and cithara was the *Nomos Pythikos*, descriptive of the victory of Apollo over the python and of the defeat of the monster.[12]

FIG. 4.—Cithara or Phorminx, from a vase in the British Museum.

The Pythian Games survived the classic Greek period and were continued under Roman sway until about A.D. 394. Not only were these games held at Delphi, but smaller contests, called Pythia, modelled on the great Pythian, were instituted in various provinces of the empire, and more especially in Asia Minor. The games lasted for several days, the first being devoted to music. To the games at Delphi came musicians from all parts of the civilized world; and the Spaniards, at the beginning of our era, had attained to such a marvellous proficiency in playing the cithara, an instrument which they had learnt to know from the Phoenician colonists before the conquest by the Romans, that some of their citharoedi easily carried off the honours at the musical contests. The consul Metellus was so charmed with the music of the Spanish competitors that he sent some to Rome for the festivals, where the impression created was so great that the Spanish citharoedi

obtained a permanent footing in Rome. Aulus Gellius (*Noct. Att.*) describes an incident at a banquet which corroborates this statement.

The degeneration of music as an art among the Romans, and its gradual degradation by association with the sensual amusements of corrupt Rome, nearly brought about its extinction at the end of the 4th century, when the condemnation of the Church closed the theatres, and the great national games came to an end. Instrumental music was banished from civil life and from religious rites, and thenceforth the slender threads which connect the musical instruments of Greeks and Romans with those of the middle ages must be sought among the unconverted barbarians of northern and western Europe, who kept alive the traditions taught them by conquerors and colonists; but as civilization was in its infancy with them the instruments sent out from their workshops must have been crude and primitive. Asia, the cradle of the cithara, also became its foster-mother; it was among the Greeks of Asia Minor that the several steps in the transition from cithara into guitar[13] (*q.v.*) took place.

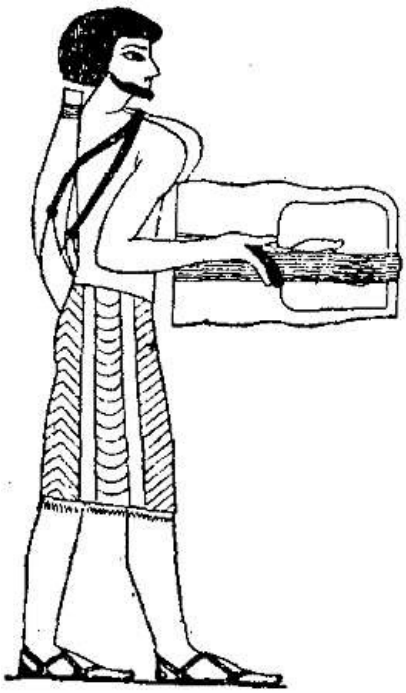


FIG. 5.—Asiatic Cithara in transition (or rotta). From a fresco at Beni-Hasan (c. 1700 B.C.).

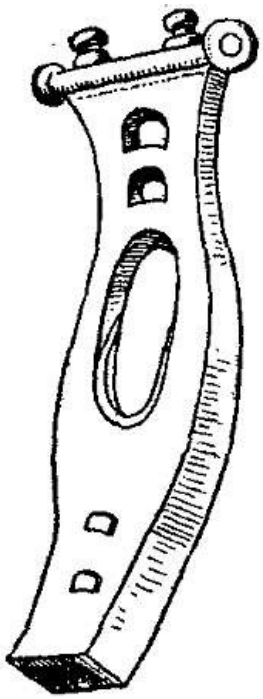


FIG. 6.—Roman Cithara in transition, of the Lycian Apollo (Rome Mus. Capit.).

The first of these steps produced the rotta (*q.v.*), by the construction of body, arms and transverse bar in one piece. The Semitic races used the rotta at a very remote period (1700 B.C.), as we know from a fresco at Beni-Hasan, dating from the reign of Senwosri II., which depicts a procession of strangers bringing tribute; among them is a bearded musician of Semitic type bearing a rotta which he holds horizontally in front of him in the Assyrian manner, and quite unlike the Greeks, who always played the lyre and cithara in an upright position. A unique specimen of this rectangular rotta was found in an Alamannic tomb of the 5th or 6th century at Oberflacht in the Black Forest. The instrument was clasped in the arms of an armed knight; it is now preserved in the Völker Museum in Berlin. This old German rotta is an exact counterpart of instruments pictured in illuminated MSS. of the 8th century, and is derived from the cithara with rectangular body, while from the cithara with a body having the curve of the lower half of the violin was produced a rotta with the outline of the body of the guitar. Both types were common in Europe until the 14th century, some played with a bow, others twanged by the fingers, and bearing indifferently both names, cithara and rotta. The addition of a finger-board, stretching like a short neck from body to transverse bar, leaving on each side of the finger-board space for the hand to pass through in order to stop the strings, produced the crwth or crowd (*q.v.*), and brought about the reduction in the number of the strings to three or four. The conversion of the rotta into the guitar (*q.v.*) was an easy transition effected by the addition of a long neck to a body derived from the oval rotta. When the bow was applied the result was the guitar or troubadour fiddle. At first the instrument called *cithara* in the Latin versions of the Psalms was glossed *citran, citre* in Anglo-Saxon, but in the 11th century the same instrument was rendered *hearpan*, and in French and English *harpe* or *harp*, and our modern versions have retained this translation. The *cittern* (*q.v.*), a later descendant of the cithara, although preserving the characteristic features of the cithara, the shallow sound-chest with ribs, adopted the pear-shaped outline of the Eastern instruments of the lute tribe.

(K. S.)

1 A drawing of an Egyptian cithara, similar to the Leiden specimen, may be seen in Champollion,

Monuments de l'Égypte et de la Nubie, ii. pl. 175.

2 See Plutarch, *Apophthegm. Lacon.*

3 Philostratus the Elder, *Imagines*, No. 10, "Amphion," and Philostratus the Younger, *Imagines*, No. 7, "Orpheus," p. 403.

4 Tibullus, *Eleg.* iii. 4. 39.

5 *Le Antichità de Ercolano*, vol. iii. p. 5.

6 *Idem*, vol. iv. p. 201.

7 Thomas Hope, *Costumes of the Ancients*, vol. ii. p. 193; also Edward Buhle, *Die musikalischen Instrumente in den Miniaturen des frühen Mittelalters* (Leipzig, 1903), frontispiece.

8 See *De Musica*, ch. vi.

9 See Visconti, *Museo Clementino*, pl. 22, Erato's cithara, and in the same work that of Apollo Citharoedus (fig. 3 above).

10 See *Od.* i. 153, 155; *Il.* xviii. 569-570. In Homer the form is always κἰθαρις.

11 See Pausanias x. 7, § 4 et seq.

12 For a description of the *Nomos Pythikos* in its relation to Greek music see Kathleen Schlesinger, "Researches into the Origin of the Organs of the Ancients," *Intern. Mus. Ges.* Sbd. ii. (1901), 2, p. 177, and Strabo ix. p. 421.

13 For a discussion of this question see Kathleen Schlesinger, *The Instruments of the Orchestra*, part ii., and especially chapters on the cithara in transition during the middle ages, and the question of the origin of the Utrecht Psalter, in which the evolution of the cithara is traced at some length.

CITIUM (Gr. *Kition*), the principal Phoenician city in Cyprus, situated at the north end of modern Larnaca, on the bay of the same name on the S.E. coast of the island. Converging currents from E. and W. meet and pass seawards off Cape Kiti a few miles south, and greatly facilitated ancient trade. To S. and W. the site is protected by lagoons, the salt from which was one of the sources of its prosperity. The earliest remains near the site go back to the Mycenaean age (c. 1400-1100 B.C.) and seem to mark an Aegean colony.[1] but in historic times Citium is the chief centre of Phoenician influence in Cyprus. That this was still a recent settlement in the 7th century is suggested by an allusion in a list of the allies of Assur-bani-pal of Assyria in 668 B.C. to a King Damasu of Ḳartihadasti (Phoenician for "New-town"), where Citium would be expected. A Phoenician dedication to "Baal of Lebanon" found here, and dated also to the 7th century, suggests that Citium may have belonged to Tyre. The biblical name Kittim, derived from Citium, is in fact used quite generally for Cyprus as a whole;[2] later also for Greeks and Romans in general.[3] The discovery here of an official monument of Sargon II. suggests that Citium was the administrative centre of Cyprus during the Assyrian protectorate (700-668 B.C.).[4] During the Greek revolts of 500, 386 foll. and 352 B.C., Citium led the side loyal to Persia and was besieged by an Athenian force in 449 B.C.; its extensive necropolis proves that it remained a considerable city even after the Greek cause triumphed with Alexander. But like other cities of Cyprus, it suffered repeatedly from earthquake, and in medieval times when its harbour became silted the population moved to Larnaca, on the open roadstead, farther south. Harbour and citadel have now quite disappeared, the latter having been used to fill up the former shortly after the British occupation; some gain to health resulted, but an irreparable loss to science. Traces remain of the circuit wall, and of a sanctuary with copious terra-cotta offerings; the large necropolis yields constant loot to illicit excavation.

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(J. L. M.)

1 Cf. the name Kathian in a Ramessid list of cities of Cyprus, Oberhummer, *Die Insel Cypern* (Munich, 1903), p. 4.

2 Gen. x. 4; Num. xxiv. 24; Is. xxiii. 1, 12; Jer. ii. 10; Ezek. xxvii. 6.

3 Dan. xi. 30; I Macc. i. 1; viii. 5.

4 Schrader, "Die Sargonstele des Berliner Museums," in *Abh. d. k. Preuss. Akad. Wiss.* (1881); *Zur Geogr. d. assyr. Reiches* (Berlin, 1890), pp. 337-344.

CITIZEN (a form corrupted in Eng., apparently by analogy with "denizen," from O. Fr. *citeain*, mod. Fr. *citoyen*), etymologically the inhabitant of a city, *cité* or *civitas* (see CITY), and in England the term still used primarily of persons possessing civic rights in a borough; thus used also of a townsman as opposed to a countryman. The more extended use of the word, however, corresponding to *civitas*, gives "citizen" the meaning of one who is a constituent member of a state in international relations and as such has full national rights and owes a certain allegiance (*q.v.*) as opposed to an "alien"; in republican countries the term is then commonly employed as the equivalent of "subject" in monarchies of feudal origin. For the rules governing the obtaining of citizenship in this latter sense in the United States and elsewhere see NATURALIZATION.

CITOLE, also spelled SYTOLE, CYTHOLE, GYTOLLE, &c. (probably a Fr. diminutive form of *cithara*, and not from Lat. *cista*, a box), an obsolete musical instrument of which the exact form is uncertain. It is frequently mentioned by poetical writers of the 13th to the 15th centuries, and is found in Wycliffe's Bible (1360) in 2 Samuel vi. 5, "Harpis and sitols and tympane." The Authorized Version has "psaltiries," and the Vulgate "lyrae." It has been supposed to be another name for the psaltery (*q.v.*), a box-shaped instrument often seen in the illuminated missals of the middle ages.

CITRIC ACID, *Acidum citricum*, or OXYTRICARBALLYLIC ACID, $C_3H_4(OH)(CO{\cdot}OH)_3$, a tetrahydroxytribasic acid, first obtained in the solid state by Karl Wilhelm Scheele, in 1784, from the juice of lemons. It is present also in oranges, citrons, currants, gooseberries and many other fruits, and in several bulbs and tubers. It is made on a large scale from lime or lemon juice, and also by the fermentation of glucose under the influence of *Citromycetes pfefferianus, C. glaber* and other ferments. Lemon juice is fermented for some time to free it from mucilage, then boiled and filtered, and neutralized with powdered chalk and a little milk of lime; the precipitate of calcium citrate so obtained is decomposed with dilute sulphuric acid, the solution filtered, evaporated to remove calcium sulphate and concentrated, preferably in vacuum pans. The acid is thus obtained in colourless rhombic prisms of the composition $C_6H_8O_7 + H_2O$. Crystals of a different form are deposited from a strong boiling solution of the acid. About 20 gallons of lemon juice should yield about 10 lb of crystallized citric acid. The acid may also be prepared from the juice of unripe gooseberries. Calcium citrate must be manufactured with care to avoid an excess of chalk or lime, which would precipitate constituents of the juice that cause the fermentation of the citrate and the production of calcium acetate and butyrate.

The synthesis of citric acid was accomplished by L.E. Grimaux and P. Adam in 1881. Glycerin when treated with hydrochloric acid gives propenyl dichlorhydrin, which may be oxidized to s-dichloracetone. This compound combines with hydrocyanic acid to form a nitrile which hydrolyses to dichlor-hydroxy iso-butyric acid. Potassium cyanide reacts with this acid to form the corresponding dinitrile, which is converted by hydrochloric acid into citric acid. This series of operations proves the constitution of the acid. A. Haller and C.A. Held synthesized the acid from ethyl chlor-acetoacetate (from chlorine and acetoacetic ester) by heating with potassium cyanide and saponifying the resulting nitrile. The acetone

dicarboxylic acid, $CO(CH_2CO_2H)_2$, so obtained combines with hydrocyanic acid, and this product yields citric acid on hydrolysis.

Citric acid has an agreeable sour taste. It is soluble in ¾ths of its weight of cold, and in half its weight of boiling water, and dissolves in alcohol, but not in ether. At 150°C. it melts, and on the continued application of heat boils, giving off its water of crystallization. At 175° C. it is resolved into water and aconitic acid, $C_6H_6O_6$, a substance found in *Equisetum fluviatile*, monks-hood and other plants. A higher temperature decomposes this body into carbon dioxide and itaconic acid, $C_5H_6C_4$, which, again, by the expulsion of a molecule of water, yields citraconic anhydride, $C_5H_4O_3$. Citric acid digested at a temperature below 40°C. with concentrated sulphuric acid gives off carbon monoxide and forms acetone dicarboxylic acid. With fused potash it forms potassium oxalate and acetate. It is a strong acid, and dissolved in water decomposes carbonates and attacks iron and zinc.

The citrates are a numerous class of salts, the most soluble of which are those of the alkaline metals; the citrates of the alkaline earth metals are insoluble. Citric acid, being tribasic, forms either acid monometallic, acid dimetallic or neutral trimetallic salts; thus, mono-, di- and tri-potassium and sodium citrates are known. On warming citric acid with an excess of lime-water a precipitate of calcium citrate is obtained which is redissolved as the liquid cools.

The impurities occasionally present in commercial citric acid are salts of potassium and sodium, traces of iron, lead and copper derived from the vessels used for its evaporation and crystallization, and free sulphuric, tartaric and even oxalic acid. Tartaric acid, which is sometimes present in large quantities as an adulterant in commercial citric acid, may be detected in the presence of the latter, by the production of a precipitate of acid potassium tartrate when potassium acetate is added to a cold solution. Another mode of separating the two acids is to convert them into calcium salts, which are then treated with a perfectly neutral solution of cupric chloride, soluble cupric citrate and calcium chloride being formed, while cupric tartrate remains undissolved. Citric acid is also distinguished from tartaric acid by the fact that an ammonia solution of silver tartrate produces a brilliant silver mirror when boiled, whereas silver citrate is reduced only after prolonged ebullition.

Citric acid is used in calico printing, also in the preparation of effervescing draughts, as a refrigerant and sialogogue, and occasionally as an antiscorbutic, instead of fresh lemon juice. In the form of lime juice it has long been known as an antidote for scurvy. Several of the citrates are much employed as medicines, the most important being the scale preparations of iron. Of these iron and ammonium citrate is much used as a haematinic, and as it has hardly any tendency to cause gastric irritation or constipation it can be taken when the ordinary forms of iron are inadmissible. Iron and quinine citrate is used as a bitter stomachic and tonic. In the blood citrates are oxidized into carbonates; they therefore act as *remote alkalis*, increasing the alkalinity of the blood and thereby the general rate of chemical change within the body (see Acetic Acid).

CITRON, a species of *Citrus* (*C. medica*), belonging to the tribe *Aurantieae*, of the botanical natural order Rutaceae; the same genus furnishes also the orange, lime and shaddock. The citron is a small evergreen tree or shrub growing to a height of about 10 ft.; it has irregular straggling spiny branches, large pale-green broadly oblong, slightly serrate leaves and generally unisexual flowers purplish without and white within. The large fruit is ovate or oblong, protuberant at the tip, and from 5 to 6 in. long, with a rough, furrowed, adherent rind, the inner portion of which is thick, white and fleshy, the outer, thin, greenish-yellow and very fragrant. The pulp is sub-acid and edible, and the seeds are bitter. There are many varieties of the fruit, some of them of great weight and size. The Madras citron has the form of an oblate sphere; and in the “fingered citron” of China the lobes are separated into finger-like divisions formed by separation of the constituent carpels, as occurs sometimes in the orange.

The citron-tree thrives in the open air in China, Persia, the West Indies, Madeira, Sicily, Corsica, and the warmer parts of Spain and Italy; and in conservatories it is often to be seen in more northerly regions. Sir Joseph Hooker (*Flora of British India*, i. 514) regards it as a native of the valleys at the foot of the Himalaya, and of the Khasia hills and the Western

Ghauts; Dr Bonavia, however, considers it to have originated in Cochin China or China, and to have been introduced into India, whence it spread to Media and Persia. It was described by Theophrastus as growing in Media, three centuries before Christ, and was early known to the ancients, and the fruit was held in great esteem by them; but they seem to have been acquainted with no other member of the *Aurantieae*, the introduction of oranges and lemons into the countries of the Mediterranean being due to the Arabs, between the 10th and 15th centuries. Josephus tells us that "the law of the Jews required that at the feast of tabernacles every one should have branches of palm-tree and citron-tree" (*Antiq.* xiii. 13. 5); and the Hebrew word *tappuach*, rendered "apples" and "apple-tree" in Cant. ii. 3, 5, Prov. xxv. 11, &c., probably signifies the citron-tree and its fruit. Oribasius in the 4th century describes the fruit, accurately distinguishing the three parts of it. About the 3rd century the tree was introduced into Italy; and, as Gallesio informs us, it was much grown at Salerno in the 11th century. In China citrons are placed in apartments to make them fragrant. The rind of the citron yields two perfumes, *oil of cedra* and *oil of citron*, isomeric with oil of turpentine; and when candied it is much esteemed as a dessert and in confectionery. The lemon (*q.v.*) is now generally regarded as a subspecies *Limonum* of *Citrus medica*.

Oribasii Sardiani, *Collectorum Medicinalium Libri XVII.* i. 64 (*De citrio*); Gallesio, *Traité du citrus* (1811); Darwin, *Animals and Plants under Domestication*, i. 334-336 (1868); Brandis, *Forest Flora of North-West and Central India*, p. 51 (1874); E. Bonavia, *The Cultivated Oranges and Lemons, &c., of India and Ceylon* (1890).

CITTADELLA, a town of Venetia, Italy, in the province of Padua, 20 m. N.W. by rail from the town of Padua; 160 ft. above sea-level. Pop. (1901) town, 3616; commune, 9686. The town was founded in 1220 by the Paduans to counterbalance the fortification of Castelfranco, 8 m. to the E., in 1218 by the Trevisans, and retains its well-preserved medieval walls, surrounded by a wet ditch. It was always a fortress of importance, and in modern times is a centre for the agricultural produce of the district, being the junction of the lines from Padua to Bassano and from Vicenza to Treviso.

CITTÀ DELLA PIEVE, a town and episcopal see of Umbria, Italy, in the province of Perugia, situated 1666 ft. above the sea, 3 m. N.E. of its station on the railway between Chiusi and Orvieto. Pop. (1901) 8381. Etruscan tombs have been found in the neighbourhood, but it is not certain that the present town stands on an ancient site. It was the birthplace of the painter Pietro Vannucci (Perugino), and possesses several of his works, but none of the first rank.

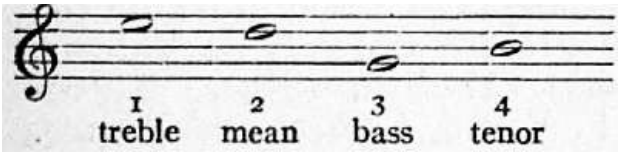
CITTÀ DI CASTELLO, a town and episcopal see of Umbria, Italy, in the province of Perugia, 38 m. E. of Arezzo by rail (18 m. direct), situated on the left bank of the Tiber, 945 ft. above sea-level. Pop. (1901) of town, 6096; of commune, 26,885. It occupies, as inscriptions show, the site of the ancient *Tifernum Tiberinum*, near which Pliny had a villa (*Epist.* v. 6; cf. H. Winnefeld in *Jahrbuch des deutschen archäologischen Instituts*, vi. Berlin, 1891, 203), but no remains exist above ground. The town was devastated by Totila, but seems to have recovered. We find it under the name of *Castrum Felicitatis* at the end of the 8th century. The bishopric dates from the 7th century. The town went through various political vicissitudes in the middle ages, being subject now to the emperor, now to the Church, until in 1468 it came under the Vitelli: but when they died out it returned to the allegiance of the Church. It is built in the form of a rectangle and surrounded by walls of 1518. It contains fine buildings of the Renaissance, especially the palaces of the Vitelli, and the cathedral, originally Romanesque. The 12th-century altar front of the latter in silver is

fine. The Palazzo Comunale is of the 14th century. Some of Raphael's earliest works were painted for churches in this town, but none of them remains there. There is, however, a small collection of pictures.

See Magherini Graziani, *L'Arte a Città di Castello* (1897).

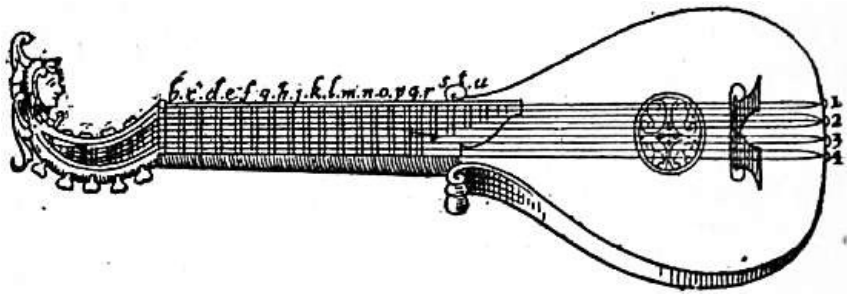
CITTÀ VECCHIA, or Città Notabile, a fortified city of Malta, 7 m. W. of Valletta, with which it is connected by railway. Pop. (1901) 7515. It lies on high, sharply rising ground which affords a view of a large part of the island. It is the seat of a bishop, and contains an ornate cathedral, overthrown by an earthquake in 1693, but rebuilt, which is said by an acceptable tradition to occupy the site of the house of the governor Publius, who welcomed the apostle Paul. It contains some rich stalls of the 15th century and other objects of interest. In the rock beneath the city there are some remarkable catacombs in part of pre-Christian origin, but containing evidence of early Christian burial; and a grotto, reputed to have given shelter to the apostle, is pointed out below the church of San Paolo. Remains of Roman buildings have been excavated in the town. About 2 m. E. of the town is the residence of the English governor, known as the palace of S. Antonio; and at a like distance to the south is the ancient palace of the grand masters of the order of St John, with an extensive public garden called Il Boschetto. Città Vecchia was called Civitas Melita by the Romans and oldest writers, Medina (*i.e.* the city) by the Saracens, Notabile (*locale notabile, et insigne coronae regiae*, as it is called in a charter by Alphonso, 1428) under the Sicilian rule, and Città Vecchia (old city) by the knights. It was the capital of the island till its supersession by Valletta in 1570. (See also Malta.)

CITTERN (also Cithern, Cithron, Cythren, Citharen, &c.; Fr. *citre, cistre, cithre, guitare allemande* or *anglaise*; Ger. *Cither*, Zither (*mit Hals*, with neck); Ital. *cetera, cetra*), a medieval stringed instrument with a neck terminating in a grotesque and twanged by fingers or plectrum. The popularity of the cittern was at its height in England and Germany during the 16th and 17th centuries. The cittern consisted of a pear-shaped body similar to that of the lute but with a flat back and sound-board joined by ribs. The neck was provided with a fretted finger-board; the head was curved and surmounted by a grotesque head of a woman or of an animal.[1] The strings were of wire in pairs of unisons, known as courses, usually four in number in England. A peculiarity of the cittern lay in the tuning of the courses, the third course known as bass being lower than the fourth styled tenor.



According to Vincentio Galilei (the father of the great astronomer) England was the birthplace of the cittern.[2] Several lesson books for this popular instrument were published during the 17th century in England. A very rare book (of which the British Museum does not possess a copy), *The Cittharn Schoole*, written by Anthony Holborne in 1597, is mentioned in Sir P. Leycester's manuscript commonplace book[3] dated 1656, "For the little Instrument called a *Psittyrne* Anthony Holborne and Tho. Robinson were most famous of any before them and have both of them set out a booke of Lessons for this Instrument. Holborne has composed a Basse-parte for the Viole to play unto the Psittyrne with those Lessons set out in his booke. These lived about Anno Domini 1600." Thomas Robinson's *New Citharen Lessons with perfect tunings for the same from Foure course of strings to Fourteene course*, &c. (printed London, 1609, by William Barley), contains illustrations of both kinds of instruments. The fourteen-course cittern was also known in England as *Bijuga*; the seven courses in pairs were stretched over the finger-board, and the seven single strings, fastened to the grotesque head, were stretched as in the lyre *à vide* alongside the neck; all the strings rested on the one flat bridge near the tail-piece. Robinson gives instructions for learning to play the cittern and for reading the tablature. John Playford's *Musick's Delight on the*

Cithren (London, 1666) also contains illustrations of the instrument as well as of the viol da Gamba and Pochette; he claims to have revived the instrument and restored it to what it was in the reign of Queen Mary.

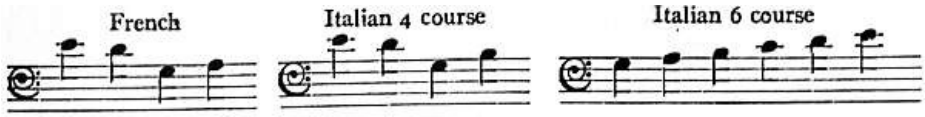


From Thomas Robinson's *New Citharen Lessons*, 1609.

Four-course Cittern.

The cittern probably owed its popularity at this time to the ease with which it might be mastered and used to accompany the voice; it was one of four instruments generally found in barbers' shops, the others being the gittern, the lute and the virginals. The customers while waiting took down the instrument from its peg and played a merry tune to pass the time.[4] We read that when Konstantijn Huygens came over to England and was received by James I. at Bagshot, he played to the king on the cittern (cithara), and that his performance was duly appreciated and applauded. He tells us that, although he learnt to play the barbiton in a few weeks with skill, he had lessons from a master for two years on the cittern.[5] On the occasion of a third visit he witnessed the performance of some fine musicians and was astonished to hear a lady, mother of twelve, singing in divine fashion, accompanying herself on the cittern; one of these artists he calls Lanivius, the British Orpheus, whose performance was really enchanting.

Michael Praetorius[6] gives various tunings for the cittern as well as an illustration (sounded an octave higher than the notation). 400

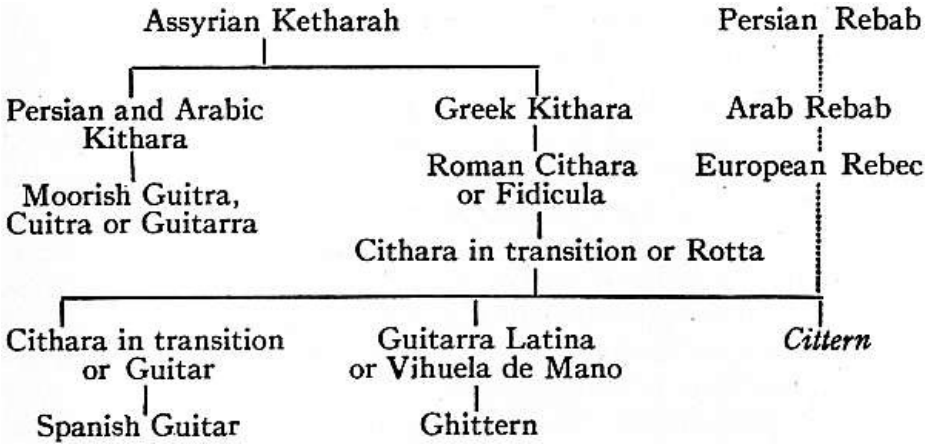


During the 18th century the cittern, citra or English guitar, had twelve wire strings in six pairs of unisons tuned thus:

The introduction of the Spanish guitar, which at once leapt into favour, gradually displaced the English variety. The Spanish guitar had gut strings twanged by the fingers. The last development of the cittern before its disappearance was the addition of keys. The keyed cithara[7] was first made by Claus & Co. of London in 1783. The keys, six in number, were placed on the left of the sound-board, and on being depressed they acted on hammers inside the sound-chest, which rising through the rose sound-hole struck the strings. Sometimes the keys were placed in a little box right over the strings, the hammers striking from above. M.J.B. Vuillaume of Paris possessed an Italian cetera (not keyed) by Antoine Stradivarius,[8] 1700 (now in the Museum of the Conservatoire, Paris), with twelve strings tuned in pairs of unisons to E, D, G, B, C, A, which was exhibited in London in 1871.

The cittern of the 16th century was the result of certain transitions which took place during the evolution of the violin from the Greek kithara (see Cithara).

Genealogical Table of the Cittern.



The cittern has retained the following characteristics of the archetype. (1) The derivation of the name, which after the introduction of the bow was used to characterize various instruments whose strings were twanged by fingers or plectrum, such as the harp and the rotta (both known as *cithara*), the citola and the zither. In an interlinear Latin and Anglo-Saxon version of the Psalms, dated A.D. 700 (Brit. Mus., Vesp. A. 1), *cithara* is translated *citran*, from which it is not difficult to trace the English *cithron, citteran, cittarn*, of the 16th century. (2) The construction of the sound-chest with flat back and sound-board connected by ribs. The pear-shaped outline was possibly borrowed from the Eastern instruments, both bowed as the rebab and twanged as the lute, so common all over Europe during the middle ages, or more probably derived from the *kithara* of the Greeks of Asia Minor, which had the corners rounded. These early steps in the transition from the *cithara* may be seen in the miniatures of the Utrecht Psalter,[9] a unique and much-copied Carolingian MS. executed at Reims (9th century), the illustrations of which were undoubtedly adapted from an earlier psalter from the Christian East. The instruments which remained true to the prototype in outline as well as in construction and in the derivation of the name were the ghittern and the guitar, so often confused with the cittern. It is evident that the kinship of cittern and guitar was formerly recognized, for during the 18th century, as stated above, the cittern was known as the English guitar to distinguish it from the Spanish guitar. The grotesque head, popularly considered the characteristic feature of the cittern, was probably added in the 12th century at a time when this style of decoration was very noticeable in other musical instruments, such as the cornet or *Zinck*, the *Platerspiel*, the chaunter of the bagpipe, &c. The cittern of the middle ages was also to be found in oval shape. From the 13th century representations of the pear-shaped instrument abound in miniatures and carvings.[10]

A very clearly drawn cittern of the 14th century occurs in a MS. treatise on astronomy (Sloane MS. 3983, Brit. Mus.) translated from the Persian of Albumazar into Latin by Georgius Zothari Zopari Fenduli, priest and philosopher, with a prologue and numerous illustrations by his own hand; the cittern is here called *giga* in an inscription at the side of the drawing.

References to the cittern are plentiful in the literature of the 16th and 17th centuries. Robert Fludd[11] describes it thus: “Cistrona quae quatuor tantum chordas duplicatas habet easque cupreas et ferreas de quibus aliquid dicemus quo loco.” Others are given in the *New English Dictionary*, “Cittern,” and in Godefroy’s *Dict. de l’anc. langue franç. du IXe au XVe siècle*.

(K. S.)

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1 See Shakespeare, *Love’s Labour’s Lost*, act v. sc. 2, where Boyet compares the countenance of Holofernes to a cittern head; John Forde, *Lovers’ Melancholy* (1629), act ii. sc. 1, “Barbers shall wear thee on their citterns.”

2 *Dialogo della musica* (Florence, 1581), p. 147.

3 The musical extracts from the commonplace book were prepared by Dr Rimbault for the Early English Text Society. Holborne’s work is mentioned in his *Bibliotheca Madrigaliana*. The descriptive list of the musical instruments in use in England during Leycester’s lifetime (about 1656) has been extracted and published by Dr F.J. Furnivall, in *Captain Cox, his Ballads and Books, or Robert Laneham’s Letter* (1575), (London, 1871), pp. 65-68.

4 See Knight’s *London*, i. 142.

5 See *De Vita propria sermonum inter liberos libri duo* (Haarlem, 1817) and E. van der Straeten, *La Musique aux Pays-Bas*, ii. 348-35O.

6 *Syntagma Musicum* (1618). See also M. Mersenne, *Harmonie universelle* (Paris, 1636), livre ii. prop. xv., who gives different accordances.

7 See Carl Engel, *Catalogue* of the Exhibition of Ancient Musical Instruments (London, 1872), Nos. 289 and 290.

8 See note above. Illustration in A.J. Hipkins, *Musical Instruments; Historic, Rare and Unique* (Edinburgh, 1888).

9 For a résumé of the question of the origin of this famous psalter, and an inquiry into its bearing on the history of musical instruments with illustrations and facsimile reproductions, see Kathleen Schlesinger, *The Instruments of the Orchestra*, part ii. "The Precursors of the Violin Family," pp. 127-166 (London, 1908-1909).

10 An oval cittern and a ghittern, side by side, occur in the beautiful 13th-century Spanish MS. known as *Cantigas de Santa Maria* in the Escorial. For a fine facsimile in colours see marquis de Valmar, *Real. Acad. Esq.*, publ. by L. Aguado (Madrid, 1889). Reproductions in black and white in Juan F. Riaño, *Critical and Bibliog. Notes on Early Spanish Music* (London, 1887). See also K. Schlesinger, op. cit. fig. 167, p. 223, also boat-shaped citterns, figs. 155 and 156, p. 197. Cittern with woman's head, 15th century, on one of six bas-reliefs on the under parts of the seats of the choir of the Priory church, Great Malvern, reproduced in J. Carter's *Ancient Sculptures*, &c., vol. ii. pl. following p. 12. Another without a head, ibid. pl. following p. 16, from a brass monumental plate in St Margaret's, King's Lynn.

11 *Historia utriusque Cosmi* (Oppenheim, ed. 1617) i. 226.

CITY (through Fr. *cité*, from Lat. *civitas*). In the United Kingdom, strictly speaking, "city" is an honorary title, officially applied to those towns which, in virtue of some preeminence (*e.g.* as episcopal sees, or great industrial centres), have by traditional usage or royal charter acquired the right to the designation. In the United Kingdom the official style of "city" does not necessarily involve the possession of municipal power greater than those of the ordinary boroughs, nor indeed the possession of a corporation at all (*e.g.* Ely). In the United States and the British colonies, on the other hand, the official application of the term "city" depends on the kind and extent of the municipal privileges possessed by the corporations, and charters are given raising towns to the rank of cities. Both in France and England the word is used to distinguish the older and central nucleus of some of the large towns, *e.g.* the *Cité* in Paris, and the "square mile" under the jurisdiction of the lord mayor which is the "City of London."

In common usage, however, the word implies no more than a somewhat vague idea of size and dignity, and is loosely applied to any large centre of population. Thus while, technically, the City of London is quite small, London is yet properly described as the largest city in the world. In the United States this use of the word is still more loose, and any town, whether technically a city or not, is usually so designated, with little regard to its actual size or importance.

It is clear from the above that the word "city" is incapable of any very clear and inclusive definition, and the attempt to show that historically it possesses a meaning that clearly differentiates it from "town" or "borough" has led to some controversy. As the translation of the Greek πόλις or Latin *civitas* it involves the ancient conception of the state or "city-state," *i.e.* of the state as not too large to prevent its government through the body of the citizens assembled in the *agora*, and is applied not to the place but to the whole body politic. From this conception both the word and its dignified connotation are without doubt historically derived. On the occupation of Gaul the Gallic states and tribes were called *civitates* by the Romans, and subsequently the name was confined to the chief towns of the various administrative districts. These were also the seats of the bishops. It is thus affirmed that in France from the 5th to the 15th century the name *civitas* or *cité* was confined to such towns as were episcopal sees, and Du Cange (*Gloss.* s.v. *civitas*) defines that word as *urbs episcopalis*, and states that other towns were termed *castra* or *oppida*. How far any such distinction can be sharply drawn may be doubted. With regard to England no definite line can be drawn between those towns to which the name *civitas* or *cité* is given in medieval documents and those called *burgi* or boroughs (see J.H. Round, *Feudal England*, p. 338; F.W. Maitland, *Domesday Book and After*, p. 183). It was, however, maintained by Coke and Blackstone that a city is a town incorporate which is or has been the see of a bishop. It is true, indeed, that the actual sees in England all have a formal right to the title; the boroughs

erected into episcopal sees by Henry VIII. thereby became “cities”; but towns such as Thetford, Sherborne and Dorchester are never so designated, though they are regularly incorporated and were once episcopal sees. On the other hand, it has only been since the latter part of the 19th century that the official style of “city” has, in the United Kingdom, been conferred by royal authority on certain important towns which were not episcopal sees, Birmingham in 1889 being the first to be so distinguished. It is interesting to note that London, besides 27 boroughs, now contains two cities, one (the City of London) outside, the other (the City of Westminster) included in the administrative county.

For the history of the origin and development of modern city government see BOROUGH and COMMUNE: *Medieval*.

CIUDAD BOLÍVAR, an inland city and river port of Venezuela, capital of the state of Bolívar, on the right bank of the Orinoco river, 240 m. above its mouth. Pop. (1891) 11,686. It stands upon a small hill about 187 ft. above sea-level, and faces the river where it narrows to a width of less than half a mile. The city is largely built upon the hillside. It is the seat of the bishopric of Guayana (founded in 1790), and is the commercial centre of the great Orinoco basin. Among its noteworthy edifices are the cathedral, federal college, theatre, masonic temple, market, custom-house, and hospital. The mean temperature is 83°. The city has a public water-supply, a tramway line, telephone service, subfluvial cable communication with Soledad near the mouth of the Orinoco, where connexion is made with the national land lines, and regular steamship communication with the lower and upper Orinoco. Previous to the revolution of 1901-3 Ciudad Bolívar ranked fourth among the Venezuelan custom-houses, but the restrictions placed upon transit trade through West Indian ports have made her a dependency of the La Guaira custom-house to a large extent. The principal exports from this region include cattle, horses, mules, tobacco, cacáo, rubber, tonka beans, bitters, hides, timber and many valuable forest products. The town was founded by Mendoza in 1764 as San Tomás de la Nueva Guayana, but its location at this particular point on the river gave to it the popular name of *Angostura*, the Spanish term for “narrows.” This name was used until 1849, when that of the Venezuelan liberator was bestowed upon it. Ciudad Bolívar played an important part in the struggle for independence and was for a time the headquarters of the revolution. The town suffered severely in the struggle for its possession, and the political disorders which followed greatly retarded its growth.

CIUDAD DE CURA, an inland town of the state of Aragua, Venezuela, 55 m. S.W. of Carácas, near the Lago de Valencia. Pop. (1891) 12,198. The town stands in a broad, fertile valley, between the sources of streams running southward to the Guárico river and northward to the lake, with an elevation above sea-level of 1598 ft. Traffic between Puerto Cabello and the Guárico plains has passed through this town since early colonial times, and has made it an important commercial centre, from which hides, cheese, coffee, cacao and beans are sent down to the coast for export; it bears a high reputation in Venezuela for commercial enterprise. Ciudad de Cura was founded in 1730, and suffered severely in the war of independence.

CIUDAD JUAREZ, formerly EL PASO DEL NORTE, a northern frontier town of Mexico, in the state of Chihuahua, 1223 m. by rail N.N.W. of Mexico City. Pop. (1895) 6917. Ciudad Juarez stands 3800 ft. above sea-level on the right bank of the Rio Grande del Norte, opposite the city of El Paso, Texas, with which it is connected by two bridges. It is the northern terminus of the Mexican Central railway, and has a large and increasing transit trade with the United

States, having a custom-house and a United States consulate. It is also a military post with a small garrison. The town has a straggling picturesque appearance, a considerable part of the habitations being small adobe or brick cabins. In the fertile neighbouring district cattle are raised, and wheat, Indian corn, fruit and grapes are grown, wine and brandy being made. The town was founded in 1681-1682; its present importance is due entirely to the railway. It was the headquarters of President Juarez in 1865, and was renamed in 1885 because of its devotion to his cause.

CIUDAD PORFIRIO DIAZ, formerly Piedras Negras, a northern frontier town of Mexico in the state of Coahuila, 1008 m. N. by W. from Mexico City, on the Rio Grande del Norte, 720 ft. above sea-level, opposite the town of Eagle Pass, Texas. Pop. (1900, estimate) 5000. An international bridge connects the two towns, and the Mexican International railway has its northern terminus in Mexico at this point. The town has an important transfer trade with the United States, and is the centre of a fertile district devoted to agriculture and stock-raising. Coal is found in the vicinity. The Mexican government maintains a custom-house and military post here. The town was founded in 1849.

CIUDAD REAL, a province of central Spain, formed in 1833 of districts taken from New Castile, and bounded on the N. by Toledo, E. by Albacete, S. by Jaen and Cordova and W. by Badajoz. Pop. (1900) 321,580; area, 7620 sq. m. The surface of Ciudad Real consists chiefly of a level or slightly undulating plain, with low hills in the north-east and south-west; but along the south-western frontier the Sierra de Alcudia rises in two parallel ridges on either side of the river Alcudia, and is continued in the Sierra Madrona on the east. The river Guadiana drains almost the entire province, which it traverses from east to west; only the southernmost districts being watered by tributaries of the Guadalquivir. Numerous smaller streams flow into the Guadiana, which itself divides near Herencia into two branches,—the northern known as the Giguela, the southern as the Zancara. The eastern division of Ciudad Real forms part of the region known as La Mancha, a flat, thinly-peopled plain, clothed with meagre vegetation which is often ravaged by locusts. La Mancha (*q.v.*) is sometimes regarded as coextensive with the whole province. Severe drought is common here, although some of the rivers, such as the Jabalon and Azuer, issue fully formed from the chalky soil, and from their very sources give an abundant supply of water to the numerous mills. Towards the west, where the land is higher, there are considerable tracts of forest.

The climate is oppressively hot in summer, and in winter the plains are exposed to violent and bitterly cold winds; while the cultivation of grain, the vine and the olive is further impeded by the want of proper irrigation, and the general barrenness of the soil. Large flocks of sheep and goats find pasture in the plains; and the swine which are kept in the oak and beech forests furnish bacon and hams of excellent quality. Coal is mined chiefly at Puertollano, lead in various districts, mercury at Almadén. There are no great manufacturing towns. The roads are insufficient and ill-kept, especially in the north-east where they form the sole means of communication; and neither the Guadiana nor its tributaries are navigable. The main railway from Madrid to Lisbon passes through the capital, Ciudad Real, and through Puertollano; farther east, the Madrid-Linares line passes through Manzanares and Valdepeñas. Branch railways also connect the capital with Manzanares, and Valdepeñas with the neighbouring town of La Calzada.

The principal towns, Alcázar de San Juan (11,499), Almadén (7375), Almodóvar del Campo (12,525), Ciudad Real (15,255), Manzanares (11,229) and Valdepeñas (21,015), are described in separate articles. Almagro (7974) and Daimiel (11,825), in the district of La Mancha known as the Campo de Calatrava, belonged in the later middle ages to the knightly Order of Calatrava, which was founded in 1158 to keep the Moors in check. Almagro was long almost exclusively inhabited by monks and knights, and contains several interesting churches and monasteries, besides the castle of the knights, now used as barracks. Almagro is further celebrated for its lace, Daimiel for its medicinal salts. Tomelloso (13,929) is one of

the chief market towns of La Mancha. Education is very backward, largely owing to the extreme poverty which has frequently brought the inhabitants to the verge of famine. (See also CASTILE.)

CIUDAD REAL, the capital formerly of La Mancha, and since 1833 of the province described above; 107 m. S. of Madrid, on the Madrid-Badajoz-Lisbon and Ciudad Real-Manzanares railways. Pop. (1900) 15,255. Ciudad Real lies in the midst of a wide plain, watered on the north by the river Guadiana, and on the south by its tributary the Jabalon. Apart from the remnants of its 13th-century fortifications, and one Gothic church of immense size, built without aisles, the town contains little of interest; its public buildings—town-hall, barracks, churches, hospital and schools—being in no way distinguished above those of other provincial capitals. There are no important local manufactures, and the trade of the town consists chiefly in the weekly sales of agricultrural produce and live-stock. Ciudad Real was founded by Alphonso X. of Castile (1252-1284), and fortified by him as a check upon the Moorish power. Its original name of *Villarreal* was changed to *Ciudad Real* by John VI. in 1420. During the Peninsular War a Spanish force was defeated here by the French, on the 27th of March 1809.

CIUDAD RODRIGO, a town of western Spain, in the province of Salamanca, situated 8 m. E. of the Portuguese frontier, on the right bank of the river Agueda, and the railway from Salamanca to Coimbra in Portugal. Pop. (1900) 8930. Ciudad Rodrigo is an episcopal see, and was for many centuries an important frontier fortress. Its cathedral dates from 1190, but was restored in the 15th century. The remnants of a Roman aqueduct, the foundations of a bridge across the Agueda, and other remains, seem to show that Ciudad Rodrigo occupies the site of a Roman settlement. It was founded in the 12th century by Count Rodrigo Gonzalez, from whom its name is derived. During the Peninsular War, it was captured by the French under Marshal Ney, in 1810; but on the 19th of January 1812 it was retaken by the British under Viscount Wellington, who, for this exploit, was created earl of Wellington, duke of Ciudad Rodrigo, and marquess of Torres Vedras, in Portugal.

CIVERCHIO, VINCENZO, an early 16th-century Italian painter, born at Crema. There are altar-pieces by him at Brescia, and at Crema the altar-piece at the duomo (1509). His “Birth of Christ” is in the Brera, Milan; and at Lovere are other of his works dating from 1539 and 1540.

CIVET, or properly CIVET-CAT, the designation of the more typical representatives of the mammalian family *Viverridae* (see CARNIVORA). Civets are characterized by the possession of a deep pouch in the neighbourhood of the genital organs, into which the substance known as civet is poured from the glands by which it is secreted. This fatty substance is at first semifluid and yellow, but afterwards acquires the consistency of pomade and becomes darker. It has a strong musky odour, exceedingly disagreeable to those unaccustomed to it, but “when properly diluted and combined with other scents it produces a very pleasing effect, and possesses a much more floral fragrance than musk, indeed it would be impossible to imitate some flowers without it.” The African civet (*Viverra civetta*) is from 2 to 3 ft. in

length, exclusive of the tail, which is half the length of the body, and stands from 10 to 12 in. high. It is covered with long hair, longest on the middle line of the back, where it is capable of being raised or depressed at will, of a dark-grey colour, with numerous transverse black bands and spots. In habits it is chiefly nocturnal, and by preference carnivorous, feeding on birds and the smaller quadrupeds, in pursuit of which it climbs trees, but it is said also to eat fruits, roots and other vegetable matters. In a state of captivity the civet is never completely tamed, and only kept for the sake of its perfume, which is obtained in largest quantity from the male, especially when in good condition and subjected to irritation, being scraped from the pouch with a small spoon usually twice a week. The zibeth (*Viverra zibetha*) is a widely distributed species extending from Arabia to Malabar, and throughout several of the larger islands of the Indian Archipelago. It is smaller than the true civet, and wants the dorsal crest. In the wild state it does great damage among poultry, and frequently makes off with the young of swine and sheep. When hunted it makes a determined resistance, and emits a scent so strong as even to sicken the dogs, who nevertheless are exceedingly fond of the sport, and cannot be got to pursue any other game while the stench of the zibeth is in their nostrils. In confinement, it becomes comparatively tame, and yields civet in considerable quantity. In preparing this for the market it is usually spread out on the leaves of the pepper plant in order to free it from the hairs that have become detached from the pouch. On the Malabar coast this species is replaced by *V. civettina*. The small Indian civet or rasse (*Viverricula malaccensis*) ranges from Madagascar through India to China, the Malay Peninsula, and the islands of the Archipelago. It is almost 3 ft. long including the tail, and prettily marked with dark longitudinal stripes, and spots which have a distinctly linear arrangement. The perfume, which is extracted in the same way as in the two preceding species, is highly valued and much used by the Javanese. Although this animal is said to be an expert climber it usually inhabits holes in the ground. It is frequently kept in captivity in the East, and becomes tame. Fossil remains of extinct civets are found in the Miocene strata of Europe.

CIVIDALE DEL FRIULI (anc. *Forum Iulii*), a town of Venetia, Italy, in the province of Udine, 10 m. E. by N. by rail from the town of Udine; 453 ft. above sea-level. Pop. (1001) town, 4143; commune, 9061. It is situated on the river Natisone, which forms a picturesque ravine here. It contains some interesting relics of the art of the 8th century. The cathedral of the 15th century contains an octagonal marble canopy with sculptures in relief, with a font below it belonging to the 8th century, but altered later. The high altar has a fine silver altar front of 1185. The museum contains various Roman and Lombard antiquities, and valuable MSS. and works of art in gold, silver and ivory formerly belonging to the cathedral chapter. The small church of S. Maria in Valle belongs to the 8th century, and contains fine decorations in stucco which probably belong to the 11th or 12th century. The fine 15th-century Ponte del Diavolo leads to the church of S. Martino, which contains an altar of the 8th century with reliefs executed by order of the Lombard king Ratchis. At Cividale were born Paulus Diaconus, the historian of the Lombards in the time of Charlemagne, and the actress Adelaide Ristori (1822-1906).

The Roman town (a *municipium*) of Forum Iulii was founded either by Julius Caesar or by Augustus, no doubt at the same time as the construction of the Via Iulia Augusta, which passed through Utina (Udine) on its way north. After the decay of Aquileia and Iulium Carnicum (Zuglio) it became the chief town of the district of Friuli and gave its name to it. The patriarchs of Aquileia resided here from 773 to 1031, when they returned to Aquileia, and finally in 1238 removed to Udine. This last change of residence was the origin of the antagonism between Cividale and Udine, which was only terminated by their surrender to Venice in 1419 and 1420 respectively.

CIVILIS, CLAUDIUS, or more correctly, JULIUS, leader of the Batavian revolt against Rome (A.D. 69-70). He was twice imprisoned on a charge of rebellion, and narrowly escaped execution. During the disturbances that followed the death of Nero, he took up arms under

pretence of siding with Vespasian and induced the inhabitants of his native country to rebel. The Batavians, who had rendered valuable aid under the early emperors, had been well treated in order to attach them to the cause of Rome. They were exempt from tribute, but were obliged to supply a large number of men for the army, and the burden of conscription and the oppressions of provincial governors were important incentives to revolt. The Batavians were immediately joined by several neighbouring German tribes, the most important of whom were the Frisians. The Roman garrisons near the Rhine were driven out, and twenty-four ships captured. Two legions under Mummius Lupercus were defeated at Castra Vetera (near the modern Xanten) and surrounded. Eight cohorts of Batavian veterans joined their countrymen, and the troops sent by Vespasian to the relief of Vetera threw in their lot with them. The result of these accessions to the forces of Civilis was a rising in Gaul. Hordeonius Flaccus was murdered by his troops (70), and the whole of the Roman forces were induced by two commanders of the Gallic auxiliaries—Julius Classicus and Julius Tutor—to revolt from Rome and join Civilis. The whole of Gaul thus practically declared itself independent, and the foundation of a new kingdom of Gaul was contemplated. The prophetess Velleda predicted the complete success of Civilis and the fall of the Roman Empire. But disputes broke out amongst the different tribes and rendered co-operation impossible; Vespasian, having successfully ended the civil war, called upon Civilis to lay down his arms, and on his refusal resolved to take strong measures for the suppression of the revolt. The arrival of Petillius Cerialis with a strong force awed the Gauls and mutinous troops into submission; Civilis was defeated at Augusta Treverorum (Trier, Trèves) and Vetera, and forced to withdraw to the island of the Batavians. He finally came to an agreement with Cerialis whereby his countrymen obtained certain advantages, and resumed amicable relations with Rome. From this time Civilis disappears from history.

The chief authority for the history of the insurrection is Tacitus, *Historiae*, iv., v., whose account breaks off at the beginning of Civilis's speech to Cerialis; see also Josephus, *Bellum Judaicum*, vii. 4. There is a monograph by E. Meyer, *Der Freiheitskrieg der Bataver unter Civilis* (1856); see also Merivale, *Hist. of the Romans under the Empire*, ch. 58; H. Schiller, *Geschichte der römischen Kaiserzeit*, bk. ii. ch. 2, § 54 (1883).

CIVILIZATION. The word "civilization" is an obvious derivative of the Lat. *civis*, a citizen, and *civilis*, pertaining to a citizen. Etymologically speaking, then, it would be putting no undue strain upon the word to interpret it as having to do with the entire period of human progress since mankind attained sufficient intelligence and social unity to develop a system of government. But in practice "civilization" is usually interpreted in a somewhat narrower sense, as having application solely to the most recent and comparatively brief period of time that has elapsed since the most highly developed races of men have used systems of writing. This restricted usage is probably explicable, in part at least, by the fact that the word, though distinctly modern in origin, is nevertheless older than the interpretation of social evolution that now finds universal acceptance. Only very recently has it come to be understood that primitive societies vastly antedating the historical period had attained relatively high stages of development and fixity, socially and politically. Now that this is understood, however, nothing but an arbitrary and highly inconvenient restriction of meanings can prevent us from speaking of the citizens of these early societies as having attained certain stages of civilization. It will be convenient, then, in outlining the successive stages of human progress here, to include under the comprehensive term "civilization" those long earlier periods of "savagery" and "barbarism" as well as the more recent period of higher development to which the word "civilization" is sometimes restricted.

Savagery and barbarism.

Adequate proof that civilization as we now know it is the result of a long, slow process of evolution was put forward not long after the middle of the 19th century by the students of palaeontology and of prehistoric archaeology. A recognition of the fact that primitive man used implements of chipped flint, of polished stone, and of the softer metals for successive ages, before he attained a degree of technical skill and knowledge that would enable him to smelt iron, led the Danish archaeologists to classify the stages of human progress under these captions: the Rough Stone Age; the Age of Polished Stone; the Age of Bronze; and the Age of Iron. These terms acquired almost universal recognition, and they retain popularity as affording a very broad outline of the story of human progress. It is obviously desirable, however, to fill in the

outlines of the story more in detail. To some extent it has been possible to do so, largely through the efforts of ethnologists who have studied the social conditions of existing races of savages. A recognition of the principle that, broadly speaking, progress has everywhere been achieved along the same lines and through the same sequence of changes, makes it possible to interpret the past history of the civilized races of to-day in the light of the present-day conditions of other races that are still existing under social and political conditions of a more primitive type. Such races as the Maoris and the American Indians have furnished invaluable information to the student of social evolution; and the knowledge thus gained has been extended and fortified by the ever-expanding researches of the palaeontologist and archaeologist.

Thus it has become possible to present with some confidence a picture showing the successive stages of human development during the long dark period when our prehistoric ancestor was advancing along the toilsome and tortuous but on the whole always uprising path from lowest savagery to the stage of relative enlightenment at which we find him at the so-called “dawnings of history.” That he was for long ages a savage before he attained sufficient culture to be termed, in modern phraseology, a barbarian, admits of no question. Equally little in doubt is it that other long ages of barbarism preceded the final ascent to civilization. The precise period of time covered by these successive “Ages” is of course only conjectural; but something like one hundred thousand years may perhaps be taken as a safe minimal estimate. At the beginning of this long period, the most advanced race of men must be thought of as a promiscuous company of pre-troglodytic mammals, at least partially arboreal in habit, living on uncooked fruits and vegetables, and possessed of no arts and crafts whatever—nor even of the knowledge of the rudest implement. At the end of the period, there emerges into the more or less clear light of history a large-brained being, living in houses of elaborate construction, supplying himself with divers luxuries through the aid of a multitude of elaborate handicrafts, associated with his fellows under the sway of highly organized governments, and satisfying aesthetic needs through the practice of pictorial and literary arts of a high order. How was this amazing transformation brought about?

If an answer can be found to that query, we shall have a clue to all human progress, not only during the prehistoric but also during the historic periods; for we may well believe that recent progress has not departed from the scheme of development impressed on humanity during that long apprenticeship. Ethnologists believe that an answer can be found. They believe that the metamorphosis from beast-like savage to cultured civilian may be proximally explained (certain potentialities and attributes of the species being taken for granted) as the result of accumulated changes that found their initial impulses in a half-dozen or so of practical inventions. Stated thus, the explanation seems absurdly simple. Confessedly it supplies only a proximal, not a final, analysis of the forces impelling mankind along the pathway of progress. But it has the merit of tangibility; it presents certain highly important facts of human history vividly: and it furnishes a definite and fairly satisfactory basis for marking successive stages of incipient civilization.

Crucial developments.

In outlining the story of primitive man’s advancement, upon such a basis, we may follow the scheme of one of the most philosophical of ethnologists, Lewis H. Morgan, who made a provisional analysis of the prehistoric period that still remains among the most satisfactory attempts in this direction. Morgan divides the entire epoch of man’s progress from bestiality to civilization into six successive periods, which he names respectively the Older, Middle and Later periods of Savagery, and the Older, Middle and Later periods of Barbarism.

The first of these periods, when mankind was in the lower status of savagery, comprises the epoch when articulate speech was being developed. Our ancestors of this epoch inhabited a necessarily restricted tropical territory, and subsisted upon raw nuts and fruits. They had no knowledge of the uses of fire. All existing races of men had advanced beyond this condition before the opening of the historical period.

Speech.

The Middle Period of Savagery began with a knowledge of the uses of fire. This wonderful discovery enabled the developing race to extend its habitat almost indefinitely, and to include flesh, and in particular fish, in its regular dietary. Man could now leave the forests, and wander along the shores and rivers, migrating to climates less enervating than those to which he had previously been confined. Doubtless he became an expert fisher, but he was as yet poorly equipped for hunting, being provided, probably, with no weapon more formidable than a crude hatchet and a roughly fashioned spear. The primitive races of Australia and Polynesia had not

Fire.

advanced beyond this middle status of savagery when they were discovered a few generations ago. It is obvious, then, that in dealing with the further progress of nascent civilization we have to do with certain favoured portions of the race, which sought out new territories and developed new capacities while many tribes of their quondam peers remained static and hence by comparison seemed to retrograde.

The next great epochal discovery, in virtue of which a portion of the race advanced to the Upper Status of Savagery, was that of the bow and arrow,—a truly wonderful implement. The possessor of this device could bring down the fleetest animal and could defend himself against the most predatory. He could provide himself not only with food but with materials for clothing and for tent-making, and thus could migrate at will back from the seas and large rivers, and far into inhospitable but invigorating temperate and sub-Arctic regions. The meat diet, now for the first time freely available, probably contributed, along with the stimulating climate, to increase the physical vigour and courage of this highest savage, thus urging him along the paths of progress. Nevertheless many tribes came thus far and no further, as witness the Athapascans of the Hudson's Bay Territory and the Indians of the valley of the Columbia.

Bow and arrow.

We now come to the marvellous discovery that enabled our ancestor to make such advances upon the social conditions of his forbears as to entitle him, in the estimate of his remote descendants, to be considered as putting savagery behind him and as entering upon the Lower Status of Barbarism. The discovery in question had to do with the practice of the art of making pottery (see CERAMICS). Hitherto man had been possessed of no permanent utensils that could withstand the action of fire. He could not readily boil water except by some such cumbersome method as the dropping of heated stones into a wooden or skin receptacle. The effect upon his dietary of having at hand earthen vessels in which meat and herbs could be boiled over a fire must have been momentous. Various meats and many vegetables become highly palatable when boiled that are almost or quite inedible when merely roasted before a fire. Bones, sinews and even hides may be made to give up a modicum of nutriment in this way; and doubtless barbaric man, before whom starvation always loomed threateningly, found the crude pot an almost perennial refuge. And of course its use as a cooking utensil was only one of many ways in which the newly discovered mechanism exerted a civilizing influence.

Pottery.

The next great progressive movement, which carried man into the Middle Status of Barbarism, is associated with the domestication of animals in the Eastern hemisphere, and with the use of irrigation in cultivating the soil and of adobe bricks and stone in architecture in the Western hemisphere. The dog was probably the first animal to be domesticated, but the sheep, the ox, the camel and the horse were doubtless added in relatively rapid succession, so soon as the idea that captive animals could be of service had been clearly conceived. Man now became a herdsman, no longer dependent for food upon the precarious chase of wild animals. Milk, procurable at all seasons, made a highly important addition to his dietary. With the aid of camel and horse he could traverse wide areas hitherto impassable, and come in contact with distant peoples. Thus commerce came to play an extended rôle in the dissemination of both commodities and ideas. In particular the nascent civilization of the Mediterranean region fell heir to numerous products of farther Asia,—gums, spices, oils, and most important of all, the cereals. The cultivation of the latter gave the finishing touch to a comprehensive and varied diet, while emphasizing the value of a fixed abode. For the first time it now became possible for large numbers of people to form localized communities. A natural consequence was the elaboration of political systems, which, however, proceeded along lines already suggested by the experience of earlier epochs. All this tended to establish and emphasize the idea of nationality, based primarily on blood-relationship; and at the same time to develop within the community itself the idea of property,—that is to say, of valuable or desirable commodities which have come into the possession of an individual through his enterprise or labour, and which should therefore be subject to his voluntary disposal. At an earlier stage of development, all property had been of communal, not of individual, ownership. It appears, then, that our mid-period barbarian had attained—if the verbal contradiction be permitted—a relatively high stage of civilization.

Domestic animals.

There remained, however, one master craft of which he had no conception. This was the art of smelting iron. When, ultimately, his descendants learned the wonderful secrets of that art, they rose in consequence to the Upper Status of Barbarism. This culminating practical invention, it will be observed, is the first of the great discoveries with which we have to do that was not primarily concerned with the question of man's food supply. Iron, to be sure, has abundant uses in the same

Iron.

connexion, but its most direct and obvious utilities have to do with weapons of war and with implements calculated to promote such arts of peace as house-building, road-making and the construction of vehicles. Wood and stone could now be fashioned as never before. Houses could be built and cities walled with unexampled facility; to say nothing of the making of a multitude of minor implements and utensils hitherto quite unknown, or at best rare and costly. Nor must we overlook the aesthetic influence of edged implements, with which wood and stone could readily be sculptured when placed in the hands of a race that had long been accustomed to scratch the semblance of living forms on bone or ivory and to fashion crude images of clay. In a word, man, the “tool-making animal,” was now for the first time provided with tools worthy of his wonderful hands and yet more wonderful brain.

Thus through the application of one revolutionary invention after another, the most advanced races of men had arrived, after long ages of effort, at a relatively high stage of development. A very wide range of experiences had enabled man to evolve a complex body politic, based on a fairly secure social basis, and his brain had correspondingly developed into a relatively efficient and stable organ of thought. But as yet he had devised no means of communicating freely with other people at a distance except through the medium of verbal messages; nor had he any method by which he could transmit his experiences to posterity more securely than by fugitive and fallible oral traditions. A vague symbolization of his achievements was preserved from generation to generation in myth-tale and epic, but he knew not how to make permanent record of his history. Until he could devise a means to make such record, he must remain, in the estimate of his descendants, a barbarian, though he might be admitted to have become a highly organized and even in a broad sense a cultured being.

Writing.

At length, however, this last barrier was broken. Some race or races devised a method of symbolizing events and ultimately of making even abstruse ideas tangible by means of graphic signs. In other words, a system of writing was developed. Man thus achieved a virtual conquest over time as he had earlier conquered space. He could now transmit the record of his deeds and his thoughts to remote posterity. Thus he stood at the portals of what later generations would term secure history. He had graduated out of barbarism, and become in the narrower sense of the word a civilized being. Henceforth, his knowledge, his poetical dreamings, his moral aspirations might be recorded in such form as to be read not merely by his contemporaries but by successive generations of remote posterity. The inspiring character of such a message is obvious. The validity of making this great culminating intellectual achievement the test of “civilized” existence need not be denied. But we should ill comprehend the character of the message which the earlier generations of civilized beings transmit to us from the period which we term the “dawning of history” did we not bear constantly in mind the long series of progressive stages of “savagery” and “barbarism” that of necessity preceded the final stage of “civilization” proper. The achievements of those earlier stages afforded the secure foundation for the progress of the future. A multitude of minor arts, in addition to the important ones just outlined, had been developed; and for a long time civilized man was to make no other epochal addition to the list of accomplishments that came to him as a heritage from his barbaric progenitor. Indeed, even to this day the list of such additions is not a long one, nor, judged in the relative scale, so important as might at first thought be supposed. Whoever considers the subject carefully must admit the force of Morgan’s suggestion that man’s achievements as a barbarian, considered in their relation to the sum of human progress, “transcend, in relative importance, all his subsequent works.”

Without insisting on this comparison, however, let us ask what discoveries and inventions man has made within the historical period that may fairly be ranked with the half-dozen great epochal achievements that have been put forward as furnishing the keys to all the progress of the prehistoric periods. In other words, let us sketch the history of progress during the ten thousand years or so that have elapsed since man learned the art of writing, adapting our sketch to the same scale which we have already applied to the unnumbered millenniums of the prehistoric period. The view of world-history thus outlined will be a very different one from what might be expected by the student of national history; but it will present the essentials of the progress of civilization in a suggestive light.

Civilization proper.

Without pretending to fix an exact date,—which the historical records do not at present permit,—we may assume that the most advanced race of men elaborated a system of writing not less than six thousand years before the beginning of the Christian era. Holding to the terminology already suggested for the earlier periods, we may speak of man’s position during the ensuing generations as that of the First or Lowest Status of civilization. If we review the history of this period

we shall find that it extends unbroken over a stretch of at least four or five thousand years. During the early part of this period such localized civilizations as those of the Egyptians, the Sumerians, the Babylonians and the Hittites rose, grew strong and passed beyond their meridian. This suggests that we must now admit the word "civilization" to yet another definition, within its larger meaning: we must speak of "*a* civilization," as that of Egypt, of Babylonia, of Assyria, and we must understand thereby a localized phase of society bearing the same relation to civilization as a whole that a wave bears to the ocean or a tree to the forest. Such other localized civilizations as those of Phoenicia, Carthage, Greece, Rome, Byzantium, the Sassanids, in due course waxed and waned, leaving a tremendous imprint on national history, but creating only minor and transitory ripples in the great ocean of civilization. Progress in the elaboration of the details of earlier methods and inventions took place as a matter of course. Some nation, probably the Phoenicians, gave a new impetus to the art of writing by developing a phonetic alphabet; but this achievement, remarkable as it was in itself, added nothing fundamental to human capacity. Literatures had previously flourished through the use of hieroglyphic and syllabic symbols; and the Babylonian syllabics continued in vogue throughout western Asia for a long time after the Phoenician alphabet had demonstrated its intrinsic superiority.

Similarly the art of Egyptian and Assyrian and Greek was but the elaboration and perfection of methods that barbaric man had practised away back in the days when he was a cave-dweller. The weapons of warfare of Greek and Roman were the spear and the bow and arrow that their ancestors had used in the period of savagery, aided by sword and helmet dating from the upper period of barbarism. Greek and Roman government at their best were founded upon the system of *gentes* that barbaric man had profoundly studied,—as witness, for example, the federal system of the barbaric Iroquois Indians existing in America before the coming of Columbus. And if the Greeks had better literature, the Romans better roads and larger cities, than their predecessors, these are but matters of detailed development, the like of which had marked the progress of the more important arts and the introduction of less important ancillary ones in each antecedent period. The axe of steel is no new implement, but a mere perfecting of the axe of chipped flint. The *Iliad* represents the perfecting of an art that unnumbered generations of barbarians practised before their camp-fires.

Thus for six or seven thousand years after man achieved civilization there was rhythmic progress in many lines, but there came no great epochal invention to usher in a new ethnic period. Then, towards the close of what historians of to-day are accustomed to call the middle ages, there appeared in rapid sequence three or four inventions and a great scientific discovery that, taken together, were destined to change the entire aspect of European civilization. The inventions were gunpowder, the mariner's compass, paper and the printing-press, three of which appear to have been brought into Europe by the Moors, whether or not they originated in the remote East. The scientific discovery which must be coupled with these inventions was the Copernican demonstration that the sun and not the earth is the centre of our planetary system. The generations of men that found themselves (1) confronted with the revolutionary conception of the universe given by the Copernican theory; (2) supplied with the new means of warfare provided by gunpowder; (3) equipped with an undreamed-of guide across the waters of the earth; and (4) enabled to promulgate knowledge with unexampled speed and cheapness through the aid of paper and printing-press—such generations of men might well be said to have entered upon a new ethnic period. The transition in their mode of thought and in their methods of practical life was as great as can be supposed to have resulted, in an early generation, from the introduction of iron, or in a yet earlier from the invention of the bow and arrow. So the Europeans of about the 15th century of the Christian era may be said to have entered upon the Second or Middle Status of civilization.

Great inventions of the middle ages.

The new period was destined to be a brief one. It had compassed only about four hundred years when, towards the close of the 18th century, James Watt gave to the world the perfected steam-engine. Almost contemporaneously Arkwright and Hargreaves developed revolutionary processes of spinning and weaving by machinery. Meantime James Hutton and William Smith and their successors on the one hand, and Erasmus Darwin, François Lamarck, and (a half-century later) Charles Darwin on the other, turned men's ideas topsy-turvy by demonstrating that the world as the abiding-place of animals and man is enormously old, and that man himself instead of deteriorating from a single perfect pair six thousand years removed, has ascended from bestiality through a slow process of evolution extending over hundreds of centuries. The revolution in practical life and in the mental life of our race that

Steam machinery.

followed these inventions and this new presentation of truth probably exceeded in suddenness and in its far-reaching effects the metamorphosis effected at any previous transition from one ethnic period to another. The men of the 19th century, living now in the period that may be termed the Upper Status of civilization, saw such changes effected in the practical affairs of their everyday lives as had not been wrought before during the entire historical period. Their fathers had travelled in vehicles drawn by horses, quite as their remoter ancestors had done since the time of higher barbarism. It may be doubted whether there existed in the world in the year 1800 a postal service that could compare in speed and efficiency with the express service of the Romans of the time of Caesar; far less was there a telegraph service that could compare with that of the ancient Persians. Nor was there a ship sailing the seas that a Phoenician trireme might not have overhauled. But now within the lifetime of a single man the world was covered with a network of steel rails on which locomotives drew gigantic vehicles, laden with passengers at an hourly speed almost equalling Caesar's best journey of a day; over the land and under the seas were stretched wires along which messages coursed from continent to continent literally with the speed of lightning; and the waters of the earth were made to teem with gigantic craft propelled without sail or oar at a speed which the Phoenician captain of three thousand years ago and the English captain of the 18th century would alike have held incredible.

There is no need to give further details here of the industrial revolutions that have been achieved in this newest period of civilization, since in their broader outlines at least they are familiar to every one. Nor need we dwell upon the revolution in thought whereby man has for the first time been given a clear inkling as to his origin and destiny. It suffices to point out that such periods of fermentation of ideas as this suggests have probably always been concomitant with those outbursts of creative genius that gave the world the practical inventions upon which human progress has been conditioned. The same attitude of receptivity to new ideas is pre-requisite to one form of discovery as to the other. Nor, it may be added, can either form of idea become effective for the progress of civilization except in proportion as a large body of any given generation are prepared to receive it. Doubtless here and there a dreamer played with fire, in a literal sense, for generations before the utility of fire as a practical aid to human progress came to be recognized in practice. And—to seek an illustration at the other end of the scale—we know that the advanced thinkers of Greece and Rome believed in the antiquity of the earth and in the evolution of man two thousand years before the coming of Darwin. We have but partly solved the mysteries of the progress of civilization, then, when we have pointed out that each tangible stage of progress owed its initiative to a new invention or discovery of science. To go to the root of the matter we must needs explain how it came about that a given generation of men was in mental mood to receive the new invention or discovery.

Social and political organization.

The pursuit of this question would carry us farther into the realm of communal and racial psychology—to say nothing of the realm of conjecture—than comports with the purpose of this article. It must suffice to point out that alertness of mind—that all mentality—is, in the last analysis, a reaction to the influences of the environment. It follows that man may subject himself to new influences and thus give his mind a new stimulus by changing his habitat. A fundamental secret of progress is revealed in this fact. Man probably never would have evolved from savagery had he remained in the Tropics where he doubtless originated. But successive scientific inventions enabled him, as has been suggested, to migrate to distant latitudes, and thus more or less involuntarily to become the recipient of new creative and progressive impulses. After migrations in many directions had resulted in the development of divers races, each with certain capacities and acquirements due to its unique environment, there was opportunity for the application of the principle of environmental stimulus in an indirect way, through the mingling and physical intermixture of one race with another. Each of the great localized civilizations of antiquity appears to have owed its prominence in part at least—perhaps very largely—to such intermingling of two or more races. Each of these civilizations began to decay so soon as the nation had remained for a considerable number of generations in its localized environment, and had practically ceased to receive accretions from distant races at approximately the same stage of development. There is a suggestive lesson for present-day civilization in that thought-compelling fact. Further evidence of the application of the principle of environmental stimulus, operating through changed habitat and racial intermixture, is furnished by the virility of the colonial peoples of our own day. The receptiveness to new ideas and the rapidity of material progress of Americans, South Africans and Australians are proverbial. No one doubts, probably, that one or another of these countries will give a new stimulus to the progress of civilization, through the promulgation of some great epochal discovery, in the not distant

future. Again, the value of racial intermingling is shown yet nearer home in the long-continued vitality of the British nation, which is explicable, in some measure at least, by the fact that the Celtic element held aloof from the Anglo-Saxon element century after century sufficiently to maintain racial integrity, yet mingled sufficiently to give and receive the fresh stimulus of "new blood." It is interesting in this connexion to examine the map of Great Britain with reference to the birthplaces of the men named above as being the originators of the inventions and discoveries that made the close of the 18th century memorable as ushering in a new ethnic era. It may be added that these names suggest yet another element in the causation of progress: the fact, namely, that, however necessary racial receptivity may be to the dynamitic upheaval of a new ethnic era, it is after all *individual* genius that applies its detonating spark.

Nine periods of progress.

Without further elaboration of this aspect of the subject it may be useful to recapitulate the analysis of the evolution of civilization above given, prior to characterizing it from another standpoint. It appears that the entire period of human progress up to the present may be divided into nine periods which, if of necessity more or less arbitrary, yet are not without certain warrant of logic. They may be defined as follows: (1) The Lower Period of Savagery, terminating with the discovery and application of the uses of fire. (2) The Middle Period of Savagery, terminating with the invention of the bow and arrow. (3) The Upper Period of Savagery, terminating with the invention of pottery. (4) The Lower Period of Barbarism, terminating with the domestication of animals. (5) The Middle Period of Barbarism, terminating with the discovery of the process of smelting iron ore. (6) The Upper Period of Barbarism, terminating with the development of a system of writing meeting the requirements of literary composition. (7) The First Period of Civilization (proper) terminating with the introduction of gunpowder. (8) The Second Period of Civilization, terminating with the invention of a practical steam-engine. (9) The Upper Period of Civilization, which is still in progress, but which, as will be suggested in a moment, is probably nearing its termination.

It requires but a glance at the characteristics of these successive epochs to show the ever-increasing complexity of the inventions that delimit them and of the conditions of life that they connote. Were we to attempt to characterize in a few phrases the entire story of achievement thus outlined, we might say that during the three stages of Savagery man was attempting to make himself master of the geographical climates. His unconscious ideal was, to gain a foothold and the means of subsistence in every zone. During the three periods of Barbarism the ideal of conquest was extended to the beasts of the field, the vegetable world, and the mineral contents of the earth's crust. During the three periods of Civilization proper the ideal of conquest has become still more intellectual and subtle, being now extended to such abstractions as an analysis of speech-sounds, and to such intangibles as expanding gases and still more elusive electric currents: in other words, to the forces of nature, no less than to tangible substances. Hand in hand with this growing complexity of man's relations with the external world has gone a like increase of complexity in the social and political organizations that characterize man's relations with his fellowmen. In savagery the family 407
expanded into the tribe; in barbarism the tribe developed into the nation. The epoch of civilization proper is aptly named, because it has been a time in which citizenship, in the narrower national significance, has probably been developed to its apogee. Throughout this period, in every land, the highest virtue has been considered to be patriotism,—by which must be understood an instinctive willingness on the part of every individual to defend even with his life the interests of the nation into which he chances to be born, regardless of whether the national cause in which he struggles be in any given case good or bad, right or wrong. The communal judgment of this epoch pronounces any man a traitor who will not uphold his own nation even in a wrong cause—and the word "traitor" marks the utmost brand of ignominy.

Nationality and cosmopolitanism.

But while the idea of nationality has thus been accentuated, there has been a never-ending struggle within the bounds of the nation itself to adjust the relations of one citizen to another. The ideas that might makes right, that the strong man must dominate the weak, that leadership in the community properly belongs to the man who is physically most competent to lead—these ideas were a perfectly natural, and indeed an inevitable, outgrowth of the conditions under which man fought his way up through savagery and barbarism. Man in the first period of civilization inherited these ideas, along with the conditions of society that were their concomitants. So throughout the periods when the oriental civilizations of Egypt and Babylonia and Assyria and Persia were dominant, a despotic form of government was accepted as the natural order of things. It does not appear that any other form was even considered as a practicality. A despot might indeed be overthrown, but only to make way for

the coronation of another despot. A little later the Greeks and Romans modified the conception of a heaven-sent individual monarch; but they went no further than to substitute a heaven-favoured community, with specially favoured groups (*Patricii*) within the community. With this, national egoism reached its climax; for each people regarded its own citizens as the only exemplars of civilization, openly branding all the rest of the world as "barbarians," fit subjects for the exaction of tribute or for the imposition of the bonds of actual slavery. During the middle ages there was a reaction towards individualism as opposed to nationalism: but the entire system of feudalism, with its clearly recognized conditions of over-lordship and of vassaldom, gave expression, no less clearly than oriental despotism and classical "democracy" had done, to the idea of individual inequality; of divergence of moral and legal status based on natural inheritance. Thus this idea, a reminiscence of barbarism, maintained its dominance throughout the first period of civilization.

But gunpowder, marking the transition to the second period of civilization, came as a great levelling influence. With its aid the weakest peasant might prove more than a match for the most powerful knight. Before its assaults the castle of the lord ceased to be an impregnable fortress. And while gunpowder thus levelled down the power of the mighty, the printing-press levelled up the intelligence, and hence the power and influence of the lowly. Meantime the mariner's compass opened up new territories beyond the seas, and in due course men of lowly origin were seen to attain to wealth and power through commercial pursuits, thus tending to break in upon the established social order. In the colonial territories themselves all men were subjected more or less to the same perils and dependent upon their own efforts. Success and prominence in the community came not as a birthright, but as the result of demonstrated fitness. The great lesson that the interests of all members of a community are, in the last analysis, mutual could be more clearly distinguished in these small colonies than in larger and older bodies politic. Through various channels, therefore, in the successive generations of this middle period of civilization, the idea gained ground that intelligence and moral worth, rather than physical prowess, should be the test of greatness; that it is incumbent on the strong in the interests of the body politic to protect the weak; and that, in the long run, the best interests of the community are conserved if all its members, without exception, are given moral equality before the law. This idea of equal rights and privileges for all members of the community—for each individual "the greatest amount of liberty consistent with a like liberty of every other individual"—first found expression as a philosophical doctrine towards the close of the 18th century; at which time also tentative efforts were made to put it into practice. It may be said therefore to represent the culminating sociological doctrine of the middle period of civilization,—the ideal towards which all the influences of the period had tended to impel the race.

It will be observed, however, that this ideal of individual equality within the body politic in no direct wise influences the status of the body politic itself as the centre of a localized civilization that may be regarded as in a sense antagonistic to all other similarly localized civilizations. If there were any such influence, it would rather operate in the direction of accentuating the patriotism of the member of a democratical community, as against that of the subject of a despot, through the sense of personal responsibility developed in the former. The developments of the middle period of civilization cannot be considered, therefore, to have tended to decrease the spirit of nationality, with its concomitant penalty of what is sometimes called provincialism. The history of this entire period, as commonly presented, is largely made up of the records of international rivalries and jealousies, perennially culminating in bitterly contested wars. It was only towards the close of the epoch that the desirability of free commercial intercourse among nations began to find expression as a philosophical creed through the efforts of Quesnay and his followers; and the doctrine that both parties to an international commercial transaction are gainers thereby found its first clear expression in the year 1776 in the pages of Condillac and of Adam Smith.

But the discoveries that ushered in the third period of civilization were destined to work powerfully from the outset for the breaking down of international barriers, though, of course, their effects would not be at once manifest. Thus the substitution of steam power for water power, besides giving a tremendous impetus to manufacturing in general, mapped out new industrial centres in regions that nature had supplied with coal but not always with other raw materials. To note a single result, England became the manufacturing centre of the world, drawing its raw materials from every corner of the globe; but in so doing it ceased to be self-supporting as regards the production of food-supplies. While growing in national wealth, as a result of the new inventions, England has therefore lost immeasurably in national self-sufficiency and independence; having become in large measure dependent upon other countries both for the raw materials without which her industries must perish

and for the foods to maintain the very life of her people.

What is true of England in this regard is of course true in greater or less measure of all other countries. Everywhere, thanks to the new mechanisms that increase industrial efficiency, there has been an increasing tendency to specialization; and since the manufacturer must often find his raw materials in one part of the world and his markets in another, this implies an ever-increasing intercommunication and interdependence between the nations. This spirit is obviously fostered by the new means of transportation by locomotive and steamship, and by the electric communication that enables the Londoner, for example, to transact business in New York or in Tokio with scarcely an hour's delay; and that puts every one in touch at to-day's breakfast table with the happenings of the entire world. Thanks to the new mechanisms, national isolation is no longer possible; globe-trotting has become a habit with thousands of individuals of many nations; and Orient and Occident, representing civilizations that for thousands of years were almost absolutely severed and mutually oblivious of each other, have been brought again into close touch for mutual education and betterment. The Western mind has learned with amazement that the aforetime *Terra Incognita* of the far East has nurtured a gigantic civilization having ideals in many ways far different from our own. The Eastern mind has proved itself capable, in self-defence, of absorbing the essential practicalities of Western civilization within a single generation. Some of the most important problems of world-civilization of the immediate future hinge upon the mutual relations of these two long-severed communities, branched at some early stage of progress to opposite hemispheres of the globe, but now brought by the new mechanisms into daily and even hourly communication.

Modern humanism.

While the new conditions of the industrial world have thus tended to develop a new national outlook, there has come about, as a result of the scientific discoveries already referred to, a no less significant broadening of the mental and spiritual horizons. Here also the trend is away from the narrowly egoistic and towards the cosmopolitan view. About the middle of the 19th century Dr Pritchard declared that many people debated whether it might not be permissible for the Australian settlers to shoot the natives as food for their dogs; some of the disputants arguing that savages were without the pale of human brotherhood. To-day the thesis that all mankind are one brotherhood needs no defence. The most primitive of existing aborigines are regarded merely as brethren who, through some defect or neglect of opportunity, have lagged behind in the race. Similarly the defective and criminal classes that make up so significant a part of the population of even our highest present-day civilizations, are no longer regarded with anger or contempt, as beings who are suffering just punishment for wilful transgressions, but are considered as pitiful victims of hereditary and environmental influences that they could neither choose nor control. Insanity is no longer thought of as demoniac possession, but as the most lamentable of diseases.

The changed attitude towards savage races and defective classes affords tangible illustrations of a fundamental transformation of point of view which doubtless represents the most important result of the operation of new scientific knowledge in the course of the 19th century. It is a transformation that is only partially effected as yet, to be sure; but it is rapidly making headway, and when fully achieved it will represent, probably, the most radical metamorphosis of mental view that has taken place in the entire course of the historical period. The essence of the new view is this: to recognize the universality and the invariability of natural law; stated otherwise, to understand that the word "supernatural" involves a contradiction of terms and has in fact no meaning. Whoever has grasped the full import of this truth is privileged to sweep mental horizons wider by far than ever opened to the view of any thinker of an earlier epoch. He is privileged to forecast, as the sure heritage of the future, a civilization freed from the last ghost of superstition—an Age of Reason in which mankind shall at last find refuge from the hosts of occult and invisible powers, the fearsome galaxies of deities and demons, which have haunted him thus far at every stage of his long journey through savagery, barbarism and civilization. Doubtless here and there a thinker, even in the barbaric eras, may have realized that these ghosts that so influenced the everyday lives of his fellows were but children of the imagination. But the certainty that such is the case could not have come with the force of demonstration even to the most clear-sighted thinker until 19th-century science had investigated with penetrating vision the realm of molecule and atom; had revealed the awe-inspiring principle of the conservation of energy; and had offered a comprehensible explanation of the evolution of one form of life from another, from monad to man, that did not presuppose the intervention of powers more "supernatural" than those that operate about us everywhere to-day.

The stupendous import of these new truths could not, of course, make itself evident to the

generality of mankind in a single generation, when opposed to superstitions of a thousand generations' standing. But the new knowledge has made its way more expeditiously than could have been anticipated; and its effects are seen on every side, even where its agency is scarcely recognized. As a single illustration, we may note the familiar observation that the entire complexion of orthodox teaching of religion has been more altered in the past fifty years than in two thousand years before. This of course is not entirely due to the influence of physical and biological science; no effect has a unique cause, in the complex sociological scheme. Archaeology, comparative philology and textual criticism have also contributed their share; and the comparative study of religions has further tended to broaden the outlook and to make for universality, as opposed to insularity, of view. It is coming to be more and more widely recognized that all theologies are but the reflex of the more or less faulty knowledge of the times in which they originate, that the true and abiding purpose of religion should be the practical betterment of humanity—the advancement of civilization in the best sense of the word; and that this end may perhaps be best subserved by different systems of theology, adapted to the varied genius of different times and divers races. Wherefore there is not the same enthusiastic desire to-day that found expression a generation ago, to impose upon the cultured millions of the East a religion that seems to them alien to their manner of thought, unsuited to their needs and less distinctly ethical in teaching than their own religions.

Such are but a few of the illustrations that might be cited from many fields to suggest that the mind of our generation is becoming receptive to a changed point of view that augurs the coming of a new ethnic era. If one may be permitted to enter very tentatively the field of prophecy, it seems not unlikely that the great revolutionary invention which will close the third period of civilization and usher in a new era is already being evolved. It seems not over-hazardous to predict that the air-ship, in one form or another, is destined to be the mechanism that will give the new impetus to human civilization; that the next era will have as one of its practical ideals the conquest of the air; and that this conquest will become a factor in the final emergence of humanity from the insularity of nationalism to the broad view of cosmopolitanism, towards which, as we have seen, the tendencies of the present era are verging. That the gap to be covered is a vastly wide one no one need be reminded who recalls that the civilized nations of Europe, together with America and Japan, are at present accustomed to spend more than three hundred million pounds each year merely that they may keep armaments in readiness to fly at one another's throats should occasion arise. Formidable as these armaments now seem, however, the developments of the not very distant future will probably make them quite obsolete; and sooner or later, as science develops yet more deadly implements of destruction, the time must come when communal intelligence will rebel at the suicidal folly of the international attitude that characterized, for example, the opening decade of the 20th century. At some time, after the first period of cosmopolitanism shall be ushered in as a tenth ethnic period, it will come to be recognized that there is a word fraught with fuller meanings even than the word patriotism. That word is humanitarianism. The enlightened generation that realizes the full implications of that word will doubtless marvel that their ancestors of the third period of civilization should have risen up as nations and slaughtered one another by thousands to settle a dispute about a geographical boundary. Such a procedure will appear to have been quite as barbarous as the cannibalistic practices of their yet more remote ancestors, and distinctly less rational, since cannibalism might sometimes save its practiser from starvation, whereas warfare of the civilized type was a purely destructive agency.

Equally obvious must it appear to the cosmopolite of some generation of the future that quality rather than mere numbers must determine the efficiency of any given community. Race suicide will then cease to be a bugbear; and it will no longer be considered rational to keep up the census at the cost of propagating low orders of intelligence, to feed the ranks of paupers, defectives and criminals. On the contrary it will be thought fitting that man should become the conscious arbiter of his own racial destiny to the extent of applying whatever laws of heredity he knows or may acquire in the interests of his own species, as he has long applied them in the case of domesticated animals. The survival and procreation of the unfit will then cease to be a menace to the progress of civilization. It does not follow that all men will be brought to a dead level of equality of body and mind, nor that individual competition will cease; but the average physical mental status of the race will be raised immeasurably through the virtual elimination of that vast company of defectives which to-day constitutes so threatening an obstacle to racial progress. There are millions of men in Europe and America to-day whose whole mental equipment—despite the fact that they have been taught to read and write—is far more closely akin to the average of the Upper Period of Barbarism than to the highest standards of their own time; and these undeveloped or atavistic persons

have on the average more offspring than are produced by the more highly cultured and intelligent among their contemporaries. “Race suicide” is thereby prevented, but the progress of civilization is no less surely handicapped. We may well believe that the cosmopolite of the future, aided by science, will find rational means to remedy this strange illogicality. In so doing he will exercise a more consciously purposeful function, and perhaps a more directly potent influence, in determining the line of human progress than he has hitherto attempted to assume, notwithstanding the almost infinitely varied character of the experiments through which he has worked his way from savagery to civilization.

Ethical evolution.

All these considerations tend to define yet more clearly the ultimate goal towards which the progressive civilization of past and present appears to be trending. The contemplation of this goal brings into view the outlines of a vastly suggestive evolutionary cycle. For it appears that the social condition of cosmopolite man, so far as the present-day view can predict it, will represent a state of things, magnified to world-dimensions, that was curiously adumbrated by the social system of the earliest savage. At the very beginning of the journey through savagery, mankind, we may well believe, consisted of a limited tribe, representing no great range or variety of capacity, and an almost absolute identity of interests. Thanks to this community of interests,—which was fortified by the recognition of blood-relationship among all members of the tribe,—a principle which we now define as “the greatest ultimate good to the greatest number” found practical, even if unwitting, recognition; and therein lay the germs of all the moral development of the future. But obvious identity of interests could be recognized only so long as the tribe remained very small. So soon as its numbers became large, patent diversities of interest, based on individual selfishness, must appear, to obscure the larger harmony. And as savage man migrated hither and thither, occupying new regions and thus developing new tribes and ultimately a diversity of “races,” all idea of community of interests, as between race and race, must have been absolutely banished. It was the obvious and patent fact that each race was more or less at rivalry, in disharmony, with all the others. In the hard struggle for subsistence, the expansion of one race meant the downfall of another. So far as any principle of “greatest good” remained in evidence, it applied solely to the members of one’s own community, or even to one’s particular phratry or gens.

Barbaric man, thanks to his conquest of animal and vegetable nature, was able to extend the size of the unified community, and hence to develop through diverse and intricate channels the application of the principle of “greatest good” out of which the idea of right and wrong was elaborated. But quite as little as the savage did he think of extending the application of the principle beyond the bounds of his own race. The laws with which he gave expression to his ethical conceptions applied, of necessity, to his own people alone. The gods with which his imagination peopled the world were local in habitat, devoted to the interests of his race only, and at enmity with the gods of rival peoples. As between nation and nation, the only principle of ethics that ever occurred to him was that might makes right. Civilized man for a long time advanced but slowly upon this view of international morality. No Egyptian or Babylonian or Hebrew or Greek or Roman ever hesitated to attack a weaker nation on the ground that it would be wrong to do so. And few indeed are the instances in which even a modern nation has judged an international question on any other basis than that of self-interest. It was not till towards the close of the 19th century that an International Peace Conference gave tangible witness that the idea of fellowship of nations was finding recognition; and in the same recent period history has recorded the first instance of a powerful nation vanquishing a weaker one without attempting to exact at least an “indemnifying” tribute.

But the citizen of the future, if the auguries of the present prove true, will be able to apply principles of right and wrong without reference to national boundaries. He will understand that the interests of the entire human family are, in the last analysis, common interests. The census through which he attempts to estimate “the greatest good of the greatest number” must include, not his own nation merely, but the remotest member of the human race. On this universal basis must be founded that absolute standard of ethics which will determine the relations of cosmopolite man with his fellows. When this ideal is attained, mankind will again represent a single family, as it did in the day when our primeval ancestors first entered on the pathway of progress; but it will be a family whose habitat has been extended from the narrow glade of some tropical forest to the utmost habitable confines of the globe. Each member of this family will be permitted to enjoy the greatest amount of liberty consistent with the like liberty of every other member; but the interests of the few will everywhere be recognized as subservient to the interests of the many, and such recognition of mutual interests will establish the practical criterion for the interpretation of international affairs.

But such an extension of the altruistic principle by no means presupposes the elimination of egoistic impulses—of individualism. On the contrary, we must suppose that man at the highest stages of culture will be, even as was the savage, a seeker after the greatest attainable degree of comfort for the least necessary expenditure of energy. The pursuit of this ideal has been from first to last the ultimate impelling force in nature urging man forward. The only change has been a change in the interpretation of the ideal, an altered estimate as to what manner of things are most worth the purchase-price of toil and self-denial. That the things most worth the having cannot, generally speaking, be secured without such toil and self-denial, is a lesson that began to be inculcated while man was a savage, and that has never ceased to be reiterated generation after generation. It is the final test of progressive civilization that a given effort shall produce a larger and larger modicum of average individual comfort. That is why the great inventions that have increased man's efficiency as a worker have been the necessary prerequisites to racial progress. Stated otherwise, that is why the industrial factor is everywhere the most powerful factor in civilization; and why the economic interpretation is the most searching interpretation of history at its every stage. It is the basal fact that progress implies increased average working efficiency—a growing ratio between average effort and average achievement—that gives sure warrant for such a prognostication as has just been attempted concerning the future industrial unification of our race. The efforts of civilized man provide him, on the average, with a marvellous range of comforts, as contrasted with those that rewarded the most strenuous efforts of savage or barbarian, to whom present-day necessaries would have been undreamed-of luxuries. But the ideal ratio between effort and result has by no means been achieved; nor will it have been until the inventive brain of man has provided a civilization in which a far higher percentage of citizens will find the life-vocations to which they are best adapted by nature, and in which, therefore, the efforts of the average worker may be directed with such vigour, enthusiasm and interest as can alone make for true efficiency; a civilization adjusted to such an economic balance that the average man may live in reasonable comfort without heart-breaking strain, and yet accumulate a sufficient surplus to ensure ease and serenity for his declining days. Such, seemingly, should be the normal goal of progressive civilization. Doubtless mankind in advancing towards that goal will institute many changes that could by no possibility be foretold, but (to summarize the views just presented) it seems a safe augury from present-day conditions and tendencies that the important lines of progress will include (1) the organic betterment of the race through wise application of the laws of heredity; (2) the lessening of international jealousies and the consequent minimizing of the drain upon communal resources that attends a military régime; and (3) an ever-increasing movement towards the industrial and economic unification of the world.

Progress and efficiency.

(H. S. WI.)

AUTHORITIES.—A list of works dealing with the savage and barbarous periods of human development will be found appended to the article ANTHROPOLOGY. Special reference may here be made to E.B. Tylor's *Early History of Mankind* (1865), *Primitive Culture* (1871) and *Anthropology* (1881); Lord Avebury's *Prehistoric Times* (new edition, 1900) and *Origin of Civilization* (new edition, 1902); A.H. Keane's *Man Past and Present* (1899); and Lewis H. Morgan's *Ancient Society* (1877). The earliest attempt at writing a history of civilization which has any value for the 20th-century reader was F. Guizot's in 1828-1830, a handy English translation by William Hazlitt being included in Bohn's Standard Library under the title of *The History of Civilization*. The earlier lectures, delivered at the Old Sorbonne, deal with the general progress of European civilization, whilst the greater part of the work is an account of the growth of civilization in France. Guizot's attitude is somewhat antiquated, but this book still has usefulness as a storehouse of facts. T.H. Buckle's famous work, *The History of Civilization in England* (1857-1861), though only a gigantic unfinished introduction to the author's proposed enterprise, holds an important place in historical literature on account of the new method which it introduced, and has given birth to a considerable number of valuable books on similar lines, such as Lecky's *History of European Morals* (1869) and *Rise and Influence of Rationalism in Europe* (1865). J.W. Draper's *History of the Intellectual Development of Europe* (1861) undertook, from the American stand-point, "the labour of arranging the evidence offered by the intellectual history of Europe in accordance with physiological principles, so as to illustrate the orderly progress of civilization." Its objective treatment and wealth of learning still give it great value to the student. Since the third quarter of the 19th century it may be said that all serious historical work has been more or less a history of civilization as displayed in all countries and ages, and a bibliography of the works bearing on the subject would be coextensive with the catalogue of a complete historical library. Special mention, however, may be made of such important and suggestive works as C.H. Pearson's *National Life and Character* (1893); Benjamin Kidd's *Social Evolution* (1894) and *Principles of Western Civilization* (1902);

Edward Eggleston's *Transit of Civilization* (1901); C. Seignobos's *Histoire de la civilisation* (1887); C. Faulmann's *Illustrirte Culturgeschichte* (1881); G. Ducoudray's *Histoire de la civilisation* (1886); J. von Hellwald's *Kulturgeschichte* (1896); J. Lippert's *Kulturgeschichte der Menschheit* (1886); O. Henne-am-Rhyn's *Die Kultur der Vergangenheit, Gegenwart und Zukunft* (1890); G. Kurth's *Origines de la civilisation moderne* (1886), &c. The vast collection of modern works on sociology, from Herbert Spencer onwards, should also be consulted; see bibliography attached to the article SOCIOLOGY. The historical method on which practically all the articles of the present edition of the *Ency. Brit.* are planned, makes the whole work itself in essentials the most comprehensive history of civilization in existence.

CIVIL LAW, a phrase which, with its Latin equivalent *jus civile*, has been used in a great variety of meanings. *Jus civile* was sometimes used to distinguish that portion of the Roman law which was the proper or ancient law of the city or state of Rome from the *jus gentium*, or the law common to all the nations comprising the Roman world, which was incorporated with the former through the agency of the praetorian edicts. This historical distinction remained as a permanent principle of division in the body of the Roman law. One of the first propositions of the Institutes of Justinian is the following:—"Jus autem civile vel gentium ita dividitur. Omnes populi qui legibus et moribus reguntur partim suo proprio, partim communi omnium hominum jure utuntur; nam quod quisque populus ipsi sibi jus constituit, id ipsius civitatis proprium est, vocaturque jus civile quasi jus proprium ipsius civitatis. Quod vero naturalis ratio inter omnes homines constituit, id apud omnes peraeque custoditur, vocaturque jus gentium quasi quo jure omnes gentes utuntur." The *jus gentium* of this passage is elsewhere identified with *jus naturale*, so that the distinction comes to be one between civil law and natural or divine law. The municipal or private law of a state is sometimes described as civil law in distinction to public or international law. Again, the municipal law of a state may be divided into civil law and criminal law. The phrase, however, is applied *par excellence* to the system of law created by the genius of the Roman people, and handed down by them to the nations of the modern world (see ROMAN LAW). The civil law in this sense would be distinguished from the local or national law of modern states. The civil law in this sense is further to be distinguished from that adaptation of its principles to ecclesiastical purposes which is known as the canon law (*q.v.*).

CIVIL LIST, the English term for the account in which are contained all the expenses immediately applicable to the support of the British sovereign's household and the honour and dignity of the crown. An annual sum is settled by the British parliament at the beginning of the reign on the sovereign, and is charged on the consolidated fund. But it is only from the reign of William IV. that the sum thus voted has been restricted solely to the personal expenses of the crown. Before his accession many charges properly belonging to the ordinary expenses of government had been placed on the civil list. The history of the civil list

History

dates from the reign of William and Mary. Before the Revolution no distinction had been made between the expenses of government in time of peace and the expenses relating to the personal dignity and support of the sovereign. The ordinary revenues derived from the hereditary revenues of the crown, and from certain taxes voted for life to the king at the beginning of each reign, were supposed to provide for the support of the sovereign's dignity and the civil government, as well as for the public defence in time of peace. Any saving made by the king in the expenditure touching the government of the country or its defence would go to swell his privy purse. But with the Revolution a step forward was made towards the establishment of the principle that the expenses relating to the support of the crown should be separated from the ordinary expenses of the state. The evils of the old system under which no appropriation was made of the ordinary revenue granted to the crown for life had been made manifest in the reigns of Charles II. and James II.; it was their control of these large revenues that made them so independent of parliament. Moreover, while the civil government and the defences suffered, the king could use these revenues as he liked. The parliament of William and Mary fixed the revenue of the crown in time of peace at £1,200,000 per annum; of this sum about £700,000

was appropriated towards the “civil list.” But from this the sovereign was to defray the expenses of the civil service and the payment of pensions, as well as the cost of the support of the royal household and his own personal expenses. It was from this that the term “civil list” arose, to distinguish it from the statement of military and naval charges. The revenue voted to meet the civil list consisted of the hereditary revenues of the crown and a part of the excise duties. Certain changes and additions were made in the sources of revenue thus appropriated between the reign of William and Mary and the accession of George III., when a different system was adopted. Generally speaking, however, the sources of revenue remained as settled at the Revolution.

Anne, George I. and George II.

Anne had the same civil list, estimated to produce an annual income of £700,000. During her reign a debt of £1,200,000 was incurred. This debt was paid by parliament and charged on the civil list itself. George I. enjoyed the same revenue by parliamentary grant, in addition to an annual sum of £120,000 on the aggregate fund. A debt of £1,000,000 was incurred, and discharged by parliament in the same manner as Anne’s debt had been. To George II. a civil list of £800,000 as a minimum was granted, parliament undertaking to make up any deficiency if the sources of income appropriated to its service fell short of that sum. Thus in 1746 a debt of £456,000 was paid by parliament on the civil list. On the accession of George III. a change was made in the system of the civil list. Hitherto the sources of revenue appropriated to the service of the civil list had been settled on the crown. If these revenues exceeded the sum they were computed to produce annually, the surplus went to the king. George III., however, surrendered the life-interest in the hereditary revenues and the excise duties hitherto voted to defray the civil list expenditure, and any claim to a surplus for a fixed amount. The king still retained other large sources of revenue which were not included in the civil list, and were free from the control of parliament. The revenues from which the civil list had been defrayed were henceforward to be carried into, and made part of, the aggregate fund. In their place a fixed civil list was granted—at first of £723,000 per annum, to be increased to £800,000 on the falling in of certain annuities to members of the royal family. From this £800,000 the king’s household and the honour and dignity of the crown were to be supported, as well as the civil service offices, pensions and other charges still laid on the list.

George III.

During the reign of George III. the civil list played an important part in the history of the struggle on the part of the king to establish the royal ascendancy. From the revenue appropriated to its service came a large portion of the money employed by the king in creating places and pensions for his supporters in parliament, and, under the colour of the royal bounty, bribery was practised on a large scale. No limit was set to the amount applicable to the pensions charged on the civil list, so long as the sum granted could meet the demand; and there was no principle on which the grant was regulated. Secret pensions at the king’s pleasure were paid out of it, and in every way the independence of parliament was menaced; and though the more legitimate expenses of the royal household were diminished by the king’s penurious style of living, and though many charges not directly connected with the king’s personal expenditure were removed, the amount was constantly exceeded, and applications were made from time to time to parliament to pay off debts incurred; and thus opportunity was given for criticism. In 1769 a debt of £513,511 was paid off in arrears; and in spite of the demand for accounts and for an inquiry into the cause of the debt, the ministry succeeded in securing this vote without granting such information. All attempts to investigate the civil list were successfully resisted, though Lord Chatham went so far as to declare himself convinced that the funds were expended in corrupting members of parliament. Again, in 1777, an application was made to parliament to pay off £618,340 of debts; and in view of the growing discontent Lord North no longer dared to withhold accounts. Yet, in spite of strong opposition and free criticism, not only was the amount voted, but also a further £100,000 per annum, thus raising the civil list to an annual sum of £900,000.

Indebtedness of civil list.

In 1779, at a time when the expenditure of the country and the national debt had been enormously increased by the American War, the general dissatisfaction found voice in parliament, and the abuses of the civil list were specially singled out for attack. Many petitions were presented to the House of Commons praying for its reduction, and a motion was made in the House of Lords in the same sense, though it was rejected. In 1780 Burke brought forward his scheme of economic reform, but his name was already associated with the growing desire to remedy the evils of the civil list by the publication in 1769 of his pamphlet on “The Causes of the Present Discontent.” In this scheme Burke freely animadverts on the profusion and abuse of the civil list, criticizing the useless and obsolete offices and the offices performed by deputy. In every department he discovers jobbery,

waste and peculation. His proposal was that the many offices should be reduced and consolidated, that the pension list should be brought down to a fixed sum of £60,000 per annum, and that pensions should be conferred only to reward merit or fulfil real public charity. All pensions were to be paid at the exchequer. He proposed also that the civil list should be divided into classes, an arrangement which later was carried into effect. In 1780 Burke succeeded in bringing in his Establishment Bill; but though at first it met with considerable support, and was even read a second time, Lord North's government defeated it in committee. The next year the bill was again introduced into the House of Commons, and Pitt made his first speech in its favour. The bill was, however, lost on the second reading.

In 1782 the Rockingham ministry, pledged to economic reform, came into power; and the Civil List Act 1782 was introduced and carried with the express object of limiting the patronage and influence of ministers, or, in other words, the ascendancy of the crown over parliament. Not only did the act effect the abolition of a number of useless offices, but it also imposed restraints on the issue of secret service money, and made provision for a more effectual supervision of the royal expenditure. As to the pension list, the annual amount was to be limited to £95,000; no pension to any one person was to exceed £1200, and all pensions were to be paid at the exchequer, thus putting a stop to the secret pensions payable during pleasure. Moreover, pensions were only to be bestowed in the way of royal bounty for persons in distress or as a reward for merit. Another very important change was made by this act: the civil list was divided into classes, and a fixed amount was to be appropriated to each class. The following were the classes:—

Civil List Act 1782.

1. Pensions and allowances of the royal family.
2. Payment of salaries of lord chancellor, speaker and judges.
3. Salaries of ministers to foreign courts resident at the same.
4. Approved bills of tradesmen, artificers and labourers for any article supplied and work done for His Majesty's service.
5. Menial servants of the household.
6. Pension list.
7. Salaries of all other places payable out of the civil list revenues.
8. Salaries and pensions of treasurer or commissioners of the treasury and of the chancellor of the exchequer.

Yet debt was still the condition of the civil list down to the end of the reign, in spite of the reforms established by the Rockingham ministry, and notwithstanding the removal from the list of many charges unconnected with the king's personal expenses. The debts discharged by parliament between 1782, the date of the passing of the Civil List Act, and the end of George III.'s reign, amounted to £2,300,000. In all, during his reign £3,398,061 of debt owing by the civil list was paid off.

With the regency the civil list was increased by £70,000 per annum, and a special grant of £100,000 was settled on the prince regent. In 1816 the annual amount was settled at £1,083,727, including the establishment of the king, now insane; though the civil list was relieved from some annuities payable to the royal family. Nevertheless, the fund still continued charged with such civil expenses as the salaries of judges, ambassadors and officers of state, and with pensions granted for public services. Other reforms were made as regards the definition of the several classes of expenditure, while the expenses of the royal household were henceforth to be audited by a treasury official—the auditor of the civil list. On the accession of George IV. the civil list, freed from the expenses of the late king, was settled at £845,727. On William IV. coming to the throne a sum of £510,000 per annum was fixed for the service of the civil list. The king at the same time surrendered all the sources of revenue enjoyed by his predecessors, apart from the civil list, represented by the hereditary revenues of Scotland—the Irish civil list, the droits of the crown and admiralty, the 4½% duties, the West India duties, and other casual revenues hitherto vested in the crown, and independent of parliament. The revenues of the duchy of Lancaster were still retained by the crown. In return for this surrender and the diminished sum voted, the civil list was relieved from all the charges relating rather to the civil government than to the support of the dignity of the crown and the royal household. The future expenditure was divided into five classes, and a fixed annual sum was appropriated to each class. The pension list was reduced to £75,000. The king resisted an attempt on the part of the select committee to reduce the salaries of the officers of state on the grounds that this touched his prerogative, and the

ministry of Earl Grey yielded to his remonstrance.

The civil list of Queen Victoria was settled on the same principles as that of William IV. A considerable reduction was made in the aggregate annual sum voted, from £510,000 to £385,000, and the pension list was separated from the ordinary civil list. The civil list proper was divided into the following five classes, with a fixed sum appropriated to each:—

Queen Victoria's civil list.

Privy purse	£60,000
Salaries of household	131,260
Expenses of household	172,500
Royal bounty, &c.	13,200
Unappropriated	8,040

In addition the queen might, on the advice of her ministers, grant pensions up to £1200 per annum, in accordance with a resolution of the House of Commons of February 18th, 1834, "to such persons as have just claims on the royal beneficence or who, by their personal services to the crown, by the performance of duties to the public, or by their useful discoveries in science and attainments in literature and art, have merited the gracious consideration of the sovereign and the gratitude of their country." The service of these pensions increased the annual sum devoted to support the dignity of the crown and the expenses of the household to about £409,000. The list of pensions must be laid before parliament within thirty days of 20th June. Thus the civil list was reduced in amount, and relieved from the very charges which gave it its name as distinct from the statement of military and naval charges. It now really only dealt with the support of the dignity and honour of the crown and the royal household. The arrangement was most successful, and during the last three reigns there was no application to parliament for the discharge of debts incurred on the civil list.

The death of Queen Victoria rendered it necessary that a renewed provision should be made for the civil list; and King Edward VII., following former precedents, placed unreservedly at the disposal of parliament his hereditary revenues. A select committee of the House of Commons was appointed to consider the provisions of the civil list for the crown, and to report also on the question of grants for the honourable support and maintenance of Her Majesty the Queen and the members of the royal family. The committee in their conclusions were guided to a considerable extent by the actual civil list expenditure during the last ten years of the last reign, and made certain recommendations which, without undue interference with the sovereign's personal arrangements, tended towards increased efficiency and economy in the support of the sovereign's household and the honour and dignity of the crown. On their report was based the Civil List Act 1901, which established the new civil list. The system that the hereditary revenues should as before be paid into the exchequer and be part of the consolidated fund was maintained. The amount payable for the civil list was increased from £385,000 to £470,000. In the application of this sum the number of classes of expenditure to which separate amounts were to be appropriated was increased from five to six. The following was the new arrangement of classes:—1st class, Their Majesties' privy purse, £110,000; 2nd class, salaries of His Majesty's household and retired allowances, £125,800; 3rd class, expenses of His Majesty's household, £193,000; 4th class, works (the interior repair and decoration of Buckingham Palace and Windsor Castle), £20,000; 5th class, royal bounty, alms and special services, £13,200; 6th class, unappropriated, £8000. The system relating to civil list pensions, established by the Civil List Act 1837, continued to apply, but the pensions were not regarded as chargeable on the sum paid for the civil list. The committee also advised that the mastership of the Buckhounds should not be continued; and the king, on the advice of his ministers, agreed to accept their recommendation. The maintenance of the royal hunt thus ceased to be a charge on the civil list. The annuities of £20,000 to the prince of Wales, of £10,000 to the princess of Wales, and of £18,000 to His Majesty's three daughters, were not included in the civil list, though they were conferred by the same act. Other grants made by special acts of parliament to members of the royal family were also excluded from it; these were £6000 to the princess Christian of Schleswig-Holstein, £6000 to the princess Louise (duchess of Argyll), £25,000 to the duke of Connaught, £6000 to the duchess of Albany, £6000 to the princess Beatrice (Henry of Battenberg), and £3000 to the duchess of Mecklenburg-Strelitz.

Civil List Act 1901.

It may be interesting to compare with the British civil list the corresponding figures in other countries. These are as follows, the figures being those, for convenience, of 1905. Spain, £280,000, exclusive of allowances to members of the royal family; Portugal, £97,333, in addition to £1333 to the queen-consort—total grant to the royal family,

Figures in other countries. £116,700; Italy, £602,000, from which was deducted £16,000 for the children of the deceased Prince Amedeo, duke of Aosta, £16,000 to Prince Tommaso, duke of Genoa, and £40,000 to Queen Margherita; Belgium, £140,000; Netherlands, £50,000, with, in addition, £4000 for the maintenance of the royal palaces; Germany, £770,500 (*Krondotations Rente*), the sovereign also possessing large private property (*Kronfideikommiss und Schatullgüter*), the revenue from which contributed to the expenditure of the court and the members of the royal family; Denmark, £55,500, in addition to £6600 to the heir-apparent; Norway, £38,888; Sweden, £72,700; Greece, £52,000, which included £4000 each from Great Britain, France and Russia; Austria-Hungary, £941,666, made up of £387,500 as emperor of Austria out of the revenues of Austria, and £554,166 as king of Hungary out of the revenues of Hungary; Japan, £300,000; Rumania, £47,000, in addition to revenues from certain crown lands; Servia, £48,000; Bulgaria, £40,000, besides £30,000 for maintenance of palaces, &c.; Montenegro, £8300; Russia had no civil list, the sovereign having all the revenue from the crown domains (actual amount unknown, but supposed to amount to over £4,000,000); the president of the French Republic had a salary of £24,000 a year, with a further £24,000 for expenses; and the president of the United States had a salary of $50,000 (from 1909, $75,000).

CIVIL SERVICE, the generic name given to the aggregate of all the public servants, or paid civil administrators and clerks, of a state. It is the machinery by which the executive, through the various administrations, carries on the central government of the country.

British Empire.—The appointments to the civil service until the year 1855 were made by nomination, with an examination not sufficient to form an intellectual or even a physical test. It was only after much consideration and almost years of discussion that the nomination system was abandoned. Various commissions reported on the civil service, and orders in council were issued. Finally in 1855 a qualifying examination of a stringent character was instituted, and in 1870 the principle of open competition was adopted as a general rule. On the report of the Playfair Commission (1876), an order in council was issued dividing the civil service into an upper and lower division. The order in council directed that a lower division should be constituted, and men and boy clerks holding permanent positions replaced the temporary assistants and writers. The “temporary” assistant was not found to be advantageous to the service. In December 1886 a new class of assistant clerks was formed to replace the men copyists. In 1887 the Ridley Commission reported on the civil service establishment. In 1890 two orders in council were issued based on the reports of the Ridley Commission, which sat from 1886 to 1890. The first order constituted what is now known as the second division of the civil service. The second order in council concerned the officers of the 1st class; and provision was made for the possible promotion of the second division clerks to the first division after eight years’ service.

The whole system is under the administration of the civil service commissioners, and power is given to them, with the approval of the treasury, to prescribe the subjects of examination, limits of age, &c. The age is fixed for compulsory retirement at sixty-five. In exceptional cases a prolongation of five years is within the powers of the civil service commissioners. The examination for 1st class clerkships is held concurrently with that of the civil service of India and Eastern cadetships in the colonial service. Candidates can compete for all three or for two. In addition to the intellectual test the candidate must fulfil the conditions of age (22 to 24), must present recommendations as to character, and pass a medical examination. This examination approximates closely to the university type of education. Indeed, there is little chance of success except for candidates who have had a successful university career, and frequently, in addition, special preparation by a private teacher. The subjects include the language and literature of England, France, Germany, Italy, ancient Greece and Rome, Sanskrit and Arabic, mathematics (pure and applied), natural science (chemistry, physics, zoology, &c.), history (English, Greek, Roman and general modern), political economy and economic history, mental and moral philosophy, Roman and English law and political science. The candidate is obliged to reach a certain standard of knowledge in each subject before any marks at all are allowed him. This rule was made to prevent success by mere cramming, and to ensure competent knowledge on the basis of real study.

The maximum scale of the salaries of clerks of Class I. is as follows:—3rd class, £200 a year, increasing by £20 a year to £500; 2nd class, £600, increasing by £25 a year to £800; 1st class, £850, increasing by £50 a year to £1000. Their pensions are fixed by the Superannuation Act 1859, 22 Vict. c. 26:—

> "To any person who shall have served ten years and upwards, and under eleven years, an annual allowance of ten-sixtieths of the annual salary and emoluments of his office:
>
> "For eleven years and under twelve years, an annual allowance of eleven-sixtieths of such salary and emoluments:
>
> "And in like manner a further addition to the annual allowance of one-sixtieth in respect of each additional year of such service, until the completion of a period of service of forty years, when the annual allowance of forty-sixtieths may be granted; and no additions shall be made in respect of any service beyond forty years."
>
> The "ordinary annual holidays allowed to officers" (1st class) "shall not exceed thirty-six week-days during each of their first ten years of service and forty-eight week-days thereafter." Order in Council, 15th August 1890.
>
> "Within that maximum heads of departments have now, as they have hitherto had, an absolute discretion in fixing the annual leave."

Sick leave can be granted on full salary for not more than six months, on half-salary for another six months.

The scale of salary for 2nd division clerks begins at £70 a year, increasing by £5 to £100; then £100 a year, increasing by £7, 10s. to £190; and then £190 a year, increasing by £10 to £250. The highest is £300 to £500. Advancement in the 2nd division to the higher ranks depends on merit, not seniority. The ordinary annual holiday of the 2nd division clerks is 14 working days for the first five years, and 21 working days afterwards. They can be allowed sick leave for six months on full pay and six months on half-pay. The subjects of their examination are: (1) handwriting and orthography, including copying MS.; (2) arithmetic; (3) English composition; (4) précis, including indexing and digest of returns; (5) book-keeping and shorthand writing; (6) geography and English history; (7) Latin; (8) French; (9) German; (10) elementary mathematics; (11) inorganic chemistry with elements of physics. Not more than four of the subjects (4) to (11) can be taken. The candidate must be between the ages of 17 and 20. A certain number of the places in the 2nd division were reserved for the candidates from the boy clerks appointed under the old system. The competition is severe, only about one out of every ten candidates being successful. Candidates are allowed a choice of departments subject to the exigencies of the services.

> There is also a class of boy copyists who are almost entirely employed in London, a few in Dublin and Edinburgh, and, very seldom, in some provincial towns. The subjects of their examination are: *Obligatory*—handwriting and orthography, arithmetic and English composition. *Optional*—(any two of the following): (1) copying MS.; (2) geography; (3) English history; (4) translation from one of the following languages—Latin, French or German; (5) Euclid, bk. i. and ii., and algebra, up to and including simple equations; (6) rudiments of chemistry and physics. Candidates must be between the ages of 15 and 18. They have no claims to superannuation or compensation allowance. Boy copyists are not retained after the age of 20.

Candidates for the civil service of India take the same examination as for 1st class clerkships. Candidates successful in the examination must subsequently spend one year in England. They receive for that year £150 if they elect to live at one of the universities or colleges approved by the secretary of state for India. They are submitted to a final examination in the following subjects—Indian Penal Code and the Code of Criminal Procedure, the principal vernacular language of the province to which they are assigned, the Indian Evidence Act (these three subjects are compulsory), either Hindu and Mahommedan Law, or Sanskrit, Arabic or Persian, Burmese (for Burma only). A candidate may not take Arabic or Sanskrit both in the first examination and in the final. They must also pass a thorough examination in riding. On reaching India their salary begins at 400 rupees a month. They may take, as leave, one-fourth of the time on active service in periods strictly limited by regulation. After 25 years' service (of which 21 must be active service) they can retire on a pension of £1000 a year. The unit of administration is the district. At the head of the district is an executive officer called either collector-magistrate or deputy-commissioner. In most provinces he is responsible to the commissioner, who corresponds directly with the provincial government. The Indian civilian after four years' probation in both branches of the service is called upon to elect whether he will enter the revenue or judicial department, and this choice as a rule is held to be final for his future work.

Candidates for the Indian Forest Service have to pass a competitive examination, one of the compulsory subjects being German or French. They have also to pass a severe medical examination, especially in their powers of vision and hearing. They must be between the ages of 18 and 22. Successful candidates are required to pass a three years' course, with a final examination, seven terms of the course at an approved school of forestry, the rest of the time receiving practical instruction in continental European forests. On reaching India they start as assistant conservators at 380 rupees a month. The highest salary, that of inspector-general of forests, in the Indian Forest Service is 2650 rupees a month.

The Indian Police Service is entered by a competitive examination of very much the same kind as for the forest service, except that special subjects such as German and botany are not included. The candidates are limited in age to 19 and 21. They must pass a riding examination. A free passage out is given them. They are allotted as probationers, their wishes being consulted as far as possible as to their province. A probationer receives 300 rupees a month. A district superintendent can rise to 1200 rupees a month, while there are a few posts with a salary of 3000 rupees a month in the police service. The leave and pension in both these departments follow the general rules for Indian services.

The civil service also includes student interpreterships for China, Japan and Siam, and for the Ottoman dominions, Persia, Greece and Morocco. Both these classes of student interpreters are selected by open competition. Their object is to supply the consular service in the above-named countries with persons having a thorough knowledge of the language of the country in which they serve.

In the first case, China, Japan, &c., they learn their language in the country itself, receiving £200 as probationers. Then they become assistants in a consulate. The highest post is that of consul-general. In the case of student interpreters for the Ottoman dominions, Persia, Greece and Morocco, the successful candidates learn their languages at Oxford. Turkish is taught gratuitously, but they pay the usual fees for other languages. At Oxford they receive £200 a year for two years. On leaving Oxford they become assistants under the embassy at Constantinople, the legations at Teheran, Athens or Morocco, or at one of H.B.M. consulates. As assistants they receive £300 a year. The consuls, the highest post to which they can reach, receive in the Levant from £500 to £1600 a year. The civil services of Ceylon, Hong-Kong, the Straits Settlements, and the Malay Peninsula are supplied by the Eastern cadetships. The limits of age for the examination are 18 and 24. The cadets are required to learn the native language of the colony or dependency to which they are assigned. In the case of the Straits Settlements and Malay cadets they may have to learn Chinese or Tamil, as well as the native language. The salaries are: passed cadets, 3500 rupees per annum, gradually increasing until first-class officers receive from 12,000 to 18,000 rupees per annum. They are allowed three months' vacation on full pay in two years, and leave of absence on half-pay after six years' service, or before that if urgently needed. They can retire for ill-health after ten years with fifteen-sixtieths of their annual salary. Otherwise they can add one-sixtieth of their annual salary to their pension for every additional year's service up to thirty-five years' service.

In spite of the general rule of open competition, there are still a few departments where the system of *nomination* obtains, accompanied by a severe test of knowledge, either active or implied. Such are the foreign office, British Museum, and board of education.

The employment of women in the civil service has been principally developed in the post office. Women are employed in the post office as female clerks, counter clerks, telegraphists, returners, sorters and post-mistresses all over the United Kingdom. The board of agriculture, the customs and the India office employ women. The department of agriculture, the board of education generally, the local government board, all to a certain extent employ women, whilst in the home office there are an increasing number of women inspectors of workshops and factories.

In 1881 the postmaster-general took a decided step in favour of female employment, and with the consent of the treasury instituted female clerkships. Female clerks do not come in contact with the public. Their duties are purely clerical, and entirely in the accountant-general's department at the savings bank. Their leave is one month per annum; their pension is on the ordinary civil service scale. The examination is competitive; the subjects are handwriting and spelling, arithmetic, English composition, geography, English history, French or German. Candidates must be between the ages of 18 and 20. Whether unmarried or widows they must resign on marriage. The class of girl clerks take the same subjects in a competitive examination. They must be between the ages of 16 and 18; they serve only in the Savings Bank department. If competent they can pass on later to female clerkships. The salaries of the female clerkships range from £200 to £500 in the higher grade, £55 to £190 in the 2nd class, whilst girl clerks are paid from £35 to £40, with the chance of advancement

to higher posts.

United States.—Civil service reform, like other great administrative reforms, began in America in the latter half of the 19th century. Personal and partisan government, with all the entailed evils of the patronage system, culminated in Great Britain during the reign of George III., and was one of the efficient causes of the American revolution. Trevelyan characterizes the use of patronage to influence legislation, and the giving of colonial positions as sinecures to the privileged classes and personal favourites of the administration, by saying, "It was a system which, as its one achievement of the first order, brought about the American War, and made England sick, once and for all, of the very name of personal government." It was natural that the founders of the new government in America, after breaking away from the mother-country, should strive to avoid the evils which had in a measure brought about the revolution. Their intention that the administrative officers of the government should hold office during good behaviour is manifest, and was given thorough and practical effect by every administration during the first forty years of the life of the government. The constitution fixed no term of office in the executive branch of the government except those of president and vice-president; and Madison, the expounder of the constitution, held that the wanton removal of a meritorious officer was an impeachable offence. Not until nine years after the passage of the Four Years' Tenure of Office Act in 1820 was there any material departure from this traditional policy of the government. This act (suggested by an appointing officer who wished to use the power it gave in order to secure his own nomination for the presidency, and passed without debate and apparently without any adequate conception of its full effect) opened the doors of the service to all the evils of the "spoils system." The foremost statesmen of the time were not slow to perceive the baleful possibilities of this legislation, Jefferson,[1] Webster, Clay, Calhoun, Benton and many others being recorded as condemning and deploring it in the strongest terms. The transition to the "spoils system" was not, however, immediate, and for the next nine years the practice of reappointing all meritorious officers was practically universal; but in 1829 this practice ceased, and the act of 1820 lent the sanction of law to the system of proscriptions which followed, which was a practical application of the theory that "to the victor belong the spoils of the enemy." In 1836 the provisions of this law, which had at first been confined mainly to officers connected with the collection of revenue, were extended to include also all postmasters receiving a compensation of $1000 per annum or more. It rapidly became the practice to regard all these four years' tenure offices as agencies not so much for the transaction of the public business as for the advancement of political ends. The revenue service from being used for political purposes merely came to be used for corrupt purposes as well, with the result that in one administration frauds were practised upon the government to the extent of $75,000,000. The corrupting influences permeated the whole body politic. Political retainers were selected for appointment not on account of their ability to do certain work but because they were followers of certain politicians; these "public servants" acknowledged no obligation except to those politicians, and their public duties, if not entirely disregarded, were negligently and inefficiently performed. Thus grew a saturnalia of spoils and corruption which culminated in the assassination of a president.

The "spoils system".

Acute conditions, not theories, give rise to reforms. In the congressional election of November 1882, following the assassination of President Garfield as an incident in the operation of the spoils system, the voice of the people commanding reform was unmistakable. Congress assembled in December 1882, and during the same month a bill looking to the improvement of the civil service, which had been pending in the Senate for nearly two years, was finally taken up and considered by that body. In the debate upon this bill its advocates declared that it would "vastly improve the whole civil service of the country," which they characterized as being at that time "inefficient, expensive and extravagant, and in many instances corrupt."[2] This bill passed the Senate on the 27th of December 1882, and the House on the 4th of January 1883, and was signed by the president on the 16th of January 1883, coming into full operation on the 16th of July 1883. It is now the national civil service law. The fundamental principles of this law are:—(1) selection by competitive examination for all appointments to the "classified service," with a period of probationary service before absolute appointment; (2) apportionment among the states and territories, according to population, of all appointments in the departmental service at Washington; (3) freedom of all the employees of the government from any necessity to contribute to political campaign funds or to render political services. For putting these principles into effect the Civil Service Commission was created, and penalties were imposed for the solicitation or collection from government employees of contributions for political purposes, and for the use of official

Law of 1883.

positions in coercing political action. The commission, in addition to its regular duties of aiding in the preparation of civil service rules, of regulating and holding examinations, and certifying the results thereof for use in making appointments, and of keeping records of all changes in the service, was given authority to investigate and report upon any violations of the act or rules. The “classified” service to which the act applies has grown, by the action of successive presidents in progressively including various branches of tne service within it, from 13,924 positions in 1883 to some 80,000 (in round numbers) in 1900, constituting about 40% of the entire civil service of the government and including practically all positions above the grade of mere labourer or workman to which appointment is *not* made directly by the president with the consent of the Senate.[3] A very large class to which the act is expressly applicable, and which has been partly brought within its provisions by executive action, is that of fourth-class postmasters, of whom there are between 70,000 and 80,000 (about 15,000 classified in 1909).

In order to provide registers of eligibles for the various grades of positions in the classified service, the United States Civil Service Commission holds annually throughout the country about 300 different kinds of examinations. In the work of preparing these examinations and of marking the papers of competitors in them the commission is authorized by law to avail itself, in addition to its own corps of trained men, of the services of the scientific and other experts in the various executive departments. In the work of holding the examinations it is aided by about 1300 local boards of examiners, which are its local representatives throughout the country and are located at the principal post offices, custom houses and other government offices, being composed of three or more Federal employees in those offices. About 50,000 persons annually compete in these examinations, and about 10,000 of those who are successful receive appointments through regular certification. Persons thus appointed, however, must serve six months “on probation” before their appointment can be made absolute. At the end of this probation, if his service has not been satisfactory, the appointee is simply dropped; and the fact that less than 1% of those appointed prove thus deficient on trial is high testimony to the practical nature of the examinations held by the commission, and to their aptness for securing persons qualified for all classes of positions.

The effects of the Civil Service Act within the scope of its actual operation have amply justified the hopes and promises of its advocates. After its passage, absentee holders of lucrative appointments were required to report for duty or to sever their connexion with the service. Improved methods were adopted in the departments, and superfluous and useless work was no longer devised in order to provide a show of employment and a *locus standi* for the parasites upon the public service. Individual clerks were required, and by reason of the new conditions were enabled, to do more and better work; and this, coupled with the increase in efficiency in the service on account of new blood coming in through the examinations, made possible an actual decrease in the force required in many offices, notwithstanding the natural growth in the amount of work to be done.[4] Experience proves that the desire to create new and unnecessary positions was in direct proportion to the power to control them, for where the act has taken away this power of control the desire had disappeared naturally. There is no longer any desire on the part of heads of departments to increase the number or salaries of classified positions which would fall by law within the civil service rules and be subject to competitive examinations. Thus the promises of improvement and economy in the service have been fulfilled.

The chief drawback to the full success of the act within its intended scope of operation has been the withholding of certain positions in the service from the application of the vital principle of competition. The Civil Service Act contemplated no exceptions, within the limits to which it was made applicable, to the general principle of competition upon merit for entrance to the service. In framing the first civil service rules, however, in 1883, the president, yielding to the pressure of the heads of some of the departments, and against the urgent protest of the Civil Service Commission, excepted from the requirement of examination large numbers of positions in the higher grades of the service, chiefly fiduciary and administrative positions such as cashiers, chief clerks and chiefs of division. These positions being thus continued under the absolute control of the appointing officer, the effect of their exception from examination was to retain just that much of the old or “spoils” system within the nominal jurisdiction of the new or “merit” system. Even more: under the old system, while appointments from the outside had been made regardless of fitness, still those appointments had been made in the lower grades, the higher positions being filled by promotion within the service, usually of the most competent, but under the new system with its exceptions, while appointments to the lower grades were filled on the basis of merit, the pressure for spoils at each change of administration forced inexperienced, political or personal favourites in at the top. This blocked promotions and demoralized the service.

Thus, while the general effect of the act was to limit very greatly the number of vicious appointments, at the same time the effect of these exceptions was to confine them to the upper grades, where the demoralizing effect of each upon the service would be a maximum. By constant efforts the Civil Service Commission succeeded in having position after position withdrawn from this excepted class, until by the action of the president, on the 6th of May 1896, it was finally reduced almost to a minimum. By subsequent presidential action, however, on the 29th of May 1899, the excepted class was again greatly extended.[5]

A further obstacle to the complete success of the merit system, and one which prevents the carrying forward of the reform to the extent to which it has been carried in Great Britain, is inherent in the Civil Service Act itself. All postmasters who receive compensation of $1000 or more per annum, and all collectors of customs and collectors of internal revenue, are appointed by the president and confirmed by the Senate, and are therefore, by express provision of the act, not "required to be classified." The universal practice of treating these offices as political agencies instead of as administrative business offices is therefore not limited by the act. Such officers are active in political work throughout the country, and their official position adds greatly to their power to affect the political prospects of the leaders in their districts. Accordingly the Senate, from being, as originally intended, merely a confirming body as to these officers, has become in a large measure, actually if not formally, a nominating body, and holds with tenacity to the power thus acquired by the individual senators. Thorough civil service reform requires that these positions also, and all those of fourth-class postmasters (partly classified by order of 1st Dec. 1908), be made subject to the merit system, for in them is the real remaining stronghold of the spoils system. Even though all their subordinates be appointed through examination, it will be impossible to carry the reform to ultimate and complete success so long as the officers in charge are appointed mainly for political reasons and are changed with every change of administration.

The purpose of the act to protect the individual employees in the service from the rapacity of the "political barons" has been measurably, if not completely, successful. The power given the Civil Service Commission, to investigate and report upon violations of the law, has been used to bring to light such abuses as the levying of political contributions, and to set the machinery of the law in motion against them. While comparatively few actual prosecutions have been brought about, and although the penalties imposed by the act for this offence have been but seldom inflicted, still the publicity given to all such cases by the commission's investigations has had a wholesome deterrent effect. Before the passage of the act, positions were as a general rule held upon a well-understood lease-tenure, the political contributions for them being as securely and as certainly collected as any rent. Now, however, it can be said that these forced contributions have almost entirely disappeared. The efforts which are still made to collect political funds from government employees in evasion of the law are limited in the main to persuasion to make "voluntary" contributions, and it has been possible so to limit and obstruct these efforts that their practical effect upon the character of the service is now very small.

State examination.

The same evils that the Federal Civil Service Act was designed to remedy exist to a large degree in many of the state governments, and are especially aggravated in the administration of the local governments of some of the larger cities. The chief, if not the only, test of fitness for office in many cases has been party loyalty, honesty and capacity being seldom more than secondary considerations. The result has been the fostering of dishonesty and extravagance, which have brought weakness and gross corruption into the administration of the local governments. In consequence of this there has been a constantly growing tendency, among the more intelligent class of citizens, to demand that honest business methods be applied to local public service, and that appointments be made on the basis of intelligence and capacity, rather than of party allegiance. The movement for the reform of the civil service of cities is going hand in hand with the movement for general municipal reform, those reformers regarding the merit system of appointments as not merely the necessary and only safe bulwark to preserve the results of their labours, but also as the most efficient means for bringing about other reforms. Hence civil service reform is given a leading position in all programmes for the reform of state and municipal governments. This has undoubtedly been due, in the first instance, at least, to the success which attended the application of the merit system to the Federal service, municipal and state legislation following in the wake of the national civil service law. In New York an act similar to the Federal Civil Service Act was passed on the 4th of May 1883, and in 1894 the principles of the merit system were introduced by an amendment into the state constitution, and made applicable to cities and villages as well. In Massachusetts an act was passed on the 3rd of

June 1884 which in its general features was based upon the Federal act and the New York act. Similar laws were passed in Illinois and Wisconsin in 1895, and in New Jersey in 1908; the laws provide for the adoption of the merit system in state and municipal government. In New Orleans, La., and in Seattle, Wash., the merit system was introduced by an amendment to the city charter in 1896. The same result was accomplished by New Haven, Conn., in 1897, and by San Francisco, Cal., in 1899. In still other cities the principles of the merit system have been enacted into law, in some cases applying to the entire service and in others to only a part of it.

The application of the merit system to state and municipal governments has proved successful wherever it has been given a fair trial.[6] As experience has fostered public confidence in the system, and at the same time shown those features of the law which are most vulnerable, and the best means for fortifying them, numerous and important improvements upon the pioneer act applying to the Federal service have been introduced in the more recent legislation. This is particularly true of the acts now in force in New York (passed in 1899) and in Chicago. The power of the commission to enforce these acts is materially greater than the power possessed by the Federal commission. In making investigations they are not confined to taking the testimony of voluntary witnesses, but may administer oaths, and compel testimony and the production of books and papers where necessary; and in taking action they are not confined to the making of a report of the findings in their investigations, but may themselves, in many cases, take final judicial action. Further than this, the payment of salaries is made dependent upon the certificate of the commission that the appointments of the recipients were made in accordance with the civil service law and rules. Thus these commissions have absolute power to prevent irregular or illegal appointments by refractory appointing officers. Their powers being so much greater than those of the national commission, their action can be much more drastic in most cases, and they can go more directly to the heart of an existing abuse, and apply more quickly and effectually the needed remedy.

Upon the termination of the Spanish-American War, the necessity for the extension of the principles of the merit system to the new territories, the responsibility for whose government the results of this war had thrown upon the United States, was realized. By the acts providing for civil government in Porto Rico (April 12th, 1900) and Hawaii (April 30th, 1900), the provisions of the Civil Service Act and Rules were applied to those islands. Under this legislation the classification applies to all positions which are analogous to positions in the Federal service, those which correspond to positions in the municipal and state governments being considered as local in character, and not included in the classification.

On the 19th of September 1900 the United States Philippine Commission passed an act “for the establishment and maintenance of an efficient and honest civil service in the Philippine Islands.” This act, in its general features, is based upon the national civil service law, but includes also a number of the stronger points to be found in the state and municipal law mentioned above. Among these are the power given the civil service board to administer oaths, summon witnesses, and require the production of official records; and the power to stop payment of salaries to persons illegally appointed. Promotions are determined by competitive examinations, and are made throughout the service, as there are no excepted positions. A just right of preference in local appointments is given to natives. The president of the Philippine commission in introducing this bill said: “The purpose of the United States government ... in these islands is to secure for the Filipino people as honest and as efficient a government as may be possible.... It is the hope of the commission to make it possible for one entering the lowest ranks to reach the highest, under a tenure based solely upon merit.” Judging by past experience it is believed that this law is well adapted to accomplish the purpose above stated.

> For fuller information upon the details of the present workings of the merit system in the Federal service, recourse should be had to the publications of the U.S. Civil Service Commission, which are to be found in the public libraries in all the principal cities in the United States, or which may be had free of charge upon application to the commission. The *Manual of Examinations*, published semi-annually, gives full information as to the character of the examinations held by the commission, together with the schedule of dates and places for the holding of those examinations. The *Annual Reports* of the commission contain full statistics of the results of its work, together with comprehensive statements as to the difficulties encountered in enforcing the law, and the means used to overcome them. In the *Fifteenth Report*, pp. 443-485, will be found a very valuable historical compilation from original sources, upon the “practice of the presidents in appointments and removals in the executive civil service, from 1789 to 1883.” In the same report, pp. 511-517, is a somewhat comprehensive bibliography of “civil service” in periodical literature in the 19th century,

brought down to the end of 1898. See also C.R. Fish, *The Civil Service and the Patronage* (New York, 1905).

In most European countries the civil service is recruited on much the same lines as in the United Kingdom and the United States, that is, either by examination or by nomination or by both. In some cases the examination is purely competitive, in other cases, as in France, holders of university degrees get special privileges, such as being put at the head of the list, or going up a certain number of places; or, as in Germany, many departmental posts are filled by nomination, combined with the results of general examinations, either at school or university. In the publications of the United States Department of Labour and Commerce for 1904-1905 will be found brief details of the systems adopted by the various foreign countries for appointing their civil service employees.

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1 See letter to Monroe, November 29th, 1820, Jefferson's *Writings*, vii. 190. A quotation from this letter is given at p. 454 of the *Fifteenth Report of the U.S. Civil Service Commission*.

2 See *Senate Report No. 576*, 47th Congress, 1st session; also *U.S. Civil Service Commission's Third Report*, p. 16 et seq., *Tenth Report*, pp. 136, 137, and *Fifteenth Report*, pp. 483, 484.

3 The progressive classification of the executive civil service, showing the growth of the merit system, is discussed, with statistics, in the *U.S. Civil Service Commission's Sixteenth Report*, pp. 129-137. A revision of this discussion, with important additions, appears in the *Seventeenth Report*.

4 For details justifying these statements, see *U.S. Civil Service Commission's Fourteenth Report*, pp. 12-14.

5 For the scope of these exceptions, see Civil Service Rule VI., at p. 57 of the *U.S. Civil Service Commission's Fifteenth and Sixteenth Reports*. A statement of the number of positions actually affected by this action of the president appears in the *Seventeenth Report*.

6 In the *U.S. Civil Service Commission's Fifteenth Report*, pp. 489-502, the "growth of the civil service reform in states and cities" is historically treated, briefly, but with some thoroughness.

CIVITA CASTELLANA (anc. *Falerii*, *q.v.*), a town and episcopal see of the province of Rome, 45 m. by rail from the city of Rome (the station is 5 m. N.E. of the town). Population (1901) 5265. The cathedral of S. Maria possesses a fine portico, erected in 1210 by Laurentius Romanus, his son Jacobus and his grandson Cosmas, in the cosmatesque style, with ancient columns and mosaic decorations: the interior was modernized in the 18th century, but has some fragments of cosmatesque ornamentation. The citadel was erected by Pope Alexander VI. from the designs of Antonio da Sangallo the elder, and enlarged by Julius II. and Leo X. The lofty bridge by which the town is approached belongs to the 18th century. Mount Soracte lies about 6 m. to the south-east.

CIVITA VECCHIA, a seaport town and episcopal see of Italy, in the province of Rome, 50 m. N.W. by rail and 35 m. direct from the city of Rome. Pop. (1871) 8143; (1901) 17,589. It is the ancient *Centum Cellae*, founded by Trajan. Interesting descriptions of it are given by Pliny the Younger (*Epist.* vi. 31) and Rutilius Namat. i. 237. The modern harbour works rest on the ancient foundations, and near it the cemetery of detachments of the *Classes Misenensis* and *Ravennas* has been found (*Corp. Inscr. Lat.* vol. xi., Berlin, 1888, pp. 3520 seq.). Remains of an aqueduct and other Roman buildings are preserved; the imperial family had a villa here. Procopius mentions it in the 6th century as a strong and populous place, but it was destroyed in 813 by the Saracens. Leo IV. erected a new city for the inhabitants on the site where they had taken refuge, about 8 m. N.N.E. of Civita Vecchia towards the hills, near La Farnesina, where its ruins may still be seen; the city walls and some of the streets and buildings may be traced, and an inscription (which must have stood over one of the city gates) recording its foundation has been discovered. It continued to exist under the name Cencelle as a feudal castle until the 15th century. In the meantime, however, the inhabitants returned to the old town by the shore in 889 and rebuilt it, giving it the name Civitas Vetus,

the modern Civita Vecchia (see O. Marucchi in *Nuovo Bullettino di archeologia cristiana*, vi., 1900, p. 195 seq.). In 1508 Pope Julius II. began the construction of the castle from the designs of Bramante, Michelangelo being responsible for the addition of the central tower. It is considered by Burckhardt the finest building of its kind. Pius IV. added a convict prison. The arsenal was built by Alexander VII. and designed by Bernini. Civita Vecchia was the chief port of the Papal State and has still a considerable trade. There are cement factories in the town, and calcium carbide is an important article of export. The principal imports are coal, cattle for the home markets, and fire-bricks from the United Kingdom. Three miles N.E. were the *Aquae Tauri*, warm springs, now known as *Bagni della Ferrata*: considerable remains of the Roman baths are still preserved. About 1 m. W. of these are other hot springs, those of the *Ficoncella*, also known in Roman times.

CLACKMANNAN, the county town of Clackmannanshire, Scotland. Pop. 1505. It lies near the north bank of the Forth, 2 m. E. of Alloa, with two stations on the North British railway. Among the public buildings are the parish church, the tower of which, standing on a commanding eminence, is a conspicuous landmark. Clackmannan Tower is now a picturesque ruin, but at one time played an important part in Scottish history, and was the seat of a lineal descendant of the Bruce family after the failure of the male line. The old market cross still exists, and close to it stands the stone that gives the town its name (Gaelic, *clach*, stone; Manann, the name of the district). A large spinning-mill and coalpits lend a modern touch in singular contrast with the quaint, old-world aspect of the place. About 1 m. to the S.E. is Kennet House, the seat of Lord Balfour of Burleigh, another member of the Bruce family.

CLACKMANNANSHIRE, the smallest county in Scotland, bounded S.W. by the Forth, W. by Stirlingshire, N.N.E. and N.W. by Perthshire, and E. by Fifeshire. It has an area of 35,160 acres, or about 55 sq. m. An elevated ridge starting on the west, runs through the middle of the county, widening gradually till it reaches the eastern boundary, and skirting the alluvial or carse lands in the valleys of the Forth and Devon. Still farther to the N. the Ochil hills form a picturesque feature in the landscape, having their generally verdant surface broken by bold projecting rocks and deeply indented ravines. The principal summits are within the limits of the shire, among them Ben Cleuch (2363 ft.), King’s Seat (2111 ft.), Whitewisp (2110 ft.), the Law (above Tillicoultry, 2094 ft.) and Blairdenon (2072 ft.), on the northern slope, in which the river Devon takes its rise. The rivers of importance are the Devon and the Black or South Devon. The former, noted in the upper parts for its romantic scenery and its excellent trout-fishing, runs through the county near the base of the Ochils, and falls into the Forth at the village of Cambus, after a winding course of 33 m., although as the crow flies its source is only 5¼ m. distant. The Black Devon, rising in the Cleish Hills, flows westwards in a direction nearly parallel to that of the Devon, and falls into the Forth near Clackmannan. It supplies motive power to numbers of mills and collieries; and its whole course is over coal strata. The Forth is navigable as far as it forms the boundary of the county, and ships of 500 tons burden run up as far as Alloa. The only lake is Gartmorn, 1 m. long by about ⅓ of a mile broad, which has been dammed in order to furnish water to Alloa and power to mills. The Ochils are noted for the number of their glens. Though these are mostly small, they are well wooded and picturesque, and those at Menstrie, Alva, Tillicoultry and Dollar are particularly beautiful.

Geology.—This county is divided geologically into two areas, the boundary line skirting the southern margin of the Ochils and running westwards from a point north of Dollar by Alva in the direction of Airthrev in Stirlingshire. The northern portion forms part of the volcanic range of the Ochils which belongs to the Old Red Sandstone period, and consists of a great succession of lavas—basalts and andesites—with intercalations of tuff and agglomerate. As the rocks dip gently towards the north and form the highest ground in the county they must reach a great thickness. They are pierced by small intrusive masses of diorite, north of Tillicoultry House. The well-marked feature running E. and W. along the southern base of

the Ochils indicates a line of fault or dislocation which abruptly truncates the Lower Old Red volcanic rocks and brings down an important development of Carboniferous strata occupying the southern part of the county. These belong mainly to the Coal-measures and comprise a number of valuable coal-seams which have been extensively worked. The Clackmannan field is the northern continuation of the great Lanarkshire basin which extends northwards by Slamannan, Falkirk and the Carron Ironworks to Alloa. Along the eastern margin between Cairnmuir and Brucefield the underlying Millstone Grit, consisting mainly of false-bedded sandstones, comes to the surface. Close to the river Devon south of Dollar the Vicars Bridge Limestone, which there marks the top of the Carboniferous Limestone series, rises from beneath the Millstone Grit. The structure of the Clackmannan field is interesting. The strata are arranged in synclinal form, the highest seams being found near the Devon ironworks, and they are traversed by a series of parallel east and west faults each with a downthrow to the south, whereby the coals are repeated and the field extended. During mining operations evidence has been obtained of the existence of a buried river-channel, filled with boulder clay and stratified deposits along the course of the Devon, which extends below the present sea-level and points to greater elevation of the land in pre-glacial time. An excellent example of a dolerite dyke trending slightly north of west occurs in the north part of the county where it traverses the volcanic rocks of Lower Old Red Sandstone age.

Industries.—The soil is generally productive and well cultivated, though the greater part of the elevated range which is interposed between the carse lands on the Forth and the vale of Devon at the base of the Ochils on the north consists of inferior soils, often lying upon an impervious clay. Oats are the chief crop, but wheat and barley are profitably grown. Sheep-farming is successfully pursued, the Ochils affording excellent pasturage, and cattle, pigs and horses are also raised. There is a small tract of moorland in the east, called the Forest, bounded on its northern margin by the Black Devon. Iron-ore (haematite), copper, silver, lead, cobalt and arsenic have all been discovered in small quantity in the Ochils, between Alva and Dollar. Ironstone—found either in beds, or in oblate balls embedded in slaty clay, and yielded from 25 to 30% of iron—is mined for the Devon iron-works, near Clackmannan. Coal has been mined for a long period. The strata which compose the field are varieties of sandstone, shale, fire-clay and argillaceous ironstone. There is a heavy continuous output of coal at the mines at Sauchie, Fishcross, Coalsnaughton, Devonside, Clackmannan and other pits. The spinning-mills at Alloa, Tillicoultry and Alva are always busy, Alloa yarns and fingering being widely famous. The distilleries at Glenochil and Carsebridge and the breweries in Alloa and Cambus do a large export business. The minor trades include glass-blowing, pottery, coopering, tanning, iron-founding, electrical apparatus making, ship-building and paper-making.

The north British railway serves the whole county, while the Caledonian has access to Alloa.

Population and Government.—The population was 33,140 in 1891 and 32,029 in 1901, when 170 persons spoke Gaelic and English and one person Gaelic only. The county unites with Kinross-shire in returning one member to parliament. Clackmannan (pop. 1505) is the county town, but Alloa (14,458), Alva (4624), and Tillicoultry (3338) take precedence in population and trade. Menstrie (pop. 898) near Alloa has a large furniture factory and the great distillery of Glenochil. To the north-east of Alloa is the thriving mining village of Sauchie. Clackmannan forms a sheriffdom with Stirling and Dumbarton shires, and a sheriff-substitute sits at Alloa. Most of the schools in the shire are under school-board control, but there are a few voluntary schools, besides an exceptionally well-equipped technical school in Alloa and a well-known academy at Dollar.

See James Wallace, *The Sheriffdom of Clackmannan: a Sketch of its History* (Edinburgh, 1890); D. Beveridge, *Between the Ochils and the Forth* (Edinburgh, 1888); John Crawford, *Memorials of Alloa* (1885); William Gibson, *Reminiscences of Dollar, Tillicoultry*,

CLACTON-ON-SEA, a watering-place in the Harwich parliamentary division of Essex, England; 71 m. E.N.E. from London by a branch from Colchester of the Great Eastern railway; served also by steamers from London in the summer months. Pop. of urban district (1901) 7456. Clay cliffs of slight altitude rise from the sandy beach and face south-eastward. In the neighbourhood, however, marshes fringe the shore. The church of Great Clacton, at the village 1½ m. inland, is Norman and later, and of considerable interest. Clacton is

provided with a pier, promenade and marine parade; and is the seat of various convalescent and other homes.

CLADEL, LÉON (1835-1892), French novelist, was born at Montauban (Tarn-et-Garonne) on the 13th of March 1835. The son of an artisan, he studied law at Toulouse and became a solicitor's clerk in Paris. He made a reputation in a limited circle by his first book, *Les Martyrs ridicules* (1862), a novel for which Charles Baudelaire, whose literary disciple Cladel was, wrote a preface. He then returned to his native district of Quercy, where he produced a series of pictures of peasant life in *Eral le dompteur* (1865), *Le Nommé Qouael* (1868) and other volumes. Returning to Paris he published the two novels which are generally acknowledged as his best work, *Le Bouscassié* (1869) and *La Fête votive de Saint Bartholomée Porte-glaive* (1872). *Une Maudite* (1876) was judged dangerous to the public morals and cost its author a month's imprisonment. Other works by Cladel are *Les Va-nu-pieds* (1873), a volume of short stories; *N'a qu'un œil* (1882), *Urbains et ruraux* (1884), *Gueux de marque* (1887), and the posthumous *Juive errante* (1897). He died at Sèvres on the 20th of July 1892.

See *La Vie de Léon Cladel* (Paris, 1905), by his daughter Judith Cladel, containing also an article on Cladel by Edmond Picard, a complete list of his works, and of the critical articles on his work.

CLAFLIN, HORACE BRIGHAM (1811-1885), American merchant, was born in Milford, Massachusetts, on the 18th of December 1811. He was educated at Milford Academy, became a clerk in his father's store in Milford, and in 1831, with his brother Aaron and his brother-in-law Samuel Daniels, succeeded to his father's business. In 1832 the firm opened a branch store in Worcester, Mass., and in 1833 Horace B. Claflin and Daniels secured the sole control of this establishment and restricted their dealing to dry goods. In 1843 Claflin removed to New York City and became a member of the firm of Bulkley & Claflin, wholesale dry goods merchants. In 1851 and in 1864 the firm was reorganized, being designated in these respective years as Claflin, Mellin & Company and H.B. Claflin & Company. Under Claflin's management the business increased so rapidly that the sales for a time after 1865 probably exceeded those of any other mercantile house in the world. Though the firm was temporarily embarrassed at the beginning of the Civil War, on account of its large business interests in the South, and during the financial panic of 1873, the promptness with which Mr Claflin met these crises and paid every dollar of his liabilities greatly increased his reputation for business ability and integrity. He died at Fordham, New York, on the 14th of November 1885.

CLAIRAULT (or CLAIRAUT), **ALEXIS CLAUDE** (1713-1765), French mathematician, was born on the 13th or 7th of May 1713, at Paris, where his father was a teacher of mathematics. Under his father's tuition he made such rapid progress in mathematical studies that in his thirteenth year he read before the French Academy an account of the properties of four curves which he had then discovered. When only sixteen he finished a treatise, *Recherches sur les courbes à double courbure*, which, on its publication in 1731, procured his admission into the Academy of Sciences, although even then he was below the legal age. In 1736, together with Pierre Louis Maupertuis, he took part in the expedition to Lapland, which was undertaken for the purpose of estimating a degree of the meridian, and on his return he published his treatise *Théorie de la figure de la terre* (1743). In this work he promulgated the theorem, known as "Clairault's theorem," which connects the gravity at points on the surface of a rotating ellipsoid with the compression and the centrifugal force

at the equator (see EARTH, FIGURE OF THE). He obtained an ingenious approximate solution of the problem of the three bodies; in 1750 he gained the prize of the St Petersburg Academy for his essay *Théorie de la lune*; and in 1759 he calculated the perihelion of Halley's comet. He also detected singular solutions in differential equations of the first order, and of the second and higher degrees. Clairault died at Paris, on the 17th of May 1765.

CLAIRON, LA (1723-1803), French actress, whose real name was CLAIRE JOSEPH HIPPOLYTE LERIS, was born at Condé sur l'Escaut, Hainaut, on the 25th of January 1723, the natural daughter of an army sergeant. In 1736 she made her first stage appearance at the Comédie Italienne, in a small part in Marivaux's *Île des esclaves*. After several years in the provinces she returned to Paris. Her life, meanwhile, had been decidedly irregular, even if not to the degree indicated by the libellous pamphlet *Histoire de la demoiselle Cronel, dite Frétillon, actrice de la Comédie de Rouen, écrite par elle-même* (The Hague, 1746), or to be inferred from the disingenuousness of her own *Mémoires d'Hippolyte Clairon* (1798); and she had great difficulty in obtaining an order to make her *début* at the Comédie Française. Succeeding, however, at last, she had the courage to select the title-rôle of *Phèdre* (1743), and she obtained a veritable triumph. During her twenty-two years at this theatre, dividing the honours with her rival Mlle Dumesnil, she filled many of the classical rôles of tragedy, and created a great number of parts in the plays of Voltaire, Marmontel, Saurin, de Belloy and others. She retired in 1766, and trained pupils for the stage, among them Mlle Raucourt. Goldsmith called Mlle Clairon "the most perfect female figure I have ever seen on any stage" (*The Bee*, 2nd No.); and Garrick, while recognizing her unwillingness or inability to make use of the inspiration of the instant, admitted that "she has everything that art and a good understanding with great natural spirit can give her."

CLAIRVAUX, a village of north-eastern France, in the department of Aube, 40 m. E.S.E. of Troyes on the Eastern railway to Belfort. Clairvaux (*Clara Vallis*) is situated in the valley of the Aube on the eastern border of the Forest of Clairvaux. Its celebrity is due to the abbey founded in 1115 by St Bernard, which became the centre of the Cistercian order. The buildings (see ABBEY) belong for the most part to the 18th century, but there is a large storehouse which dates from the 12th century. The abbey, suppressed at the Revolution, now serves as a prison, containing on an average 800 inmates, who are employed in agricultural and industrial occupations. Clairvaux has iron-works of some importance.

CLAIRVOYANCE (Fr. for "clear-seeing"), a technical term in psychical research, properly equivalent to lucidity, a supernormal power of obtaining knowledge in which no part is played by (*a*) the ordinary processes of sense-perception or (*b*) supernormal communication with other intelligences, incarnate, or discarnate. The word is also used, sometimes qualified by the word *telepathic*, to mean the power of gaining supernormal knowledge from the mind of another (see TELEPATHY). It is further commonly used by spiritualists to mean the power of seeing spirit forms, or, more vaguely, of discovering facts by some supernormal means.

Lucidity.—Few experiments have been made to test the existence of this faculty. If communications from discarnate minds are regarded as possible, there are no means of distinguishing facts obtained in this way from facts obtained by independent clairvoyance. In practice no evidence has been obtained pointing to the possession by a discarnate spirit of knowledge not possessed by any living person (see MEDIUM). As explanation of the few successful experiments in independent clairvoyance we have the choice of three explanations: (1) lucidity; (2) telepathy from living persons; (3) hyperaesthesia. The second possibility was overlooked in Richet's diagram experiments; it cannot be assumed that a

picture put into an envelope and not consciously recalled has been in reality forgotten. Similarly the clairvoyant diagnosis of diseases may depend on knowledge gained telepathically from the patient, who may be subliminally aware of diseased states of the body. The most elaborate experiments are by Prof. Richet with a hypnotized subject who succeeded in naming twelve cards out of sixty-eight. But no precautions were taken against hyperaesthesia further than enclosing the card in a second envelope. There is a power possessed by a certain number of people, of naming a card drawn by them or held in the hand face downwards, so that there is no normal knowledge of its suit and number. Few thorough trials have been made; but it seems to point to some kind of hyperaesthesia rather than to clairvoyance; in the Richet experiments even if the envelopes excluded hyperaesthesia of touch on the part of the medium, there may have been subliminal knowledge on Prof. Richet's part of the card which he put in the envelope. The experience known as the *déjà vu* has sometimes been explained as due to clairvoyance.

Telepathic Clairvoyance.—For a discussion of this see Telepathy and Crystal-gazing. It may be noted here that some curious relation seems to exist between apparently telepathic acquisition of knowledge and the arrival of a letter, newspaper, &c, from which the same knowledge could be directly gained. We are confronted with a similar problem in attempting an explanation of the power of mediums to state correctly facts relating to objects placed in their hands. Of a somewhat different character is retrocognition (*q.v.*), where the knowledge in many cases, if telepathic, must be derived from a discarnate mind.

Clairvoyance, as a term of spiritualism, with its correlative *clairaudience*, is the name given to the power of seeing and hearing discarnate spirits of dead relatives and others, with whom the living are said to be surrounded. More vaguely it includes the power of gaining knowledge, either through the spirit world or by means of psychometry (*i.e.* the supernormal acquisition of knowledge about owners of objects, writers of letters, &c). Some evidence for these latter powers has been accumulated by the Society for Psychical Research, but in many cases the piecing together of normally acquired knowledge, together with shrewd guessing, suffices to explain the facts, especially where the investigator has had no special training for his task.

See Richet, *Experimentelle Studien* (1891); also in *Proc. S.P.R.* vi. 66. For a criticism see N.W. Thomas, *Thought Transference*, pp. 44-48. For Clairvoyance in general see F.W.H. Myers, *Human Personality*, and in *Proc. S.P.R.* xi. 334 et seq. For a criticism of the evidence see Mrs Sidgwick in *Proc. S.P.R.* vii. 30, 356.

(N. W. T.)

CLAMECY, a town of central France, capital of an arrondissement in the department of Nièvre, at the confluence of the Yonne and Beuvron and on the Canal du Nivernais, 46 m. N.N.E. of Nevers on the Paris-Lyon railway. Pop. (1906) 4455. Its principal building is the church of St Martin, which dates chiefly from the 13th, 14th and 15th centuries. The tower and façade are of the 16th century. The chevet, which is surrounded by an aisle, is rectangular—a feature found in few French churches. Of the old castle of the counts of Nevers, vaulted cellars alone remain. A church in the suburb of Bethlehem, dating from the 12th and 13th centuries, now serves as part of an hotel. The public institutions include the sub-prefecture, tribunals of first instance and of commerce and a communal college. Among the industrial establishments are saw-mills, fulling-mills and flour-mills, tanneries and manufactories of boots and shoes and chemicals; and there is considerable trade in wine and cattle and in wood and charcoal, which is conveyed principally to Paris, by way of the Yonne.

In the early middle ages Clamecy belonged to the abbey of St Julian at Auxerre; in the 11th century it passed to the counts of Nevers, one of whom, Hervé, enfranchised the inhabitants in 1213. After the capture of Jerusalem by Saladin in 1188, Clamecy became the seat of the bishops of Bethlehem, who till the Revolution resided in the hospital of Panthenor, bequeathed by William IV., count of Nevers. On the *coup d'état* of 1851 an insurrection broke out in the town, and was repressed by the new authorities with great severity.

CLAN (Gaelic *clann*, O. Ir. *cland*, connected with Lat. *planta*, shoot or scion, the ancient Gaelic or Goidelic substituting k for p), a group of people united by common blood, and usually settled in a common habitat. The clan system existed in Ireland and the Highlands of Scotland from early times. In its strictest sense the system was peculiar to those countries, but, in its wider meaning of a group of kinsmen forming a self-governing community, the system as represented by the village community has been shown by Sir H. Maine and others to have existed at one time or another in all lands.

Before the use of surnames and elaborate written genealogies, a tribe in its definite sense was called in Celtic a *tuath*, a word of wide affinities, from a root *tu*, to grow, to multiply, existing in all European languages. When the tribal system began to be broken up by conquest and by the rise of towns and of territorial government, the use of a common surname furnished a new bond for keeping up a connexion between kindred. The head of a tribe or smaller group of kindred selected some ancestor and called himself his *Ua*, grandson, or as it has been anglicized *O', e.g. Ua Conchobair* (O' Conor), *Ua Suilleabhain* (O'Sullivan). All his kindred adopted the same name, the chief using no fore-name however. The usual mode of distinguishing a person before the introduction of surnames was to name his father and grandfather, *e.g.* Owen, son of Donal, son of Dermot. This naturally led some to form their surnames with *Mac*, son, instead of *Ua*, grandson, *e.g. MacCarthaigh*, son of *Carthach* (MacCarthy), *MacRuaidhri*, son of Rory (Macrory). Both methods have been followed in Ireland, but in Scotland *Mac* came to be exclusively used. The adoption of such genealogical surnames fostered the notion that all who bore the same surname were kinsmen, and hence the genealogical term *clann*, which properly means the descendants of some progenitor, gradually became synonymous with *tuath*, tribe. Like all purely genealogical terms, *clann* may be used in the limited sense of a particular tribe governed by a chief, or in that of many tribes claiming descent from a common ancestor. In the latter sense it was synonymous with *síl, siol,* seed *e.g. Siol Alpine*, a great clan which included the smaller clans of the Macgregors, Grants, Mackinnons, Macnabs, Macphies, Macquarries and Macaulays.

The clan system in the most archaic form of which we have any definite information can be best studied in the Irish *tuath*, or tribe.[1] This consisted of two classes: (1) tribesmen, and (2) a miscellaneous class of slaves, criminals, strangers and their descendants. The first class included tribesmen by blood in the male line, including all illegitimate children acknowledged by their fathers, and tribesmen by adoption or sons of tribeswomen by strangers, foster-sons, men who had done some signal service to the tribe, and lastly the descendants of the second class after a certain number of generations. Each *tuath* had a chief called a *ríg*, king, a word cognate with the Gaulish *ríg-s* or *rix*, the Latin *reg-s* or *rex*, and the Old Norse *rik-ir*. The tribesmen formed a number of communities, each of which, like the tribe itself, consisted of a head, *ceann fine*, his kinsmen, slaves and other retainers. This was the *fine*, or sept. Each of these occupied a certain part of the tribe-land, the arable part being cultivated under a system of co-tillage, the pasture land co-grazed according to certain customs, and the wood, bog and mountains forming the marchland of the sept being the unrestricted common land of the sept. The sept was in fact a village community.

What the sept was to the tribe, the homestead was to the sept. The head of a homestead was an *aire*, a representative freeman capable of acting as a witness, compurgator and bail. These were very important functions, especially when it is borne in mind that the tribal homestead was the home of many of the kinsfolk of the head of the family as well as of his own children. The descent of property being according to a gavel-kind custom, it constantly happened that when an *aire* died the share of his property which each member of his immediate family was entitled to receive was not sufficient to qualify him to be an *aire*. In this case the family did not divide the inheritance, but remained together as "a joint and undivided family," one of the members being elected chief of the family or household, and in this capacity enjoyed the rights and privileges of an *aire*. Sir H.S. Maine directed attention to this kind of family as an important feature of the early institutions of all Indo-European nations. Beside the "joint and undivided family," there was another kind of family which we might call "the joint family." This was a partnership composed of three or four members of a sept whose individual wealth was not sufficient to qualify each of them to be an *aire*, but whose joint wealth qualified one of the co-partners as head of the joint family to be one.

So long as there was abundance of land each family grazed its cattle upon the tribe-land without restriction; unequal increase of wealth and growth of population naturally led to its limitation, each head of a homestead being entitled to graze an amount of stock in proportion to his wealth, the size of his homestead, and his acquired position. The arable land was no doubt applotted annually at first; gradually, however, some of the richer

families of the tribe succeeded in evading this exchange of allotments and converting part of the common land into an estate in sevralty. Septs were at first colonies of the tribe which settled on the march-land; afterwards the conversion of part of the common land into an estate in sevralty enabled the family that acquired it to become the parent of a new sept. The same process might, however, take place within a sept without dividing it; in other words, several members of the sept might hold part of the land of the sept as separate estate. The possession of land in sevralty introduced an important distinction into the tribal system—it created an aristocracy. An *aire* whose family held the same land for three generations was called a *flaith*, or lord, of which rank there were several grades according to their wealth in land and chattels. The *aires* whose wealth consisted in cattle only were called *bó-aires*, or cow-*aires*, of whom there were also several grades, depending on their wealth in stock. When a *bó-aire* had twice the wealth of the lowest class of *flaith* he might enclose part of the land adjoining his house as a lawn; this was the first step towards his becoming a *flaith*. The relations which subsisted between the *flaiths* and the *bó-aires* formed the most curious part of the Celtic tribal system, and throw a flood of light on the origin of the feudal system. Every tribesman without exception owed *ceilsinne* to the *ríg*, or chief, that is, he was bound to become his *ceile*, or vassal. This consisted in paying the *ríg* a tribute in kind, for which the *ceile* was entitled to receive a proportionate amount of stock without having to give any bond for their return, giving him service, *e.g.* in building his *dun*, or stronghold, reaping his harvest, keeping his roads clean and in repair, killing wolves, and especially service in the field, and doing him homage three times while seated every time he made his return of tribute. Paying the "*calpe*" to the Highland chiefs represented this kind of vassalage, a *colpdach* or heifer being in many cases the amount of food-rent paid by a free or *saer ceile*. A tribesman might, however, if he pleased, pay a higher rent on receiving more stock together with certain other chattels for which no rent was chargeable. In this case he entered into a contract, and was therefore a bond or *daer ceile*. No one need have accepted stock on these terms, nor could he do so without the consent of his sept, and he might free himself at any time from his obligation by returning what he had received, and the rent due thereon.

What every one was bound to do to his *ríg*, or chief, he might do voluntarily to the *flaith* of his sept, to any *flaith* of the tribe, or even to one of another tribe. He might also become a bond *ceile*. In either case he might renounce his ceileship by returning a greater or lesser amount of stock than what he had received according to the circumstances under which he terminated his vassalage. In cases of disputed succession to the chiefship of a tribe the rival claimants were always anxious to get as many as possible to become their vassals. Hence the anxiety of minor chieftains, in later times in the Highlands of Scotland, to induce the clansmen to pay the "*calpe*" where there happened to be a doubt as to who was entitled to be chief.

The effect of the custom of gavel-kind was to equalize the wealth of each and leave no one wealthy enough to be chief. The "joint and undivided family" and the formation of "joint families," or gilds, was one way of obviating this result; another way was the custom of tanistry. The headship of the tribe was practically confined to the members of one family; this was also the case with the headship of a sept. Sometimes a son succeeded his father, but the rule was that the eldest and most capable member of the *geilfine*, that is, the relatives of the actual chief to the fifth degree,[2] was selected during his lifetime to be his successor—generally the eldest surviving brother or son of the preceding chief. The man selected as successor to a chief of a tribe, or chieftain of a sept, was called the tanist, and should be "the most experienced, the most noble, the most wealthy, the wisest, the most learned, the most truly popular, the most powerful to oppose, the most steadfast to sue for profits and (be sued) for losses." In addition to these qualities he should be free from personal blemishes and deformities and of fit age to lead his tribe or sept, as the case may be, to battle.[3] So far as selecting the man of the *geilfine* who was supposed to possess all those qualities, the office of chief of a tribe or chieftain of a sept was elective, but as the *geilfine* was represented by four persons, together with the chief or chieftain, the election was practically confined to one of the four. In order to support the dignity of the chief or chieftain a certain portion of the tribe or sept land was attached as an apanage to the office; this land, with the *duns* or fortified residences upon it, went to the successor, but a chief's own property might be gavelled. This custom of tanistry applied at first probably to the selection of the successors of a *ríg*, but was gradually so extended that even a *bó-aire* had a tanist.

A sept might have only one *flaith*, or lord, connected with it, or might have several. It sometimes happened, however, that a sept might be so broken and reduced as not to have even one man qualified to rank as a *flaith*. The rank of a *flaith* depended upon the number of

his *ceiles*, that is, upon his wealth. The *flaith* of a sept, and the highest when there was more than one, was *ceann fine*, or head of the sept, or as he was usually called in Scotland, the chieftain. He was also called the *flaith geilfine*, or head of the *geilfine*, that is, the kinsmen to the fifth degree from among whom should be chosen the tanist, and who, according to the custom of gavel-kind, were the immediate heirs who received the personal property and were answerable for the liabilities of the sept. The *flaiths* of the different septs were the vassals of the *ríg*, or chief of the tribe, and performed certain functions which were no doubt at first individual, but in time became the hereditary right of the sept. One of those was the office of *maer*, or steward of the chief's rents, &c.;[4] and another that of *aire tuisi*, leading *aire*, or *taoisech*, a word cognate with the Latin *duc-s* or *dux*, and Anglo-Saxon here-*tog*, leader of the "here," or army. The *taoisech* was leader of the tribe in battle; in later times the term seems to have been extended to several offices of rank. The cadet of a Highland clan was always called the *taoisech*, which has been translated captain; after the conquest of Wales the same term, *tywysaug*, was used for a ruling prince. Slavery was very common in Ireland and Scotland; in the former slaves constituted a common element in the stipends or gifts which the higher kings gave their vassal *sub-reguli*. Female slaves, who were employed in the houses of chiefs and *flaiths* in grinding meal with the hand-mill or quern, and in other domestic work, must have been very common, for the unit or standard for estimating the wealth of a *bó-aire*, blood-fines, &c., was called a *cumhal*, the value of which was three cows, but which literally meant a female slave. The descendants of those slaves, prisoners of war, forfeited hostages, refugees from other tribes, broken tribesmen, &c., gathered round the residence of the *ríg* and *flaiths*, or squatted upon their march-lands, forming a motley band of retainers which made a considerable element in the population, and one of the chief sources of the wealth of chiefs and *flaiths*. The other principal source of their income was the food-rent paid by *ceiles*, and especially by the *daer* or bond *ceiles*, who were hence called *biathachs*, from *biad*, food. A *flaith*, but not a *ríg*, might, if he liked, go to the house of his *ceile* and consume his food-rent in the house of the latter.

Under the influence of feudal ideas and the growth of the modern views as to ownership of land, the chiefs and other lords of clans claimed in modern times the right of best owing the tribe-land as *turcrec*, instead of stock, and receiving rent not for cattle and other chattels as in former times, but proportionate to the extent of land given to them. The *turcrec*-land seems to have been at first given upon the same terms as *turcrec*-stock, but gradually a system of short leases grew up; sometimes, too, it was given on mortgage. In the Highlands of Scotland *ceiles* who received *turcrec*-land were called "taksmen." On the death of the chief or lord, his successor either bestowed the land upon the same person or gave it to some other relative. In this way in each generation new families came into possession of land, and others sank into the mass of mere tribesmen. Sometimes a "taksman" succeeded in acquiring his land in perpetuity, by gift, marriage or purchase, or even by the "strong hand." The universal prevalence of exchangeable allotments, or the rundale system, shows that down to even comparatively modern times some of the land was still recognized as the property of the tribe, and was cultivated in village communities.

The chief governed the clan by the aid of a council called the *sabaid* (*sab*, a prop), but the chief exercised much power, especially over the miscellaneous body of non-tribesmen who lived on his own estate. This power seems to have extended to life and death. Several of the *flaiths*, perhaps, all heads of septs, also possessed somewhat extensive powers of the same kind.

The Celtic dress, at least in the middle ages, consisted of a kind of shirt reaching to a little below the knees called a *lenn*, a jacket called an *inar*, and a garment called a *brat*, consisting of a single piece of cloth. This was apparently the garb of the *aires*, who appear to have been further distinguished by the number of colours in their dress, for we are told that while a slave had clothes of one colour, a *rég tuatha*, or chief of a tribe, had five, and an *ollamh* and a superior king six. The breeches was also known, and cloaks with a cowl or hood, which buttoned up tight in front. The *lenn* is the modern kilt, and the *brat* the plaid, so that the dress of the Irish and Welsh in former times was the same as that of the Scottish Highlander.

By the abolition of the heritable jurisdiction of the Highland chiefs, and the general disarmament of the clans by the acts passed in 1747 after the rebellion of 1745, the clan system was practically broken up, though its influence still lingers in the more remote districts. An act was also passed in 1747 forbidding the use of the Highland garb; but the injustice and impolicy of such a law being generally felt it was afterwards repealed.

(W. K. S.)

1 The following account of the Irish clan-system differs in some respects from that in the article on Brehon Laws (*q.v.*); but it is retained here in view of the authority of the writer and the admitted obscurity of the whole subject.

(ED. *E. B.*)

2 The explanation here given of *geilfine* is different from that given in the introduction to the third volume of the *Ancient Laws of Ireland*, which was followed by Sir H.S. Maine in his account of it in his *Early History of Institutions*, and which the present writer believes to be erroneous.

3 It should also be mentioned that illegitimacy was not a bar. The issue of "handfast" marriages in Scotland were eligible to be chiefs, and even sometimes claimed under feudal law.

4 This office is of considerable importance in connexion with early Scottish history. In the Irish annals the *ríg*, or chief of a great tribe (*mor tuath*), such as of Ross, Moray, Marr, Buchan, &c., is called a *mor maer*, or great *maer*. Sometimes the same person is called king also in these annals. Thus *Findlaec*, or Finlay, son of *Ruadhri*, the father of Shakespeare's Macbeth, is called king of Moray in the *Annals of Ulster*, and *mor maer* in the *Annals of Tighernach*. The term is never found in Scottish charters, but it occurs in the Book of the Abbey of Deir in Buchan, now in the library of the university of Cambridge. The Scotic kings and their successors obviously regarded the chiefs of the great tribes in question merely as their *maers*, while their tribesmen only knew them as kings. From these "mor-maerships," which corresponded with the ancient *mor tuatha*, came most, if not all, the ancient Scottish earldoms.

CLANRICARDE, ULICK DE BURGH (Bourke or Burke), 1st Earl of (d. 1544), styled MacWilliam, and Ne-gan or Na-gCeann (*i.e.* "of the Heads," "having made a mount of the heads of men slain in battle which he covered up with earth"), was the son of Richard or Rickard de Burgh, lord of Clanricarde, by a daughter of Madden of Portumna, and grandson of Ulick de Burgh, lord of Clanricarde (1467-1487), the collateral heir male of the earls of Ulster. On the death of the last earl in 1333, his only child Elizabeth had married Lionel, duke of Clarence, and the earldom became merged in the crown, in consequence of which the de Burghs abjured English laws and sovereignty, and chose for their chiefs the sons of Sir William, the "Red" earl of Ulster's brother, the elder William taking the title of MacWilliam Eighter (Uachtar, *i.e.* Upper), and becoming the ancestor of the earls of Clanricarde, and his brother Sir Edmond that of MacWilliam Oughter (Ochtar, *i.e.* Lower), and founding the family of the earls of Mayo. In 1361 the duke of Clarence was sent over as lord-lieutenant to Ireland to enforce his claims as husband of the heir general, but failed, and the chiefs of the de Burghs maintained their independence of English sovereignty for several generations. Ulick de Burgh succeeded to the headship of his clan, exercised a quasi-royal authority and held vast estates in county Galway, in Connaught, including Loughry, Dunkellin, Kiltartan (Hilltaraght) and Athenry, as well as Clare and Leitrim. In March 1541, however, he wrote to Henry VIII., lamenting the degeneracy of his family, "which have been brought to Irish and disobedient rule by reason of marriage and nurseing with those Irish, sometime rebels, near adjoining to me," and placing himself and his estates in the king's hands. The same year he was present at Dublin, when the act was passed making Henry VIII. king of Ireland. In 1543, in company with other Irish chiefs, he visited the king at Greenwich, made full submission, undertook to introduce English manners and abandon Irish names, received a regrant of the greater part of his estates with the addition of other lands, was confirmed in the captainship and rule of Clanricarde, and was created on the 1st of July 1543 earl of Clanricarde and baron of Dunkellin in the peerage of Ireland, with unusual ceremony. "The making of McWilliam earl of Clanricarde made all the country during his time quiet and obedient," states Lord Chancellor Cusake in his review of the state of Ireland in 1553.[1] He did not live long, however, to enjoy his new English dignities, but died shortly after returning to Ireland about March 1544. He is called by the annalist of Loch Cé "a haughty and proud lord," who reduced many under his yoke, and by the Four Masters "the most illustrious of the English in Connaught."

Clanricarde married (1) Grany or Grace, daughter of Mulrone O'Carroll, "prince of Ely," by whom he had Richard or Rickard "the Saxon," who succeeded him as 2nd earl of Clanricarde (grandfather of the 4th earl, whose son became marquess of Clanricarde), this alliance being the only one declared valid. After parting with his first wife he married (2) Honora, sister of Ulick de Burgh, from whom he also parted. He married (3) Mary Lynch, by whom he had John, who claimed the earldom in 1568. Other sons, according to Burke's *Peerage*, were Thomas "the Athlete," shot in 1545, Redmond "of the Broom" (d. 1595), and Edmund (d.

1597).

See also *Annals of Ireland by the Four Masters* (ed. by O. Connellan, 1846), p. 132 note, and reign of Henry VIII.; *Annals of Loch Cé (Rerum Brit. Medii Aevi Scriptores*) (54) (1871); *Hist. Mem. of the O'Briens*, by J.O. Donoghue (i860), pp 159, 519; *Ireland under the Tudors*, by R. Bagwell, vol. i.; *State Papers, Ireland, Carew MSS.* and Gairdner's *Letters and Papers of Henry VIII.; Cotton MSS.* Brit. Mus., Titus B xi. f. 388.

(P. C. Y.)

1 *Cal. of State Pap., Carew MSS.* 1515-1574, p. 246.

CLANRICARDE, ULICK DE BURGH (Bourke or Burke), Marquess of (1604-1657 or 1658), son of Richard, 4th earl of Clanricarde, created in 1628 earl of St Albans, and of Frances, daughter and heir of Sir Francis Walsingham, and widow of Sir Philip Sidney and of Robert Devereux, earl of Essex, was born in 1604. He was summoned to the House of Lords as Lord Burgh in 1628, and succeeded his father as 5th earl in 1635. He sat in the Short Parliament of 1640 and attended Charles I. in the Scottish expedition. On the outbreak of the Irish rebellion Clanricarde had powerful inducements for joining the Irish—the ancient greatness and independence of his family, his devotion to the Roman Catholic Church, and strongest of all, the ungrateful treatment meted out by Charles I. and Wentworth to his father, one of Elizabeth's most stanch adherents in Ireland, whose lands were appropriated by the crown and whose death, it was popularly asserted, was hastened by the harshness of 422
the lord-lieutenant. Nevertheless at the crisis his loyalty never wavered. Alone of the Irish Roman Catholic nobility to declare for the king, he returned to Ireland, took up his residence at Portumna, kept Galway, of which he was governor, neutral, and took measures for the defence of the county and for the relief of the Protestants, making "his house and towns a refuge, nay, even a hospital for the distressed English."[1] In 1643 he was one of the commissioners appointed by the king to confer with the Irish confederates, and urged the wisdom of a cessation of hostilities in a document which he publicly distributed. He was appointed commander of the English forces in Connaught in 1644, and in 1646 was created a marquess and a privy councillor. He supported the same year the treaty between Charles I. and the confederates, and endeavoured after its failure to persuade Preston, the general of the Irish, to agree to a peace; but the latter, being advised by Rinuccini, the papal nuncio, refused in December. Together with Ormonde, Clanricarde opposed the nuncio's policy; and the royalist inhabitants of Galway having through the latter's influence rejected the cessation of hostilities, arranged with Lord Inchiquin in 1648, he besieged the town and compelled its acquiescence. In 1649 he reduced Sligo. On Ormonde's departure in December 1650 Clanricarde was appointed deputy lord-lieutenant, but he was not trusted by the Roman Catholics, and was unable to stem the tide of the parliamentary successes. In 1651 he opposed the offer of Charles, duke of Lorraine, to supply money and aid on condition of being acknowledged "Protector" of the kingdom. In May 1652 Galway surrendered to the parliament, and in June Clanricarde signed articles with the parliamentary commissioners which allowed his departure from Ireland. In August he was excepted from pardon for life and estate, but by permits, renewed from time to time by the council, he was enabled to remain in England for the rest of his life, and in 1653 £500 a year was settled upon him by the council of state in consideration of the protection which he had given to the Protestants in Ireland at the time of the rebellion. He died at Somerhill in Kent in 1657 or 1658 and was buried at Tunbridge.

The "great earl," as he was called, supported Ormonde in his desire to unite the English royalists with the more moderate Roman Catholics on the basis of religious toleration under the authority of the sovereign, against the papal scheme advocated by Rinuccini, and in opposition to the parliamentary and Puritan policy. By the author of the *Aphorismical Discovery*, who represents the opinion of the native Irish, he is denounced as the "masterpiece of the treasonable faction," "a foe to his king, nation and religion," and by the duke of Lorraine as "a traitor and a base fellow"; but there is no reason to doubt Clarendon's opinion of him as "a person of unquestionable fidelity. . . and of the most eminent constancy to the Roman Catholic religion of any man in the three kingdoms," or the verdict of Hallam, who describes him "as perhaps the most unsullied character in the annals of Ireland."

He married Lady Anne Compton, daughter of William Compton, 1st earl of Northampton,

but had issue only one daughter. On his death, accordingly, the marquessate and the English peerages became extinct, the Irish titles reverting to his cousin Richard, 6th earl, grandson of the 3rd earl of Clanricarde. Henry, the 12th earl (1742-1797), was again created a marquess in 1789, but the marquessate expired at his death without issue, the earldom going to his brother. In 1825 the 14th earl (1802-1874) was created a marquess; he was ambassador at St Petersburg, and later postmaster-general and lord privy seal, and married George Canning's daughter. His son (b. 1832), who achieved notoriety in the Irish land agitation, succeeded him as 2nd marquess.

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(P. C. Y.)

1 *Hist. MSS. Comm.: MSS of Earl of Egmont*, i. 223.

CLANVOWE, SIR THOMAS, the name of an English poet first mentioned in the history of English literature by F.S. Ellis in 1896, when, in editing the text of *The Book of Cupid, God of Love, or The Cuckoo and the Nightingale*, for the Kelmscott Press, he stated that Professor Skeat had discovered that at the end of the best of the MSS. the author was called Clanvowe. In 1897 this information was confirmed and expanded by Professor Skeat in the supplementary volume of his Clarendon Press *Chaucer* (1894-1897). The beautiful romance of *The Cuckoo and the Nightingale* was published by Thynne in 1532, and was attributed by him, and by successive editors down to the days of Henry Bradshaw, to Chaucer. It was due to this error that for three centuries Chaucer was supposed to be identified with the manor of Woodstock, and even painted, in fanciful pictures, as lying

> "Under a maple that is fair and green,
> Before the chamber-window of the Queen
> At Wodëstock, upon the greenë lea."

But this queen could only be Joan of Navarre, who arrived in 1403, three years after Chaucer's death, and it is to the spring of that year that Professor Skeat attributes the composition of the poem. Sir Thomas Clanvowe was of a Herefordshire family, settled near Wigmore. He was a prominent figure in the courts of Richard II. and Henry IV., and is said to have been a friend of Prince Hal. He was one of those who "had begun to mell of Lollardy, and drink the gall of heresy." He was one of the twenty-five knights who accompanied John Beaufort (son of John of Gaunt) to Barbary in 1390.

The date of his birth is unknown, and his name is last mentioned in 1404. The historic and literary importance of *The Cuckoo and the Nightingale* is great. It is the work of a poet who had studied the prosody of Chaucer with more intelligent care than either Occleve or Lydgate, and who therefore forms an important link between the 14th and 15th centuries in English poetry. Clanvowe writes with a surprising delicacy and sweetness, in a five-line measure almost peculiar to himself. Professor Skeat points out a unique characteristic of Clanvowe's versification, namely, the unprecedented freedom with which he employs the suffix of the final *-e*, and rather avoids than seeks elision. *The Cuckoo and the Nightingale* was imitated by Milton in his sonnet to the Nightingale, and was rewritten in modern English by Wordsworth. It is a poem of so much individual beauty, that we must regret the apparent loss of everything else written by a poet of such unusual talent.

See also a critical edition of the *Boke of Cupide* by Dr Erich Vollmer (Berlin, 1898).

(E. G.)

CLAPARÈDE, JEAN LOUIS RENÉ ANTOINE ÉDOUARD (1832-1870), Swiss naturalist, was born at Geneva on the 24th of April 1832. He belonged to a French family, some members of which had taken refuge in that city after the revocation of the Edict of Nantes. In 1852 he began to study medicine and natural science at Berlin, where he was greatly influenced by J. Müller and C.G. Ehrenberg, the former being at that period engaged in his important researches on the Echinoderms. In 1855 he accompanied Müller to Norway, and there spent two months on a desolate reef that he might obtain satisfactory observations. The latter part of his stay at Berlin he devoted, along with J. Lachmann, to the study of the Infusoria and Rhizopods. In 1857 he obtained the degree of doctor, and in 1862 he was chosen professor of comparative anatomy at Geneva. In 1859 he visited England, and in company with W.B. Carpenter made a voyage to the Hebrides; and in 1863 he spent some months in the Bay of Biscay. On the appearance of Darwin's work on the *Origin of Species*, he adopted his theories and published a valuable series of articles on the subject in the *Revue Germanique* (1861). During 1865 and 1866 ill-health rendered him incapable of work, and he determined to pass the winter of 1866-1867 in Naples. The change of climate produced some amelioration, and his energy was attested by two elaborate volumes on the Annelidae of the gulf. He again visited Naples with advantage in 1868; but in 1870, instead of recovering as before, he grew worse, and on the 31st of May he died at Siena on his way home. His *Recherches sur la structure des annélides sédentaires* were published posthumously in 1873.

CLAPPERTON, HUGH (1788-1827), Scottish traveller in West-Central Africa, was born in 1788 at Annan, Dumfriesshire, where his father was a surgeon. He gained some knowledge of practical mathematics and navigation, and at thirteen was apprenticed on board a vessel which traded between Liverpool and North America. After having made several voyages across the Atlantic he was impressed for the navy, in which he soon rose to the rank of midshipman. During the Napoleonic wars he saw a good deal of active service, and at the storming of Port Louis, Mauritius, in November 1810, he was first in the breach and hauled down the French flag. In 1814 he went to Canada, was promoted to the rank of lieutenant, and to the command of a schooner on the Canadian lakes. In 1817, when the flotilla on the lakes was dismantled, he returned home on half-pay.

In 1820 Clapperton removed to Edinburgh, where he made the acquaintance of Walter Oudney, M.D., who aroused in him an interest in African travel. Lieut. G.F. Lyon, R.N., having returned from an unsuccessful attempt to reach Bornu from Tripoli, the British government determined on a second expedition to that country. Dr Oudney was appointed by Lord Bathurst, then colonial secretary, to proceed to Bornu as consul with the object of promoting trade, and Clapperton and Major Dixon Denham (*q.v.*) were added to the party. From Tripoli, early in 1822, they set out southward to Murzuk, and from this point Clapperton and Oudney visited the Ghat oasis. Kuka, the capital of Bornu, was reached in February 1823, and Lake Chad seen for the first time by Europeans. At Bornu the travellers were well received by the sultan; and after remaining in the country till the 14th of December they again set out for the purpose of exploring the course of the Niger. At Murmur, on the road to Kano, Oudney died (January 1824). Clapperton continued his journey alone through Kano to Sokoto, the capital of the Fula empire, where by order of Sultan Bello he was obliged to stop, though the Niger was only five days' journey to the west. Worn out with his travel he returned by way of Zaria and Katsena to Kuka, where he again met Denham. The two travellers then set out for Tripoli, reached on the 26th of January 1825. An account of the travels was published in 1826 under the title of *Narrative of Travels and Discoveries in Northern and Central Africa in the years 1822-1824*.

Immediately after his return Clapperton was raised to the rank of commander, and sent out with another expedition to Africa, the sultan Bello of Sokoto having professed his eagerness to open up trade with the west coast. Clapperton landed at Badagry in the Bight of Benin, and started overland for the Niger on the 7th of December 1825, having with him his servant Richard Lander (*q.v.*), Captain Pearce, R.N., and Dr Morrison, navy surgeon and naturalist. Before the month was out Pearce and Morrison were dead of fever. Clapperton continued his journey, and, passing through the Yoruba country, in January 1826 he crossed the Niger at Bussa, the spot where Mungo Park had died twenty years before. In July he arrived at Kano. Thence he went to Sokoto, intending afterwards to go to Bornu. The sultan,

however, detained him, and being seized with dysentery he died near Sokoto on the 13th of April 1827.

Clapperton was the first European to make known from personal observation the semi-civilized Hausa countries, which he visited soon after the establishment of the Sokoto empire by the Fula. In 1829 appeared the *Journal of a Second Expedition into the Interior of Africa*, &c, by the late Commander Clapperton, to which was prefaced a biographical sketch of the explorer by his uncle, Lieut.-colonel S. Clapperton. Lander, who had brought back the journal of his master, also published *Records of Captain Clapperton's Last Expedition to Africa . . . with the subsequent Adventures of the Author* (2 vols., London, 1830).

CLAQUE (Fr. *claquer*, to clap the hands), an organized body of professional applauders in the French theatres. The hiring of persons to applaud dramatic performances was common in classical times, and the emperor Nero, when he acted, had his performance greeted by an encomium chanted by five thousand of his soldiers, who were called Angustals. The recollection of this gave the 16th-century French poet, Jean Daurat, an idea which has developed into the modern claque. Buying up a number of tickets for a performance of one of his plays, he distributed them gratuitously to those who promised publicly to express their approbation. It was not, however, till 1820 that a M. Sauton seriously undertook the systematization of the claque, and opened an office in Paris for the supply of *claqueurs*. By 1830 the claque had become a regular institution. The manager of a theatre sends an order for any number of *claqueurs*. These people are usually under a *chef de claque*, whose duty it is to judge where their efforts are needed and to start the demonstration of approval. This takes several forms. Thus there are *commissaires*, those who learn the piece by heart, and call the attention of their neighbours to its good points between the acts. The *rieurs* are those who laugh loudly at the jokes. The *pleureurs*, generally women, feign tears, by holding their handkerchiefs to their eyes. The *chatouilleurs* keep the audience in a good humour, while the *bisseurs* simply clap their hands and cry *bis! bis!* to secure encores.

CLARA, SAINT (1194-1253), foundress of the Franciscan nuns, was born of a knightly family in Assisi in 1194. At eighteen she was so impressed by a sermon of St Francis that she was filled with the desire to devote herself to the kind of life he was leading. She obtained an interview with him, and to test her resolution he told her to dress in penitential sackcloth and beg alms for the poor in the streets of Assisi. Clara readily did this, and Francis, satisfied as to her vocation, told her to come to the Portiuncula arrayed as a bride. The friars met her with lighted candles, and at the foot of the altar Francis shore off her hair, received her vows of poverty, chastity and obedience, and invested her with the Franciscan habit, 1212. He placed her for a couple of years in a Benedictine convent in Assisi, until the convent at St Damian's, close to the town, was ready. Her two younger sisters, and, after her father's death, her mother and many others joined her, and the Franciscan nuns spread widely and rapidly (see Clares, Poor). The relations of friendship and sympathy between St Clara and St Francis were very close, and there can be no doubt that she was one of the truest heirs of Francis's inmost spirit. After his death Clara threw herself wholly on the side of those who opposed mitigations in the rule and manner of life, and she was one of the chief upholders of St Francis's primitive idea of poverty (see Franciscans). She was the close friend of Brother Leo and the other "Companions of St Francis," and they assisted at her death. For forty years she was abbess at St Damian's, and the great endeavour of her life was that the rule of the nuns should be purged of the foreign elements that had been introduced, and should become wholly conformable to St Francis's spirit. She lived just long enough to witness the fulfilment of her great wish, a rule such as she desired being approved by the pope two days before her death on the 11th of August 1253.

The sources for her life are to be found in the Bollandist *Acta Sanctorum* on the 11th of August, and sketches in such *Lives of the Saints* as Alban Butler's. See also Wetzer und Welte, *Kirchen-lexicon* (2nd ed.), art. "Clara."

(E. C. B.)

CLARE, the name of a famous English family. The ancestor of this historic house, “which played,” in Freeman’s words, “so great a part alike in England, Wales and Ireland,” was Count Godfrey, eldest of the illegitimate sons of Richard the Fearless, duke of Normandy. His son, Count Gilbert of Brionne, had two sons, Richard, lord of Bienfaite and Orbec, and Baldwin, lord of Le Sap and Meulles, both of whom accompanied the Conqueror to England. Baldwin, known as “De Meulles” or “of Exeter,” received the hereditary shrievalty of Devon with great estates in the West Country, and left three sons, William, Robert and Richard, of whom the first and last were in turn sheriffs of Devon. Richard, known as “de Bienfaite,” or “of Tunbridge,” or “of Clare,” was the founder of the house of Clare.

Richard derived his English appellation from his strongholds at Tunbridge and at Clare, at both of which his castle-mounds still remain. The latter, on the borders of Essex and Suffolk, was the head of his great “honour” which lay chiefly in the eastern counties. Appointed joint justiciar in the king’s absence abroad, he took a leading part in suppressing the revolt of 1075. By his wife, Rohese, daughter of Walter Giffard, through whom great Giffard estates afterwards came to his house, he left five sons and two daughters. Roger was his heir in Normandy, Walter founded Tintern Abbey, Richard was a monk, and Robert, receiving the forfeited fief of the Baynards in the eastern counties, founded, through his son Walter, the house of FitzWalter (extinct 1432), of whom the most famous was Robert FitzWalter, the leader of the barons against King John. Of this house, spoken of by Jordan Fantosme as “Clarreaus,” the Daventrys of Daventry (extinct 1380) and Fawsleys of Fawsley (extinct 1392) were cadets. One of Richard’s two daughters married the famous Walter Tirel.

Gilbert, Richard’s heir in England, held his castle of Tunbridge against William Rufus, but was wounded and captured. Under Henry I., who favoured the Clares, he obtained a grant of Cardigan, and carried his arms into Wales. Dying about 1115, he left four sons, of whom Gilbert, the second, inherited Chepstow, with Nether-Gwent, from his uncle, Walter, the founder of Tintern, and was created earl of Pembroke by Stephen about 1138; he was father of Richard Strongbow, earl of Pembroke (*q.v.*). The youngest son Baldwin fought for Stephen at the battle of Lincoln (1141) and founded the priories of Bourne and Deeping on lands acquired with his wife. The eldest son Richard, who was slain by the Welsh on his way to Cardigan in 1135 or 1136, left two sons Gilbert and Roger, of whom Gilbert was created earl of Hertfordshire by Stephen.

It was probably because he and the Clares had no interests in Hertfordshire that they were loosely and usually styled the earls of (de) Clare. Dying in 1152, Gilbert was succeeded by his brother Roger, of whom Fitz-Stephen observes that “nearly all the nobles of England were related to the earl of Clare, whose sister, the most beautiful woman in England, had long been desired by the king” (Henry II.). He was constantly fighting the Welsh for his family possessions in Wales and quarrelled with Becket over Tunbridge Castle. In 1173 or 1174 he was succeeded by his son Richard as third earl, whose marriage with Amicia, daughter and co-heir of William, earl of Gloucester, was destined to raise the fortunes of his house to their highest point. He and his son Gilbert were among the “barons of the Charter,” Gilbert, who became fourth earl in 1217, obtained also, early in 1218, the earldom of Gloucester, with its great territorial “Honour,” and the lordship of Glamorgan, in right of his mother; “from this time the house of Clare became the acknowledged head of the baronage.” Gilbert had also inherited through his father his grandmother’s “Honour of St Hilary” and a moiety of the Giffard fief; but the vast possessions of his house were still further swollen by his marriage with a daughter of William (Marshal), earl of Pembroke, through whom his son Richard succeeded in 1245 to a fifth of the Marshall lands including the Kilkenny estates in Ireland. Richard’s successor, Gilbert, the “Red” earl, died in 1295, the most powerful subject in the kingdom.

On his death his earldoms seem to have been somewhat mysteriously deemed to have passed to his widow Joan, daughter of Edward I.; for her second husband, Ralph de Monthermer, was summoned to parliament in right of them from 1299 to 1306. After her death, however, in 1307, Earl Gilbert’s son and namesake was summoned in 1308 as earl of Gloucester and Hertford, though only sixteen. A nephew of Edward II. and brother-in-law of Gaveston, he played a somewhat wavering part in the struggle between the king and the barons. Guardian of the realm in 1311 and regent in 1313, he fell gloriously at Bannockburn (June 24th, 1314), when only twenty-three, rushing on the enemy “like a wild boar, making his sword drunk with their blood.”

The earl was the last of his mighty line, and his vast possessions in England (in over twenty counties), Wales and Ireland fell to his three sisters, of whom Elizabeth, the youngest, wife of John de Burgh, obtained the “Honour of Clare” and transmitted it to her son William de Burgh, 3rd earl of Ulster, whose daughter brought it to Lionel, son of King Edward III., who was thereupon created duke of Clarence, a title associated ever since with the royal house. The “Honour of Clare,” vested in the crown, still preserves a separate existence, with a court and steward of its own.

Clare College, Cambridge, derived its name from the above Elizabeth, “Lady of Clare,” who founded it as Clare Hall in 1347.

Clare County in Ireland derives its name from the family, though whether from Richard Strongbow, or from Thomas de Clare, a younger son, who had a grant of Thomond in 1276, has been deemed doubtful.

Clarenceux King of Arms, an officer of the Heralds’ College, derives his style, through Clarence, from Clare.

See J.H. Round’s *Geoffrey de Mandeville, Feudal England, Commune of London*, and *Peerage Studies*; also his “Family of Clare” in *Arch. Journ.* lvi., and “Origin of Armorial Bearings” in Ib. li.; Parkinson’s “Clarence, the origin and bearers of the title,” in *The Antiquary*, v.; Clark’s “Lords of Glamorgan” in *Arch. Journ.* xxxv.; Planche’s “Earls of Gloucester” in *Journ. Arch. Assoc.* xxvi.; Dugdale’s *Baronage*, vol. i., and *Monasticon Anglicanum*; G.E. C[okayne]’s *Complete Peerage*.

(J. H. R.)

CLARE, JOHN (1793-1864), English poet, commonly known as “the Northamptonshire Peasant Poet,” the son of a farm labourer, was born at Helpstone near Peterborough, on the 13th of July 1793. At the age of seven he was taken from school to tend sheep and geese; four years later he began to work on a farm, attending in the winter evenings a school where he is said to have learnt some algebra. He then became a pot-boy in a public-house and fell in love with Mary Joyce, but her father, a prosperous farmer, forbade her to meet him. Subsequently he was gardener at Burghley Park. He enlisted in the militia, tried camp life with gipsies, and worked as a lime burner in 1817, but in the following year he was obliged to accept parish relief. Clare had bought a copy of Thomson’s *Seasons* out of his scanty earnings and had begun to write poems. In 1819 a bookseller at Stamford, named Drury, lighted on one of Clare’s poems, *The Setting Sun*, written on a scrap of paper enclosing a note to his predecessor in the business. He befriended the author and introduced his poems to the notice of John Taylor, of the publishing firm of Taylor & Hussey, who issued the *Poems Descriptive of Rural Life and Scenery* in 1820. This book was highly praised, and in the next year his *Village Minstrel and other Poems* were published. He was greatly patronized; fame, in the shape of curious visitors, broke the tenor of his life, and the convivial habits that he had formed were indulged more freely. He had married in 1820, and an annuity of 15 guineas from Lord Exeter, in whose service he had been, was supplemented by subscription, and he became possessed of £45 annually, a sum far beyond what he had ever earned, but new wants made his income insufficient, and in 1823 he was nearly penniless. The *Shepherd’s Calendar* (1827) met with little success, which was not increased by his hawking it himself. As he worked again on the fields his health temporarily improved; but he soon became seriously ill. Lord Fitzwilliam presented him with a new cottage and a piece of ground, but Clare could not settle in his new home. Gradually his mind gave way. His last and best work, the *Rural Muse* (1835), was noticed by “Christopher North” alone. He had for some time shown symptoms of insanity; and in July 1837 he was removed to a private asylum, and afterwards to the Northampton general lunatic asylum, where he died on the 20th of May 1864. Clare’s descriptions of rural scenes show a keen and loving appreciation of nature, and his love-songs and ballads charm by their genuine feeling; but his vogue was no doubt largely due to the interest aroused by his humble position in life.

See the *Life of John Clare*, by Frederick Martin (1865); and *Life and Remains of John Clare*, by J.L. Cherry (1873), which, though not so complete, contains some of the poet’s asylum verses and prose fragments.

CLARE, JOHN FITZGIBBON, 1ST EARL OF (1749-1802), lord chancellor of Ireland, was the second son of John Fitzgibbon, who had abandoned the Roman Catholic faith in order to pursue a legal career. He was educated at Trinity College, Dublin, where he was highly distinguished as a classical scholar, and at Christ Church, Oxford, where he graduated in 1770. In 1772 he was called to the Irish bar, and quickly acquired a very lucrative practice; he also inherited his father's large fortune on the death of his elder brother. In 1778 he entered the Irish House of Commons as member for Dublin University, and at first gave a general support to the popular party led by Henry Grattan (*q.v.*). He was, however, from the first hostile to that part of Grattan's policy which aimed at removing the disabilities of the Roman Catholics; he endeavoured to impede the Relief Bill of 1778 by raising difficulties about its effect on the Act of Settlement. He especially distrusted the priests, and many years later explained that his life-long resistance to all concession to the Catholics was based on his "unalterable opinion" that "a conscientious Popish ecclesiastic never will become a well-attached subject to a Protestant state, and that the Popish clergy must always have a commanding influence on every member of that communion." As early as 1780 Fitzgibbon began to separate himself from the popular or national party, by opposing Grattan's declaration of the Irish parliament's right to independence. There is no reason to suppose that in this change of view he was influenced by corrupt or personal motives. His cast of mind naturally inclined to authority rather than to democratic liberty; his hostility to the Catholic claims, and his distrust of parliamentary reform as likely to endanger the connexion of Ireland with Great Britain, made him a sincere opponent of the aims which Grattan had in view. In reply, however, to a remonstrance from his constituents Fitzgibbon promised to support Grattan's policy in the future, and described the claim of Great Britain to make laws for Ireland as "a daring usurpation of the rights of a free people."

For some time longer there was no actual breach between him and Grattan. Grattan supported the appointment of Fitzgibbon as attorney-general in 1783, and in 1785 the latter highly eulogized Grattan's character and services to the country in a speech in which he condemned Flood's volunteer movement. He also opposed Flood's Reform Bill of 1784; and from this time forward he was in fact the leading spirit in the Irish government, and the stiffest opponent of all concession to popular demands. In 1784 the permanent committee of revolutionary reformers in Dublin, of whom Napper Tandy was the most conspicuous, invited the sheriffs of counties to call meetings for the election of delegates to attend a convention for the discussion of reform; and when the sheriff of the county of Dublin summoned a meeting for this purpose Fitzgibbon procured his imprisonment for contempt of court, and justified this procedure in parliament, though Lord Erskine declared it grossly illegal. In the course of the debates on Pitt's commercial propositions in 1785, which Fitzgibbon supported in masterly speeches, he referred to Curran in terms which led to a duel between the two lawyers, when Fitzgibbon was accused of a deliberation in aiming at his opponent that was contrary to etiquette. His antagonism to Curran was life-long and bitter, and after he became chancellor his hostility to the famous advocate was said to have driven the latter out of practice. In January 1787 Fitzgibbon introduced a stringent bill for repressing the Whiteboy outrages. It was supported by Grattan, who, however, procured the omission of a clause enacting that any Roman Catholic chapel near which an illegal oath had been tendered should be immediately demolished. His influence with the majority in the Irish parliament defeated Pitt's proposed reform of the tithe system in Ireland, Fitzgibbon refusing even to grant a committee to investigate the subject. On the regency question in 1789 Fitzgibbon, in opposition to Grattan, supported the doctrine of Pitt in a series of powerful speeches which proved him a great constitutional lawyer; he intimated that the choice for Ireland might in certain eventualities rest between complete separation from England and legislative union; and, while he exclaimed as to the latter alternative, "God forbid that I should ever see that day!" he admitted that separation would be the worse evil of the two.

In the same year Lord Lifford resigned the chancellorship, and Fitzgibbon was appointed in his place, being raised to the peerage as Baron Fitzgibbon. His removal to the House of Lords greatly increased his power. In the Commons, though he had exercised great influence as attorney-general, his position had been secondary; in the House of Lords and in the privy council he was little less than despotic. "He was," says Lecky, "by far the ablest Irishman who had adopted without restriction the doctrine that the Irish legislature must be maintained in a condition of permanent and unvarying subjection to the English executive." But the English ministry were now embarking on a policy of conciliation in Ireland. The Catholic Relief Bill of 1793 was forced on the Irish executive by the cabinet in London, but it passed rapidly and easily through the Irish parliament. Lord Fitzgibbon, while accepting the bill as inevitable under the circumstances that had arisen, made a most violent though

exceedingly able speech against the principle of concession, which did much to destroy the conciliatory effect of the measure; and as a consequence of this act he began persistently to urge the necessity for a legislative union. From this date until the union was carried, the career of Fitzgibbon is practically the history of Ireland. True to his inveterate hostility to the popular claims, he was opposed to the appointment of Lord Fitzwilliam (*q.v.*) as viceroy in 1795, and was probably the chief influence in procuring his recall; and it was Fitzgibbon who first put it into the head of George III. that the king would violate his coronation oath if he consented to the admission of Catholics to parliament. When Lord Camden, Fitzwilliam's successor in the viceroyalty, arrived in Dublin on the 31st of March 1795, Fitzgibbon's carriage was violently assaulted by the mob, and he himself was wounded; and in the riots that ensued his house was also attacked. But as if to impress upon the Catholics the hopelessness of their case, the government who had made Fitzgibbon a viscount immediately after his attack on the Catholics in 1793 now bestowed on him a further mark of honour. In June 1795 he was created earl of Clare. On the eve of the rebellion he warned the government that while emancipation and reform might be the objects aimed at by the better classes, the mass of the disaffected had in view "the separation of the country from her connexion with Great Britain, and a fraternal alliance with the French Republic." Clare advocated stringent measures to prevent an outbreak; but he was neither cruel nor immoderate, and was inclined to mercy in dealing with individuals. He attempted to save Lord Edward Fitzgerald (*q.v.*) from his fate by giving a friendly warning to his friends, and promising to facilitate his escape from the country; and Lord Edward's aunt, Lady Louisa Conolly, who was conducted to his death-bed in prison by the chancellor in person, declared that "nothing could exceed Lord Clare's kindness." His moderation and humanity after the rebellion was extolled by Cornwallis. He threw his great influence on the side of clemency, and it was through his intervention that Oliver Bond, when sentenced to death, was reprieved; and that an arrangement was made by which Arthur O'Connor, Thomas Emmet and other state prisoners were allowed to leave the country.

In October 1798 Lord Clare, who since 1793 had been convinced of the necessity for a legislative union if the connexion between Great Britain and Ireland was to be maintained, and who was equally determined that the union must be unaccompanied by Catholic emancipation, crossed to England and successfully pressed his views on Pitt. In 1799 he induced the Irish House of Lords to throw out a bill for providing a permanent endowment of Maynooth. On the 10th of February 1800 Clare in the House of Lords moved the resolution approving the union in a long and powerful speech, in which he reviewed the history of Ireland since the Revolution, attributing the evils of recent years to the independent constitution of 1782, and speaking of Grattan in language of deep personal hatred. He was not aware of the assurance which Cornwallis had been authorized to convey to the Catholics that the union was to pave the way for emancipation, and when he heard of it after the passing of the act he bitterly complained that Pitt and Castlereagh had deceived him. After the union Clare became more violent than ever in his opposition to any policy of concession in Ireland. He died on the 28th of January 1802; his funeral in Dublin was the occasion of a riot organized "by a gang of about fourteen persons under orders of a leader." His wife, in compliance with his death-bed request, destroyed all his papers. His two sons, John (1792-1851) and Richard Hobart (1793-1864), succeeded in turn to the earldom, which became extinct on the death of the latter, whose only son, John Charles Henry, Viscount Fitzgibbon (1829-1854), was killed in the charge of the Light Brigade at Balaklava.

Lord Clare was in private life an estimable and even an amiable man; many acts of generosity are related of him; the determination of his character swayed other wills to his purpose, and his courage was such as no danger, no obloquy, no public hatred or violence could disturb. Though not a great orator like Flood or Grattan, he was a skilful and ready debater, and he was by far the ablest Irish supporter of the union. He was, however, arrogant, overbearing and intolerant to the last degree. He was the first Irishman since the Revolution to hold the office of lord chancellor of Ireland. "Except where his furious personal antipathies and his ungovernable arrogance were called into action, he appears to have been," says Lecky, "an able, upright and energetic judge"; but as a politician there can be little question that Lord Clare's bitter and unceasing resistance to reasonable measures of reform did infinite mischief in the history of Ireland, by inflaming the passions of his countrymen, driving them into rebellion, and perpetuating their political and religious divisions.

See W.E.H. Lecky, *History of Ireland in the Eighteenth Century* (5 vols., London, 1892); J.R. O'Flanagan, *The Lives of the Lord Chancellors and Keepers of the Great Seal in Ireland* (2 vols., London, 1870); *Cornwallis Correspondence*, ed. by C. Ross (3 vols., London, 1859); Charles Phillips, *Recollections of Curran and some of his Contemporaries* (London, 1822);

Henry Grattan, *Memoirs of the Life and Times of the Right Honble. Henry Grattan* (5 vols., London, 1839-1846); Lord Auckland, *Journal and Correspondence* (4 vols., London, 1861); Charles Coote, *History of the Union of Great Britain and Ireland* (London, 1802).

(R. J. M.)

CLARE, a county in the province of Munster, Ireland, bounded N. by Galway Bay and Co. Galway, E. by Lough Derg, the river Shannon, and counties Tipperary and Limerick, S. by the estuary of the Shannon, and W. by the Atlantic Ocean. The area is 852,389 acres, or nearly 1332 sq. m. Although the surface of the county is hilly, and in some parts even mountainous, it nowhere rises to a great elevation. Much of the western baronies of Moyarta and Ibrickan is composed of bog land. Bogs are frequent also in the mountainous districts elsewhere, except in the limestone barony of Burren, the inhabitants of some parts of which supply themselves with turf from the opposite shores of Connemara. Generally speaking, the eastern parts of the county are mountainous, with tracts of rich pasture-land interspersed; the west abounds with bog; and the north is rocky and best adapted for grazing sheep. In the southern part, along the banks of the Fergus and Shannon, are the bands of rich low grounds called corcasses, of various breadth, indenting the land in a great variety of shapes. They are composed of deep rich loam, and are distinguished as the black corcasses, adapted for tillage, and the blue, used more advantageously as meadow land. The coast is in general rocky, and occasionally bold and precipitous in the extreme, as may be observed at the picturesque cliffs of Moher within a few miles of Ennistimon and Lisdoonvarna, which rise perpendicularly at O’Brien’s Tower to an elevation of 580 ft. The coast of Clare is indented with several bays, the chief of which are Ballyvaghan, Liscannor and Malbay; but from Black Head to Loop Head, that is, along the entire western boundary of the county formed by the Atlantic, there is no safe harbour except Liscannor Bay. Malbay takes its name from its dangers to navigators, and the whole coast has been the scene of many fatal disasters. The county possesses only one large river, the Fergus; but nearly 100 m. of its boundary-line are washed by the river Shannon, which enters the Atlantic Ocean between this county and Kerry. The numerous bays and creeks on both sides of this great river render its navigation safe in every wind; but the passage to and from Limerick is often tedious, and the port of Kilrush has from that cause gained in importance. The river Fergus is navigable from the Shannon to the town of Clare, which is the terminating point of its natural navigation, and the port of all the central districts of the county.

There are a great number of lakes and tarns in the county, of which the largest are Loughs Muckanagh, Graney, Atedaun and Dromore; but they are more remarkable for beauty than for size or utility, with the exception of the extensive and navigable Lough Derg, formed by the river Shannon between this county and Tipperary. The salmon fishery of the Shannon, both as a sport and as an industry, is famous; the Fergus also holds salmon, and there is much good trout-fishing in the lakes for which Ennis is a centre, and in the streams of the Atlantic seaboard. Clare is a county which, like all the western counties of Ireland, repays visitors in search of the pleasures of seaside resorts, sport, scenery or antiquarian interest. Yet, again like other western counties, it was long before it was rendered accessible. Communications, however, are now satisfactory.

Geology.—Upper Carboniferous strata cover the county west of Ennis, the coast-sections in them being particularly fine. Shales and sandstones alternate, now horizontal, as in the Cliffs of Moher, now thrown into striking folds. The Carboniferous Limestone forms a barren terraced country, often devoid of soil, through the Burren in the north, and extends to the estuary of the Fergus and the Shannon. On the east, the folding has brought up two bold masses of Old Red Sandstone, with Silurian cores. Slieve Bernagh, the more southerly of these, rises to 1746 ft. above Killaloe, and the hilly country here traversed by the Shannon is in marked contrast with the upper course of the river through the great limestone plain.

Minerals.—Although metals and minerals have been found in many places throughout the county, they do not often show themselves in sufficient abundance to induce the application of capital for their extraction. The principal metals are lead, iron and manganese. The Milltown lead mine in the barony of Tulla is probably one of the oldest mines in Ireland, and formerly, if the extent of the ancient excavations may be taken as a guide, there must have been a very rich deposit. Copper pyrites occurs in several parts of Burren, but in small quantity. Coal exists at Labasheeda on the right bank of the Shannon, but the few and thin

seams are not productive. The nodules of clay-ironstone in the strata that overlie the limestone were mined and smelted down to 1750. Within half a mile of the Milltown lead mine are immense natural vaulted passages of limestone, through which the river Ardsullas winds a singular course. The lower limestone of the eastern portion of the county has been found to contain several very large deposits of argentiferous galena. Flags, easily quarried, are procured near Kilrush, and thinner flags near Ennistimon. Slates are quarried in several places, the best being those of Broadford and Killaloe, which are nearly equal to the finest procured in Wales. A species of very fine black marble is obtained near Ennis; it takes a high polish, and is free from the white spots with which the black Kilkenny marble is marked.

The mineral springs, which are found in many places, are chiefly chalybeate. That of Lisdoonvarna, a sulphur spa, about 8 m. from Ennistimon, has been celebrated since the 18th century for its medicinal qualities, and now attracts a large number of visitors annually. It lies 9 m. by road N. of Ennistimon. There are chalybeate springs of less note at Kilkishen, Burren, Broadfoot, Lehinch, Kilkee, Kilrush, Killadysart, and near Milltown Malbay. Springs called by the people “holy” or “blessed” wells, generally mineral waters, are common; but the belief in their power of performing cures in inveterate maladies is nearly extinct.

Watering-places.—The Atlantic Ocean and the estuary of the Shannon afford many situations admirably adapted for summer bathing-places. Among the most frequented of these localities are Milltown Malbay; with one of the best beaches on the western coast; and the neighbouring Spanish Point (named from the scene of the wreck of two ships of the Armada); Lehinch, about 2 m. from Ennistimon on Liscannor Bay, and near the interesting cliffs of Moher, has a magnificent beach. Kilkee is the most fashionable watering-place on the western coast of Ireland; and Kilrush on the Shannon estuary is also favoured.

Industries.—The soil and surface of the county are in general better adapted for grazing than for tillage, and the acreage devoted to the former consequently exceeds three times that of the latter. Agriculture is in a backward state, and not a fifth of the total area is under cultivation, while the acreage shows a decrease even in the principal crops of oats and potatoes. Cattle, sheep, poultry and pigs, however, all receive considerable attention. Owing to the mountainous nature of the county nearly one-seventh of the total area is quite barren.

There are no extensive manufactures, although flannels and friezes are made for home use, and hosiery of various kinds, chiefly coarse and strong, is made around Ennistimon and other places. There are several fishing stations on the coast, and cod, haddock, ling, sole, turbot, ray, mackerel and other fish abound, but the rugged nature of the coast and the tempestuous sea greatly hinder the operations of the fishermen. Near Pooldoody is the great Burren oyster bed called the Red Bank, where a large establishment is maintained, from which a constant supply of the excellent Red Bank oysters is furnished to the Dublin and other large markets. Crabs and lobsters are caught on the shores of the Bay of Galway in every creek from Black Head to Ardfry. In addition to the Shannon salmon fishery mentioned above, eels abound in every rivulet, and form an important article of consumption.

The Great Southern & Western railway line from Limerick to Sligo intersects the centre of the county from north to south. From Ennis on this line the West Clare railway runs to Ennistimon on the coast, where it turns south and follows the coast by Milltown Malbay to Kilkee and Kilrush. Killaloe in the east of the county is the terminus of a branch of the Great Southern & Western railway.

Population and Administration.—The population (126,244 in 1891; 112,334 in 1901; almost wholly Roman Catholic and rural) shows a decrease among the most serious of the Irish counties, and the emigration returns are proportionately heavy. The principal towns, all of insignificant size, are Ennis (pop. 5093, the county town), Kilrush (4179), Kilkee (1661) and Killaloe (885); but several of the smaller settlements, as resorts, are of more than local importance. The county, which is divided into 11 baronies, contains 79 parishes, and includes the Protestant diocese of Kilfenora, the greater part of Killaloe, and a very small portion of the diocese of Limerick. It is within the Roman Catholic dioceses of Killaloe and Limerick. The assizes are held at Ennis, and quarter sessions here and at Ennistimon, Killaloe, Kilrush and Tulla. The county is divided into the East and West parliamentary divisions, each returning one member.

History.—This county, together with part of the neighbouring district, was anciently called Thomond, that is, North Munster, and formed part of the monarchy of the celebrated Brian Boroihme, who held his court at Kincora near Killaloe, where his palace was situated on the banks of the Shannon. The site is still distinguished by extensive earthen ramparts. Settlements were effected by the Danes, and in the 13th century by the Anglo-Normans, but without permanently affecting the possession of the district by its native proprietors. In

1543 Murrogh O'Brien, after dispossessing his nephew and vainly attempting a rebellion against the English rule, proceeded to England and submitted to Henry VIII., resigning his name and possessions. He soon received them back by an English tenure, together with the title of earl of Thomond, on condition of adopting the English dress, manners and customs. In 1565 this part of Thomond (sometimes called O'Brien's country) was added to Connaught, and made one of the six new counties into which that province was divided by Sir Henry Sidney. It was named Clare, the name being traceable either to Richard de Clare (Strongbow), earl of Pembroke, or to his younger brother, Thomas de Clare, who obtained a grant of Thomond from Edward I. in 1276, and whose family for some time maintained a precarious position in the district. Towards the close of the reign of Elizabeth, Clare was detached from the government of Connaught and given a separate administration; but at the Restoration it was reunited to Munster.

Antiquities.—The county abounds with remains of antiquities, both military and ecclesiastical, especially in the north-western part. There still exist above a hundred fortified castles, several of which are inhabited. They are mostly of small extent, a large portion being fortified dwellings. The chief of them is Bunratty Castle, built in 1277, once inhabited by the earls of Thomond, 10 m. W. of Limerick, on the Shannon. Those of Ballykinvarga, Ballynalackan and Lemaneagh, all in the north-west, should also be mentioned. Raths or encampments are to be found in every part. They are generally circular, composed either of large stones without mortar or of earth thrown up and surrounded by one or more ditches. The list of abbeys and other religious houses formerly flourishing here (some now only known by name, but many of them surviving in ruins) comprehends upwards of twenty. The most remarkable are—Quin, considered one of the finest and most perfect specimens of ancient monastic architecture in Ireland; Corcomroe; Ennis, in which is a very fine window of uncommonly elegant workmanship; and those on Inniscattery or Scattery Island, in the Shannon, said to have been founded by St Senan (see KILRUSH). Kilfenora, 5 m. N.E. of Ennistimon, was until 1752 a separate diocese, and its small cathedral is of interest, with several neighbouring crosses and a holy well. The ruined churches of Kilnaboy, Nouhaval and Teampul Cronan are the most noteworthy of many in the north-west. Five round towers are to be found in various stages of preservation—at Scattery Island, Drumcliffe, Dysert O'Dea, Kilnaboy and Inniscaltra (Lough Derg). The cathedral of the diocese of Killaloe is at the town of that name. Cromlechs are found, chiefly in the rocky limestone district of Burren in the N.W., though there are some in other baronies. That at Ballygannor is formed of a stone 40 ft. long and 10 broad.

See papers by T.J. Westropp in *Proceedings of the Royal Irish Academy*—"Distribution of Cromlechs in County Clare" (1897); and "Churches of County Clare, and Origin of Ecclesiastical Divisions" (1900).

CLAREMONT, a city of Sullivan county, New Hampshire, U.S.A., situated in the W. part of the state, bordering on the Connecticut river. Pop. (1890) 5565; (1900) 6498 (1442 foreign-born); (1910) 7529. Area, 6 sq. m. It is served by two branches of the Boston & Maine railway. In Claremont is the Fiske free library (1873), housed in a Carnegie building (1904). The Stevens high school is richly endowed by the gift of Paran Stevens, a native of Claremont. The city contains several villages, the principal being Claremont, Claremont Junction and West Claremont. Sugar river, flowing through the city into the Connecticut and falling 223 ft. within the city limits, furnishes good water-power. Among the manufactures are woollen and cotton goods, paper, mining and quarrying machinery, rubber goods, linens, shoes, wood trim and pearl buttons. The first settlement here was made in 1762, and a township was organized in 1764; in 1908 Claremont was chartered as a city. It was named from Claremont, Lord Clive's country place.

CLARENCE, DUKES OF. The early history of this English title is identical with that of the family of Clare (*q.v.*), earls of Gloucester, who are sometimes called earls of Clare, of which

word Clarence is a later form. The first duke of Clarence was Lionel of Antwerp (see below), third son of Edward III., who was created duke in 1362, and whose wife Elizabeth was a direct descendant of the Clares, the “Honour of Clare” being among the lands which she brought to her husband. When Lionel died without sons in 1368 the title became extinct; but in 1412 it was revived in favour of Thomas (see below), the second son of Henry IV. The third creation of a duke of Clarence took place in 1461, and was in favour of George (see below), brother of the King Edward IV. When this duke, accused by the king, was attainted and killed in 1478, his titles and estates were forfeited. There appears to have been no other creation of a duke of Clarence until 1789, when William, third son of George III., was made a peer under this title. Having merged in the crown when William became king of Great Britain and Ireland in 1830, the title of duke of Clarence was again revived in 1890 in favour of Albert Victor (1864-1892), the elder son of King Edward VII., then prince of Wales, only to become extinct for the fifth time on his death in 1892.

Lionel of Antwerp, duke of Clarence (1338-1368), third son of Edward III., was born at Antwerp on the 29th of November 1338. Betrothed when a child to Elizabeth (d. 1363), daughter and heiress of William de Burgh, 3rd earl of Ulster (d. 1332), he was married to her in 1352; but before this date he had entered nominally into possession of her great Irish inheritance. Having been named as his father’s representative in England in 1345 and again in 1346, Lionel was created earl of Ulster, and joined an expedition into France in 1355, but his chief energies were reserved for the affairs of Ireland. Appointed governor of that country, he landed at Dublin in 1361, and in November of the following year was created duke of Clarence, while his father made an abortive attempt to secure for him the crown of Scotland. His efforts to secure an effective authority over his Irish lands were only moderately successful; and after holding a parliament at Kilkenny, which passed the celebrated statute of Kilkenny in 1367, he threw up his task in disgust and returned to England. About this time a marriage was arranged between Clarence and Violante, daughter of Galeazzo Visconti, lord of Pavia (d. 1378); the enormous dowry which Galeazzo promised with his daughter being exaggerated by the rumour of the time. Journeying to fetch his bride, the duke was received in great state both in France and Italy, and was married to Violante at Milan in June 1368. Some months were then spent in festivities, during which Lionel was taken ill at Alba, where he died on the 7th of October 1368. His only child Philippa, a daughter by his first wife, married in 1368 Edmund Mortimer, 3rd earl of March (1351-1381), and through this union Clarence became the ancestor of Edward IV. The poet Chaucer was at one time a page in Lionel’s household.

Thomas, duke of Clarence (c. 1388-1421), who was nominally lieutenant of Ireland from 1401 to 1413, and was in command of the English fleet in 1405, acted in opposition to his elder brother, afterwards King Henry V., and the Beauforts during the later part of the reign of Henry IV.; and was for a short time at the head of the government, leading an unsuccessful expedition into France in 1412. When Henry V., however, became king in 1413 no serious dissensions took place between the brothers, and as a member of the royal council Clarence took part in the preparations for the French war. He was with the English king at Harfleur, but not at Agincourt, and shared in the expedition of 1417 into Normandy, during which he led the assault on Caen, and distinguished himself as a soldier in other similar undertakings. When Henry V. returned to England in 1421, the duke remained in France as his lieutenant, and was killed at Beaugé whilst rashly attacking the French and their Scottish allies on the 22nd of March 1421. He left no legitimate issue, and the title again became extinct.

George, duke of Clarence (1449-1478), younger son of Richard, duke of York, by his wife Cicely, daughter of Ralph Neville, 1st earl of Westmorland, was born in Dublin on the 21st of October 1449. Soon after his elder brother became king as Edward IV. in March 1461, he was created duke of Clarence, and his youth was no bar to his appointment as lord-lieutenant of Ireland in the following year. Having been mentioned as a possible husband for Mary, daughter of Charles the Bold, afterwards duke of Burgundy, Clarence came under the influence of Richard Neville, earl of Warwick, and in July 1469 was married at Calais to the earl’s elder daughter Isabella. With his father-in-law he then acted in a disloyal manner towards the king. Both supported the rebels in the north of England, and when their treachery was discovered Clarence was deprived of his office as lord-lieutenant and fled to France. Returning to England with Warwick in September 1470, he witnessed the

restoration of Henry VI., when the crown was settled upon himself in case the male line of Henry's family became extinct. The good understanding, however, between Warwick and his son-in-law was not lasting, and Clarence was soon secretly reconciled with Edward. The public reconciliation between the brothers took place when the king was besieging Warwick in Coventry, and Clarence then fought for the Yorkists at Barnet and Tewkesbury. After Warwick's death in April 1471 Clarence appears to have seized the whole of the vast estates of the earl, and in March 1472 was created by right of his wife earl of Warwick and Salisbury. He was consequently greatly disturbed when he heard that his younger brother Richard, duke of Gloucester, was seeking to marry Warwick's younger daughter Anne, and was claiming some part of Warwick's lands. A violent quarrel between the brothers ensued, but Clarence was unable to prevent Gloucester from marrying, and in 1474 the king interfered to settle the dispute, dividing the estates between his brothers. In 1477 Clarence was again a suitor for the hand of Mary, who had just become duchess of Burgundy. Edward objected to the match, and Clarence, jealous of Gloucester's influence, left the court. At length Edward was convinced that Clarence was aiming at his throne. The duke was thrown into prison, and in January 1478 the king unfolded the charges against his brother to the parliament. He had slandered the king; had received oaths of allegiance to himself and his heirs; had prepared for a new rebellion; and was in short incorrigible. Both Houses of Parliament passed the bill of attainder, and the sentence of death which followed was carried out on the 17th or 18th of February 1478. It is uncertain what share Gloucester had in his brother's death; but soon after the event the rumour gained ground that Clarence had been drowned in a butt of malmsey wine. Two of the duke's children survived their father: Margaret, countess of Salisbury (1473-1541), and Edward, earl of Warwick (1475-1499), who passed the greater part of his life in prison and was beheaded in November 1499.

On the last-named see W. Stubbs, *Constitutional History*, vol. iii. (Oxford, 1895); Sir J.H. Ramsay, *Lancaster and York* (Oxford, 1892); C.W.C. Oman, *Warwick the Kingmaker* (London, 1891). On the title generally see G.E. C(okayne), *Complete Peerage* (1887-1898).

CLARENDON, EDWARD HYDE, 1ST EARL OF (1609-1674), English historian and statesman, son of Henry Hyde of Dinton, Wiltshire, a member of a family for some time established at Norbury, Cheshire, was born on the 18th of February 1609. He entered Magdalen Hall, Oxford, in 1622 (having been refused a demyship at Magdalen College), and graduated B.A. in 1626. Intended originally for holy orders, the death of two elder brothers made him his father's heir, and in 1625 he entered the Middle Temple. At the university his abilities were more conspicuous than his industry, and at the bar his time was devoted more to general reading and to the society of eminent scholars and writers than to the study of law treatises. This wandering from the beaten track, however, was not without its advantages. In later years Clarendon declared "next the immediate blessing and providence of God Almighty" that he "owed all the little he knew and the little good that was in him to the friendships and conversation ... of the most excellent men in their several kinds that lived in that age."[1] These included Ben Jonson, Selden, Waller, Hales, and especially Lord Falkland; and from their influence and the wide reading in which he indulged, he doubtless drew the solid learning and literary talent which afterwards distinguished him.

In 1629 he married his first wife, Anne, daughter of Sir George Ayliffe, who died six months afterwards; and secondly, in 1634, Frances, daughter of Sir Thomas Aylesbury, Master of Requests. In 1633 he was called to the bar, and obtained quickly a good position and practice. His marriages had gained for him influential friends, and in December 1634 he was made keeper of the writs and rolls of the common pleas; while his able conduct of the petition of the London merchants against Portland earned Laud's approval. He was returned to the Short Parliament in 1640 as member for Wootton Bassett. Respect and veneration for the law and constitution of England were already fundamental principles with Hyde, and the flagrant violations and perversions of the law which characterized the twelve preceding years of absolute rule drove him into the ranks of the popular party. He served on numerous and important committees, and his parliamentary action was directed chiefly towards the support and restoration of the law. He assailed the jurisdiction of the earl marshal's court, and in the Long Parliament, in which he sat for Saltash, renewed his attacks and practically effected its suppression. In 1641 he served on the committees for inquiring into the status of the councils of Wales and of the North, distinguished himself by a speech against the latter,

and took an important part in the proceedings against the judges. He supported Stafford's impeachment, and did not vote against the attainder, subsequently making an unsuccessful attempt through Essex to avert the capital penalty.[2] Hyde's allegiance, however, to the church of England was as staunch as his support of the law, and was soon to separate him from the popular faction. In February 1641 he opposed the reception of the London petition against episcopacy, and in May the project for unity of religion with the Scots, and the bill for the exclusion of the clergy from secular office. He showed special energy in his opposition to the Root and Branch Bill, and, though made chairman of the committee on the bill on the 11th of July in order to silence his opposition, he caused by his successful obstruction the failure of the measure. In consequence he was summoned to the king's presence, and encouraged in his attitude, and at the beginning of the second session was regarded as one of the king's ablest supporters in the Commons. He considered the claims put forward at this time by parliament as a violation and not as a guarantee of the law and constitution. He opposed the demand by the parliament to choose the king's ministers, and also the Grand Remonstrance, to which he wrote a reply published by the king.

He now definitely though not openly joined the royal cause, and refused office in January 1642 with Colepeper and Falkland in order to serve the king's interests more effectually. Charles undertook to do nothing in the Commons without their advice. Nevertheless a few days afterwards, without their knowledge and by the advice of Lord Digby, he attempted the arrest of the five members, a resort to force which reduced Hyde to despair, and which indeed seemed to show that things had gone too far for an appeal to the law. He persevered, nevertheless, in his legal policy, to which Charles after the failure of his project again returned, joined the king openly in June, and continued to compose the king's answers and declarations in which he appealed to the "known Laws of the land" against the arbitrary and illegal acts of a seditious majority in the parliament, his advice to the king being "to shelter himself wholly under the law,... presuming that the king and the law together would have been strong enough for any encounter." Hyde's appeal had great influence, and gained for the king's cause half the nation. It by no means, however, met with universal support among the royalists, Hobbes jeering at Hyde's love for "mixed monarchy," and the courtiers expressing their disapproval of the "spirit of accommodation" which "wounded the regality." It was destined to failure owing principally to the invincible distrust of Charles created in the parliament leaders, and to the fact that Charles was simultaneously carrying on another and an inconsistent policy, listening to very different advisers, such as the queen and Digby, and resolving on measures (such as the attempt on Hull) without Hyde's knowledge or approval.

War, accordingly, in spite of his efforts, broke out. He was expelled the House of Commons on the 11th of August 1642, and was one of those excepted later from pardon. He showed great activity in collecting loans, was present at Edgehill, though not as a combatant, and followed the king to Oxford, residing at All Souls College from October 1642 till March 1645. On the 22nd of February he was made a privy councillor and knighted, and on the 3rd of March appointed chancellor of the exchequer. He was an influential member of the "Junto" which met every week to discuss business before it was laid before the council. His aim was to gain over some of the leading Parliamentarians by personal influence and personal considerations, and at the Uxbridge negotiations in January 1645, where he acted as principal manager on the king's side, while remaining firm on the great political questions such as the church and the militia, he tried to win individuals by promises of places and honours. He promoted the assembly of the Oxford parliament in December 1643 as a counterpoise to the influence and status of the Long Parliament. Hyde's policy and measures, however, all failed. They had been weakly and irregularly supported by the king, and were fiercely opposed by the military party, who were jealous of the civil influence, and were urging Charles to trust to force and arms alone and eschew all compromise and concessions. Charles fell now under the influence of persons devoid of all legal and constitutional scruples, sending to Glamorgan in Ireland "those strange powers and instructions inexcusable to justice, piety and prudence."[3]

Hyde's influence was much diminished, and on the 4th of March 1645 he left the king for Bristol as one of the guardians of the prince of Wales and governors of the west. Here the disputes between the council and the army paralysed the proceedings, and lost, according to Hyde, the finest opportunity since the outbreak of the war of raising a strong force and gaining substantial victories in that part of the country. After Hopton's defeat on the 16th of February 1646, at Torrington, Hyde accompanied the prince, on the 4th of March, to Scilly, and on the 17th of April, for greater security, to Jersey. He strongly disapproved of the prince's removal to France by the queen's order and of the schemes of assistance from abroad, refused to accompany him, and signed a bond to prevent the sale of Jersey to the

French supported by Jermyn. He opposed the projected sacrifice of the church to the Scots and the grant by the king of any but personal or temporary concessions, declaring that peace was only possible “upon the old foundations of government in church and state.” He was especially averse to Charles’s tampering with the Irish Romanists. “Oh, Mr Secretary,” he wrote to Nicholas, “those stratagems have given me more sad hours than all the misfortunes in war which have befallen the king and look like the effects of God’s anger towards us.”[4] He refused to compound for his own estate. While in Jersey he resided first at St Helier and afterwards at Elizabeth Castle with Sir George Carteret. He composed the first portion of his *History* and kept in touch with events by means of an enormous correspondence. In 1648 he published *A Full answer to an infamous and traiterous Pamphlet...*, a reply to the resolution of the parliament to present no more addresses to the king and a vindication of Charles.

On the outbreak of the second Civil War Hyde left Jersey (26th of June 1648) to join the queen and prince at Paris. He landed at Dieppe, sailed from that port to Dunkirk, and thence followed the prince to the Thames, where Charles had met the fleet, but was captured and robbed by a privateer, and only joined the prince in September after the latter’s return to the Hague. He strongly disapproved of the king’s concessions at Newport. When the army broke off the treaty and brought Charles to trial he endeavoured to save his life, and after the execution drew up a letter to the several European sovereigns invoking their assistance to avenge it. Hyde strongly opposed Charles II.’s ignominious surrender to the Covenanters, the alliance with the Scots, and the Scottish expedition, desiring to accomplish whatever was possible there through Montrose and the royalists, and inclined rather to an attempt in Ireland. His advice was not followed, and he gladly accepted a mission with Cottington to Spain to obtain money from the Roman Catholic powers, and to arrange an alliance between Owen O’Neill and Ormonde for the recovery of Ireland, arriving at Madrid on the 26th of November 1649. The defeat, however, of Charles at Dunbar, and the confirmation of Cromwell’s ascendancy, influenced the Spanish government against them, and they were ordered to leave in December 1650. Hyde arrived at Antwerp in January 1651, and in December rejoined Charles at Paris after the latter’s escape from Worcester. He now became one of his chief advisers, accompanying him in his change of residence to Cologne in October 1654 and to Bruges in 1658, and was appointed lord chancellor on the 13th of January 1658. His influence was henceforth maintained in spite of the intrigues of both Romanists and Presbyterians, as well as the violent and openly displayed hostility of the queen, and was employed unremittingly in the endeavour to keep Charles faithful to the church and constitution, and in the prevention of unwise concessions and promises which might estrange the general body of the royalists. His advice to Charles was to wait upon the turn of events, “that all his activity was to consist in carefully avoiding to do anything that might do him hurt and to expect some blessed conjuncture.”[5] In 1656, during the war between England and Spain, Charles received offers of help from the latter power provided he could gain a port in England, but Hyde discouraged small isolated attempts. He expected much from Cromwell’s death. The same year he made an alliance with the Levellers, and was informed of their plots to assassinate the protector, without apparently expressing any disapproval.[6] He was well supplied with information from England,[7] and guided the action of the royalists with great ability and wisdom during the interval between Cromwell’s death and the Restoration, urged patience, and advocated the obstruction of a settlement between the factions contending for power and the fomentation of their jealousies, rather than premature risings.

The Restoration was a complete triumph for Hyde’s policy. He lays no stress on his own great part in it, but it was owing to him that the Restoration was a national one, by the consent and invitation of parliament representing the whole people and not through the medium of one powerful faction enforcing its will upon a minority, and that it was not only a restoration of Charles but a restoration of the monarchy. By Hyde’s advice concessions to the inconvenient demands of special factions had been avoided by referring the decision to a “free parliament,” and the declaration of Breda reserved for parliament the settlement of the questions of amnesty, religious toleration and the proprietorship of forfeited lands.

Hyde entered London with the king, all attempts at effecting his fall having failed, and immediately obtained the chief place in the government, retaining the chancellorship of the exchequer till the 13th of May 1661, when he surrendered it to Lord Ashley. He took his seat as speaker of the House of Lords and in the court of chancery on the 1st of June 1660. On the 3rd of November 1660 he was made Baron Hyde of Hindon, and on the 20th of April 1661 Viscount Cornbury and earl of Clarendon, receiving a grant from the king of £20,000 and at different times of various small estates and Irish rents. The marriage of his daughter Anne to James, duke of York, celebrated in secret in September 1660, at first alarmed

Clarendon on account of the public hostility he expected thereby to incur, but finding his fears unconfirmed he acquiesced in its public recognition in December, and thus became related in a special manner to the royal family and the grandfather of two English sovereigns.[8]

Clarendon's position was one of great difficulties, but at the same time of splendid opportunities. In particular a rare occasion now offered itself of settling the religious question on a broad principle of comprehension or toleration; for the monarchy had been restored not by the supporters of the church alone but largely by the influence and aid of the nonconformists and also of the Roman Catholics, who were all united at that happy moment by a common loyalty to the throne. Clarendon appears to have approved of comprehension but not of toleration. He had already in April 1660 sent to discuss terms with the leading Presbyterians in England, and after the Restoration offered bishoprics to several, including Richard Baxter. He drew up the royal declaration of October, promising limited episcopacy and a revised prayer-book and ritual, which was subsequently thrown out by parliament, and he appears to have anticipated some kind of settlement from the Savoy Conference which sat in April 1661. The failure of the latter proved perhaps that the differences were too great for compromise, and widened the breach. The parliament immediately proceeded to pass the series of narrow and tyrannical measures against the dissenters known as the Clarendon Code. The Corporations Act, obliging members of corporations to denounce the Covenant and take the sacrament according to the Anglican usage, became law on the 20th of December 1661, the Act of Uniformity enforcing the use of the prayer-book on ministers, as well as a declaration that it was unlawful to bear arms against the sovereign, on the 19th of May 1662, and these were followed by the Conventicle Act in 1664 suppressing conventicles and by the Five-Mile Act in 1665 forbidding ministers who had refused subscription to the Act of Uniformity to teach or reside within 5 m. of a borough. Clarendon appears to have reluctantly acquiesced in these civil measures rather than to have originated them, and to have endeavoured to mitigate their injustice and severity. He supported the continuance of the tenure by presbyterian ministers of livings not held by Anglicans and an amendment in the Lords allowing a pension to those deprived, earning the gratitude of Baxter and the nonconformists. On the 17th of March 1662 he introduced into parliament a declaration enabling the king to dispense with the Act of Uniformity in the case of ministers of merit.[9] But once committed to the narrow policy of intolerance, Clarendon was inevitably involved in all its consequences. His characteristic respect for the law and constitution rendered him hostile to the general policy of indulgence, which, though the favourite project of the king, he strongly opposed in the Lords, and in the end caused its withdrawal. He declared that he could have wished the law otherwise, "but when it was passed, he thought it absolutely necessary to see obedience paid to it without any connivance."[10] Charles was greatly angered. It was believed in May 1663 that the intrigues of Bennet and Buckingham, who seized the opportunity of ingratiating themselves with the king by zealously supporting the indulgence, had secured Clarendon's dismissal, and in July Bristol ventured to accuse him of high treason in the parliament; but the attack, which did not receive the king's support, failed entirely and only ended in the banishment from court of its promoter. Clarendon's opposition to the court policy in this way acquired a personal character, and he was compelled to identify himself more completely with the intolerant measures of the House of Commons. Though not the originator of the Conventicle Act or of the Five-Mile Act, he has recorded his approval,[11] and he ended by taking alarm at plots and rumours and by regarding the great party of nonconformists, through whose co-operation the monarchy had been restored, as a danger to the state whose "faction was their religion."[12]

Meanwhile Clarendon's influence and direction had been predominant in nearly all departments of state. He supported the exception of the actual regicides from the Indemnity, but only ten out of the twenty-six condemned were executed, and Clarendon, with the king's support, prevented the passing of a bill in 1661 for the execution of thirteen more. He upheld the Act of Indemnity against all the attempts of the royalists to upset it. The conflicting claims to estates were left to be decided by the law. The confiscations of the usurping government accordingly were cancelled, while the properly executed transactions between individuals were necessarily upheld. There can be little doubt that the principle followed was the only safe one in the prevailing confusion. Great injustice was indeed suffered by individuals, but the proper remedy of such injustice was the benevolence of the king, which there is too much reason to believe proved inadequate and partial. The settlement of the church lands which was directed by Clarendon presented equal difficulties and involved equal hardships. In settling Scotland Clarendon's aim was to make that kingdom dependent upon England and to uphold the Cromwellian union. He proposed to establish a council at Whitehall to govern Scottish affairs, and showed great zeal in

endeavouring to restore episcopacy through the medium of Archbishop Sharp. His influence, however, ended with the ascendancy of Lauderdale in 1663. He was, to some extent at least, responsible for the settlement in Ireland, but, while anxious for an establishment upon a solid Protestant basis, urged "temper and moderation and justice" in securing it. He supported Ormonde's wise and enlightened Irish administration, and in particular opposed persistently the prohibition of the import of Irish cattle into England, incurring thereby great unpopularity. He showed great activity in the advancement of the colonies, to whom he allowed full freedom of religion. He was a member of the council for foreign plantations, and one of the eight lords proprietors of Carolina in 1663; and in 1664 sent a commission to settle disputes in New England. In the department of foreign affairs he had less influence. His policy was limited to the maintenance of peace "necessary for the reducing [the king's] own dominions into that temper of subjection and obedience as they ought to be in."[13] In 1664 he demanded, on behalf of Charles, French support, and a loan of £50,000 against disturbance at home, and thus initiated that ignominious system of pensions and dependence upon France which proved so injurious to English interests later. But he was the promoter neither of the sale of Dunkirk on the 27th of October 1662, the author of which seems to have been the earl of Sandwich,[14] nor of the Dutch War. He attached considerable value to the possession of the former, but when its sale was decided he conducted the negotiations and effected the bargain. He had zealously laboured for peace with Holland, and had concluded a treaty for the settlement of disputes on the 4th of September 1662. Commercial and naval jealousies, however, soon involved the two states in hostilities. Cape Corso and other Dutch possessions on the coast of Africa, and New Amsterdam in America, were seized by squadrons from the royal navy in 1664, and hostilities were declared on the 22nd of February 1665. Clarendon now gave his support to the war, asserted the extreme claims of the English crown over the British seas, and contemplated fresh cessions from the Dutch and an alliance with Sweden and Spain. According to his own account he initiated the policy of the Triple Alliance,[15] but it seems clear that his inclination towards France continued in spite of the intervention of the latter state in favour of Holland; and he took part in the negotiations for ending the war by an undertaking with Louis XIV. implying a neutrality, while the latter seized Flanders. The crisis in this feeble foreign policy and in the general official mismanagement was reached in June 1667, when the Dutch burnt several ships at Chatham and when "the roar of foreign guns were heard for the first and last time by the citizens of London."[16]

The whole responsibility for the national calamity and disgrace, and for the ignominious peace which followed it, was unjustly thrown on the shoulders of Clarendon, though it must be admitted that the disjointed state of the administration and want of control over foreign policy were largely the causes of the disaster, and for these Clarendon's influence and obstruction of official reforms were to some extent answerable. According to Sir William Coventry, whose opinion has weight and who acknowledges the chancellor's fidelity to the king, while Clarendon "was so great at the council board and in the administration of matters, there was no room for anybody to propose any remedy to what was remiss ... he managing all things with that greatness which will now be removed."[17] He disapproved of the system of boards and committees instituted during the Commonwealth, as giving too much power to the parliament, and regarded the administration by the great officers of state, to the exclusion of pure men of business, as the only method compatible with the dignity and security of the monarchy. The lowering of the prestige of the privy council, and its subordination first to the parliament and afterwards to the military faction, he considered as one of the chief causes of the fall of Charles I. He aroused a strong feeling of hostility in the Commons by his opposition to the appropriation of supplies in 1665, and to the audit of the war accounts in 1666, as "an introduction to a commonwealth" and as "a new encroachment," and by his high tone of prerogative and authority, while by his advice to Charles to prorogue parliament he incurred their resentment and gave colour to the accusation that he had advised the king to govern without parliaments. He was unpopular among all classes, among the royalists on account of the Act of Indemnity, among the Presbyterians because of the Act of Uniformity. It was said that he had invented the maxim "that the king should buy and reward his enemies and do little for his friends, because they are his already."[18] Every kind of maladministration was currently ascribed to him, of designs to govern by a standing army, and of corruption. He was credited with having married Charles purposely to a barren queen in order to raise his own grandchildren to the throne, with having sold Dunkirk to France, and his magnificent house in St James's was nicknamed "Dunkirk House," while on the day of the Dutch attack on Chatham the mob set up a gibbet at his gate and broke his windows. He had always been exceedingly unpopular at court, and kept severely aloof from the revels and licence which reigned there. Evelyn names "the

buffoons and the misses to whom he was an eyesore."[19] He was intensely disliked by the royal mistresses, whose favour he did not condescend to seek, and whose presence and influence were often the subject of his reproaches.[20] A party of younger men of the king's own age, more congenial to his temperament, and eager to drive the old chancellor from power and to succeed him in office, had for some time been endeavouring to undermine his influence by ridicule and intrigue. Surrounded by such general and violent animosity, Clarendon's only hope could be in the support of the king. But the chancellor had early and accurately gauged the nature and extent of the king's attachment to him, which proceeded neither from affection nor gratitude but "from his aversion to be troubled with the intricacies of his affairs," and in 1661 he had resisted the importunities of Ormonde to resign the great seal for the lord treasurership with the rank of "first minister," "a title newly translated out of French into English," on account of the obloquy this position would incur and the further dependence which it entailed upon the inconstant king.[21] Charles, long weary of the old chancellor's rebukes, was especially incensed at this time owing to his failure in securing Frances Stuart (la Belle Stuart) for his seraglio, a disappointment which he attributed to Clarendon, and was now alarmed by the hostility which his administration had excited. He did not scruple to sacrifice at once the old adherent of his house and fortunes. "The truth is," he wrote Ormonde, "his behaviour and humour was grown so insupportable to myself and all the world else that I could no longer endure it, and it was impossible for me to live with it and do these things with the Parliament that must be done, or the government will be lost."[22] By the direction of Charles, James advised Clarendon to resign before the meeting of parliament, but in an interview with the king on the 26th of August Clarendon refused to deliver up the seal unless dismissed, and urged him not to take a step ruinous to the interests both of the chancellor himself and of the crown.[23] He could not believe his dismissal was really intended, but on the 30th of August he was deprived of the great seal, for which the king received the thanks of the parliament on the 16th of October. On the 12th of November his impeachment, consisting of various charges of arbitrary government, corruption and maladministration, was brought up to the Lords, but the latter refused to order his committal, on the ground that the Commons had only accused him of treason in general without specifying any particular charge. Clarendon wrote humbly to the king asking for pardon, and that the prosecution might be prevented, but Charles had openly taken part against him, and, though desiring his escape, would not order or assist his departure for fear of the Commons. Through the bishop of Hereford, however, on the 29th of November he pressed Clarendon to fly, promising that he should not during his absence suffer in his honour or fortune. Clarendon embarked the same night for Calais, where he arrived on the 2nd of December. The Lords immediately passed an act for his banishment and ordered the petition forwarded by him to parliament to be burnt.

The rest of Clarendon's life was passed in exile. He left Calais for Rouen on the 25th of December, returning on the 21st of January 1668, visiting the baths of Bourbon in April, thence to Avignon in June, residing from July 1668 till June 1671 at Montpellier, whence he proceeded to Moulins and to Rouen again in May 1674. His sudden banishment entailed great personal hardships. His health at the time of his flight was much impaired, and on arriving at Calais he fell dangerously ill; and Louis XIV., anxious at this time to gain popularity in England, sent him peremptory and repeated orders to quit France. He suffered severely from gout, and during the greater part of his exile could not walk without the aid of two men. At Evreux, on the 23rd of April 1668, he was the victim of a murderous assault by English sailors, who attributed to him the non-payment of their wages, and who were on the point of despatching him when he was rescued by the guard. For some time he was not allowed to see any of his children; even correspondence with him was rendered treasonable by the Act of Banishment; and it was not apparently till 1671, 1673 and 1674 that he received visits from his sons, the younger, Lawrence Hyde, being present with him at his death.

Clarendon bore his troubles with great dignity and fortitude. He found consolation in religious duties, and devoted a portion of every day to the composition of his *Contemplations on the Psalms*, and of his moral essays. Removed effectually from the public scene, and from all share in present politics, he turned his attention once more to the past and finished his *History* and his *Autobiography*. Soon after reaching Calais he had written, on the 17th of December 1667, to the university of Oxford, desiring as his last request that the university should believe in his innocence and remember him, though there could be no further mention of him in their public devotions, in their private prayers.[24] In 1668 he wrote to the duke and duchess of York to remonstrate on the report that they had turned Roman Catholic, to the former urging "You cannot be without zeal for the Church to which your blessed father made himself a sacrifice," adding that such a change would bring a great

storm against the Romanists. He entertained to the last hopes of obtaining leave to return to England. He asked for permission in June 1671 and in August 1674. In the dedication of his *Brief View of Mr Hobbes's Book Leviathan* he repeats "the hope which sustains my weak, decayed spirits that your Majesty will at some time call to your remembrance my long and incorrupted fidelity to your person and your service"; but his petitions were not even answered or noticed. He died at Rouen on the 9th of December 1674. He was buried in Westminster Abbey at the foot of the steps at the entrance to Henry VII.'s chapel. He left two sons, Henry, 2nd earl of Clarendon, and Lawrence, earl of Rochester, his daughter Anne, duchess of York, and a third son, Edward, having predeceased him. His male descendants became extinct on the death of the 4th earl of Clarendon and 2nd earl of Rochester in 1753, the title of Clarendon being revived in 1776 in the person of Thomas Villiers, who had married the granddaughter and heir of the last earl.

As a statesman Clarendon had obvious limitations and failings. He brought to the consideration of political questions an essentially legal but also a narrow mind, conceiving the law, "that great and admirable mystery," and the constitution as fixed, unchangeable and sufficient for all time, in contrast to Pym, who regarded them as living organisms capable of continual development and evolution; and he was incapable of comprehending and governing the new conditions and forces created by the civil wars. His character, however, and therefore to some extent his career, bear the indelible marks of greatness. He left the popular cause at the moment of its triumph and showed in so doing a strict consistency. In a court degraded by licence and self-indulgence, he maintained his self-respect and personal dignity regardless of consequences, and in an age of almost universal corruption and self-seeking he preserved a noble integrity and patriotism. At the Restoration he showed great moderation in accepting rewards. He refused a grant of 10,000 acres in the Fens from the king on the ground that it would create an evil precedent, and amused Charles and James by his indignation at the offer of a present of £10,000 from the French minister Fouquet, the only present he accepted from Louis XIV. being a set of books printed at the Louvre. His income, however, as lord chancellor was very large, and Clarendon maintained considerable state, considering it due to the dignity of the monarchy that the high officers should carry the external marks of greatness. The house built by him in St James's was one of the most magnificent ever seen in England, and was filled with a collection of portraits, chiefly those of contemporary statesmen and men of letters. It cost Clarendon £50,000, involved him deeply in debt and was considered one of the chief causes of the "gust of envy" that caused his fall.[25] He is described as "a fair, ruddy, fat, middle-statured, handsome man," and his appearance was stately and dignified. He expected deference from his inferiors, and one of the chief charges which he brought against the party of the young politicians was the want of respect with which they treated himself and the lord treasurer. His industry and devotion to public business, of which proofs still remain in the enormous mass of his state papers and correspondence, were exemplary, and were rendered all the more conspicuous by the negligence, inferiority in business, and frivolity of his successors. As lord chancellor Clarendon made no great impression in the court of chancery. His early legal training had long been interrupted, and his political preoccupations probably rendered necessary the delegation of many of his judicial duties to others. According to Speaker Onslow his decrees were always made with the aid of two judges. Burnet praises him, however, as "a very good chancellor, only a little too rough but very impartial in the administration of justice," and Pepys, who saw him presiding in his court, perceived him to be "a most able and ready man."[26] According to Evelyn, "though no considerable lawyer" he was "one who kept up the fame and substance of things in the nation with ... solemnity." He made good appointments to the bench and issued some important orders for the reform of abuses in his court.[27] As chancellor of Oxford University, to which office he was elected on the 27th of October 1660, Clarendon promoted the restoration of order and various educational reforms. In 1753 his manuscripts were left to the university by his great-grandson Lord Cornbury, and in 1868 the money gained by publication was spent in erecting the Clarendon Laboratory, the profits of the *History* having provided in 1713 a building for the university press adjoining the Sheldonian theatre, known since the removal of the press to its present quarters as the Clarendon Building.

Clarendon had risen to high office largely through his literary and oratorical gifts. His eloquence was greatly admired by Evelyn and Pepys, though Burnet criticises it as too copious. He was a great lover of books and collected a large library, was well read in the Roman and in the contemporary histories both foreign and English, and could appreciate Carew, Ben Jonson and Cowley. As a writer and historian Clarendon occupies a high place in English literature. His great work, the *History of the Rebellion*, is composed in the grand style. A characteristic feature is the wonderful series of well-known portraits, drawn with

great skill and liveliness and especially praised by Evelyn and by Macaulay. The long digressions, the lengthy sentences, and the numerous parentheses do not accord with modern taste and usage, but it may be observed that these often follow more closely the natural involutions of the thought, and express the argument more clearly, than the short disconnected sentences, now generally employed, while in rhythm and dignity Clarendon's style is immeasurably superior. The composition, however, of the work as a whole is totally wanting in proportion, and the book is overloaded with state papers, misplaced and tedious in the narrative. In considering the accuracy of the history it is important to remember the dates and circumstances of the composition of its various portions. The published *History* is mainly a compilation of two separate original manuscripts, the first being the history proper, written between 1646 and 1648, with the advantage of a fresh memory and the help of various documents and authorities, and ending in March 1644, and the second being the *Life*, extending from 1609 to 1660, but composed long afterwards in exile and without the aid of papers between 1668 and 1670. The value of any statement, therefore, in the published *History* depends chiefly on whether it is taken from the *History* proper or the *Life*. In 1671 these two manuscripts were united by Clarendon with certain alterations and modifications making Books i.-vii. of the published *History*, while Books viii.-xv. were written subsequently, and, being composed for the most part without materials, are generally inaccurate, with the notable exception of Book ix., made up from two narratives written at Jersey in 1646, and containing very little from the *Life*. Sincerity and honest conviction are present on every page, and the inaccuracies are due not to wilful misrepresentation, but to failure of memory and to the disadvantages under which the author laboured in exile. But they lessen considerably the value of his work, and detract from his reputation as chronicler of contemporary events, for which he was specially fitted by his practical experience in public business, a qualification declared by himself to be the "genius, spirit and soul of an historian." In general, Clarendon, like many of his contemporaries, failed signally to comprehend the real issues and principles at stake in the great struggle, laying far too much stress on personalities and never understanding the real aims and motives of the Presbyterian party. The work was first published in 1702-1704 from a copy of a transcript made by Clarendon's secretary, with a few unimportant alterations, and was the object of a violent attack by John Oldmixon for supposed changes and omissions in *Clarendon and Whitelocke compared* (1727) and again in a preface to his *History of England* (1730), repelled and refuted by John Burton in the *Genuineness of Lord Clarendon's History Vindicated* (1744). The history was first published from the original in 1826; the best edition being that of 1888 edited by W.D. Macray and issued by the Clarendon Press. *The Lord Clarendon's History ... Compleated*, a supplement containing portraits and illustrative papers, was published in 1717, and *An Appendix to the History*, containing a life, speeches and various pieces, in 1724. The *Sutherland Clarendon* in the Bodleian library at Oxford contains several thousand portraits and illustrations of the *History*. *The Life of Edward, earl of Clarendon* ... [*and the*] *Continuation of the History ...* , the first consisting of that portion of the *Life* not included in the *History*, and the second of the account of Clarendon's administration and exile in France, begun in 1672, was published in 1759, the *History of the Reign of King Charles II. from the Restoration ...*, published about 1755, being a surreptitious edition of this work, of which the latest and best edition is that of the Clarendon Press of 1857.

Clarendon was also the author of *The Difference and Disparity between the Estate and Condition of George, duke of Buckingham and Robert, earl of Essex*, a youthful production vindicating Buckingham, printed in *Reliquiae Wottonianae* (1672), i. 184; *Animadversions on a Book entitled Fanaticism* (1673); *A Brief View ... of the dangerous ... errors in ... Mr Hobbes's book entitled "Leviathan"* (1676); *The History of the Rebellion and Civil War in Ireland* (1719); *A Collection of Several Pieces of Edward, earl of Clarendon*, containing reprints of speeches from the journals of the House of Lords and of the History of the Rebellion in Ireland (1727); *A Collection of Several Tracts* containing his *Vindication* in answer to his impeachment, *Reflections upon several Christian Duties, Two Dialogues on Education and on the want of Respect due to age*, and *Contemplations on the Psalms* (1727); *Religion and Policy* (1811); *Essays moral and entertaining on the various faculties and passions of the human mind* (1815, and in *British Prose Writers*, 1819, vol. i.); *Speeches* in *Rushworth's Collections* (1692), pt. iii. vol. i. 230, 333; *Declarations and Manifestos* (Clarendon being the author of nearly all on the king's side between March 1642 and March 1645, the first being the answer to the Grand Remonstrance in January 1642, but not of the answer to the XIX. Propositions or the apology for the King's attack upon Brentford) in the published *History*, Rushworth's *Collections*, E. Husband's *Collections of Ordinances and Declarations* (1646), *Old Parliamentary History* (1751-1762), *Somers Tracts, State Tracts, Harleian Miscellany, Thomasson Tracts* (Brit. Mus.), E. 157 (14); and a large number of

anonymous pamphlets aimed against the parliament, including *Transcendent and Multiplied Rebellion and Treason* (1645), *A Letter from a True and Lawful Member of Parliament ... to one of the Lords of his Highness's Council* (1656), and *Two Speeches made in the House of Peers on Monday 19th Dec.* [1642] ... (*Somers Tracts*, Scott, vi. 576); *Second Thoughts* (n.d., in favour of a limited toleration) is ascribed to him in the Catalogue in the British Museum; *A Letter ... to one of the Chief Ministers of the Nonconforming Party* ... (Saumur, 7th May 1674) has been attributed to him on insufficient evidence.

Clarendon's correspondence, amounting to over 100 volumes, is in the Bodleian library at Oxford, and other letters are to be found in *Additional MSS.* in the British Museum. Selections have been published under the title of *State Papers Collected by Edward, earl of Clarendon* (Clarendon State Papers) between 1767 and 1786, and the collection has been calendared up to 1657 in 1869, 1872, 1876. Other letters of Clarendon are to be found in Lister's *Life of Clarendon, iii.; Nicholas Papers* (Camden Soc., 1886); *Diary* of J. Evelyn, *appendix*; Sir R. Fanshaw's *Original Letters* (1724); Warburton's *Life of Prince Rupert* (1849): Barwick's *Life of Barwick* (1724); *Hist. MSS. Comm.* 10th Rep. pt. vi. pp. 193-216, and in the *Harleian Miscellany*.

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(P. C. Y.)

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1 *Life*, i. 25.

2 *Hist. of the Rebellion*, iii. 164, the account being substantially accepted by Gardiner, in spite of inaccuracies in details (*Hist.* ix. 341, note).

3 *Clarendon St. Pap.* ii. 337.

4 Ibid.

5 *Hist. of the Rebellion*, xiii. 140.

6 *Clarendon State Papers*, iii. 316, 325, 341, 343.

7 *Hist. MSS. Comm.: MSS. of F.W. Leyborne-Popham*, 227.

8 Anne Hyde (1637-1671), eldest daughter of the chancellor, was the mother by James of Queen Mary and Queen Anne, besides six other children, including four sons who all died in infancy. She became a Roman Catholic in 1670 shortly before her death, and was buried in the vault of Mary, queen of Scots, in Henry VII.'s chapel in Westminster Abbey.

9 See *Hist. MSS. Comm.: Various Collections*, ii. 118, and *MSS. of Duke of Somerset*, 94.

10 *Continuation*, 339.

11 Ib. 511, 776.

12 Lister's *Life of Clarendon*, ii. 295; *Hist. MSS. Comm.: Various Collections*, ii. 379.

13 *Continuation*, 1170.

14 *Hist. MSS. Comm.: MSS. of F.W. Leyborne-Popham*, 250.

15 *Continuation*, 1066.

16 Macaulay's *Hist. of England*, i. 193.

17 Pepys's *Diary*, Sept. 2, 1667.

18 *Hist. MSS. Comm.*, 7th Rep. 162.

19 *Diary*, iii. 95, 96.

20 *Lives from the Clarendon Gallery*, by Lady Th. Lewis, i. 39; Burnet's *Hist. of his own Times*, i. 209.

21 *Continuation*, 88.

22 Lister's *Life of Clarendon*, ii. 416.

23 *Continuation*, 1137.

24 *Clarendon St. Pap.* iii. Suppl. xxxvii.

25 Evelyn witnessed its demolition in 1683—*Diary*, May 19th, Sept. 18th; *Lives from the Clarendon Gallery*, by Lady Th. Lewis, i. 40.

26 *Diary*, July 14th, 1664.

27 *Lister*, ii. 528.

CLARENDON, GEORGE WILLIAM FREDERICK VILLIERS, 4TH EARL OF (in the Villiers line) (1800-1870), English diplomatist and statesman, was born in London on the 12th of January 1800. He was the eldest son of Hon. George Villiers (1750-1827), youngest son of the 1st earl of Clarendon (second creation), by Theresa, only daughter of the first Lord Boringdon, and granddaughter of the first Lord Grantham. The earldom of the lord chancellor Clarendon became extinct in the Hyde line by the death of the 4th earl, his last male descendant. Jane Hyde, countess of Essex, the sister of that nobleman (she died in 1724), left two daughters; of these the eldest, Lady Charlotte, became heiress of the Hyde family. She married Thomas Villiers (1709-1786), second son of the 2nd earl of Jersey, who served with distinction as English minister in Germany, and in 1776 the earldom of Clarendon was revived in his favour. The connexion with the Hyde family was therefore in the female line and somewhat remote. But a portion of the pictures and plate of the great chancellor was preserved to this branch of the family, and remains at The Grove, their family seat at Hertfordshire. The 2nd and 3rd earls were sons of the 1st, and, neither of them having sons, the title passed, on the death of the 3rd earl (John Charles) in 1838, to their younger brother's son.

Young George Villiers entered upon life in circumstances which gave small promise of the brilliancy of his future career. He was well born; he was heir presumptive to an earldom; and his mother was a woman of great energy, admirable good sense, and high feeling. But the means of his family were contracted; his education was desultory and incomplete; he had not the advantages of a training either at a public school or in the House of Commons. He went up to Cambridge at the early age of sixteen, and entered St John's College on the 29th of June 1816. In 1820, as the eldest son of an earl's brother with royal descent, he was enabled to take his M.A. degree under the statutes of the university then in force. In the same year he was appointed attaché to the British embassy at St Petersburg, where he remained three years, and gained that practical knowledge of diplomacy which was of so much use to him in after-life. He had received from nature a singularly handsome person, a polished and engaging address, a ready command of languages, and a remarkable power of composition.

Upon his return to England in 1823 he was appointed to a commissionership of customs, an office which he retained for about ten years. In 1831 he was despatched to France to

negotiate a commercial treaty, which, however, led to no result. On the 16th of August 1833 he was appointed minister at the court of Spain. Ferdinand VII. died within a month of his arrival at Madrid, and the infant queen Isabella, then in the third year of her age, was placed by the old Spanish law of female inheritance on her contested throne. Don Carlos, the late king's brother, claimed the crown by virtue of the Salic law of the House of Bourbon which Ferdinand had renounced before the birth of his daughter. Isabella II. and her mother Christina, the queen regent, became the representatives of constitutional monarchy, Don Carlos of Catholic absolutism. The conflict which had divided the despotic and the constitutional powers of Europe since the French Revolution of 1830 broke out into civil war in Spain, and by the Quadruple Treaty, signed on the 22nd of April 1834, France and England pledged themselves to the defence of the constitutional thrones of Spain and Portugal. For six years Villiers continued to give the most active and intelligent support to the Liberal government of Spain. He was accused, though unjustly, of having favoured the revolution of La Granja, which drove Christina, the queen mother, out of the kingdom, and raised Espartero to the regency. He undoubtedly supported the chiefs of the Liberal party, such as Espartero, against the intrigues of the French court; but the object of the British government was to establish the throne of Isabella on a truly national and liberal basis and to avert those complications, dictated by foreign influence, which eventually proved so fatal to that princess. Villiers received the grand cross of the Bath in 1838 in acknowledgment of his services, and succeeded, on the death of his uncle, to the title of earl of Clarendon; in the following year, having left Madrid, he married Katharine, eldest daughter of James Walter, first earl of Verulam.

In January 1840 he entered Lord Melbourne's administration as lord privy seal, and from the death of Lord Holland in the autumn of that year Lord Clarendon also held the office of chancellor of the duchy of Lancaster until the dissolution of the ministry in 1841. Deeply convinced that the maintenance of a cordial understanding with France was the most essential condition of peace and of a liberal policy in Europe, he reluctantly concurred in the measures proposed by Lord Palmerston for the expulsion of the pasha of Egypt from Syria; he strenuously advocated, with Lord Holland, a more conciliatory policy towards France; and he was only restrained from sending in his resignation by the dislike he felt to break up a cabinet he had so recently joined.

The interval of Sir Robert Peel's great administration (1841-1846) was to the leaders of the Whig party a period of repose; but Lord Clarendon took the warmest interest in the triumph of the principles of free trade and in the repeal of the corn-laws, of which his brother, Charles Pelham Villiers (*q.v.*), had been one of the earliest champions. For this reason, upon the formation of Lord John Russell's first administration, Lord Clarendon accepted the office of president of the Board of Trade. Twice in his career the governor-generalship of India was offered him, and once the governor-generalship of Canada;—these he refused from reluctance to withdraw from the politics of Europe. But in 1847 a sense of duty compelled him to take a far more laborious and uncongenial appointment. The desire of the cabinet was to abolish the lord-lieutenancy of Ireland, and Lord Clarendon was prevailed upon to accept that office, with a view to transform it ere long into an Irish secretaryship of state. But he had not been many months in Dublin before he acknowledged that the difficulties then existing in Ireland could only be met by the most vigilant and energetic authority, exercised on the spot. The crisis was one of extraordinary peril. Agrarian crimes of horrible atrocity had increased threefold. The Catholic clergy were openly disaffected. This was the second year of the Irish famine, and extraordinary measures were required to regulate the bounty of the government and the nation. In 1848 the revolution in France let loose fresh elements of discord, which culminated in an abortive insurrection, and for a lengthened period Ireland was a prey to more than her wonted symptoms of disaffection and disorder. Lord Clarendon remained viceroy of Ireland till 1852, and left behind him permanent marks of improvement. His services were expressly acknowledged in the queen's speech to both Houses of Parliament on the 5th of September 1848—this being the first time that any *civil* services obtained that honour; and he was made a knight of the Garter (retaining also the grand cross of the Bath by special order) on the 23rd of March 1849.

Upon the formation of the coalition ministry between the Whigs and the Peelites, in 1853, under Lord Aberdeen, Lord Clarendon became foreign minister. The country was already "drifting" into the Crimean War, an expression of his own which was never forgotten. Clarendon was not responsible for the policy which brought war about; but when it occurred he employed every means in his power to stimulate and assist the war departments, and above all he maintained the closest relations with the French. The tsar Nicholas had speculated on the impossibility of the sustained joint action of France and England in council and in the field. It was mainly by Lord Clarendon at Whitehall and by Lord Raglan before

Sevastopol that such a combination was rendered practicable, and did eventually triumph over the enemy. The diplomatic conduct of such an alliance for three years between two great nations jealous of their military honour and fighting for no separate political advantage, tried by excessive hardships and at moments on the verge of defeat, was certainly one of the most arduous duties ever performed by a minister. The result was due in the main to the confidence with which Lord Clarendon had inspired the emperor of the French, and to the affection and regard of the empress, whom he had known in Spain from her childhood.

In 1856 Lord Clarendon took his seat at the congress of Paris convoked for the restoration of peace, as first British plenipotentiary. It was the first time since the appearance of Lord Castlereagh at Vienna that a secretary of state for foreign affairs had been present in person at a congress on the continent. Lord Clarendon's first care was to obtain the admission of Italy to the council chamber as a belligerent power, and to raise the barrier which still excluded Prussia as a neutral one. But in the general anxiety of all the powers to terminate the war there was no small danger that the objects for which it had been undertaken would be abandoned or forgotten. It is due entirely to the firmness of Lord Clarendon that the principle of the neutralization of the Black Sea was preserved, that the Russian attempt to trick the allies out of the cession in Bessarabia was defeated, and that the results of the war were for a time secured. The congress was eager to turn to other subjects, and perhaps the most important result of its deliberations was the celebrated Declaration of the Maritime Powers, which abolished privateering, defined the right of blockade, and limited the right of capture to enemy's property in enemy's ships. Lord Clarendon has been accused of an abandonment of what are termed the belligerent rights of Great Britain, which were undoubtedly based on the old maritime laws of Europe. But he acted in strict conformity with the views of the British cabinet, and the British cabinet adopted those views because it was satisfied that it was not for the benefit of the country to adhere to practices which exposed the vast mercantile interests of Britain to depredation, even by the cruisers of a secondary maritime power, and which, if vigorously enforced against neutrals, could not fail to embroil her with every maritime state in the world.

Upon the reconstitution of the Whig administration in 1859, Lord John Russell made it a condition of his acceptance of office under Lord Palmerston that the foreign department should be placed in his own hands, which implied that Lord Clarendon should be excluded from office, as it would have been inconsistent alike with his dignity and his tastes to fill any other post in the government. The consequence was that from 1859 till 1864 Lord Clarendon remained out of office, and the critical relations arising out of the Civil War in the United States were left to the guidance of Earl Russell. But he re-entered the cabinet in May 1864 as chancellor of the duchy of Lancaster; and upon the death of Lord Palmerston in 1865, Lord Russell again became prime minister, when Lord Clarendon returned to the foreign office, which was again confided to him for the third time upon the formation of Mr Gladstone's administration in 1868. To the last moment of his existence, Lord Clarendon continued to devote every faculty of his mind and every instant of his life to the public service; and he expired surrounded by the boxes and papers of his office on the 27th of June 1870. No man owed more to the influence of a generous, unselfish and liberal disposition. If he had rivals he never ceased to treat them with the consideration and confidence of friends, and he cared but little for the ordinary prizes of ambition in comparison with the advancement of the cause of peace and progress.

He was succeeded as 5th earl by his eldest son, Edward Hyde Villiers (b. 1846), who became lord chamberlain in 1900.

See also the article (by Henry Reeve) in *Fraser's Magazine*, August 1876.

CLARENDON, HENRY HYDE, 2nd Earl of (1638-1709), English statesman, eldest son of the first earl, was born on the 2nd of June 1638. He accompanied his parents into exile and assisted his father as secretary, returning with them in 1660. In 1661 he was returned to parliament for Wiltshire as Lord Cornbury. He became secretary in 1662 and lord chamberlain to the queen in 1665. He took no part in the life of the court, and on the dismissal of his father became a vehement opponent of the administration, defended his father in the impeachment, and subsequently made effective attacks upon Buckingham and

Arlington. In 1674 he became earl of Clarendon by his father's death, and in 1679 was made a privy councillor. He was not included in Sir W. Temple's council of that year, but was reappointed in 1680. In 1682 he supported Halifax's proposal of declaring war on France. On the accession of James in 1685 he was appointed lord privy seal, but shortly afterwards, in September, was removed from this office to that of lord-lieutenant of Ireland. Clarendon was embarrassed in his estate, and James required a willing agent to carry out his design by upsetting the Protestant government and the Act of Settlement. Clarendon arrived in Dublin on the 9th of January 1686. He found himself completely in the power of Tyrconnel, the commander-in-chief; and though, like his father, a staunch Protestant, elected this year high steward of Oxford University, and detesting the king's policy, he obeyed his orders to introduce Roman Catholics into the government and the army and upon the bench, and clung to office till after the dismissal of his brother, the earl of Rochester, in January 1687, when he was recalled and succeeded by Tyrconnel. He now supported the church in its struggle with James, opposed the Declaration of Indulgence, wrote to Mary an account of the resistance of the bishops,[1] and visited and advised the latter in the Tower. He had no share, however, in inviting William to England. He assured James in September that the Church would be loyal, advised the calling of the parliament, and on the desertion of his son, Lord Cornbury, to William on the 14th of November, expressed to the king and queen the most poignant grief. In the council held on the 27th, however, he made a violent and unseasonable attack upon James's conduct, and on the 1st of December set out to meet William, joined him on the 3rd at Berwick near Salisbury, and was present at the conference at Hungerford on the 8th, and again at Windsor on the 16th. His wish was apparently to effect some compromise, saving the crown for James. According to Burnet, he advised sending James to Breda, and according to the duchess of Marlborough to the Tower, but he himself denies these statements.[2] He opposed vehemently the settlement of the crown upon William and Mary, voted for the regency, and refused to take the oaths of the new sovereigns, remaining a non-juror for the rest of his life. He subsequently retired to the country, engaged in cabals against the government, associated himself with Richard Graham, Lord Preston, and organizing a plot against William, was arrested on the 24th of June 1690 by order of his niece, Queen Mary, and placed in the Tower. Liberated on the 15th of August, he immediately recommenced his intrigues. On Preston's arrest on the 31st of December, a compromising letter from Clarendon was found upon him, and he was named by Preston as one of his accomplices. He was examined before the privy council and again imprisoned in the Tower on the 4th of January 1691, remaining in confinement till the 3rd of July. This closed his public career. In 1702, on Queen Anne's accession, he presented himself at court, "to talk to his niece," but the queen refused to see him till he had taken the oaths. He died on the 31st of October 1709, and was buried in Westminster Abbey.

His public career had been neither distinguished nor useful, but it seems natural to ascribe its failure to small abilities and to the conflict between personal ties and political convictions which drew him in opposite directions, rather than, following Macaulay, to motives of self-interest. He was a man of some literary taste, a fellow of the Royal Society (1684), the author of *The History and Antiquities of the Cathedral Church of Winchester ... continued by S. Gale* (1715), and he collaborated with his brother Rochester in the publication of his father's *History* (1702-1704). He married (1) in 1660, Theodosia, daughter of Lord Capel, and (2) in 1670, Flower, daughter of William Backhouse of Swallowfield in Berkshire, and widow of William Bishopp and of Sir William Backhouse, Bart. He was succeeded by his only son, Edward (1661-1724), as 3rd earl of Clarendon; and, the latter having no surviving son, the title passed to Henry, 2nd earl of Rochester (1672-1753), at whose death without male heirs it became extinct in the Hyde line.

1 *Hist. MSS. Comm.: MSS. of the Duke of Buccleuch*, ii. 31.

2 *Correspondence and Diary* (1828), ii. 286.

CLARENDON, CONSTITUTIONS OF, a body of English laws issued at Clarendon in 1164, by which Henry II. endeavoured to settle the relations between Church and State. Though they purported to declare the usages on the subject which prevailed in the reign of Henry I. they were never accepted by the clergy, and were formally renounced by the king at Avranches in September 1172. Some of them, however, were in part at least, as they all

purported to be, declaratory of ancient usage and remained in force after the royal renunciation. Of the sixteen provisions the one which provoked the greatest opposition was that which declared in effect that criminous clerks were to be summoned to the king's court, and from there, after formal accusation and defence, sent to the proper ecclesiastical court for trial. If found guilty they were to be degraded and sent back to the king's court for punishment. Another provision, which in spite of all opposition obtained a permanent place in English law, declared that all suits even between clerk and clerk concerning advowsons and presentations should be tried in the king's court. By other provisions appeals to Rome without the licence of the king were forbidden. None of the clergy were to leave the realm, nor were the king's tenants-in-chief and ministers to be excommunicated or their lands interdicted without the royal permission. Pleas of debt, whether involving a question of good faith or not, were to be in the jurisdiction of the king's courts. Two most interesting provisions, to which the clergy offered no opposition, were: (1) if a dispute arose between a clerk and a layman concerning a tenement which the clerk claimed as free-alms (frankalmoign) and the layman as a lay-fee, it should be determined by the recognition of twelve lawful men before the king's justice whether it belonged to free-alms or lay-fee, and if it were found to belong to free-alms then the plea was to be held in the ecclesiastical court, but if to lay-fee, in the court of the king or of one of his magnates; (2) a declaration of the procedure for election to bishoprics and royal abbeys, generally considered to state the terms of the settlement made between Henry I. and Anselm in 1107.

AUTHORITIES.—J.C. Robertson, *Materials for History of Thomas Becket*, Rolls Series (1875-1885); Sir F. Pollock and F.W. Maitland, *History of English Law before the Time of Ed. I.* (Cambridge, 1898), and F.W. Maitland, *Roman Canon Law in the Church of England* (1898); the text of the Constitutions is printed by W. Stubbs in *Select Charters* (Oxford, 1895).

(G. J. T.)

CLARES, POOR, otherwise *Clarisses*, Franciscan nuns, so called from their foundress, St Clara (*q.v.*). She was professed by St Francis in the Portiuncula in 1212, and two years later she and her first companions were established in the convent of St Damian's at Assisi. The nuns formed the "Second Order of St Francis," the friars being the "First Order," and the Tertiaries (*q.v.*) the "Third." Before Clara's death in 1253, the Second Order had spread all over Italy and into Spain, France and Germany; in England they were introduced c. 1293 and established in London, outside Aldgate, where their name of Minoresses survives in the Minories; there were only two other English houses before the Dissolution. St Francis gave the nuns no rule, but only a "Form of Life" and a "Last Will," each only five lines long, and coming to no more than an inculcation of his idea of evangelical poverty. Something more than this became necessary as soon as the institute began to spread; and during Francis's absence in the East, 1219, his supporter Cardinal Hugolino composed a rule which made the Franciscan nuns practically a species of unduly strict Benedictines, St Francis's special characteristics being eliminated. St Clara made it her life work to have this rule altered, and to get the Franciscan character of the Second Order restored; in 1247 a "Second Rule" was approved which went a long way towards satisfying her desires, and finally in 1253 a "Third," which practically gave what she wanted. This rule has come to be known as the "Rule of the Clares"; it is one of great poverty, seclusion and austerity of life. Most of the convents adopted it, but several clung to that of 1247. To bring about conformity, St Bonaventura, while general (1264), obtained papal permission to modify the rule of 1253, somewhat mitigating its austerities and allowing the convents to have fixed incomes,—thus assimilating them to the Conventual Franciscans as opposed to the Spirituals. This rule was adopted in many convents, but many more adhered to the strict rule of 1253. Indeed a counter-tendency towards a greater strictness set in, and a number of reforms were initiated, introducing an appalling austerity of life. The most important of these reforms were the Coletines (St Colette, c. 1400) and the Capucines (c. 1540; see CAPUCHINS). The half-dozen forms of the Franciscan rule for women here mentioned are still in use in different convents, and there are also a great number of religious institutes for women based on the rule of the Tertiaries. By the term "Poor Clares" the Coletine nuns are now commonly understood; there are various convents of these nuns, as of other Franciscans, in England and Ireland. Franciscan nuns have always been very numerous; there are now about 150 convents of the various observances of the Second Order, in every part of the world, besides innumerable institutions of Tertiaries.

See Helyot, *Hist. des ordres religieux* (1792), vii. cc. 25-28 and 38-42; Wetzer and Welte, *Kirchenlexikon* (2nd ed.), art. "Clara"; Max Heimbucher, *Orden und Kongregationen* (1896), i. §§ 47, 48, who gives references to all the literature. For a scientific study of the beginnings see Lempp, "Die Anfänge des Klarissenordens" in *Zeitschrift für Kirchengeschichte*, xiii. (1892), 181 ff.

(E. C. B.)

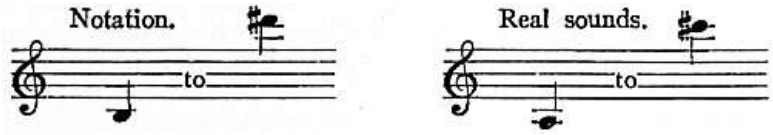
CLARET (from the Fr. *vin claret*, mod. *clairet*, wine of a light clear colour, from Lat. *clarus*, clear), the English name for the red Bordeaux wines. The term was originally used in France for light-yellow or light-red wines, as distinguished from the *vins rouges* and the *vins blancs*; later it was applied to red wines generally, but is rarely used in French, and never with the particular English meaning (see WINE).

CLARETIE, JULES ARSÈNE ARNAUD (1840-), French man of letters and director of the Théâtre Français, was born at Limoges on the 3rd of December 1840. After studying at the lycée Bonaparte in Paris, he became an active journalist, achieving great success as dramatic critic to the *Figaro* and to the *Opinion nationale*. He was a newspaper correspondent during the Franco-German War, and during the Commune acted as staff-officer in the National Guard. In 1885 he became director of the Théâtre Français, and from that time devoted his time chiefly to its administration. He was elected a member of the Academy in 1888, and took his seat in February 1889, being received by Ernest Renan. The long list of his works includes *Histoire de la révolution de 1870-1871* (new ed., 5 vols., 1875-1876); *Cinq ans après; l'Alsace et la Lorraine depuis l'annexion* (1876); some annual volumes of reprints of his articles in the weekly press, entitled *La Vie à Paris; La Vie moderne au théâtre* (1868-1869); *Molière, sa vie et son œuvre* (1871); *Histoire de la littérature française, 900-1900* (2nd ed. 1905); *Candidat!* (1887), a novel of contemporary life; *Brichanteau, comédien français* (1896); several plays, some of which are based on novels of his own—*Les Muscadins* (1874), *Le Régiment de Champagne* (1877), *Les Mirabeau* (1879), *Monsieur le ministre* (1883), and others; and the opera, *La Navarraise*, based on his novel *La Cigarette*, and written with Henri Cain to the music of Massenet. *La Navarraise* was first produced at Covent Garden (June 1894) with Mme Calvé in the part of Anita. His *Œuvres complètes* were published in 1897-1904.

CLARI, GIOVANNI CARLO MARIA, Italian musical composer, chapel-master at Pistoia, was born at Pisa about the year 1669. The time of his death is unknown. He was the most celebrated pupil of Colonna, chapel-master of S. Petronio, at Bologna. He became *maestro di cappella* at Pistoia about 1712, at Bologna in 1720, and at Pisa in 1736. He is supposed to have died about 1745. The works by which Clari distinguished himself pre-eminently are his vocal duets and trios, with a *basso continuo*, published between 1740 and 1747. These compositions, which combine graceful melody with contrapuntal learning, were much admired by Cherubini. They appear to have been admired by Handel also, since he did not hesitate to make appropriations from them. Clari composed one opera, *Il Savio delirante*, produced at Bologna in 1695, and a large quantity of church music, several specimens of which were printed in Novello's *Fitzwilliam Music*.

CLARINA, a comparatively new instrument of the wood-wind class (although actually made of metal), a hybrid possessing characteristics of both oboe and clarinet. The clarina was invented by W. Heckel of Biebrich-am-Rhein, and has been used since 1891 at the Festspielhaus, Bayreuth, in *Tristan und Isolde*, as a substitute for the *Holztrompete* made according to Wagner's instructions. The clarina has been found more practical and more effective in producing the desired tone-colour. The clarina is a metal instrument with the conical bore and fingering of the oboe and the clarinet single-reed mouthpiece. The compass of the instrument is as shown, and it stands in the key of B♭. Like the clarinet, the clarina is a transposing instrument, for which the music must be written in a key a tone higher than that of the composition. The timbre resulting from the combination of conical bore and single-reed mouthpiece has in the lowest register affinities with the *cor anglais*, in the middle with the saxophone, and in the highest with the clarinet. Other German orchestras have followed the example of Bayreuth. The clarina has also been found very effective as a solo instrument.

(K. S.)



CLARINET, or CLARIONET (Fr. *clarinette*; Ger. *Clarinette, Klarinett*; Ital. *clarinetto, chiarinetto*), a wood-wind instrument having a cylindrical bore and played by means of a single-reed mouthpiece. The word "clarinet" is said to be derived from *clarinetto*, a diminutive of *clarino*, the Italian for (1) the soprano trumpet, (2) the highest register of the instrument, (3) the trumpet played musically without the blare of the martial instrument. The word "clarionet" is similarly derived from "clarion," the English equivalent of *clarino*. It is suggested that the name *clarinet* or *clarinetto* was bestowed on account of the resemblance in timbre between the high registers of the clarino and clarinet. By adding the speaker-hole to the old chalumeau, J.C. Denner gave it an additional compass based on the overblowing of the harmonic twelfth, and consisting of an octave and a half of harmonics, which received the name of *clarino*, while the lower register retained the name of *chalumeau*. There is something to be said also in favour of another suggested derivation from the Italian *chiarina*, the name for reed instruments and the equivalent for tibia and aulos. At the beginning of the 18th century in Italy *clarinetto*, the diminutive of *clarino*, would be masculine, whereas *chiarinetta* or *clarinetta* would be feminine,[1] as in Doppelmayr's account of the invention written in 1730. The word "clarinet" is sometimes used in a generic sense to denote the whole family, which consists of the clarinet, or discant corresponding to the violin, oboe, &c; the alto clarinet in E; the basset horn in F (*q.v.*); the bass clarinet (*q.v.*), and the pedal clarinet (*q.v.*).

The modern clarinet consists of five (or four) separate pieces: (1) the mouthpiece; (2) the bulb; (3) the upper middle joint, or left-hand joint; (4) the lower middle joint, or right-hand joint[2]; (5) the bell; which (the bell excepted) when joined together, form a tube with a continuous cylindrical bore, 2 ft. or more in length, according to the pitch of the instrument. The mouthpiece, including the beating or single-reed common to the whole clarinet family, has the appearance of a beak with the point bevelled off and thinned at the edge to correspond with the end of the reed shaped like a spatula. The under part of the mouthpiece (fig. 2) is flattened in order to form a table for the support of the reed which is adjusted thereon with great nicety, allowing just the amount of play requisite to set in vibration the column of air within the tube.

The mouthpiece, which is subject to continual fluctuations of dampness and dryness, and to changes of temperature, requires to be made of a material having great powers of resistance, such as cocus wood, ivory or vulcanite, which are mostly used for the purpose in England. A longitudinal aperture 1 in. long and ½ in. wide, communicating with the bore, is cut in the table and covered by the reed. The aperture is thus closed except towards the point,

where, for the distance of ⅓ to ¼ in., the reed is thinned and the table curves backwards towards the point, leaving a gap between the ends of the mouthpiece and of the reed of 1 mm. or about the thickness of a sixpence for the B flat clarinet. The curve of the table and the size of the gap are therefore of considerable importance. The reed is cut from a joint of the *Arundo donax* or *sativa*, which grows wild in the regions bordering on the Mediterranean. A flat slip of the reed is cut, flattened on one side and thinned to a very delicate edge on the other. At first the reed was fastened to the table by means of many turns of a fine waxed cord. The metal band adjusted by means of two screws, known as the "ligature," was introduced about 1817 by Ivan Müller. The reed is set in vibration by the breath of the performer, and being flexible it beats against the table, opening and closing the gap at a rate depending on the rate of the vibrations it sets up in the air column, this rate varying according to the length of the column as determined by opening the lateral holes and keys. A cylindrical tube played by means of a reed has the acoustic properties of a stopped pipe, *i.e.* the fundamental tone produced by the tube is an octave lower than the corresponding tone of an open pipe of the same length, and overblows a twelfth; whereas tubes having a conical bore like the oboe, and played by means of a reed, speak as open pipes and overblow an octave. This forms the fundamental difference between the instruments of the oboe and clarinet families. Wind instruments depending upon lateral holes for the production of their scale must either have as many holes pierced in the bore as they require notes, or make use of the property possessed by the air-column of dividing into harmonics or partials of the fundamental tones. Twenty to twenty-two holes is the number generally accepted as the practical limit for the clarinet; beyond that number the fingering and mechanism become too complicated. The compass of the clarinet is therefore extended through the medium of the harmonic overtones. In stopped pipes a node is formed near the mouthpiece, and they are therefore only able to produce the uneven harmonics, such as the 1st, 3rd, 5th, 7th, &c, corresponding to the fundamental, and the diatonic intervals of the 5th one octave above, and of the 3rd and 7th two octaves above the fundamental. By pressing the reed with the lip near the base where it is thicker and stiffer, and increasing the pressure of the breath, the air-column is forced to divide and to sound the harmonics, a principle well understood by the ancient Greeks and Romans in playing upon the aulos and tibia.[3] This is easier to accomplish with the double reed than with the beating reed; in fact with a tube of wide diameter, such as that of the modern clarinet, it would not be possible by this means alone to do justice to the tone of the instrument or to the music now written for it. The bore of the aulos was very much narrower than that of the clarinet.

FIG. 1.—Clarinet (Albert Model).

In order to facilitate the production of the harmonic notes on the clarinet, a small hole, closed by means of a key and called the "speaker," is bored near the mouthpiece. By means of this small hole the air-column is placed in communication with the external atmosphere, a ventral segment is formed, and the air-column divides into three equal parts, producing a triple number of vibrations resulting in the third note of the harmonic series, at an interval of a twelfth above the fundamental.[4] In a wind instrument with lateral holes the fundamental note corresponding to any particular hole is produced when all the holes below that hole are open and it itself and all above it are closed, the effective length of the resonating tube being shortened as each of the closed holes is successively uncovered. In order to obtain a complete chromatic scale on the clarinet at least eighteen holes are required. This series produces with the bell-note a succession of nineteen semitones, giving the range of a twelfth and known as the fundamental scale or *chalumeau* register, so called, no doubt, because it was the compass (without chromatic semitones) of the more primitive predecessor of the clarinet, known as the *chalumeau*, which must not be confounded with the shawm or schalmey of the middle ages.

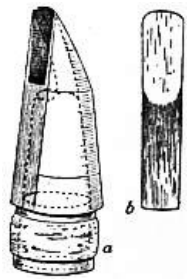


FIG. 2.—Clarinet Mouthpiece. *a*, the mouthpiece showing the position of the bore inside; *b*, the single or beating reed.

The fundamental scale of the modern clarinet in C extends from  The next octave and a half is obtained by opening the speaker key, whereby each of the

fundamental notes is reproduced a twelfth higher; the bell-note thus jumps from E to B♮, the first key gives instead of F its twelfth C♯, and so on, extending the compass to  , which ends the natural compass of the instrument, although a skilful performer may obtain another octave by cross-fingering. The names of the holes and keys on the clarinet are derived not from the notes of the fundamental scale, but from the name of the twelfth produced by overblowing with the speaker key open; for instance, the first key near the bell is known not as the E key but as the B♮. The use of the speaker key forms the greatest technical difficulty in learning to play the clarinet, on account of the thumb having to do double duty, closing one hole and raising the lever of the speaker key simultaneously. In a clarinet designed by Richard Carte this difficulty was ingeniously overcome by placing the left thumb-hole towards the front, and closing it by a thumb-lever or with a ring action by the first or second finger of the left hand, thus leaving the thumb free to work the speaker key alone.

There is good reason to think that the ancient Greeks understood the advantage of a speaker-hole, which they called *Syrinx*, for facilitating the production of harmonics on the aulos. The credit of the discovery of this interesting fact is due to A.A. Howard,[5] of Harvard University; it explains many passages in the classics which before were obscure (see AULOS). Plutarch relates[6] that Telephanes of Megara was so incensed with the syrinx that he never allowed his instrument-makers to place one on any of his auloi; he even went so far as to absent himself, principally on account of the syrinx, from the Pythian games. Telephanes was a great virtuoso who scorned the use of a speaker-hole, being able to obtain his harmonics on the aulos by the mere control of lips and teeth.

The modern clarinet has from thirteen to nineteen keys, some being normally open and others closed. In order to understand why, when once the idea of adding keys to the chalumeau had been conceived, the number rose so slowly, keys being added one or two at a time by makers of various nationalities at long intervals, it is necessary to consider the effect of boring holes in the side of a cylindrical tube. If it were possible to proceed from an absolute theoretical basis, there would be but little difficulty; there are, however, practical reasons which make this a matter of great difficulty. According to V. Mahillon,[7] the theoretical length of a B♭ clarinet (French pitch diapason normal A = 435 vibrations), is 39 cm. when the internal diameter of the bore measures exactly 1.4 cm. Any increase in the diameter of the cylindrical bore for a given length of tube raises the pitch proportionally and in the same way a decrease lowers it. A bore narrow in proportion to the length facilitates the production of the harmonics, which is no doubt the reason why the aulos was made with a very narrow diameter, and produced such deep notes in proportion to its length. In determining the position of the holes along the tube, the thickness of the wood to be pierced must be taken into consideration, for the length of the passage from the main bore to the outer air adds to the length of the resonating column; as, however, the clarinet tube is reckoned as a closed one, only half the extra length must be taken into account. When placed in its correct theoretical position, a hole should have its diameter equal to the diameter of the main bore, which is the ideal condition for obtaining a full, rich tone; it is, however, feasible to give the hole a smaller diameter, altering its position by placing it nearer the mouthpiece. These laws, which were likewise known to the Greeks and Romans,[8] had to be rediscovered by experience in the 18th and 19th centuries, during which the mechanism of the key system was repeatedly improved. Due consideration having been given to these points, it will also be necessary to remember that the stopping of the seven open holes leaves only the two little fingers (the thumb of the right hand being in the ordinary clarinet engaged in supporting the instrument) free at all times for key service, the other fingers doing duty when momentarily disengaged. The fingering of the clarinet is the most difficult of any instrument in the orchestra, for it differs in all four octaves of its compass. Once mastered, however, it is the same for all clarinets, the music being always written in the key of C.

The actual tonality of the clarinet is determined by the diatonic scale produced when, starting with keys untouched and finger and thumb-holes closed, the fingers are raised one by one from the holes. In the B flat clarinet, the *real sounds* thus produced are

being part of the scale of B flat major. By the closing of two *open* keys, the lower E flat and D

are added.

The following are the various sizes of clarinets with the key proper to each:

E flat, a minor third above the C clarinet.
B flat, a tone below the C clarinet.
The high F, 4 tones above the C clarinet.
The D, 1 tone above the C clarinet.
The low G, a fourth below the C clarinet.
The A, a minor third below the C clarinet.
The B♮ 1 semintone below the C clarinet.
The alto clarinet in E♭, a fifth below the B♭ clarinet.
The tenor or basset horn, in F, a fifth below the C clarinet.
The bass clarinet in B♭, an 8ve below that in B♭.
The pedal clarinet in B♭, an 8ve below the bass clarinet.
The clarinets in B♭ and A are used in the orchestra; those in C and E♭ in military bands.

History.—Although the single beating-reed associated with the instruments of the clarinet family has been traced in ancient Egypt, the double reed, characteristic of the oboe family, being of simpler construction, was probably of still greater antiquity. An ancient Egyptian pipe found in a mummy-case and now preserved in the museum at Turin was found to contain a beating-reed sunk 3 in. below the end of the pipe, which is the principle of the drone. It would appear that the double chalumeau, called arghoul (*q.v.*) by the modern Egyptians, was known in ancient Egypt, although it was not perhaps in common use. The Musée Guimet possesses a copy of a fresco from the tombs at Saqqarah (executed under the direction of Mariette Bey) assigned to the 4th or 5th dynasty, on which is shown a concert with dancing; the instruments used are two harps, the long oblique flute “nay,” blown from the end without any mouthpiece or embouchure, and an instrument identified as an arghoul[9] from its resemblance to the modern instrument of the same name. This is believed to be the only illustration of the ancient double chalumeau yet found in Egypt, with the single exception of a hieroglyph occurring also once only, *i.e.* the sign read *As-it*, consisting of a cylindrical pipe with a beak mouthpiece bound round with a cord tied in a bow. The bow is taken to indicate the double parallel pipes bound together; the same sign without the bow occurs frequently and is read *Ma-it*,[10] and is considered to be the generic name for reed wind instruments. The beating-reed was probably introduced into classic Greece from Egypt or Asia Minor. A few ancient Greek instruments are extant, five of which are in the British Museum. They are as nearly cylindrical as would be the natural growing reed itself. The probability is that both single and double reeds were at times used with the Greek aulos and the Roman tibia. V. Mahillon and A.A. Howard of Harvard have both obtained facsimiles of actual instruments, some found at Pompeii and now deposited in the museum at Naples, and others in the British Museum. Experiments made with these instruments, whose original mouthpieces have perished, show that with pipes of such narrow diameter the fundamental scale and pitch are the same whether sounded by means of a single or of a double reed, but the modern combination of single reed and cylindrical tube alone gives the full pure tone quality. The subject is more fully discussed in the article Aulos.[11] The Roman tibia, if monuments can be trusted, sometimes had a beak-shaped mouthpiece, as for instance that attached to a pipe discovered at Pompeii, or that shown in a scene on Trajan’s column.[12] It is probable that when, at the decline of the Roman empire, instrumental music was placed by the church under a ban—and the tibia more especially from its association with every form of licence and moral depravity—this instrument, sharing the common fate, survived chiefly among itinerant musicians who carried it into western Europe, where it was preserved from complete extinction. An instrument of difficult technique requiring an advanced knowledge of acoustics was not, however, likely to flourish or even to be understood among nations whose culture was as yet in its infancy.

The tide of culture from the Byzantine empire filtered through to the south and west, leaving many traces; a fresh impetus was received from the east through the Arabs; and later, as a result of the Crusades, the prototype of the clarinet, together with the practical knowledge necessary for making the instrument and playing upon it, may have been re-introduced through any one or all of these sources. However this may be, the instrument was during the Carolingian period identified with the tibia of the Romans until such time as the new western civilization ceased to be content to go back to classical Rome for its models, and began to express itself, at first naively and awkwardly, as the 11th century dawned. The name then changed to the derivatives of the Greek *kalamos*, assuming an almost bewildering variety of forms, of which the commonest are chalemie, chalumeau,

schalmey, scalmeye, shawm, calemel, kalemele.[13] The derivation of the name seems to point to a Byzantine rather than an Arab source for the revival of the instruments which formed the prototype of both oboe and clarinet, but it must not be forgotten that the instruments with a conical bore—more especially those played by a reed—are primarily of Asiatic origin. At the beginning of the 13th century in France, where the instrument remained a special favourite until it was displaced by the clarinet, the chalumeau is mentioned in some of the early romances:—"Tabars et chalemiaux et estrumens sonner" (*Aye d'Avignon*, v. 4137); "Grelles et chelimiaus et buisines bruians" (*Gui de Bourgogne*, v. 1374), &c. By the end of the 13th century, the German equivalent *Schalmey* appears in the literature of that country, —"Pusûnen und Schalmeyen schal moht niemen da gehoeren wal" (*Frauendienst*, 492, fol. 5, Ulrich von Lichtenstein). The schalmey or shawm is frequently represented in miniatures from the 13th century, but it must have been known long before, since it was at that period in use as the chaunter of the bag-pipe (*q.v.*), a fully-developed complex instrument which presupposes a separate previous existence for its component parts.

We have no reason to suppose that any distinction was drawn between the single and double reed instruments during the early middle ages—if indeed the single reed was then known at all—for the derivatives of *kalamos* were applied to a variety of pipes. The first clear and unmistakable drawing yet found of the single reed occurs in Mersenne's *Harmonie universelle* (p. 282), where the primitive reed pipe is shown with the beating-reed detached from the tube of the instrument itself, by making a lateral slit and then splitting back a little tongue of reed towards a knot. Mersenne calls this the simplest form of chalumeau or wheat-stalk (*tuyau de blé*). It is evident that no significance was then attached to the form of the vibrating reed, whether single or double, for Mersenne and other writers of his time call the chaunters of the musette and cornemuse chalumeaux whether they are of cylindrical or of conical bore. The difference in timbre produced by the two kinds of reeds was, however, understood, for Mersenne states that a special kind of cornemuse was used in concert with the *hautbois de Poitou* (an oboe whose double reed was enclosed in an air chamber) and was distinguished from the shepherd's cornemuse by having double reeds throughout, whereas the drones of the latter instrument were furnished with beating reeds. It is therefore evident that as late as 1636 (the date at which Mersenne wrote) in France the word "chalumeau" was not applied to the instrument transformed some sixty years later into the clarinet, nor was it applied exclusively to any one kind of pipe except when acting as the chaunter of the bagpipe, and that independently of any structural characteristics. The chaunter was still called chalumeau in 1737.[14] Of the instrument which has been looked upon as the chalumeau, there is but little trace in Germany or in France at the beginning of the 17th century. A chalumeau with beak mouthpiece and characteristic short cylindrical tube pierced with six holes figures among the musical instruments used for the triumphal procession of the emperor Maximilian I., commemorated by a fine series of plates,[15] engraved on wood by Hans Burgkmair, the friend and colleague of A. Dürer. On the same plate (No. 79) are five schalmeys with double reeds and five chalumeaux with single-reed beak mouthpieces; the latter instruments were in all probability made in the Netherlands, which excelled from the 12th century in the manufacture of all musical instruments. No single-reed instrument, with the exception of the regal (*q.v.*), is figured by S. Virdung,[16] M. Agricola[17] or M. Praetorius.[18]

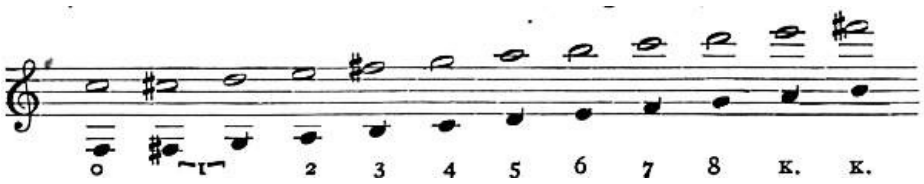
A good idea of the primitive chalumeau may be gained from a reproduction of one of the few specimens from the 16th or 17th century still extant, which belonged to Césare Snoeck and was exhibited at the Royal Military Exhibition in London in 1890.[19] The tube is stopped at the mouthpiece end by a natural joint of the reed, and a tongue has been detached just under the joint; there are six finger-holes and one for the thumb. An instrument almost identical with the above, but with a rudimentary bell, and showing plainly the detached tongue, is figured by Jost Amman in 1589.[20] A plate in Diderot and d'Alembert's *Encyclopédie*[21] shows a less primitive instrument, outwardly cylindrical and having a separate mouthpiece joint and a clarinet reed but no keys. A chalumeau without keys, but consisting apparently of three joints—mouthpiece, main tube and bell,—is figured on the title-page of a musical work[22] dated 1690; it is very similar to the one represented in fig. 3, except that only six holes are visible.

In his biographical notice of J. Christian Denner (1655-1707), J.G. Doppelmayr[23] states that at the beginning of the 18th century "Denner invented a new kind of pipe, the so-called clarinet, which greatly

(From Diderot and d'Alembert's *Encyclopédie*.)

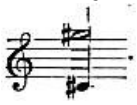
FIG. 3. Chalumeau, 1767. (*a*) Front, (*b*) Back view.

delighted lovers of music; he also made great improvements in the stock or rackett-fagottos, known in the olden time and finally also in the chalumeaux." It is probable that the improvements in the chalumeau to which Doppelmayr alludes without understanding them consisted (*a*) in giving the mouthpiece the shape of a beak and adding a separate reed tongue as in that of the modern clarinet, unless this change had already taken place in the Netherlands, the country which the unremitting labours of E. van der Straeten[24] have revealed as taking the lead in Europe from the 14th to the 16th century in the construction of musical instruments of all kinds; (*b*) in the boring of two additional holes for A and B near the mouthpiece and covering them with two keys; (*c*) in replacing the long cylindrical mouthpiece joint by a bulb, thus restoring one of the characteristic features of the tibia,[25] known as the ὅλμος. There are a few of these improved chalumeaux in existence, two being in the Bavarian national museum at Munich, the one in high A, in a bad state of preservation, the second in C, marked J.C. Denner, of which V. Mahillon has made a facsimile[26] for the museum of the Brussels Conservatoire. There are two keys and eight holes; the first consists of two small holes on the same level giving a semitone if only one be closed. If the thumb-key be left open, the sounds of the fundamental scale (shown in the black notes below) rise a twelfth to form the second register (the white notes).



This early clarinet or improved chalumeau has a clarinet mouthpiece, but no bulb; it measures 50 cm. (20 in.), whereas the one in A mentioned above is only 28 cm. in length, the long cylindrical tube between mouthpiece and key-joint, afterwards turned into the bulb, being absent. Mahillon was probably the first to point out that the so-called invention of the clarinet by J.C. Denner consisted in providing a device—the speaker-key—to facilitate the production of the harmonics of the fundamental. Can we be sure that the same result was not obtained on the old chalumeau before keys were added, by partially uncovering the hole for the thumb?

The Berlin museum possesses an early clarinet with two keys, marked J.B. Oberlender, derived from the Snoeck collection. Paul de Wit's collection has a similar specimen by Enkelmer. The Brussels Conservatoire possesses clarinets with two keys by Flemish makers, G.A. Rottenburgh and J.B. Willems[27]; the latter, with a small bulb and bell, is in G a fifth above the C clarinet. The next improvements in the clarinet, made in 1720, are due to J. Denner, probably a son of J.C. Denner. They consisted in the addition of a bell and in the removal of the speaker-hole and key nearer the mouthpiece, involving the reduction of the diameter of the hole. The effect of this change of position was to turn the B♮ into B♭, for J. Denner introduced into the hole, nearly as far as the axis of the bore, a small metal drainage tube[28] for the moisture of the breath. In the modern clarinet, the same result is attained by raising this little tube slightly above the surface of the main tube, placing a key on the top of it, and bending the lever. In order to produce the missing B♮, J. Denner lengthened the tube and pierced another hole, the low E, covered by an open key with a long lever which, when closed, gives the desired B as its twelfth, thus forming a connexion between the two registers. A clarinet with three keys, of similar construction (about 1750), marked J.W.

Kenigsperger, is preserved in the Bavarian national museum, at Munich. Another in B♭ marked Lindner[29] belongs to the collection at Brussels. About the middle of the 18th century, the number of keys was raised to five, some say[30] by Barthold Fritz of Brunswick (1697-1766), who added keys for C♯ and D♯.  According to Altenburg[31] the E♭ or D♯ key is due to the virtuoso Joseph Beer (1744-1811). The sixth key was added about 1790 by the celebrated French virtuoso Xavier Lefébure (or Lefèvre), and produced G♯.  Anton Stadler and his brother, both clarinettists in the Vienna court orchestra and instrument-makers, are said to have lengthened the tube of the B♭ clarinet, extending the compass down to C (real sound B♭). It was for the Stadler brothers that Mozart wrote his quintet for strings, with a fine obbligato for the clarinet in A (1789), and the clarinet concerto with orchestra in 1791.

This, then, was the state of the clarinet in 1810 when Ivan Müller, then living in Paris, carried the number of keys up to thirteen, and made several structural improvements already mentioned, which gave us the modern instrument and inaugurated a new era in the construction and technique of the clarinet. Müller's system is still adopted in principle by most clarinet makers. The instrument was successively improved during the 19th century by the Belgian makers Bachmann, the elder Sax, Albert and C. Mahillon, whose invention in 1862 of the C♯ key with double action is now generally adopted. In Paris the labours of Lefébure, Buffet-Crampon, and Goumas are pre-eminent. In 1842 H.E. Klosé conceived the idea of adapting to the clarinet the ingenious mechanism of movable rings, invented by Boehm for the flute, and he entrusted the execution of this innovation to Buffet-Crampon; this is the type of clarinet generally adopted in French orchestras. From this adaptation has sprung the erroneous notion that Klosé's clarinet was constructed according to the Boehm system; Klosé's lateral divisions of the tube do not follow those applied by Boehm to the flute.

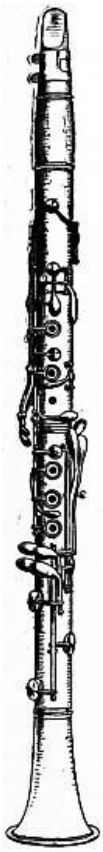


FIG. 4.—Clarinet (Boehm model, Klussmann's patent).

In England the clarinet has also passed through several progressive stages since its introduction about 1770, and first of all at the hands of Cornelius Ward. The principal improvements were due to Richard Carte, who took out a patent in 1858 for an improved Boehm clarinet which possessed some claim to the name, since Boehm's principle of boring the holes at theoretically correct intervals and of venting the holes by means of open holes below was carried out. Carte made several modifications of his original patent, his chief endeavour being to so dispose the key-work as to reduce the difficulties in fingering. By the extension of the principle of the ring action, the work of the third and little fingers of the left hand was simplified and the fingering of certain difficult notes and shakes greatly facilitated. Messrs Rudall, Carte & Company have made further improvements in the clarinet, which are embodied in Klussmann's patent (fig. 4); these consist in the introduction of the duplicate G♯ key, a note which has hitherto formed a serious obstacle to perfect execution. The duplicate key, operated by the third or second finger of the right hand, releases the fourth finger of the left hand. The old G♯ is still retained and may be used in the usual way if desired. The body of the instrument is now made in one joint, and the position of the G♯ hole is mathematically correct, whereby perfect intonation for C♯, G♯ and F♮ is secured. Other improvements were made in Paris by Messrs Evette & Schaeffer and by M. Paradis,[32] a clarinet-player in the band of the Garde Républicaine, and very great improvements in boring and in key mechanism were effected by Albert of Brussels (see fig. 1).

The clarinet appears to have received appreciation in the Netherlands earlier than in its own native land. According to W. Altenburg (op. cit. p. 11),[33] a MS. is preserved in the cathedral at Antwerp of a mass written by A.J. Faber in 1720, which is scored for a clarinet. Johann Mattheson,[34] *Kapellmeister* at Hamburg, mentions clarinet music in 1713, although Handel, whose rival he was, does not appear to have known the instrument. Joh. Christ. Bach scored for the clarinet in 1763 in his opera *Orione* performed in London, and Rameau had already employed the instrument in 1751 in a theatre for his pastoral entitled *Acante et Céphise*.[35] The clarinet was formally introduced

into the orchestra in Vienna in 1767,[36] Gluck having contented himself with the use of the chalumeau in *Orfeo* (1762) and in *Alceste* (1767).[37] The clarinet had already been adopted in military bands in France in 1755, where it very speedily completely replaced the oboe. One of Napoleon Bonaparte's bands is said to have had no less than twenty clarinets.

For further information on the clarinet at the beginning of the 19th century, consult the *Methods* by Ivan Müller and Xavier Lefébure, and Joseph Froehlich's admirable work on the instruments of the orchestra; and Gottfried Weber's articles in Ersch and Gruber's *Encyclopaedia*. See also Basset Horn; Bass Clarinet and Pedal Clarinet.

(K. S.)

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1 See Gottfried Weber's objection to this derivation in "Über Clarinette und Basset-horn," *Caecilia* (Mainz, 1829), vol. xi. pp. 36 and 37, note.

2 Nos. 3 and 4 are sometimes made in one, as for instance in Messrs Rudall, Carte & Company's modification, the Klussmann patent.

3 Aristotle (*de Audib.* 802 b 18, and 804 a) and Porphyry (ed. Wallis, pp. 249 and 252) mention that if the performer presses the *zeuge* (mouthpiece) or the *glottai* (reeds) of the pipes, a sharper tone is produced.

4 Cf. V.C. Mahillon, *Éléments d'acoustique musicale et instrumentale* (Brussels, 1874), p. 161; and Fr. Zamminer, *Die Musik und die musikalischen Instrumente in ihrer Beziehung zu den Gesetzen der Akustik ...* (Giessen, 1855), pp. 297 and 298.

5 "The Aulos or Tibia," *Harvard Studies*, iv. (Boston, 1893).

6 *De Musica*, 1138.

7 *Op. cit.* pp. 160 et seq.; and Wilhelm Altenburg, *Die Klarinette* (Heilbronn, 1904), p. 9, who refers to Mahillon.

8 See Macrobius, *Comm. in somnium Scipionis*, ii. 4. 5 "nec secus probamus in tibiis de quarum foraminibus vicinis inflantis ori sonus acutus emittitur, de longinquis autem et termino proximis, gravior: item acutior per patentiora foramina, gravior per angusta."

9 See Victor Loret, *L'Égypte au temps des Pharaons—la vie, le science, et l'art* (Paris, 1889), illustration p. 139 and p. 143. The author gives no information about this fresco except that it is in the Musée Guimet. It is probably identical with the second of the mural paintings described on p. 190 of *Petit guide illustré au Musée Guimet*, par L. de Milloue.

10 See Victor Loret, "Les flûtes égyptiennes antiques," *Journal asiatique* (Paris, 1889), [8], xiv. pp. 129, 130, 132.

11 See also A.A. Howard, "Study on the Aulos or Tibia," *Harvard Studies*, vol. iv. (Boston, 1893); F.C. Gevaert, *Musique de l'antiquité*; Carl von Jan, article "Floete" in August Baumeister's *Denkmäler des klassischen Alterthums* (Leipzig, 1884-1888), vol. i.; Dr Hugo Riemann, *Handbuch der Musikgesch.* vol. i. p. 90, &c. (Leipzig, 1904); all of whom have not come to the same conclusions.

12 Wilhelm Froehner, *La Colonne trajane* (Paris, 1872), t. ii. pl. 76.

13

"Aveuc aus ert vestus Guis
Ki leur cante et Kalemele,
En la muse au grant bourdon."

J.A.U. Scheler's *Trouvères belges*.

14 See Ernest Thoinan, *Les Hotteterre et les Chédeville, célèbres facteurs de flûtes, hautbois, bassons et musettes* (Paris, 1894), p. 15 et seq., and *Méthode pour la musette*, &c., par Hotteterre le Romain (Paris, 1737).

15 The whole series of 135 plates has been reproduced in *Jahrb. d. Samml. des Alterh. Kaiserhauses* (Vienna, 1883-1884).

16 *Musica getutscht und auszgezogen* (Basel, 1511).

17 *Musica Instrumentalis Deudsch* (Nuremberg, 1528 and 1545).

18 *Syntagma Musicum* (Wolfenbüttel, 1618). This work and those mentioned in the two previous notes have been reprinted by the Ges. f. Musikforschung in vols. xi., xx. and xiii. of *Publikationen* (Berlin).

19 See *Descriptive Catalogue*, by Capt. C.R. Day (London, 1891), pl. iv. A and p. 110, No. 221.

20 *Wappenbuch*, p. 111, "Musica."

21 Paris, 1767, vol. v. "Planches," pl. ix. 20, 21, 22.

22 Dr Theofilo Muffat, “Componimenti musicali per il cembalo,” in *Denkmäler d. Tonkunst in Österreich*, Bd. iii.

23 *Historische Nachricht von den Nürnbergischen Mathematicis u. Künstlern*, &c. (Nuremberg, 1730), p. 305.

24 *Histoire de la musique aux Pays Bas avant le XIXe siècle.*

25 For a facsimile of one of the Pompeii tibiae, see Capt. C.R. Day, *op. cit.* pl. iv. C. and p. 109.

26 *Catalogue descriptif* (Ghent, 1896), vol. ii. p. 211, No. 911, where an illustration is given. See also Capt. C.R. Day, *op. cit.* pl. iv. B and *Errata* where the description is printed.

27 For a description with illustration see V. Mahillon’s *Catalogue descriptif* (Ghent, 1896), vol. ii. p. 215, No. 916.

28 See Wilhelm Altenburg, op. cit. p. 6.

29 See V. Mahillon, *Catal. descript.* (1896), p. 213, No. 913.

30 H. Welcker von Gontershausen, *Die musikalischen Tonwerk-zeuge* (Frankfort-on-Main, 1855), p. 141.

31 Op. cit. p. 6.

32 See Capt. C.R. Day, op. cit. p. 106.

33 V. Mahillon, *Catal. desc.* (1880), p. 182, refers his statement to the Chevalier L. de Burbure.

34 *Das neu-eröffnete Orchester* (Hamburg, 1713).

35 Mahillon, *Catal. desc.* (1880), vol. i. p. 182.

36 See Chevalier Ludwig von Koechel, *Die kaiserliche Hofmusik-kapelle zu Wien, 1543-1867* (Vienna, 1869).

37 In the Italian edition of 1769 the part is scored for clarinet.

CLARK, SIR ANDREW, Bart. (1826-1893), British physician, was born at Aberdeen on the 28th of October 1826. His father, who also was a medical man, died when he was only a few years old. After attending school in Aberdeen, he was sent by his guardians to Dundee and apprenticed to a druggist; then returning to Aberdeen he began his medical studies in the university of that city. Soon, however, he went to Edinburgh, where in the extra-academical school he had a student’s career of the most brilliant description, ultimately becoming assistant to J. Hughes Bennett in the pathological department of the Royal Infirmary, and assistant demonstrator of anatomy to Robert Knox. But symptoms of pulmonary phthisis brought his academic life to a close, and in the hope that the sea might benefit his health he joined the medical department of the navy in 1848. Next year he became pathologist to the Haslar hospital, where T.H. Huxley was one of his colleagues, and in 1853 he was the successful candidate for the newly-instituted post of curator to the museum of the London hospital. Here he intended to devote all his energies to pathology, but circumstances brought him into active medical practice. In 1854, the year in which he took his doctor’s degree at Aberdeen, the post of assistant-physician to the hospital became vacant and he was prevailed upon to apply for it. He was fond of telling how his phthisical tendencies gained him the appointment. “He is only a poor Scotch doctor,” it was said, “with but a few months to live; let him have it.” He had it, and two years before his death publicly declared that of those who were on the staff of the hospital at the time of his selection he was the only one remaining alive. In 1854 he became a member of the College of Physicians, and in 1858 a fellow, and then went in succession through all the offices of honour the college has to offer, ending in 1888 with the presidency, which he continued to hold till his death. From the time of his selection as assistant physician to the London hospital, his fame rapidly grew until he became a fashionable doctor with one of the largest practices in London, counting among his patients some of the most distinguished men of the day. The great number of persons who passed through his consulting-room every morning rendered it inevitable that to a large extent his advice should become stereotyped and his prescriptions often reduced to mere stock formulae, but in really serious cases he was not to be surpassed in the skill and carefulness of his diagnosis and in his attention to detail. In spite of the claims of his practice he found time to produce a good many books, all written in the precise and polished style on which he used to pride himself. Doubtless owing largely to personal

reasons, lung diseases and especially fibroid phthisis formed his favourite theme, but he also discussed other subjects, such as renal inadequacy, anaemia, constipation, &c. He died in London on the 6th of November 1893, after a paralytic stroke which was probably the result of persistent overwork.

CLARK, FRANCIS EDWARD (1851-), American clergyman, was born of New England ancestry at Aylmer, Province of Quebec, Canada, on the 12th of September 1851. He was the son of Charles C. Symmes, but took the name of an uncle, the Rev. E.W. Clark, by whom he was adopted after his father's death in 1853. He graduated at Dartmouth College in 1873 and at Andover Theological Seminary in 1876, was ordained in the Congregational ministry, and was pastor of the Williston Congregational church at Portland, Maine, from 1876 to 1883, and of the Phillips Congregational church, South Boston, Mass., from 1883 to 1887. On the 2nd of February 1881 he founded at Portland the Young People's Society of Christian Endeavor, which, beginning as a small society in a single New England church, developed into a great interdenominational organization, which in 1908 had 70,761 societies and more than 3,500,000 members scattered throughout the United States, Canada, Great Britain, Australia, South Africa, India, Japan and China. After 1887 he devoted his time entirely to the extension of this work, and was president of the United Societies of Christian Endeavor and of the World's Christian Endeavor Union, and editor of the *Christian Endeavor World* (originally *The Golden Rule*). Among his numerous publications are *The Children and the Church* (1882); *Looking Out on Life* (1883); *Young People's Prayer Meetings* (1884); *Some Christian Endeavor Saints* (1889); *World-Wide Endeavor* (1895); *A New Way Round an Old World* (1900).

See his *The Young People's Christian Endeavor, where it began, &c.* (Boston, 1895); *Christian Endeavor Manual* (Boston, 1903); and *Christian Endeavor in All Lands: Record of Twenty-five Years of Progress* (Philadelphia, 1907).

CLARK, GEORGE ROGERS (1752-1818), American frontier military leader, was born near Charlottesville, in Albemarle county, Virginia, on the 19th of November 1752. Early in life he became a land-surveyor; he took part in Lord Dunmore's War (1774), and in 1775 went as a surveyor for the Ohio Company to Kentucky (then a district of Virginia), whither he removed early in 1776. His iron will, strong passions, audacious courage and magnificent physique soon made him a leader among his frontier neighbours, by whom in 1776 he was sent as a delegate to the Virginia legislature. In this capacity he was instrumental in bringing about the organization of Kentucky as a county of Virginia, and also obtained from Governor Patrick Henry a supply of powder for the Kentucky settlers. Convinced that the Indians were instigated and supported in their raids against the American settlers by British officers stationed in the forts north of the Ohio river, and that the conquest of those forts would put an end to the evil, he went on foot to Virginia late in 1777 and submitted to Governor Henry and his council a plan for offensive operations. On the 2nd of January 1778 he was commissioned lieutenant-colonel, received £1200 in depreciated currency, and was authorized to enlist troops; and by the end of May he was at the falls of the Ohio (the site of Louisville) with about 175 men. The expedition proceeded to Fort Kaskaskia, on the Mississippi, in what is now Illinois. This place and Cahokia, also on the Mississippi, near St Louis, were defended by small British garrisons, which depended upon the support of the French *habitants*. The French being willing to accept the authority of Virginia, both forts were easily taken. Clark gained the friendship of Father Pierre Gibault, the priest at Kaskaskia, and through his influence the French at Vincennes on the Wabash were induced (late in July) to change their allegiance. On the 17th of December Lieut.-Governor Henry Hamilton, the British commander at Detroit, recovered Vincennes and went into winter quarters. Late in February 1779 he was surprised by Clark and compelled to give up Vincennes and its fort, Fort Sackville, and to surrender himself and his garrison of about 80 men, as prisoners of war. With the exception of Detroit and several other posts on the Canadian frontier the whole of the North-West was thus brought under American influence;

many of the Indians, previously hostile, became friendly, and the United States was put in a position to demand the cession of the North-West in the treaty of 1783. For this valuable service, in which Clark had freely used his own private funds, he received practically no recompense either from Virginia or from the United States, and for many years before his death he lived in poverty. To him and his men, however, the Virginia legislature granted 150,000 acres of land in 1781, which was subsequently located in what are now Clark, Floyd and Scott counties, Indiana; Clark's individual share was 8049 acres, but from this he realized little. Clark built Fort Jefferson on the Mississippi, 4 or 5 m. below the mouth of the Ohio, in 1780, destroyed the Indian towns Chillicothe and Piqua in the same year, and in November 1782 destroyed the Indian towns on the Miami river. With this last expedition his active military service virtually ended, and in July 1783 he was relieved of his command by Virginia. Thereafter he lived on part of the land granted to him by Virginia or in Louisville for the rest of his life. In 1793 he accepted from Citizen Genet a commission as "major-general in the armies of France, and commander-in-chief of the French Revolutionary Legion in the Mississippi Valley," and tried to raise a force for an attack upon the Spanish possessions in the valley of the Mississippi. The scheme, however, was abandoned after Genet's recall. Disappointed at what he regarded as his country's ingratitude, and broken down by excessive drinking and paralysis, he lost his once powerful influence and lived in comparative isolation until his death, near Louisville, Kentucky, on the 13th of February 1818.

> See W.H. English, *Conquest of the Country north-west of the River Ohio, 1778-1783, and Life of George Rogers Clark* (2 vols., Indianapolis and Kansas City, 1896), an accurate and detailed work, which represents an immense amount of research among both printed and manuscript sources. Clark's own accounts of his expeditions, and other interesting documents, are given in the appendix to this work.

CLARK, WILLIAM (1770-1838), the well-known explorer, was the youngest brother of the foregoing. He was born in Caroline county, Virginia, on the 1st of August 1770. At the age of fourteen he removed with his parents to Kentucky, settling at the falls of the Ohio (Louisville). He entered the United States army as a lieutenant of infantry in March 1792, and served under General Anthony Wayne against the Indians in 1794. In July 1796 he resigned his commission on account of ill-health. In 1803-1806, with Meriwether Lewis (*q.v.*), he commanded the famous exploring expedition across the continent to the mouth of the Columbia river, and was commissioned second lieutenant in March 1804 and first lieutenant in January 1806. In February he again resigned from the army. He then served for a few years as brigadier-general of the Louisiana territorial militia, as Indian agent for "Upper Louisiana," as territorial governor of Missouri in 1813-1820, and as superintendent of Indian affairs at St Louis from 1822 until his death there on the 1st of September 1838.

CLARK, SIR JAMES (1788-1870), English physician, was born at Cullen, Banffshire, and was educated at the grammar school of Fordyce and at the universities of Aberdeen and Edinburgh. He served for six years as a surgeon in the army; then spent some time in travelling on the continent, in order to investigate the mineral waters and the climate of various health resorts; and for seven years he lived in Rome. In 1826 he began to practise in London. In 1835 he was appointed physician to the duchess of Kent, becoming physician in ordinary to Queen Victoria in 1837. In 1838 he was created a baronet. He published *The Influence of Climate in Chronic Diseases*, containing valuable meteorological tables (1829), and a *Treatise on Pulmonary Consumption* (1835).

CLARK, JOHN BATES (1847-), American economist, was born at Providence, Rhode Island, on the 26th of January 1847. Educated at Brown University, Amherst College, Heidelberg and Zurich, he was appointed professor of political economy at Carleton College, Minnesota, in 1877. In 1881 he became professor of history and political science in Smith College, Massachusetts; in 1892 professor of political economy in Amherst College. He was

appointed professor of political economy at Columbia University in 1895. Among his works are: *The Philosophy of Wealth* (1885); *Wages* (1889); *Capital and its Earnings* (1898); *The Control of Trusts* (1901); *The Problem of Monopoly* (1904); and *Essentials of Economic Theory* (1907).

CLARK, JOSIAH LATIMER (1822-1898), English engineer and electrician, was born on the 10th of March 1822 at Great Marlow, Bucks. His first interest was in chemical manufacturing, but in 1848 he became assistant engineer at the Menai Straits bridge under his elder brother Edwin (1814-1894), the inventor of the Clark hydraulic lift graving dock. Two years later, when his brother was appointed engineer to the Electric Telegraph Company, he again acted as his assistant, and subsequently succeeded him as chief engineer. In 1854 he took out a patent "for conveying letters or parcels between places by the pressure of air and vacuum," and later was concerned in the construction of a large pneumatic despatch tube between the general post office and Euston station, London. About the same period he was engaged in experimental researches on the propagation of the electric current in submarine cables, on which he published a pamphlet in 1855, and in 1859 he was a member of the committee which was appointed by the government to consider the numerous failures of submarine cable enterprises. Latimer Clark paid much attention to the subject of electrical measurement, and besides designing various improvements in method and apparatus and inventing the Clark standard cell, he took a leading part in the movement for the systematization of electrical standards, which was inaugurated by the paper which he and Sir C.T. Bright read on the question before the British Association in 1861. With 443
Bright also he devised improvements in the insulation of submarine cables. In the later part of his life he was a member of several firms engaged in laying submarine cables, in manufacturing electrical appliances, and in hydraulic engineering. He died in London on the 30th of October 1898. Besides professional papers, he published an *Elementary Treatise on Electrical Measurement* (1868), together with two books on astronomical subjects, and a memoir of Sir W.F. Cooke.

CLARK, THOMAS (1801-1867), Scottish chemist, was born at Ayr on the 31st of March 1801. In 1826 he was appointed lecturer on chemistry at the Glasgow mechanics' institute, and in 1831 he took the degree of M.D. at the university of that city. Two years later he became professor of chemistry in Marischal College, Aberdeen, but was obliged to give up the duties of that position in 1844 through ill-health, though nominally he remained professor till 1860. His name is chiefly known in connexion with his process for softening hard waters, and his water tests, patented in 1841. The last twenty years before his death at Glasgow on the 27th of November 1867 were occupied with the study of the historical origin of the Gospels.

CLARK, WILLIAM GEORGE (1821-1878), English classical and Shakespearian scholar, was born at Barford Hall, Darlington, in March 1821. He was educated at Sedbergh and Shrewsbury schools and Trinity College, Cambridge, where he was elected fellow after a brilliant university career. In 1857 he was appointed public orator. He travelled much during the long vacations, visiting Spain, Greece, Italy and Poland. His *Peloponnesus* (1858) was an important contribution to the knowledge of the country at that time. In 1853 Clark had taken orders, but left the Church in 1870 after the passing of the Clerical Disabilities Act, of which he was one of the promoters. He also resigned the public oratorship in the same year, and in consequence of illness left Cambridge in 1873. He died at York on the 6th of November 1878. He bequeathed a sum of money to his old college for the foundation of a

lectureship in English literature. Although Clark was before all a classical scholar, he published little in that branch of learning. A contemplated edition of the works of Aristophanes, a task for which he was singularly fitted, was never published. He visited Italy in 1868 for the express purpose of examining the Ravenna and other MSS., and on his return began the notes to the *Acharnians*, but they were left in too incomplete a state to admit of publication in book form even after his death (see *Journal of Philology*, viii., 1879). He established the Cambridge *Journal of Philology*, and cooperated with B.H. Kennedy and James Riddell in the production of the well-known *Sabrinae Corolla*. The work by which he is best known is the Cambridge Shakespeare (1863-1866), containing a collation of early editions and selected emendations, edited by him at first with John Glover and afterwards with W. Aldis Wright. *Gazpacho* (1853)gives an account of his tour in Spain; his visits to Italy at the time of Garibaldi's insurrection, and to Poland during the insurrection of 1863, are described in *Vacation Tourists*, ed. F. Galton, i. and iii.

H.A.J. Munro in *Journal of Philology* (viii. 1879) describes Clark as "the most accomplished and versatile man he ever met"; see also notices by W. Aldis Wright in *Academy* (Nov. 23, 1878); R. Burn in *Athenaeum* (Nov. 16, 1878); *The Times* (Nov. 8, 1878); *Notes and Queries*, 5th series, x. (1878), p. 400.

CLARKE, ADAM (1762?-1832), British Nonconformist divine, was born at Moybeg, Co. Londonderry, Ireland, in 1760 or 1762. After receiving a very limited education he was apprenticed to a linen manufacturer, but, finding the employment uncongenial, he resumed school-life at the institution founded by Wesley at Kingswood, near Bristol. In 1782 he entered on the duties of the ministry, being appointed by Wesley to the Bradford (Wiltshire) circuit. His popularity as a preacher was very great, and his influence in the denomination is indicated by the fact that he was three times (1806, 1814, 1822) chosen to be president of the conference. He served twice on the London circuit, the second period being extended considerably longer than the rule allowed, at the special request of the British and Foreign Bible Society, who had employed him in the preparation of their Arabic Bible. Though ardent in his pastoral work, he found time for diligent study of Hebrew and other Oriental languages, undertaken chiefly with the view of qualifying himself for the great work of his life, his *Commentary on the Holy Scriptures* (8 vols., 1810-1820). In 1802 he published a *Bibliographical Dictionary* in six volumes, to which he afterwards added a supplement. He was selected by the Records Commission to re-edit Rymer's *Foedera*, a task which after ten years' labour (1808-1818) he had to resign. He also wrote *Memoirs of the Wesley Family* (1823), and edited a large number of religious works. Honours were showered upon him (he was M.A., LL.D. of Aberdeen), and many distinguished men in church and state were his personal friends. He died in London on the 16th of August 1832.

His *Miscellaneous Works* were published in 13 vols. (1836), and a *Life* (3 vols.) by his son, J.B.B. Clarke, appeared in 1833.

CLARKE, SIR ANDREW (1824-1902), British soldier and administrator, son of Colonel Andrew Clarke, of Co. Donegal, Ireland, governor of West Australia, was born at Southsea, England, on the 27th of July 1824, and educated at King's school, Canterbury. He entered the Royal Military Academy, Woolwich, and obtained his commission in the army in 1844 as second lieutenant in the Royal Engineers. He was appointed to his father's staff in West Australia, but was transferred to be A.D.C. and military secretary to the governor of Tasmania; and in 1847 he went to New Zealand to take part in the Maori War, and for some years served on Sir George Grey's staff. He was then made surveyor-general in Victoria, took a prominent part in framing its new constitution, and held the office of minister of public lands during the first administration (1855-1857). He returned to England in 1857, and in 1863 was sent on a special mission to the West Coast of Africa. In 1864 he was appointed director of works for the navy, and held this post for nine years, being responsible for great improvements in the naval arsenals at Chatham, Portsmouth and Plymouth, and for

fortifications at Malta, Cork, Bermuda and elsewhere. In 1873 he was made K.C.M.G., and became governor of the Straits Settlements, where he did most valuable work in consolidating British rule and ameliorating the condition of the people. From 1875 to 1880 he was minister of public works in India; and on his return to England in 1881, holding then the rank of lieutenant-colonel in the army, he was first appointed commandant at Chatham and then inspector-general of fortifications (1882-1886). Having attained the rank of lieutenant-general and been created G.C.M.G., he retired from official life, and in 1886 and 1893 unsuccessfully stood for parliament as a supporter of Mr Gladstone. During his last years he was agent-general for Victoria. He died on the 29th of March 1902. Both as a technical and strategical engineer and as an Imperial administrator Sir Andrew Clarke was one of the ablest and most useful public servants of his time; and his contributions to periodical literature, as well as his official memoranda, contained valuable suggestions on the subjects of imperial defence and imperial consolidation which received too little consideration at a period when the home governments were not properly alive to their importance. He is entitled to remembrance as one of those who first inculcated, from a wide practical experience, the views of imperial administration and its responsibilities, which in his last years he saw accepted by the bulk of his countrymen.

CLARKE, CHARLES COWDEN (1787-1877), English author and Shakespearian scholar, was born at Enfield, Middlesex, on the 15th of December 1787. His father, John Clarke, was a schoolmaster, among whose pupils was John Keats. Charles Clarke taught Keats his letters, and encouraged his love of poetry. He knew Charles and Mary Lamb, and afterwards became acquainted with Shelley, Leigh Hunt, Coleridge and Hazlitt. Clarke became a music publisher in partnership with Alfred Novello, and married in 1828 his partner's sister, Mary Victoria (1809-1898), the eldest daughter of Vincent Novello. In the year after her marriage Mrs Cowden Clarke began her valuable Shakespeare concordance, which was eventually issued in eighteen monthly parts (1844-1845), and in volume form in 1845 as *The Complete Concordance to Shakespeare, being a Verbal Index to all the Passages in the Dramatic Works of the Poet*. This work superseded the *Copious Index to ... Shakespeare* (1790) of Samuel Ayscough, and the *Complete Verbal Index ...* (1805-1807) of Francis Twiss. Charles Cowden Clarke published many useful books, and edited the text for John Nichol's edition of the British poets; but his most important work consisted of lectures delivered between 1834 and 1856 on Shakespeare and other literary subjects. Some of the more notable series were published, among them being *Shakespeare's Characters, chiefly those subordinate* (1863), and *Molière's Characters* (1865). In 1859 he published a volume of original poems, *Carmina Minima*. For some years after their marriage the Cowden Clarkes lived with the Novellos in London. In 1849 Vincent Novello with his wife removed to Nice, where he was joined by the Clarkes in 1856. After his death they lived at Genoa at the "Villa Novello." They collaborated in *The Shakespeare Key, unlocking the Treasures of his Style ...* (1879), and in an edition of Shakespeare for Messrs Cassell, which was issued in weekly parts, and completed in 1868. It was reissued in 1886 as *Cassell's Illustrated Shakespeare*. Charles Clarke died on the 13th of March 1877 at Genoa, and his wife survived him until the 12th of January 1898. Among Mrs Cowden Clarke's other works may be mentioned *The Girlhood of Shakespeare's Heroines* (3 vols., 1850-1852), and a translation of Berlioz's *Treatise upon Modern Instrumentation and Orchestration* (1856).

See *Recollections of Writers* (1898), a joint work by the Clarkes containing letters and reminiscences of their many literary friends; and Mary Cowden Clarke's autobiography, *My Long Life* (1896). A charming series of letters (1850-1861), addressed by her to an American admirer of her work, Robert Balmanno, was edited by Anne Upton Nettleton as *Letters to an Enthusiast* (Chicago, 1902).

CLARKE, EDWARD DANIEL (1769-1822), English mineralogist and traveller, was born at Willingdon, Sussex, on the 5th of June 1769, and educated first at Tonbridge. In 1786 he obtained the office of chapel clerk at Jesus College, Cambridge, but the loss of his father at

this time involved him in difficulties. In 1790 he took his degree, and soon after became private tutor to Henry Tufton, nephew of the duke of Dorset. In 1792 he obtained an engagement to travel with Lord Berwick through Germany, Switzerland and Italy. After crossing the Alps, and visiting a few of the principal cities of Italy, including Rome, he went to Naples, where he remained nearly two years. Having returned to England in the summer of 1794, he became tutor in several distinguished families. In 1799 he set out with a Mr Cripps on a tour through the continent of Europe, beginning with Norway and Sweden, whence they proceeded through Russia and the Crimea to Constantinople, Rhodes, and afterwards to Egypt and Palestine. After the capitulation of Alexandria, Clarke was of considerable use in securing for England the statues, sarcophagi, maps, manuscripts, &c., which had been collected by the French savants. Greece was the country next visited. From Athens the travellers proceeded by land to Constantinople, and after a short stay in that city directed their course homewards through Rumelia, Austria, Germany and France. Clarke, who had now obtained considerable reputation, took up his residence at Cambridge. He received the degree of LL.D. shortly after his return in 1803, on account of the valuable donations, including a colossal statue of the Eleusinian Ceres, which he had made to the university. He was also presented to the college living of Harlton, near Cambridge, in 1805, to which, four years later, his father-in-law added that of Yeldham. Towards the end of 1808 Dr Clarke was appointed to the professorship of mineralogy in Cambridge, then first instituted. Nor was his perseverance as a traveller otherwise unrewarded. The MSS. which he had collected in the course of his travels were sold to the Bodleian library for £1000; and by the publication of his travels he realized altogether a clear profit of £6595. Besides lecturing on mineralogy and discharging his clerical duties, Dr Clarke eagerly prosecuted the study of chemistry, and made several discoveries, principally by means of the gas blow-pipe, which he had brought to a high degree of perfection. He was also appointed university librarian in 1817, and was one of the founders of the Cambridge Philosophical Society in 1819. He died in London on the 9th of March 1822. The following is a list of his principal works:—*Testimony of Authors respecting the Colossal Statue of Ceres in the Public Library, Cambridge* (8vo, 1801-1803); *The Tomb of Alexander, a Dissertation on the Sarcophagus brought from Alexandria, and now in the British Museum* (4to, 1805); *A Methodical Distribution of the Mineral Kingdom* (fol., Lewes, 1807); *A Description of the Greek Marbles brought from the Shores of the Euxine, Archipelago and Mediterranean, and deposited in the University Library, Cambridge* (8vo, 1809); *Travels in various Countries of Europe, Asia and Africa* (4to, 1810-1819; 2nd ed., 1811-1823).

See *Life and Remains*, by Rev. W. Otter (1824).

CLARKE, SIR EDWARD GEORGE (1841-), English lawyer and politician, son of J.G. Clarke of Moorgate Street, London, was born on the 15th of February 1841. In 1859 he became a writer in the India office, but resigned in the next year, and became a law reporter. He obtained a Tancred law scholarship in 1861, and was called to the bar at Lincoln’s Inn in 1864. He joined the home circuit, became Q.C. in 1880, and a bencher of Lincoln’s Inn in 1882. In November 1877 he was successful in securing the acquittal of Chief-Inspector Clarke from the charge brought against certain Scotland Yard officials of conspiracy to defeat justice, and his reputation was assured by his defence of Patrick Staunton in the Penge murder case (1877), and of Mrs Bartlett against the charge of poisoning her husband (1886). Among other notable cases he was counsel for the plaintiff in the libel action brought by Sir William Gordon-Cumming (1890) against Mr and Mrs Lycett Green and others for slander, charging him with cheating in the game of baccarat (in this case the prince of Wales, afterwards Edward VII., gave evidence), and he appeared for Dr Jameson, Sir John Willoughby and others when they were tried (1896) under the Foreign Enlistment Act. He was knighted in 1886. He was returned as Conservative member for Southwark at a by-election early in 1880, but failed to retain his seat at the general election which followed a month or two later; he found a seat at Plymouth, however, which he retained until 1900. He was solicitor-general in the Conservative administration of 1886-1892, but declined office under the Unionist government of 1895 when the law officers of the crown were debarred from private practice. The most remarkable, perhaps, of his speeches in the House of Commons was his reply to Mr Gladstone on the second reading of the Home Rule Bill in 1893. In 1899 differences which arose between Sir Edward Clarke and his party on the subject of the government’s South African policy led to his resigning his

seat. At the general election of 1906 he was returned at the head of the poll for the city of London, but he offended a large section of his constituents by a speech against tariff reform in the House of Commons on the 12th of March, and shortly afterwards he resigned his seat on grounds of health. He published a *Treatise on the Law of Extradition* (4th ed., 1903), and also three volumes of his political and forensic speeches.

CLARKE, JAMES FREEMAN (1810-1888), American preacher and author, was born in Hanover, New Hampshire, on the 4th of April 1810. He was prepared for college at the public Latin school of Boston, and graduated at Harvard College in 1829, and at the Harvard Divinity School in 1833. He was then ordained as minister of a Unitarian congregation at Louisville, Kentucky, which was then a slave state. Clarke soon threw himself heart and soul into the national movement for the abolition of slavery, though he was never what was then called in America a "radical abolitionist." In 1839 he returned to Boston, where he and his friends established (1841) the "Church of the Disciples." It brought together a body of men and women active and eager in applying the Christian religion to the social problems of the day, and he would have said that the feature which distinguished it from any other church was that they also were ministers of the highest religious life. Ordination could make no distinction between him and them. Of this church he was the minister from 1841 until 1850 and from 1854 until his death. He was also secretary of the Unitarian Association and, in 1867-1871 professor of natural religion and Christian doctrine at Harvard. From the beginning of his active life he wrote freely for the press. From 1836 until 1839 he was editor of the *Western Messenger*, a magazine intended to carry to readers in the Mississippi Valley simple statements of "liberal religion," involving what were then the most radical appeals as to national duty, especially the abolition of slavery. The magazine is now of value to collectors because it contains the earliest printed poems of Ralph Waldo Emerson, who was Clarke's personal friend. Most of Clarke's earlier published writings were addressed to the immediate need of establishing a larger theory of religion than that espoused by people who were still trying to be Calvinists, people who maintained what a good American phrase calls "hard-shelled churches." But it would be wrong to call his work controversial. He was always declaring that the business of the Church is Eirenic and not Polemic. Such books as *Orthodoxy: Its Truths and Errors* (1866) have been read more largely by members of orthodox churches than by Unitarians. In the great moral questions of his time Clarke was a fearless and practical advocate of the broadest statement of human rights. Without caring much what company he served in, he could always be seen and heard, a leader of unflinching courage, in the front rank of the battle. He published but few verses, but at the bottom he was a poet. He was a diligent and accurate scholar, and among the books by which he is best known is one called *Ten Great Religions* (2 vols., 1871-1883). Few Americans have done more than Clarke to give breadth to the published discussion of the subjects of literature, ethics and religious philosophy. Among his later books are *Every-Day Religion* (1886) and *Sermons on the Lord's Prayer* (1888). He died at Jamaica Plain, Mass., on the 8th of June 1888.

His *Autobiography, Diary and Correspondence*, edited by Edward Everett Hale, was published in Boston in 1891.

(E. E. H.)

CLARKE, JOHN SLEEPER (1833-1899), American actor, was born in Baltimore, Maryland, on the 3rd of September 1833, and was educated for the law. He made his first appearance in Boston as Frank Hardy in *Paul Pry* in 1851. In 1859 he married Asia Booth, daughter of Junius Brutus Booth, and he was associated with his brother-in-law Edwin Booth in the management of the Winter Garden theatre in New York, the Walnut Street theatre in Philadelphia and the Boston theatre. In 1867 he went to London, where he made his first appearance at the St James's as Major Wellington de Boots in Stirling Coynes's *Everybody's Friend*, rewritten for him and called *The Widow's Hunt*. His success was so great that he remained in England for the rest of his life, except for four visits to America. Among his

favourite parts were Toodles, which ran for 200 nights at the Strand, Dr Pangloss in *The Heir-at-law*, and Dr Ollapod in *The Poor Gentleman*. He managed several London theatres, including the Haymarket, where he preceded the Bancrofts. He retired in 1889, and died on the 24th of September 1899. His two sons also were actors.

CLARKE, MARCUS ANDREW HISLOP (1846-1881), Australian author, was born in London on the 24th of April 1846. He was the only son of William Hislop Clarke, a barrister of the Middle Temple who died in 1863. He emigrated forthwith to Australia, where his uncle, James Langton Clarke, was a county court judge. He was at first a clerk in the bank of Australasia, but showed no business ability, and soon proceeded to learn farming at a station on the Wimmera river, Victoria. He was already writing stories for the *Australian Magazine*, when in 1867 he joined the staff of the Melbourne *Argus* through the introduction of Dr Robert Lewins. He also became secretary (1872) to the trustees of the Melbourne public library and later (1876) assistant librarian. He founded in 1868 the Yorick Club, which soon numbered among its members the chief Australian men of letters. The most famous of his books is *For the Term of his Natural Life* (Melbourne, 1874), a powerful tale of an Australian penal settlement, which originally appeared in serial form in a Melbourne paper. He also wrote *The Peripatetic Philosopher* (1869), a series of amusing papers reprinted from *The Austral-asian; Long Odds* (London, 1870), a novel; and numerous comedies and pantomimes, the best of which was *Twinkle, Twinkle, Little Star* (Theatre Royal, Melbourne; Christmas, 1873). He married an actress, Marian Dunn. In spite of his popular success Clarke was constantly involved in pecuniary difficulties, which are said to have hastened his death at Melbourne on the 2nd of August 1881.

See *The Marcus Clarke Memorial Volume* (Melbourne, 1884), containing selections from his writings with a biography and list of works, edited by Hamilton Mackinnon.

CLARKE, MARY ANNE (c. 1776-1852), mistress of Frederick duke of York, second son of George III., was born either in London or at Oxford. Her father, whose name was Thompson, seems to have been a tradesman in rather humble circumstances. She married before she was eighteen, but Mr Clarke, the proprietor of a stonemasonry business, became bankrupt, and she left him. After other *liaisons*, she became in 1803 the mistress of the duke of York, then commander-in-chief, maintaining a large and expensive establishment in a fashionable district. The duke’s promised allowance was not regularly paid, and to escape her financial difficulties Mrs Clarke trafficked in her protector’s position, receiving money from various promotion-seekers, military, civil and even clerical, in return for her promise to secure them the good services of the duke. Her procedure became a public scandal, and in 1809 Colonel Wardle, M.P., brought eight charges of abuse of military patronage against the duke in the House of Commons, and a committee of inquiry was appointed, before which Mrs Clarke herself gave evidence. The result of the inquiry clearly established the charges as far as she was concerned, and the duke of York was shown to have been aware of what was being done, but to have derived no pecuniary benefit himself. He resigned his appointment as commander-in-chief, and terminated his connexion with Mrs Clarke, who subsequently obtained from him a considerable sum in cash and a pension, as the price for withholding the publication of his numerous letters to her. Mrs Clarke died at Boulogne on the 21st of June 1852.

See Taylor, *Authentic Memoirs of Mrs Clarke*; Clarke (? pseud.), *Life of Mrs M.A. Clarkek*; *Annual Register*, vol. li.

CLARKE, SAMUEL (1675-1729), English philosopher and divine, son of Edward Clarke, an alderman, who for several years was parliamentary representative of the city of Norwich, was born on the 11th of October 1675, and educated at the free school of Norwich and at Caius College, Cambridge. The philosophy of Descartes was the reigning system at the university; Clarke, however, mastered the new system of Newton, and contributed greatly to its extension by publishing an excellent Latin version of the *Traité de physique* of Jacques Rohault (1620-1675) with valuable notes, which he finished before he was twenty-two years of age. The system of Rohault was founded entirely upon Cartesian principles, and was previously known only through the medium of a rude Latin version. Clarke's translation (1697) continued to be used as a text-book in the university till supplanted by the treatises of Newton, which it had been designed to introduce. Four editions were issued, the last and best being that of 1718. It was translated into English in 1723 by his brother Dr John Clarke (1682-1757), dean of Sarum.

Clarke afterwards devoted himself to the study of Scripture in the original, and of the primitive Christian writers. Having taken holy orders, he became chaplain to John Moore (1646-1714), bishop of Norwich, who was ever afterwards his friend and patron. In 1699 he published two treatises,—one entitled *Three Practical Essays on Baptism, Confirmation and Repentance*, and the other, *Some Reflections on that part of a book called Amyntor, or a Defence of Milton's Life, which relates to the Writings of the Primitive Fathers, and, the Canon of the New Testament*. In 1701 he published *A Paraphrase upon the Gospel of St Matthew*, which was followed, in 1702, by the *Paraphrases upon the Gospels of St Mark and St Luke*, and soon afterwards by a third volume upon St John. They were subsequently printed together in two volumes and have since passed through several editions. He intended to treat in the same manner the remaining books of the New Testament, but his design was unfulfilled.

Meanwhile he had been presented by Bishop Moore to the rectory of Drayton, near Norwich. As Boyle lecturer, he dealt in 1704 with the *Being and Attributes of God*, and in 1705 with the *Evidences of Natural and Revealed Religion*. These lectures, first printed separately, were afterwards published together under the title of *A Discourse concerning the Being and Attributes of God, the Obligations of Natural Religion, and the Truth and Certainty of the Christian Revelation, in opposition to Hobbes, Spinoza, the author of the Oracles of Reason, and other Deniers of Natural and Revealed Religion*. 446

In 1706 he wrote a refutation of Dr Henry Dodwell's views on the immortality of the soul, and this drew him into controversy with Anthony Collins. He also wrote at this time a translation of Newton's *Optics*, for which the author presented him with £500. In the same year through the influence of Bishop Moore, he obtained the rectory of St Benet's, Paul's Wharf, London. Soon afterwards Queen Anne appointed him one of her chaplains in ordinary, and in 1709 presented him to the rectory of St James's, Westminster. He then took the degree of doctor in divinity, defending as his thesis the two propositions: *Nullum fidei Christianae dogma, in Sacris Scripturis traditum, est rectae rationi dissentaneum*, and *Sine actionum humanarum libertate nulla potest esse religio*. During the same year, at the request of the author, he revised Whiston's English translation of the *Apostolical Constitutions*.

In 1712 he published a carefully punctuated and annotated edition (folio 1712, octavo 1720) of Caesar's *Commentaries*, with elegant engravings, dedicated to the duke of Marlborough. During the same year he published his celebrated treatise on *The Scripture Doctrine of the Trinity*. It is divided into three parts. The first contains a collection and exegesis of all the texts in the New Testament relating to the doctrine of the Trinity; in the second the doctrine is set forth at large, and explained in particular and distinct propositions; and in the third the principal passages in the liturgy of the Church of England relating to the doctrine of the Trinity are considered. Whiston informs us that, some time before the publication of this book, a message was sent to him from Lord Godolphin "that the affairs of the public were with difficulty then kept in the hands of those that were for liberty; that it was therefore an unseasonable time for the publication of a book that would make a great noise and disturbance; and that therefore they desired him to forbear till a fitter opportunity should offer itself,"—a message that Clarke of course entirely disregarded. The ministers were right in their conjectures; and the work not only provoked a great number of replies, but occasioned a formal complaint from the Lower House of Convocation. Clarke, in reply, drew up an apologetic preface, and afterwards gave several explanations, which satisfied the Upper House; and, on his pledging himself that his future conduct would occasion no trouble, the matter dropped.

In 1715 and 1716 he had a discussion with Leibnitz relative to the principles of natural

philosophy and religion, which was at length cut short by the death of his antagonist. A collection of the papers which passed between them was published in 1717 (cf. G. v. Leroy, *Die philos. Probleme in dem Briefwechsel Leibniz und Clarke*, Giessen, 1893). In 1719 he was presented by Nicholas 1st Baron Lechmere, to the mastership of Wigston's hospital in Leicester. In 1724 he published seventeen sermons, eleven of which had not before been printed. In 1727, on the death of Sir Isaac Newton, he was offered by the court the place of master of the mint, worth on an average from £1200 to £1500 a year. This secular preferment, however, he absolutely refused. In 1728 was published "A Letter from Dr Clarke to Benjamin Hoadly, F.R.S., occasioned by the controversy relating to the Proportion of Velocity and Force in Bodies in Motion," printed in the *Philosophical Transactions*. In 1729 he published the first twelve books of Homer's *Iliad*. This edition, dedicated to William Augustus, duke of Cumberland, was highly praised by Bishop Hoadly. On Sunday, the 11th of May 1729, when going out to preach before the judges at Serjeants' Inn, he was seized with a sudden illness, which caused his death on the Saturday following (May 17, 1729).

Soon after his death his brother Dr John Clarke, dean of Sarum, published, from his original manuscripts, *An Exposition of the Church Catechism*, and ten volumes of sermons. The *Exposition* is composed of the lectures which he read every Thursday morning, for some months in the year, at St James's church. In the latter part of his life he revised them with great care, and left them completely prepared for the press. Three years after his death appeared also the last twelve books of the *Iliad*, published by his son Samuel Clarke, the first three of these books and part of the fourth having, as he states, been revised and annotated by his father.

In disposition Clarke was cheerful and even playful. An intimate friend relates that he once found him swimming upon a table. At another time Clarke on looking out at the window saw a grave blockhead approaching the house; upon which he cried out, "Boys, boys, be wise; here comes a fool." Dr Warton, in his observations upon Pope's line,

"Unthought-of frailties cheat us in the wise,"

says, "Who could imagine that Locke was fond of romances; that Newton once studied astrology; that Dr Clarke valued himself on his agility, and frequently amused himself in a private room of his house in leaping over the tables and chairs?"

Philosophy.—Clarke, though in no way an original thinker, was eminent in theology, mathematics, metaphysics and philology, but his chief strength lay in his logical power. The materialism of Hobbes, the pantheism of Spinoza, the empiricism of Locke, the determinism of Leibnitz, Collins' necessitarianism, Dodwell's denial of the natural immortality of the soul, rationalistic attacks on Christianity, and the morality of the sensationalists—all these he opposed with a thorough conviction of the truth of the principles which he advocated. His fame as theologian and philosopher rests to a large extent on his demonstration of the existence of God and his theory of the foundation of rectitude. The former is not a purely a priori argument, nor is it presented as such by its author. It starts from a fact and it often explicitly appeals to facts. The intelligence, for example, of the self-existence and original cause of all things is, he says, "not easily proved a priori," but "demonstrably proved a posteriori from the variety and degrees of perfection in things, and the order of causes and effects, from the intelligence that created beings are confessedly endowed with, and from the beauty, order, and final purpose of things." The propositions maintained in the argument are—"(1) That something has existed from eternity; (2) that there has existed from eternity some one immutable and independent being; (3) that that immutable and independent being, which has existed from eternity, without any external cause of its existence, must be self-existent, that is, necessarily existing; (4) what the substance or essence of that being is, which is self-existent or necessarily existing, we have no idea, neither is it at all possible for us to comprehend it; (5) that though the substance or essence of the self-existent being is itself absolutely incomprehensible to us, yet many of the essential attributes of his nature are strictly demonstrable as well as his existence, and, in the first place, that he must be of necessity eternal; (6) that the self-existent being must of necessity be infinite and omnipresent; (7) must be but one; (8) must be an intelligent being; (9) must be not a necessary agent, but a being endued with liberty and choice; (10) must of necessity have infinite power; (11) must be infinitely wise, and (12) must of necessity be a being of infinite goodness, justice, and truth, and all other moral perfections, such as become the supreme governor and judge of the world."

In order to establish his sixth proposition, Clarke contends that time and space, eternity and immensity, are not substances, but attributes—the attributes of a self-existent being. Edmund Law, Dugald Stewart, Lord Brougham, and many other writers, have, in consequence, represented Clarke as arguing from the existence of time and space to the

existence of Deity. This is a serious mistake. The existence of an immutable, independent, and necessary being is supposed to be proved before any reference is made to the nature of time and space. Clarke has been generally supposed to have derived the opinion that time and space are attributes of an infinite immaterial and spiritual being from the *Scholium Generale*, first published in the second edition of Newton's *Principia* (1714). The truth is that his work on the Being and Attributes of God appeared nine years before that *Scholium*. The view propounded by Clarke may have been derived from the Midrash, the Kabbalah, Philo, Henry More, or Cudworth, but not from Newton. It is a view difficult to prove, and probably few will acknowledge that Clarke has conclusively proved it.

His ethical theory of "fitness" (see ETHICS) is formulated on the analogy of mathematics. He held that in relation to the will things possess an objective fitness similar to the mutual consistency of things in the physical universe. This fitness God has given to actions, as he has given laws to Nature; and the fitness is as immutable as the laws. The theory has been unfairly criticized by Jouffroy, Amédée Jacques, Sir James Mackintosh, Thomas Brown and others. It is said, for example, that Clarke made virtue consist in conformity to the relations of things universally, although the whole tenor of his argument shows him to have had in view conformity to such relations only as belong to the sphere of moral agency. It is true that he might have emphasized the relation of moral fitness to the will, and in this respect J.F. Herbart (*q.v.*) improved on Clarke's statement of the case. To say, however, that Clarke simply confused mathematics and morals by justifying the moral criterion on a mathematical basis is a mistake. He compared the two subjects for the sake of the analogy.

Though Clarke can thus be defended against this and similar criticism, his work as a whole can be regarded only as an attempt to present the doctrines of the Cartesian school in a form which would not shock the conscience of his time. His work contained a measure of rationalism sufficient to arouse the suspicion of orthodox theologians, without making any valuable addition to, or modification of, the underlying doctrine.

AUTHORITIES.—See W. Whiston's *Historical Memoirs*, and the preface by Benjamin Hoadly to Clarke's *Works* (4 vols., London, 1738-1742). See further on his general philosophical position J. Hunt's *Religious Thought in England*, *passim*, but particularly in vol. ii. 447-457, and vol. iii. 20-29 and 109-115, &c.; Rob. Zimmermann in the *Denkschriften d. k. Akademie der Wissenschaften, Phil.-Hist. Classe*, Bd. xix. (Vienna, 1870); H. Sidgwick's *Methods of Ethics* (6th ed., 1901), p. 384; A. Bain's *Moral Science* (1872), p. 562 foll., and *Mental Science* (1872), p. 416; Sir L. Stephen's *English Thought in the Eighteenth Century* (3rd ed., 1902), c. iii.; J. E. le Rossignol, *Ethical Philosophy of S. Clarke* (Leipzig, 1892).

CLARKE, THOMAS SHIELDS (1860-), American artist, was born in Pittsburg, Pennsylvania, on the 25th of April 1860, and graduated at Princeton in 1882. He was a pupil of the Art Students' League, New York, and of the École des Beaux Arts, Paris, under J.L. Gérôme; later he entered the atelier of Dagnan-Bouveret, and, becoming interested in sculpture, worked for a while under Henri M. Chapu. As a sculptor, he received a medal of honour in Madrid for his "The Cider Press," now in the Golden Gate Park, San Francisco, California, and he made four caryatides of "The Seasons" for the Appellate Court House, New York. He designed an "Alma Mater" for Princeton University, and a model is in the library. Among his paintings are his "Night Market in Morocco" (Philadelphia Art Club), for which he received a medal at the International Exposition in Berlin in 1891, and his "A Fool's Fool," exhibited at the Salon in 1887 and now in the collection of the Pennsylvania Academy of Fine Arts, Philadelphia.

CLARKE, WILLIAM BRANWHITE (1798-1878), British geologist, was born at East Bergholt, in Suffolk, on the 2nd of June 1798. He received his early education at Dedham grammar school, and in 1817 entered Jesus College, Cambridge; he took his B.A. in 1821, was ordained and became M.A. in 1824. In 1821 he was appointed curate of Ramsholt in Suffolk, and he acted in his clerical capacity in other places until 1839. Having become interested in geology through the teachings of Sedgwick, he utilized his opportunities and

gathered many interesting facts on the geology of East Anglia which were embodied in a paper “On the Geological Structure and Phenomena of Suffolk” (*Trans. Geol. Soc.* 1837). He also communicated a series of papers on the geology of S.E. Dorsetshire to the *Magazine of Nat. Hist.* (1837-1838). In 1839, after a severe illness, he left England for New South Wales, mainly with the object of benefiting by the sea voyage. He remained, however, in that country, and came to be regarded as the “Father of Australian Geology.” From the date of his arrival in New South Wales until 1870 he was in clerical charge first of the country from Paramatta to the Hawkesbury river, then of Campbelltown, and finally of Willoughby. He zealously devoted attention to the geology of the country, with results that have been of paramount importance. In 1841 he discovered gold, being the first explorer who had obtained it *in situ* in the country, finding it both in the detrital deposits and in the quartzites of the Blue Mountains, and he then declared his belief in its abundance. In 1849 he made the first actual discovery of tin in Australia and in 1859 he made known the occurrence of the diamond. He was also the first to indicate the presence of Silurian rocks, and to determine the age of the coal-bearing rocks in New South Wales. In 1869 he announced the discovery of remains of *Dinornis* in Queensland. He was a trustee of the Australian museum at Sydney, and an active member of the Royal Society of New South Wales. In 1860 he published *Researches in the Southern Gold-fields of New South Wales*. He was elected F.R.S. in 1876, and in the following year was awarded the Murchison medal by the Geological Society of London. His contributions to Australian scientific journals were numerous. He died near Sydney, on the 17th of June 1878.

CLARKSON, THOMAS (1760-1846), English anti-slavery agitator, was born on the 28th of March 1760, at Wisbeach, in Cambridgeshire, where his father was headmaster of the free grammar school. He was educated at St Paul’s school and at St John’s College, Cambridge. Having taken the first place among the middle bachelors as Latin essayist, he succeeded in 1785 in gaining a similar honour among the senior bachelors. The subject appointed by the vice-chancellor, Dr Peckhard, was one in which he was himself deeply interested—*Anne liceat invitos in servitutem dare?* (Is it right to make men slaves against their will?). In preparing for this essay Clarkson consulted a number of works on African slavery, of which the chief was Benezet’s *Historical Survey of New Guinea*; and the atrocities of which he read affected him so deeply that he determined to devote all his energies to effect the abolition of the slave trade, and gave up his intention of entering the church.

His first measure was to publish, with additions, an English translation of his prize essay (June 1786). He then commenced to search in all quarters for information concerning slavery. He soon discovered that the cause had already been taken up to some extent by others, most of whom belonged to the Society of Friends, and among the chief of whom were William Dillwyn, Joseph Wood and Granville Sharp. With the aid of these gentlemen, a committee of twelve was formed in May 1787 to do all that was possible to effect the abolition of the slave trade. Meanwhile Clarkson had also gained the sympathy of Wilberforce, Whitbread, Sturge and several other men of influence. Travelling from port to port, he now commenced to collect a large mass of evidence; and much of it was embodied in his *Summary View of the Slave Trade, and the Probable Consequences of its Abolition*, which, with a number of other anti-slavery tracts, was published by the committee. Pitt, Grenville, Fox and Burke looked favourably on the movement; in May 1788 Pitt introduced a parliamentary discussion on the subject, and Sir W. Dolben brought forward a bill providing that the number of slaves carried in a vessel should be proportional to its tonnage. A number of Liverpool and Bristol merchants obtained permission from the House to be heard by council against the bill, but on the 18th of June it passed the Commons. Soon after Clarkson published an *Essay on the Impolicy of the Slave Trade*; and for two months he was continuously engaged in travelling that he might meet men who were personally acquainted with the facts of the trade. From their lips he collected a considerable amount of evidence; but only nine could be prevailed upon to promise to appear before the privy council. Meanwhile other witnesses had been obtained by Wilberforce and the committee, and on the 12th of May 1789 the former led a debate on the subject in the House of Commons, in which he was seconded by Burke and supported by Pitt and Fox.

It was now the beginning of the French Revolution, and in the hope that he might arouse

the French to sweep away slavery with other abuses, Clarkson crossed to Paris, where he remained six months. He found Necker head of the government, and obtained from him some sympathy but little help. Mirabeau, however, with his assistance, prepared a speech against slavery, to be delivered before the National Assembly, and the Marquis de la Fayette entered enthusiastically into his views. During this visit Clarkson met a deputation of negroes from Santo Domingo, who had come to France to present a petition to the National Assembly, desiring to be placed on an equal footing with the whites; but the storm of the Revolution permitted no substantial success to be achieved. Soon after his return home he engaged in a search, the apparent hopelessness of which finely displays his unshrinking laboriousness and his passionate enthusiasm. He desired to find some one who had himself witnessed the capture of the negroes in Africa; and a friend having met by chance a man-of-war's-man who had done so, Clarkson, though ignorant of the name and address of the sailor, set out in search of him, and actually discovered him. His last tour was undertaken in order to form anti-slavery committees in all the principal towns. At length, in the autumn of 1794, his health gave way, and he was obliged to cease active work. He now occupied his time in writing a *History of the Abolition of the Slave Trade*, which appeared in 1808. The bill for the abolition of the trade became law in 1807; but it was still necessary to secure the assent of the other powers to its principle. To obtain this was, under pressure of the public opinion created by Clarkson and his friends, one of the main objects of British diplomacy at the Congress of Vienna, and in February 1815 the trade was condemned by the powers. The question of concerting practical measures for its abolition was raised at the Congress of Aix-la-Chapelle in 1818, but without result. On this occasion Clarkson personally presented an address to the emperor Alexander I., who communicated it to the sovereigns of Austria and Prussia. In 1823 the Anti-Slavery Society was formed, and Clarkson was one of its vice-presidents. He was for some time blind from cataract; but several years before his death on the 26th of September 1846, his sight was restored.

Besides the works already mentioned, he published the *Portraiture of Quakerism* (1806), *Memoirs of William Penn* (1813), *Researches, Antediluvian, Patriarchal and Historical* (1836), intended as a history of the interference of Providence for man's spiritual good, and *Strictures* on several of the remarks concerning himself made in the *Life of Wilberforce*, in which his claim as originator of the anti-slavery movement is denied.

See the lives by Thomas Elmes (1876) and Thomas Taylor (1839).

CLARKSVILLE, a city and the county-seat of Montgomery county, Tennessee, U.S.A., situated in the N. part of the state, about 50 m. N.W. of Nashville, on the Cumberland river, at the mouth of the Red river. Pop. (1890) 7924; (1900) 9431, of whom 5094 were negroes; (1910 census) 8548. It is served by the Louisville & Nashville, and the Illinois Central railways, and by passenger and freight steamboat lines on the Cumberland river. The city hall, and the public library are among the principal public buildings, and the city is the seat of the Tennessee Odd Fellows' home, and of the South-Western Presbyterian University, founded in 1875. Clarksville lies in the centre of the dark tobacco belt—commonly known as the "Black Patch"—and is an important tobacco market, with an annual trade in that staple of about $4,000,000, most of the product being exported to France, Italy, Austria and Spain. The city is situated in a region well adapted for the growing of wheat, Indian corn, and vegetables, and for the raising of live-stock; and Clarksville is a shipping point for the lumber—chiefly oak, poplar and birch—and the iron-ore of the surrounding country, a branch of the Louisville & Nashville railway extending into the iron district. The city's principal manufactures are flour and grist mill products, chewing and smoking tobacco and snuff, furniture, lumber, iron, and pearl buttons. The value of the factory product in 1905 was $2,210,112, being 32% greater than in 1900. The municipality owns its water-works. Clarksville was first settled as early as 1780, was named in honour of General George Rogers Clark, and was chartered as a city in 1850.

CLASSICS. The term "classic" is derived from the Latin epithet *classicus*, found in a passage of Aulus Gellius (xix. 8. 15), where a "*scriptor 'classicus'*" is contrasted with a "*scriptor proletarius*." The metaphor is taken from the division of the Roman people into *classes* by Servius Tullius, those in the first class being called *classici*, all the rest *infra classem*, and those in the last *proletarii*.[1] The epithet "classic" is accordingly applied (1) generally to an author of the first rank, and (2) more particularly to a Greek or Roman author of that character. Similarly, "the classics" is a synonym for the choicest products of the literature of ancient Greece and Rome. It is to this sense of the word that the following article is devoted in two main divisions: (A) the general history of classical (*i.e.* Greek and Latin) scholarship, and (B) its place in higher education.

(A) General History of the Study of the Classics

We may consider this subject in four principal periods:—(i.) the *Alexandrian*, c. 300-1 B.C.; (ii.) the *Roman*, A.D. c. 1-530; (iii.) the *Middle Ages*, c. 530-1350; and (iv.) the *Modern Age*, c. 1350 to the present day.

(i.) *The Alexandrian Age.*—The study of the Greek classics begins with the school of Alexandria. Under the rule of Ptolemy Philadelphus (285-247 B.C.), learning found a home in the Alexandrian Museum and in the great Alexandrian Library. The first four librarians were Zenodotus, Eratosthenes, Aristophanes of Byzantium, and Aristarchus. Zenodotus produced before 274 the first scientific edition of the *Iliad* and *Odyssey*, an edition in which spurious lines were marked, at the beginning, with a short horizontal dash called an *obelus* (—). He also drew up select lists of epic and lyric poets. Soon afterwards a classified catalogue of dramatists, epic and lyric poets, legislators, philosophers, historians, orators and rhetoricians, and miscellaneous writers, with a brief biography of each, was produced by the scholar and poet Callimachus (fl. 260). Among the pupils of Callimachus was Eratosthenes who, in 234, succeeded Zenodotus as librarian. Apart from his special interest in the history of the Old Attic comedy, he was a man of vast and varied learning; the founder of astronomical geography and of scientific chronology; and the first to assume the name of φιλόλογος. The greatest philologist of antiquity was, however, his successor, Aristophanes of Byzantium (195), who reduced accentuation and punctuation to a definite system, and used a variety of critical symbols in his recension of the *Iliad* and *Odyssey*. He also edited Hesiod and Pindar, Euripides and Aristophanes, besides composing brief introductions to the several plays, parts of which are still extant. Lastly, he established a scientific system of lexicography and drew up lists of the "best authors." Two critical editions of the *Iliad* and *Odyssey* were produced by his successor, Aristarchus, who was librarian until 146 B.C. and was the founder of scientific scholarship. His distinguished pupil, Dionysius Thrax (born c. 166 B.C.), drew up a Greek grammar which continued in use for more than thirteen centuries. The most industrious of the successors of Aristarchus was Didymus (c. 65 B.C.-A.D. 10), who, in his work on the Homeric poems, aimed at restoring the lost recensions of Aristarchus. He also composed commentaries on the lyric and comic poets and on Thucydides and Demosthenes; part of his commentary on this last author was first published in 1904. He was a teacher in Alexandria (and perhaps also in Rome); and his death, about A.D. 10, marks the close of the Alexandrian age. He is the industrious compiler who gathered up the remnants of the learning of his predecessors and transmitted them to posterity. The poets of that age, including Callimachus and Theocritus, were subsequently expounded by Theon, who flourished under Tiberius, and has been well described as "the Didymus of the Alexandrian poets."

The Alexandrian canon of the Greek classics, which probably had its origin in the lists drawn up by Callimachus, Aristophanes of Byzantium and Aristarchus, included the following authors:—

Epic poets (5): Homer, Hesiod, Peisander, Panyasis, Antimachus.

Iambic poets (3): Simonides of Amorgos, Archilochus, Hipponax.

Tragic poets (5): Aeschylus, Sophocles, Euripides, Ion, Achaeus.

Comic poets, Old (7): Epicharmus, Cratinus, Eupolis, Aristophanes, Pherecrates, Crates, Plato. *Middle* (2): Antiphanes, Alexis. *New* (5): Menander, Philippides, Diphilus, Philemon, Apollodorus.

Elegiac poets (4): Callinus, Mimnermus, Philetas, Callimachus.

Lyric poets (9): Alcman, Alcaeus, Sappho, Stesichorus, Pindar, Bacchylides, Ibycus, Anacreon, Simonides of Ceos.

Orators (10): Demosthenes, Lysias, Hypereides, Isocrates, Aeschines, Lycurgus, Isaeus, Antiphon, Ándocides, Deinarchus.

Historians (10): Thucydides, Herodotus, Xenophon, Philistius, Theopompus, Ephorus, Anaximenes, Callisthenes, Hellanicus, Polybius.

The latest name in the above list is that of Polybius, who died about 123 B.C. Apollonius Rhodius, Aratus and Theocritus were subsequently added to the "epic" poets. Philosophers, such as Plato and Aristotle, were possibly classed in a separate "canon."

While the scholars of Alexandria were mainly interested in the *verbal criticism* of the Greek *poets*, a wider variety of studies was the characteristic of the school of Pergamum, the literary rival of Alexandria. Pergamum was a home of learning for a large part of the 150 years of the Attalid dynasty, 283-133 B.C.

The grammar of the Stoics, gradually elaborated by Zeno, Cleanthes and Chrysippus, supplied a terminology which, in words such as "genitive," "accusative" and "aorist," has become a permanent part of the grammarian's vocabulary; and the study of this grammar found its earliest home in Pergamum.

From about 168 B.C. the head of the Pergamene school was Crates of Mallus, who (like the Stoics) was an adherent of the principle of "anomaly" in grammar, and was thus opposed to Aristarchus of Alexandria, the champion of "analogy." He also opposed Aristarchus, and supported the Stoics, by insisting on an *allegorical* interpretation of Homer. He is credited with having drawn up the classified lists of the best authors for the Pergamene library. His mission as an envoy to the Roman senate, "shortly after the death of Ennius" in 169 B.C., had a remarkable influence on literary studies in Rome. Meeting with an accident while he was wandering on the Palatine, and being detained in Rome, he passed part of his enforced leisure in giving lectures (possibly on Homer, his favourite author), and thus succeeded in arousing among the Romans a taste for the scholarly study of literature. The example set by Crates led to the production of a new edition of the epic poem of Naevius, and to the public recitation of the *Annals* of Ennius, and (two generations later) the *Satires* of Lucilius.

(ii.) *The Roman Age.*—(a) *Latin Studies.*—In the 1st century B.C. the foremost scholar in Rome was L. Aelius Stilo (c. 154-c. 74), who is described by Cicero as profoundly learned in Greek and Latin literature, and as an accomplished critic of Roman antiquities and of ancient authors. Of the plays then passing under the name of Plautus, he recognized twenty-five as genuine. His most famous pupil was Varro (116-27), the six surviving books of whose great work on the Latin language are mainly concerned with the great grammatical controversy on analogy and anomaly—a controversy which also engaged the attention of Cicero and Caesar, and of the elder Pliny and Quintilian. The twenty-one plays of Plautus accepted by Varro are doubtless the twenty now extant, together with the lost *Vidularia*. The influence of Varro's last work on the nine *disciplinae*, or branches of study, long survived in the seven "liberal arts" recognized by St Augustine and Martianus Capella, and in the *trivium* and *quadrivium* of the middle ages.

Part of Varro's treatise on Latin was dedicated to Cicero (106-43), who as an interpreter of Greek philosophy to his fellow-countrymen enlarged the vocabulary of Latin by his admirable renderings of Greek philosophical terms, and thus ultimately gave us such indispensable words as "species," "quality" and "quantity."

The earliest of Latin lexicons was produced about 10 B.C. by Verrius Flaccus in a work, *De Verborum Significatu*, which survived in the abridgment by Festus (2nd century A.D.) and in the further abridgment dedicated by Paulus Diaconus to Charles the Great.

Greek models were diligently studied by Virgil and Horace. Their own poems soon became the theme of criticism and of comment; and, by the time of Quintilian and Juvenal, they shared the fate (which Horace had feared) of becoming text-books for use in schools.

Recensions of Terence, Lucretius and Persius, as well as Horace and Virgil, were produced by Probus (d. A.D. 88), with critical symbols resembling those invented by the Alexandrian scholars. His contemporary Asconius is best known as the author of an extant historical commentary on five of the speeches of Cicero. In A.D. 88 Quintilian was placed at the head of the first state-supported school in Rome. His comprehensive work on the training of the future orator includes an outline of general education, which had an important influence on the humanistic schools of the Italian Renaissance. It also presents us with a critical survey of the Greek and Latin classics arranged under the heads of poets, historians, orators and philosophers (book x. chap. i.). The lives of Roman poets and scholars were among the many subjects that exercised the literary skill of Hadrian's private secretary, Suetonius. One of his

lost works is the principal source of the erudition of Isidore of Seville (d. A.D. 636), whose comprehensive encyclopaedia was a favourite text-book in the middle ages. About the time of the death of Suetonius (A.D. 160) a work entitled the *Noctes Atticae* was begun by Aulus Gellius. The author is an industrious student and a typical scholar, who frequents libraries and is interested in the MSS. of old Latin authors. Early in the 4th century the study of grammar was represented in northern Africa by the Numidian tiro, Nonius Marcellus (fl. 323), the author of an encyclopaedic work in three parts, lexicographical, grammatical and antiquarian, the main value of which lies in its quotations from early Latin literature. About the middle of the same century grammar had a far abler exponent at Rome in the person of Aelius Donatus, the preceptor of St Jerome, as well as the author of a text-book that remained in use throughout the middle ages. The general state of learning in this century is illustrated by Ausonius (c. 310-393), the grammarian and rhetorician of Bordeaux, the author of the *Mosella*, and the probable inspirer of the memorable decree of Gratian (376), providing for the appointment and the payment of teachers of rhetoric and of Greek and Latin literature in the principal cities of Gaul. His distinguished friend, Q. Aurelius Symmachus, the consul of A.D. 391, aroused in his own immediate circle an interest in Livy, the whole of whose history was still extant. Early in the 5th century other aristocratic Romans interested themselves in the textual criticism of Persius and Martial. Among the contemporaries of Symmachus, the devoted adherent of the old Roman religion, was St Jerome (d. 420), the most scholarly representative of Christianity in the 4th century, the student of Plautus and Terence, of Virgil and Cicero, the translator of the *Chronology* of Eusebius, and the author of the Latin version of the Bible now known as the Vulgate. St Augustine (d. 430) confesses to his early fondness for Virgil, and also tells us that he received his first serious impressions from the *Hortensius* of Cicero, an eloquent exhortation to the study of philosophy, of which only a few fragments survive. In his survey of the "liberal arts" St Augustine imitates (as we have seen) the *Disciplinae* of Varro, and in the greatest of his works, the *De Civitate Dei* (426), he has preserved large portions of the *Antiquitates* of Varro and the *De Republica* of Cicero. About the same date, and in the same province of northern Africa, Martianus Capella produced his allegorical work on the "liberal arts," the principal, and, indeed, often the only, text-book of the medieval schools.

In the second half of the 5th century the foremost representative of Latin studies in Gaul was Apollinaris Sidonius (fl. 470), whose *Letters* were modelled on those of the younger Pliny, while his poems give proof of a wide though superficial acquaintance with classical literature. He laments the increasing decline in the classical purity of the Latin language.

An interest in Latin literature lived longest in Gaul, where schools of learning flourished as early as the 1st century at Autun, Lyons, Toulouse, Nîmes, Vienne, Narbonne and Marseilles; and, from the 3rd century onwards, at Trier, Poitiers, Besançon and Bordeaux.

About ten years after the death of Sidonius we find Asterius, the consul of 494, critically revising the text of Virgil in Rome. Boëthius, who early in life formed the ambitious plan of expounding and reconciling the opinions of Plato and Aristotle, continued in the year of his sole consulship (510) to instruct his fellow-countrymen in the wisdom of Greece. He is a link between the ancient world and the middle ages, having been the last of the learned Romans who understood the language and studied the literature of Greece, and the first to interpret to the middle ages the logical treatises of Aristotle. He thereby gave the signal for the age-long conflict between Nominalism and Realism, which exercised the keenest intellects among the Schoolmen, while the crowning work of his life, the *Consolatio Philosophiae* (524), was repeatedly expounded and imitated, and reproduced in renderings that were among the earliest literary products of the vernacular languages of modern Europe. His contemporary, Cassiodorus (c. 480-c. 575), after spending thirty years in the service of the Ostrogothic dynasty at Ravenna, passed the last thirty-three years of his long life on the shores of the Bay of Squillace, where he founded two monasteries and diligently trained their inmates to become careful copyists. In his latest work he made extracts for their benefit from the pages of Priscian (fl. 512), a transcript of whose great work on Latin grammar was completed at Constantinople by one of that grammarian's pupils in 527, to be reproduced in a thousand MSS. in the middle ages. More than ten years before Cassiodorus founded his monasteries in the south of Italy, Benedict of Nursia (480-543) had rendered a more permanent service to the cause of scholarship by building, amid the ruins of the temple of Apollo on the crest of Monte Cassino, the earliest of those homes of learning that have lent an undying distinction to the Benedictine order. The learned labours of the Benedictines were no part of the original requirements of the rule of St Benedict; but before the founder's death his favourite disciple had planted a monastery in France, and the name of that disciple is permanently associated with the learned labours of the Benedictines of the Congregation of St Maur (see MAURISTS).

(b) *Greek Studies.*—Meanwhile, the study of the Greek classics was ably represented at Rome in the Augustan age by Dionysius of Halicarnassus (fl. 30-8 B.C.), the intelligent critic of the ancient Attic orators, while the 1st century of our era is the probable date of the masterpiece of literary criticism known as the treatise *On the Sublime* by Longinus (*q.v.*).

The 2nd century is the age of the two great grammarians, Apollonius Dyscolus (the founder of scientific grammar and the creator of the study of Greek syntax) and his son Herodian, the larger part of whose principal work dealt with the subject of Greek accentuation. It is also the age of the lexicographers of Attic Greek, the most important of whom are Phrynichus, Pollux (fl. A.D. 180) and Harpocration.

In the 4th century Demosthenes was expounded and imitated by the widely influential teacher, Libanius of Antioch (c. 314-c. 393), the pagan preceptor of St Chrysostom. To the same century we may assign the grammarian Theodosius of Alexandria, who, instead of confining himself (like Dionysius Thrax) to the tenses of τύπτω in actual use, was the first to set forth all the imaginary aorists and futures of that verb, which have thence descended through the Byzantine age to the grammars of the Renaissance and of modern Europe.

In the 5th century we may place Hesychius of Alexandria, the compiler of the most extensive of our ancient Greek lexicons, and Proclus, the author of a chrestomathy, to the extracts from which (as preserved by Photius) we owe almost all our knowledge of the contents of the lost epics of early Greece. In the same century the study of Plato was represented by Synesius of Cyrene (c. 370-c. 413) and by the Neoplatonists of Alexandria and of Athens. The lower limit of the Roman age of classical studies may be conveniently placed in the year 529. In that year the monastery of Monte Cassino was founded in the West, while the school of Athens was closed in the East. The Roman age thus ends in the West with Boëthius, Cassiodorus and St Benedict, and in the East with Priscian and Justinian.

(iii.) *The Middle Ages.*—(a) *In the East*, commonly called the *Byzantine Age*, c. 530-1350. In this age, grammatical learning was represented by Choeroboscus, and lexicography by Photius (d. 891), the patriarch of Constantinople, who is also the author of a *Bibliotheca* reviewing and criticizing the contents of 280 MSS., and incidentally preserving important extracts from the lost Greek historians.

In the time of Photius the poets usually studied at school were Homer, Hesiod, Pindar; certain select plays of Aeschylus (*Prometheus, Septem* and *Persae*), Sophocles (*Ajax, Electra* and *Oedipus Tyrannus*), and Euripides (*Hecuba, Orestes, Phoenissae*, and, next to these, *Alcestis, Andromache, Hippolytus, Medea, Rhesus, Troades*,) also Aristophanes (beginning with the *Plutus*), Theocritus, Lycophron, and Dionysius Periegetes. The principal prose authors were Thucydides, parts of Plato and Demosthenes, with Aristotle, Plutarch's *Lives*, and, above all, Lucian, who is often imitated in the Byzantine age.

One of the distinguished pupils of Photius, Arethas, bishop of Caesarea in Cappadocia (c. 907-932), devoted himself with remarkable energy to collecting and expounding the Greek classics. Among the important MSS. still extant that were copied at his expense are the Bodleian Euclid (888) and the Bodleian Plato (895). To the third quarter of the 10th century we may assign the Greek lexicon of Suïdas, a combination of a lexicon and an encyclopaedia, the best articles being those on the history of literature.

Meanwhile, during the "dark age" of secular learning at Constantinople (641-850), the light of Greek learning had spread eastwards to Syria and Arabia. At Bagdad, in the reign of Mamun (813-833), the son of Harun al-Rashid, philosophical works were translated by Syrian Christians from Greek into Syriac and from Syriac into Arabic. It was in his reign that Aristotle was first translated into Arabic, and, shortly afterwards, we have Syriac and Arabic renderings of commentators on Aristotle, and of portions of Plato, Hippocrates and Galen; while in the 10th century new translations of Aristotle and his commentators were produced by the Nestorian Christians.

The Arabic translations of Aristotle passed from the East to the West by being transmitted through the Arab dominions in northern Africa to Spain, which had been conquered by the Arabs in the 8th century. In the 12th century Toledo was the centre of the study of Aristotle in the West, and it was from Toledo that the knowledge of Aristotle spread to Paris and to other seats of learning in western Europe.

The 12th century in Constantinople is marked by the name of Tzetzes (c. 1110-c. 1180), the author of a mythological, literary and historical miscellany called the *Chiliades*, in the course of which he quotes more than four hundred authors. The prolegomena to his scholia

on Aristophanes supply us with valuable information on the Alexandrian libraries. The most memorable name, however, among the scholars of this century is that of Eustathius, whose philological studies at Constantinople preceded his tenure of the archbishopric of Thessalonica (1175-1192). The opening pages of his commentaries on the *Iliad* and the *Odyssey* dwell with enthusiasm on the abiding influence of Homer on the literature of Greece.

While the Byzantine MSS. of the 11th century (such as the Laurentian MSS. of Aeschylus and Sophocles, and the Ravenna MS. of Aristophanes) maintain the sound traditions of the Alexandrian and Roman ages, those of the times of the Palaeologi give proof of a frequent tampering with the metres of the ancient poets in order to bring them into conformity with theories recently invented by Moschopulus and Triclinius. The scholars of these times are the natural precursors of the earliest representatives of the Revival of Learning in the West. Of these later Byzantines the first in order of date is the monk Planudes (d. 1330), who devoted his knowledge of Latin to producing excellent translations of Caesar's *Gallic War* as well as Ovid's *Metamorphoses* and *Heroides*, and the classic work of Boëthius; he also compiled (in 1302) the only Greek anthology known to scholars before the recovery in 1607 of the earlier and fuller anthology of Cephalas (fl. 917).

The scholars of the Byzantine age cannot be compared with the great Alexandrians, but they served to maintain the continuity of tradition by which the Greek classics selected by the critics of Alexandria were transmitted to modern Europe.

(b) *In the West* (c. 530-c. 1350).—At the portal of the middle ages stands Gregory the Great (c. 540-604), who had little (if any) knowledge of Greek and had no sympathy with the *secular* side of the study of Latin. A decline in grammatical learning is exemplified in the three Latin historians of the 6th century, Jordanes, Gildas and Gregory of Tours (d. 594), who begins his history of the Franks by lamenting the decay of Latin literature in Gaul. The historian of Tours befriended the Latin poet, Venantius Fortunatus (d. *c.* 600), who is still remembered as the writer of the three well-known hymns beginning *Salve festa dies*, *Vexilla regis prodeunt*, and *Pange lingua gloriosi proelium certaminis*. The decadence of Latin early in the 7th century is exemplified by the fantastic grammarian Virgilius Maro, who also illustrates the transition from Latin to Provençal, and from quantitive to accentual forms of verse.

While Latin was declining in Gaul, even Greek was not unknown in Ireland, and the Irish passion for travel led to the spread of Greek learning in the west of Europe. The Irish monk Columban, shortly before his death in 615, founded in the neighbourhood of Pavia the monastery of Bobbio, to be the repository of many Latin MSS. which were ultimately dispersed among the libraries of Rome, Milan and Turin. About the same date his fellow-traveller, Gallus, founded above the Lake of Constance the monastery of St Gallen, where Latin MSS. were preserved until their recovery in the age of the Renaissance. During the next twenty-five years Isidore of Seville (d. 636) produced in his *Origines* an encyclopaedic work which gathered up for the middle ages much of the learning of the ancient world.

In Italy a decline in the knowledge of Greek in the 5th and 6th centuries led to an estrangement between the Greek and Latin Churches. The year 690 is regarded as the date of the temporary extinction of Greek in Italy, but, in the first quarters of the 8th and the 9th centuries, the iconoclastic decrees of the Byzantine emperors drove many of the Greek monks and their lay adherents to the south of Italy, and even to Rome itself.

In Ireland we find Greek characters used in the Book of Armagh (*c.* 807); and, in the same century, a Greek psalter was copied by an Irish monk of Liége, named Sedulius (fl. 850), who had a wide knowledge of Latin literature. In England, some sixty years after the death of Augustine, the Greek archbishop of Canterbury, Theodore of Tarsus (d. 690) founded a school for the study of Greek, and with the help of an African monk named Hadrian made many of the English monasteries schools of Greek and Latin learning, so that, in the time of Bede (d. 735), some of the scholars who still survived were "as familiar with Greek and Latin as with their mother-tongue." Among those who had learned their Greek at Canterbury was Aldhelm (d. 709), "the first Englishman who cultivated classical learning with any success." While Aldhelm is known as "the father of Anglo-Latin verse," Latin prose was the literary medium used by Bede in his celebrated *Ecclesiastical History* of England (731). Nine years after the death of Bede (735), Boniface, "the apostle of Germany," sanctioned the founding of Fulda (744), which soon rivalled St Gallen as a school of learning. Alcuin (d. 804), who was probably born in the year of Bede's death, tells us of the wealth of Latin literature preserved in the library at York. Through the invitation of Charles the Great, he became associated with the revival of learning which marks the reign of that monarch, by presiding

over the School of the Palace (782-790), and by exercising a healthy influence as abbot of St Martin's at Tours (796-804). Among the friends of Alcuin and the advisers of Charles was Theodulfus, bishop of Orleans and abbot of Fleury (d. 821), who is memorable as an accomplished Latin poet, and as the initiator of free education. Einhard (d. 840), in his classic life of Charles the Great, models his style on that of Suetonius, and shows his familiarity with Caesar and Livy and Cicero, while Rabanus Maurus (d. 856), who long presided over Einhard's school of Fulda, was the first to introduce Priscian into the schools of Germany. His pupil, Walafrid Strabo, the abbot of Reichenau (d. 849), had a genuine gift for Latin poetry, a gift agreeably exemplified in his poem on the plants in the monastic garden. In the same century an eager interest in the Latin classics is displayed by Servatus Lupus, who was educated at Fulda, and was abbot of Ferrières for the last twenty years of his life (d. 862). In his literary spirit he is a precursor of the humanists of the Renaissance. Under Charles the Bald (d. 877) there was a certain revival of interest in literature, when John the Scot (Erigena) became, for some thirty years (c. 845-875), the head of the Palace School. He was familiar with the Greek Fathers, and was chosen to execute a Latin rendering of the writings of "Dionysius the Areopagite," the patron saint of France. In the preface the translator praises the king for prompting him not to rest satisfied with the literature of the West, but to have recourse to the "most pure and copious waters of the Greeks." In the next generation Remi of Auxerre was the first to open a school in Paris (900). Virgil is the main authority quoted in Remi's Commentary on Donatus, which remained in use until the Renaissance. During the two centuries after John the Scot, the study of Greek declined in France. In England the 9th century closes with Alfred, who, with the aid of the Welsh monk, Asser, produced a series of free translations from Latin texts, including Boëthius and Orosius and Bede, and the *Cura Pastoralis* of Gregory the Great.

In the 10th century learning flourished at Aachen under Bruno, brother of Otto I. and archbishop of Cologne (953-965), who had himself learned Greek from certain Eastern monks at the imperial court, and who called an Irish bishop from Trier to teach Greek at the imperial capital. He also encouraged the transcription of Latin MSS., which became models of style to Widukind of Corvey, the imitator of Sallust and Livy. In the same century the monastery of Gandersheim, south of Hanover, was the retreat of the learned nun Hroswitha, who celebrated the exploits of Otho in leonine hexameters, and composed in prose six moral and religious plays in imitation of Terence. One of the most prominent personages of the century was Gerbert of Aurillac, who, after teaching at Tours and Fleury, became abbot of Bobbio, archbishop of Reims, and ultimately pope under the name of Silvester II. (d. 1003). He frequently quotes from the speeches of Cicero, and it has been surmised that the survival of those speeches may have been due to the influence of Gerbert. The most original hellenist of this age is Luitprand, bishop of Cremona (d. 972), who acquired some knowledge of Greek during his repeated missions to Constantinople. About the same time in England Oswald of York, who had himself been educated at Fleury, invited Abbo (d. 1004) to instruct the monks of the abbey recently founded at Ramsey, near Huntingdon. At Ramsey he wrote for his pupils a scholarly work dealing with points of prosody and pronunciation, and exhibiting an accurate knowledge of Virgil and Horace. During the same half-century, Ælfric, the abbot of Eynsham (d. c. 1030), aided Bishop Æthelwold in making Winchester famous as a place of education. It was there that he began his *Latin Grammar*, his *Glossary* (the earliest Latin-English dictionary in existence), and his *Colloquium*, in which Latin is taught in a conversational manner.

In France, the most notable teacher in the first quarter of the 11th century was Fulbert, bishop of Chartres (d. 1029). In and after the middle of that century the Norman monastery of Bec flourished under the rule of Lanfranc and Anselm, both of whom had begun their career in northern Italy, and closed it at Canterbury. Meanwhile, in Germany, the styles of Sallust and Livy were being happily imitated in the *Annals* of Lambert of Hersfeld (d. 1077). In Italy, where the study of Latin literature seems never to have entirely died out, young nobles and students preparing for the priesthood were not infrequently learning Latin together, in private grammar schools under liberal clerics, such as Anselm of Bisate (fl. 1050), who describes himself as divided in his allegiance between the saints and the muses. Learning flourished at Monte Cassino under the rule of the Abbot Desiderius (afterwards Pope Victor III.). In this century that famous monastery had its classical chronicler in Leo Marsicanus, and its Latin poet in Alfanus, the future archbishop of Salerno.

The Schoolmen devoted most of their attention to Aristotle, and we may here briefly note the successive stages in their gradually increasing knowledge of his works. Until 1128 only the first two of the five parts of the *Organon* were known, and those solely in Latin translations from the original. After that date two more became known; the whole was familiar to John of Salisbury in 1159; while the *Physics* and *Metaphysics* came into notice

about 1200. Plato was mainly represented by the Latin translation of the *Timaeus*. Abelard (d. 1142) was acquainted with no Greek works except in Latin translations, but he has left his mark on the history of European education. The wide popularity of his brilliant lectures in the "schools" of Paris made this city the resort of the many students who were ultimately organized as a "university" (c. 1170). John of Salisbury attended Abelard's lectures in 1136, and, after spending two years in the study of logic in Paris, passed three more in the scholarly study of Latin literature at Chartres, where a sound and healthy tradition, originally due to Bernard of Chartres (fl. 1120), was still perpetuated by his pupils. In that school the study of "figures of speech" was treated as merely introductory to that of the classical texts. Stress was laid on the sense as well as the style of the author studied. Discussions on set subjects were held, select passages from the classics learned by heart, while written exercises in prose and verse were founded on the best ancient models. In the general scheme of education the authority followed was Quintilian. John of Salisbury (d. 1180), the ripest product of this school, is the most learned man of his time. His favourite author is Cicero, and in all the Latin literature accessible to him he is the best-read scholar of his age. Among Latin scholars of the next generation we have Giraldus Cambrensis (d. c. 1222), the author of topographical and historical writings on Ireland and Wales, and of other works teeming with quotations from the Latin classics. During the middle ages Latin prose never dies out. It is the normal language of literature. In England it is used by many chroniclers and historians, the best known of whom are William of Malmesbury (d. 1142) and Matthew Paris (d. 1259). In Italy Latin verse had been felicitously applied to historic themes by William of Apulia (fl. 1100) and other Latin poets (1088-1247). In the 12th century England claims at least seven Latin poets, one of these being her only Latin epic poet, Joseph of Exeter (d. 1210), whose poem on the Trojan war is still extant. The Latin versifier, John of Garlandia, an Englishman who lived mainly in France (fl. 1204-1252), produced several Latin vocabularies which were still in use in the boyhood of Erasmus. The Latin poets of French birth include Gautier and Alain de Lille (d. c. 1203), the former being the author of the *Alexandreis*, and the latter that of the *Anti-Claudianus*, a poem familiar to Chaucer.

During the hundred and thirty years that elapsed between the early translations of Aristotle executed at Toledo about 1150 and the death in 1281 of William of Moerbeke, the translator of the *Rhetoric* and the *Politics*, the knowledge of Aristotle had been greatly extended in Europe by means of translations, first from the Arabic, and, next, from the original Greek. Aristotle had been studied in England by Grosseteste (d. 1253), and expounded abroad by the great Dominican, Albertus Magnus (d. 1280), and his famous pupil, Thomas Aquinas (d. 1274). Among the keenest critics of the Schoolmen and of the recent translations of Aristotle was Roger Bacon (d. 1294), whose *Opus majus* has been recognized as the *Encyclopédie* and the *Organon* of the 13th century. His knowledge of Greek, as shown in his *Greek Grammar* (first published in 1902), was clearly derived from the Greeks of his own day. The medieval dependence on the authority of Aristotle gradually diminished. This was partly due to the recovery of some of the lost works of ancient literature, and the transition from the middle ages to the revival of learning was attended by a general widening of the range of classical studies and by a renewed interest in Plato.

The classical learning of the middle ages was largely second-hand. It was often derived from glossaries, from books of elegant extracts, or from comprehensive encyclopaedias. Among the compilers of these last were Isidore and Hrabanus, William of Conches and Honorius of Autun, Bartholomaeus Anglicus (fl. 1250), Vincent of Beauvais (d. 1264), and, lastly, Brunetto Latini (d. 1290), the earlier contemporary of Dante. For Aristotle, as interpreted by Albertus Magnus and Thomas Aquinas, Dante has the highest regard. To the Latin translations of Aristotle and to his interpreters he refers in more than three hundred passages, while the number of his references to the Latin translation of the *Timaeus* of Plato is less than ten. His five great pagan poets are Homer, Virgil, Horace, Ovid, Lucan; Statius he regards as a "Christian" converted by Virgil's *Fourth Eclogue*. His standard authors in Latin prose are Cicero, Livy, Pliny, Frontinus and Orosius. His knowledge of Greek was practically nil. Latin was the language of his political treatise, *De Monarchia*, and even that of his defence of the vulgar tongue, *De Vulgari Eloquio*. He is, in a limited sense, a precursor of the Renaissance, but he is far more truly to be regarded as the crowning representative of the spirit of the middle ages.

(iv.) *The Modern Age.*—(a) Our fourth period is ushered in by the age of the Revival of Learning in Italy (c. 1350-1527). Petrarch (1304-1374) has been well described as "the first of modern men." In contrast with the Schoolmen of the middle ages, he has no partiality for Aristotle. He was interested in Greek, and, a full century before the fall of Constantinople, he was in possession of MSS. of Homer

Italy.

and Plato, though his knowledge of the language was limited to the barest rudiments. For that knowledge, scanty as it was, he was indebted to Leontius Pilatus, with whose aid Boccaccio (1313-1375) became “the first of modern men” to study Greek to some purpose during the three years that Leontius spent as his guest in Florence (1360-1363). It was also at Florence that Greek was taught in the next generation by Chrysoloras (in 1396-1400). Another generation passed, and the scholars of the East and West met at the council of Florence (1439). One of the envoys of the Greeks, Gemistus Pletho, then inspired Cosimo dei Medici with the thought of founding an academy for the study of Plato. The academy was founded, and, in the age of Lorenzo, Plato and Plotinus were translated into Latin by Marsilio Ficino (d. 1499). The *Apology* and *Crito*, the *Phaedo, Phaedrus* and *Gorgias* of Plato, as well as speeches of Demosthenes and Aeschines, with the *Oeconomics, Ethics* and *Politics* of Aristotle, had already been translated by Leonardo Bruni (d. 1444); the *Rhetoric* by Filelfo (1430), and Plato’s *Republic* by Decembrio (1439). A comprehensive scheme for translating the principal Greek prose authors into Latin was carried out at Rome by the founder of the manuscript collections of the Vatican, Nicholas V. (1447-1455), who had belonged to the literary circle of Cosimo at Florence. The translation of Aristotle was entrusted to three of the learned Greeks who had already arrived in Italy, Trapezuntius, Gaza and Bessarion, while other authors were undertaken by Italian scholars such as Guarino, Valla, Decembrio and Perotti. Among the scholars of Italian birth, probably the only one in this age who rivalled the Greeks as a public expositor of their own literature was Politian (1454-1494), who lectured on Homer and Aristotle in Florence, translated Herodian, and was specially interested in the Latin authors of the Silver Age and in the text of the *Pandects* of Justinian. It will be observed that the study of Greek had been resumed in Florence half a century before the fall of Constantinople, and that the principal writers of Greek prose had been translated into Latin before that event.

Meanwhile, the quest of MSS. of the Latin classics had been actively pursued. Petrarch had discovered Cicero’s Speech *pro Archia* at Liége (1333) and the *Letters to Atticus* and *Quintus* at Verona (1345). Boccaccio had discovered Martial and Ausonius, and had been the first of the humanists to be familiar with Varro and Tacitus, while Salutati had recovered Cicero’s letters *Ad Familiares* (1389). During the council of Constance, Poggio, the papal secretary, spent in the quest of MSS. the interval between May 1415 and November 1417, during which he was left at leisure by the vacancy in the apostolic see.

Thirteen of Cicero’s speeches were found by him at Cluny and Langres, and elsewhere in France or Germany; the commentary of Asconius, a complete Quintilian, and a large part of Valerius Flaccus were discovered at St Gallen. A second expedition to that monastery and to others in the neighbourhood led to the recovery of Lucretius, Manilius, Silius Italicus and Ammianus Marcellinus, while the *Silvae* of Statius were recovered shortly afterwards. A complete MS. of Cicero, *De Oratore*, *Brutus* and *Orator*, was found by Bishop Landriani at Lodi (1421). Cornelius Nepos was discovered by Traversari in Padua (1434). The *Agricola*, *Germania* and *Dialogue* of Tacitus reached Italy from Germany in 1455, and the early books of the *Annals* in 1508. Pliny’s *Panegyric* was discovered by Aurispa at Mainz (1433), and his correspondence with Trajan by Fra Giocondo in Paris about 1500.

Greek MSS. were brought from the East by Aurispa, who in 1423 returned with no less than two hundred and thirty-eight, including the celebrated Laurentian MS. of Aeschylus, Sophocles and Apollonius Rhodius. A smaller number was brought from Constantinople by Filelfo (1427), while Quintus Smyrnaeus was discovered in south Italy by Bessarion, who presented his own collection of MSS. to the republic of Venice and thus led to the foundation of the library of St Mark’s (1468). As the emissary of Lorenzo, Janus Lascaris paid two visits to the East, returning from his second visit in 1492 with two hundred MSS. from Mount Athos.

The Renaissance theory of a humanistic education is illustrated by several treatises still extant. In 1392 Vergerio addressed to a prince of Padua the first treatise which methodically maintains the claims of Latin as an essential part of a liberal education. Eight years later, he was learning Greek from Chrysoloras. Among the most distinguished pupils of the latter was Leonardo Bruni, who, about 1405, wrote “the earliest humanistic tract on education expressly addressed to a lady.” He here urges that the foundation of all true learning is a “sound and thorough knowledge of Latin,” and draws up a course of reading, in which history is represented by Livy, Sallust, Curtius, and Caesar; oratory by Cicero; and poetry by Virgil. The same year saw the birth of Maffeo Vegio, whose early reverence for the muse of Virgil and whose later devotion to the memory of Monica have left their mark on the educational treatise which he wrote a few years before his death in 1458. The authors he recommends include “Aesop” and Sallust, the tragedies of Seneca and the epic poets,

especially Virgil, whom he interprets in an allegorical sense. He is in favour of an early simultaneous study of a wide variety of subjects, to be followed later by the special study of one or two. Eight years before the death of Vegio, Aeneas Sylvius Piccolomini (Pius II.) had composed a brief treatise on education in the form of a letter to Ladislaus, the young king of Bohemia and Hungary. The Latin poets to be studied include Virgil, Lucan, Statius, Ovid's *Metamorphoses*, and (with certain limitations) Horace, Juvenal and Persius, as well as Plautus, Terence and the tragedies of Seneca; the prose authors recommended are Cicero, Livy and Sallust. The first great school of the Renaissance was that established by Vittorino da Feltre at Mantua, where he resided for the last twenty-two years of his life (1424-1446). Among the Latin authors studied were Virgil and Lucan, with selections from Horace, Ovid and Juvenal, besides Cicero and Quintilian, Sallust and Curtius, Caesar and Livy. The Greek authors were Homer, Hesiod, Pindar and the dramatists, with Herodotus, Xenophon and Plato, Isocrates and Demosthenes, Plutarch and Arrian.

Meanwhile, Guarino had been devoting five years to the training of the eldest son of the marquis of Ferrara. At Ferrara he spent the last thirty years of his long life (1370-1460), producing text-books of Greek and Latin grammar, and translations from Strabo and Plutarch. His method may be gathered from his son's treatise, *De Ordine Docendi et Studendi*. In that treatise the essential marks of an educated person are, not only ability to write Latin verse, but also, a point of "at least equal importance," "familiarity with the language and literature of Greece." "Without a knowledge of Greek, Latin scholarship itself is, in any real sense, impossible" (1459).

By the fall of Constantinople in 1453, "Italy (in the eloquent phrase of Carducci) became sole heir and guardian of the ancient civilization," but its fall was in no way necessary for the revival of learning, which had begun a century before. Bessarion, Theodorus Gaza, Georgius Trepezuntius, Argyropulus, Chalcondyles, all had reached Italy before 1453. A few more Greeks fled to Italy after that date, and among these were Janus Lascaris, Musurus and Callierges. All three were of signal service in devoting their knowledge of Greek to perpetuating and popularizing the Greek classics with the aid of the newly-invented art of printing. That art had been introduced into Italy by the German printers, Sweynheym and Pannartz, who had worked under Fust at Mainz. At Subiaco and at Rome they had produced in 1465-1471 the earliest editions of Cicero, *De Oratore* and the *Letters*, and eight other Latin authors.

The printing of Greek began at Milan with the Greek grammar of Constantine Lascaris (1476). At Florence the earliest editions of Homer (1488) and Isocrates (1493) had been produced by Demetrius Chalcondyles, while Janus Lascaris was the first to edit the Greek anthology, Apollonius Rhodius, and parts of Euripides, Callimachus and Lucian (1494-1496). In 1494-1515 Aldus Manutius published at Venice no less than twenty-seven *editiones principes* of Greek authors and of Greek works of reference, the authors including Aristotle, Theophrastus, Theocritus, Aristophanes, Thucydides, Sophocles, Herodotus, Euripides, Demosthenes (and the minor Attic orators), Pindar, Plato and Athenaeus. In producing Plato, Athenaeus and Aristophanes, the scholar-printer was largely aided by Musurus, who also edited the Aldine Pausanias (1516) and the *Etymologicum* printed in Venice by another Greek immigrant, Callierges (1499).

The Revival of Learning in Italy ends with the sack of Rome (1527). Before 1525 the study of Greek had begun to decline in Italy, but meanwhile an interest in that language had been transmitted to the lands beyond the Alps.

In the study of Latin the principal aim of the Italian humanists was the *imitation* of the style of their classical models. In the case of poetry, this imitative spirit is apparent in Petrarch's *Africa*, and in the Latin poems of Politian, Pontano, Sannazaro, Vida and many others. Petrarch was not only the imitator of Virgil, who had been the leading name in Latin letters throughout the middle ages; it was the influence of Petrarch that gave a new prominence to Cicero. The imitation of Cicero was carried on with varying degrees of success by humanists such as Gasparino da Barzizza (d. 1431), who introduced a new style of epistolary Latin; by Paolo Cortesi, who discovered the importance of a rhythmical structure in the composition of Ciceronian prose (1490); and by the accomplished secretaries of Leo X., Bembo and Sadoleto. Both of these papal secretaries were mentioned in complimentary terms by Erasmus in his celebrated dialogue, the *Ciceronianus* (1528), in which no less than one hundred and six Ciceronian scholars of all nations are briefly and brilliantly reviewed, the slavish imitation of Cicero denounced, and the law laid down that "to speak with propriety we must adapt ourselves to the age in which we live—an age that differs entirely from that of Cicero." One of the younger Ciceronians criticized by Erasmus was Longolius, who had died at Padua in 1522. The cause of the Ciceronians was defended

by the elder Scaliger in 1531 and 1536, and by Étienne Dolet in 1535, and the controversy was continued by other scholars down to the year 1610. Meanwhile, in Italy, a strict type of Ciceronianism was represented by Paulus Manutius (d. 1574), and a freer and more original form of Latinity by Muretus (d. 1585).

Before touching on the salient points in the subsequent centuries, in connexion with the leading nations of Europe, we may briefly note the cosmopolitan position of Erasmus (1466-1536), who, although he was a native of the Netherlands, was far more closely connected with France, England, Italy, Germany and Switzerland, than with the land of his birth. He was still a school-boy at Deventer when his high promise was recognized by Rudolf Agricola, "the first (says Erasmus) who brought from Italy some breath of a better culture." Late in 1499 Erasmus spent some two months at Oxford, where he met Colet; it was in London that he met More and Linacre and Grocyn, who had already ceased to lecture at Oxford. At Paris, in 1500, he was fully conscious that "without Greek the amplest knowledge of Latin was imperfect"; and, during his three years in Italy (1506-1509), he worked quietly at Greek in Bologna and attended the lectures of Musurus in Padua. In October 1511 he was teaching Greek to a little band of students in Cambridge; at Basel in 1516 he produced his edition of the Greek Testament, the first that was actually published; and during the next few years he was helping to organize the college lately founded at Louvain for the study of Greek and Hebrew, as well as Latin. Seven years at Basel were followed by five at Freiburg, and by two more at Basel, where he died. The names of all these places are suggestive of the wide range of his influence. By his published works, his *Colloquies*, his *Adages* and his *Apophthegms*, he was the educator of the nations of Europe. An educational aim is also apparent in his editions of Terence and of Seneca, while his Latin translations made his contemporaries more familiar with Greek poetry and prose, and his *Paraphrase* promoted a better understanding of the Greek Testament. He was not so much a scientific scholar as a keen and brilliant man of letters and a widely influential apostle of humanism.

In France the most effective of the early teachers of Greek was Janus Lascaris (1495-1503). Among his occasional pupils was Budaeus (d. 1540), who prompted Francis I. to found in 1530 the corporation of the Royal Readers in Greek, as well as Latin and Hebrew, afterwards famous under the name of the Collège de France. In the study of Greek one of the earliest links between Italy and Germany was Rudolf Agricola, who had learned Greek under Gaza at Ferrara. It was in Paris that his younger contemporary Reuchlin acquired part of that proficiency in Greek which attracted the notice of Argyropulus, whose admiration of Reuchlin is twice recorded by Melanchthon, who soon afterwards was pre-eminent as the "praeceptor" of Germany.

France.

Germany.

In the age of the revival the first Englishman who studied Greek was a Benedictine monk, William of Selling (d. 1494), who paid two visits to Italy. At Canterbury he inspired with his own love of learning his nephew, Linacre, who joined him on one of those visits, studied Greek at Florence under Politian and Chalcondyles, and apparently stayed in Italy from 1485 to 1499. His translation of a treatise of Galen was printed at Cambridge in 1521 by Siberch, who, in the same year and place, was the first to use Greek type in England. Greek had been first taught to some purpose at Oxford by Grocyn on his return from Italy in 1491. One of the younger scholars of the day was William Lilye, who picked up his Greek at Rhodes on his way to Palestine and became the first high-master of the school founded by Colet at St Paul's (1510).

England.

(b) That part of the *Modern Period* of classical studies which succeeds the age of the Revival in Italy may be subdivided into three periods distinguished by the names of the nations most prominent in each.

1. The first may be designated the *French* period. It begins with the foundation of the Royal Readers by Francis I. in 1530, and it may perhaps be regarded as extending to 1700. This period is marked by a many-sided *erudition* rather than by any special cult of the *form* of the classical languages. It is the period of the great polyhistors of France. It includes Budaeus and the elder Scaliger (who settled in France in 1529), with Turnebus and Lambinus, and the learned printers Robertus and Henricus Stephanus, while among its foremost names are those of the younger (and greater) Scaliger, Casaubon and Salmasius. Of these, Casaubon ended his days in England (1614); Scaliger, by leaving France for the Netherlands in 1593, for a time at least transferred the supremacy in scholarship from the land of his birth to that of his adoption. The last sixteen years of his life (1593-1609) were spent at Leiden, which was also for more than twenty years (1631-1653) the home of Salmasius, and for thirteen (1579-1592) that of Lipsius (d. 1606). In the 17th century the erudition of France is best represented by

The French period.

"Henricus Valesius," Du Cange and Mabillon. In the same period Italy was represented by Muretus, who had left France in 1563, and by her own sons, Nizolius, Victorius, Robortelli and Sigonius, followed in the 17th century by R. Fabretti. The Netherlands, in the 16th, claim W. Canter as well as Lipsius, and, in the 17th, G.J. Vossius, Johannes Meursius, the elder and younger Heinsius, Hugo Grotius, J.F. Gronovius, J.G. Graevius and J. Perizonius. Scotland, in the 16th, is represented by George Buchanan; England by Sir John Cheke, Roger Ascham, and Sir Henry Savile, and, in the 17th, by Thomas Gataker, Thomas Stanley, Henry Dodwell, and Joshua Barnes; Germany by Janus Gruter, Ezechiel Spanheim and Chr. Cellarius, the first two of whom were also connected with other countries.

Literary Latin.

We have already seen that a strict imitation of Cicero was one of the characteristics of the Italian humanists. In and after the middle of the 16th century a correct and pure Latinity was promoted by the educational system of the Jesuits; but with the growth of the vernacular literatures Latin became more and more exclusively the language of the learned. Among the most conspicuous Latin writers of the 17th century are G.J. Vossius and the Heinsii, with Salmasius and his great adversary, Milton. Latin was also used in works on science and philosophy, such as Sir Isaac Newton's *Principia* (1687), and many of the works of Leibnitz (1646-1705). In botany the custom followed by John Ray (1627-1705) in his *Historia Plantarum* and in other works was continued in 1760 by Linnaeus in his *Systema Naturae*. The last important work in English theology written in Latin was George Bull's *Defensio Fidei Nicenae* (1685). The use of Latin in diplomacy died out towards the end of the 17th century; but, long after that date negotiations with the German empire were conducted in Latin, and Latin was the language of the debates in the Hungarian diet down to 1825.

The English and Dutch period.

2. During the 18th century the classical scholarship of the Netherlands was under the healthy and stimulating influence of Bentley (1662-1742), who marks the beginning of the English and Dutch period, mainly represented in Holland by Bentley's younger contemporary and correspondent, Tiberius Hemsterhuys (1685-1766), and the latter scholar's great pupil David Ruhnken (1723-1798). It is the age of historical and literary, as well as verbal, criticism. Both of these were ably represented in the first half of the century by Bentley himself, while, in the twenty years between 1782 and 1803, the verbal criticism of the tragic poets of Athens was the peculiar province of Richard Porson (1759-1808), who was born in the same year as F.A. Wolf. Among other representatives of England were Jeremiah Markland and Jonathan Toup, Thomas Tyrwhitt and Thomas Twining, Samuel Parr and Sir William Jones; and of the Netherlands, the two Burmanns and L. Küster, Arnold Drakenborch and Wesseling, Lodewyk Valckenaer and Daniel Wyttenbach (1746-1829). Germany is represented by Fabricius and J.M. Gesner, J.A. Ernesti and J.J. Reiske, J.J. Winckelmann and Chr. G. Heyne; France by B. de Montfaucon and J.B.G.D. Villoison; Alsace by French subjects of German origin, R.F.P. Brunck and J. Schweighäuser; and Italy by E. Forcellini and Ed. Corsini.

The German period.

3. The *German* period begins with F.A. Wolf (1759-1824), whose *Prolegomena* to Homer appeared in 1795. He is the founder of the systematic and encyclopaedic type of scholarship embodied in the comprehensive term *Altertumswissenschaft*, or "a scientific knowledge of the old classical world." The tradition of Wolf was ably continued by August Böckh (d. 1867), one of the leaders of the historical and antiquarian school, brilliantly represented in the previous generation by B.G. Niebuhr (d. 1831).

In contrast with this school we have the critical and grammatical school of Gottfried Hermann (d. 1848). During this period, while Germany remains the most productive of the nations, scholarship has been more and more international and cosmopolitan in its character.

Germany.

19th Century.—We must here be content with simply recording the names of a few of the more prominent representatives of the 19th century in some of the most obvious departments of classical learning. Among natives of Germany the leading scholars have been, in *Greek*, C.F.W. Jacobs, C.A. Lobeck, L. Dissen, I. Bekker, A. Meineke, C. Lehrs, W. Dindorf, T. Bergk, F.W. Schneidewin, H. Köchly, A. Nauck, H. Usener, G. Kaibel, F. Blass and W. Christ; in *Latin*, C. Lachmann, F. Ritschl, M. Haupt, C. Halm, M. Hertz, A. Fleckeisen, E. Bährens, L. Müller and O. Ribbeck. *Grammar* and kindred subjects have been represented by P. Buttmann, A. Matthiae, F.W. Thiersch, C.G. Zumpt, G. Bernhardy, C.W. Krüger, R. Kühner and H.L. Ahrens; and *lexicography* by F. Passow and C.E. Georges. Among editors of *Thucydides* we have had E.F. Poppo and J. Classen; among editors of *Demosthenes or other orators*, G.H. Schäfer, J.T.

Vömel, G.E. Benseler, A. Westermann, G.F. Schömann, H. Sauppe, and C. Rehdantz (besides Blass, already mentioned). The *Platonists* include F. Schleiermacher, G.A.F. Ast, G. Stallbaum and the many-sided C.F. Hermann; the *Aristotelians*, C.A. Brandis, A. Trendelenburg, L. Spengel, H. Bonitz, C. Prantl, J. Bernays and F. Susemihl. The history of *Greek philosophy* was written by F. Ueberweg, and, more fully, by E. Zeller. *Greek history* was the domain of G. Droysen, Max Duncker, Ernst Curtius, Arnold Schäfer and Adolf Holm; *Greek antiquities* that of M.H. Meier and G.F. Schömann and of G. Gilbert; *Greek epigraphy* that of J. Franz, A. Kirchhoff, W. von Hartel, U. Köhler, G. Hirschfeld and W. Dittenberger; *Roman history and constitutional antiquities* that of Theodor Mommsen (1817-1903), who was associated in *Latin epigraphy* with E. Hübner and W. Henzen. *Classical art and archaeology* were represented by F.G. Welcker, E. Gerhard, C.O. Müller, F. Wieseler, O. Jahn, C.L. Urlichs, H. Brunn, C.B. Stark, J. Overbeck, W. Helbig, O. Benndorf and A. Furtwängler; *mythology* (with cognate subjects) by G.F. Creuzer, P.W. Forchhammer, L. Preller, A. Kuhn, J.W. Mannhardt and E. Rohde; and *comparative philology* by F. Bopp, A.F. Pott, T. Benfey, W. Corssen, Georg Curtius, A. Schleicher and H. Steinthal. The history of *classical philology* in Germany was written by Conrad Bursian (1830-1883).

France, Belgium, Holland, England.

In France we have J.F. Boissonade, J.A. Letronne, L.M. Quicherat, M.P. Littré, B. Saint-Hilaire, J.V. Duruy, B.E. Miller, É. Egger, C.V. Daremberg, C. Thurot, L.E. Benoist, O. Riemann and C. Graux; (in archaeology) A.C. Quatremère de Quincy, P. le Bas, C.F.M. Texier, the duc de Luynes, the Lenormants (C. and F.), W.H. Waddington and O. Rayet; and (in comparative philology) Victor Henry. Greece was ably represented in France by A. Koraes. In Belgium we have P. Willems and the Baron De Witte (long resident in France); in Holland, C.G. Cobet; in Denmark, J.N. Madvig. Among the scholars of Great Britain and Ireland may be mentioned: P. Elmsley, S. Butler, T. Gaisford, P.P. Dobree, J.H. Monk, C.J. Blomfield, W. Veitch, T.H. Key, B.H. Kennedy, W. Ramsay, T.W. Peile, R. Shilleto, W.H. Thompson, J.W. Donaldson, Robert Scott, H.G. Liddell, C. Badham, G. Rawlinson, F.A. Paley, B. Jowett, T.S. Evans, E.M. Cope, H.A.J. Munro, W.G. Clark, Churchill Babington, H.A. Holden, J. Riddell, J. Conington, W.Y. Sellar, A. Grant, W.D. Geddes, D.B. Monro, H. Nettleship, A. Palmer, R.C. Jebb, A.S. Wilkins, W.G. Rutherford and James Adam; among historians and archaeologists, W.M. Leake, H. Fynes-Clinton, G. Grote and C. Thirlwall, T. Arnold, G. Long and Charles Merivale, Sir Henry Maine, Sir Charles Newton and A.S. Murray, Robert Burn and H.F. Pelham. Among comparative philologists Max Müller belonged to Germany by birth and to England by adoption, while, in the United States, his ablest counterpart was W.D. Whitney. B.L. Gildersleeve, W.W. Goodwin, Henry Drisler, J.B. Greenough and G.M. Lane were prominent American classical scholars.

The 19th century in Germany was marked by the organization of the great series of Greek and Latin inscriptions, and by the foundation of the Archaeological Institute in Rome (1829), which was at first international in its character. The Athenian Institute was founded in 1874. Schools at Athens and Rome were founded by France in 1846 and 1873, by the United States of America in 1882 and 1895, and by England in 1883 and 1901; and periodicals are published by the schools of all these four nations. An interest in Greek studies (and especially in art and archaeology) has been maintained in England by the Hellenic Society, founded in 1879, with its organ the *Journal of Hellenic Studies*. A further interest in Greek archaeology has been awakened in all civilized lands by the excavations of Troy, Mycenae, Tiryns, Epidaurus, Sparta, Olympia, Dodona, Delphi, Delos and of important sites in Crete. The extensive discoveries of papyri in Egypt have greatly extended our knowledge of the administration of that country in the times of the Ptolemies, and have materially added to the existing remains of Greek literature. Scholars have been enabled to realize in their own experience some of the enthusiasm that attended the recovery of lost classics during the Revival of Learning. They have found themselves living in a new age of *editiones principes*, and have eagerly welcomed the first publication of Aristotle's *Constitution of Athens* (1891), Herondas (1891) and Bacchylides (1897), as well as the *Persae* of Timotheus of Miletus (1903), with some of the *Paeans* of Pindar (1907) and large portions of the plays of Menander (1898-1899 and 1907). The first four of these were first edited by F.G. Kenyon, Timotheus by von Wilamowitz-Möllendorff, Menander partly by J. Nicole and G. Lefebre and partly by B.P. Grenfell and A.S. Hunt, who have also produced fragments of the *Paeans* of Pindar and many other classic texts (including a Greek continuation of Thucydides and a Latin epitome of part of Livy) in the successive volumes of the *Oxyrhynchus papyri* and other kindred publications.

Schools of Rome and Athens.

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(B) The Study of the Classics in Secondary Education

After the Revival of Learning the study of the classics owed much to the influence and example of Vittorino da Feltre, Budacus, Erasmus and Melanchthon, who were among the leading representatives of that revival in Italy, France, England and Germany.

England.

1. In *England*, the two great schools of Winchester (1382) and Eton (1440) had been founded during the life of Vittorino, but before the revival had reached Britain. The first school[2] which came into being under the immediate influence of humanism was that founded at St Paul's by Dean Colet (1510), the friend of Erasmus, whose treatise *De pueris instituendis* (1529) has its English counterpart in the *Governor* of Sir Thomas Elyot (1531). The highmaster of St Paul's was to be "learned in good and clean Latin, and also in Greek, if such may be gotten." The master and the second master of Shrewsbury (founded 1551) were to be "well able to make a Latin verse, and learned in the Greek tongue." The influence of the revival extended to many other schools, such as Christ's Hospital (1552), Westminster (1560), and Merchant Taylors' (1561); Repton (1557), Rugby (1567) and Harrow (1571).

Shakespeare and the grammar-school.

Early text-books.

At the grammar school of Stratford-on-Avon, about 1571-1577, Shakespeare presumably studied Terence, Horace, Ovid and the *Bucolics* of Baptista Mantuanus (1502). In the early plays he quotes Ovid and Seneca. Similarly, in *Titus Andronicus* (iv. 2) he says, of *Integer vitae*: "'Tis a verse in Horace; I know it well: I read it in the grammar long ago." In *Henry VI.* part ii. sc. 7, when Jack Cade charges Lord Say with having "most traitorously corrupted the youth of the realm in erecting a grammar-school," Lord Say replies that "ignorance is the curse of God, knowledge the wing wherewith we fly to heaven." In the *Taming of the Shrew* (I. i. 157) a line is quoted as from Terence (*Andria*, 74): "*redime te captum quam queas minimo.*" This is taken *verbatim* from Lilye's contribution to the *Brevis Institutio*, originally composed by Colet, Erasmus and Lilye for St Paul's School (1527), and ultimately adopted as the *Eton Latin Grammar*. The *Westminster Greek Grammar* of Grant (1575) was succeeded by that of Camden (1595), founded mainly on a Paduan text-book, and apparently adopted in 1596 by Sir Henry Savile at Eton, where it long remained in use as the *Eton Greek Grammar*, while at Westminster itself it was superseded by that of Busby (1663). The text-books to be used at Harrow in 1590 included Hesiod and some of the Greek orators and historians.

Ascham.

In one of the *Paston Letters* (i. 301), an Eton boy of 1468 quotes two Latin verses of his own composition. Nearly a century later, on New Year's Day, 1560, forty-four boys of the school presented Latin verses to Queen Elizabeth. The queen's former tutor, Roger Ascham, in his *Scholemaster* (1570), agrees with his

Strassburg friend, J. Sturm, in making the imitation of the Latin classics the main aim of instruction. He is more original when he insists on the value of translation and retranslation for acquiring a mastery over Latin prose composition, and when he protests against compelling boys to converse in Latin too soon. Ascham's influence is apparent in the *Positions* of Mulcaster, who in 1581 insists on instruction in English before admission to a grammar-school, while he is distinctly in advance of his age in urging the foundation of a special college for the training of teachers.

Cleland.

Cleland's *Institution of a Young Nobleman* (1607) owes much to the Italian humanists. The author follows Ascham in protesting against compulsory Latin conversation, and only slightly modifies his predecessor's method of teaching Latin prose. When Latin grammar has been mastered, he bids the teacher lead his pupil "into the sweet fountain and spring of all Arts and Science," that is, Greek learning which is "as profitable for the understanding as the Latin tongue for speaking." In the study of ancient history, "deeds and not words" are the prime interest. "In Plutarch pleasure is so mixed and confounded with profit; that I esteem the reading of him as a paradise for a curious spirit to walk in at all time." Bacon in his *Advancement of Learning* (1605) notes it as "the first distemper of learning when men study words and not matter" (I. iv. 3); he also observes that the Jesuits "have much quickened and strengthened the state of learning" (I. vi. 15). He is on the side of reform in education; he waves the humanist aside with the words: *vetustas cessit, ratio vicit*. Milton, in his *Tractate on Education* (1644), advances further on Bacon's lines, protesting against the length of time spent on instruction in language, denouncing merely verbal knowledge, and recommending the study of a large number of classical authors for the sake of their subject-matter, and with a view to their bearing on practical life. His ideal place of education is an institution combining a school and a university. Sir William Petty, the economist (1623-1687), urged the establishment of *ergastula literaria* for instruction of a purely practical kind. Locke, who had been educated at Winchester and had lectured on Greek at Oxford (1660), nevertheless almost completely eliminated Greek from the scheme which he unfolded in his *Thoughts on Education* (1693). With Locke, the moral and practical qualities of virtue and prudence are of the first consideration. Instruction, he declares, is but the least part of education; his aim is to train, not men of letters or men of science, but practical men armed for the battle of life. Latin was, above all, to be learned through use, with as little grammar as possible, but with the reading of easy Latin texts, and with no repetition, no composition. Greek he absolutely proscribes, reserving a knowledge of that language to the learned and the lettered, and to professional scholars.

Bacon, Milton, Petty.

Locke.

Throughout the 18th century and the early part of the 19th, the old routine went on in England with little variety, and with no sign of expansion. The range of studies was widened, however, at Rugby in 1828-1842 by Thomas Arnold, whose interest in ancient history and geography, as a necessary part of classical learning, is attested by his edition of Thucydides; while his influence was still further extended when those who had been trained in his traditions became head masters of other schools.

Arnold.

During the rest of the century the leading landmarks are the three royal commissions known by the names of their chairmen: (1) Lord Clarendon's on nine public schools, Eton, Winchester, Westminster, Charterhouse, Harrow, Rugby, Shrewsbury, St Paul's and Merchant Taylors' (1861-1864), resulting in the Public Schools Act of 1868; (2) Lord Taunton's on 782 endowed schools (1864-1867), followed by the act of 1869; and (3) Mr Bryce's on secondary education (1894-1895).

A certain discontent with the current traditions of classical training found expression in the *Essays on a Liberal Education* (1867). The author of the first essay, C.S. Parker, closed his review of the reforms instituted in Germany and France by adding that in England there had been but little change. The same volume included a critical examination of the "Theory of Classical Education" by Henry Sidgwick, and an attack on compulsory Greek and Latin verse composition by F.W. Farrar. The claims of verse composition have since been judiciously defended by the Hon. Edward Lyttelton (1897), while a temperate and effective restatement of the case for the classics may be found in Sir Richard Jebb's Romanes Lecture on "Humanism in Education" (1899).

Controversy on classical education.

The question of the position of Greek in secondary education has from time to time attracted attention in connexion with the requirement of Greek in Responsions at Oxford, and in the Previous Examination at Cambridge.

In the *Cambridge University Reporter* for November 9, 1870, it was stated that, "in order to provide adequate encouragement for the study of Modern Languages and Natural Science," the commissioners for endowed schools had determined on the establishment of modern schools of the first grade in which Greek would be excluded. The commissioners feared that, so long as Greek was a *sine qua non* at the universities, these schools would be cut off from direct connexion with the universities, while the universities would in some degree lose their control over a portion of the higher culture of the nation. On the 9th of March 1871 a syndicate recommended that, in the Previous Examination, French and German (taken together) should be allowed in place of Greek; on the 27th of April this recommendation (which only affected candidates for honours or for medical degrees) was rejected by 51 votes to 48.

"Compulsory Greek."

All the other proposals and votes relating to Greek in the Previous Examination in 1870-1873, 1878-1880, and 1891-1892 are set forth in the *Cambridge University Reporter* for November 11, 1904, pp. 202-205. In November 1903 a syndicate was appointed to consider the studies and examinations of the university, their report of November 1904 on the Previous Examination was fully discussed, and the speeches published in the *Reporter* fcr December 17, 1904. In the course of the discussion Sir Richard Jebb drew attention to the statistics collected by the master of Emmanuel, Mr W. Chawner, showing that, out of 86 head masters belonging to the Head Masters' Conference whose replies had been published, "about 56 held the opinion that the exemption from Greek for all candidates for a degree would endanger or altogether extinguish the study of Greek in the vast majority of schools, while about 21 head masters held a different opinion." On the 3rd of March 1905 a proposal for accepting either French or German as an alternative for either Latin or Greek in the Previous Examination was rejected by 1559 to 1052 votes, and on the 26th of May 1906 proposals distinguishing between students in letters and students in science, and (*inter alia*) *requiring* the latter to take either French or German for either Latin or Greek in the Previous Examination, were rejected by 746 to 241.

Meanwhile, at Oxford a proposal practically making Greek optional with all undergraduates was rejected, in November 1902, by 189 votes to 166; a preliminary proposal permitting students of mathematics or natural science to offer one or more modern languages in lieu of Greek was passed by 164 to 162 in February 1904, but on the 29th of November the draft of a statute to this effect was thrown out by 200 to 164. In the course of the controversy three presidents of the Royal Society, Lord Kelvin, Lord Lister and Sir W. Huggins, expressed the opinion that the proposed exemption was not beneficial to science students.

Incidentally, the question of "compulsory Greek" has stimulated a desire for greater efficiency in classical teaching. In December 1903, a year before the most important of the public discussions at Cambridge, the Classical Association was founded in London. The aim of that association is "to promote the development, and maintain the well-being, of classical studies, and in particular (a) to impress upon public opinion the claim of such studies to an eminent place in the national scheme of education; (b) to improve the practice of classical teaching by free discussion of its scope and methods; (c) to encourage investigation and call attention to new discoveries; (d) to create opportunities of friendly intercourse and co-operation between all lovers of classical learning in this country."

The Classical Association.

The question of the curriculum and the time-table in secondary education has occupied the attention of the Classical Association, the British Association and the Education Department of Scotland. The general effect of the recommendations already made would be to begin the study of foreign languages with French, and to postpone the study of Latin to the age of twelve and that of Greek to the age of thirteen. At the Head Masters' Conference of December 1907 a proposal to lower the standard of Greek in the entrance scholarship examinations of public schools was lost by 10 votes to 16, and the "British Association report" was adopted with reservations in 1908. In the case of secondary schools in receipt of grants of public money (about 700 in England and 100 in Wales in 1907-1908), "the curriculum, and time-table must be approved by the Board of Education." The Board has also a certain control over the curriculum of schools under the Endowed Schools Acts and the Charitable Trusts Acts, and also over that of schools voluntarily applying for inspection with a view to being recognized as efficient.

The curriculum.

Further efficiency in classical education has been the aim of the movement in favour of the reform of Latin pronunciation. In 1871 this movement resulted in Munro and Palmer's *Syllabus of Latin Pronunciation*. The reform was carried forward at University College, London, by Professor Key and by Professor Robinson

Reform in

Latin pronunciation.

Ellis in 1873, and was accepted at Shrewsbury, Marlborough, Liverpool College, Christ's Hospital, Dulwich, and the City of London school. It was taken up anew by the Cambridge Philological Society in 1886, by the Modern Languages Association in 1901, by the Classical Association in 1904-1905, and the Philological Societies of Oxford and Cambridge in 1906. The reform was accepted by the various bodies of head masters and assistant masters in December 1906-January 1907, and the proposed scheme was formally approved by the Board of Education in February 1907.

See W.H. Woodward, *Studies in Education during the Age of the Renaissance* (1906), chap. xiii.; Acland and Llewellin Smith, *Studies in Secondary Education*, with introduction by James Bryce (1892); *Essays on a Liberal Education*, ed. F.W. Farrar (1867); R.C. Jebb, "Humanism in Education," Romanes Lecture of 1899, reprinted with other lectures on cognate subjects in *Essays and Addresses* (1907); Foster Watson, *The Curriculum and Practice of the English Grammar Schools up to 1660* (1908); "Greek at Oxford," by a Resident, in *The Times* (December 27, 1904); *Cambridge University Reporter* (November 11 and December 17, 1904); *British Association Report on Curricula of Secondary Schools* (with an independent paper by Professor Armstrong on "The Teaching of Classics"), (December 1907); W.H.D. Rouse in *The Year's Work in Classical Studies* (1907 and 1908), chap. i.; J.P. Postgate, *How to pronounce Latin* (Appendix B, on "Recent Progress"), (1907). For further bibliographical details see pp. 875-890 of Dr Karl Breul's "Grossbritannien" in Baumeister's *Handbuch*, I. ii. 737-892 (Munich, 1897).

2. In *France* it was mainly with a view to promoting the study of Greek that the corporation of Royal Readers was founded by Francis I. in 1530 at the prompting of Budaeus. In the university of Paris, which was originally opposed to this innovation, the statutes of 1598 prescribed the study of Homer, Hesiod, Pindar, Theocritus, Plato, Demosthenes and Isocrates (as well as the principal Latin classics), and required the production of three exercises in Greek or Latin in each week.

France.

From the middle of the 16th century the elements of Latin were generally learned from unattractive abridgments of the grammar of the Flemish scholar, van Pauteren or Despautère (d. 1520), which, in its original folio editions of 1537-1538, was an excellent work. The unhappy lot of those who were compelled to learn their Latin from the current abridgments was lamented by a Port-Royalist in a striking passage describing the gloomy forest of *le pays de Despautère* (Guyot, quoted in Sainte-Beuve's *Port-Royal*, iii. 429). The first Latin grammar written in French was that of Père de Condren of the *Oratoire* (c. 1642), which was followed by the Port-Royal *Méthode latine* of Claude Lancelot (1644), and by the grammar composed by Bossuet for the dauphin, and also used by Fénelon for the instruction of the duc de Bourgogne. In the second half of the 17th century the rules of grammar and rhetoric were simplified, and the time withdrawn from the practice of composition (especially verse composition) transferred to the explanation and the study of authors.

Textbooks.

Richelieu, in 1640, formed a scheme for a college in which Latin was to have a subordinate place, while room was to be found for the study of history and science, Greek, and French and modern languages. Bossuet, in educating the dauphin, added to the ordinary classical routine represented by the extensive series of the "Delphin Classics" the study of history and of science. A greater originality in the method of teaching the ancient languages was exemplified by Fénelon, whose views were partially reflected by the Abbé Fleury, who also desired the simplification of grammar, the diminution of composition, and even the suppression of Latin verse. Of the ordinary teaching of Greek in his day, Fleury wittily observed that most boys "learned just enough of that language to have a pretext for saying for the rest of their lives that Greek was a subject easily forgotten."

Richelieu, Bossuet, Fénelon, Fleury.

In the 18th century Rollin, in his *Traité des études* (1726), agreed with the Port-Royalists in demanding that Latin grammars should be written in French, that the rules should be simplified and explained by a sufficient number of examples, and that a more important place should be assigned to translation than to composition. The supremacy of Latin was the subject of a long series of attacks in the same century. Even at the close of the previous century the brilliant achievements of French literature had prompted La Bruyère to declare in *Des ouvrages de l'esprit* (about 1680), "We have at last thrown off the yoke of *Latinism*"; and, in the same year, Jacques Spon claimed in his correspondence the right to use the French language in discussing points of archaeology.

Rollin.

Meanwhile, in 1563, notwithstanding the opposition of the university of Paris, the Jesuits

had succeeded in founding the *Collegium Claromontanum*. After the accession of Henry IV. they were expelled from Paris and other important towns in 1594, and not allowed to return until 1609, when they found themselves confronted once more by their rival, the university of Paris. They opened the doors of their schools to the Greek and Latin classics, but they represented the ancient masterpieces dissevered from their original historic environment, as impersonal models of taste, as isolated standards of style. They did much, however, for the cultivation of original composition modelled on Cicero and Virgil. They have been charged with paying an exaggerated attention to form, and with neglecting the subject-matter of the classics. This neglect is attributed to their anxiety to avoid the "pagan" element in the ancient literature. Intensely conservative in their methods, they kept up the system of using Latin in their grammars (and in their oral instruction) long after it had been abandoned by others.

The Jesuits.

The use of French for these purposes was a characteristic of the "Little Schools" of the Jansenists of Port-Royal(1643-1660). The text-books prepared for them by Lancelot included not only the above-mentioned Latin grammar (1644) but also the *Méthode grecque* of 1655 and the *Jardin des racines grecques* (1657), which remained in use for two centuries and largely superseded the grammar of Clenardus (1636) and the *Tirocinium* of Père Labbe (1648). Greek began to decline in the university about 1650, at the very time when the Port-Royalists were aiming at its revival. During the brief existence of their schools their most celebrated pupils were Tillemont and Racine.

Port-Royal.

The Jesuits, on the other hand, claimed Corneille and Molière, as well as Descartes and Bossuet, Fontenelle, Montesquieu and Voltaire. Of their Latin poets the best-known were Denis Petau (d. 1652), René Rapin (d. 1687) and N.E. Sanadon (d. 1733). In 1762 the Jesuits were suppressed, and more than one hundred schools were thus deprived of their teachers. The university of Paris, which had prompted their suppression, and the parliament, which had carried it into effect, made every endeavour to replace them. The university took possession of the *Collegium Claromontanum*, then known as the *Collège Louis-le-Grand*, and transformed it into an *école normale*. Many of the Jesuit schools were transferred to the congregations of the *Oratoire* and the Benedictines, and to the secular clergy. On the eve of the Revolution, out of a grand total of 562 classical schools, 384 were in the hands of the clergy and 178 in those of the congregations.

The expulsion of the Jesuits gave a new impulse to the attacks directed against all schemes of education in which Latin held a prominent position. At the moment when the university of Paris was, by the absence of its rivals, placed in complete control of the education of France, she found herself driven to defend the principles of classical education against a crowd of assailants. All kinds of devices were suggested for expediting the acquisition of Latin; grammar was to be set aside; Latin was to be learned as a "living language"; much attention was to be devoted to acquiring an extensive vocabulary; and, "to save time," composition was to be abolished. To facilitate the reading of Latin texts, the favourite method was the use of interlinear translations, originally proposed by Locke, first popularized in France by Dumarsais (1722), and in constant vogue down to the time of the Revolution.

Classical education attacked.

Early in the 18th century Rollin pleaded for the "utility of Greek," while he described that language as the heritage of the university of Paris. In 1753 Berthier feared that in thirty years no one would be able to read Greek. In 1768 Rolland declared that the university, which held Greek in high honour, nevertheless had reason to lament that her students learnt little of the language, and he traced this decline to the fact that attendance at lectures had ceased to be compulsory. Greek, however, was still recognized as part of the examination held for the appointment of schoolmasters.

During the 18th century, in Greek as well as in Latin, the general aim was to reach the goal as rapidly as possible, even at the risk of missing it altogether. On the eve of the Revolution, France was enjoying the study of the institutions of Greece in the attractive pages of the *Voyage du jeune Anacharsis* (1789), but the study of Greek was menaced even more than that of Latin. For fifty years before the Revolution there was a distinct dissatisfaction with the routine of the schools. To meet that dissatisfaction, the teachers had accepted new subjects of study, had improved their methods, and had simplified the learning of the dead languages. But even this was not enough. In the study of the classics, as in other spheres, it was revolution rather than evolution that was loudly demanded.

Eve of the Revolution.

The Revolution was soon followed by the long-continued battle of the "Programmes." Under the First Republic the schemes of Condorcet (April 1792) and J. Lakanal (February 1795) were superseded by that of P.C.F. Daunou (October 1795), which divided the pupils of the "central schools" into three groups, according to age, with corresponding subjects of study: (1) twelve to fourteen,—drawing, natural history, Greek and Latin, and a choice of modern languages; (2) fourteen to sixteen,—mathematics, physics, chemistry; (3) over sixteen,—general grammar, literature, history and constitutional law..

First Republic.

In July 1801, under the consulate, there were two courses, (1) nine to twelve,—elementary knowledge, including elements of Latin; (2) above twelve,—a higher course, with two alternatives, "humanistic" studies for the "civil," and purely practical studies for the "military" section. The law of the 1st of May 1802 brought the *lycées* into existence, the subjects being, in Napoleon's own phrase, "mainly Latin and mathematics."

Consulate.

At the Restoration (1814) the military discipline of the lycées was replaced by the ecclesiastical discipline of the "Royal Colleges." The reaction of 1815-1821 in favour of classics was followed by the more liberal programme of Vatimesnil (1829), including, for those who had no taste for a classical education, certain "special courses" (1830), which were the germ of the *enseignement spécial* and the *enseignement moderne*.

Restoration.

Under Louis Philippe (1830-1848), amid all varieties of administration there was a consistent desire to hold the balance fairly between all the conflicting subjects of study. After the revolution of 1848 the difficulties raised by the excessive number of subjects were solved by H.N.H. Fortoul's expedient of "bifurcation," the alternatives being letters and science. In 1863, under Napoleon III., Victor Duruy encouraged the study of history, and also did much for classical learning by founding the École des Hautes Études. In 1872, under the Third Republic, Jules Simon found time for hygiene, geography and modern languages by abolishing Latin verse composition and reducing the number of exercises in Latin prose, while he insisted on the importance of studying the inner meaning of the ancient classics. The same principles were carried out by Jules Ferry (1880) and Paul Bert (1881-1882). In the scheme of 1890 the Latin course of six years began with ten hours a week and ended with four; Greek was begun a year later with two hours, increasing to six and ending with four.

Third Republic.

The commission of 1899, under the able chairmanship of M. Alexandre Ribot, published an important report, which was followed in 1902 by the scheme of M. Georges Leygues. The preamble includes a striking tribute to the advantages that France had derived from the study of the classics:—

> "L'étude de l'antiquité grecque et latine a donné au génie français une mesure, une clarté et une élégance incomparables. C'est par elle que notre philosophie, nos lettres et nos arts ont brillé d'un si vif éclat; c'est par elle que notre influence morale s'est exercée en souveraine dans le monde. Les humanités doivent être protégées contre toute atteinte et fortifiées. Elles font partie du patrimoine national.
>
> "L'esprit classique n'est pas ... incompatible avec l'esprit moderne. Il est de tous les temps, parce qu'il est le culte de la raison claire et libre, la recherche de la beauté harmonieuse et simple dans toutes les manifestations de la pensée."

By the scheme introduced in these memorable terms the course of seven years is divided into two cycles, the first cycle (of four years) having two parallel courses: (1) without Greek or Latin, and (2) with Latin, and with optional Greek at the beginning of the third year. In the second cycle (of three years) those who have been learning both Greek and Latin, and those who have been learning neither, continue on the same lines as before; while those who have been learning Latin only may either (1) discontinue it in favour of modern languages *and* science, or (2) continue it with *either*. As an alternative to the second cycle, which normally ends in the examination for the *baccalauréat*, there is a shorter course, mainly founded on modern languages or applied science and ending in a public examination without the *baccalauréat*. The *baccalauréat*, however, has been condemned by the next minister, M. Briand, who prefers to crown the course with the award of a school diploma (1907).

See H. Lantoine, *Histoire de l'enseignement secondaire en France au XVIIe siècle* (1874); A. Sicard, *Les Études classiques avant la Révolution* (1887); Sainte-Beuve, *Port-Royal*, vols. i.-v. (1840-1859), especially iii. 383-588; O. Gréard, *Education et instruction*, 4 vols., especially "Enseignement secondaire," vol. ii. pp. 1-90, with conspectus of programmes in the appendix (1889); A. Ribot, *La Réforme de l'enseignement secondaire* (1900); G. Leygues,

Plan d'études, &c. (1902); H.H. Johnson, "Present State of Classical Studies in France," in *Classical Review* (December 1907). See also the English Education Department's *Special Reports on Education in France* (1899). The earlier literature is best represented in England by Matthew Arnold's *Schools and Universities in France* (1868; new edition, 1892) and *A French Eton* (1864).

3. The history of education in Germany since 1500 falls into three periods: (a) the age of the Revival of Learning and the Reformation (1500-1650), (b) the age of French influence (1650-1800), and (c) the 19th century.

Germany.

(a) During the first twenty years of the 16th century the reform of Latin instruction was carried out by setting aside the old medieval grammars, by introducing new manuals of classical literature, and by prescribing the study of classical authors and the imitation of classical models. In all these points the lead was first taken by south Germany, and by the towns along the Rhine down to the Netherlands. The old schools and universities were being quietly interpenetrated by the new spirit of humanism, when the sky was suddenly darkened by the clouds of religious conflict. In 1525-1535 there was a marked depression in the classical studies of Germany. Erasmus, writing to W. Pirckheimer in 1528, exclaims: "Wherever the spirit of Luther prevails, learning goes to the ground." Such a fate was, however, averted by the intervention of Melanchthon (d. 1560), the *praeceptor Germaniae*, who was the embodiment of the spirit of the new Protestant type of education, with its union of evangelical doctrine and humanistic culture. Under his influence, new schools rapidly rose into being at Magdeburg, Eisleben and Nuremberg (1521-1526). During more than forty years of academic activity he not only provided manuals of Latin and Greek grammar and many other text-books that long remained in use, but he also formed for Germany a well-trained class of learned teachers, who extended his influence throughout the land. His principal ally as an educator and as a writer of text-books was Camerarius (d. 1574). Precepts of style, and models taken from the best Latin authors, were the means whereby a remarkable skill in the imitation of Cicero was attained at Strassburg during the forty-four years of the headmastership of Johannes von Sturm (d. 1589), who had himself been influenced by the *De disciplinis* of J.L. Vivès (1531), and in all his teaching aimed at the formation of a *sapiens atque eloquens pietas*. Latin continued to be the living language of learning and of literature, and a correct and elegant Latin style was regarded as the mark of an educated person. Greek was taught in all the great schools, but became more and more confined to the study of the Greek Testament. In 1550 it was proposed in Brunswick to banish all "profane" authors from the schools, and in 1589 a competent scholar was instructed to write a sacred epic on the kings of Israel as a substitute for the works of the "pagan" poets. In 1637, when the doubts of Scaliger and Heinsius as to the purity of the Greek of the New Testament prompted the rector of Hamburg to introduce the study of classical authors, any reflection on the style of the Greek Testament was bitterly resented.

Melanchthon.

The Greek Testament.

The Society of Jesus was founded in 1540, and by 1600 most of the teachers in the Catholic schools and universities of Germany were Jesuits. The society was "dissolved" in 1773, but survived its dissolution. In accordance with the *Ratio Studiorum* of Aquaviva (1599), which long remained unaltered and was only partially revised by J. Roothaan (1832), the main subjects of instruction were the *litterae humaniores diversarum linguarum*. The chief place among these was naturally assigned to Latin, the language of the society and of the Roman Church. The Latin grammar in use was that of the Jesuit rector of the school at Lisbon, Alvarez (1572). As in the Protestant schools, the principal aim was the attainment of *eloquentia*. A comparatively subordinate place was assigned to Greek, especially as the importance attributed to the Vulgate weakened the motive for studying the original text. It was recognized, however, that Latin itself (as Vivès had said) was "in no small need of Greek," and that, "unless Greek was learnt in boyhood, it would hardly ever be learnt at all." The text-book used was the *Institutiones linguae Graecae* of the German Jesuit, Jacob Gretser, of Ingolstadt (c. 1590), and the reading in the highest class included portions of Demosthenes, Isocrates, Plato, Thucydides, Homer, Hesiod, Pindar, Gregory of Nazianzus, Basil and Chrysostom. The Catholic and Protestant schools of the 16th century succeeded, as a rule, in giving a command over a correct Latin style and a taste for literary form and for culture. Latin was still the language of the law-courts and of a large part of general literature. Between Luther and Lessing there was no great writer of German prose.

The Jesuits.

(b) In the early part of the period 1650-1800, while Latin continued to hold the foremost place, it was ceasing to be Latin of the strictly classical type. Greek fell still further into the

The age of French influence.

background; and Homer and Demosthenes gradually gave way to the Greek Testament. Between 1600 and 1775 there was a great gap in the production of new editions of the principal Greek classics. The spell was only partially broken by J.A. Ernesti's *Homer* (1759 f.) and Chr. G. Heyne's *Pindar* (1773 f.).

The peace of Westphalia (1648) marks a distinct epoch in the history of education in Germany. Thenceforth, education became more modern and more secular. The long wars of religion in Germany, as in France and England, were followed by a certain indifference as to disputed points of theology. But the modern and secular type of education that now supervened was opposed by the pietism of the second half of the 17th century, represented at the newly-founded university of Halle (1694) by A.H. Francke, the professor of Greek (d. 1727), whose influence was far greater than that of Chr. Cellarius (d. 1707), the founder of the first philological *Seminar* (1697). Francke's contemporary, Chr. Thomasius (d. 1728), was never weary of attacking scholarship of the old humanistic type and everything that savoured of antiquarian pedantry, and it was mainly his influence that made German the language of university lectures and of scientific and learned literature. A modern education is also the aim of the general introduction to the *nova methodus* of Leibnitz, where the study of Greek is recommended solely for the sake of the Greek Testament (1666). Meanwhile, Ratichius (d. 1635) had in vain pretended to teach Hebrew, Greek and Latin in the space of six months (1612), but he had the merit of maintaining that the study of a language should begin with the study of an author. Comenius (d. 1671) had proposed to teach Latin by drilling his pupils in a thousand graduated phrases distributed over a hundred instructive chapters, while the Latin authors were banished because of their difficulty and their "paganism" (1631). One of the catchwords of the day was to insist on a knowledge of *things* instead of a knowledge of *words*, on "realism" instead of "verbalism."

Modern and secular education.

Under the influence of France the perfect courtier became the ideal in the German education of the upper classes of the 17th and 18th centuries. A large number of aristocratic schools (*Ritter-Akademien*) were founded, beginning with the Collegium Illustre of Tübingen (1589) and ending with the Hohe Karlschule of Stuttgart (1775). In these schools the subjects of study included mathematics and natural sciences, geography and history, and modern languages (especially French), with riding, fencing and dancing; Latin assumed a subordinate place, and classical composition in prose or verse was not considered a sufficiently courtly accomplishment. The youthful aristocracy were thus withdrawn from the old Latin schools of Germany, but the aristocratic schools vanished with the dawn of the 19th century, and the ordinary public schools were once more frequented by the young nobility.

Ritter-akademien.

(c) *The Modern Period.*—In the last third of the 18th century two important movements came into play, the "naturalism" of Rousseau and the "new humanism." While Rousseau sought his ideal in a form of education and of culture that was in close accord with nature, the German apostles of the new humanism were convinced that they had found that ideal completely realized in the old Greek world. Hence the aim of education was to make young people thoroughly "Greek," to fill them with the "Greek" spirit, with courage and keenness in the quest of truth, and with a devotion to all that was beautiful. The link between the naturalism of Rousseau and the new humanism is to be found in J.G. Herder, whose passion for all that is Greek inspires him with almost a hatred of Latin. The new humanism was a kind of revival of the Renaissance, which had been retarded by the Reformation in Germany and by the Counter-Reformation in Italy, or had at least been degraded to the dull classicism of the schools. The new humanism agreed with the Renaissance in its unreserved recognition of the old classical world as a perfect pattern of culture. But, while the Renaissance aimed at reproducing the Augustan age of *Rome*, the new humanism found its golden age in *Athens*. The Latin Renaissance in Italy aimed at recovering and verbally imitating the ancient literature; the Greek Renaissance in Germany sought inspiration from the creative originality of Greek literature with a view to producing an original literature in the German language. The movement had its effect on the schools by discouraging the old classical routine of verbal imitation, and giving a new prominence to Greek and to German. The new humanism found a home in Göttingen (1783) in the days of J.M. Gesner and C.G. Heyne. It was represented at Leipzig by Gesner's successor, Ernesti (d. 1781); and at Halle by F.A. Wolf, who in 1783 was appointed professor of education by Zedlitz, the minister of Frederick the Great. In literature, its leading names were Winckelmann, Lessing and Voss, and Herder, Goethe and Schiller. The tide of the new

The "new humanism."

Herder.

movement had reached its height about 1800. Goethe and Schiller were convinced that the old Greek world was the highest revelation of humanity; and the universities and schools of Germany were reorganized in this spirit by F.A. Wolf and his illustrious pupil, Wilhelm von Humboldt. In 1809-1810 Humboldt was at the head of the educational section of the Prussian Home Office, and, in the brief interval of a year and a half, gave to the general system of education the direction which it followed (with slight exceptions) throughout the whole century. In 1810 the *examen pro facultate docendi* first made the profession of a schoolmaster independent of that of a minister of religion. The new scheme drawn up by J.W. Süvern recognized four principal co-ordinated branches of learning: Latin, Greek, German, mathematics. All four were studied throughout the school, Greek being begun in the fourth of the nine classes, that corresponding to the English "third form." The old Latin school had only one main subject, the study of Latin style (combined with a modicum of Greek). The new gymnasium aimed at a wider education, in which literature was represented by Latin, Greek and German, by the side of mathematics and natural science, history and religion. The uniform employment of the term *Gymnasium* for the highest type of a Prussian school dates from 1812. The leaving examination (*Abgangsprüfung*), instituted in that year, required Greek translation at sight, with Greek prose composition, and ability to speak and to write Latin. In 1818-1840 the leading spirit on the board of education was Johannes Schulze, and a *complete* and comprehensive system of education continued to be the ideal kept in view. Such an education, however, was found in practice to involve a prolongation of the years spent at school and a correspondingly later start in life. It was also attacked on the ground that it led to "overwork." This attack was partially met by the scheme of 1837. Schulze's period of prominence in Berlin closely corresponded to that of Herbart at Königsberg (1809-1833) and Göttingen (1833-1841), who insisted that for boys of eight to twelve there was no better text-book than the Greek *Odyssey*, and this principle was brought into practice at Hanover by his distinguished pupil, Ahrens.

School reorganization.

The Prussian policy of the next period, beginning with the accession of Friedrich Wilhelm IV. in 1840, was to lay a new stress on religious teaching, and to obviate the risk of overwork resulting from the simultaneous study of all subjects by the encouragement of specialization in a few. Ludwig Wiese's scheme of 1856 insisted on the retention of Latin verse as well as Latin prose, and showed less favour to natural science, but it awakened little enthusiasm, while the attempt to revive the old humanistic Gymnasium led to a demand for schools of a more modern type, which issued in the recognition of the *Realgymnasium* (1859).

In the age of Bismarck, school policy in Prussia had for its aim an increasing recognition of modern requirements. In 1875 Wiese was succeeded by Bonitz, the eminent Aristotelian scholar, who in 1849 had introduced mathematics and natural science into the schools of Austria, and had substituted the wide reading of classical authors for the prevalent practice of speaking and writing Latin. By his scheme of 1882 natural science recovered its former position in Prussia, and the hours assigned in each week to Latin were diminished from 86 to 77. But neither of the two great parties in the educational world was satisfied; and great expectations were aroused when the question of reform was taken up by the German emperor, William II., in 1890. The result of the conference of December 1890 was a compromise between the conservatism of a majority of its members and the forward policy of the emperor. The scheme of 1892 reduced the number of hours assigned to Latin from 77 to 62, and laid special stress on the *German* essay; but the modern training given by the *Realgymnasium* was still unrecognized as an avenue to a university education. A conference held in June 1900, in which the speakers included Mommsen and von Wilamowitz, Harnack and Diels, was followed by the "Kiel Decree" of the 26th of November. In that decree the emperor urged the equal recognition of the classical and the modern *Gymnasium*, and emphasized the importance of giving more time to Latin and to English in both. In the teaching of Greek, "useless details" were to be set aside, and special care devoted to the connexion between ancient and modern culture, while, in all subjects, attention was to be paid to the classic precept: *multum, non multa*.

By the scheme of 1901 the pupils of the *Realgymnasium*, the *Oberrealschule* and the *Gymnasium* were admitted to the university on equal terms in virtue of their leaving-certificates, but Greek and Latin were still required for students of classics or divinity.

For the *Gymnasium* the aim of the new scheme is, in *Latin*, "to supply boys with a sound basis of grammatical training, with a view to their understanding the more important classical writers of Rome, and being thus introduced to the intellectual life and culture of the ancient world"; and, in *Greek*, "to give them a sufficient knowledge of the language with

a view to their obtaining an acquaintance with some of the Greek classical works which are distinguished both in matter and in style, and thus gaining an insight into the intellectual life and culture of Ancient Greece." In consequence of these changes Greek is now studied by a smaller number of boys, but with better results, and a new lease of life has been won for the classical *Gymnasium*.

Lastly, by the side of the classical *Gymnasium*, we now have the "German Reform Schools" of two different types, that of Altona (dating from 1878) and that of Frankfort-on-the-Main (1892). The leading principle in both is the postponement of the time for learning Latin. Schools of the Frankfort type take French as their only foreign language in the first three years of the course, and aim at achieving in six years as much as has been achieved by the *Gymnasia* in nine; and it is maintained that, in six years, they succeed in mastering a larger amount of Latin literature than was attempted a generation ago, even in the best *Gymnasia* of the old style. It may be added that in all the German *Gymnasia*, whether reformed or not, more time is given to classics than in the corresponding schools in England.

See F. Paulsen, *Geschichte des gelehrten Unterrichts vom Ausgang des Mittelalters bis auf die Gegenwart mit besonderer Rücksicht auf den klassischen Unterricht* (2 vols., 2nd ed., 1896); *Das Realgymnasium und die humanistische Bildung* (1889); *Die höheren Schulen und das Universitätsstudium im 20. Jahrhundert* (1901); "Das moderne Bildungswesen" in *Die Kulture der Gegenwart*, vol. i. (1904); *Das deutsche Bildungswesen in seiner geschichtlichen Entwickelung* (1906) (with the literature there quoted, pp. 190-192), translated by Dr T. Lorenz, *German Education, Past and Present* (1908); T. Ziegler, *Notwendigkeit ... des Realgymnasiums* (Stuttgart, 1894); F.A. Eckstein, *Lateinischer und griechischer Unterricht* (1887); O. Kohl, "Griechischer Unterricht" (Langensalza, 1896) in W. Rein's *Handbuch*; A. Baumeister's *Handbuch* (1895), especially vol. i. 1 (History) and i. 2 (Educational Systems); P. Stötzner, *Das öffentliche Unterrichtswesen Deutschlands in der Gegenwart* (1901); F. Seiler, *Geschichte des deutschen Unterrichtswesens* (2 vols., 1906); *Verhandlungen* of June 1900 (2nd ed., 1902); *Lehrpläne*, &c. (1901); *Die Reform des höheren Schulwesens*, ed. W. Lexis (1902); A. Harnack's *Vortrag* and W. Parow's *Erwiderung* (1905); H. Müller, *Das höhere Schulwesen Deutschlands am Anfang des 20. Jahrhunderts* (Stuttgart, 1904); O. Steinbart, *Durchführung des preussischen Schulreform in ganz Deutschland* (Duisburg, 1904); J. Schipper, *Alte Bildung und moderne Cultur* (Vienna, 1901); Papers by M.E. Sadler: (1) "Problems in Prussian Secondary Education" (Special Reports of Education Dept., 1899); (2) "The Unrest in Secondary Education in Germany and Elsewhere" (Special Reports of Board of Education, vol. 9, 1902); J.L. Paton, *The Teaching of Classics in Prussian Secondary Schools* (on "German Reform Schools") (1907, Wyman, London); J.E. Russell, *German Higher Schools* (New York, 1899); and (among earlier English publications) Matthew Arnold's *Higher Schools and Universities in Germany* (1874, reprinted from *Schools and Universities on the Continent*, 1865).

(4) In the *United States of America* the highest degree of educational development has been subsequent to the Civil War. The study of Latin begins in the "high schools," the average age of admission being fifteen and the normal course extending over four years. Among classical teachers an increasing number would prefer a longer course extending over six years for Latin, and at least three for Greek, and some of these would assign to the elementary school the first two of the proposed six years of Latin study. Others are content with the late learning of Latin and prefer that it should be preceded by a thorough study of modern languages (see Prof. B.I. Wheeler, in Baumeister's *Handbuch*, 1897, ii. 2, pp. 584-586).

United States.

It was mainly owing to a pamphlet issued in 1871 by Prof. G.M. Lane, of Harvard, that a reformed pronunciation of Latin was adopted in all the colleges and schools of the United States. Some misgivings on this reform found expression in a work on the *Teaching of Latin*, published by Prof. C.E. Bennett of Cornell in 1901, a year in which it was estimated that this pronunciation was in use by more than 96% of the Latin pupils in the secondary schools.

Latin pronunciation.

Some important statistics as to the number studying Latin and Greek in the secondary schools were collected in 1900 by a committee of twelve educational experts representing all parts of the Union, with a view to a uniform course of instruction being pursued in all classical schools. They had the advantage of the co-operation of Dr W.T. Harris, the U.S. commissioner of education, and they were able to report that, in all the five groups into which they had divided the states, the number of pupils pursuing the study of Latin and Greek showed a remarkable advance, especially in the most progressive states of the middle west. The number learning Latin had increased from 100,144 in 1890 to 314,856 in 1899-1900, and those learning Greek from 12,869 to 24,869. Thus the number learning Latin at the later date was three times, and the number learning Greek twice, as many as those

learning Latin or Greek ten years previously. But the total number in 1000 was 630,048; so that, notwithstanding this proof of progress, the number learning Greek in 1900 was only about one twenty-fifth of the total number, while the number learning Latin was as high as half.

The position of Greek as an “elective” or “optional” subject (notably at Harvard), an arrangement regarded with approval by some eminent educational authorities and with regret by others, probably has some effect on the high schools in the small number of those who learn Greek, and in their lower rate of increase, as compared with those who learn Latin. Some evidence as to the quality of the study of those languages in the schools is supplied by English commissioners in the *Reports of the Mosely Commission*. Thus Mr Papillon considered that, while the teaching of English literature was admirable, the average standard of Latin and Greek teaching and attainment in the upper classes was “below that of an English public school”; he felt, however, that the secondary schools of the United States had a “greater variety of the curriculum to suit the practical needs of life,” and that they existed, not “for the select few,” but “for the whole people” (pp. 250 f.).

For full information see the “Two volumes of Monographs prepared for the United States Educational Exhibit at the Paris Exposition of 1900,” edited by Dr N. Murray Butler; the *Annual Reports* of the U.S. commissioner of education (Washington); and the *Reports of the Mosely Commission to the United States of America* (London, 1904). Cf. statistics quoted in G.G. Ramsay’s “Address on Efficiency in Education” (Glasgow, 1902, 17-20), from the *Transactions of the Amer. Philol. Association*, xxx. (1899), pp. lxxvii-cxxii; also Bennett and Bristol, *The Teaching of Latin and Greek in the Secondary School* (New York, 1901).

(J. E. S.*)

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1 The above derivation is in accordance with English usage. In the *New English Dictionary* the earliest example of the word “classical” is the phrase “classical and canonical,” found in the *Europae Speculum* of Sir Edwin Sandys (1599), and, as applied to a writer, it is explained as meaning “of the first rank or authority.” This exactly corresponds with the meaning of *classicus* in the above passage of Gellius. On the other hand, the French word *classique* (in Littré’s view) primarily means “used in class.”

2 See also the article Schools.

CLASSIFICATION (Lat. *classis*, a class, probably from the root *cal-*, *cla-*, as in Gr. καλέω, *clamor*), a logical process, common to all the special sciences and to knowledge in general, consisting in the collection under a common name of a number of objects which are alike in one or more respects. The process consists in observing the objects and abstracting from their various qualities that characteristic which they have in common. This characteristic constitutes the definition of the “class” to which they are regarded as belonging. It is this process by which we arrive first at “species” and then at “genus,” *i.e.* at all scientific generalization. Individual things, regarded as such, constitute a mere aggregate, unconnected with one another, and so far unexplained; scientific knowledge consists in systematic classification. Thus if we observe the heavenly bodies individually we can state merely that they have been observed to have certain motions through the sky, that they are luminous, and the like. If, however, we compare them one with another, we discover that, whereas all partake in the general movement of the heavens, some have a movement of their own. Thus we arrive at a system of classification according to motion, by which fixed stars are differentiated from planets. A further classification according to other criteria gives us stars of the first magnitude and stars of the second magnitude, and so forth. We thus arrive at a systematic understanding expressed in laws by the application of which accurate forecasts of celestial phenomena can be made. Classification in the strict logical sense consists in discovering the casual interrelation of natural objects; it thus differs from what is often called “artificial” classification, which is the preparation, *e.g.* of statistics for particular purposes, administrative and the like.

Of the systems of classification adopted in physical science, only one requires treatment here, namely, the classification of the sciences as a whole, a problem which has from the time of Aristotle attracted considerable attention. Its object is to delimit the spheres of influence of the positive sciences and show how they are mutually related. Of such attempts three are specially noteworthy, those of Francis Bacon, Auguste Comte and Herbert

Spencer.

Bacon's classification is based on the subjective criterion of the various faculties which are specially concerned. He thus distinguished History (natural, civil, literary, ecclesiastical) as the province of memory, Philosophy (including Theology) as that of reason, and Poetry, Fables and the like, as that of imagination. This classification was made the basis of the *Encyclopédie*. Comte adopted an entirely different system based on an objective criterion. Having first enunciated the theory that all science passes through three stages, theological, metaphysical and positive, he neglects the two first, and divides the last according to the "things to be classified," in view of their real affinity and natural connexions, into six, in order of decreasing generality and increasing complexity—mathematics, astronomy, physics, chemistry, physiology and biology (including psychology), and sociology. This he conceives to be not only the logical, but also the historical, order of development, from the abstract and purely deductive to the concrete and inductive. Sociology is thus the highest, most complex, and most positive of the sciences. Herbert Spencer, condemning this division as both incomplete and theoretically unsound, adopted a three-fold division into (1) *abstract* science (including logic and mathematics) dealing with the universal forms under which all knowledge of phenomena is possible, (2) *abstract-concrete* science (including mechanics, chemistry, physics), dealing with the elements of phenomena themselves, *i.e.* laws of forces as deducible from the persistence of forces, and (3) *concrete* science (*e.g.* astronomy, biology, sociology), dealing with "phenomena themselves in their totalities," the universal laws of the continuous redistribution of Matter and Motion, Evolution and Dissolution.

Beside the above three systems several others deserve brief mention. In Greece at the dawn of systematic thought the physical sciences were few in number; none the less philosophers were not agreed as to their true relation. The Platonic school adopted a triple classification, physics, ethics and dialectics; Aristotle's system was more complicated, nor do we know precisely how he subdivided his three main classes, theoretical, practical and poetical (*i.e.* technical, having to do with ποίησις, creative). The second class covered ethics and politics, the latter of which was often regarded by Aristotle as including ethics; the third includes the useful and the imitative sciences; the first includes metaphysics and physics. As regards pure logic Aristotle sometimes seems to include it with metaphysics and physics, sometimes to regard it as ancillary to all the sciences.

Thomas Hobbes (*Leviathan*) drew up an elaborate paradigm of the sciences, the first stage of which was a dichotomy into "Naturall Philosophy" ("consequences from the accidents of bodies naturall") and "Politiques and Civill Philosophy" ("consequences from accidents of Politique bodies"). The former by successive subdivisions is reduced to eighteen special sciences; the latter is subdivided into the rights and duties of sovereign powers, and those of the subject.

Jeremy Bentham and A.M. Ampère both drew up elaborate systems based on the principle of dichotomy, and beginning from the distinction of mind and body. Bentham invented an artificial terminology which is rather curious than valuable. The science of the body was Somatology, that of the mind Pneumatology. The former include Posology (science of quantity, mathematics) and Poiology (science of quality); Posology includes Morphoscopic (geometry) and Alegomorphic(arithmetic). See further Bentham's *Chrestomathia* and works quoted under Bentham, Jeremy.

Carl Wundt criticized most of these systems as taking too little account of the real facts, and preferred a classification based on the standpoint of the various sciences towards their subject-matter. His system may, therefore, be described as conceptional. It distinguishes philosophy, which deals with facts in their widest universal relations, from the special sciences, which consider facts in the light of a particular relation or set of relations.

All these systems have a certain value, and are interesting as throwing light on the views of those who invented them. It will be seen, however, that none can lay claim to unique validity. The *fundamenta divisionis*, though in themselves more or less logical, are quite arbitrarily chosen, generally as being germane to a preconceived philosophical or scientific theory.

CLASTIDIUM (mod. *Casteggio*), a village of the Anamares, in Gallia Cispadana, on the Via

Postumia, 5 m. E. of Iria (mod. *Voghera*) and 31 m. W. of Placentia. Here in 222 B.C. M. Claudius Marcellus defeated the Gauls and won the *spolia opima*; in 218 Hannibal took it and its stores of corn by treachery. It never had an independent government, and not later than 190 B.C. was made part of the colony of Placentia (founded 219). In the Augustan division of Italy, however, Placentia belonged to the 8th region, Aemilia, whereas Iria certainly, and Clastidium possibly, belonged to the 9th, Liguria (see Th. Mommsen in *Corp. Inscrip. Lat.* vol. v. Berlin, 1877, p. 828). The remains visible at Clastidium are scanty; there is a fountain (the Fontana d'Annibale), and a Roman bridge, which seems to have been constructed of tiles, not of stone, was discovered in 1857, but destroyed.

See C. Giulietti, *Casteggio, notizie storiche II. Avanzi di antichità* (Voghera, 1893).

CLAUBERG, JOHANN (1622-1665), German philosopher, was born at Solingen, in Westphalia, on the 24th of February 1622. After travelling in France and England, he studied the Cartesian philosophy under John Raey at Leiden. He became (1649) professor of philosophy and theology at Herborn, but subsequently (1651), in consequence of the jealousy of his colleagues, accepted an invitation to a similar post at Duisburg, where he died on the 31st of January 1665. Clauberg was one of the earliest teachers of the new doctrines in Germany and an exact and methodical commentator on his master's writings. His theory of the connexion between the soul and the body is in some respects analogous to that of Malebranche; but he is not therefore to be regarded as a true forerunner of Occasionalism, as he uses "Occasion" for the stimulus which directly produces a mental phenomenon, without postulating the intervention of God (H. Müller, *J. Clauberg und seine Stellung im Cartesianismus*). His view of the relation of God to his creatures is held to foreshadow the pantheism of Spinoza. All creatures exist only through the continuous creative energy of the Divine Being, and are no more independent of his will than are our thoughts independent of us,—or rather less, for there are thoughts which force themselves upon us whether we will or not. For metaphysics Clauberg suggested the names *ontosophy* or *ontology*, the latter being afterwards adopted by Wolff. He also devoted considerable attention to the German languages, and his researches in this direction attracted the favourable notice of Leibnitz. His chief works are: *De conjunctione animae et corporis humani*; *Exercitationes centum de cognitione Dei et nostri*; *Logica vetus et nova*; *Initiatio philosophi, seu Dubitatio Cartesiana*; a commentary on Descartes' *Meditations*; and *Ars etymologica Teutonum*.

A collected edition of his philosophical works was published at Amsterdam (1691), with life by H.C. Hennin; see also E. Zeller, *Geschichte der deutschen Philosophie seit Leibnitz* (1873).

CLAUDE, JEAN (1619-1687), French Protestant divine, was born at La Sauvetat-du-Dropt near Agen. After studying at Montauban, he entered the ministry in 1645. He was for eight years professor of theology in the Protestant college of Nîmes; but in 1661, having successfully opposed a scheme for re-uniting Catholics and Protestants, he was forbidden to preach in Lower Languedoc. In 1662 he obtained a post at Montauban similar to that which he had lost; but after four years he was removed from this also. He next became pastor at Charenton near Paris, where he engaged in controversies with Pierre Nicole (*Réponse aux deux traités intitulés la perpétuité de la foi*, 1665), Antoine Arnauld (*Réponse au livre de M. Arnauld*, 1670), and J.B. Bossuet (*Réponse au livre de M. l'évêque de Meaux*, 1683). On the revocation of the edict of Nantes he fled to Holland, and received a pension from William of Orange, who commissioned him to write an account of the persecuted Huguenots (*Plaintes des protestants cruellement opprimés dans le royaume de France*, 1686). The book was translated into English, but by order of James II, both the translation and the original were publicly burnt by the common hangman on the 5th of May 1686, as containing "expressions scandalous to His Majesty the king of France." Other works by him were *Réponse au livre de P. Nouet sur l'eucharistie* (1668); *Œuvres posthumes* (Amsterdam, 1688), containing the

Traité de la composition d'un sermon, translated into English in 1778.

See biographies by J.P. Nicéron and Abel Rotholf de la Devèze; E. Haag, *La France protestante*, vol. iv. (1884, new edition).

CLAUDE OF LORRAINE, or Claude Gelée (1600-1682), French landscape-painter, was born of very poor parents at the village of Chamagne in Lorraine. When it was discovered that he made no progress at school, he was apprenticed, it is commonly said, to a pastry-cook, but this is extremely dubious. At the age of twelve, being left an orphan, he went to live at Freiburg on the Rhine with an elder brother, Jean Gelée, a wood-carver of moderate merit, and under him he designed arabesques and foliage. He afterwards rambled to Rome to seek a livelihood; but from his clownishness and ignorance of the language, he failed to obtain permanent employment. He next went to Naples, to study landscape painting under Godfrey Waals, a painter of much repute. With him he remained two years; then he returned to Rome, and was domesticated until April 1625 with another landscape-painter, Augustin Tassi, who hired him to grind his colours and to do all the household drudgery.

His master, hoping to make Claude serviceable in some of his greatest works, advanced him in the rules of perspective and the elements of design. Under his tuition the mind of Claude began to expand, and he devoted himself to artistic study with great eagerness. He exerted his utmost industry to explore the true principles of painting by an incessant examination of nature; and for this purpose he made his studies in the open fields, where he very frequently remained from sunrise till sunset, watching the effect of the shifting light upon the landscape. He generally sketched whatever he thought beautiful or striking, marking every tinge of light with a similar colour; from these sketches he perfected his landscapes. Leaving Tassi, he made a tour in Italy, France and a part of Germany, including his native Lorraine, suffering numerous misadventures by the way. Karl Dervent, painter to the duke of Lorraine, kept him as assistant for a year; and he painted at Nancy the architectural subjects on the ceiling of the Carmelite church. He did not, however, relish this employment, and in 1627 returned to Rome. Here, painting two landscapes for Cardinal Bentivoglio, he earned the protection of Pope Urban VIII, and from about 1637 he rapidly rose into celebrity. Claude was acquainted not only with the facts, but also with the laws of nature; and the German painter Joachim von Sandrart relates that he used to explain, as they walked together through the fields, the causes of the different appearances of the same landscape at different hours of the day, from the reflections or refractions of light, or from the morning and evening dews or vapours, with all the precision of a natural philosopher. He elaborated his pictures with great care; and if any performance fell short of his ideal, he altered, erased and repainted it several times over.

His skies are aerial and full of lustre, and every object harmoniously illumined. His distances and colouring are delicate, and his tints have a sweetness and variety till then unexampled. He frequently gave an uncommon tenderness to his finished trees by glazing. His figures, however, are very indifferent; but he was so conscious of his deficiency in this respect, that he usually engaged other artists to paint them for him, among whom were Courtois and Filippo Lauri. Indeed, he was wont to say that he sold his landscapes and gave away his figures. In order to avoid a repetition of the same subject, and also to detect the very numerous spurious copies of his works, he made tinted outline drawings (in six paper books prepared for this purpose) of all those pictures which were transmitted to different countries; and on the back of each drawing he wrote the name of the purchaser. These books he named *Libri di verità*. This valuable work (now belonging to the duke of Devonshire) has been engraved and published, and has always been highly esteemed by students of the art of landscape. Claude, who had suffered much from gout, died in Rome at the age of eighty-two, on the 21st (or perhaps the 23rd) of November 1682, leaving his wealth, which was considerable, between his only surviving relatives, a nephew and an adopted daughter (? niece).

Many choice specimens of his genius may be seen in the National Gallery and in the Louvre; the landscapes in the Altieri and Colonna palaces in Rome are also of especial celebrity. A list has been printed showing no less than 92 examples in the various public galleries of Europe. He himself regarded a landscape which he painted in the Villa Madama, being a cento of various views with great abundance and variety of leafage, and a

composition of Esther and Ahasuerus, as his finest works; the former he refused to sell, although Clement IX. offered to cover its surface with gold pieces. He etched a series of twenty-eight landscapes, fine impressions of which are greatly prized. Full of amenity, and deeply sensitive to the graces of nature, Claude was long deemed the prince of landscape painters, and he must always be accounted a prime leader in that form of art, and in his day a great enlarger and refiner of its province.

Claude was a man of amiable and simple character, very kind to his pupils, a patient and unwearied worker; in his own sphere of study, his mind was stored (as we have seen) with observation and knowledge, but he continued an unlettered man till his death. Famous and highly patronized though he was in all his later years, he seems to have been very little known to his brother artists, with the single exception of Sandrart. This painter is the chief direct authority for the facts of Claude's life (*Academia Artis Pictoriae*, 1683); Baldinucci, who obtained information from some of Claude's immediate survivors, relates various incidents to a different effect (*Notizie dei professori del disegno*).

See also Victor Cousin, *Sur Claude Gelée* (1853); M.F. Sweetser, *Claude Lorrain* (1878); Lady Dilke, *Claude Lorrain* (1884).

(W. M. R.)

CLAUDET, ANTOINE FRANÇOIS JEAN (1797-1867), French photographer, was born at Lyons on the 12th of August 1797. Having acquired a share in L.J.M. Daguerre's invention, he was one of the first to practise daguerreotype portraiture in England, and he improved the sensitizing process by using chlorine in addition to iodine, thus gaining greater rapidity of action. In 1848 he produced the photographometer, an instrument designed to measure the intensity of photogenic rays; and in 1849 he brought out the focimeter, for securing a perfect focus in photographic portraiture. He was elected a fellow of the Royal Society in 1853, and in 1858 he produced the stereomonoscope, in reply to a challenge from Sir David Brewster. He died in London on the 27th of December 1867.

CLAUDIANUS, CLAUDIUS, Latin epic poet and panegyrist, flourished during the reign of Arcadius and Honorius. He was an Egyptian by birth, probably an Alexandrian, but it may be conjectured from his name and his mastery of Latin that he was of Roman extraction. His own authority has been assumed for the assertion that his first poetical compositions were in Greek, and that he had written nothing in Latin before A.D. 395; but this seems improbable, and the passage (*Carm. Min.* xli. 13) which is taken to prove it does not necessarily bear this meaning. In that year he appears to have come to Rome, and made his début as a Latin poet by a panegyric on the consulship of Olybrius and Probinus, the first brothers not belonging to the imperial family who had ever simultaneously filled the office of consul. This piece proved the precursor of the series of panegyrical poems which compose the bulk of his writings. In Birt's edition a complete chronological list of Claudian's poems is given, and also in J.B. Bury's edition of Gibbon (iii. app. i. p. 485), where the dates given differ slightly from those in the present article.

In 396 appeared the encomium on the third consulship of the emperor Honorius, and the epic on the downfall of Rufinus, the unworthy minister of Arcadius at Constantinople. This revolution was principally effected by the contrivance of Stilicho, the great general and minister of Honorius. Claudian's poem appears to have obtained his patronage, or rather perhaps that of his wife Serena, by whose interposition the poet was within a year or two enabled to contract a wealthy marriage in Africa (*Epist.* 2). Previously to this event he had produced (398) his panegyric on the fourth consulship of Honorius, his epithalamium on the marriage of Honorius to Stilicho's daughter, Maria, and his poem on the Gildonic war, celebrating the repression of a revolt in Africa. To these succeeded his piece on the consulship of Manlius Theodorus (399), the unfinished or mutilated invective against the Byzantine prime minister Eutropius in the same year, the epics on Stilicho's first consulship and on his repulse of Alaric (400 and 403), and the panegyric on the sixth consulship of

Honorius (404). From this time all trace of Claudian is lost, and he is generally supposed to have perished with his patron Stilicho in 408. It may be conjectured that he must have died in 404, as he could hardly otherwise have omitted to celebrate the greatest of Stilicho's achievements, the destruction of the barbarian host led by Radagaisus in the following year. On the other hand, he may have survived Stilicho, as in the dedication to the second book of his epic on the *Rape of Proserpine* (which Birt, however, assigns to 395-397), he speaks of his disuse of poetry in terms hardly reconcilable with the fertility which he displayed during his patron's lifetime. From the manner in which Augustine alludes to him in his *De civitate Dei*, it may be inferred that he was no longer living at the date of the composition of that work, between 415 and 428.

Besides Claudian's chief poems, his lively Fescennines on the emperor's marriage, his panegyric on Serena, and the *Gigantomachia*, a fragment of an unfinished Greek epic, may also be mentioned. Several poems expressing Christian sentiments are undoubtedly spurious. Claudian's paganism, however, neither prevented his celebrating Christian rulers and magistrates nor his enjoying the distinction of a court laureate. It is probable that he was nominally a Christian, like his patron Stilicho and Ausonius, although at heart attached to the old religion. The very decided statements of Orosius and Augustine as to his heathenism may be explained by the pagan style of Claudian's political poems. We have his own authority for his having been honoured by a bronze statue in the forum, and Pomponius Laetus discovered in the 15th century an inscription (*C.I.L.* vi. 1710) on the pedestal, which, formerly considered spurious, is now generally regarded as genuine.

The position of Claudian—the last of the Roman poets—is unique in literature. It is sufficiently remarkable that, after nearly three centuries of torpor, the Latin muse should have experienced any revival in the age of Honorius, nothing less than amazing that this revival should have been the work of a foreigner, most surprising of all that a just and enduring celebrity should have been gained by official panegyrics on the generally uninteresting transactions of an inglorious epoch. The first of these particulars bespeaks Claudian's taste, rising superior to the prevailing barbarism, the second his command of language, the third his rhetorical skill. As remarked by Gibbon, "he was endowed with the rare and precious talent of raising the meanest, of adorning the most barren, and of diversifying the most similar topics." This gift is especially displayed in his poem on the downfall of Rufinus, where the punishment of a public malefactor is exalted to the dignity of an epical subject by the magnificence of diction and the ostentation of supernatural machinery. The noble exordium, in which the fate of Rufinus is propounded as the vindication of divine justice, places the subject at once on a dignified level; and the council of the infernal powers has afforded a hint to Tasso, and through him to Milton. The inevitable monotony of the panegyrics on Honorius is relieved by just and brilliant expatiation on the duties of a sovereign. In his celebration of Stilicho's victories Claudian found a subject more worthy of his powers, and some passages, such as the description of the flight of Alaric, and of Stilicho's arrival at Rome, and the felicitous parallel between his triumphs and those of Marius, rank among the brightest ornaments of Latin poetry. Claudian's panegyric, however lavish and regardless of veracity, is in general far less offensive than usual in his age, a circumstance attributable partly to his more refined taste and partly to the genuine merit of his patron Stilicho. He is a valuable authority for the history of his times, and is rarely to be convicted of serious inaccuracy in his facts, whatever may be thought of the colouring he chooses to impart to them. He was animated by true patriotic feeling, in the shape of a reverence for Rome as the source and symbol of law, order and civilization. Outside the sphere of actual life he is less successful; his *Rape of Proserpine*, though the beauties of detail are as great as usual, betrays his deficiency in the creative power requisite for dealing with a purely ideal subject. This denotes the rhetorician rather than the poet, and in general it may be said that his especial gifts of vivid natural description, and of copious illustration, derived from extensive but not cumbrous erudition, are fully as appropriate to eloquence as to poetry. In the general cast of his mind and character of his writings, and especially, in his faculty for bestowing enduring interest upon occasional themes, we may fitly compare him with Dryden, remembering that while Dryden exulted in the energy of a vigorous and fast-developing language, Claudian was cramped by an artificial diction, confined to the literary class.

The editio princeps of Claudian was printed at Vicenza in 1482; the editions of J.M. Gesner (1759) and P. Burmann (1760) are still valuable for their notes. The first critical edition was that of L. Jeep (1876-1879), now superseded by the exhaustive work of T. Birt, with bibliography, in *Monumenta Germaniae Historica* (x., 1892; smaller ed. founded on this by J. Koch, Teubner series, 1893). There is a separate edition with commentary and verse translation of *Il Ratto di Proserpina*, by L. Garces de Diez (1889); the satire *In Eutropium* is

discussed by T. Birt in *Zwei politische Satiren des alten Rom* (1888). There is a complete English verse translation of little merit by A. Hawkins (1817). See the articles by Ramsay in Smith's *Classical Dictionary* and Vollmer in Pauly-Wissowa's *Realencyclopädie der classischen Altertumswissenschaft*, iii. 2 (1899); also J.H.E. Crees, *Claudian as an Historian* (1908), the "Cambridge Historical Essay" for 1906 (No. 17); T. Hodgkin, *Claudian, the last of the Roman Poets* (1875).

CLAUDIUS [Tiberius Claudius Drusus Nero Germanicus], Roman emperor A.D. 41-54, son of Drusus and Antonia, nephew of the emperor Tiberius, and grandson of Livia, the wife of Augustus, was born at Lugdunum (Lyons) on the 1st of August 10 B.C. During his boyhood he was treated with contempt, owing to his weak and timid character and his natural infirmities; the fact that he was regarded as little better than an imbecile saved him from death at the hands of Caligula. He chiefly devoted himself to literature, especially history, and until his accession he took no real part in public affairs, though Caligula honoured him with the dignity of consul. He was four times married: to Plautia Urgulanilla, whom he divorced because he suspected her of designs against his life; to Aelia Petina, also divorced; to the infamous Valeria Messallina (*q.v.*); and to his niece Agrippina.

In A.D. 41, on the murder of Caligula, Claudius was seized by the praetorians, and declared emperor. The senate, which had entertained the idea of restoring the republic, was obliged to acquiesce. One of Claudius's first acts was to proclaim an amnesty for all except Cassius Chaerea, the assassin of his predecessor, and one or two others. After the discovery of a conspiracy against his life in 42, he fell completely under the influence of Messallina and his favourite freedmen Pallas and Narcissus, who must be held responsible for acts of cruelty which have brought undeserved odium upon the emperor. There is no doubt that Claudius was a liberal-minded man of kindly nature, anxious for the welfare of his people. Humane regulations were made in regard to freedmen, slaves, widows and orphans; the police system was admirably organized; commerce was put on a sound footing; the provinces were governed in a spirit of liberality; the rights of citizens and admission to the senate were extended to communities outside Italy. The speech of Claudius delivered (in the year 48) in the senate in support of the petition of the Aeduans that their senators should have the *jus petendorum honorum* (claim of admission to the senate and magistracies) at Rome has been 465
partly preserved on the fragment of a bronze tablet found at Lyons in 1524; an imperial edict concerning the citizenship of the Anaunians (15th of March 46) was found in the southern Tirol in 1869 (*C.I.L.* v. 5050). Claudius was especially fond of building. He completed the great aqueduct (Aqua Claudia) begun by Caligula, drained the Lacus Fucinus, and built the harbour of Ostia. Nor were his military operations unsuccessful. Mauretania was made a Roman province; the conquest of Britain was begun; his distinguished general Domitius Corbulo (*q.v.*) gained considerable successes in Germany and the East. The intrigues of Narcissus caused Messallina to be put to death by order of Claudius, who took as his fourth wife his niece Agrippina, a woman as criminal as any of her predecessors. She prevailed upon him to set aside his own son Britannicus in favour of Nero, her son by a former marriage; and in 54, to make Nero's position secure, she put the emperor to death by poison. The apotheosis of Claudius was the subject of a lampoon by Seneca called *apokolokyntosis*, the "pumpkinification" of Claudius.

Claudius was a prolific writer, chiefly on history, but his works are lost. He wrote (in Greek) a history of Carthage and a history of Etruria; (in Latin) a history of Rome from the death of Caesar, an autobiography, and an essay in defence of Cicero against the attacks of Asinius Gallus. He also introduced three new letters into the Latin alphabet: Ⅎ for the consonantal V, ↀ for BS and PS, ⊦ for the intermediate sound between I and U.

Authorities.—Ancient: the *Annals* of Tacitus, Suetonius and Dio Cassius. Modern: H. Lehmann, *Claudius und seine Zeit*, with introductory chapter on the ancient authorities (1858); Lucien Double, *L'Empereur Claude* (1876); A. Ziegler, *Die politische Seite der Regierung des Kaisers Claudius* (1885); H.F. Pelham in *Quarterly Review* (April 1905), where certain administrative and political changes introduced by Claudius, for which he was attacked by his contemporaries, are discussed and defended; Merivale, *Hist. of the Romans under the Empire*, chs. 49, 50; H. Schiller, *Geschichte der römischen Kaiserzeit*, i., pt. 1; H. Furneaux's ed. of the *Annals* of Tacitus (introduction).

CLAUDIUS, the name of a famous Roman gens. The by-form *Clodius*, in its origin a mere orthographical variant, was regularly used for certain Claudii in late republican times, but otherwise the two forms were used indifferently. The gens contained a patrician and a plebeian family; the chief representatives of the former were the Pulchri, of the latter the Marcelli (see MARCELLUS). The following members of the gens deserve particular mention.

1. APPIUS SAMINUS INREGILLENSIS, or REGILLENSIS, CLAUDIUS, so called from Regillum (or Regilli) in Sabine territory, founder of the Claudian gens. His original name was Attus or Attius Clausus. About 504 B.C. he settled in Rome, where he and his followers formed a tribe. In 495 he was consul, and his cruel enforcement of the laws of debtor and creditor, in opposition to his milder colleague, P. Servilius Priscus, was one of the chief causes of the "secession" of the plebs to the Sacred Mount. On several occasions he displayed his hatred of the people, although it is stated that he subsequently played the part of mediator.

Suetonius, *Tiberius*, i.; Livy ii. 16-29; Dion. Halic. v. 40, vi. 23, 24.

2. CLAUDIUS, APPIUS, surnamed CRASSUS, a Roman patrician, consul in 471 and 451 B.C., and in the same and following year one of the decemvirs. At first he was conspicuous for his aristocratic pride and bitter hatred of the plebeians. Twice they refused to fight under him, and fled before their enemies. He retaliated by decimating the army. He was banished, but soon returned, and again became consul. In the same year (451) he was made one of the decemviri who had been appointed to draw up a code of written laws. When it was decided to elect decemvirs for another year, he who had formerly been looked upon as the champion of the aristocracy, suddenly came forward as the friend of the people, and was himself re-elected together with several plebeians. But no sooner was the new body in office, than it treated both patricians and plebeians with equal violence, and refused to resign at the end of the year. Matters were brought to a crisis by the affair of Virginia. Enamoured of the beautiful daughter of the plebeian centurion Virginius, Claudius attempted to seize her by an abuse of justice. One of his clients, Marcus Claudius, swore that she was the child of a slave belonging to him, and had been stolen by the childless wife of the centurion. Virginius was summoned from the army, and on the day of trial was present to expose the conspiracy. Nevertheless, judgment was given according to the evidence of Marcus, and Claudius commanded Virginia to be given up to him. In despair, her father seized a knife from a neighbouring stall and plunged it in her side. A general insurrection was the result; and the people seceded to the Sacred Mount. The decemvirs were finally compelled to resign and Appius Claudius died in prison, either by his own hand or by that of the executioner. For a discussion of the character of Appius Claudius, see Mommsen's appendix to vol. i. of his *History of Rome*. He holds that Claudius was never the leader of the patrician party, but a patrician demagogue who ended by becoming a tyrant to patricians as well as plebeians. The decemvirate, one of the triumphs of the plebs, could hardly have been abolished by that body, but would naturally have been overthrown by the patricians. The revolution which ruined Claudius was a return to the rule of the patricians represented by the Horatii and Valerii.

Livy iii. 32-58; Dion. Halic. x. 59, xi. 3.

3. CLAUDIUS, APPIUS, surnamed CAECUS, Roman patrician and author. In 312 B.C. he was elected censor without having passed through the office of consul. His censorship—which he retained for five years, in spite of the lex Aemilia which limited the tenure of that office to eighteen months—was remarkable for the actual or attempted achievement of several great constitutional changes. He filled vacancies in the senate with men of low birth, in some cases even the sons of freedmen (Diod. Sic. xx. 36; Livy ix. 30; Suetonius, *Claudius*, 24). His most important political innovation was the abolition of the old free birth, freehold basis of suffrage. He enrolled the freedmen and landless citizens both in the centuries and in the tribes, and, instead of assigning them to the four urban tribes, he distributed them through all the tribes and thus gave them practical control of the elections. In 304, however, Q. Fabius Rullianus limited the landless and poorer freedmen to the four urban tribes, thus annulling the effect of Claudius's arrangement. Appius Claudius transferred the charge of the public worship of Hercules in the Forum Boarium from the Potitian gens to a number of public slaves. He further invaded the exclusive rights of the patricians by directing his secretary Gnaeus Flavius (whom, though a freedman, he made a senator) to publish the *legis actiones* (methods of legal practice) and the list of *dies fasti* (or days on which legal business

could be transacted). Lastly, he gained enduring fame by the construction of a road and an aqueduct, which—a thing unheard of before—he called by his own name (Livy ix. 29; Frontinus, *De Aquis*, 115; Diod. Sic. xx. 36). In 307 he was elected consul for the first time. In 298 he was interrex; in 296, as consul, he led the army in Samnium, and although, with his colleague, he gained a victory over the Etruscans and Samnites, he does not seem to have specially distinguished himself as a soldier (Livy x. 19). Next year he was praetor, and he was once dictator. His character, like his namesake the decemvir's is not easy to define. In spite of his political reforms, he opposed the admission of the plebeians to the consulship and priestly offices; and, although these reforms might appear to be democratic in character and calculated to give preponderance to the lowest class of the people, his probable aim was to strengthen the power of the magistrates (and lessen that of the senate) by founding it on the popular will, which would find its expression in the urban inhabitants and could be most easily influenced by the magistrate. He was already blind and too feeble to walk, when Cineas, the minister of Pyrrhus, visited him, but so vigorously did he oppose every concession that all the eloquence of Cineas was in vain, and the Romans forgot past misfortunes in the inspiration of Claudius's patriotism (Livy x. 13; Justin xviii. 2; Plutarch, *Pyrrhus*, 19). The story of his blindness, however, may be merely a method of accounting for his cognomen. Tradition regarded it as the punishment of his transference of the cult of Hercules from the Potitii.

Appius Claudius Caecus is also remarkable as the first writer mentioned in Roman literature. His speech against peace with Pyrrhus was the first that was transmitted to writing, and thereby laid the foundation of prose composition. He was the author of a collection of aphorisms in verse mentioned by Cicero (of which a few fragments remain), and of a legal work entitled *De Usurpationibus*. It is very likely also that he was concerned in the drawing up of the *Legis Actiones* published by Flavius. The famous dictum "Every man is the architect of his own fortune" is attributed to him. He also interested himself in grammatical questions, distinguished the two sounds R and S in writing, and did away with the letter Z.

See Mommsen's appendix to his *Roman History* (vol. i.); treatises by W. Siebert (1863) and F.D. Gerlach (1872), dealing especially with the censorship of Claudius.

4. Claudius, Publius, surnamed Pulcher, son of (3). He was the first of the gens who bore this surname. In 249 he was consul and appointed to the command of the fleet in the first Punic War. Instead of continuing the siege of Lilybaeum, he decided to attack the Carthaginians in the harbour of Drepanum, and was completely defeated. The disaster was commonly attributed to Claudius's treatment of the sacred chickens, which refused to eat before the battle. "Let them drink then," said the consul, and ordered them to be thrown into the sea. Having been recalled and ordered to appoint a dictator, he gave another instance of his high-handedness by nominating a subordinate official, M. Claudius Glicia, but the nomination was at once overruled. Claudius himself was accused of high treason and heavily fined. He must have died before 246, in which year his sister Claudia was fined for publicly expressing a wish that her brother Publius could rise from the grave to lose a second fleet and thereby diminish the number of the people. It is supposed that he committed suicide.

Livy, *Epit.*, 19; Polybius i. 49; Cicero, *De Divinatione*, i. 16, ii. 8; Valerius Maximus i. 4, viii. I.

5. Claudius, Appius, surnamed Pulcher, Roman statesman and author. He served under his brother-in-law Lucullus in Asia (72 B.C.) and was commissioned to deliver the ultimatum to Tigranes, which gave him the choice of war with Rome or the surrender of Mithradates. In 57 he was praetor, in 56 propraetor in Sardinia, and in 54 consul with L. Domitius Ahenobarbus. Through the intervention of Pompey, he became reconciled to Cicero, who had been greatly offended because Claudius had indirectly opposed his return from exile. In this and certain other transactions Claudius seems to have acted from avaricious motives,—a result of his early poverty. In 53 he entered upon the governorship of Cilicia, in which capacity he seems to have been rapacious and tyrannical. During this period he carried on a correspondence with Cicero, whose letters to him form the third book of the *Epistolae ad Familiares*. Claudius resented the appointment of Cicero as his successor, avoided meeting him, and even issued orders after his arrival in the province. On his return to Rome Claudius was impeached by P. Cornelius Dolabella on the ground of having violated the sovereign rights of the people. This led him to make advances to Cicero, since it was necessary to obtain witnesses in his favour from his old province. He was acquitted, and a charge of bribery against him also proved unsuccessful. In 50 he was censor, and expelled many of the members of the senate, amongst them the historian Sallust on the ground of immorality. His connexion with Pompey brought upon him the enmity of Caesar, at whose march on Rome

he fled from Italy. Having been appointed by Pompey to the command in Greece, in obedience to an ambiguous oracle he crossed over to Euboea, where he died about 48, before the battle of Pharsalus. Claudius was of a distinctly religious turn of mind, as is shown by the interest he took in sacred buildings (the temple at Eleusis, the sanctuary of Amphiaraus at Oropus). He wrote a work on augury, the first book of which he dedicated to Cicero. He was also extremely superstitious, and believed in invocations of the dead. Cicero had a high opinion of his intellectual powers, and considered him a great orator (see Orelli, *Onomasticon Tullianum*).

A full account of all the Claudii will be found in Pauly-Wissowa's *Realencyclopädie der classischen Altertumswissenschaft*, iii. 2 (1899).

CLAUDIUS, MARCUS AURELIUS, surnamed GOTHICUS, Roman emperor A.D. 268-270, belonged to an obscure Illyrian family. On account of his military ability he was placed in command of an army by Decius; and Valerian appointed him general on the Illyrian frontier, and ruler of the provinces of the lower Danube. During the reign of Gallienus, he was called to Italy in order to crush Aureolus; and on the death of the emperor (268) he was chosen as his successor, in accordance, it was said, with his express desire. Shortly after his accession he routed the Alamanni on the Lacus Benacus (some doubt is thrown upon this); in 269 a great victory over the Goths at Naïssus in Moesia gained him the title of Gothicus. In the following year he died of the plague at Sirmium, in his fifty-sixth year. He enjoyed great popularity, and appears to have been a man of ability and character.

His life was written by Trebellius Pollio, one of the *Scriptores Historiae Augusiae*; see also Zosimus i. 40-43, the histories of Th. Bernhardt and H. Schiller, and special dissertations by A. Duncker on the life of Claudius (1868) and the defeat of the Alamanni (*Annalen des Vereins für nassauische Altertumskunde*, 1879); Homo, *De Claudio Gothico* (1900); Pauly-Wissowa, *Realencyclopädie*, ii. 2458 ff. (Henze).

CLAUDIUS, MATTHIAS (1740-1815), German poet, otherwise known by the *nom de plume* of ASMUS, was born on the 15th of August 1740 at Reinfeld, near Lübeck, and studied at Jena. He spent the greater part of his life in the little town of Wandsbeck, near Hamburg, where he earned his first literary reputation by editing from 1771 to 1775, a newspaper called the *Wandsbecker Bote* (*Wandsbeck Messenger*), in which he published a large number of prose essays and poems. They were written in pure and simple German, and appealed to the popular taste; in many there was a vein of extravagant humour or even burlesque, while others were full of quiet meditation and solemn sentiment. In his later days, perhaps through the influence of Klopstock, with whom he had formed an intimate acquaintance, Claudius became strongly pietistic, and the graver side of his nature showed itself. In 1814 he removed to Hamburg, to the house of his son-in-law, the publisher Friedrich Christoph Perthes, where he died on the 21st of January 1815.

Claudius's collected works were published under the title of *Asmus omnia sua secum portans, oder Sämtliche Werke des Wandsbecker Boten* (8 vols., 1775-1812; 13th edition, by C. Redich, 2 vols., 1902). His biography has been written by Wilhelm Herbst (4th ed., 1878). See also M. Schneidereit, *M. Claudius, seine Weltanschauung und Lebensweisheit* (1898).

CLAUSEL (more correctly CLAUZEL), **BERTRAND**, COUNT (1772-1842), marshal of France, was born at Mirepoix (Ariège) on the 12th of December 1772, and served in the first campaign of the French Revolutionary Wars as one of the volunteers of 1791. In June 1795, having distinguished himself repeatedly in the war on the northern frontier (1792-1793) and

the fighting in the eastern Pyrenees (1793-1794), Clausel was made a general of brigade. In this rank he served in Italy in 1798 and 1799, and in the disastrous campaign of the latter year he won great distinction at the battles of the Trebbia and of Novi. In 1802 he served in the expedition to S. Domingo. He became a general of division in December 1802, and after his return to France he was in almost continuous military employment there until in 1806 he was sent to the army of Naples. Soon after this Napoleon made him a grand officer of the Legion of Honour. In 1808-1809 he was with Marmont in Dalmatia, and at the close of 1809 he was appointed to a command in the army of Portugal under Masséna.

Clausel took part in the Peninsular campaigns of 1810 and 1811, including the Torres Vedras campaign, and under Marmont he did excellent service in re-establishing the discipline, efficiency and mobility of the army, which had suffered severely in the retreat from Torres Vedras. In the Salamanca campaign (1812) the result of Clausel's work was shown in the marching powers of the French, and at the battle of Salamanca, Clausel, who had succeeded to the command on Marmont being wounded, and had himself received a severe wound, drew off his army with the greatest skill, the retreat on Burgos being conducted by him in such a way that the pursuers failed to make the slightest impression, and had themselves in the end to retire from the siege of Burgos (1812). Early in 1813 Clausel was made commander of the Army of the North in Spain, but he was unable to avert the great disaster of Vittoria. Under the supreme command of Soult he served through the rest of the Peninsular War with unvarying distinction. On the first restoration in 1814 he submitted unwillingly to the Bourbons, and when Napoleon returned to France, he hastened to join him. During the Hundred Days he was in command of an army defending the Pyrenean frontier. Even after Waterloo he long refused to recognize the restored government, and he escaped to America, being condemned to death in absence. He took the first opportunity of returning to aid the Liberals in France (1820), sat in the chamber of deputies from 1827 to 1830, and after the revolution of 1830 was at once given a military command. At the head of the army of Algiers, Clausel made a successful campaign, but he was soon recalled by the home government, which desired to avoid complications in Algeria. At the same time he was made a marshal of France (February 1831). For some four years thereafter he urged his Algerian policy upon the chamber of deputies, and finally in 1835 was reappointed commander-in-chief. But after several victories, including the taking of Mascara in 1835, the marshal met with a severe repulse at Constantine in 1836. A change of government in France was primarily responsible for the failure, but public opinion attributed it to Clausel, who was recalled in February 1837. He thereupon retired from active service, and, after vigorously defending his conduct before the deputies, he ceased to take part in public affairs. He lived in complete retirement up to his death at Secourrieu (Garonne) on the 21st of April 1842.

CLAUSEN, GEORGE (1852-), English painter, was born in London, the son of a decorative artist. He attended the design classes at the South Kensington schools from 1867-1873 with great success. He then worked in the studio of Edwin Long, R.A., and subsequently in Paris under Bouguereau and Robert-Fleury. He became one of the foremost modern painters of landscape and of peasant life, influenced to a certain extent by the impressionists with whom he shared the view that light is the real subject of landscape art. His pictures excel in rendering the appearance of things under flecking outdoor sunlight, or in the shady shelter of a barn or stable. His "Girl at the Gate" was acquired for the nation by the Chantrey Trustees and is now at the National Gallery of British Art (Tate Gallery). He was elected associate of the Royal Academy in 1895, and as professor of painting gave a memorable series of lectures to the students of the schools,—published as *Six Lectures on Painting* (1904) and *Aims and Ideals in Art* (1906).

CLAUSEWITZ, KARL VON (1780-1831), Prussian general and military writer, was born at Burg, near Magdeburg, on the 1st of June 1780. His family, originally Polish, had settled in Germany at the end of the previous century. Entering the army in 1792, he first saw

service in the Rhine campaigns of 1793-1794, receiving his commission at the siege of Mainz. On his return to garrison duty he set to work so zealously to remedy the defects in his education caused by his father's poverty, that in 1801 he was admitted to the Berlin Academy for young officers, then directed by Scharnhorst. Scharnhorst, attracted by his pupil's industry and force of character, paid special attention to his training, and profoundly influenced the development of his mind. In 1803, on Scharnhorst's recommendation, Clausewitz was made "adjutant" (aide-de-camp) to Prince August, and he served in this capacity in the campaign of Jena (1806), being captured along with the prince by the French at Prenzlau. A prisoner in France and Switzerland for the next two years, he returned to Prussia in 1809; and for the next three years, as a departmental chief in the ministry of war, as a teacher in the military school, and as military instructor to the crown prince, he assisted Scharnhorst in the famous reorganization of the Prussian army. In 1810 he married the countess Marie von Brühl.

On the outbreak of the Russian war in 1812, Clausewitz, like many other Prussian officers, took service with his country's nominal enemy. This step he justified in a memorial, published for the first time in the *Leben Gneisenaus* by Pertz (Berlin, 1869). At first adjutant to General Phull, who had himself been a Prussian officer, he served later under Pahlen at Witepsk and Smolensk, and from the final Russian position at Kaluga he was sent to the army of Wittgenstein. It was Clausewitz who negotiated the convention of Tauroggen, which separated the cause of Yorck's Prussians from that of the French, and began the War of Liberation (see Yorck Von Wartenburg; also Blumenthal's *Die Konvention von Tauroggen*, Berlin, 1901). As a Russian officer he superintended the formation of the *Landwehr* of east Prussia (see Stein, Baron Vom), and in the campaign of 1813 served as chief of staff to Count Wallmoden. He conducted the fight at Göhrde, and after the armistice, with Gneisenau's permission, published an account of the campaign (*Der Feldzug von 1813 bis zum Waffenstillstand*, Leipzig, 1813). This work was long attributed to Gneisenau himself. After the peace of 1814 Clausewitz re-entered the Prussian service, and in the Waterloo campaign was present at Ligny and Wavre as General Thielmann's chief of staff. This post he retained till 1818, when he was promoted major-general and appointed director of the *Allgemeine Kriegsschule*. Here he remained till in 1830 he was made chief of the 3rd Artillery Inspection at Breslau. Next year he became chief of staff to Field-marshal Gneisenau, who commanded an army of observation on the Polish frontier. After the dissolution of this army Clausewitz returned to his artillery duties; but on the 18th of November 1831 he died at Breslau of cholera, which had proved fatal to his chief also, and a little previously, to his old Russian commander Diebitsch on the other side of the frontier.

His collected works were edited and published by his widow, who was aided by some officers, personal friends of the general, in her task. Of the ten volumes of *Hinterlassene Werke über Krieg und Kriegführung* (Berlin, 1832-1837, later edition called *Clausewitz's Gesammte Werke*, Berlin, 1874) the first three contain Clausewitz's masterpiece, *Vom Kriege*, an exposition of the philosophy of war which is absolutely unrivalled. He produced no "system" of strategy, and his critics styled his work "negative" and asked "*Qu'a-t-il fondé?*" What he had "founded" was that modern strategy which, by its hold on the Prussian mind, carried the Prussian arms to victory in 1866 and 1870 over the "systematic" strategists Krismánic and Bazaine, and his philosophy of war became, not only in Germany but in many other countries, the essential basis of all serious study of the art of war. The English and French translations (Graham, *On War*, London, 1873; Neuens, *La Guerre*, Paris, 1849-1852; or Vatry, *Théorie de la grande guerre*, Paris, 1899), with the German original, place the work at the disposal of students of most nationalities. The remaining volumes deal with military history: vol. 4, the Italian campaign of 1796-97; vols. 5 and 6, the campaign of 1799 in Switzerland and Italy; vol. 7, the wars of 1812, 1813 to the armistice, and 1814; vol. 8, the Waterloo Campaign; vols. 9 and 10, papers on the campaigns of Gustavus Adolphus, Turenne, Luxemburg, Münnich, John Sobieski, Frederick the Great, Ferdinand of Brunswick, &c. He also wrote *Über das Leben und den Charakter von Scharnhorst* (printed in Ranke's *Historisch-politischer Zeitschrift*, 1832). A manuscript on the catastrophe of 1806 long remained unpublished. It was used by v. Höpfner in his history of that war, and eventually published by the Great General Staff in 1888 (French translation, 1903). Letters from Clausewitz to his wife were published in *Zeitschrift für preussische Landeskunde* (1876). His name is borne by the 28th Field Artillery regiment of the German army.

See Schwartz, *Leben des General von Clausewitz und der Frau Marie von Clausewitz* (2 vols., Berlin, 1877); von Meerheimb, *Karl von Clausewitz* (Berlin, 1875), also Memoir in *Allgemeine deutsche Biographie*; Bernhardi, *Leben des Generals von Clausewitz* (10th Supplement, *Militär. Wochenblatt*, 1878).

CLAUSIUS, RUDOLF JULIUS EMMANUEL (1822-1888), German physicist, was born on the 2nd of January 1822 at Köslin, in Pomerania. After attending the Gymnasium at Stettin, he studied at Berlin University from 1840 to 1844. In 1848 he took his degree at Halle, and in 1850 was appointed professor of physics in the royal artillery and engineering school at Berlin. Late in the same year he delivered his inaugural lecture as *Privatdocent* in the university. In 1855 he became an ordinary professor at Zürich Polytechnic, accepting at the same time a professorship in the university of Zürich In 1867 he moved to Würzburg as professor of physics, and two years later was appointed to the same chair at Bonn, where he died on the 24th of August 1888. During the Franco-German War he was at the head of an ambulance corps composed of Bonn students, and received the Iron Cross for the services he rendered at Vionville and Gravelotte. The work of Clausius, who was a mathematical rather than an experimental physicist, was concerned with many of the most abstruse problems of molecular physics. By his restatement of Carnot's principle he put the theory of heat on a truer and sounder basis, and he deserves the credit of having made thermodynamics a science; he enunciated the second law, in a paper contributed to the Berlin Academy in 1850, in the well-known form, "Heat cannot of itself pass from a colder to a hotter body." His results he applied to an exhaustive development of the theory of the steam-engine, laying stress in particular on the conception of entropy. The kinetic theory of gases owes much to his labours, Clerk Maxwell calling him its principal founder. It was he who raised it, on the basis of the dynamical theory of heat, to the level of a theory, and he carried out many numerical determinations in connextion with it, *e.g.* of the mean free path of a molecule. To Clausius also was due an important advance in the theory of electrolysis, and he put forward the idea that molecules in electrolytes are continually interchanging atoms, the electric force not causing, but merely directing, the interchange. This view found little favour until 1887, when it was taken up by S.A. Arrhenius, who made it the basis of the theory of electrolytic dissociation. In addition to many scientific papers he wrote *Die Potentialfunktion und das Potential*, 1864, and *Abhandlungen über die mechanische Wärmetheorie*, 1864-1867.

CLAUSTHAL, or KLAUSTHAL, a town of Germany, in the Prussian Harz, lying on a bleak plateau, 1860 ft. above sea-level, 50. m. by rail W.S.W. of Halberstadt. Pop. (1905) 8565. Clausthal is the chief mining town of the Upper Harz Mountains, and practically forms one town with Zellerfeld, which is separated from it by a small stream, the Zellbach. The streets are broad, opportunity for improvement having been given by fires in 1844 and 1854; the houses are mostly of wood. There are an Evangelical and a Roman Catholic church, and a gymnasium. Clausthal has a famous mining college with a mineralogical museum, and a disused mint. Its chief mines are silver and lead, but it also smelts copper and a little gold. Four or five sanatoria are in the neighbourhood. The museum of the Upper Harz is at Zellerfeld.

Clausthal was founded about the middle of the 12th century in consequence probably of the erection of a Benedictine monastery (closed in 1431), remains of which still exist in Zellerfeld. At the beginning of the 16th century the dukes of Brunswick made a new settlement here, and under their directions the mining, which had been begun by the monks, was carried on more energetically. The first church was built at Clausthal in 1570. In 1864 the control of the mines passed into the hands of the state.

CLAVECIN, the French for clavisymbal or harpsichord (Ger. *Clavicymbel* or *Dockenklavier*), an abbreviation of the Flemish *clavisinbal* and Ital. *clavicimbalo*, a keyboard musical instrument in which the strings were plucked by means of a plectrum consisting of a

quill mounted upon a jack.

See PIANOFORTE; HARPSICHORD.

CLAVICEMBALO, or GRAVICEMBALO (from Lat. *clavis*, key, and *cymbalum*, cymbal; Eng. clavicymbal, clavisymbal; Flemish, *clavisinbal*; Span. *clavisinbanos*), a keyboard musical instrument with strings plucked by means of small quill or leather plectra. "Cymbal" (Gr. κύμβαλον, from κύμβη, a hollow vessel) was the old European term for the dulcimer, and hence its place in the formation of the word.

See PIANOFORTE; SPINET; VIRGINAL.

CLAVICHORD, or CLARICHORD (Fr. *manicorde*; Ger. *Clavichord*; Ital. *manicordo*; Span. *manicordio*[1]), a medieval stringed keyboard instrument, a forerunner of the pianoforte (*q.v.*), its strings being set in vibration by a blow from a brass tangent instead of a hammer as in the modern instrument. The clavichord, derived from the dulcimer by the addition of a keyboard, consisted of a rectangular case, with or without legs, often very elaborately ornamented with paintings and gilding. The earliest instruments were small and portable, being placed upon a table or stand. The strings, of finely drawn brass, steel or iron wire, were stretched almost parallel with the keyboard over the narrow belly or soundboard resting on the soundboard bridges, often three in number, and wound as in the piano round wrest or tuning pins set in a block at the right-hand side of the soundboard and attached at the other end to hitch pins. The bridges served to direct the course of the strings and to conduct the sound waves to the soundboard. The scaling, or division of the strings determining their vibrating length, was effected by the position of the tangents. These tangents, small wedge-shaped blades of brass, beaten out at the top, were inserted in the end of the arm of the keys. As the latter were depressed by the fingers the tangents rose to strike the strings and stop them at the proper length from the belly-bridge. Thus the string was set in vibration between the point of impact and the belly-bridge just as long as the key was pressed down. The key being released, the vibrations were instantly stopped by a list of cloth acting as damper and interwoven among the strings behind the line of the tangents.

There were two kinds of clavichords—the fretted or *gebunden* and the fret-free or *bund-frei*. The term "fretted" was applied to those clavichords which, instead of being provided with a string or set of strings in unison for each note, had one set of strings acting for three or four notes, the arms of the keys being twisted in order to bring the contact of the tangent into the acoustically correct position under the string. The "fret-free" were chromatically-scaled instruments. The first *bund-frei* clavichord is attributed to Daniel Faber of Crailsheim in Saxony about 1720. This important change in construction increased the size of the instrument, each pair of unison strings requiring a key and tangent of its own, and led to the introduction of the system of tuning by equal temperament upheld by J.S. Bach. Clavichords were made with pedals.[2]

The tone of the clavichord, extremely sweet and delicate, was characterized by a tremulous hesitancy, which formed its great charm while rendering it suitable only for the private music room or study. Between 1883 and 1893 renewed attention was drawn to the instrument by A.J. Hipkins's lectures and recitals on keyboard instruments in London, Oxford and Cambridge; and Arnold Dolmetsch reintroduced the art of making clavichords in 1894.

(K. S.)

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1 The words *clavicorde*, *clavicordo* and *clavicordio*, respectively French, Italian and Spanish, were applied to a different type of instrument, the spinet (*q.v.*).

2 See Sebastian Virdung, *Musica getutscht und auszgezogen* (Basel, 1511) (facsimile reprint Berlin, 1882, edited by R. Eitner); J. Verschuere Reynvaan, *Musijkaal Kunst-Woordenboek* (Amsterdam, 1795) (a very scarce book, of which the British Museum does not possess a copy);

Jacob Adlung, *Musica Mechanica Organoedi* (Berlin, 1768), vol. ii. pp. 158-9; A.J. Hipkins, *The History of the Pianoforte* (London, 1896), pp. 61 and 62.

CLAVICYTHERIUM, a name usually applied to an upright spinet (*q.v.*), the soundboard and strings of which were vertical instead of horizontal, being thus perpendicular to the keyboard; but it would seem that the clavicytherium proper is distinct from the upright spinet in that its strings are placed horizontally. In the early clavicytherium there was, as in the spinet, only one string (of gut) to each key, set in vibration by means of a small quill or leather plectrum mounted on a jack which acted as in the spinet and harpsichord (*q.v.*). The clavicytherium or keyed cythera or cetra, names which in the 14th and 15th centuries had been applied somewhat indiscriminately to instruments having strings stretched over a soundboard and plucked by fingers or plectrum, was probably of Italian[1] or possibly of south German origin. Sebastian Virdung,[2] writing early in the 16th century, describes the clavicytherium as a new invention, having gut strings, and gives an illustration of it. (See Pianoforte.) A certain amount of uncertainty exists as to its exact construction, due to the extreme rarity of unrestored specimens extant, and to the almost total absence of trustworthy practical information.

In a unique specimen with two keyboards dating from the 16th or 17th century, which is in the collection of Baron Alexandre Kraus,[3] what appear to be vibrating strings stretched over a soundboard perpendicular to the keyboard are in reality the wires forming part of the mechanism of the action. The arrangement of this mechanism is the distinctive feature of the clavicytherium, for the wires, unlike the strings of the upright spinet, increase in length from *left to right*, so that the upright harp-shaped back has its higher side over the treble of the keyboard instead of over the bass. The vibrating strings of the clavicytherium in the Kraus Museum are stretched horizontally over two kinds of psalteries fixed one over the other. The first, serving for the lower register, is of the well-known trapezoid shape and lies over the keyboards; it has 30 wire strings in pairs of unisons corresponding to the 15 lowest keys. The second psaltery resembles the kanoun of the Arabs, and has 36 strings in courses of 3 unisons corresponding to the next 12 keys, and 88 very thin strings in courses of 4, completing the 49 keys; the compass thus has a range of four octaves from C to C. The quills of the jacks belonging to the two keyboards are of different length and thickness. The jacks, which work as in the spinet, are attached to the perpendicular wires, disposed in two parallel rows, one for each keyboard.

There is a very fine specimen of the so-called clavicytherium (upright spinet) in the Donaldson museum of the Royal College of Music, London, acquired from the Correr collection at Venice in 1885.[4] The instrument is undated, but A.J. Hipkins[5] placed it early in the 16th or even at the end of the 15th century. There is German writing on the inside of the back, referring to some agreement at Ulm. The case is of pine-wood, and the natural keys of box-wood. The jacks have the early steel springs, and in 1885 traces were found in the instrument of original brass plectra, all of which point to a very early date.

A learned Italian, Nicolo Vicentino,[6] living in the 16th century, describes an *archicembalo* of his own invention, at which the performer had to stand, having four rows of keys designed to obtain a complete mesotonic pure third tuning. This was an attempt to reintroduce the ancient Greek musical system. This instrument was probably an upright harpsichord or clavicembalo.

For the history of the clavicytherium considered as a forerunner of the pianoforte see Pianoforte.

(K. S.)

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1 Mersenne, *Harmonie universelle* (Paris, 1636), p. 113, calls the clavicytherium “une nouvelle forme d’épinette dont on use en Italie,” and states that the action of the jacks and levers is parallel from back to front.

2 *Musica getutscht und auszgezogen* (Basel, 1511).

3 See “Une Pièce unique du Musée Kraus de Florence” in *Annales de l’alliance scientifique universelle* (Paris, 1907).

4 See illustration by William Gibb in A.J. Hipkins’s *Musical Instruments, Historic, Rare and*

Unique (1888).

5 *History of the Pianoforte*, Novello's Music Primers, No. 52 (1896), p. 75.

6 *L'Antica Musica ridotta moderna prattica* (Rome, 1555).

CLAVIE, BURNING THE, an ancient Scottish custom still observed at Burghead, a fishing village on the Moray Firth, near Forres. The "clavie" is a bonfire of casks split in two, lighted on the 12th of January, corresponding to the New Year of the old calendar. One of these casks is joined together again by a huge nail (Lat. *clavus*; hence the term). It is then filled with tar, lighted and carried flaming round the village and finally up to a headland upon which stands the ruins of a Roman altar, locally called "the Douro." It here forms the nucleus of the bonfire, which is built up of split casks. When the burning tar-barrel falls in pieces, the people scramble to get a lighted piece with which to kindle the New Year's fire on their cottage hearth. The charcoal of the clavie is collected and is put in pieces up the cottage chimneys, to keep spirits and witches from coming down.

CLAVIÈRE, ÉTIENNE (1735-1793), French financier and politician, was a native of Geneva. As one of the democratic leaders there he was obliged in 1782 to take refuge in England, upon the armed interference of France, Sardinia and Berne in favour of the aristocratic party. There he met other Swiss, among them Marat and Étienne Dumont, but their schemes for a new Geneva in Ireland—which the government favoured—were given up when Necker came to power in France, and Clavière, with most of his comrades, went to Paris. There in 1789 he and Dumont allied themselves with Mirabeau, secretly collaborating for him on the *Courrier de Provence* and also in preparing the speeches which Mirabeau delivered as his own. It was mainly by his use of Clavière that Mirabeau sustained his reputation as a financier. But Clavière also published some pamphlets under his own name, and through these and his friendship with J.P. Brissot, whom he had met in London, he became minister of finance in the Girondist ministry, from March to the 12th of June 1792. After the 10th of August he was again given charge of the finances in the provisional executive council, though with but indifferent success. He shared in the fall of the Girondists, was arrested on the 2nd of June 1793, but somehow was left in prison until the 8th of December, when, on receiving notice that he was to appear on the next day before the Revolutionary Tribunal, he committed suicide.

CLAVIJO, RUY GONZALEZ DE (d. 1412), Spanish traveller of the 15th century, whose narrative is the first important one of its kind contributed to Spanish literature, was a native of Madrid, and belonged to a family of some antiquity and position. On the return of the ambassadors Pelayo de Sotomayor and Hernan Sanchez de Palazuelos from the court of Timur, Henry III. of Castille determined to send another embassy to the new lord of Western Asia, and for this purpose he selected Clavijo, Gomez de Salazar (who died on the outward journey), and a master of theology named Fray Alonzo Paez de Santa Maria. They sailed from St Mary Port near Cadiz on the 22nd of May 1403, touched at the Balearic Isles, Gaeta and Rhodes, spent some time at Constantinople, sailed along the southern coast of the Black Sea to Trebizond, and proceeded inland by Erzerum, the Ararat region, Tabriz, Sultanieh, Teheran and Meshed, to Samarkand, where they were well received by the conqueror. Their return was at last accomplished, in part after Timur's death, and with countless difficulties and dangers, and they landed in Spain on the 1st of March 1406. Clavijo proceeded at once to the court, at that time in Alcala de Henares, and served as chamberlain till the king's death (in the spring of 1406-1407); he then returned to Madrid, and lived there in opulence

till his own death on the 2nd of April 1412. He was buried in the chapel of the monastery of St Francis, which he had rebuilt at great expense.

There are two leading MSS. of Clavijo's narrative—(a) London, British Museum, Additional MSS., 16,613 fols. I, n.-125, v.; (b) Madrid, National Library, 9218; and two old editions of the original Spanish—(1) by Gonçalo Argote de Molina (Seville, 1582), (2) by Antonio de Sancha (Madrid, 1782), both having the misleading titles, apparently invented by Molina, of *Historia del gran Tamorlan*, and *Vida y hazañas del gran Tamorlan* (the latter at the beginning of the text itself); a better sub-title is added, viz. *Itinerario y enarracion del viage y relacion de la embaxada que Ruy Gonzalez de Clavijo le hizo*. Both editors, and especially Sancha, supply general explanatory dissertations. The Spanish text has also been published, with a Russian translation, in vol. xxviii. (pp. 1-455) of the *Publications of the Russian Imperial Academy of Sciences* (*Section of Russian Language*, &c.), edited by I.I. Sreznevski (1881). An English version, by Sir Clements Markham, was issued by the Hakluyt Society in 1859 (*Narrative of the Embassy of R ... G ... de Clavijo to the Court of Timour*). The identification of a great number of the places mentioned by Clavijo is a matter of considerable difficulty, and has given rise to some discussion (see Khanikof's list in *Geographical Magazine* (1874), and Sreznevski's *Annotated Index* in the Russian edition of 1881). A short account ot Clavijo's life is given by Alvarez y Baena in the *Hijos de Madrid*, vol. ix. See also C.R. Beazley, *Dawn of Modern Geography*, iii. 332-56.

CLAVIJO Y FAJARDO, JOSÉ (1730-1806), Spanish publicist, was born at Lanzarote (Canary Islands) in 1730. He settled in Madrid, became editor of *El Pensador*, and by his campaign against the public performance of *autos sacramentales* secured their prohibition in 1765. In 1770 he was appointed director of the royal theatres, a post which he resigned in order to take up the editorship of the *Mercurio histórico y politico de Madrid*: at the time of his death in 1806 he was secretary to the Cabinet of Natural History. He had in abundance the courage, perseverance and gift of pungent expression which form the equipment of the aggressive journalist, but his work would long since have been forgotten were it not that it put an end to a peculiarly national form of dramatic exposition, and that his love affair with one of Beaumarchais' sisters suggested the theme of Goethe's first publication, *Clavigo*.

CLAY, CASSIUS MARCELLUS (1810-1903), American politician, was born in Madison county, Kentucky, on the 19th of October 1810. He was the son of Green Clay (1757-1826), a Kentucky soldier of the war of 1812 and a relative of Henry Clay. He was educated at Centre College, Danville, Kentucky, and at Yale, where he graduated in 1832. Influenced to some extent by William Lloyd Garrison, he became an advocate of the abolition of slavery, and on his return to his native state, at the risk of social and political ostracism, he gave utterance to his belief. He studied law, but instead of practising devoted himself to a political career. In 1835, 1837 and 1840 he was elected as a Whig to the Kentucky legislature, where he advocated a system of gradual emancipation, and secured the establishment of a public school system, and a much-needed reform in the jury system. In 1841 he was defeated on account of his abolition views. In 1844 he delivered campaign speeches for Henry Clay throughout the North. In 1845 he established, at Lexington, Kentucky, an anti-slavery publication known as *The True American*, but in the same year his office and press were wrecked by a mob, and he removed the publication office to Cincinnati, Ohio. During this and the earlier period of his career his zeal and hot temper involved him in numerous personal encounters and several duels, in all of which he bore himself with a reckless bravery. In the Mexican War he served as a captain of a Kentucky company of militia, and was taken prisoner, while reconnoitring, during General Scott's advance on the City of Mexico. He left the Whig party in 1850, and as an anti-slavery candidate for governor of Kentucky polled 5000 votes. In 1856 he joined the Republican party, and wielded considerable influence as a Southern representative in its councils. In 1860 he was a leading candidate for the vice-presidential nomination. In 1861 he was sent by President Lincoln as minister to Russia; in 1862 he returned to America to accept a commission as major-general

of volunteers, but in March 1863 was reappointed to his former post at St Petersburg, where he remained until 1869. Disapproving of the Republican policy of reconstruction, he left the party, and in 1872 was one of the organizers of the Liberal-Republican revolt, and was largely instrumental in securing the nomination of Horace Greeley for the presidency. In the political campaigns of 1876 and 1880 he supported the Democratic candidate, but rejoined the Republican party in the campaign of 1884. He died at Whitehall, Kentucky, on the 22nd of July 1903.

See his autobiography, *The Life, Memoirs, Writings, and Speeches of Cassius Marcellus Clay* (Cincinnati, 1896); and *The Writings of Cassius Marcellus Clay* (edited with a “Memoir” by Horace Greeley. New York, 1848).

CLAY, CHARLES (1801-1893), English surgeon, was born at Bredbury, near Stockport, on the 27th of December 1801. He began his medical education as a pupil of Kinder Wood in Manchester (where he used to attend John Dalton’s lectures on chemistry), and in 1821 went to Edinburgh to continue his studies there. Qualifying in 1823, he began a general practice in Ashton-under-Lyne, but in 1839 removed to Manchester to practise as an operative and consulting surgeon. It was there that, in 1842, he first performed the operation of ovariotomy with which his name is associated. On this occasion it was perfectly successful, and when in 1865 he published an analysis of 111 cases he was able to show a mortality only slightly above 30%. Although his merits in this matter have sometimes been denied, his claim to the title “Father of Ovariotomy” is now generally conceded, and it is admittted that he deserves the credit not only of having shown how that operation could be made a success, but also of having played an important part in the advance of abdominal surgery for which the 19th century was conspicuous. In spite of the claims of a heavy practice, Clay found time for the pursuit of geology and archaeology. Among the books of which he was the author were a volume of *Geological Sketches of Manchester* (1839) and a *History of the Currency of the Isle of Man* (1849), and his collections included over a thousand editions of the Old and New Testaments and a remarkably complete series of the silver and copper coins of the United States. He died at Poulton-le-Fylde, near Preston, on the 19th of September 1893.

CLAY, FREDERIC (1838-1889), English musical composer, the son of James Clay, M.P., who was celebrated as a player of whist and a writer on that subject, was born in Paris on the 3rd of August 1838. He studied music under W.B. Molique in Paris and Moritz Hauptmann at Leipzig. With the exception of a few songs and two cantatas, *The Knights of the Cross* (1866) and *Lalla Rookh* (1877),—the latter of which contained his well-known song “I’ll sing thee songs of Araby,”—his compositions were all written for the stage. Clay’s first public appearance was made with an opera entitled *Court and Cottage*, the libretto of which was written by Tom Taylor. This was produced at Covent Garden in 1862, and was followed by *Constance* (1865), *Ages Ago* (1869), and *Princess Toto* (1875), to name only three of many works which have long since been forgotten. The last two, which were written to libretti by W.S. Gilbert, are among Clay’s most tuneful and most attractive works. He wrote part of the music for *Babil and Bijou* (1872) and *The Black Crook* (1873), both of which were produced at the Alhambra. He also furnished incidental music for a revival of *Twelfth Night* and for the production of James Albery’s *Oriana*. His last works, *The Merry Duchess* (1883) and *The Golden Ring* (1883), the latter written for the reopening of the Alhambra, which had been burned to the ground the year before, showed an advance upon his previous work, and rendered all the more regrettable the stroke of paralysis which crippled his physical and mental energies during the last few years of his life. He died at Great Marlow on the 24th of November 1889.

CLAY, HENRY (1777-1852), American statesman and orator, was born in Hanover county, Virginia, on the 12th of April 1777, and died in Washington on the 29th of June 1852. Few public characters in the United States have been the subject of more heated controversy. His enemies denounced him as a pretender, a selfish intriguer, and an abandoned profligate; his supporters placed him among the sages and sometimes even among the saints. He was an arranger of measures and leader of political forces, not an originator of ideas and systems. His public life covered nearly half a century, and his name and fame rest entirely upon his own merits. He achieved his success despite serious obstacles. He was tall, rawboned and awkward; his early instruction was scant; but he “read books,” talked well, and so, after his admission to the bar at Richmond, Virginia, in 1797, and his removal next year to Lexington, Kentucky, he quickly acquired a reputation and a lucrative income from his law practice.

Thereafter, until the end of life, and in a field where he met, as either friend or foe, John Quincy Adams, Gallatin, Madison, Monroe, Webster, Jackson, Calhoun, Randolph and Benton, his political activity was wellnigh ceaseless. At the age of twenty-two (1799), he was elected to a constitutional convention in Kentucky; at twenty-six, to the Kentucky legislature; at twenty-nine, while yet under the age limit of the United States constitution, he was appointed to an unexpired term (1806-1807) in the United States Senate, where, contrary to custom, he at once plunged into business, as though he had been there all his life. He again served in the Kentucky legislature (1808-1809), was chosen speaker of its lower house, and achieved distinction by preventing an intense and widespread anti-British feeling from excluding the common law from the Kentucky code. A year later he was elected to another unexpired term in the United States Senate, serving in 1810-1811. At thirty-four (1811) he was elected to the United States House of Representatives and chosen speaker on the first day of the session. One of the chief sources of his popularity was his activity in Congress in promoting the war with Great Britain in 1812, while as one of the peace commissioners he reluctantly signed the treaty of Ghent on the 24th of December 1814. During the fourteen years following his first election, he was re-elected five times to the House and to the speakership; retiring for one term (1821-1823) to resume his law practice and retrieve his fortunes. He thus served as speaker in 1811-1814, in 1815-1820 and in 1823-1825. Once he was unanimously elected by his constituents, and once nearly defeated for having at the previous session voted to increase congressional salaries. He was a warm friend of the Spanish-American revolutionists (1818) and of the Greek insurgents (1824). From 1825 to 1829 he served as secretary of state in President John Quincy Adams’s cabinet, and in 1831 he was elected to the United States Senate, where he served until 1842, and again from 1849 until his death.

From the beginning of his career he was in favour of internal improvements as a means of opening up the fertile but inaccessible West, and was opposed to the abuse of official patronage known as “the spoils system.” The most important of the national questions with which Clay was associated, however, were the various phases of slavery politics and protection to home industries. The most prominent characteristics of his public life were his predisposition to “compromises” and “pacifications” which generally failed of their object, and his passionate patriotic devotion to the Union.

His career as a Protectionist.

His earliest championship of protection was a resolution introduced by him in the Kentucky legislature (1808) which favoured the wearing by its members of home-made clothes; and one in the United States Senate (April 1810), on behalf of home-grown and home-made supplies for the United States navy, but only to the point of making the nation independent of foreign supply. In 1816 he advocated the Dallas tariff, in which the duties ranged up to 35% on articles of home production, the supply of which could satisfy the home demand; the avowed purpose being to build up certain industries for safety in time of war. In 1824 he advocated high duties to relieve the prevailing distress, which he pictured in a brilliant and effective speech. Although the distress was caused by the reactionary effect of a disordered currency and the inflated prices of the war of 1812, he ascribed it to the country’s dependence on foreign supply and foreign markets. Great Britain, he said, was a shining example of the wisdom of a high tariff. No nation ever flourished without one. He closed his principal speech on the subject in the House of Representatives with a glowing appeal in behalf of what he called “The American System.” In spite of the opposition of Webster and other prominent statesmen, Clay succeeded in enacting a tariff which the people of the Southern states denounced as a “tariff of abominations.” As it overswelled the revenue, in 1832 he vigorously favoured reducing the tariff rates on all articles not competing with American products. His speech in behalf of the measure was for years a protection text-book; but the measure itself reduced the revenue so little and provoked such serious threats

of nullification and secession in South Carolina, that, to prevent bloodshed and to forestall a free trade measure from the next Congress, Clay brought forward in 1833 a compromise gradually reducing the tariff rates to an average of 20%. To the Protectionists this was “like a crash of thunder in winter”; but it was received with such favour by the country generally, that its author was hailed as “The Great Pacificator,” as he had been thirteen years before at the time of the Missouri Compromise (see below). As, however, the discontent with the tariff in the South was only a symptom of the real trouble there—the sensitiveness of the slave-power,—Clay subsequently confessed his serious doubts of the policy of his interference.

He was only twenty-two, when, as an opponent of slavery, he vainly urged an emancipation clause for the new constitution of Kentucky, and he never ceased regretting that its failure put his state, in improvements and progress, behind its free neighbours. In 1820 he congratulated the new South American republics on having abolished slavery, but the same year the threats of the Southern states to destroy the Union led him to advocate the “Missouri Compromise,” which, while keeping slavery out of all the rest of the territory acquired by the “Louisiana Purchase” north of Missouri’s southern boundary line, permitted it in that state. Then, greeted with the title of “The Great Pacificator” as a reward for his success, he retired temporarily to private life, with a larger stock of popularity than he had ever had before. Although at various times he had helped to strengthen the law for the recovery of fugitive slaves, declining as secretary of state to aid Great Britain in the further suppression of the slave trade, and demanding the return of fugitives from Canada, yet he heartily supported the colonizing of the slaves in Africa, because slavery was the “deepest stain upon the character of the country,” opposition to which could not be repressed except by “blowing out the moral lights around,” and “eradicating from the human soul the light of reason and the law of liberty.” When the slave power became more aggressive, in and after the year 1831, Clay defended the right of petition for the abolition of slavery in the District of Columbia, and opposed Calhoun’s bill forbidding the use of the mails to “abolition” newspapers and documents. He was luke-warm toward recognizing the independence of Texas, lest it should aid the increase of slave territory, and generally favoured the freedom of speech and press as regards the question of slavery; yet his various concessions and compromises resulted, as he himself declared, in the abolitionists denouncing him as a slaveholder, and the slaveholders as an abolitionist. In 1839, only twelve months after opposing the pro-slavery demands, he prepared an elaborate speech, in order “to set himself right with the South,” which, before its delivery, received pro-slavery approval. While affirming that he was “no friend of slavery” he held abolition and the abolitionists responsible for the hatred, strife, disruption and carnage that menaced the nation. In response, Calhoun extended to him a most hearty welcome, and assigned him to a place on the bench of the penitents. Being a candidate for the presidency Clay had to take the insult without wincing. It was in reference to this speech that he made the oft-quoted remark that he “would rather be right than be president.” While a candidate for president in 1844, he opposed in the “Raleigh letter” the annexation of Texas on many grounds except that of its increasing the slave power, thus displeasing both the men of anti-slavery and those of pro-slavery sentiments. In 1847, after the conquest of Mexico, he made a speech against the annexation of that country or the acquiring of any foreign territory for the spread of slavery. Although in 1849 he again vainly proposed emancipation in Kentucky, he was unanimously elected to the United States Senate, where in 1850 he temporarily pacified both sections of the country by successfully offering, for the sake of the “peace, concord and harmony of these states,” a measure or series of measures that became known as the “Compromise of 1850.” It admitted California as a free state, organized Utah and New Mexico as Territories without reference to slavery, and enacted a more efficient fugitive slave law. In spite of great physical weakness he made several earnest speeches in behalf of these measures to save the Union.

Another conspicuous feature of Clay’s public career was his absorbing and rightful, but constantly ungratified, ambition to be president of the United States. His name in connexion therewith was mentioned comparatively early, and in 1824, with W.H. Crawford, Andrew Jackson, and John Quincy Adams, he was a candidate for that office. There being no choice by the people, and the House of Representatives having elected Adams, Clay was accused by Jackson and his friends of making a corrupt bargain whereby, in payment of his vote and influence for Adams, he was appointed secretary of state. This made Jackson Clay’s lifelong enemy, and ever after kept Clay busy explaining and denying the allegation. In 1832 Clay was unanimously nominated for the presidency by the National Republicans; Jackson, by the Democrats. The main issue was the policy of continuing the United States Bank, which in 1811 Clay had opposed, but in 1816 and always subsequently warmly favoured. A majority of the voters approved of Jackson’s fight against what Clay had once denounced as a

dangerous and unconstitutional monopoly. Clay made the mistake of supposing that he could arouse popular enthusiasm for a moneyed corporation in its contest with the great military "hero of New Orleans." In 1839 he was a candidate for the Whig nomination, but by a secret ballot his enemies defeated him in the party convention, held in December of that year, and nominated William Henry Harrison. The result threw Clay into paroxysms of rage, and he violently complained that his friends always used him as their candidate when he was sure to be defeated, and betrayed him when he or any one could have been elected. In 1844 he was nominated by the Whigs against James K. Polk, the Democratic candidate. By an audacious fraud that represented him as an enemy, and Polk as a friend of protection, Clay lost the vote of Pennsylvania; and he lost the vote of New York by his own letter abating the force of his previous opposition to the annexation of Texas. Even his enemies felt that his defeat by Polk was almost a national calamity. In 1848, Zachary Taylor, a Mexican War hero, and hardly even a convert to the Whig party, defeated Clay for the nomination, Kentucky herself deserting her "favourite son."

Clay's quick intelligence and sympathy, and his irreproachable conduct in youth, explain his precocious prominence in public affairs. In his persuasiveness as an orator and his charming personality lay the secret of his power. He had early trained himself in the art of speech-making, in the forest, the field and even the barn, with horse and ox for audience. By contemporaries his voice was declared to be the finest musical instrument that they ever heard. His eloquence was in turn majestic, fierce, playful, insinuating; his gesticulation natural, vivid, large, powerful. In public he was of magnificent bearing, possessing the true oratorical temperament, the nervous exaltation that makes the orator feel and appear a superior being, transfusing his thought, passion and will into the mind and heart of the listener; but his imagination frequently ran away with his understanding, while his imperious temper and ardent combativeness hurried him and his party into disadvantageous positions. The ease, too, with which he outshone men of vastly greater learning lured him from the task of intense and arduous study. His speeches were characterized by skill of statement, ingenious grouping of facts, fervent diction, and ardent patriotism; sometimes by biting sarcasm, but also by superficial research, half-knowledge and an unwillingness to reason a proposition to its logical results. In private, his never-failing courtesy, his agreeable manners and a noble and generous heart for all who needed protection against the powerful or the lawless, endeared him to hosts of friends. His popularity was as great and as inexhaustible among his neighbours as among his fellow-citizens generally. He pronounced upon himself a just judgment when he wrote: "If any one desires to know the leading and paramount object of my public life, the preservation of this Union will furnish him the key."

See Calvin Colton, *The Works of Henry Clay* (6 vols., New York, 1857; new ed., 7 vols., New York, 1898), the first three volumes of which are an account of Clay's "Life and Times"; Carl Schurz, *Henry Clay* (2 vols., Boston, 1887), in the "American Statesmen" series; and the life by T. Hart Clay (1910).

(C. S.)

CLAY (from O. Eng. *claeg*, a word common in various forms to Teutonic languages, cf. Ger. *Klei*), commonly defined as a fine-grained, almost impalpable substance, very soft, more or less coherent when dry, plastic and retentive of water when wet; it has an "earthy" odour when breathed upon or moistened, and consists essentially of hydrous aluminium silicate with various impurities. Of clay are formed a great number of rocks, which collectively are known as "clay-rocks" or "pelitic rocks" (from Gr. πηλός, clay), *e.g.* mudstone, shale, slate: these exhibit in greater or less perfection the properties above described according to their freedom from impurities. In nature, clays are rarely free from foreign ingredients, many of which can be detected with the unaided eye, while others may be observed by means of the microscope. The commonest impurities are:— (1) organic matter, humus, &c. (exemplified by clay-soils with an admixture of peat, oil shales, carbonaceous shales); (2) fossils (such as plants in the shales of the Lias and Coal Measures, shells in clays of all geological periods and in fresh water marls); (3) carbonate of lime (rarely altogether absent, but abundant in marls, cement-stones and argillaceous limestones); (4) sulphide of iron, as pyrite or marcasite (when finely diffused, giving the clay a dark grey-blue colour, which weathers to brown—*e.g.* London Clay; also as nodules and concretions, *e.g.* Gault); (5) oxides of iron (staining the clay bright red when ferric oxide, red ochre; yellow when hydrous, *e.g.* yellow ochre); (6) sand or detrital silica (forming loams, arenaceous clays, argillaceous sandstones,

&c.). Less frequently present are the following:—rock salt (Triassic clays, and marls of Cheshire, &c.); gypsum (London Clay, Triassic clays); dolomite, phosphate of lime, vivianite (phosphate of iron), oxides of manganese, copper ores (*e.g. Kupferschiefer*), wavellite and amber. As the impurities increase in amount the clay rocks pass gradually into argillaceous sands and sandstones, argillaceous limestones and dolomites, shaly coals and clay ironstones.

Natural clays, even when most pure, show a considerable range of composition, and hence cannot be regarded as consisting of a single mineral; clay is a *rock*, and has that variability which characterizes all rocks. Of the essential properties of clay some are merely physical, and depend on the minute size of the particles. If any rock be taken (even a piece of pure quartz) and crushed to a very fine powder, it will show some of the peculiarities of clays; for example, it will be plastic, retentive of moisture, impermeable to water, and will shrink to some extent if the moist mass be kneaded, and then allowed to dry. It happens, however, that many rocks are not disintegrated to this extreme degree by natural processes, and weathering invariably accompanies disintegration. Quartz, for example, has little or no cleavage, and is not attacked by the atmosphere. It breaks up into fragments, which become rounded by attrition, but after they reach a certain minuteness are borne along by currents of water or air in a state of suspension, and are not further reduced in size. Hence sands are more coarse grained than clays. A great number of rock-forming minerals, however, possess a good cleavage, so that when bruised they split into thin fragments; many of these minerals decompose somewhat readily, yielding secondary minerals, which are comparatively soft and have a scaly character, with eminently perfect cleavages, which facilitate splitting into exceedingly thin plates. The principal substances of this description are kaolin, muscovite and chlorite. Kaolin and muscovite are formed principally after felspar (and the felspars are the commonest minerals of all crystalline rocks); also from nepheline, leucite, scapolite and a variety of other rock-forming minerals. Chlorite arises from biotite, augite and hornblende. Serpentine, which may be fibrous or scaly, is a secondary product of olivine and certain pyroxenes. Clays consist essentially of the above ingredients (although serpentine is not known to take part in them to any extent, it is closely allied to chlorite). At the same time other substances are produced as decomposition goes on. They are principally finely divided quartz, epidote, zoisite, rutile, limonite, calcite, pyrites, and very small particles of these are rarely absent from natural clays. These fine-grained materials are at first mixed with broken and more or less weathered rock fragments and coarser mineral particles in the soil and subsoil, but by the action of wind and rain they are swept away and deposited in distant situations. “Loess” is a fine calcareous clay, which has been wind-borne, and subsequently laid down on the margins of dry steppes and deserts. Most clays are water-borne, having been carried from the surface of the land by rain and transported by the brooks and rivers into lakes or the sea. In this state the fine particles are known as “mud.” They are deposited where the currents are checked and the water becomes very still. If temporarily laid down in other situations they are ultimately lifted again and removed. A little clay, stirred up with water in a glass vessel, takes hours to settle, and even after two or three days some remains in suspension; in fact, it has been suggested that in such cases the clay forms a sort of “colloidal solution” in the water. Traces of dissolved salts, such as common salt, gypsum or alum, greatly accelerate deposition. For these reasons the principal gathering places of fine pure clays are deep, still lakes, and the sea bottom at considerable distances from the shore. The coarser materials settle nearer the land, and the shallower portions of the sea floor are strewn with gravel and sand, except in occasional depressions and near the mouths of rivers where mud may gather. Farther out the great mud deposits begin, extending from 50 to 200 m. from the land, according to the amount of sediment brought in, and the rate at which the water deepens. A girdle of mud accumulations encircles all the continents. These sediments are fine and tenacious; their principal components, in addition to clay, being small grains of quartz, zircon, tourmaline, hornblende, felspar and iron compounds. Their typical colour is blackish-blue, owing to the abundance of sulphuretted hydrogen; when fresh they have a sulphurous odour, when weathered they are brown, as their iron is present as hydrous oxides (limonite, &c). These deposits are tenanted by numerous forms of marine life, and the sulphur they contain is derived from decomposing organic matter. Occasionally water-logged plant débris is mingled with the mud. In a few places a red colour prevails, the iron being mostly oxidized; elsewhere the muds are green owing to abundant glauconite. Traced landwards the muds become more sandy, while on their outer margins they grade into the abysmal deposits, such as the globigerina ooze (see Ocean and Oceanography). Near volcanoes they contain many volcanic minerals, and around coral islands they are often in large part calcareous.

Microscopic sections of some of the more coherent clays and shales may be prepared by

saturating them with Canada balsam by long boiling, and slicing the resultant mass in the same manner as one of the harder rocks. They show that clay rocks contain abundant very small grains of quartz (about 0.01 to 0.05 mm. in diameter), with often felspar, tourmaline, zircon, epidote, rutile and more or less calcite. These may form more than one-third of an ordinary shale; the greater part, however, consists of still smaller scales of other minerals (0.01 mm. in diameter and less than this). Some of these are recognizable as pale yellowish and white mica; others seem to be chlorite, the remainder is perhaps kaolin, but, owing to the minute size of the flakes, they yield very indistinct reactions to polarized light. They are also often stained with iron oxide and organic substances, and in consequence their true nature is almost impossible to determine. It is certain, however, that the finer-grained rocks are richest in alumina, and in combined water; hence the inference is clear that kaolin or some other hydrous aluminium silicate is the dominating constituent. These results are confirmed by the mechanical analysis of clays. This process consists in finely pulverizing the soil or rock, and levigating it in vessels of water. A series of powders is obtained progressively finer according to the time required to settle to the bottom of the vessel. The clay is held to include those particles which have less than 0.005 mm. diameter, and contains a higher percentage of alumina than any of the other ingredients.

As might be inferred from the differences they exhibit in other respects, clay rocks vary greatly in their chemical composition. Some of them contain much iron (yellow, blue and red clays); others contain abundant calcium carbonate (calcareous clays and marls). Pure clays, however, may be found almost quite free from these substances. Their silica ranges from about 60 to 45%, varying in accordance with the amount of quartz and alkali-felspar present. It is almost always more than would be the case if the rock consisted of kaolin mixed with muscovite. Alumina is high in the finer clays (18 to 30%), and they are the most aluminous of all sediments, except bauxite. Magnesia is never absent, though its amount may be less than 1%; it is usually contained in minerals of the chlorite group, but partly also in dolomite. The alkalis are very interesting; often they form 5 or 10% of the whole rock; they indicate abundance of white micas or of undecomposed particles of felspar. Some clays, however, such as fireclays, contain very little potash or soda, while they are rich in alumina; and it is a fair inference that hydrated aluminous silicates, such as kaolin, are well represented in these rocks. There are, in fact, a few clays which contain about 45% of alumina, that is to say, more than in pure kaolin. It is probable that these are related to bauxite and certain kinds of laterite.

A few of the most important clay rocks, such as china-clay, brick-clay, red-clay and shale, may be briefly described here.

China-clay is white, friable and earthy. It occurs in regions of granite, porphyry and syenite, and usually occupies funnel-shaped cavities of no great superficial area, but of considerable depth. It consists of very fine scaly kaolin, larger, shining plates of white mica, grains of quartz and particles of semi-decomposed felspar, tourmaline, zircon and other minerals, which originally formed part of the granite. These clays are produced by the decomposition of the granite by acid vapours, which are discharged after the igneous rock has solidified (“fumarole or pneumatolytic action”). Fluorine and its compounds are often supposed to have been among the agencies which produce this change, but more probably carbonic acid played the principal role. The felspar decomposes into kaolin and quartz; its alkalis are for the most part set free and removed in solution, but are partly retained in the white mica which is constantly found in crude china-clays. Semi-decomposed varieties of the granite are known as china-stone. The kaolin may be washed away from its original site, and deposited in hollows or lakes to form beds of white clay, such as pipe-clay; in this case it is always more or less impure. Yellow and pinkish varieties of china-clay and pipe-clay contain a small quantity of oxide of iron. The best known localities for china-clay are Cornwall, Limoges (France), Saxony, Bohemia and China; it is found also in Pennsylvania, N. Carolina and elsewhere in the United States.

Fire-clays include all those varieties of clay which are very refractory to heat. They must contain little alkalis, lime, magnesia and iron, but some of them are comparatively rich in silica. Many of the clays which pass under this designation belong to the Carboniferous period, and are found underlying seams of coal. Either by rapid growth of vegetation, or by subsequent percolation of organic solutions, most of the alkalis and the lime have been carried away.

Any argillaceous material, which can be used for the manufacture of bricks, may be called a *brick-clay*. In England, Kimmeridge Clay, Lias clays, London Clay and pulverized shale and slate are all employed for this purpose. Each variety needs special treatment according to its properties. The true brick-clays, however, are superficial deposits of Pleistocene or

Quaternary age, and occur in hollows, filled-up lakes and deserted stream channels. Many of them are derived from the glacial boulder-clays, or from the washing away of the finer materials contained in older clay formations. They are always very impure.

The *red-clay* is an abysmal formation, occurring in the sea bottom in the deepest part of the oceans. It is estimated to cover over fifty millions of square miles, and is probably the most extensive deposit which is in course of accumulation at the present day. In addition to the reddish or brownish argillaceous matrix it contains fresh or decomposed crystals of volcanic minerals, such as felspar, augite, hornblende, olivine and pumiceous or palagonitic rocks. These must either have been ejected by submarine volcanoes or drifted by the wind from active vents, as the fine ash discharged by Krakatoa was wafted over the whole globe. Larger rounded lumps of pumice, found in the clay, have probably floated to their present situations, and sank when decomposed, all their cavities becoming filled with sea water. 474 Crystals of zeolites (phillipsite) form in the red-clay as radiate, nodular groups. Lumps of manganese oxide, with a black, shining outer surface, are also characteristic of this deposit, and frequently encrust pieces of pumice or animal remains. The only fossils of the clay are radiolaria, sharks' teeth and the ear-bones of whales, precisely those parts of the skeleton of marine creatures which are hardest and can longest survive exposure to sea-water. Their comparative abundance shows how slowly the clay gathers. Small rounded spherules of iron, believed by some to be meteoric dust, have also been obtained in some numbers. Among the rocks of the continents nothing exactly the same as this remarkable deposit is known to occur, though fine dark clays, with manganese nodules, are found in many localities, accompanied by other rocks which indicate deep-water conditions of deposit.

Another type of red-clay is found in caves, and is known as *cave-earth* or *red-earth* (*terra rossa*). It is fine, tenacious and bright red, and represents the insoluble and thoroughly weathered impurities which are left behind when the calcareous matter is removed in solution by carbonated waters. Similar residual clays sometimes occur on the surface of areas of limestone in hollows and fissures formed by weathering.

Boulder-clay is a coarse unstratified deposit of fine clay, with more or less sand, and boulders of various sizes, the latter usually marked with glacial striations.

Some clay rocks which have been laid down by water are very uniform through their whole thickness, and are called *mud-stones*. Others split readily into fine leaflets or laminae parallel to their bedding, and this structure is accentuated by the presence of films of other materials, such as sand or vegetable debris. Laminated clays of this sort are generally known as *shales*; they occur in many formations but are very common in the Carboniferous. Some of them contain much organic debris, and when distilled yield paraffin oil, wax, compounds of ammonia, &c. In these oil-shales there are clear, globular, yellow bodies which seem to be resinous. It has been suggested that the admixture of large quantities of decomposed fresh-water algae among the original mud is the origin of the paraffins. In New South Wales, Scotland and several parts of America such oil-shales are worked on a commercial scale. Many shales contain great numbers of ovoid or rounded septarian nodules of clay ironstone. Others are rich in pyrites, which, on oxidation, produces sulphuric acid; this attacks the aluminous silicates of the clay and forms aluminium sulphate (*alum shales*). The lias shales of Whitby contain blocks of semi-mineralized wood, or jet, which is black with a resinous lustre, and a fibrous structure. The laminated structure of shales, though partly due to successive very thin sheets of deposit, is certainly dependent also on the vertical pressure exerted by masses of super-incumbent rock; it indicates a transition to the fissile character of clay slates.

(J. S. F.)

CLAY CROSS, an urban district in the Chesterfield parliamentary division of Derbyshire, England, near the river Amber, on the Midland railway, 5 m. S. of Chesterfield. Pop. (1901) 8358. The Clay Cross Colliery and Ironworks Company, whose mines were for a time leased by George Stephenson, employ a great number of hands.

CLAYMORE (from the Gaelic *claidheamh mòr*, “great sword”), the old two-edged broadsword with cross hilt, of which the guards were usually turned down, used by the Highlanders of Scotland. The name is also wrongly applied to the single-edged basket-hilted sword adopted in the 16th century and still worn as the full-dress sword in the Highland regiments of the British army.

CLAYS, PAUL JEAN (1819-1900), Belgian artist, was born at Bruges in 1819, and died at Brussels in 1900. He was one of the most esteemed marine painters of his time, and early in his career he substituted a sincere study of nature for the extravagant and artificial conventionality of most of his predecessors. When he began to paint, the sea was considered by continental artists as worth representing only under its most tempestuous aspects. Artists cared only for the stirring drama of storm and wreck, and they clung still to the old-world tradition of the romantic school. Clays was the first to appreciate the beauty of calm waters reflecting the slow procession of clouds, the glories of sunset illuminating the sails of ships or gilding the tarred sides of heavy fishing-boats. He painted the peaceful life of rivers, the poetry of wide estuaries, the regulated stir of roadsteads and ports. And while he thus broke away from old traditions he also threw off the trammels imposed on him by his master, the marine painter Theodore Gudin (1802-1880). Endeavouring only to give truthful expression to the nature that delighted his eyes, he sought to render the limpid salt atmosphere, the weight of waters, the transparence of moist horizons, the gem-like sparkle of the sky. A Fleming in his feeling for colour, he set his palette with clean strong hues, and their powerful harmonies were in striking contrast with the rusty, smoky tones then in favour. If he was not a “luminist” in the modern use of the word, he deserves at any rate to be classed with the founders of the modern naturalistic school. This conscientious and healthy interpretation, to which the artist remained faithful, without any important change, to the end of an unusually long and laborious career, attracted those minds which aspired to be bold, and won over those which were moderate. Clays soon took his place among the most famous Belgian painters of his generation, and his pictures, sold at high prices, are to be seen in most public and private galleries. We may mention, among others, “The Beach at Ault,” “Boats in a Dutch Port,” and “Dutch Boats in the Flushing Roads,” the last in the National Gallery, London. In the Brussels gallery are “The Port of Antwerp,” “Coast near Ostend,” and a “Calm on the Scheldt”; in the Antwerp museum, “The Meuse at Dordrecht”; in the Pinakothek at Munich, “The Open North Sea”; in the Metropolitan Museum of Fine Arts, New York, “The Festival of the Freedom of the Scheldt at Antwerp in 1863”; in the palace of the king of the Belgians, “Arrival of Queen Victoria at Ostend in 1857”; in the Bruges academy, “Port of Feirugudo, Portugal.” Clays was a member of several Academies, Belgian and foreign, and of the Order of Leopold, the Legion of Honour, &c.

See Camille Lemonnier, *Histoire des Beaux-Arts* (Brussels, 1887).

(O. M.*)

CLAYTON, JOHN MIDDLETON (1796-1856), American politician, was born in Dagsborough, Sussex county, Delaware, on the 24th of July 1796. He came of an old Quaker family long prominent in the political history of Delaware. He graduated at Yale in 1815, and in 1819 began to practise law at Dover, Delaware, where for a time he was associated with his cousin, Thomas Clayton (1778-1854), subsequently a United States senator and chief-justice of the state. He soon gained a large practice. He became a member of the state House of Representatives in 1824, and from December 1826 to October 1828 was secretary of state of Delaware. In 1829, by a combination of anti-Jackson forces in the state legislature, he was elected to the United States Senate. Here his great oratorical gifts gave him a high place as one of the ablest and most eloquent opponents of the administration. In 1831 he was a member of the Delaware constitutional convention, and in 1835 he was returned to the Senate as a Whig, but resigned in the following year. In 1837-1839 he was chief justice of Delaware. In 1845 he again entered the Senate, where he opposed the annexation of Texas and the Mexican War, but advocated the active prosecution of the latter

once it was begun. In March 1849 he became secretary of state in the cabinet of President Zachary Taylor, to whose nomination and election his influence had contributed. His brief tenure of the state portfolio, which terminated on the 22nd of July 1850, soon after Taylor's death, was notable chiefly for the negotiation with the British minister, Sir Henry Lytton Bulwer, of the Clayton-Bulwer Treaty (*q.v.*). He was once more a member of the Senate from March 1853 until his death at Dover, Delaware, on the 9th of November 1856. By his contemporaries Clayton was considered one of the ablest debaters and orators in the Senate.

See the memoir by Joseph P. Comegys in the *Papers* of the Historical Society of Delaware, No. 4 (Wilmington, 1882).

CLAYTON-BULWER TREATY, a famous treaty between the United States and Great Britain, negotiated in 1850 by John M. Clayton and Sir Henry Lytton Bulwer (Lord Dalling), in consequence of the situation created by the project of an interoceanic canal across Nicaragua, each signatory being jealous of the activities of the other in Central America. Great Britain had large and indefinite territorial claims in three regions—Belize or British Honduras, the Mosquito Coast and the Bay Islands.[1] On the other hand, the United States, without territorial claims, held in reserve, ready for ratification, treaties with Nicaragua and Honduras, which gave her a certain diplomatic vantage with which to balance the *de facto* dominion of Great Britain. Agreement on these points being impossible and agreement on the canal question possible, the latter was put in the foreground. The resulting treaty had four essential points. It bound both parties not to "obtain or maintain" any exclusive control of the proposed canal, or unequal advantage in its use. It guaranteed the neutralization of such canal. It declared that, the intention of the signatories being not only the accomplishment of "a particular object"—*i.e.* that the canal, then supposedly near realization, should be neutral and equally free to the two contracting powers—"but also to establish a general principle," they agreed "to extend their protection by treaty stipulation to any other practicable communications, whether by canal or railway, across the isthmus which connects North and South America." Finally, it stipulated that neither signatory would ever "occupy, or fortify, or colonize, or assume or exercise any dominion over Nicaragua, Costa Rica, the Mosquito Coast or any part of Central America," nor make use of any protectorate or alliance, present or future, to such ends.

The treaty was signed on the 19th of April, and was ratified by both governments; but before the exchange of ratifications Lord Palmerston, on the 8th of June, directed Sir H. Bulwer to make a "declaration" that the British government did not understand the treaty "as applying to Her Majesty's settlement at Honduras, or its dependencies." Mr Clayton made a counter-declaration, which recited that the United States did not regard the treaty as applying to "the British settlement in Honduras commonly called British-Honduras ... nor the small islands in the neighbourhood of that settlement which may be known as its dependencies"; that the treaty's engagements did apply to all the Central American states, "with their just limits and proper dependencies"; and that these declarations, not being submitted to the United States Senate, could of course not affect the legal import of the treaty. The interpretation of the declarations soon became a matter of contention. The phraseology reflects the effort made by the United States to render impossible a physical control of the canal by Great Britain through the territory held by her at its mouth—the United States losing the above-mentioned treaty advantages,—just as the explicit abnegations of the treaty rendered impossible such control politically by either power. But great Britain claimed that the excepted "settlement" at Honduras was the "Belize" covered by the extreme British claim; that the Bay Islands were a dependency of Belize; and that, as for the Mosquito Coast, the abnegatory clauses being wholly prospective in intent, she was not required to abandon her protectorate. The United States contended that the Bay Islands were not the "dependencies" of Belize, these being the small neighbouring islands mentioned in the same treaties; that the excepted "settlement" was the British-Honduras of definite extent and narrow purpose recognized in British treaties with Spain; that she had not confirmed by recognition the large, indefinite and offensive claims whose dangers the treaty was primarily designed to lessen; and that, as to the Mosquito Coast, the treaty was retrospective, and mutual in the rigour of its requirements, and as the United States had no *de facto* possessions, while Great Britain had, the clause binding both not to "occupy" any

part of Central America or the Mosquito Coast necessitated the abandonment of such territory as Great Britain was already actually occupying or exercising dominion over; and the United States demanded the complete abandonment of the British protectorate over the Mosquito Indians. It seems to be a just conclusion that when in 1852 the Bay Islands were erected into a British "colony" this was a flagrant infraction of the treaty; that as regards Belize the American arguments were decidedly stronger, and more correct historically; and that as regards the Mosquito question, inasmuch as a protectorate seems certainly to have been recognized by the treaty, to demand its absolute abandonment was unwarranted, although to satisfy the treaty Great Britain was bound materially to weaken it.

In 1859-1860, by British treaties with Central American states, the Bay Islands and Mosquito questions were settled nearly in accord with the American contentions.[2] But by the same treaties Belize was accorded limits much greater than those contended for by the United States. This settlement the latter power accepted without cavil for many years.

Until 1866 the policy of the United States was consistently for inter-oceanic canals open equally to all nations, and unequivocally neutralized; indeed, until 1880 there was practically no official divergence from this policy. But in 1880-1884 a variety of reasons were advanced why the United States might justly repudiate at will the Clayton-Bulwer Treaty.[3] The new policy was based on national self-interest. The arguments advanced on its behalf were quite indefensible in law and history, and although the position of the United States in 1850-1860 was in general the stronger in history, law and political ethics, that of Great Britain was even more conspicuously the stronger in the years 1880-1884. In 1885 the former government reverted to its traditional policy, and the Hay-Pauncefote Treaty of 1902, which replaced the Clayton-Bulwer Treaty, adopted the rule of neutralization for the Panama Canal.

See the collected diplomatic correspondence in I.D. Travis, *History of the Clayton-Bulwer Treaty* (Ann Arbor, Mich., 1899); J.H. Latané, *Diplomatic Relations of the United States and Spanish America* (Baltimore, 1900); T.J. Lawrence, *Disputed Questions of Modern International Law* (2nd ed., Cambridge, England, 1885); Sir E.L. Bulwer in 99 *Quarterly Rev.* 235-286, and Sir H. Bulwer in 104 *Edinburgh Rev.* 280-298.

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1 The claims to a part of the first two were very old in origin, but all were heavily clouded by interruptions of possession, contested interpretations of Spanish-British treaties, and active controversy with the Central American States. The claim to some of the territory was new and still more contestable. See particularly on these claims Travis'e book cited below.

2 The islands were ceded to Honduras. The Mosquito Coast was recognized as under Nicaraguan rule limited by an attenuated British protectorate over the Indians, who were given a reservation and certain peculiar rights. They were left free to accept full Nicaraguan rule at will. This they did in 1894.

3 It was argued, *e.g.*, that the "general principle" of that engagement was contingent on the prior realization of its "particular object," which had failed, and the treaty had determined as a special contract; moreover, none of the additional treaties to embody the "general principle" had been negotiated, and Great Britain had not even offered co-operation in the protection and neutrality-guarantee of the Panama railway built in 1850-1855, so that her rights had lapsed; certain engagements of the treaty she had violated, and therefore the whole treaty was voidable, &c.

CLAY-WITH-FLINTS, in geology, the name given by W. Whitaker in 1861 to a peculiar deposit of stiff red, brown or yellow clay containing unworn whole flints as well as angular shattered fragments, also with a variable admixture of rounded flint, quartz, quartzite and other pebbles. It occurs "in sheets or patches of various sizes over a large area in the south of England, from Hertfordshire on the north to Sussex on the south, and from Kent on the east to Devon on the west. It almost always lies on the surface of the Upper Chalk, but in Dorset it passes on to the Middle and Lower Chalk, and in Devon it is found on the Chert-Beds of the Selbornian group" (A.J. Jukes-Browne, "The Clay-with-Flints, its Origin and Distribution," *Q.J.G.S.*, vol. lxii., 1906, p. 132). Many geologists have supposed, and some still hold, that the Clay-with-Flints is the residue left by the slow solution and disintegration of the Chalk by the processes of weathering; on the other hand, it has long been known that the deposit very frequently contains materials foreign to the Chalk, derived either from the Tertiary rocks or from overlying drift. In the paper quoted above, Jukes-Browne ably

summarizes the evidence against the view that the deposit is mainly a Chalk residue, and brings forward a good deal of evidence to show that many patches of the Clay-with-Flints lie upon the same plane and may be directly associated with Reading Beds. He concludes “that the material of the Clay-with-Flints has been chiefly and almost entirely derived from Eocene clay, with addition of some flints from the Chalk; that its presence is an indication of the previous existence of Lower Eocene Beds on the same site and nearly at the same relative level, and, consequently, that comparatively little Chalk has been removed from beneath it. Finally, I think that the tracts of Clay-with-Flints have been much more extensive than they are now” (loc. cit. p. 159).

It is noteworthy that the Clay-with-Flints is developed over an area which is just beyond the limits of the ice sheets of the Glacial epoch, and the peculiar conditions of late Pliocene and Pleistocene times; involving heavy rains, snow and frost, may have had much to do with the mingling of the Tertiary and Chalky material. Besides the occurrence in surface patches, Clay-with-Flints is very commonly to be observed descending in “pipes” often to a considerable depth into the Chalk; here, if anywhere, the residual chalk portion of the deposit should be found, and it is surmised that a thin layer of very dark clay with darkly stained flints, which appears in contact with the sides and bottom of the pipe, may represent all there is of insoluble residue.

A somewhat similar deposit, a “*conglomérat de silex*” or “*argue à silex*,” occurs at the base of the Eocene on the southern and western borders of the Paris basin, in the neighbourhood of Chartres, Thimerais and Sancerrois.

(J. A. H.)

CLAZOMENAE (mod. *Kelisman*), an ancient town of Ionia and a member of the Ionian Dodecapolis (Confederation of Twelve Cities), on the Gulf of Smyrna, about 20 m. W. of that city. Though not in existence before the arrival of the Ionians in Asia, its original founders were largely settlers from Phlius and Cleonae. It stood originally on the isthmus connecting the mainland with the peninsula on which Erythrae stood; but the inhabitants, alarmed by the encroachments of the Persians, removed to one of the small islands of the bay, and there established their city. This island was connected with the mainland by Alexander the Great by means of a pier, the remains of which are still visible. During the 5th century it was for some time subject to the Athenians, but about the middle of the Peloponnesian war (412 B.C.) it revolted. After a brief resistance, however, it again acknowledged the Athenian supremacy, and repelled a Lacedaemonian attack. Under the Romans Clazomenae was included in the province of Asia, and enjoyed an immunity from taxation. The site can still be made out, in the neighbourhood of Vourla, but nearly every portion of its ruins has been removed. It was the birthplace of the philosopher Anaxagoras. It is famous for its painted terra-cotta sarcophagi, which are the finest monuments of Ionian painting in the 6th century B.C.

(E. GR.)

CLEANTHES (c. 301-232 or 252 B.C.), Stoic philosopher, born at Assos in the Troad, was originally a boxer. With but four drachmae in his possession he came to Athens, where he listened first to the lectures of Crates the Cynic, and then to those of Zeno, the Stoic, supporting himself meanwhile by working all night as water-carrier to a gardener (hence his nickname Φρεάντλης). His power of patient endurance, or perhaps his slowness, earned him the title of “the Ass”; but such was the esteem awakened by his high moral qualities that, on the death of Zeno in 263, he became the leader of the school. He continued, however, to support himself by the labour of his own hands. Among his pupils were his successor, Chrysippus, and Antigonus, king of Macedon, from whom he accepted 2000 minae. The manner of his death was characteristic. A dangerous ulcer had compelled him to fast for a time. Subsequently he continued his abstinence, saying that, as he was already half-way on the road to death, he would not trouble to retrace his steps.

Cleanthes produced very little that was original, though he wrote some fifty works, of which fragments have come down to us. The principal is the large portion of the *Hymn to Zeus* which has been preserved in Stobaeus. He regarded the sun as the abode of God, the intelligent providence, or (in accordance with Stoical materialism) the vivifying fire or aether of the universe. Virtue, he taught, is life according to nature; but pleasure is not according to nature. He originated a new theory as to the individual existence of the human soul; he held that the degree of its vitality after death depends upon the degree of its vitality in this life. The principal fragments of Cleanthes's works are contained in Diogenes Laertius and Stobaeus; some may be found in Cicero and Seneca.

See G.C. Mohinke, *Kleanthes der Stoiker* (Greifswald, 1814); C. Wachsmuth, *Commentationes de Zenone Citiensi et Cleanthe Assio* (Göttingen, 1874-1875); A.C. Pearson, *Fragments of Zeno and Cleanthes* (Camb., 1891); article by E. Wellmann in Ersch and Gruber's *Allgemeine Encyklopädie*; R. Hirzel, *Untersuchungen zu Ciceros philosophischen Schriften*, ii. (1882), containing a vindication of the originality of Cleanthes; A.B. Krische, *Forschungen auf dem Gebiete der alten Philosophie* (1840); also works quoted under STOICS.

CLEARCHUS, the son of Rhamphias, a Spartan general and condottiere. Born about the middle of the 5th century B.C., Clearchus was sent with a fleet to the Hellespont in 411 and became governor (ἁρμοστής) of Byzantium, of which town he was *proxenus*. His severity, however, made him unpopular, and in his absence the gates were opened to the Athenian besieging army under Alcibiades (409). Subsequently appointed by the ephors to settle the political dissensions then rife at Byzantium and to protect the city and the neighbouring Greek colonies from Thracian attacks, he made himself tyrant of Byzantium, and, when declared an outlaw and driven thence by a Spartan force, he fled to Cyrus. In the "expedition of the ten thousand" undertaken by Cyrus to dethrone his brother Artaxerxes Mnemon, Clearchus led the Peloponnesians, who formed the right wing of Cyrus's army at the battle of Cunaxa (401). On Cyrus's death Clearchus assumed the chief command and conducted the retreat, until, being treacherously seized with his fellow-generals by Tissaphernes, he was handed over to Artaxerxes and executed (Thuc. viii. 8. 39, 80; Xen. *Hellenica*, i. 3. 15-19; *Anabasis*, i. ii.; Diodorus xiv. 12. 19-26). In character he was a typical product of the Spartan educational system. He was a warrior to the finger-tips (πολεμικὸς καὶ φιλοπόλεμος ἐσχάτως. Xen. *Anab.* ii. 6. 1), and his tireless energy, unfaltering courage and strategic ability made him an officer of no mean order. But he seems to have had no redeeming touch of refinement or humanity.

CLEARFIELD, a borough and the county-seat of Clearfield county, Pennsylvania, U.S.A., on the W. branch of the Susquehanna river, in the W. central part of the state. Pop. (1890) 2248; (1900) 5081 (310 foreign-born); (1910) 6851. It is served by the New York Central & Hudson River, the Pennsylvania, and the Buffalo, Rochester & Pittsburg railways. The borough is about 1105 ft. above sea-level, in a rather limited space between the hills, which command picturesque views of the narrow valley. The river runs through the borough. Coal and fireclay abound in the vicinity, and these, with leather, iron, timber and the products of the fertile soil, are the bases of its leading industries. Before the arrival of the whites the place had been cleared of timber (whence its name), and in 1805 it was chosen as a site for the county-seat of the newly erected county and laid out as a town; in 1840 it was incorporated as a borough.

CLEARING-HOUSE, the general term for a central institution employed in connexion

with large and interrelated businesses for the purpose of facilitating the settlement of accounts.

Banking.—The London Clearing-House was established between 1750 and 1770 as a place where the clerks of the bankers of the city of London could assemble daily to exchange with one another the cheques drawn upon and bills payable at their respective houses. Before the clearing-house existed, each banker had to send a clerk to the places of business of all the other bankers in London to collect the sums payable by them in respect of cheques and bills; and it is obvious that much time was consumed by this process, which involved the use of an unnecessary quantity of money and corresponding risks of safe carriage. In 1775 a room in Change Alley was settled upon as a common centre of exchange; this was afterwards removed to Post Office Court, Lombard Street. This clearing centre was at first confined to the bankers—at that time and long afterwards exclusively private bankers—doing business within the city, and the bankers in the west end of the metropolis used some one or other of the city banks as their agent in clearing. When the joint-stock banks were first established, the jealousy of the existing banks was powerful enough to exclude them altogether from the use of the Clearing-House; and it was not until 1854 that this feeling was removed so as to allow them to be admitted.

At first the Clearing-House was simply a place of meeting, but it came to be perceived that the sorting and distribution of cheques, bills, &c, could be more expeditiously conducted by the appointment of two or three common clerks to whom each banker’s clerk could give all the instruments of exchange he wished to collect, and from whom he could receive all those payable at his own house. The payment of the balance settled the transaction, but the arrangements were afterwards so perfected that the balance is now settled by means of transfers made at the Bank of England between the Clearing-House account and those of the various banks, the Clearing-House, as well as each banker using it, having an account at the Bank of England. The use of the Clearing-House was still further extended in 1858, so as to include the settlement of exchanges between the country bankers of England. Before that time each country banker receiving cheques on other country bankers sent them to those other bankers by post (supposing they were not carrying on business in the same place), and requested that the amount should be paid by the London agent of the banker on whom the cheques were drawn to the London agent of the banker remitting them. Cheques were thus collected by correspondence, and each remittance involved a separate payment in London. Since 1858, accordingly, a country banker sends cheques on other country banks to his London correspondent, who exchanges them at the Clearing-House with the correspondents of the bankers on whom they are drawn.

The Clearing-House consists of one long room, lighted from the roof. Around the walls and down the centre are placed desks, allotted to the various banks, according to the amount of their business. The desks are arranged alphabetically, so that the clerks may lose no time in passing round the room and delivering their “charges” or batches of cheques to the representatives of the various banks. There are three clearings in London each day. The first is at 10.30 A.M., the second at noon, and the third at 2.30 P.M. It is the busiest of all, and continues until five minutes past four, when the last delivery must be made. The three clearings were, in 1907, divided into town, metropolitan and country clearings, each with a definite area. All the clearing banks have their cheques marked with the letters “T,” “M” and “C,” according to the district in which the issuing bank is situated. Every cheque issued by the clearing banks, even though drawn in the head office of a bank, goes through the Clearing-House.

The amount of business transacted at the Clearing-House varies very much with the seasons of the year, the busiest time being when dividends are paid and stock exchange settlements are made, but the volume of transactions averages roughly from 200 to 300 millions sterling a week, and the yearly clearances amount to something like £12,000,000,000. There are provincial clearing-houses at Manchester, Liverpool, Birmingham, Newcastle-on-Tyne, Leeds, Sheffield, Leicester and Bristol. There are also clearing-houses in most of the large towns of Scotland and Ireland. In New York and the other large cities of the United States there are clearing-houses providing accommodation for the various banking institutions (see Banks and Banking).

The progress of banking on the continent of Europe has been slow in comparison with that of the United Kingdom, and the use of cheques is not so general, consequently the need for clearing-houses is not so great. In France, too, the greater proportion of the banking business is carried on through three banks only, the Banque de France, the Société Générale and the Crédit Lyonnais, and a great part of their transactions are settled at their own head offices. But at the same time large sums pass through the Paris Chambre de Compensation

(the clearing-house), established in 1872.

There are clearing-houses also in Berlin, Hamburg and many other European cities.

Railways.—The British Railway Clearing-House was established in 1842, its purpose, as defined by the Railway Clearing-House Act of 1850, being "to settle and adjust the receipts arising from railway traffic within, or partly within, the United Kingdom, and passing over more than one railway within the United Kingdom, booked or invoiced at throughout rates or fares." It is an independent body, governed by a committee which is composed of delegates (usually the chairman or one of the directors) from each of the railways that belong to it. Any railway company may be admitted a party to the clearing-system with the assent of the committee, may cease to be a member at a month's notice, and may be expelled if such expulsion be voted for by two-thirds of the delegates present at a specially convened meeting. The cost of maintaining it is defrayed by contributions from the companies proportional to the volume of business passed through it by each. It has two main functions. (1) When passengers or goods are booked through between stations belonging to different railway companies at an inclusive charge for the whole journey, it distributes the money received in due proportions between the companies concerned in rendering the service. To this end it receives, in the case of passenger traffic, a monthly return of the tickets issued at each station to stations on other lines, and, in the case of goods traffic, it is supplied by both the sending and receiving stations (when these are on different companies' systems) with abstracts showing the character, weight, &c., of the goods that have travelled between them. By the aid of these particulars it allocates the proper share of the receipts to each company, having due regard to the distance over which the traffic has been carried on each line, to the terminal services rendered by each company, to any incidental expenses to which it may have been put, and to the existence of any special agreements for the division of traffic. (2) To avoid the inconvenience of a change of train at points where the lines of different companies meet, passengers are often, and goods and minerals generally, carried in through vehicles from their starting-point to their destination. In consequence, vehicles belonging to one company are constantly forming part of trains that belong to, and run over the lines of, other companies, which thus have the temporary use of rolling stock that does not belong to them. By the aid of a large staff of "number takers" who are stationed at junctions all over the country, and whose business is to record particulars of the vehicles which pass through those junctions, the Clearing-House follows the movements of vehicles which have left their owners' line, ascertains how far they have run on the lines of other companies, and debits each of the latter with the amount it has to pay for their use. This charge is known as "mileage"; another charge which is also determined by the Clearing-House is "demurrage," that is, the amount exacted from the detaining company if a vehicle is not returned to its owners within a prescribed time. By the exercise of these functions the Clearing-House accumulates a long series of credits to, and debits against, each company; these are periodically added up and set against each other, with the result that the accounts between it and the companies are finally settled by the transfer of comparatively small balances. It also distributes the money paid by the post-office to the railways on account of the conveyance of parcel-post traffic, and through its lost luggage department many thousands of articles left in railway carriages are every year returned to their owners. Its situation in London further renders it a convenient meeting-place for several "Clearing-House Conferences" of railway officials, as of the general managers, the goods managers, and the superintendents of the line, held four times a year for the consideration of questions in which all the companies are interested. The Irish Railway Clearing-House, established in 1848, has its headquarters in Dublin, and was incorporated by act of parliament in 1860.

General.—The principle of clearing adopted by banks and railways has been applied with considerable success in other businesses.

In 1874 the London Stock Exchange Clearing-House was established for the purpose of settling transactions in stock, the clearing being effected by balance-sheets and tickets; the balance of stock to be received or delivered is shown on a balance-sheet sent in by each member, and the items are then cancelled against one another and tickets issued for the balances outstanding. The New York Stock Exchange Clearing-House was established in 1892. The settlements on the Paris Bourse are cleared within the Bourse itself, through the Compagnie des Agents de Change de Paris.

In 1888 a society was formed in London called the Beetroot Sugar Association for clearing bargains in beetroot sugar. For every 500 bags of sugar of a definite weight which a broker sells, he issues a *filière* (a form something like a dock-warrant), giving particulars as to the ship, the warehouse, trade-marks, &c. The filière contains also a series of transfer forms which are filled up and signed by each successive holder, so transferring the property to a

new purchaser. The new purchaser also fills up a coupon attached to the transfer, quoting the date and hour of sale. This coupon is detached by the seller and retained by him as evidence to determine any liability through subsequent delay in the delivery of the sugar. Any purchaser requiring delivery of the sugar forwards the filière to the clearing-house, and the officials then send on his name to the first seller who tenders him the warrant direct. These filières pass from hand to hand within a limit of six days, a stamp being affixed on each transfer as a clearing-house fee. The difference between each of the successive transactions is adjusted by the clearing-house to the profit or loss of the seller.

The London Produce Clearing-House was established in 1888 for regulating and adjusting bargains in foreign and colonial produce. The object of the association is to guarantee both to the buyer and the seller the fulfilment of bargains for future delivery. The transactions on either side are allowed to accumulate during a month and an adjustment made at the end by a settlement of the final balance owing. On the same lines are the Caisse de Liquidation at Havre and the Waaren Liquidations Casse at Hamburg. The Cotton Association also has a clearing-house at Liverpool for clearing the transactions which arise from dealings in cotton.

AUTHORITIES.—W. Howarth, *Our Clearing System and Clearing Houses* (1897), *The Banks in the Clearing House* (1905); J.G. Cannon, *Clearing-houses, their History, Methods and Administration* (1901); H.T. Easton, *Money, Exchange and Banking* (1905); and the various volumes of the *Journal of the Institute of Bankers*.

(T. A. I.)

CLEAT (a word common in various forms to many Teutonic languages, in the sense of a wedge or lump, cf. “clod” and “clot”), a wedge-shaped piece of wood fastened to ships’ masts and elsewhere to prevent a rope, collar or the like from slipping, or to act as a step; more particularly a piece of wood or metal with double or single horns used for belaying ropes. A “cleat” is also a wedge fastened to a ship’s side to catch the shores in a launching cradle or dry dock. “Cleat” is also used in mining for the vertical cleavage-planes of coal.

CLEATOR MOOR, an urban district in the Egremont parliamentary division of Cumberland, England, 4 m. S.E. of White-haven, served by the Furness, London & North-Western and Cleator & Workington Junction railways. Pop. (1901) 8120. The town lies between the valleys of the Ehen and its tributary the Dub Beck, in a district rich in coal and iron ore. The mining of these, together with blast furnaces and engineering works, occupies the large industrial population.

CLEAVERS, or GOOSE-GRASS, *Galium Aparine* (natural order Rubiaceae), a common plant in hedges and waste places, with a long, weak, straggling, four-sided, green stem, bearing whorls of 6 to 8 narrow leaves, ½ to 2 in. long, and, like the angles of the stem, rough from the presence of short, stiff, downwardly-pointing, hooked hairs. The small, white, regular flowers are borne, a few together, in axillary clusters, and are followed by the large, hispid, two-celled fruit, which, like the rest of the plant, readily clings to a rough surface, whence the common name. The plant has a wide distribution throughout the north temperate zone, and is also found in temperate South America.

CLEBURNE, a town and the county-seat of Johnson county, Texas, U.S.A., 25 m. S. of Fort Worth. Pop. (1890) 3278; (1900) 7493, including 611 negroes; (1910) 10,364. It is served by the Gulf, Colorado & Santa Fé, the Missouri, Kansas & Texas, and the Trinity & Brazos Valley railways. It is the centre of a prosperous farming, fruit and stock-raising region, has large railway repair shops, flour-mills, cotton gins and foundries, a canning factory and machine shops. It has a Carnegie library, and St Joseph's Academy (Roman Catholic; for girls). The town was named in honour of Patrick Ronayne Cleburne (1828-1864), a major-general of the Confederate army, who was of Irish birth, practised law in Helena, Arkansas, served at Shiloh, Perryville, Stone River, Chickamauga, Missionary Ridge, Ring-gold Gap, Jonesboro and Franklin, and was killed in the last-named battle; he was called the "Stonewall of the West."

CLECKHEATON, an urban district in the Spen Valley parliamentary division of the West Riding of Yorkshire, England, 5½ m. S. by E. of Bradford, on the Lancashire & Yorkshire, Great Northern and London & North-Western railways. Pop. (1901) 12,524. A chamber of commerce has held meetings here since 1878. The industries comprise the manufacture of woollens, blankets, flannel, wire-card and machinery.

CLEETHORPES, a watering-place of Lincolnshire, England; within the parliamentary borough of Great Grimsby, 3 m. S.E. of that town by a branch of the Great Central railway. Pop. of urban district of Cleethorpe with Thrunscoe (1901) 12,578. Cleethorpes faces eastward to the North Sea, but its shore of fine sand, affording good bathing, actually belongs to the estuary of the Humber. There is a pier, and the sea-wall extends for about a mile, forming a pleasant promenade. The suburb of New Clee connects Cleethorpes with Grimsby. The church of the Holy Trinity and St Mary is principally Norman of various dates, but work of a date apparently previous to the Conquest appears in the tower. Cleethorpes is greatly favoured by visitors from the midland counties, Lancashire and Yorkshire.

CLEFT PALATE and **HARE-LIP**, in surgery. *Cleft Palate* is a congenital cleavage, or incomplete development in the roof of the mouth, and is frequently associated with hare-lip. The infant is prevented from sucking, and an operation is necessary. Cleft-palate is often a hereditary defect. The most favourable time for operating is between the age of two weeks and three months, and if the cleft is closed at this early date, not only are the nutrition and general development of the child greatly improved, but the voice is probably saved from much of the unpleasant tone which is usually associated with a defective roof to the mouth and is apt to persist even if a cleft has been successfully operated on later in childhood. The greatest advance which has been made in the operative treatment of cleft palate is due to the teaching of Dr Truman W. Brophy, who adopted the ingenious plan of thrusting together to the middle line of the mouth the halves of the palate which nature had unfortunately left apart. But, as noted above, this operation must, to give the best results, be undertaken in the earliest months of infancy. After the cleft in the palate has been effectually dealt with, the hare-lip can be repaired with ease and success.

Hare-lip.—In the hare the splitting of the lip is in the middle line, but in the human subject it is on one side, or on both sides of the middle line. This is accounted for on developmental grounds: a cleft in the exact middle line is of extremely rare occurrence. Hare-lip is often associated with cleft palate. Though we are at present unable to explain why development should so frequently miss the mark in connexion with the formation of the lip and palate, it is unlikely that maternal impressions have anything to do with it. As a rule, the supposed

"fright" comes long after the lips are developed. They are completely formed by the ninth week. Heredity has a powerful influence in many cases. The best time for operating on a hare-lip depends upon various circumstances. Thus, if it is associated with cleft palate, the palatine cleft has first to be closed, in which case the child will probably be several months old before the lip is operated on. If the infant is in so poor a state of nutrition that it appears unsuitable for surgical treatment, the operation must be postponed until his condition is sufficiently improved. But, assuming that the infant is in fair health, that he is taking his food well and thriving on it, that he is not troubled by vomiting or diarrhoea, and that the hare-lip is not associated with a defective palate, the sooner it is operated on the better. It may be successfully done even within a few hours of birth. When a hare-lip is unassociated with cleft palate, the infant may possibly be enabled to take the breast within a short time of the gap being closed. In such a case the operation may be advisably undertaken within the first few days of birth. The case being suitable, the operation may be conveniently undertaken at any time after the tenth day.

(E. O.*)

CLEISTHENES, the name of two Greek statesmen, (1) of Athens, (2) of Sicyon, of whom the first is far the more important.

1. Cleisthenes, the Athenian statesman, was the son of Megacles and Agariste, daughter of Cleisthenes of Sicyon. He thus belonged, through his father, to the noble family of the Alcmaeonidae (*q.v.*), who bore upon them the curse of the Cylonian massacre, and had been in exile during the rule of the Peisistratids. In the hope of washing out the stigma, which damaged their prestige, they spent the latter part of their exile in carrying out with great splendour the contract given out by the Amphictyons for the rebuilding of the temple at Delphi (destroyed by fire in 548 B.C.). By building the pronaos of Parian marble instead of limestone as specified in the contract, they acquired a high reputation for piety; the curse was consigned to oblivion, and their reinstatement was imposed by the oracle itself upon the Spartan king, Cleomenes (*q.v.*). Cleisthenes, to whom this far-seeing atonement must probably be attributed, had also on his side (1) the malcontents in Athens who were disgusted with the growing severity of Hippias, and (2) the oligarchs of Sparta, partly on religious grounds, and partly owing to their hatred of tyranny. Aristotle's *Constitution of Athens*, however, treats the alliance of the Peisistratids with Argos, the rival of Sparta in the Peloponnese, as the chief ground for the action of Sparta (*c.* 19). In *c.* 513 B.C. Cleisthenes invaded Attica, but was defeated by the tyrant's mercenaries at Leipsydrium (S. of Mt. Parnes). Sparta then, in tardy obedience to the oracle, threw off her alliance with the Peisistratids, and, after one failure, expelled Hippias in 511-510 B.C., leaving Athens once again at the mercy of the powerful families.

Home and foreign policy.

Cleisthenes, on his return, was in a difficulty; he realized that Athens would not tolerate a new tyranny, nor were the other nobles willing to accept him as leader of a constitutional oligarchy. It was left for him to "take the people into partnership" as Peisistratus had in a different way done before him. Solon's reforms had failed, primarily because they left unimpaired the power of the great landed nobles, who, in their several districts, doubled the rôles of landlord, priest and patriarch. This evil of local influence Peisistratus had concealed by satisfying the nominally sovereign people that in him they had a sufficient representative. It was left to Cleisthenes to adopt the remaining remedy of giving substance to the form of the Solonian constitution. His first attempts roused the aristocrats to a last effort; Isagoras appealed to the Spartans (who, though they disliked tyranny, had no love for democracy) to come to his aid. Cleisthenes retired on the arrival of a herald from Cleomenes, reviving the old question of the curse; Isagoras thus became all-powerful[1] and expelled seven hundred families. The democrats, however, rose, and after besieging Cleomenes and Isagoras in the Acropolis, let them go under a safe-conduct, and brought back the exiles.

Apart from the reforms which Cleisthenes was now able to establish, the period of his ascendancy is a blank, nor are we told when and how it came to an end. It is clear, however —and it is impossible in connexion with the Pan-hellenic patriotism to which Athens laid claim, to overrate the importance of the fact—that Cleisthenes, hard pressed in the war with

Boeotia, Euboea and Sparta (Herod, v. 73 and foll.), sent ambassadors to ask the help of Persia. The story, as told by Herodotus, that the ambassadors of their own accord agreed to give "earth and water" (*i.e.* submission) in return for Persian assistance, and that the Ecclesia subsequently disavowed their action as unauthorized, is scarcely credible. Cleisthenes (1) was in full control and must have instructed the ambassadors; (2) he knew that any help from Persia meant submission. It is practically certain, therefore, that he (cf. the Alcmaeonids and the story of the shield at Marathon) was the first to "medize" (see Curtius, *History of Greece*). Probably he had hoped to persuade the Ecclesia that the agreement was a mere form. Aelian says that he himself was a victim to his own device of ostracism (*q.v.*); this, though apparently inconsistent with the *Constitution of Athens* (*c.* 22), may perhaps indicate that his political career ended in disgrace, a hypothesis which is explicable on the ground of this act of treachery in respect of the attempted Persian alliance. Whether to Cleisthenes are due the final success over Boeotia and Euboea, the planting of the 4000 cleruchs on the Lelantine Plain, and the policy of the Aeginetan War (see Aegina), in which Athens borrowed ships from Corinth, it is impossible to determine. The eclipse of Cleisthenes in all records is one of the most curious facts in Greek history. It is also curious that we do not know in what official capacity Cleisthenes carried his reforms. Perhaps he was given extraordinary *ad hoc* powers for a specified time; conceivably he used the ordinary mechanism. It seems clear that he had fully considered his scheme in advance, that he broached it before the last attack of Isagoras, and that it was only after the final expulsion of Isagoras and his Spartan allies that it became possible for him to put it into execution.

Analysis of his reforms

Cleisthenes aimed at being the leader of a self-governing people; in other words he aimed at making the democracy actual. He realized that the dead-weight which held the democracy down was the influence on politics of the local religious unit. Therefore his prime object was to dissociate the clans and the phratries from politics, and to give the democracy a totally new electoral basis in which old associations and vested interests would be split up and become ineffective. It was necessary that no man should govern a pocket-constituency merely by virtue of his religious, financial or ancestral prestige, and that there should be created a new local unit with administrative powers of a democratic character which would galvanize the lethargic voters into a new sense of responsibility and independence. His first step was to abolish the four Solonian tribes and create ten new ones.[2]

The ten tribes

Each of the new tribes was subdivided into "demes'" (roughly "townships"); this organization did not, except politically, supersede the system of clans and phratries whose old religious signification remained untouched. The new tribes, however, though geographically arranged, did not represent local interests. Further, the tribe names were taken from legendary heroes (Cecropis, Pandionis, Aegeis recalled the storied kings of Attica), and, therefore, contributed to the idea of a national unity; even Ajax, the eponym of the tribe Aeantis, though not Attic, was famous as an ally (Herod, v. 66) and ranked as a national hero. Each tribe had its shrine and its particular hero-cult, which, however, was free from local association and the dominance of particular families. This national idea Cleisthenes further emphasized by setting up in the market-place at Athens a statue of each tribal hero.

Demes.

The next step was the organization of the deme. Within each tribe he grouped ten demes (see below), each of which had (1) its hero and its chapel, and (2) its census-list kept by the demarch. The demarch (local governor), who was elected popularly and held office for one year, presided over meetings affecting local administration and the provision of crews for the state-navy, and was probably under a system of scrutiny like the *dokimasia* of the state-magistrates. According to the Aristotelian *Constitution of Athens*, Cleisthenes further divided Attica into three districts, Urban and Suburban, Inland (*Mesogaios*), and Maritime (*Paralia*), each of which was subdivided into ten *trittyes*; each tribe had three trittyes in each of these districts. The problem of establishing this decimal system in connexion with the demes and trittyes is insoluble. Herodotus says that there were ten[3] demes to each tribe (δέκα εἰς τὰς φυλάς); but each tribe was composed of three trittyes, one in each of the three districts. Since the deme was, as will be seen, the electoral unit, it is clear that in tribal voting the object of ending the old threefold schism of the Plain, the Hill and the Shore was attained, but the relation of deme and trittys is obviously of an unsymmetrical kind. The *Constitution of Athens* says nothing of the ten-deme-to-each-tribe arrangement, and there is no sufficient reason for supposing that the demes originally were exactly a hundred in number. We know the names of 168 demes, and Polemon (3rd century B.C.) enumerated 173. It has been suggested that the demes did originally number exactly a hundred, and that new demes were added as the

population increased. This theory, however, presupposes that the demes were originally equal in numbers. In the 5th and 4th centuries this was certainly not the case; the number of demesmen in some cases was only one hundred or two hundred, whereas the deme Acharnae is referred to as a "great part" of the whole state, and is known to have furnished three thousand hoplites. The theory is fundamentally at fault, inasmuch as it regards the deme as consisting of all those *resident within its borders*. In point of fact membership was hereditary, not residential; Demosthenes "of the Paeanian deme" might live where he would without severing his deme connexion. Thus the increase of population could be no reason for creating new demes. This distinction in a deme between demesmen and residents belonging to another deme (the ἐγκεκτημένοι), who paid a deme-tax for their privilege, is an important one. It should further be noted that the demes belonging to a particular tribe do not, as a fact, appear always in three separate groups; the tribe Aeantis consisted of Phalerum and eleven demes in the district of Marathon; other tribes had demes in five or six groups. It must, therefore, be admitted that the problem is insoluble for want of data. Nor are we better equipped to settle the relation between the Cleisthenean division into Urban, Maritime and Inland, and the old divisions of the Plain, the Shore and the Upland or Hill. The "Maritime" of Cleisthenes and the old "Shore" are certainly not coincident, nor is the "Inland" identical with the "Upland."

Lastly, it has been asked whether we are to believe that Cleisthenes invented the demes. To this the answer is in the negative. The demes were undoubtedly primitive divisions of Attica; Herodotus (ix. 73) speaks of the Dioscuri as ravaging the demes of Decelea (see R.W. Macan *ad loc.*) and we hear of opposition between the city and the demes. The most logical conclusion perhaps is that Cleisthenes, while he *did* create the demes which Athens itself comprised, did not create the country demes, but merely gave them definition as political divisions. Thus the city itself had six demes in five different tribes, and the other five tribes were represented in the suburbs and the Peiraeus. It is clear that in the Cleisthenean system there was one great source of danger, namely that the residents in and about Athens must always have had more weight in elections than those in distant demes. There can be little doubt that the preponderating influence of the city was responsible for the unwisdom of the later imperial policy and the Peloponnesian war.

A second problem is the franchise reform of Cleisthenes. Aristotle in the *Politics* (iii. 2. 3 = 1275 b) says that Cleisthenes created new citizens by enrolling in the tribes "many resident aliens and emancipated slaves."[4] But the Aristotelian *Constitution of Athens* asserts that he gave "citizenship to the masses." These two statements are not compatible. It is perfectly clear that Cleisthenes is to be regarded as a democrat, and it would have been no bribe to the people merely to confer a boon on aliens and slaves. Moreover, a revision of the citizen-roll (*diapsephismus*) had recently taken place (after the end of the tyranny) and a great many citizens had been struck off the roll as being of impure descent (οἱ τῷ γένει μὴ καθαροί). This class had existed from the time of Solon, and, through fear of political extinction by the oligarchs, had been favourable to Peisistratus. Cleisthenes may have enfranchised aliens and slaves, but it seems certain that he must have dealt with these free Athenians who had lost their rights. Now Isagoras presumably did not carry out this revision of the roll (*diapsephismus*); as "the friend of the tyrants" (so *Ath. Pol.* 20; by Meyer, Busolt and others contest this) he would not have struck a blow at a class which favoured his own views. A reasonable hypothesis is that Cleisthenes was the originator of the measure of expulsion, and that he now changed his policy, and strengthened his hold on the democracy by reinstating the disfranchised in much larger numbers. The new citizens, whoever they were, must, of course, have been enrolled also in the (hitherto exclusive) phratry lists and the deme-rolls.

The diapsephismus.

The Boulē (*q.v.*) was reorganized to suit the new tribal arrangement, and was known henceforward as the Council of the Five Hundred, fifty from each tribe. Its exact constitution is unknown, but it was certainly more democratic than the Solonian Four Hundred. Further, the system of ten tribes led in course of time to the construction of boards of ten to deal with military and civil affairs, *e.g.* the Strategi (see STRATEGUS), the Apodectae, and others. Of these the former cannot be attributed to Cleisthenes, but on the evidence of Androtion it is certain that it was Cleisthenes who replaced the Colacretae[5] by the Apodectae ("receivers"), who were controllers and auditors of the finance department, and, before the council in the council-chamber, received the revenues. The Colacretae, who had done this work before, remained in authority over the internal expenses of the Prytaneum. A further change which followed from the new tribal system was the reconstitution of the army; this, however, probably took place about 501 B.C., and cannot be attributed directly to Cleisthenes. It has been said that the deme became the local political unit, replacing the naucrary (*q.v.*). But

The council and boards of ten.

the naucraries still supplied the fleet, and were increased in number from forty-eight to fifty; if each naucrary still supplied a ship and two mounted soldiers as before, it is interesting to learn that, only seventy years before the Peloponnesian War, Athens had but fifty ships and a hundred horse.[6]

The device of ostracism is the final stone in the Cleisthenean structure. An admirable scheme in theory, and, at first, in practice, it deteriorated in the 5th century into a mere party weapon, and in the case of Hyperbolus (417) became an absurdity. 481

Summary. In conclusion it should be noticed that Cleisthenes was the founder of the Athens which we know. To him was due the spirit of nationality, the principle of liberty duly apportioned and controlled by centralized and decentralized administration, which prepared the ground for the rich developments of the Golden Age with its triumphs of art and literature, politics and philosophy. It was Cleisthenes who organized the structure which, for a long time, bore the heavy burden of the Empire against impossible odds, the structure which the very different genius of Pericles was able to beautify. He was the first to appreciate the unique power in politics, literature and society of an organized public opinion.

AUTHORITIES.—*Ancient:* Aristotle, *Constitution of Athens* (ed. J.E. Sandys), cc. 20-22, 41; Herodotus v, 63-73, vi. 131; Aristotle, *Politics*, iii. 2, 3 (= 1275 b, for franchise reforms). *Modern:* Histories of Greece in general, especially those of Grote and Curtius (which, of course, lack the information contained in the *Constitution of Athens*), and J.B. Bury. See also E. Meyer, *Geschichte des Altertums* (vol. ii.); G. Busolt, *Griech. Gesch.* (2nd ed., 1893 foll.); Milchhöfer, "Über die Demenordnung des Kleisthenes" in appendix to *Abhandlung d. Berl. Akad.* (1892); R. Loeper in *Athen. Mitteil.* (1892), pp. 319-433; A.H.J. Greenidge, *Handbook of Greek Constitutional History* (1896); Gilbert, *Greek Constitutional Antiquities* (Eng. trans., 1895); R.W. Macan, *Herodotus iv.-vi.*, vol. ii. (1895), pp. 127-148; U. von Wilamowitz-Moellendorff, *Arist. und Athen.* See also BOLLĒ; ECCLESIA; OSTRACISM; NAUCRARY; SOLON.

2. CLEISTHENES OF SICYON (c. 600-570), grandfather of the above, became tyrant of Sicyon as the representative of the conquered Ionian section of the inhabitants. He emphasized the destruction of Dorian predominance by giving ridiculous epithets to their tribal units, which from Hylleis, Dymanes and Pamphyli become Hyatae ("Swine-men"), Choireatae ("Pig-men") and Oneatae ("Ass-men"). He also attacked Dorian Argos, and suppressed the Homeric "rhapsodists" who sang the exploits of Dorian heroes. He championed the cause of the Delphic oracle against the town of Crisa (Cirrha) in the Sacred War (c. 590). Crisa was destroyed, and Delphi became one of the meeting-places of the old amphictyony of Anthela, henceforward often called the Delphic amphictyony. The Pythian games, largely on the initiative of Cleisthenes, were re-established with new magnificence, and Cleisthenes won the first chariot race in 582. He founded Pythian games at Sicyon, and possibly built a new Sicyonian treasury at Delphi. His power was so great that when he offered his daughter Agariste in marriage, some of the most prominent Greeks sought the honour, which fell upon Megacles, the Alcmaeonid. The story of the rival wooers with the famous retort, "Hippocleides don't care," is told in Herod. vi. 125; see also Herod, v. 67 and Thuc. i. 18.

CLEISTHENES is also the name of an Athenian, pilloried by Aristophanes (*Clouds*, 354; *Thesm.* 574) as a fop and a profligate.

(J. M. M.)

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1 The archonship of Isagoras in 508 is important as showing that Cleisthenes, three years after his return, had so far failed to secure the support of a majority in Athens. There is no sufficient reason for supposing that the election of Isagoras was procured by Cleomenes; all the evidence points to its having been brought about in the ordinary way. Probably, therefore, Cleisthenes did not take the people thoroughly into partnership till after the spring of 508.

2 The explanation given for this step by Herodotus (v. 67) is an amusing example of his incapacity as a critical historian. To compare Cleisthenes of Sicyon (see below), bent on humiliating the Dorians of Sicyon by giving opprobrious names to the Dorian tribes, with his grandson, whose endeavour was to elevate the very persons whose tribal organization he replaced, is clearly absurd.

3 Wilamowitz-Moellendorff (*Arist. und Athen*, pp. 149-150) suggests δεκαχά, "in ten batches," instead of δέκα.

4 It should be observed that there are other translations of the difficult phrase ξένους καὶ δούλους μετοίκους.

5 *Colacretae* were very ancient Athenian magistrates; either (1) those who "cut up the joints" in

the Prytaneum (κῶλα, κείρω), or (2) those who "collected the joints" (κῶλα, ἀγείρω) which were left over from public sacrifices, and consumed in the Prytaneum. These officials were again important in the time of Aristophanes (*Wasps*, 693, 724; *Birds*, 1541), and they presided over the payment of the dicasts instituted by Pericles. They are not mentioned, though they may have existed, after 403 B.C. At Sicyon also magistrates of this name are found.

6 It is, however, more probable that the right reading of the passage is δέκα ἱππεῖς instead of δύο, which would give a cavalry force in early Athens of 480, a reasonable number in proportion to the total fighting strength.

CLEITARCHUS, one of the historians of Alexander the Great, son of Deinon, also an historian, was possibly a native of Egypt, or at least spent a considerable time at the court of Ptolemy Lagus. Quintilian (*Instit.* x. i. 74) credits him with more ability than trustworthiness, and Cicero (*Brutus*, 11) accuses him of giving a fictitious account of the death of Themistocles. But there is no doubt that his history was very popular, and much used by Diodorus Siculus, Quintus Curtius, Justin and Plutarch, and the authors of the Alexander romances. His unnatural and exaggerated style became proverbial.

The fragments, some thirty in number, chiefly preserved in Aelian and Strabo, will be found in C. Müller's *Scriptores Rerum Alexandri Magni* (in the Didot *Arrian*, 1846); monographs by C. Raun, *De Clitarcho Diodori, Curtii, Justini auctore* (1868), and F. Reuss, "Hellenistische Beiträge" in *Rhein. Mus.* lxiii. (1908), pp. 58-78.

CLEITHRAL (Gr. κλεῖθρον, an enclosed or shut-up place), an architectural term applied to a covered Greek temple, in contradistinction to *hypaethral*, which designates one that is uncovered; the roof of a cleithral temple completely covers it.

CLEITOR, or CLITOR, a town of ancient Greece, in that part of Arcadia which corresponds to the modern eparchy of Kalavryta in the nomos of Elis and Achaea. It stood in a fertile plain to the south of Mt Chelmos, the highest peak of the Aroanian Mountains, and not far from a stream of its own name, which joined the Aroanius, or Katzana. In the neighbourhood was a fountain, the waters of which were said to deprive those who drank them of the taste for wine. The town was a place of considerable importance in Arcadia, and its inhabitants were noted for their love of liberty. It extended its territory over several neighbouring towns, and in the Theban war fought against Orchomenus. It joined the other Arcadian cities in the foundation of Megalopolis. As a member of the Achaean league it was besieged by the Aetolians in 220 B.C., and was on several occasions the seat of the federal assemblies. It coined money up to the time of Septimius Severus. The ruins, which bear the common name of Paleopoli, or Old City, are still to be seen about 3 m. from a village that preserves the ancient designation. The greater part of the walls which enclose an area of about a mile and several of the semi-circular towers with which they were strengthened can be clearly made out; and there are also remains of three Doric temples and a small theatre.

CLELAND, WILLIAM (1661?-1689), Scottish poet and soldier, son of Thomas Cleland, gamekeeper to the marquis of Douglas, was born about 1661. He was probably brought up on the marquess of Douglas's estate in Lanarkshire, and was educated at St Andrews

University. Immediately on leaving college he joined the army of the Covenanters, and was present at Drumclog, where, says Robert Wodrow, some attributed to Cleland the manœuvre which led to the victory. He also fought at Bothwell Bridge. He and his brother James were described in a royal proclamation of the 16th of June 1679 among the leaders of the insurgents. He escaped to Holland, but in 1685 was again in Scotland in connexion with the abortive invasion of the earl of Argyll. He escaped once more, to return in 1688 as agent for William of Orange. He was appointed lieutenant-colonel of the Cameronian regiment raised from the minority of the western Covenanters who consented to serve under William III. The Cameronians were entrusted with the defence of Dunkeld, which they held against the fierce assault of the Highlanders on the 26th of August. The repulse of the Highlanders before Dunkeld ended the Jacobite rising, but Cleland fell in the struggle. He wrote *A Collection of several Poems and Verses* composed upon various occasions (published posthumously, 1697). Of “Hullo, my fancie, whither wilt thou go?” only the last nine stanzas are by Cleland. His poems have small literary merit, and are written, not in pure Lowland Scots, but in English with a large admixture of Scottish words. The longest and most important of them are the “mock poems” “On the Expedition of the Highland Host who came to destroy the western shires in winter 1678” and “On the clergie when they met to consult about taking the Test in the year 1681.”

An Exact Narrative of the *Conflict of Dunkeld ... collected from several officers of the regiment ...* appeared in 1689.

CLEMATIS, in botany, a genus of the natural order Ranunculaceae, containing nearly two hundred species, and widely distributed. It is represented in England by *Clematis Vitalba*, “old man’s beard” or “traveller’s joy,” a common plant on chalky or light soil. The plants are shrubby climbers with generally compound opposite leaves, the stalk of which is sensitive to contact like a tendril, becoming twisted round suitable objects and thereby giving support to the plant. The flowers are arranged in axillary or terminal clusters; they have no petals, but white or coloured, often very large sepals, and an indefinite number of stamens and carpels. They contain no honey, and are visited by insects for the sake of the pollen, which is plentiful. The fruit is a head of achenes, each bearing the long-bearded persistent style, suggesting the popular name. This feathery style is an important agent in the distribution of the seed by means of the wind. Several of the species, especially the large-flowered ones, are favourite garden plants, well adapted for covering trellises or walls, or trailing over the ground. Many garden forms have been produced by hybridization; among the best known is *C. Jackmanni*, due to Mr George Jackman of Woking.

Further information may be obtained from *The Clematis as a Garden Flower*, by Thos. Moore and George Jackman. See also G. Nicholson, *Dictionary of Gardening*, i. (1885) and *Supplements*.

CLEMENCEAU, GEORGES (1841-), French statesman, was born at Mouilleron-en-Pareds, Vendée, on the 28th of September 1841. Having adopted medicine as his profession, he settled in 1869 in Montmartre; and after the revolution of 1870 he had become sufficiently well known to be nominated mayor of the 18th arrondissement of Paris (Montmartre)—an unruly district over which it was a difficult task to preside. On the 8th of February 1871 he was elected as a Radical to the National Assembly for the department of the Seine, and voted against the peace preliminaries. The execution, or rather murder, of Generals Lecomte and Clément Thomas by the communists on 18th March, which he vainly tried to prevent, brought him into collision with the central committee sitting at the hôtel de ville, and they ordered his arrest, but he escaped; he was accused, however, by various witnesses, at the subsequent trial of the murderers (November 29th), of not having intervened when he might have done, and though he was cleared of this charge it led to a duel, for his share in which he was prosecuted and sentenced to a fine and a fortnight’s imprisonment.

Meanwhile, on the 20th of March 1871, he had introduced in the National Assembly at Versailles, on behalf of his Radical colleagues, the bill establishing a Paris municipal council of eighty members; but he was not returned himself at the elections of the 26th of March. He tried with the other Paris mayors to mediate between Versailles and the hôtel de ville, but failed, and accordingly resigned his mayoralty and his seat in the Assembly, and temporarily gave up politics; but he was elected to the Paris municipal council on the 23rd of July 1871 for the Clignancourt *quartier*, and retained his seat till 1876, passing through the offices of secretary and vice-president, and becoming president in 1875. In 1876 he stood again for the Chamber of Deputies, and was elected for the 18th arrondissement. He joined the Extreme Left, and his energy and mordant eloquence speedily made him the leader of the Radical section. In 1877, after the *Seize Mai* (see FRANCE: *History*), he was one of the republican majority who denounced the Broglie ministry, and he took a leading part in resisting the anti-republican policy of which the *Seize Mai* incident was a symptom, his demand in 1879 for the indictment of the Broglie ministry bringing him into particular prominence. In 1880 he started his newspaper, *La Justice*, which became the principal organ of Parisian Radicalism; and from this time onwards throughout M. Grévy's presidency his reputation as a political critic, and as a destroyer of ministries who yet would not take office himself, rapidly grew. He led the Extreme Left in the Chamber. He was an active opponent of M. Jules Ferry's colonial policy and of the Opportunist party, and in 1885 it was his use of the Tongking disaster which principally determined the fall of the Ferry cabinet. At the elections of 1885 he advocated a strong Radical programme, and was returned both for his old seat in Paris and for the Var, selecting the latter. Refusing to form a ministry to replace the one he had overthrown, he supported the Right in keeping M. Freycinet in power in 1886, and was responsible for the inclusion of General Boulanger in the Freycinet cabinet as war minister. When Boulanger (*q.v.*) showed himself as an ambitious pretender, Clemenceau withdrew his support and became a vigorous combatant against the Boulangist movement, though the Radical press and a section of the party continued to patronize the general.

By his exposure of the Wilson scandal, and by his personal plain speaking, M. Clemenceau contributed largely to M. Grévy's resignation of the presidency in 1887, having himself declined Grévy's request to form a cabinet on the downfall of that of M. Rouvier; and he was primarily responsible, by advising his followers to vote neither for Floquet, Ferry nor Freycinet, for the election of an "outsider" as president in M. Carnot. He had arrived, however, at the height of his influence, and several factors now contributed to his decline. The split in the Radical party over Boulangism weakened his hands, and its collapse made his help unnecessary to the moderate republicans. A further misfortune occurred in the Panama affair, Clemenceau's relations with Cornelius Herz leading to his being involved in the general suspicion; and, though he remained the leading spokesman of French Radicalism, his hostility to the Russian alliance so increased his unpopularity that in the election for 1893 he was defeated for the Chamber, after having sat in it continuously since 1876. After his defeat for the Chamber, M. Clemenceau confined his political activities to journalism, his career being further overclouded—so far as any immediate possibility of regaining his old ascendancy was concerned—by the long-drawn-out Dreyfus case, in which he took an active and honourable part as a supporter of M. Zola and an opponent of the anti-Semitic and Nationalist campaign. In 1900 he withdrew from *La Justice* to found a weekly review, *Le Bloc*, which lasted until March 1902. On the 6th of April 1902 he was elected senator for the Var, although he had previously continually demanded the suppression of the Senate. He sat with the Socialist Radicals, and vigorously supported the Combes ministry. In June 1903 he undertook the direction of the journal *L'Aurore*, which he had founded. In it he led the campaign for the revision of the Dreyfus affair, and for the separation of Church and State.

In March 1906 the fall of the Rouvier ministry, owing to the riots provoked by the inventories of church property, at last brought Clemenceau to power as minister of the interior in the Sarrien cabinet. The strike of miners in the Pas de Calais after the disaster at Courrières, leading to the threat of disorder on the 1st of May 1906, obliged him to employ the military; and his attitude in the matter alienated the Socialist party, from which he definitely broke in his notable reply in the Chamber to Jean Jaurès in June 1906. This speech marked him out as the strong man of the day in French politics; and when the Sarrien ministry resigned in October, he became premier. During 1907 and 1908 his premiership was notable for the way in which the new *entente* with England was cemented, and for the successful part which France played in European politics, in spite of difficulties with Germany and attacks by the Socialist party in connexion with Morocco (see FRANCE: *History*). But on July 20th, 1909, he was defeated in a discussion in the Chamber on the state of the navy, in which bitter words were exchanged between him and Delcassé; and he at once

resigned, being succeeded as premier by M. Briand, with a reconstructed cabinet.

CLEMENCÍN, DIEGO (1765-1834), Spanish scholar and politician, was born on the 27th of September 1765, at Murcia, and was educated there at the Colegio de San Fulgencio. Abandoning his intention of taking orders, he found employment at Madrid in 1788 as tutor to the sons of the countess-duchess de Benavente, and devoted himself to the study of archaeology. In 1807 he became editor of the *Gaceta de Madrid*, and in the following year was condemned to death by Murat for publishing a patriotic article; he fled to Cadiz, and under the Junta Central held various posts from which he was dismissed by the reactionary government of 1814. During the liberal régime of 1820-1823 Clemencín took office as colonial minister, was exiled till 1827, and in 1833 published the first volume of his edition (1833-1839) of *Don Quixote*. Its merits were recognized by his appointment as royal librarian, but he did not long enjoy his triumph: he died on the 30th of July 1834. His commentary on *Don Quixote* owes something to John Bowle, and is disfigured by a patronizing, carping spirit; nevertheless it is the most valuable work of its kind, and is still unsuperseded. Clemencín is also the author of an interesting *Elogio de la reina Isabel la Católica*, published as the sixth volume of the *Memorias* of the Spanish Academy of History, to which body he was elected on the 12th of September 1800.

CLEMENT (Lat. *Clemens*, *i.e.* merciful; Gr. Κλήμης), the name of fourteen popes and two anti-popes.

Clement I., generally known as Clement of Rome, or Clemens Romanus (flor. c. A.D. 96), was one of the “Apostolic Fathers,” and in the lists of bishops of Rome is given the third or fourth place—Peter, Linus, (Anencletus), Clement. There is no ground for identifying him with the Clement of Phil. iv. 3. He may have been a freedman of T. Flavius Clemens, who was consul with his cousin, the Emperor Domitian, in A.D. 95. A 9th- century tradition says he was martyred in the Crimea in 102; earlier authorities say he died a natural death; he is commemorated on the 23rd of November.

In *The Shepherd of Hermas* (*q.v.*) (Vis. 11. iv. 3) mention is made of one Clement whose office it is to communicate with other churches, and this function agrees well with what we find in the letter to the church at Corinth by which Clement is best known. Whilst being on our guard against reading later ideas into the title “bishop” as applied to Clement, there is no reason to doubt that he was one of the chief personalities in the Christian community at Rome, where since the time of Paul the separate house congregations (Rom. xvi.) had been united into one church officered by presbyters and deacons (Clem. 40-42). The letter in question was occasioned by a dispute in the church of Corinth, which had led to the ejection of several presbyters from their office. It does not contain Clement’s name, but is addressed by “the Church of God which sojourneth in Rome to the Church of God which sojourneth in Corinth.” But there is no reason for doubting the universal tradition which ascribes it to Clement, or the generally accepted date, c. A.D. 96. No claim is made by the Roman Church to interfere on any ground of superior rank; yet it is noteworthy that in the earliest document outside the canon which we can securely date, the church in the imperial city comes forward as a peacemaker to compose the troubles of a church in Greece. Nothing is known of the cause of the discontent; no moral offence is charged against the presbyters, and their dismissal is regarded by Clement as high-handed and unjustifiable, and as a revolt of the younger members of the community against the elder. After a laudatory account of the past conduct of the Corinthian Church, he enters upon a denunciation of vices and a praise of virtues, and illustrates his various topics by copious citations from the Old Testament scriptures. Thus he paves the way for his tardy rebuke of present disorders, which he reserves until two-thirds of his epistle is completed. Clement is exceedingly discursive, and his letter reaches twice the length of the Epistle to the Hebrews. Many of his

general exhortations are but very indirectly connected with the practical issue to which the epistle is directed, and it is very probable that he was drawing largely upon the homiletical material with which he was accustomed to edify his fellow-Christians at Rome.

This view receives some support from the long liturgical prayer at the close, which almost certainly represents the intercession used in the Roman eucharists. But we must not allow such a theory to blind us to the true wisdom with which the writer defers his censure. He knows that the roots of the quarrel lie in a wrong condition of the church's life. His general exhortations, courteously expressed in the first person plural, are directed towards a wide reformation of manners. If the wrong spirit can be exorcised, there is hope that the quarrel will end in a general desire for reconciliation. The most permanent interest of the epistle lies in the conception of the grounds on which the Christian ministry rests according to the view of a prominent teacher before the 1st century has closed. The orderliness of nature is appealed to as expressing the mind of its Creator. The orderliness of Old Testament worship bears a like witness; everything is duly fixed by God; high priests, priests and Levites, and the people in the people's place. Similarly in the Christian dispensation all is in order due. "The apostles preached the gospel to us from the Lord Jesus Christ; Jesus Christ was sent from God. Christ then is from God, and the apostles from Christ. . . . They appointed their first-fruits, having tested them by the Spirit, as bishops and deacons of those who should believe. . . . Our apostles knew through our Lord Jesus Christ that there would be strife about the name of the bishop's office. For this cause therefore, having received perfect foreknowledge, they appointed the aforesaid, and afterwards gave a further injunction (ἐπινομήν] has now the further evidence of the Latin *legem*) that, if these should fall asleep, other approved men should succeed to their ministry. . . . It will be no small sin in us if we eject from the bishop's office those who have offered the gifts blamelessly and holily" (cc. xlii. xliv.).

Clement's familiarity with the Old Testament points to his being a Christian of long standing rather than a recent convert. We learn from his letter (i. 7) that the church at Rome, though suffering persecution, was firmly held together by faith and love, and was exhibiting its unity in an orderly worship. The epistle was publicly read from time to time at Corinth, and by the 4th century this usage had spread to other churches. We even find it attached to the famous Alexandrian MS. (Codex A) of the New Testament, but this does not imply that it ever reached canonical rank. For the mass of early Christian literature that was gradually attached to his name see Clementine Literature.

The epistle was published in 1633 by Patrick Young from Cod. Alexandrinus, in which a leaf near the end was missing, so that the great prayer (cc. lv.-lxiv.) remained unknown. In 1875 (six years after J.B. Lightfoot's first edition) Bryennius (*q.v.*) published a complete text from the MS. in Constantinople (dated 1055), from which in 1883 he gave us the *Didaché*. In 1876 R.L. Bensly found a complete Syriac text in a MS. recently obtained by the University library at Cambridge. Lightfoot made use of these new materials in an Appendix (1877); his second edition, on which he had been at work at the time of his death, came out in 1890. This must remain the standard edition, notwithstanding Dom Morin's most interesting discovery of a Latin version (1894), which was probably made in the 3rd century, and is a valuable addition to the authorities for the text. Its evidence is used in a small edition of the epistle by R. Knopf (Leipzig, 1899). See also W. Wrede, *Untersuchungen zum ersten Clemensbrief* (1891), and the other literature cited in Herzog-Hauck's *Realencyklopädie*, vol. iv.

(A. J. G.; J. A. R.)

Clement II. (Suidger) became pope on the 25th of December 1046. He belonged to a noble Saxon family, was bishop of Bamberg, and chancellor to the emperor Henry III., to whom he was indebted for his elevation to the papacy upon the abdication of Gregory VI. He was the first pope placed on the throne by the power of the German emperors, but his short pontificate was only signalized by the convocation of a council in which decrees were enacted against simony. He died on the 9th of October 1047, and was buried at Bamberg.

(L. D.*)

Clement III. (Paolo Scolari), pope from 1187 to 1191, a Roman, was made cardinal bishop of Palestrina by Alexander III. in 1180 or 1181. On the 19th of December 1187 he was chosen at Pisa to succeed Gregory VIII. On the 31st of May 1188 he concluded a treaty with the Romans which removed difficulties of long standing, and in April 1189 he made peace with the emperor Frederick I. Barbarossa. He settled a controversy with William of Scotland concerning the choice of the archbishop of St Andrews, and on the 13th of March 1188

removed the Scottish church from under the legatine jurisdiction of the archbishop of York, thus making it independent of all save Rome. In spite of his conciliatory policy, Clement angered Henry VI. of Germany by bestowing Sicily on Tancred. The crisis was acute when the pope died, probably in the latter part of March 1191.

See “Epistolae et Privilegia,” in J.P. Migne, *Patrologiae cursus completes*, tom. 204 (Paris, 1853), 1253 ff.; additional material in *Neues Archiv für die ältere deutsche Geschichtskunde*, 2. 219; 6. 293; 14. 178-182; P. Jaffé, *Regesta Pontificum Romanorum*, tom. 2 (2nd edition, Leipzig, 1888), 535 ff.

(W. W. R.*)

Clement IV. (Gui Foulques), pope from 1265 to 1268, son of a successful lawyer and judge, was born at St Gilles-sur-Rhône. He studied law, and became a valued adviser of Louis IX. of France. He married, and was the father of two daughters, but after the death of his wife took orders. In 1257 he became bishop of Le Puy; in 1259 he was elected archbishop of Narbonne; and on the 24th of December 1261 Urban IV. created him cardinal bishop of Sabina. He was appointed legate in England on the 22nd of November 1263, and before his return was elected pope at Perugia on the 5th of February 1265. On the 26th of February he invested Charles of Anjou with the kingdom of Sicily; but subsequently he came into conflict with Charles, especially after the death of Manfred in February 1266. To the cruelty and avarice of Charles he opposed a generous humanity. When Conradin, the last of the Hohenstaufen, appeared in Italy the pope excommunicated him and his supporters, but it is improbable that he was in the remotest degree responsible for his execution. At Viterbo, 484 where he spent most of his pontificate, Clement died on the 29th of November 1268, leaving a name unsullied by nepotism. As the benefactor and protector of Roger Bacon he has a special title to the gratitude of posterity.

See A. Potthast, *Regesta Pontificum Romanorum*, vol. ii. (Berlin, l875). 1542 ff.; E. Jordan, *Les Régistres de Clement IV* (Paris, 1893 ff.); Herzog-Hauck, *Realencyklopädie* (3rd ed., vol. iv., Leipzig, 1898), 144 f.; J. Heidemann, *Papst Clemens IV., I. Teil: Das Vorleben des Papstes und sein Legationsregister = Kirchengeschichtliche Studien, herausgegeben von Knöpfler*, &c., 6. Band, 4. Heft (Münster, 1903), reprints *Processus legationis in Angliam*.

(W. W. R.*)

Clement V. (Bertrand de Gouth), pope from 1305 to 1314, was born of a noble Gascon family about 1264. After studying the arts at Toulouse and law at Orleans and Bologna, he became a canon at Bordeaux and then vicar-general to his brother the archbishop of Lyons, who in 1294 was created cardinal bishop of Albano. Bertrand was made a chaplain to Boniface VIII., who in 1295 nominated him bishop of Cominges (Haute Garonne), and in 1299 translated him to the archbishopric of Bordeaux. Because he attended the synod at Rome in 1302 in the controversy between France and the Pope, he was considered a supporter of Boniface VIII., yet was by no means unfavourably regarded at the French court. At Perugia on the 5th of June 1305 he was chosen to succeed Benedict XI; the cardinals by a vote of ten to five electing one neither an Italian nor a cardinal, in order to end a conclave which had lasted eleven months. The chronicler Villani relates that Bertrand owed his election to a secret agreement with Philip IV., made at St Jean d’Angély in Saintonge; this may be dismissed as gossip, but it is probable that the future pope had to accept certain conditions laid down by the cardinals. At Bordeaux Bertrand was formally notified of his election and urged to come to Italy; but he caused his coronation to take place at Lyons on the 14th of November 1305. From the beginning Clement V. was subservient to French interests. Among his first acts was the creation of nine French cardinals. Early in 1306 he modified or explained away those features of the bulls *Clericis Laicos* and *Unam sanctam* which were particularly offensive to the king. Most of the year 1306 he spent at Bordeaux because of ill-health; subsequently he resided at Poitiers and elsewhere, and in March 1309 the entire papal court settled at Avignon, an imperial fief held by the king of Sicily. Thus began the seventy years “Babylonian captivity of the Church.” On the 13th of October 1307 came the arrest of all the Knights Templar in France, the breaking of a storm conjured up by royal jealousy and greed. From the very day of Clement’s coronation the king had charged the Templars with heresy, immorality and abuses, and the scruples of the weak pope were at length overcome by apprehension lest the State should not wait for the Church, but should proceed independently against the alleged heretics, as well as by the royal threats of pressing the accusation of heresy against the late Boniface VIII. In pursuance of the king’s wishes Clement summoned the council of Vienne (see Vienne, Council of), which was unable to conclude that the Templars were guilty of heresy. The pope abolished the order, however,

as it seemed to be in bad repute and had outlived its usefulness. Its French estates were granted to the Hospitallers, but actually Philip IV. held them until his death.

In his relations to the Empire Clement was an opportunist. He refused to use his full influence in favour of the candidacy of Charles of Valois, brother of Philip IV., lest France became too powerful; and recognized Henry of Luxemburg, whom his representatives crowned emperor at the Lateran in 1312. When Henry, however, came into conflict with Robert of Naples, Clement supported Robert and threatened the emperor with ban and interdict. But the crisis passed with the unexpected death of Henry, soon followed by that of the pope on the 20th of April 1314 at Roquemaure-sur-Rhône. Though the sale of offices and oppressive taxation which disgraced his pontificate may in part be explained by the desperate condition of the papal finances and by his saving up gold for a crusade, nevertheless he indulged in unbecoming pomp. Showing favouritism toward his family and his nation, he brought untold disaster on the Church.

BIBLIOGRAPHY—See "Clementis V. . . . et aliorum epistolae," in S. Baluzius, *Vitae Paparum Avenionensium*, tom. ii. (Paris, 1693), 55 ff.; "Tractatus cum Henrico VII. imp. Germ. anno 1309," in Pertz, *Monumenta Germaniae historica*, legum ii. I. 492-496; J.F. Rabanis, *Clément V et Philippe le Bel. Suivie du journal de la visite pastorale de Bertrand de Got dans la province ecclésiastique de Bordeaux en 1304 et 1305* (Paris, 1858); "Clementis Papae V. Constitutiones," in *Corpus Iuris Canonici*, ed. Aemilius Friedberg, vol. ii. (Leipzig, 1881), 1125-1200; P.B. Gams, *Series Episcoporum Ecclesiae Catholicae* (Regensburg, 1873); Wetzer und Welte, *Kirchenlexikon*, vol. iii. (2nd ed., Freiburg, 1884), 462-473; *Regestum Clementis Papae V. ex Vaticanis archetypis cura et studio monachorum ord. Ben.* (Rome, 1885-1892), 9 vols. and appendix; J. Gmelin, *Schuld oder Unschuld des Templerordens* (Stuttgart, 1893); Gachon, *Pièces relatifs au débat du pape Clément V avec l'empéreur Henri VII* (Montpellier 1894); Lacoste, *Nouvelles Études sur Clément V* (1896); Herzog-Hauck, *Realencyklopädie*, vol. iv. (3rd ed., Leipzig, 1898), 144 f.; J. Loserth, *Geschichte des späteren Mittelalters* (Munich, 1903); and A. Eitel, *Der Kirchenstaat unter Klemens V.* (Berlin, 1907).

(W. W. R.*)

CLEMENT VI. (Pierre Roger), pope from the 7th of May 1342 to the 6th of December 1352, was born at Maumont in Limousin in 1291, the son of the wealthy lord of Rosières, entered the Benedictine order as a boy, studied at Paris, and became successively prior of St Baudil, abbot of Fécamp, bishop of Arras, chancellor of France, archbishop of Sens and archbishop of Rouen. He was made cardinal-priest of Sti Nereo ed Achilleo and administrator of the bishopric of Avignon by Benedict XII. in 1338, and four years later succeeded him as pope. He continued to reside at Avignon despite the arguments of envoys and the verses of Petrarch, but threw a sop to the Romans by reducing the Jubilee term from one hundred years to fifty. He appointed Cola di Rienzo to a civil position at Rome, and, although at first approving the establishment of the tribunate, he later sent a legate who excommunicated Rienzo and, with the help of the aristocratic faction, drove him from the city (December 1347). Clement continued the struggle of his predecessors with the emperor Louis the Bavarian, excommunicating him after protracted negotiations on the 13th of April 1346, and directing the election of Charles of Moravia, who received general recognition after the death of Louis in October 1347, and put an end to the schism which had long divided Germany. Clement proclaimed a crusade in 1343, but nothing was accomplished beyond a naval attack on Smyrna (29th of October 1344). He also carried on fruitless negotiations for church unity with the Armenians and with the Greek emperor, John Cantacuzenus. He tried to end the Hundred Years' War between England and France, but secured only a temporary truce. He excommunicated Casimir of Poland for marital infidelity and forced him to do penance. He successfully resisted encroachments on ecclesiastical jurisdiction by the kings of England, Castile and Aragon. He made Prague an archbishopric in 1344, and three years later founded the university there. During the disastrous plague of 1347-1348 Clement did all he could to alleviate the distress, and condemned the Flagellants and Jew-baiters. He tried Queen Joanna of Naples for the murder of her husband and acquitted her. He secured full ownership of the county of Avignon through purchase from Queen Joanna (9th of June 1348) and renunciation of feudal claims by Charles IV. of France, and considerably enlarged the papal palace in that city. To supply money for his many undertakings Clement revived the practice of selling reservations and expectancies, which had been abolished by his predecessor. Oppressive taxation and unblushing nepotism were Clement's great faults. On the other hand, he was famed for his engaging manners, eloquence and theological learning. He died on the 6th of December 1352, and was buried in the Benedictine abbey at Auvergne, but his tomb was destroyed by Calvinists in 1562. His successor was Innocent VI.

The chief sources for the life of Clement VI. are in Baluzius, *Vitae Pap. Avenion.*, vol. i.

(Paris, 1693); E. Werunsky, *Excerpta ex registris Clementis VI. et Innocentii VI.* (Innsbruck, 1885); and F. Cerasoli, *Clemente VI. e Giovanni I. di Napoli—Documenti inedite dell' Archivio Vaticano* (1896, &c).

See L. Pastor, *History of the Popes*, vol. i., trans, by F.I. Antrobus (London, 1899); F. Gregorovius, *Rome in the Middle Ages*, vol. vi. trans. by Mrs G.W. Hamilton (London, 1900-1902); J.B. Christophe, *Histoire de la papauté pendant le XIVe siècle*, vol. ii. (Paris, 1853); also article by L. Küpper in the *Kirchenlexikon* (2nd ed.). 485

(C. H. HA.)

Clement VII. (Robert of Geneva), (d. 1394), antipope, brother of Peter, count of Genevois, was connected by blood or marriage with most of the sovereigns of Europe. After occupying the episcopal sees of Thérouanne and Cambrai, he attained to the cardinalate at an early age. In 1377, as legate of Pope Gregory XI. in the Romagna, he directed, or rather assisted in, the savage suppression of the revolt of the inhabitants of Cesena against the papal authority. In the following year he took part in the election of Pope Urban VI. at Rome, and was perhaps the first to express doubts as to the validity of that tumultuous election. After withdrawing to Fondi to reconsider the election, the cardinals finally resolved to regard Urban as an intruder and the Holy See as still vacant, and an almost unanimous vote was given in favour of Robert of Geneva (20th of September 1378), who took the name of Clement VII. Thus originated the Great Schism of the West.

To his high connexions and his adroitness, as well as to the gross mistakes of his rival, Clement owed the immediate support of Queen Joanna of Naples and of several of the Italian barons; and the king of France, Charles V., who seems to have been sounded beforehand on the choice of the Roman pontiff, soon became his warmest protector. Clement eventually succeeded in winning to his cause Scotland, Castile, Aragon, Navarre, a great part of the Latin East, and Flanders. He had adherents, besides, scattered through Germany, while Portugal on two occasions acknowledged him, but afterwards forsook him. From Avignon, however, where he had immediately fixed his residence, his eyes were always turned towards Italy, his purpose being to wrest Rome from his rival. To attain this end he lavished his gold—or rather the gold provided by the clergy in his obedience—without stint, and conceived a succession of the most adventurous projects, of which one at least was to leave a lasting mark on history.

By the bait of a kingdom to be carved expressly out of the States of the Church and to be called the kingdom of Adria, coupled with the expectation of succeeding to Queen Joanna, Clement incited Louis, duke of Anjou, the eldest of the brothers of Charles V., to take arms in his favour. These tempting offers gave rise to a series of expeditions into Italy carried out almost exclusively at Clement's expense, in the first of which Louis lost his life. These enterprises on several occasions planted Angevin domination in the south of the Italian peninsula, and their most decisive result was the assuring of Provence to the dukes of Anjou and afterwards to the kings of France. After the death of Louis, Clement hoped to find equally brave and interested champions in Louis' son and namesake; in Louis of Orleans, the brother of Charles VI.; in Charles VI. himself; and in John III., count of Armagnac. The prospect of his briliant progress to Rome was ever before his eyes; and in his thoughts force of arms, of French arms, was to be the instrument of his glorious triumph over his competitor.

There came a time, however, when Clement and more particularly his following had to acknowledge the vanity of these illusive dreams; and before his death, which took place on the 16th of September 1394, he realized the impossibility of overcoming by brute force an opposition which was founded on the convictions of the greater part of Catholic Europe, and discerned among his adherents the germs of disaffection. By his vast expenditure, ascribable not only to his wars in Italy, his incessant embassies, and the necessity of defending himself in the Comtat Venaissin against the incursions of the adventurous Raymond of Turenne, but also to his luxurious tastes and princely habits, as well as by his persistent refusal to refer the question of the schism to a council, he incurred general reproach. Unity was the crying need; and men began to fasten upon him the responsibility of the hateful schism, not on the score of insincerity—which would have been very unjust,—but by reason of his obstinate persistence in the course he had chosen.

See N. Valois, *La France el le grand schisme d'occident* (Paris, 1896).

(N. V.)

Clement VII. (Giulio de' Medici), pope from 1523 to 1534, was the son of Giuliano de'

Medici, assassinated in the conspiracy of the Pazzi at Florence, and of a certain Fioretta, daughter of Antonia. Being left an orphan he was taken into his own house by Lorenzo the Magnificent and educated with his sons. In 1494 Giulio went with them into exile; but, on Giovanni's restoration to power, returned to Florence, of which he was made archbishop by his cousin Pope Leo X., a special dispensation being granted on account of his illegitimate birth, followed by a formal declaration of the fact that his parents had been secretly married and that he was therefore legitimate. On the 23rd of September 1513 the pope conferred on him the title of cardinal and made him legate at Bologna. During the reign of the pleasure-loving Leo, Cardinal Giulio had practically the whole papal government in his hands and displayed all the qualities of a good administrator; and when, on the death of Adrian VI.—whose election he had done most to secure—he was chosen pope (Nov. 18, 1523), his accession was hailed as the dawn of a happier era. It soon became clear, however, that the qualities which had made Clement an excellent second in command were not equal to the exigencies of supreme power at a time of peculiar peril and difficulty.

Though free from the grosser vices of his predecessors, a man of taste, and economical without being avaricious, Clement VII. was essentially a man of narrow outlook and interests. He failed to understand the great spiritual movement which was convulsing the Church; and instead of bending his mind to the problem of the Reformation, he from the first subordinated the cause of Catholicism and of the world to his interests as an Italian prince and a Medici. Even in these purely secular affairs, moreover, his timidity and indecision prevented him from pursuing a consistent policy; and his ill fortune, or his lack of judgment, placed him, as long as he had the power of choice, ever on the losing side.

Clement's accession at once brought about a political change in favour of France; yet he was unable to take a strong line, and wavered between the emperor and Francis I., concluding a treaty of alliance with the French king, and then, when the crushing defeat of Pavia had shown him his mistake, making his peace with Charles (April 1, 1525), only to break it again by countenancing Girolamo Morone's League of Freedom, of which the aim was to assert the independence of Italy from foreign powers. On the betrayal of this conspiracy Clement made a fresh submission to the emperor, only to follow this, a year later, by the Holy League of Cognac with Francis I. (May 22, 1526). Then followed the imperial invasion of Italy and Bourbon's sack of Rome (May 1527) which ended the Augustan age of the papal city in a horror of fire and blood. The pope himself was besieged in the castle of St Angelo, compelled on the 6th of June to ransom himself with a payment of 400,000 scudi, and kept in confinement until, on the 26th of November, he accepted the emperor's terms, which besides money payments included the promise to convene a general council to deal with Lutheranism. On the 6th of December Clement escaped, before the day fixed for his liberation, to Orvieto, and at once set to work to establish peace. After the signature of the treaty of Cambrai on the 3rd of August 1529 Charles met Clement at Bologna and received from him the imperial crown and the iron crown of Lombardy. The pope was now restored to the greater part of his temporal power; but for some years it was exercised in subservience to the emperor. During this period Clement was mainly occupied in urging Charles to arrest the progress of the Reformation in Germany and in efforts to elude the emperor's demand for a general council, which Clement feared lest the question of the mode of his election and his legitimacy should be raised. It was due to his dependence on Charles V., rather than to any conscientious scruples, that Clement evaded Henry VIII.'s demand for the nullification of his marriage with Catherine of Aragon, and so brought about the breach between England and Rome. Some time before his death, however, the dynastic interests of his family led him once more to a rapprochement with France. On the 9th of June 1531 an agreement was signed for the marriage of Henry of Orleans with Catherine de' Medici; but it was not till October 1533 that Clement met Francis at Marseilles, the wedding being celebrated on the 27th. Before, however, the new political alliance, thus cemented, could take effect, Clement died, on the 25th of September 1534.

See E. Casanova, *Lettere di Carlo V. a Clemente VII.* (Florence, 1893); Hugo Lämmer, *Monumenta Vaticana*, &c (Freiburg, 1861); P. Balan, *Monumenta saeculi XVI. hist. illustr.* (Innsbruck, 1885); ib. *Mon. Reform. Luther* (Regensburg, 1884); Stefan Ehses, *Röm. Dokum. z. Gesch. der Ehescheidung Heinrichs VIII.* (Paderborn, 1893); *Calendar of State Papers* (London, 1869, &c.); J.J.I. von Döllinger, *Beiträge zur politischen, kirchlichen und Kulturgeschichte* (3 vols., Vienna, 1882); F. Guicciardini, *Istoria d'Italia*; L. von Ranke, *Die römischen Päpste in den letzten vier Jahrhunderten*, and *Deutsche Gesch. im Zeitalter der Reformation*; W. Hellwig, *Die politischen Beziehungen Clements VII. zu Karl V., 1526* (Leipzig, 1889); H. Baumgarten, *Gesch. Karls V.* (Stuttgart, 1888); F. Gregorovius, *Geschichte der Stadt Rom*, vol. viii. p. 414. (2nd ed., 1874); P. Balan, *Clemente VII. e l' Italia de' suoi tempi* (Milan, 1887); E. Armstrong, *Charles the Fifth* (2 vols., London, 1902); M.

Creighton, *Hist. of the Papacy during the Period of the Reformation* (London, 1882); and H.M. Vaughan, *The Medici Popes* (1908). Further references will be found in Herzog-Hauck, *Realencyklopädie, s. Clemens VII*. See also *Cambridge Modern History*, vol. ii. chap. i. and bibliography.

(W. A. P.)

Clement VIII. (Aegidius Muñoz), antipope from 1425 to the 26th of July 1429, was a canon at Barcelona until elected at Peñiscola by three cardinals whom the stubborn antipope Benedict XIII. had named on his death-bed. Clement was immediately recognized by Alphonso V. of Aragon, who was hostile to Pope Martin V. on account of the latter's opposition to his claims to the kingdom of Naples, but abdicated as soon as an agreement was reached between Alphonso and Martin through the exertions of Cardinal Pierre de Foix, an able diplomat and relation of the king's. Clement spent his last years as bishop of Majorca, and died on the 28th of December 1446.

See. L. Pastor, *History of the Popes*, vol. i. trans, by F.I. Antrobus (London, 1899); M. Creighton, *History of the Papacy*, vol. ii. (London, 1899); and consult bibliography on Martin V.

(C. H. HA.)

Clement VIII. (Ippolito Aldobrandini), pope from 1592 to 1605, was born at Fano, in 1535. He became a jurist and filled several important offices. In 1585 he was made a cardinal, and subsequently discharged a delicate mission to Poland with skill. His moderation and experience commended him to his fellow cardinals, and on the 30th of January 1592 he was elected pope, to succeed Innocent IX. While not hostile to Philip II., Clement desired to emancipate the papacy from undue Spanish influence, and to that end cultivated closer relations with France. In 1595 he granted absolution to Henry IV., and so removed the last objection to the acknowledgment of his legitimacy. The peace of Vervins (1598), which marked the end of Philip's opposition to Henry, was mainly the work of the pope. Clement also entertained hopes of recovering England. He corresponded with James I. and with his queen, Anne of Denmark, a convert to Catholicism. But James was only half in earnest, and, besides, dared not risk a breach with his subjects. Upon the failure of the line of Este, Clement claimed the reversion of Ferrara and reincorporated it into the States of the Church (1598). He remonstrated against the exclusion of the Jesuits from France, and obtained their readmission. But in their doctrinal controversy with the Dominicans (see Molina, Luis) he refrained from a decision, being unwilling to offend either party. Under Clement the publication of the revised edition of the Vulgate, begun by Sixtus V., was finished; the Breviary, Missal and Pontifical received certain corrections; the Index was expanded; the Vatican library enlarged; and the Collegium Clementinum founded. Clement was an unblushing nepotist; three of his nephews he made cardinals, and to one of them gradually surrendered the control of affairs. But on the other hand among those whom he promoted to the cardinalate were such men as Baronius, Bellarmine and Toledo. During this pontificate occurred the burning of Giordano Bruno for heresy; and the tragedy of the Cenci (see the respective articles). Clement died on the 5th of March 1605, and was succeeded by Leo XI.

See the contemporary life by Ciaconius, *Vitae et res gestae summorum Pontiff. Rom.* (Rome, 1601-1602); Francolini, *Ippolito Aldobrandini, che fu Clemente VIII.* (Perugia, 1867); Ranke's excellent sketch, *Popes* (Eng. trans. Austin), ii. 234 seq.; v. Reumont, *Gesch. der Stadt Rom*, iii. 2, 599 seq.; Brosch, *Gesch. des Kirchenstaates* (1880), i. 301 seq.

(T. F. C.)

Clement IX. (Giulio Rospigliosi) was born in 1600, became successively auditor of the Rota, archbishop of Tarsus *in partibus*, and cardinal, and was elected pope on the 20th of June 1667. He effected a temporary adjustment of the Jansenist controversy; was instrumental in concluding the peace of Aix-la-Chapelle (1668); healed a long-standing breach between the Holy See and Portugal; aided Venice against the Turks, and laboured unceasingly for the relief of Crete, the fall of which hastened his death on the 9th of October 1669.

See Oldoin, continuator of Ciaconius, *Vitae et res gestae summorum Pontiff. Rom.*; Palazzi, *Gesta Pontiff. Rom.* (Venice, 1687-1688), iv. 621 seq. (both contemporary); Ranke, *Popes* (Eng. trans. Austin), iii. 59 seq.; and v. Reumont, *Gesch. der Stadt Rom*, iii. 2, 634 seq.

(T. F. C.)

Clement X. (Emilio Altieri) was born in Rome, on the 13th of July 1590. Before becoming

pope, on the 29th of April 1670 he had been auditor in Poland, governor of Ancona, and nuncio in Naples. His advanced age induced him to resign the control of affairs to his adopted nephew, Cardinal Paluzzi, who embroiled the papacy in disputes with the resident ambassadors, and incurred the enmity of Louis XIV., thus provoking the long controversy over the regalia (see Innocent XI.). Clement died on the 22nd of July 1676.

See Guarnacci, *Vitae et res gestae Pontiff. Rom.* (Rome, 1751), (contin. of Ciaconius), i. 1 seq.; Palazzi, *Gesta Pontiff. Rom.* (Venice, 1687-1688), iv. 655 seq.; and Ranke, *Popes* (Eng. trans. Austin), iii. 172 seq.

(T. F. C.)

Clement XI (Giovanni Francesco Albani), pope from 1700 to 1721, was born in Urbino, on the 22nd of July 1649, received an extraordinary education in letters, theology and law, filled various important offices in the Curia, and finally, on the 23rd of November 1700, succeeded Innocent XII. as pope. His private life and his administration were blameless, but it was his misfortune to reign in troublous times. In the war of the Spanish Succession he would willingly have remained neutral, but found himself between two fires, forced first to recognize Philip V., then driven by the emperor to recognize the Archduke Charles. In the peace of Utrecht he was ignored; Sardinia and Sicily, Parma and Piacenza, were disposed of without regard to papal claims. When he quarrelled with the duke of Savoy, and revoked his investiture rights in Sicily (1715), his interdict was treated with contempt. The prestige of the papacy had hardly been lower within two centuries. About 1702 the Jansenist controversy broke out afresh. Clement reaffirmed the infallibility of the pope, in matters of *fact* (1705), and, in 1713, issued the bull *Unigenitus*, condemning 101 Jansenistic propositions extracted from the *Moral Reflections* of Pasquier Quesnel. The rejection of this bull by certain bishops led to a new party division and a further prolonging of the controversy (see Jansenism and Quesnel, Pasquier). Clement also forbade the practice of the Jesuit missionaries in China of “accommodating” their teachings to pagan notions or customs, in order to win converts. Clement was a polished writer, and a generous patron of art and letters. He died on the 19th of March 1721.

For contemporary lives see Elci, *The Present State of the Court of Rome*, trans, from the Ital. (London, 1706); Polidoro, *De Vita et Reb. Gest. Clem. XI.* (Urbino, 1727); Reboulet, *Hist. de Clem. XI. Pape* (Avignon, 1752); Guarnacci, *Vitae et res gest. Pontiff. Rom.* (Rome, 1751); Sandini, *Vitae Pontiff Rom.* (Padua, 1739); Buder, *Leben u. Thaten Clementis XI.* (Frankfort, 1720-1721). See also *Clementis XI. Opera Omnia* (Frankfort, 1729); the detailed “Studii sul pontificato di Clem. XI.,” by Pometti in the *Archivio della R. Soc. romana di storia patria*, vols. 21, 22, 23 (1898-1900), and the extended bibliography in Hergenröther, *Allg. Kirchengesch.* (1880), iii. 506.

(T. F. C.)

Clement XII. (Lorenzo Corsini), pope from 1730 to 1740, succeeded Benedict XIII. on the 12th of July 1730, at the age of seventy-eight. The rascally Cardinal Coscia, who had deluded Benedict, was at once brought to justice and forced to disgorge his dishonest gains. Politically the papacy had sunk to the level of pitiful helplessness, unable to resist the aggressions of the Powers, who ignored or coerced it at will. Yet Clement entertained high 487
hopes for Catholicism; he laboured for a union with the Greek Church, and was ready to facilitate the return of the Protestants of Saxony. He deserves well of posterity for his services to learning and art; the restoration of the Arch of Constantine; the enrichment of the Capitoline museum with antique marbles and inscriptions, and of the Vatican library With oriental manuscripts (see Assemani); and the embellishment of the city with many buildings. He died on the 6th of February 1740, and was succeeded by Benedict XIV.

See Guarnacci, *Vitae et res gestae Pontiff. Rom.* (Rome, 1751); Sandini, *Vitae Pontiff. Rom.* (Padua, 1739); Fabroni, *De Vita et Reb. Gest. Clementis XII.* (Rome, 1760); Ranke, *Popes* (Eng. trans. Austin), iii. 191 seq.; v. Reumont, *Gesch. der Stadt Rom*, iii. 2, 653 seq.

(T. F. C.)

Clement XIII. (Carlo della Torre Rezzonico), pope from 1758 to 1769, was born in Venice, on the 7th of March 1693, filled various important posts in the Curia, became cardinal in 1737, bishop of Padua in 1743, and succeeded Benedict XIV. as pope on the 6th of July 1758. He was a man of upright, moderate and pacific intentions, but his pontificate of eleven years was anything but tranquil. The Jesuits had fallen upon evil days; in 1758 Pombal expelled them from Portugal; his example was followed by the Bourbon countries—France, Spain, the

Two Sicilies and Parma (1764-1768). The order turned to the pope as its natural protector; but his protests (cf. the bull *Apostolicum pascendi munus*, 7th of January 1765) were unheeded (see Jesuits). A clash with Parma occurred to aggravate his troubles. The Bourbon kings espoused their relative's quarrel, seized Avignon, Benevento and Ponte Corvo, and united in a peremptory demand for the suppression of the Jesuits (January 1769). Driven to extremities, Clement consented to call a Consistory to consider the step, but on the very eve of the day set for its meeting he died (2nd of February 1769), not without suspicion of poison, of which, however, there appears to be no conclusive evidence.

A contemporary account of Clement was written by Augustin de Andrès y Sobiñas, ... *el nacimiento, estudios y empleos de ... Clem. XIII.* (Madrid, 1759). Ravignan's *Clement XIII. e Clement XIV.* (Paris, 1854) is partisan but free from rancour; and appends many interesting documents. See also the bibliographical note under Clement XIV. *infra.*; and the extended bibliography in Hergenröther, *Allg. Kirchengesch.* (1880), iii. 509.

(T. F. C.)

Clement XIV. (Lorenzo Ganganelli), pope from 1769 to 1774, son of a physician of St Arcangelo, near Rimini, was born on the 31st of October 1705, entered the Franciscan order at the age of seventeen, and became a teacher of theology and philosophy. As regent of the college of S. Bonaventura, Rome, he came under the notice of Benedict XIV., who conceived a high opinion of his talents and made him consulter of the Inquisition. Upon the recommendation of Ricci, general of the Jesuits, Clement XIII. made him a cardinal; but, owing to his disapproval of the pope's policy, he found himself out of favour and without influence. The conclave following the death of Clement XIII. was the most momentous of at least two centuries. The fate of the Jesuits hung in the balance; and the Bourbon princes were determined to have a pope subservient to their hostile designs. The struggle was prolonged three months. At length, on the 19th of May 1769, Ganganelli was chosen, not as a declared enemy of the Jesuits, but as being least objectionable to each of the contending factions. The charge of simony was inspired by Jesuit hatred; there is absolutely no evidence that Ganganelli pledged himself to suppress the order.

The outlook for the papacy was dark; Portugal was talking of a patriarchate; France held Avignon; Naples held Ponte Corvo and Benevento; Spain was ill-affected; Parma, defiant; Venice, aggressive; Poland meditating a restriction of the rights of the nuncio. Clement realized the imperative necessity of conciliating the powers. He suspended the public reading of the bull *In Coena Domini*, so obnoxious to civil authority; resumed relations with Portugal; revoked the *monitorium* of his predecessor against Parma. But the powers were bent upon the destruction of the Jesuits, and they had the pope at their mercy. Clement looked abroad for help, but found none. Even Maria Theresa, his last hope, suppressed the order in Austria. Temporizing and partial concessions were of no avail. At last, convinced that the peace of the Church demanded the sacrifice, Clement signed the brief *Dominus ac Redemptor*, dissolving the order, on the 21st of July 1773. The powers at once gave substantial proof of their satisfaction; Benevento, Ponte Corvo, Avignon and the Venaissin were restored to the Holy See. But it would be unfair to accept this as evidence of a bargain. Clement had formerly indignantly rejected the suggestion of such an exchange of favours.

There is no question of the legality of the pope's act; whether he was morally culpable, however, continues to be a matter of bitter controversy. On the one hand, the suppression is denounced as a base surrender to the forces of tyranny and irreligion, an act of treason to conscience, which reaped its just punishment of remorse; on the other hand, it is as ardently maintained that Clement acted in full accord with his conscience, and that the order merited its fate by its own mischievous activities which made it an offence to religion and authority alike. But whatever the guilt or innocence of the Jesuits, and whether their suppression were ill-advised or not, there appears to be no ground for impeaching the motives of Clement, or of doubting that he had the approval of his conscience. The stories of his having swooned after signing the brief, and of having lost hope and even reason, are too absurd to be entertained. The decline in health, which set in shortly after the suppression, and his death (on the 22nd of September 1774) proceeded from wholly natural causes. The testimony of his physician and of his confessor ought to be sufficient to discredit the oft-repeated story of slow poisoning (see Duhr, *Jesuiten Fabeln*, 4th ed., 1904, pp. 69 seq.).

The suppression of the Jesuits bulks so large in the pontificate of Clement that he has scarcely been given due credit for his praiseworthy attempt to reduce the burdens of taxation and to reform the financial administration, nor for his liberal encouragement of art and learning, of which the museum Pio-Clementino is a lasting monument.

No pope has been the subject of more diverse judgments than Clement XIV. Zealous defenders credit him with all virtues, and bless him as the instrument divinely ordained to restore the peace of the Church; virulent detractors charge him with ingratitude, cowardice and double-dealing. The truth is at neither extreme. Clement's was a deeply religious and poetical nature, animated by a lofty and refined spirit. Gentleness, equanimity and benevolence were native to him. He cherished high purposes and obeyed a lively conscience. But he instinctively shrank from conflict; he lacked the resoluteness and the sterner sort of courage that grapples with a crisis.

Caraccioli's *Vie de Clément XIV* (Paris, 1775) (freq. translated), is incomplete, uncritical and too laudatory. The middle of the 19th century saw quite a spirited controversy over Clement XIV.; St Priest, in his *Hist. de la chute des Jésuites* (Paris, 1846), represented Clement as lamentably, almost culpably, weak; Cretineau-Joly, in his *Hist. ... de la Comp. de Jésus* (Paris, 1844-1845), and his *Clément XIV et les Jésuites* (Paris, 1847), was outspoken and bitter in his condemnation; this provoked Theiner's *Gesch. des Pontificats Clemens' XIV.* (Leipzig and Paris, 1852), a vigorous defence based upon original documents to which, as custodian of the Vatican archives, the author had freest access; Cretineau-Joly replied with *Le Pape Clément XIV; Lettres au P. Theiner* (Paris, 1852). Ravignan's *Clem. XIII. e Clem. XIV.* (Paris, 1854) is a weak, half-hearted apology for Clement XIV. See also v. Reumont, *Ganganelli, Papst Clemens XIV.* (Berlin, 1847); and Reinerding, *Clemens XIV. u. d. Aufhebung der Gesellschaft Jesu* (Augsburg, 1854). The letters of Clement have frequently been printed; the genuineness of Caraccioli's collection (Paris, 1776; freq. translated) has been questioned, but most of the letters are now generally accepted as genuine; see also *Clementis XIV. Epp. ac Brevia*, ed. Theiner (Paris, 1852). An extended bibliography is to be found in Hergenröther, *Allg. Kirchengesch.* (1880), iii. 510 seq.

(T. F. C.)

CLEMENT OF ALEXANDRIA (*Clemens Alexandrinus*), Greek Father of the Church. The little we know of him is mainly derived from his own works. He was probably born about A.D. 150 of heathen parents in Athens. The earliest writer after himself who gives us any information with regard to him is Eusebius. The only points on which his works now extant inform us are his date and his instructors. In the *Stromateis*, while attempting to show that 488
the Jewish Scriptures were older than any writings of the Greeks, he invariably brings down his dates to the death of Commodus, a circumstance which at once suggests that he wrote in the reign of the emperor Severus, from 193 to 211 A.D. (see *Strom.* lib. i. cap. xxi. 140, p. 403, Potter's edition). The passage in regard to his teachers is corrupt, and the sense is therefore doubtful (*Strom.* lib. i. cap. i. 11, p. 322, P.).

"This treatise," he says, speaking of the *Stromateis*, "has not been contrived for mere display, but memoranda are treasured up in it for my old age to be a remedy for forgetfulness,—an image, truly, and an outline of those clear and living discourses, and those men truly blessed and noteworthy I was privileged to hear. One of these was in Greece, the Ionian, the other was in Magna Graecia; the one of them was from Coele Syria, the other from Egypt; but there were others in the East, one of whom belonged to the Assyrians, but the other was in Palestine, originally a Jew. The last of those whom I met was first in power. On falling in with him I found rest, having tracked him while he lay concealed in Egypt. He was in truth the Sicilian bee, and, plucking the flowers of the prophetic and apostolic meadow, he produced a wonderfully pure knowledge in the souls of the listeners."

Some have supposed that in this passage seven teachers are named, others that there are only five, and various conjectures have been hazarded as to what persons were meant. The only one about whom conjecture has any basis for speculating is the last, for Eusebius states (*H.E.* v. 11) that Clement made mention of Pantaenus as his teacher in the *Hypotyposes*. The reference in this passage is plainly to one whom he might well designate as his teacher.

To the information which Clement here supplies subsequent writers add little. By Eusebius and Photius he is called Titus Flavius Clemens, and "the Alexandrian" is added to his name. Epiphanius tells us that some said Clement was an Alexandrian, others that he was an Athenian (*Haer.* xxxii. 6), and a modern writer imagined that he reconciled this discordance by the supposition that he was born at Athens, but lived at Alexandria. We know nothing of his conversion except that he passed from heathenism to Christianity. This is expressly stated by Eusebius (*Praep. Evangel.* lib. ii. cap. 2), though it is likely that Eusebius had no

other authority than the works of Clement. These works, however, warrant the inference. They show a singularly minute acquaintance with the ceremonies of pagan religion, and there are indications that Clement himself had been initiated in some of the mysteries (*Protrept.* cap. ii. sec. 14, p. 13, P.). There is no means of determining the date of his conversion. He attained the position of presbyter in the church of Alexandria (Eus. *H.E.* vi. 11, and Jerome, *De Vir. Ill.* 38), and became perhaps the assistant, and certainly the successor of Pantaenus in the catechetical school of that place. Among his pupils were Origen (Eus. *H.E.* vi. 7) and Alexander, bishop of Jerusalem (Eus. *H.E.* vi. 14.). How long he continued in Alexandria, and when and where he died, are all matters of pure conjecture. The only further notice of Clement that we have in history is in a letter written in 211 by Alexander, bishop of Jerusalem, to the Antiochians, and preserved by Eusebius (*H.E.* vi. 11). The words are as follows:—"This letter I sent through Clement the blessed presbyter, a man virtuous and tried, whom ye know and will come to know completely, who being here by the providence and guidance of the Ruler of all strengthened and increased the church of the Lord." A statement of Eusebius in regard to the persecution of Severus in 202 (*H.E.* vi. 3) would render it likely that Clement left Alexandria on that occasion. It is conjectured that he went to his old pupil Alexander, who was at that time bishop of Flaviada in Cappadocia, and that when his pupil was raised to the see of Jerusalem Clement followed him there. The letter implies that he was known to the Antiochians, and that it was likely he would be still better known. Some have conjectured that he returned to Alexandria, but there is not the shadow of evidence for such conjecture. Alexander, writing to Origen (c. 216), mentions Clement as dead (Eus. *H.E.* vi. 14, 9).

Eusebius and Jerome give us lists of the works which Clement left behind him. Photius has also described some of them. They are as follows:—(1) Πρὸς Ἕλληνας λόγος ὁ προτρεπτικος, *A Hortatory Address to the Greeks*. (2) Ὁ Παιδαγωγός, *The Tutor*, in three books. (3) Στρωματεῖς, or *Patch-work*, in eight books. (4) Τίς ὁ σωξόμενος πλούσιος; *Who is the Rich Man that is Saved?* (5) Eight books of Ὑποτυπώσεις, *Adumbrations or Outlines.* (6) *On the Passover.* (7) *Discourses on Fasting.* (8) *On Slander.* (9) *Exhortation to Patience, or to the Newly Baptized.* (10) The Κανὼν ἐκκλησιαστικός, the *Rule of the Church, or to those who Judaize*, a work dedicated to Alexander, bishop of Jerusalem.

Of these, the first four have come down to us complete, or nearly complete. The first three form together a progressive introduction to Christianity corresponding to the stages through which the μύστης passed at Eleusis—purification, initiation, revelation. The *Hortatory Address to the Greeks* is an appeal to them to give up the worship of their gods, and to devote themselves to the worship of the one living and true God. Clement exhibits the absurdity and immorality of the stories told with regard to the pagan deities, the cruelties perpetrated in their worship, and the utter uselessness of bowing down before images made by hands. He at the same time shows the Greeks that their own greatest philosophers and poets recognized the unity of the divine Being, and had caught glimpses of the true nature of God, but that fuller light had been thrown on this subject by the Hebrew prophets. He replies to the objection that it was not right to abandon the customs of their forefathers, and points them to Christ as their only safe guide to God.

The *Paedagogue* is divided into three books. In the first Clement discusses the necessity for and the true nature of the Paedagogus, and shows how Christ as the Logos acted as Paedagogus, and still acts. In the second and third books Clement enters into particulars, and explains how the Christian following the Logos or Reason ought to behave in the various circumstances of life—in eating, drinking, furnishing a house, in dress, in the relations of social life, in the care of the body, and similar concerns, and concludes with a general description of the life of a Christian. Appended to the *Paedagogue* are two hymns, which are, in all probability, the production of Clement, though some have conjectured that they were portions of the church service of that time. στρωματεῖς were bags in which bedclothes (στρώματα) were kept. The phrase was used as a book-title by Origen and others, and is equivalent to our "miscellanies." It is difficult to give a brief account of the varied contents of the book. Sometimes Clement discusses chronology, sometimes philosophy, sometimes poetry, entering into the most minute critical and chronological details; but one object runs through all, and this is to show what the true Christian Gnostic is, and what is his relation to philosophy. The work was in eight books. The first seven are complete. The eighth now extant is really an incomplete treatise on logic. Some critics have rejected this book as spurious, since its matter is so different from that of the rest. Others, however, have held to its genuineness, because in a Patch-work or Book of Miscellanies the difference of subject is no sound objection, and because Photius seems to have regarded our present eighth book as genuine (Phot. cod. iii. p. 89b, Bekker).

The treatise *Who is the Rich Man that is Saved?* is an admirable exposition of the narrative contained in St Mark's Gospel x. 17-31. Here Clement argues that wealth, if rightly used, is

not unchristian.

The *Hypotyposes*[1] in eight books, have not come down to us. Cassiodorus translated them into Latin, freely altering to suit his own ideas of orthodoxy. Both Eusebius and Photius describe the work. It was a short commentary on all the books of Scripture, including some of the apocryphal works, such as the Epistle of Barnabas and the Revelation of Peter. Photius speaks in strong language of the impiety of some opinions in the book (*Bibl.* cod. 109, p. 89 a Bekker), but his statements are such as to prove conclusively that he must have had a corrupt copy, or read very carelessly, or grossly misunderstood Clement. Notes in Latin on the first epistle of Peter, the epistle of Jude, and the first two of John have come down to us; but whether they are the translation of Cassiodorus, or indeed a translation of Clement's work at all, is a matter of dispute.

The treatise on the Passover was occasioned by a work of Melito on the same subject. Two fragments of this treatise were given by Petavius, and are contained in the modern editions.

We know nothing of the work called *The Ecclesiastical Canon* from any external testimony. Clement himself often mentions the ἐκκλησιαστικὸς κανών, and defines it as the agreement and harmony of the law and the prophets with the covenant delivered at the appearance of Christ (*Strom.* vi. cap. xv. 125, p. 803, P.). No doubt this was the subject of the treatise. Jerome and Photius call the work *Ecclesiastical Canons*, but this seems to be a mistake.

Of the other treatises mentioned by Eusebius and Jerome nothing is known. A fragment of Clement, quoted by Antonius Melissa, is most probably taken from the treatise on slander.

Besides the treatises mentioned by Eusebius, fragments of treatises on Providence and the Soul have been preserved. Mention is also made of a work by Clement on the Prophet Amos, and another on Definitions.

In addition to these Clement often speaks of his intention to write on certain subjects, but it may well be doubted whether in most cases, if not all, he intended to devote separate treatises to them. Some have found an allusion to the treatise on the Soul already mentioned. The other subjects are Marriage (γαμικὸς λόγος), Continence, the Duties of Bishops, Presbyters, Deacons and Widows, Prophecy, the Soul, the Transmigration of the Soul and the Devil, Angels, the Origin of the World, First Principles and the Divinity of the Logos, Allegorical Interpretations of Statements made with regard to God's anger and similar affections, the Unity of the Church, and the Resurrection.

Two works are incorporated in the editions of Clement which are not mentioned by himself or any ancient writer. They are Ἐκ τῶν Θεοδότου καί τῆς ἀνατολικῆς καλουμένης διδασκαλίας κατὰ τοὺς Οὐαλεντίνου χρόνους ἐπιτομαί, and Ἐκ τῶν προφητικῶν ἐκλογαί. The first, if it is the work of Clement, must be a book merely of excerpts, for it contains many opinions which Clement opposed. Mention is made of Pantaenus in the second, and some have thought it more worthy of him than the first. Others have regarded it as a work similar to the first, and derived from Theodorus.

Clement occupies a profoundly interesting position in the history of Christianity. He is the first to bring all the culture of the Greeks and all the speculations of the Christian heretics to bear on the exposition of Christian truth. He does not attain to a systematic exhibition of Christian doctrine, but he paves the way for it, and lays the first stones of the foundation. In some respects Justin anticipated him. He also was well acquainted with Greek philosophy, and took a genial view of it; but he was not nearly so widely read as Clement. The list of Greek authors whom Clement has quoted occupies upwards of fourteen of the quarto pages in Fabricius's *Bibliotheca Graeca*. He is at home alike in the epic and the lyric, the tragic and the comic poets, and his knowledge of the prose writers is very extensive. Some, however, of the classic poets he appears to have known only from anthologies; hence he was misled into quoting as from Euripides and others verses which were written by Jewish forgers. He made a special study of the philosophers. Equally minute is his knowledge of the systems of the Christian heretics. And in all cases it is plain that he not merely read but thought deeply on the questions which the civilization of the Greeks and the various writings of poets, philosophers and heretics raised. But it was in the Scriptures that he found his greatest delight. He believed them to contain the revelation of God's wisdom to men. He quotes all the books of the Old Testament except Ruth and the Song of Solomon, and amongst the sacred writings of the Old Testament he evidently included the book of Tobit, the Wisdom of Solomon and Ecclesiasticus. He is equally full in his quotations from the New Testament, for he quotes from all the books except the epistle to Philemon, the second epistle of St Peter, and the epistle of St James, and he quotes from *The Shepherd of Hermas*, and the epistles of Clemens Romanus and of Barnabas, as inspired. He appeals also to many of the lost gospels, such as those of the Hebrews, of the Egyptians and of Matthias.

Notwithstanding this adequate knowledge of Scripture, the modern theologian is disappointed to find very little of what he deems characteristically Christian. In fact Clement regarded Christianity as a philosophy. The ancient philosophers sought through their philosophy to attain to a nobler and holier life, and this also was the aim of Christianity. The difference between the two, in Clement's judgment, was that the Greek philosophers had only glimpses of the truth, that they attained only to fragments of the truth, while Christianity revealed in Christ the absolute and perfect truth. All the stages of the world's history were therefore preparations leading up to this full revelation, and God's care was not confined to the Hebrews alone. The worship of the heavenly bodies, for instance, was given to man at an early stage that he might rise from a contemplation of these sublime objects to the worship of the Creator. Greek philosophy in particular was the preparation of the Greeks for Christ. It was the schoolmaster or paedagogue to lead them to Christ. Plato was Moses atticizing. Clement varies in his statement how Plato got his wisdom or his fragments of the Reason. Sometimes he thinks that they came direct from God, like all good things, but he is also fond of maintaining that many of Plato's best thoughts were borrowed from the Hebrew prophets; and he makes the same statement in regard to the wisdom of the other philosophers. But however this may be, Christ was the end to which all that was true in philosophies pointed. Christ himself was the Logos, the Reason. God the Father was ineffable. The Son alone can manifest Him fully. He is the Reason that pervades the universe, that brings out all goodness, that guides all good men. It was through possessing somewhat of this Reason that the philosophers attained to any truth and goodness; but in Christians he dwells more fully and guides them through all the perplexities of life. Photius, probably on a careless reading of Clement, argued that he could not have believed in a real incarnation. But the words of Clement are quite precise and their meaning indisputable. The real difficulty attaches not to the Second Person, but to the First. The Father in Clement's mind becomes the Absolute of the philosophers, that is to say, not the Father at all, but the Monad, a mere point devoid of all attributes. He believed in a personal Son of God who was the Reason and Wisdom of God; and he believed that this Son of God really became incarnate though he speaks of him almost invariably as the Word, and attaches little value to his human nature. The object of his incarnation and death was to free man from his sins, to lead him into the path of wisdom, and thus in the end elevate him to the position of a god. But man's salvation was to be gradual. It began with faith, passed from that to love, and ended in full and complete knowledge. There could be no faith without knowledge. But the knowledge is imperfect, and the Christian was to do many things in simple obedience without knowing the reason. But he has to move upwards continually until he at length does nothing that is evil, and he knows fully the reason and object of what he does. He thus becomes the true Gnostic, but he can become the true Gnostic only by contemplation and by the practice of what is right. He has to free himself from the power of passion. He has to give up all thoughts of pleasure. He must prefer goodness in the midst of torture to evil with unlimited pleasure. He has to resist the temptations of the body, keeping it under strict control, and with the eye of the soul undimmed by corporeal wants and impulses, contemplate God the supreme good, and live a life according to reason. In other words, he must strive after likeness to God as he reveals himself in his Reason or in Christ. Clement thus looks entirely at the enlightened moral elevation to which Christianity raises man. He believed that Christ instructed men before he came into the world, and he therefore viewed heathenism with kindly eye. He was also favourable to the pursuit of all kinds of knowledge. All enlightenment tended to lead up to the truths of Christianity, and hence knowledge of every kind not evil was its handmaid. Clement had at the same time a strong belief in evolution or development. The world went through various stages in preparation for Christianity. The man goes through various stages before he can reach Christian perfection. And Clement conceived that this development took place not merely in this life, but in the future through successive grades. The Jew and the heathen had the gospel preached to them in the world below by Christ and his apostles, and Christians will have to pass through processes of purification and trial after death before they reach knowledge and perfect bliss.

The beliefs of Clement have caused considerable difference of opinion among modern scholars. He sought the truth from whatever quarter he could get it, believing that all that is good comes from God, wherever it be found. He belongs therefore to no school of philosophers. He calls himself an Eclectic. He was in the main a Neoplatonist, drawing from that school his doctrines of the Monad and his strong tendency towards mysticism. For his moral doctrine he borrowed freely from Stoicism. Aristotelian features may be found but are quite subordinate. But Clement always regards the articles of the Christian creed as the axioms of a new philosophy. Daehne had tried to show that he was Neoplatonic, and Reinkens has maintained that he was essentially Aristotelian. His mode of viewing Christianity does not fit into any classification. It is the result of the period in which he lived,

of his wide culture and the simplicity and noble purity of his character.

It is needless to say that his books well deserve study; but the study is not smoothed by simplicity of style. Clement professed to despise rhetoric, but was himself a rhetorician, and his style is turgid, involved and difficult. He is singularly simple in his character. In discussing marriage he refuses to use any but the plainest language. A euphemism is with him a falsehood. But he is temperate in his opinions; and the practical advices in the second and third books of the *Paedagogue* are remarkably sound and moderate. He is not always very critical, and he is passionately fond of allegorical interpretations, but these were the faults of his age.

All early writers speak of Clement in the highest terms of laudation, and he certainly ought to have been a saint in any Church that reveres saints. But Clement is not a saint in the Roman Church. He was a saint up till the time of Benedict XIV., who read Photius on Clement, believed him, and struck the Alexandrian's name out of the calendar. But many Roman Catholic writers, though they yield a practical obedience to the papal decision, have adduced good reason why it should be reversed (Cognat, p. 451).

EDITIONS.—The standard edition of the collected works will be that of O. Stählin (first vol. containing *Protrepticus* and *Paedagogus*, Leipzig, 1905). Separate editions of *Strom*. vii., Hort and Major (1902); *Q.D.S.*, Barnard in *Texts and Studies*, v. 2 (1897); W. Dindorf's edition in 4 vols. (Oxford, 1869) is little more than a reprint of the text of Bishop Potter, 1715. For the *Fragments* see Zahn, *Forschungen zur Gesch. des neut. Kanons*, part iii., or Harnack and Preuschen, *Gesch. der altch. Litt.*, vol. i.

LITERATURE.—A copious bibliography will be found in Harnack, *Chronologie*, vol. ii., or in Bardenhewer, *Gesch. der altk. Lit.* Either of these will supply the names of works upon Clement's biblical text, his use of Stoic writers, his quotations from heathen writers, and his relation to heathen philosophy. A valuable book is de Faye, *Clém. d'Alex*. (1898). For his theological position see Harnack, *Dogmengeschichte*; Hort, *Six Lectures on the Ante-Nicene Fathers*; Westcott, "Clem, of Alex." in *Dict. Christ. Biog.*; Bigg, *Christian Platonists of Alex.* (1886). A book on Clement's relation to Mysticism is wanted.

(C. Bi.; J. D.)

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1 Zahn thinks we have part of them in the *Adumbrationes Clem. Alex. in epistolas canonicas* (Codex Lindum, 96, sec. ix.). They were perhaps intended as a completion of the preceding course.

CLÉMENT, FRANÇOIS (1714-1793), French historian, was born at Bèze, near Dijon, and was educated at the Jesuit College at Dijon. At the age of seventeen he entered the society of the Benedictines of Saint Maur, and worked with such intense application that at the age of twenty-five he was obliged to take a protracted rest. He now resided in Paris, where he wrote the 11th and 12th vols. of the *Histoire littéraire de la France*, and edited (with Dom Brial) the 12th and 13th vols. of the *Recueil des historiens des Gauls et de la France*. The king appointed him on the committee which was engaged in publishing charters, diplomas and other documents connected with French history (see Xavier Charmes, *Le Comité des travaux historiques et scientifiques*, vol. i., 1886, passim); and the Academy of Inscriptions chose him as a member (1785). Dom Clément also revised the *Art de vérifier les dates*, edited in 1750 by Dom Clémencet. Three volumes with the Indexes appeared from 1783 to 1792. He was engaged in preparing another volume including the period before the Christian era, when he died suddenly of apoplexy, at the age of sixty-nine. The work was afterwards brought down from 1770 to 1827 by Julien de Courcelles and Fortia d'Urban.

CLÉMENT, JACQUES (1567-1589), murderer of the French king Henry III., was born at Sorbon in the Ardennes, and became a Dominican friar. Civil war was raging in France, and Clément became an ardent partisan of the League; his mind appears to have become unhinged by religious fanaticism, and he talked of exterminating the heretics, and formed a

plan to kill Henry III. His project was encouraged by some of the heads of the League; he was assured of temporal rewards if he succeeded, and of eternal bliss if he failed. Having obtained letters for the king, he left Paris on the 31st of July 1589, and reached St Cloud, the headquarters of Henry, who was besieging Paris. On the following day he was admitted to the royal presence, and presenting his letters he told the king that he had an important and confidential message to deliver. The attendants then withdrew, and while Henry was reading the letters Clément mortally wounded him with a dagger which had been concealed beneath his cloak. The assassin was at once killed by the attendants who rushed in, and Henry died early on the following day. Clément's body was afterwards quartered and burned. This deed, however, was viewed with far different feelings in Paris and by the partisans of the League, the murderer being regarded as a martyr and extolled by Pope Sixtus V., while even his canonization was discussed.

See E. Lavisse, *Histoire de France*, tome vi. (Paris, 1904).

CLEMENTI, MUZIO (c. 1751-1832), Italian pianist and composer, was born at Rome between 1750 and 1752. His father, a jeweller, encouraged his son's early musical talent. Buroni and Cordicelli were his first masters, and at the age of nine Clementi's theoretical and practical studies had advanced to such a degree that he was able to win the position of organist at a church. He continued his studies under Santarelli and Carpani, and at the age of fourteen wrote a mass which was performed in public. About 1766 Beckford, the author of *Vathek*, persuaded Clementi to follow him to England, where the young composer lived in retirement at one of the country seats of his protector in Dorsetshire until 1770. In that year he first appeared in London, where his success both as composer and pianist was rapid and brilliant. In 1777 he was for some time employed as conductor of the Italian opera, but he soon afterwards left London for Paris. Here also his concerts were crowded by enthusiastic audiences, and the same success accompanied Clementi on a tour about the year 1780 to southern Germany and Austria. At Vienna, which he visited between 1781 and 1782, he was received with high honour by the emperor Joseph II., in whose presence he met Mozart, and fought a kind of musical duel with him. His technical skill proved to be equal if not superior to that of his rival, who on the other hand infinitely surpassed him by the passionate beauty of his interpretation. It is worth noting that one of the finest of Clementi's sonatas, that in B flat, shows an exactly identical opening theme with Mozart's overture to the *Flauto Magico*.

In May 1782 Clementi returned to London, where for the next twelve years he continued his lucrative occupations of fashionable teacher and performer at the concerts of the aristocracy. He took shares in the pianoforte business of a firm which went bankrupt in 1800. He then established a pianoforte and music business of his own, under the name of Clementi & Co. Other members were added to the firm, including Collard and Davis, and the firm was ultimately taken over by Messrs Collard alone. Amongst his pupils on the pianoforte during this period may be mentioned John Field, the composer of the celebrated *Nocturnes*. In his company Clementi paid, in 1804, a visit to Paris, Vienna, St Petersburg, Berlin and other cities. While he was in Berlin, Meyerbeer became one of his pupils. He also revisited his own country after an absence of more than thirty years. In 1810 Clementi returned to London, but refused to play again in public, devoting the remainder of his life to composition. Several symphonies belong to this time, and were played with much success at contemporary concerts, but none of them seem to have been published. His intellectual and musical faculties remained unimpaired until his death, on the 9th of March 1832, at Evesham, Worcester.

Of Clementi's playing in his youth, Moscheles wrote that it was "marked by a most beautiful *legato*, a supple touch in lively passages, and a most unfailing *technique*." Mozart may be said to have closed the old and Clementi to have founded the newer school of *technique* on the piano. Amongst Clementi's compositions the most remarkable are sixty sonatas for pianoforte, and the great collection of *Études* called *Gradus ad Parnassum*.

CLEMENTINE LITERATURE, the name generally given to the writings which at one time or another were fathered upon Pope Clement I. (*q.v.*), commonly called Clemens Romanus, who was early regarded as a disciple of St Peter. Thus they are for the most part a species of the larger pseudo-Petrine genus. Chief among them are: (1) The so-called Second Epistle; (2) two Epistles on Virginity; (3) the *Homilies* and *Recognitions*; (4) the *Apostolical Constitutions* (*q.v.*); and (5) five epistles forming part of the Forged Decretals (see DECRETALS). The present article deals mainly with the third group, to which the title "Clementine literature" is usually confined, owing to the stress laid upon it in the famous 491
Tübingen reconstruction of primitive Christianity, in which it played a leading part; but later criticism has lowered its importance as its true date and historical relations have been progressively ascertained. (1) and (2) became "Clementine" only by chance, but (3) was so originally by literary device or fiction, the cause at work also in (4) and (5). But while in all cases the suggestion of Clement's authorship came ultimately from his prestige as writer of the genuine Epistle of Clement (see CLEMENT I.), both (3) and (4) were due to this idea as operative on Syrian soil; (5) is a secondary formation based on (3) as known to the West.

(1) *The "Second Epistle of Clement."*—This is really the earliest extant Christian homily (see APOSTOLIC FATHERS). Its theme is the duty of Christian repentance, with a view to obedience to Christ's precepts as the true confession and homage which He requires. Its special charge is "Preserve the flesh pure and the seal (*i.e.* baptism) unstained" (viii. 6). But the peculiar way in which it enforces its morals in terms of the Platonic contrast between the spiritual and sensuous worlds, as archetype and temporal manifestation, suggests a special local type of theology which must be taken into account in fixing its *provenance*. This theology, the fact that the preacher seems to quote the *Gospel according to the Egyptians* (in ch. xii. and possibly elsewhere) as if familiar to his hearers, and indeed its literary affinities generally, all point to Alexandria as the original home of the homily, at a date about 120-140 (see *Zeit. f. N. T. Wissenschaft*, vii. 123 ff). Neither Corinth (as Lightfoot) nor Rome (as Harnack, who assigns it to Bishop Soter, c. 166-174) satisfies all the internal conditions, while the Eastern nature of the external evidence and the homily's quasi-canonical status in the Codex-Alexandrinus strongly favour an Alexandrine origin.

(2) *The Two Epistles to Virgins*, *i.e.* to Christian celibates of both sexes. These are known in their entirety only in Syriac, and were first published by Wetstein (1752), who held them genuine. This view is now generally discredited, even by Roman Catholics like Funk, their best recent editor (*Patres Apost.*, vol. ii.). External evidence begins with Epiphanius (*Haer.* xxx. 15) and Jerome (*Ad Jovin.* i. 12); and the silence of Eusebius tells heavily against their existence before the 4th century, at any rate as writings of Clement. The Monophysite Timothy of Alexandria (A.D. 457) cites one of them as Clement's, while Antiochus of St Saba (C. A.D. 620) makes copious but unacknowledged extracts from both in the original Greek. There is no trace of their use in the West. Thus their Syrian origin is manifest, the more so that in the Syriac MS. they are appended to the New Testament, like the better-known epistles of Clement in the Codex Alexandrinus. Indeed, judging from another Syriac MS. of earlier date, which includes the latter writings in its canon, it seems that the Epistles on Virginity gradually replaced the earlier pair in certain Syrian churches—even should Lightfoot be right in doubting if this had really occurred by Epiphanius's day (*S. Clement of Rome*, i. 412).

Probably these epistles did not originally bear Clement's name at all, but formed a single epistle addressed to ascetics among an actual circle of churches. In that case they, or rather it, may date from the 3rd century in spite of Eusebius's silence, and are not pseudo-Clementine in any real sense. It matters little whether or not the false ascription was made before the division into two implied already by Epiphanius (c. A.D. 375). Special occasion for such a hortatory letter may be discerned in its polemic against intimate relations between ascetics of opposite sex, implied to exist among its readers, in contrast to usage in the writer's own locality. Now we know that spiritual unions, prompted originally by highstrung Christian idealism as to a religious fellowship transcending the law of nature in relation to sex, did exist between persons living under vows of celibacy during the 3rd century in particular, and not least in Syria (cf. the case of Paul of Samosata, c. 265, and the Synod of Ancyra in Galatia, c. 314). It is natural, then, to see in the original epistle a protest against the dangers of such spiritual boldness (cf. "Subintroductae" in Herzog-Hauck's *Realencyklopädie*), prior perhaps to the famous case at Antioch just noted. Possibly it is the feeling of south Syria or Palestine that here expresses itself in remonstrance against usages prevalent in north Syria. Such a view finds support also in the New Testament canon implied in these epistles.

(3)[a] *The Epistle of Clement to James* (the Lord's brother). This was originally part of (3)

[b], in connexion with which its origin and date are discussed. But as known to the West through Rufinus's Latin version, it was quoted as genuine by the synod of Vaison (A.D. 442) and throughout the middle ages. It became "the starting point of the most momentous and gigantic of medieval forgeries, the Isidorian Decretals," "where it stands at the head of the pontifical letters, extended to more than twice its original length." This extension perhaps occurred during the 5th century. At any rate the letter in this form, along with a "second epistle to James" (on the Eucharist, church furniture, &c.), dating from the early 6th century, had separate currency long before the 9th century, when they were incorporated in the *Decretals* by the forger who raised the Clementine epistles to five (see Lightfoot, *Clement*, i. 414 ff.).

(3)[b] *The "Homilies" and "Recognitions"*—"The two chief extant Clementine writings, differing considerably in some respects in doctrine, are both evidently the outcome of a peculiar speculative type of Judaistic Christianity, for which the most characteristic name of Christ was 'the true Prophet.' The framework of both is a narrative purporting to be written by Clement (of Rome) to St James, the Lord's brother, describing at the beginning his own conversion and the circumstances of his first acquaintance with St Peter, and then a long succession of incidents accompanying St Peter's discourses and disputations, leading up to a romantic recognition of Clement's father, mother and two brothers, from whom he had been separated since childhood. The problems discussed under this fictitious guise are with rare exceptions fundamental problems for every age; and, whatever may be thought of the positions maintained, the discussions are hardly ever feeble or trivial. Regarded simply as mirroring the past, few, if any, remains of Christian antiquity present us with so vivid a picture of the working of men's minds under the influence of the new leaven which had entered into the world" (Hort, *Clem. Recog.*, p. xiv.).

The indispensable preliminary to a really historic view of these writings is some solution of the problem of their mutual relations. The older criticism assumed a dependence of one upon the other, and assigned one or both to the latter part of the 2nd century. Recent criticism, however, builds on the principle, which emerges alike from the external and internal evidence (see Salmon in the *Dict. of Christian Biography*), that both used a common basis. Our main task, then, is to define the nature, origin and date of the parent document, and if possible its own literary antecedents. Towards the solution of this problem two contributions of prime importance have recently been made. The earlier of these is by F.J.A. Hort, and was delivered in the form of lectures as far back as 1884, though issued posthumously only in 1901; the other is the elaborate monograph of Dr Hans Waitz (1904).

Criticism.—(i.) *External Evidence as to the Clementine Romance.* The evidence of ancient writers really begins, not with Origen,[1] but with Eusebius of Caesarea, who in his *Eccl. Hist.* iii. 38, writes as follows: "Certain men have quite lately brought forward as written by him (Clement) other verbose and lengthy writings, containing dialogues of Peter, forsooth, and Apion, whereof not the slightest mention is to be found among the ancients, for they do not even preserve in purity the stamp of the Apostolic orthodoxy." Apion, the Alexandrine grammarian and foe of Judaism, whose criticism was answered by Josephus, appears in this character both in *Homilies* and *Recognitions*, though mainly in the former (iv. 6-vii. 5). Thus Eusebius implies (1) a spurious Clementine work containing matter found also in our *Homilies* at any rate; and (2) its quite recent origin. Next we note that an extract in the *Philocalia* is introduced as follows: "Yea, and Clement the Roman, a disciple of Peter the Apostle, after using words in harmony with these on the present problem, in conversation with his father at Laodicea in the *Circuits*, speaks a very necessary word for the end of arguments touching this matter, viz. those things which seem to have proceeded from *genesis* (= astrological destiny), in the fourteenth book." The extract answers to *Recognitions*, x. 10-13, but it is absent from our *Homilies*. Here we observe that (1) the extract agrees this time with *Recognitions*, not with *Homilies*; (2) its framework is that of the Clementine romance found in both; (3) the tenth and last book of *Recognitions* is here parallel to book xiv. of a work called *Circuits* (*Periodoi*).

This last point leads on naturally to the witness of Epiphanius (c. 375), who, speaking of Ebionites or Judaizing Christians of various sorts, and particularly the Essene type, says (*Haer.* xxx. 15) that "they use certain other books likewise, to wit, the so-called *Circuits* of Peter, which were written by the hand of Clement, falsifying their contents, though leaving a few genuine things." Here Ephiphanius simply assumes that the Ebionite *Circuits of Peter* was based on a genuine work of the same scope, and goes on to say that the spurious elements are proved such by contrast with the tenor of Clement's "encyclic epistles" (*i.e.* those to virgins, (2) above); for these enjoin virginity (celibacy), and praise Elijah, David, Samson, and all the prophets, whereas the Ebionite *Circuits* favour marriage (even in

Apostles) and depreciate the prophets between Moses and Christ, “the true Prophet.” “In the *Circuits*, then, they adapted the whole to their own views, representing Peter falsely in many ways, as that he was daily baptized for the sake of purification, as these also do; and they say that he likewise abstained from animal food and meat, as they themselves also do.” Now all the points here noted in the *Circuits* can be traced in our *Homilies* and *Recognitions*, though toned down in different degrees.

The witness of the Arianizing *Opus Imperfectum in Matthaeum* (c. 400) is in general similar. Its usual form of citation is “Peter in Clement” (*apud Clementem*). This points to “Clement” as a brief title for the Clementine *Periodoi*, a title actually found in a Syriac MS. of A.D. 411 which contains large parts of *Recognitions* and *Homilies*, and twice used by Rufinus, *e.g.* when he proposes to inscribe his version of the *Recognitions* “Rufinus *Clemens*.” Rufinus in his preface to this work—in which for the first time we meet the title *Recognition(s)*—observes that there are two editions to which the name applies, two collections of books differing in some points but in many respects containing the same narrative. This he remarks in explanation of the order of his version in some places, which he feels may strike his friend Gaudentius as unusual, the inference being that the other edition was the better-known one, although it lacked “the transformation of Simon” (*i.e.* of Clement’s father into Simon’s likeness), which is common to the close both of our *Recognitions* and *Homilies*, and so probably belonged to the *Circuits*. We may assume, too (*e.g.* on the basis of our Syriac MS.), that the Greek edition of the *Recognition(s)* actually used by Rufinus was much nearer the text of the *Periodoi* of which we have found traces than we should imagine from its Latin form.

So far we have no sure trace of our *Homilies* at all, apart from the Syriac version. Even four centuries later, Photius, in referring to a collection of books called both *Acts of Peter* and the *Recognition of Clement*, does not make clear whether he means *Homilies* or *Recognitions* or either. “In all the copies which we have seen (and they are not a few) after those different epistles (viz. ‘Peter to James’ and ‘Clement to James,’ prefixed, the one in some MSS. the other in others) and titles, we found without variation the same treatise, beginning, I, Clement, &c.” But it is not clear that he had read more than the opening of these MSS. The fact that different epistles are prefixed to the same work leads him to conjecture “that there were two editions made of the *Acts of Peter* (his usual title for the collection), but in course of time the one perished and that of Clement prevailed.” This is interesting as anticipating a result of modern criticism, as will appear below. The earliest probable reference to our *Homilies* occurs in a work of doubtful date, the pseudo-Athanasian *Synopsis*, which mentions “Clementines, whence came by selection and rewriting the true and inspired form.” Here too we have the first sure trace of an expurgated recension, made with the idea of recovering the genuine form assumed, as earlier by Epiphanius, to lie behind an unorthodox recension of Clement’s narrative. As, moreover, the extant *Epitome* is based on our *Homilies*, it is natural to suppose it was also the basis of earlier orthodox recensions, one or more of which may be used in certain Florilegia of the 7th century and later. Nowhere do we find the title *Homilies* given to any form of the Clementine collection in antiquity.

(ii.) *The Genesis of the Clementine Literature.* It has been needful to cite so much of the evidence proving that our *Homilies* and *Recognitions* are both recensions of a common basis, at first known as the *Circuits of Peter* and later by titles connecting it rather with Clement, its ostensible author, because it affords data also for the historical problems touching (a) the contents and origin of the primary Clementine work, and (b) the conditions under which our extant recensions of it arose.

(a) *The Circuits of Peter*, as defined on the one hand by the epistle of Clement to James originally prefixed to it and by patristic evidence, and on the other by the common element in our *Homilies* and *Recognitions*, may be conceived as follows. It contained accounts of Peter’s teachings and discussions at various points on a route beginning at Caesarea, and extending northwards along the coast-lands of Syria as far as Antioch. During this tour he meets with persons of typically erroneous views, which it was presumably the aim of the work to refute in the interests of true Christianity, conceived as the final form of divine revelation—a revelation given through true prophecy embodied in a succession of persons, the chief of whom were Moses and the prophet whom Moses foretold, Jesus the Christ. The prime exponent of the spurious religion is Simon Magus. A second protagonist of error, this time of Gentile philosophic criticism directed against fundamental Judaism, is Apion, the notorious anti-Jewish Alexandrine grammarian of Peter’s day; while the rôle of upholder of astrological fatalism (*Genesis*) is played by Faustus, father of Clement, with whom Peter and Clement debate at Laodicea. Finally, all this is already embedded in a setting determined by

the romance of Clement and his lost relatives, “recognition” of whom forms the *dénouement* of the story.

There is no reason to doubt that such, roughly speaking, were the contents of the Clementine work to which Eusebius alludes slightingly, in connexion with that section of it which had to his eye least verisimilitude, viz. the dialogues between Peter and Apion. Now Eusebius believed the work to have been of quite recent and suspicious origin. This points to a date about the last quarter of the 3rd century; and the prevailing doctrinal tone of the contents, as known to us, leads to the same result. The standpoint is that of the peculiar Judaizing or Ebonite Christianity due to persistence among Christians of the tendencies known among pre-Christian Jews as Essene. The Essenes, while clinging to what they held to be original Mosaism, yet conceived and practised their ancestral faith in ways which showed distinct traces of syncretism, or the operation of influences foreign to Judaism proper. They thus occupied an ambiguous position on the borders of Judaism. Similarly Christian Essenism was syncretist in spirit, as we see from its best-known representatives, the Elchasaites, of whom we first hear about 220, when a certain Alcibiades of Apamea in Syria (some 60 m. south of Antioch) brought to Rome the *Book of Helxai*—the manifesto of their distinctive message (Hippol., *Philos.* ix. 13)—and again some twenty years later, when Origen refers to one of their leaders as having lately arrived at Caesarea (Euseb. vi. 38). The 493
first half of the 3rd century was marked, especially in Syria, by a strong tendency to syncretism, which may well have stirred certain Christian Essenes to fresh propaganda. Other writings than the *Book of Helxai*, representing also other species of the same genus, would take shape. Such may have been some of the pseudo-apostolic *Acts* to which Epiphanius alludes as in use among the Ebionites of his own day: and such was probably the nucleus of our Clementine writings, the *Periodoi* of Peter.

Harnack (*Chronologie*, ii. 522 f.), indeed, while admitting that much (*e.g.* in *Homilies*, viii. 5-7) points the other way, prefers the view that even the *Circuits* were of Catholic origin (Chapman, as above, says Arian, soon after 325), regarding the syncretistic Jewish-Christian features in it as due either to its earlier basis or to an instinct to preserve continuity of manner (*e.g.* absence of explicit reference to Paul). Hort, on the contrary, assumes as author “an ingenious Helxaite ... perhaps stimulated by the example of the many Encratite *Periodoi*” (p. 131), and writing about A.D. 200.

Only it must not be thought of as properly Elchasaite, since it knew no baptism distinct from the ordinary Christian one. It seems rather to represent a later and modified Essene Christianity, already half-Catholic, such as would suit a date after 250, in keeping with Eusebius’s evidence. Confirmation of such a date is afforded by the silence of the Syrian *Didascalia*, itself perhaps dating from about 250, as to any visit of Simon Magus to Caesarea, in contrast to the reference in its later form, the *Apostolical Constitutions* (c. 350-400), which is plainly coloured (vi. 9) by the Clementine story. On the other hand, the *Didascalia* seems to have been evoked partly by Judaizing propaganda in north Syria. If, then, it helps to date the *Periodoi* as after 250, it may also suggest as place of origin one of the large cities lying south of Antioch, say Laodicea (itself on the coast about 30 m. from Apamea), where the Clementine story reaches its climax. The intimacy of local knowledge touching this region implied in the narrative common to *Homilies* and *Recognitions* is notable, and tells against an origin for the *Periodoi* outside Syria (*e.g.* in Rome, as Waitz and Harnack hold, but Lightfoot disproves, *Clem.* i. 55 f., 64,100, cf. Hort, p. 131). Further, though the curtain even in it fell on Peter at Antioch itself (our one complete MS. of the *Homilies* is proved by the *Epitome*, based on the *Homilies*, to be here abridged), the interest of the story culminates at Laodicea.

If we assume, then, that the common source of our extant Clementines arose in Syria, perhaps c. 265,[2] had it also a written source or sources which we can trace? Though Hort doubts it, most recent scholars (*e.g.* Waitz, Harnack) infer the existence of at least one source, “Preachings (*Kerygmata*) of Peter,” containing no reference at all to Clement. Such a work seems implied by the epistle of Peter to James and its appended adjuration, prefixed in our MSS. to the *Homilies* along with the epistle of Clement to James. Thus the later work aimed at superseding the earlier, much as Photius suggests (see above). It was, then, to these “Preachings of Peter” that the most Ebionite features, and especially the anti-Pauline allusions under the guise of Simon still inhering in the *Periodoi* (as implied by *Homilies* in particular), originally belonged. The fact, however, that these were not more completely suppressed in the later work, proves that it, too, arose in circles of kindred, though largely modified, Judaeo-Christian sentiment (cf. *Homilies*, vii., *e.g.* ch. 8). The differences of standpoint may be due not only to lapse of time, and the emergence of new problems on the horizon of Syrian Christianity generally, but also to change in locality and in the degree of

Greek culture represented by the two works. A probable date for the "Preachings" used in the *Periodoi* is c. 200.[3]

If the home of the *Periodoi* was the region of the Syrian Laodicea, we can readily explain most of its characteristics. Photius refers to the "excellences of its language and its learning"; while Waitz describes the aim and spirit of its contents as those of an apology for Christianity against heresy and paganism, in the widest sense of the word, written in order to win over both Jews (cf. *Recognitions*, i. 53-70) and pagans, but mainly the latter. In particular it had in view persons of culture, as most apt to be swayed by the philosophical tendencies in the sphere of religion prevalent in that age, the age of neo-Platonism. It was in fact designed for propaganda among religious seekers in a time of singular religious restlessness and varied inquiry, and, above all, for use by catechumens (cf. *Ep. Clem.* 2, 13) in the earlier stages of their preparation for Christian baptism. To such its romantic setting would be specially adapted, as falling in with the literary habits and tastes of the period; while its doctrinal peculiarities would least give offence in a work of the aim and character just described.

As regards the sources to the narrative part of the *Periodoi*, it is possible that the "recognition" *motif* was a literary commonplace. The account of Peter's journeyings was no doubt based largely on local Syrian tradition, perhaps as already embodied in written *Acts of Peter* (so Waitz and Harnack), but differing from the Western type, *e.g.* in bringing Peter to Rome long before Nero's reign. As for the allusions, more or less indirect, to St Paul behind the figure of Simon, as the arch-enemy of the truth—allusions which first directed attention to the Clementines in the last century—there can be no doubt as to their presence, but only as to their origin and the degree to which they are so meant in *Homilies* and *Recognitions*. There is certainly "an application to Simon of words used by or of St Paul, or of claims made by or in behalf of St Paul" (Hort), especially in *Homilies* (ii. 17 f., xi. 35, xvii. 19), where a consciousness also of the double reference must still be present, though this does not seem to be the case in *Recognitions* (in Rufinus's Latin.) Such covert reference to Paul must designedly have formed part of the *Periodoi*, yet as adopted from its more bitterly anti-Pauline basis, the "Preachings of Peter" (cf. *Homilies*, ii. 17 f. with *Ep. Pet. ad Jac. 2*), which probably shared most of the features of Ebionite Essenism as described by Epiphanius xxx. 15 f. (including the qualified dualism of the two kingdoms—the present one of the devil, and the future one of the angelic Christ—which appears also in the *Periodoi*, cf. *Ep. Clem. ad Jac. 1 fin.*).

(b) That the *Periodoi* was a longer work than either our *Homilies* or *Recognitions* is practically certain; and its mere bulk may well, as Hort suggests (p. 88), have been a chief cause of the changes of form. Yet *Homilies* and *Recognitions* are abridgments made on different principles and convey rather different impressions to their readers. "The *Homilies* care most for doctrine," especially philosophical doctrine, "and seem to transpose very freely for doctrinal purposes" (*e.g.* matter in xvi.-xix. is placed at the end for effect, while xx. 1-10 gives additional emphasis to the *Homilies*' theory of evil, perhaps over against Manichaeism). "The *Recognitions* care most for the story," as a means of religious edification, "and have preserved the general framework much more nearly." They arose in different circles: indeed, save the compiler of the text represented by the Syriac MS. of 411 A.D., "not a single ancient writer shows a knowledge of both books in any form." But Hort is hardly right in suggesting that, while *Homilies* arose in Syria, *Recognitions* took shape in Rome. Both probably arose in Syria (so Lightfoot), but in circles varying a good deal in religious standpoint.[4] *Homilies* was a sort of second edition, made largely in the spirit of its original and perhaps in much the same locality, with a view to maintaining and propagating the doctrines of a semi-Judaic Christianity (cf. bk. vii.), as it existed a generation or two after the *Periodoi* appeared. The *Recognitions*, in both recensions, as is shown by the fact that it was read in the original with general admiration not only by Rufinus but also by others in the West, was more Catholic in tone and aimed chiefly at commending the Christian religion 494
over against all non-Christian rivals or gnostic perversions. That is, more than one effort of this sort had been made to adapt the story of Clement's *Recognitions* to general Christian use. Later the *Homilies* underwent further adaptation to Catholic feeling even before the *Epitome*, in its two extant forms, was made by more drastic methods of expurgation. One kind of adaptation at least is proved to have existed before the end of the 4th century, namely a selection of certain discourses from the *Homilies* under special headings, following on *Recognitions*, i.-iii., as seen in a Syriac MS. of A.D. 411. As this MS. contains transcriptional errors, and as its archetype had perhaps a Greek basis, the *Recognitions* may be dated c. 350-375[5] (its Christology suggested to Rufinus an Arianism like that of Eunomius of Cyzicus, c. 362), and the *Homilies* prior even to 350. But the different circles represented

by the two make relative dating precarious.

Summary.—The Clementine literature throws light upon a very obscure phase of Christian development, that of Judaeo-Christianity, and proves that it embraced more intermediate types, between Ebionism proper and Catholicism, than has generally been realized. Incidentally, too, its successive forms illustrate many matters of belief and usage among Syrian Christians generally in the 3rd and 4th centuries, notably their apologetic and catechetical needs and methods. Further, it discusses, as Hort observes, certain indestructible problems which much early Christian theology passes by or deals with rather perfunctorily; and it does so with a freshness and reality which, as we compare the original 3rd-century basis with the conventional manner of the *Epitome*, we see to be not unconnected with origin in an age as yet free from the trammels of formal orthodoxy. Again it is a notable specimen of early Christian pseudepigraphy, and one which had manifold and far-reaching results. Finally the romance to which it owed much of its popular appeal, became, through the medium of Rufinus's Latin, the parent of the late medieval legend of Faust, and so the ancestor of a famous type in modern literature.

LITERATURE.—For a full list of this down to 1904 see Hans Waitz, "Die Pseudoklementinen" (*Texte u. Untersuchungen zur Gesch. der altchr. Literatur, neue Folge*, Bd. x. Heft 4), and A. Harnack, *Chronologie der altchr. Litteratur* (1904), ii. 518 f. In English, besides Hort's work, there are articles by G. Salmon, in *Dict. of Christ. Biog.*, C. Bigg, *Studia Biblica*, ii., A.C. Headlam, *Journal of Theol. Studies*, iii.

(J. V. B.)

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1 Dr Armitage Robinson, in his edition of the *Philocalia* (extracts made c. 358 by Basil and Gregory from Origen's writings), proved that the passage cited below is simply introduced as a parallel to an extract of Origen's; while Dom Chapman, in the *Journal of Theol. Studies*, iii. 436 ff., made it probable that the passages in Origen's *Comm. on Matthew* akin to those in the *Opus Imperf. in Matth.* are insertions in the former, which is extant only in a Latin version. Subsequently he suggested (*Zeitsch. f. N.T. Wissenschaft*, ix. 33 f.) that the passage in the *Philocalia* is due not to its authors but to an early editor, since it is the only citation not referred to Origen.

2 While Hort and Waitz say c. 200, Harnack says c. 260. The reign of Gallienus (260-268) would suit the tone of its references to the Roman emperor (Waitz, p. 74), and also any polemic against the Neoplatonic philosophy of revelation by visions and dreams which it may contain.

3 Even Waitz agrees to this, though he argues back to a yet earlier anti-Pauline (rather than anti-Marcionite) form, composed in Caesarea, c. 135.

4 Dom Chapman maintains that the *Recognitions* (c. 370-390,) even attack the doctrine of God in the *Homilies* or their archetype.

5 Dom Chapman (ut supra, p. 158) says during the Neoplatonist reaction under Julian 361-363, to which period he also assigns the *Homilies*.

CLEOBULUS, one of the Seven Sages of Greece, a native and tyrant of Lindus in Rhodes. He was distinguished for his strength and his handsome person, for the wisdom of his sayings, the acuteness of his riddles and the beauty of his lyric poetry. Diogenes Laërtius quotes a letter in which Cleobulus invites Solon to take refuge with him against Peisistratus; and this would imply that he was alive in 560 B.C. He is said to have held advanced views as to female education, and he was the father of the wise Cleobuline, whose riddles were not less famous than his own (Diogenes Laërtius i. 89-93).

See F.G. Mullach, *Fragmenta Philosophorum Graecorum*, i.

CLEOMENES (Κλεομένης), the name of three Spartan kings of the Agiad line.

Cleomenes I. was the son of Anaxandridas, whom he succeeded about 520 B.C. His chief exploit was his crushing victory near Tiryns over the Argives, some 6000 of whom he burned to death in a sacred grove to which they had fled for refuge (Herodotus vi. 76-82). This secured for Sparta the undisputed hegemony of the Peloponnese. Cleomenes' interposition in the politics of central Greece was less successful. In 510 he marched to Athens with a Spartan force to aid in expelling the Peisistratidae, and subsequently returned to support the oligarchical party, led by Isagoras, against Cleisthenes (*q.v.*). He expelled seven hundred families and transferred the government from the council to three hundred of the oligarchs, but being blockaded in the Acropolis he was forced to capitulate. On his return home he collected a large force with the intention of making Isagoras despot of Athens, but the opposition of the Corinthian allies and of his colleague Demaratus caused the expedition to break up after reaching Eleusis (Herod. v. 64-76; Aristotle, *Ath. Pol.* 19, 20). In 491 he went to Aegina to punish the island for its submission to Darius, but the intrigues of his colleague once again rendered his mission abortive. In revenge Cleomenes accused Demaratus of illegitimacy and secured his deposition in favour of Leotychides (Herod. vi. 50-73). But when it was discovered that he had bribed the Delphian priestess to substantiate his charge he was himself obliged to flee; he went first to Thessaly and then to Arcadia, where he attempted to foment an anti-Spartan rising. About 488 B.C. he was recalled, but shortly afterwards, in a fit of madness, he committed suicide (Herod. vi. 74, 75). Cleomenes seems to have received scant justice at the hands of Herodotus or his informants, and Pausanias (iii. 3, 4) does little more than condense Herodotus's narrative. In spite of some failures, largely due to Demaratus's jealousy, Cleomenes strengthened Sparta in the position, won during his father's reign, of champion and leader of the Hellenic race; it was to him, for example, that the Ionian cities of Asia Minor first applied for aid in their revolt against Persia (Herod. v. 49-51).

For the chronology see J. Wells, *Journal of Hellenic Studies* (1905), p. 193 ff., who assigns the Argive expedition to the outset of the reign, whereas nearly all historians have dated it in or about 495 B.C.

Cleomenes II. was the son of Cleombrotus I., brother and successor of Agesipolis II. Nothing is recorded of his reign save the fact that it lasted for nearly sixty-one years (370-309 B.C.).

Cleomenes III., the son and successor of Leonidas II., reigned about 235-219 B.C. He made a determined attempt to reform the social condition of Sparta along the lines laid down by Agis IV., whose widow Agiatis he married; at the same time he aimed at restoring Sparta's hegemony in the Peloponnese. After twice defeating the forces of the Achaean League in Arcadia, near Mount Lycaeum and at Leuctra, he strengthened his position by assassinating four of the ephors, abolishing the ephorate, which had usurped the supreme power, and banishing some eighty of the leading oligarchs. The authority of the council was also curtailed, and a new board of magistrates, the *patronomi*, became the chief officers of state. He appointed his own brother Eucleidas as his colleague in succession to the Eurypontid Archidamus, who had been murdered. His social reforms included a redistribution of land, the remission of debts, the restoration of the old system of training (ἀγωγή) and the admission of picked perioeci into the citizen body. As a general Cleomenes did much to revive Sparta's old prestige. He defeated the Achaeans at Dyme, made himself master of Argos, and was eventually joined by Corinth, Phlius, Epidaurus and other cities. But Aratus, whose jealousy could not brook to see a Spartan at the head of the Achaean league called in Antigonus Doson of Macedonia, and Cleomenes, after conducting successful expeditions to Megalopolis and Argos, was finally defeated at Sellasia, to the north of Sparta, in 222 or 221 B.C. He took refuge at Alexandria with Ptolemy Euergetes, but was arrested by his successor, Ptolemy Philopator, on a charge of conspiracy. Escaping from prison he tried to raise a revolt, but the attempt failed and to avoid capture he put an end to his life. Both as general and as politician Cleomenes was one of Sparta's greatest men, and with him perished her last hope of recovering her ancient supremacy in Greece.

See Polybius ii. 45-70, v. 35-39, viii. 1; Plutarch, *Cleomenes; Aratus*, 35-46; *Philopoemen*, 5, 6; Pausanias ii. 9; Gehlert, *De Cleomene* (Leipzig, 1883); Holm, *History of Greece*, iv. cc. 10, 15.

(M. N. T.)

CLEON (d. 422 B.C.), Athenian politician during the Peloponnesian War, was the son of Cleaenetus, from whom he inherited a lucrative tannery business. He was the first prominent representative of the commercial class in Athenian politics. He came into notice first as an opponent of Pericles, to whom his advanced ideas were naturally unacceptable, and in his opposition somewhat curiously found himself acting in concert with the aristocrats, who equally hated and feared Pericles. During the dark days of 430, after the unsuccessful expedition of Pericles to Peloponnesus, and when the city was devastated by the plague, Cleon headed the opposition to the Periclean régime. Pericles was accused by Cleon of maladministration of public money, with the result that he was actually found guilty (see Grote's *Hist. of Greece*, abridged ed., 1907, p. 406, note 1). A revulsion of feeling, however, soon took place. Pericles was reinstated, and Cleon now for a time fell into the background. The death of Pericles (429) left the field clear for him. Hitherto he had only been a vigorous opposition speaker, a trenchant critic and accuser of state officials. He now came forward as the professed champion and leader of the democracy, and, owing to the moderate abilities of his rivals and opponents, he was for some years undoubtedly the foremost man in Athens. Although rough and unpolished, he was gifted with natural eloquence and a powerful voice, and knew exactly how to work upon the feelings of the people. He strengthened his hold on the poorer classes by his measure for trebling the pay of the jurymen, which provided the poorer Athenians with an easy means of livelihood. The notorious fondness of the Athenians for litigation increased his power; and the practice of "sycophancy" (raking up material for false charges; see SYCOPHANT), enabled him to remove those who were likely to endanger his ascendancy. Having no further use for his former aristocratic associates, he broke off all connexion with them, and thus felt at liberty to attack the secret combinations for political purposes, the oligarchical clubs to which they mostly belonged. Whether he also introduced a property-tax for military purposes, and even held a high position in connexion with the treasury, is uncertain. His ruling principles were an inveterate hatred of the nobility, and an equal hatred of Sparta. It was mainly through him that the opportunity of concluding an honourable peace (in 425) was lost, and in his determination to see Sparta humbled he misled the people as to the extent of the resources of the state, and dazzled them by promises of future benefits.

In 427 Cleon gained an evil notoriety by his proposal to put to death indiscriminately all the inhabitants of Mytilene, which had put itself at the head of a revolt. His proposal, though accepted, was, fortunately for the credit of Athens, rescinded, although, as it was, the chief leaders and prominent men, numbering about 1000, fell victims. In 425, he reached the summit of his fame by capturing and transporting to Athens the Spartans who had been blockaded in Sphacteria (see PYLOS). Much of the credit was probably due to the military skill of his colleague Demosthenes; but it must be admitted that it was due to Cleon's determination that the Ecclesia sent out the additional force which was needed. It was almost certainly due to Cleon that the tribute of the "allies" was doubled in 425 (see DELIAN LEAGUE). In 422 he was sent to recapture Amphipolis, but was outgeneralled by Brasidas and killed. His death removed the chief obstacle to an arrangement with Sparta, and in 421 the peace of Nicias was concluded (see PELOPONNESIAN WAR).

The character of Cleon is represented by Aristophanes and Thucydides in an extremely unfavourable light. But neither can be considered an unprejudiced witness. The poet had a grudge against Cleon, who had accused him before the senate of having ridiculed (in his *Babylonians*) the policy and institutions of his country in the presence of foreigners and at the time of a great national war. Thucydides, a man of strong oligarchical prejudices, had also been prosecuted for military incapacity and exiled by a decree proposed by Cleon. It is therefore likely that Cleon has had less than justice done to him in the portraits handed down by these two writers.

AUTHORITIES.—For the literature on Cleon see C.F. Hermann, *Lehrbuch der griechischen Antiquitäten*, i. pt. 2 (6th ed. by V. Thumser, 1892), p. 709, and G. Busolt, *Griechische Geschichte*, iii. pt. 2 (1904), p. 988, note 3. The following are the chief authorities:—(a) *Favourable to Cleon.*—C.F. Ranke, *Commentatio de Vita Aristophanis* (Leipzig, 1845); J.G. Droysen, *Aristophanes*, ii., introd. to the *Knights* (Berlin, 1837); G. Grote, *Hist. of Greece*, chs. 50, 54; W. Oncken, *Athen und Hellas*, ii. p. 204 (Leipzig, 1866); H. Müller-Strübing, *Aristophanes und die historische Kritik* (Leipzig, 1873); J.B. Bury, *Hist. of Greece*, i. (1902). (b) *Unfavourable.*—J.F. Kortüm, *Geschichtliche Forschungen* (Leipzig, 1863), and *Zur Geschichte hellenischen Staatsverfassungen* (Heidelberg, 1821); F. Passow, *Vermischte*

Schriften (Leipzig, 1843); C. Thirlwall, *Hist. of Greece*, ch. 21; E. Curtius, *Hist. of Greece* (Eng. tr.) iii. p. 112; J. Schvarcz, *Die Demokratie* (Leipzig, 1882); H. Delbrück, *Die Strategie des Perikles* (Berlin, 1890); E. Meyer, *Forschungen zur alten Geschichte*, ii. p. 333 (Halle, 1899). The balance between the two extreme views is fairly held by J. Beloch, *Die attische Politik seit Perikles* (Leipzig, 1884), and *Griechische Geschichte*, i. p. 537; and by A. Holm, *Hist. of Greece*, ii. (Eng. tr.), ch. 23, with the notes.

CLEOPATRA, the regular name of the queens of Egypt in the Ptolemaic dynasty after Cleopatra, daughter of the Seleucid Antiochus the Great, wife of Ptolemy V., Epiphanes. The best known was the daughter of Ptolemy XIII. Auletes, born 69 (or 68) B.C. At the age of seventeen she became queen of Egypt jointly with her younger brother Ptolemy Dionysus, whose wife, in accordance with Egyptian custom, she was to become. A few years afterwards, deprived of all royal authority, she withdrew into Syria, and made preparation to recover her rights by force of arms. At this juncture Julius Caesar followed Pompey into Egypt. The personal fascinations of Cleopatra induced him to undertake a war on her behalf, in which Ptolemy lost his life, and she was replaced on the throne in conjunction with a younger brother, of whom, however, she soon rid herself by poison. In Rome she lived openly with Caesar as his mistress until his assassination, when, aware of her unpopularity, she returned at once to Egypt. Subsequently she became the ally and mistress of Mark Antony (see ANTONIUS). Their connexion was highly unpopular at Rome, and Octavian (see AUGUSTUS) declared war upon them and defeated them at Actium (31 B.C.). Cleopatra took to flight, and escaped to Alexandria, where Antony joined her. Having no prospect of ultimate success, she accepted the proposal of Octavian that she should assassinate Antony, and enticed him to join her in a mausoleum which she had built in order that "they might die together." Antony committed suicide, in the mistaken belief that she had already done so, but Octavian refused to yield to the charms of Cleopatra who put an end to her life, by applying an asp to her bosom, according to the common tradition, in the thirty-ninth year of her age (29th of August, 30 B.C.). With her ended the dynasty of the Ptolemies, and Egypt was made a Roman province. Cleopatra had three children by Antony, and by Julius Caesar, as some say, a son, called Caesarion, who was put to death by Octavian. In her the type of queen characteristic of the Macedonian dynasties stands in the most brilliant light. Imperious will, masculine boldness, relentless ambition like hers had been exhibited by queens of her race since the old Macedonian days before Philip and Alexander. But the last Cleopatra had perhaps some special intellectual endowment. She surprised her generation by being able to speak the many tongues of her subjects. There may have been an individual quality in her luxurious profligacy, but then her predecessors had not had the Roman lords of the world for wooers.

For the history of Cleopatra see ANTONIUS, MARCUS; CAESAR, GAIUS JULIUS; PTOLEMIES. The life of Antony by Plutarch is our main authority; it is upon this that Shakespeare's *Antony and Cleopatra* is based. Her life is the subject of monographs by Stahr (1879, an *apologia*), and Houssaye, *Aspasie, Cléopâtre*, &c. (1879).

CLEPSYDRA (from Gr. κλέπτειν, to steal, and ὕδωρ, water), the chronometer of the Greeks and Romans, which measured time by the flow of water. In its simplest form it was a short-necked earthenware globe of known capacity, pierced at the bottom with several small holes, through which the water escaped or "stole away." The instrument was employed to set a limit to the speeches in courts of justice, hence the phrases *aquam dare*, to give the advocate speaking time, and *aquam perdere*, to waste time. Smaller clepsydrae of glass were very early used in place of the sun-dial, to mark the hours. But as the length of the hour varied according to the season of the year, various arrangements, of which we have no clear account, were necessary to obviate this and other defects. For instance, the flow of water varied with the temperature and pressure of the air, and secondly, the rate of flow became less as the vessel emptied itself. The latter defect was remedied by keeping the level of the water in the clepsydra uniform, the volume of that discharged being noted. Plato is

said to have invented a complicated clepsydra to indicate the hours of the night as well as of the day. In the clepsydra or hydraulic clock of Ctesibius of Alexandria, made about 135 B.C., the movement of water-wheels caused the gradual rise of a little figure, which pointed out the hours with a little stick on an index attached to the machine. The clepsydra is said to have been known to the Egyptians. There was one in the Tower of the Winds at Athens; and the turret on the south side of the tower is supposed to have contained the cistern which supplied the water.

See Marquardt, *Das Privatleben der Römer*, i. (2nd ed., 1886), p. 792; G. Bilfinger, *Die Zeitmesser der antiken Völker* (1886), and *Die antiken Stundenangaben* (1888).

CLERESTORY, or CLEARSTORY (Ital. *chiaro piano*, Fr. *clairevoie*, *claire étage*, Ger. *Lichtgaden*), in architecture, the upper storey of the nave of a church, the walls of which rise above the aisles and are pierced with windows ("clere" being simply "clear," in the sense of "lighted"). Sometimes these windows are very small, being mere quatrefoils or spherical triangles. In large buildings, however, they are important objects, both for beauty and utility. The windows of the clerestories of Norman work, even in large churches, are of less importance than in the later styles. In Early English they became larger; and in the Decorated they are more important still, being lengthened as the triforium diminishes. In Perpendicular work the latter often disappears altogether, and in many later churches, as at Taunton, and many churches in Norfolk and Suffolk, the clerestories are close ranges of windows. The term is equally applicable to the Egyptian temples, where the lighting of the hall of columns was obtained over the stone roofs of the adjoining aisles, through slits pierced in vertical slabs of stone. The Romans also in their baths and palaces employed the same method, and probably derived it from the Greeks; in the palaces at Crete, however, light-wells would seem to have been employed.

CLERFAYT (or CLAIRFAYT), **FRANÇOIS SEBASTIEN CHARLES JOSEPH DE CROIX**, COUNT OF (1733-1798), Austrian field marshal, entered the Austrian army in 1753. In the Seven Years' War he greatly distinguished himself, earning rapid promotion, and receiving the decoration of the order of Maria Theresa. At the conclusion of the peace, though still under thirty, he was already a colonel. During the outbreak of the Netherlands in 1787, he was, as a Walloon by birth, subjected to great pressure to induce him to abandon Joseph II., but he resisted all overtures, and in the following year went to the Turkish war in the rank of lieutenant field marshal. In an independent command Clerfayt achieved great success, defeating the Turks at Mehadia and Calafat. In 1792, as one of the most distinguished of the emperor's generals, he received the command of the Austrian contingent in the duke of Brunswick's army, and at Croix-sous-Bois his corps inflicted a reverse on the troops of the French revolution. In the Netherlands, to which quarter he was transferred after Jemappes, he opened the campaign of 1793 with the victory of Aldenhoven and the relief of Maestricht, and on March 18th mainly brought about the complete defeat of Dumouriez at Neerwinden. Later in the year, however, his victorious career was checked by the reverse at Wattignies, and in 1794 he was unsuccessful in West Flanders against Pichegru. In the course of the campaign Clerfayt succeeded the duke of Saxe-Coburg in the supreme command, but was quite unable to make head against the French, and had to recross the Rhine. In 1795, now field marshal, he commanded on the middle Rhine against Jourdan, and this time the fortune of war changed. Jourdan was beaten at Höchst and Mainz brilliantly relieved. But the field marshal's action in concluding an armistice with the French not being approved by Thugut, he resigned the command, and became a member of the Aulic Council in Vienna. He died in 1798. A brave and skilful soldier, Clerfayt perhaps achieved more than any other Austrian commander (except the archduke Charles) in the hopeless struggle of small dynastic armies against a "nation in arms."

See von Vivenot, *Thugut, Clerfayt, und Würmser* (Vienna, 1869).

CLERGY (M.E. *clergie*, O. Fr. *clergie*, from Low Lat. form *clericia* [Skeat], by assimilation with O. Fr. *clergié*, Fr. *clergé*, from Low Lat. *clericatus*), a collective term signifying in English strictly the body of "clerks," *i.e.* men in holy orders (see CLERK). The word has, however, undergone sundry modifications of meaning. Its M.E. senses of "clerkship" and "learning" have long since fallen obsolete. On the other hand, in modern times there has been an increasing tendency to depart from its strict application to technical "clerks," and to widen it out so as to embrace all varieties of ordained Christian ministers. While, however, it is now not unusual to speak of "the Nonconformist clergy," the word "clergyman" is still, at least in the United Kingdom, used of the clergy of the Established Church in contradistinction to "minister." As applied to the Roman Catholic Church the word embraces the whole hierarchy, whether its *clerici* be in holy orders or merely in minor orders. The term has also been sometimes loosely used to include the members of the regular orders; but this use is improper, since monks and friars, as such, have at no time been *clerici*. The use of the word "clergy" as a plural, though the *New English Dictionary* quotes the high authority of Cardinal Newman for it, is less rare than wrong; in the case cited "Some hundred Clergy" should have been "Some hundred of the Clergy."

In distinction to the "clergy" we find the "laity" (Gr. λάος, people), the great body of "faithful people" which, in nearly every various conception of the Christian Church, stands in relation to the clergy as a flock of sheep to its pastor. This distinction was of early growth, and developed, with the increasing power of the hierarchy, during the middle ages into a very lively opposition (see ORDER, HOLY; CHURCH HISTORY; PAPACY; INVESTITURES). The extreme claim of the great medieval popes, that the priest, as "ruler over spiritual things," was as much superior to temporal rulers as the soul is to the body (see INNOCENT III.), led logically to the vast privileges and immunities enjoyed by the clergy during the middle ages. In those countries where the Reformation triumphed, this triumph represented the victory of the civil over the clerical powers in the long contest. The victory was, however, by no means complete. The Presbyterian model was, for instance, as sacerdotal in its essence as the Catholic; Milton complained with justice that "new presbyter is but old priest writ large," and declared that "the Title of Clergy St Peter gave to all God's people," its later restriction being a papal and prelatical usurpation (*i.e.* i Peter v. 3, for κλῆρος and κλήρων).

Clerical immunities, of course, differed largely at different times and in different countries, the extent of them having been gradually curtailed from a period a little earlier than the close of the middle ages. They consisted mainly in exemption from public burdens, both as regarded person and pocket, and in immunity from lay jurisdiction. This last enormous privilege, which became one of the main and most efficient instruments of the subjection of Europe to clerical tyranny, extended to matters both civil and criminal; though, as Bingham shows, it did not (always and everywhere) prevail in cases of heinous crime (*Origines Eccles.* bk. v.).

This diversity of jurisdiction, and subjection of the clergy only to the sentences of judges bribed by their *esprit de corps* to judge leniently, led to the adoption of a scale of punishments for the offences of clerks avowedly much lighter than that which was inflicted for the same crimes on laymen; and this in turn led to the survival in England, long after the Reformation, of the curious legal fiction of benefit of clergy (see below), used to mitigate the extreme harshness of the criminal law.

CLERGY, BENEFIT OF, an obsolete but once very important feature in English criminal law. Benefit of clergy began with the claim on the part of the ecclesiastical authorities in the 12th century that every *clericus* should be exempt from the jurisdiction of the temporal courts and be subject to the spiritual courts alone. The issue of the conflict was that the common law courts abandoned the extreme punishment of death assigned to some offences when the person convicted was a *clericus*, and the church was obliged to accept the compromise and let a secondary punishment be inflicted. The term "clerk" or *clericus* always included a large number of persons in what were called minor orders, and in 1350

the privilege was extended to secular as well as to religious clerks; and, finally, the test of being a clerk was the ability to read the opening words of verse 1 of Psalm li., hence generally known as the “neck-verse.” Even this requirement was abolished in 1705. In 1487 it was enacted that every layman, when convicted of a clergyable felony, should be branded on the thumb, and disabled from claiming the benefit a second time. The privilege was extended to peers, even if they could not read, in 1547, and to women, partially in 1622 and fully in 1692. The partial exemption claimed by the Church did not apply to the more atrocious crimes, and hence offences came to be divided into clergyable and unclergyable. According to the common practice in England of working out modern improvements through antiquated forms, this exemption was made the means of modifying the severity of the criminal law. It became the practice to claim and be allowed the benefit of clergy; and when it was the intention by statute to make a crime really punishable with death, it was awarded “without benefit of clergy.” The benefit of clergy was abolished by a statute of 1827, but as this statute did not repeal that of 1547, under which peers were given the privilege, a further statute was passed in 1841 putting peers on the same footing as commons and clergy.

For a full account of benefit of clergy see Pollock and Maitland, *History of English Law*, vol. i. 424-440; also Stephen, *History of the Criminal Law of England*, vol. i.; E. Friedberg, *Corpus juris canonici* (Leipzig, 1879-1881).

CLERGY RESERVES, in Canada. By the act of 1791, establishing the provinces of Upper and Lower Canada, the British government set apart one-eighth of all the crown lands for the support of “a Protestant clergy.” These reservations, after being for many years a stumbling-block to the economic development of the province, and the cause of much bitter political and ecclesiastical controversy, were secularized by the Canadian parliament in 1854, and the proceeds applied to other purposes, chiefly educational. Owing to the wording of the imperial act, the amount set apart is often stated as one-seventh, and was sometimes claimed as such by the clergy.

CLERK[1] (from A.S. *cleric* or *clerc*, which, with the similar Fr. form, comes direct from the Lat. *clericus*), in its original sense, as used in the civil law, one who had taken religious orders of whatever rank, whether “holy” or “minor.” The word *clericus* is derived from the Greek κληρικός, “of or pertaining to an inheritance,” from κλῆρος, “lot,” “allotment,” “estate,” “inheritance”; but the authorities are by no means agreed in which sense the root is connected with the sense of the derivative, some conceiving that the original idea was that the clergy received the service of God as their lot or portion; others that they were the portion of the Lord; while others again, with more reason as Bingham (*Orig. Eccl.* lib. i. cap. 5, sec. 9) seems to think, maintain that the word has reference to the choosing by lot, as in early ages was the case of those to whom public offices were to be entrusted.

In the primitive times of the church the term canon was used as synonymous with clerk, from the names of all the persons in the service of any church having been inscribed on a roll, or κανών, whence they were termed *canonici*, a fact which shows that the practice of the Roman Catholic Church of including all persons of all ranks in the service of the church, ordained or unordained, in the term clerks, or clergy, is at least in conformity with the practice of antiquity. Thus, too, in English ecclesiastical law, a clerk was any one who had been admitted to the ecclesiastical state, and had taken the tonsure. The application of the word in this sense gradually underwent a change, and “clerk” became more especially the term applied to those in minor orders, while those in “major” or “holy” orders were designated in full “clerks in holy orders,” which in English law still remains the designation of clergymen of the Established Church. After the Reformation the word “clerk” was still further extended to include laymen who performed duties in cathedrals, churches, &c., *e.g.* the choirmen, who were designated “lay clerks.” Of these lay clerks or choirmen there was always one whose duty it was to be constantly present at every service, to sing or say the

responses as the leader or representative of the laity. His duties were gradually enlarged to include the care of the church and precincts, assisting at baptisms, marriages, &c., and he thus became the precursor of the later *parish clerk*. In a somewhat similar sense we find *bible clerk, singing clerk*, &c. The use of the word “clerk” to denote a person ordained to the ministry is now mainly legal or formal.

The word also developed in a different sense. In medieval times the pursuit of letters and general learning was confined to the clergy, and as they were practically the only persons who could read and write all notarial and secretarial work was discharged by them, so that in time the word was used with special reference to secretaries, notaries, accountants or even mere penmen. This special meaning developed into what is now one of the ordinary senses of the word. We find, accordingly, the term applied to those officers of courts, corporations, &c., whose duty consists in keeping records, correspondence, and generally managing business, as *clerk of the market, clerk of the petty bag, clerk of the peace, town clerk*, &c. Similarly, a clerk also means any one who in a subordinate position is engaged in writing, making entries, ordinary correspondence, or similar “clerkly” work. In the United States the word means also an assistant in a commercial house, a retail salesman.

1 The accepted English pronunciation, “clark,” is found in southern English as early as the 15th century; but northern dialects still preserve the e sound (“clurk”), which is the common pronunciation in America.

CLERKE, AGNES MARY (1842-1907), English astronomer and scientific writer, was born on the 10th of February 1842, and died in London on the 20th of January 1907. She wrote extensively on various scientific subjects, but devoted herself more especially to astronomy. Though not a practical astronomer in the ordinary sense, she possessed remarkable skill in collating, interpreting and summarizing the results of astronomical research, and as a historian her work has an important place in scientific literature. Her chief works were *A Popular History of Astronomy during the 19th Century*, first edition 1885, fourth 1902; *The System of the Stars*, first edition 1890, second 1905; and *Problems in Astrophysics*, 1903. In addition she wrote *Familiar Studies in Homer* (1892), *The Herschels and Modern Astronomy* (1895), *Modern Cosmogonies* (1906), and many valuable articles, such as her contributions to the *Encyclopaedia Britannica*. In 1903 she was elected an honorary member of the Royal Astronomical Society.

CLERKENWELL, a district on the north side of the city of London, England, within the metropolitan borough of Finsbury (*q.v.*). It is so called from one of several wells or springs in this district, near which miracle plays were performed by the parish clerks of London. This well existed until the middle of the 19th century. Here was situated a priory, founded in 1100, which grew to great wealth and fame as the principal institution in England of the Knights Hospitallers of the Order of St John of Jerusalem. Its gateway, erected in 1504, and remaining in St John’s Square, served various purposes after the suppression of the monasteries, being, for example, the birthplace of the *Gentleman’s Magazine* in 1731, and the scene of Dr Johnson’s work in connexion with that journal. In modern times the gatehouse again became associated with the Order, and is the headquarters of the St John’s Ambulance Association. An Early English crypt remains beneath the neighbouring parish church of St John, where the notorious deception of the “Cock Lane Ghost,” in which Johnson took great interest, was exposed. Adjoining the priory was St Mary’s Benedictine nunnery, St James’s church (1792) marking the site, and preserving in its vaults some of the ancient monuments. In the 17th century Clerkenwell became a fashionable place of residence. A prison erected here at this period gave place later to the House of Detention, notorious as the scene of a Fenian outrage in 1867, when it was sought to release certain prisoners by blowing up part of the building. Clerkenwell is a centre of the watch-making and jeweller’s industries, long established here; and the Northampton Polytechnic Institute, Northampton Square, a branch of the City Polytechnic, has a department devoted to

instruction in these trades.

CLERMONT-EN-BEAUVAISIS, or Clermont-de-l'Oise, a town of northern France, capital of an arrondissement in the department of Oise, on the right bank of the Brèche, 41 m. N. of Paris on the Northern railway to Amiens. Pop. (1906) 4014. The hill on which the town is built is surmounted by a keep of the 14th century, the relic of a fortress the site of which is partly occupied by a large penitentiary for women. The church dates from the 14th to the 16th centuries. The hôtel-de-ville, built by King Charles IV., who was born at Clermont in 1294, is the oldest in the north of France. The most attractive feature of the town is the Promenade du Châtellier on the site of the old ramparts. Clermont is the seat of a sub-prefect and has a tribunal of first instance, a communal college and a large lunatic asylum. It manufactures felt and corsets, and carries on a trade in horses, cattle and grain.

The town was probably founded during the time of the Norman invasions, and was an important military post, during the middle ages. It was several times taken and retaken by the contending parties during the Hundred Years' War, and the Wars of Religion, and in 1615 Henry II., prince of Condé, was besieged and captured there by the marshal d'Ancre.

Counts of Clermont. Clermont was at one time the seat of a countship, the lords of which were already powerful in the 11th century. Raoul de Clermont, constable of France, died at Acre in 1191, leaving a daughter who brought Clermont to her husband, Louis, count of Blois and Chartres. Theobald, count of Blois and Clermont, died in 1218 without issue, and King Philip Augustus, having received the countship of Clermont from the collateral heirs of this lord, gave it to his son Philip Hurepel, whose daughter Jeanne, and his widow, Mahaut, countess of Dammartin, next held the countship. It was united by Saint Louis to the crown, and afterwards given by him (1269) to his son Robert, from whom sprang the house of Bourbon. In 1524 the countship of Clermont was confiscated from the constable de Bourbon, and later (1540) given to the duke of Orleans, to Catherine de' Medici (1562), to Eric, duke of Brunswick (1569), from whom it passed to his brother-in-law Charles of Lorraine (1596), and finally to Henry II., prince of Condé (1611). In 1641 it was again confiscated from Louis de Bourbon, count of Soissons, then in 1696 sold to Louis Thomas Amadeus of Savoy, count of Soissons, in 1702 to Françoise de Brancas, princesse d'Harcourt, and in 1719 to Louis-Henry, prince of Condé. From a branch of the old lords of Clermont were descended the lords of Nesle and Chantilly.

CLERMONT-FERRAND, a city of central France, capital of the department of Puy-de-Dôme, 113 m. W. of Lyons on the Paris-Lyon railway. Pop. (1906) town, 44,113; commune, 58,363. Clermont-Ferrand is situated on an eminence on the western border of the fertile plain of Limagne. On the north, west and south it is surrounded by hills, with a background of mountains amongst which the Puy-de-Dôme stands out prominently. A small river, the Tiretaine, borders the town on the north. Since 1731 it has been composed of the two towns of Clermont and Montferrand, now connected by a fine avenue of walnut trees and willows, 2 m. in length, bordered on one side by barracks. The watering-place of Royat lies a little more than a mile to the west. Clermont has several handsome squares ornamented with fountains, the chief of which is a graceful structure erected by Bishop Jacques d'Amboise in 1515. The streets of the older and busier quarter of Clermont in the neighbourhood of the cathedral and the Place de Jaude, the principal square, are for the most part narrow, sombre and bordered by old houses built of lava; boulevards divide this part from more modern and spacious quarters, which adjoin it. To the south lies the fine promenade known as the Jardin Lecoq.

The principal building is the cathedral, a Gothic edifice begun in the 13th century. It was not completed, however, till the 19th century, when the west portal and towers and two bays of the nave were added, according to the plans of Viollet-le-Duc. The fine stained glass of the windows dates from the 13th to the 15th centuries. A monument of the Crusades with a statue of Pope Urban II. stands in the Cathedral square. The church of Notre-Dame du Port

is a typical example of the Romanesque style of Auvergne, dating chiefly from the 11th and 12th centuries. The exterior of the choir, with its four radiating chapels, its jutting cornices supported by modillions and columns with carved capitals, and its mosaic decoration of black and white stones, is the most interesting part of the exterior. The rest of the church comprises a narthex surmounted by a tower, three naves and a transept, over which rises another tower. There are several churches of minor importance in the town. Among the old houses one, dating from the 16th century, was the birthplace of Blaise Pascal, whose statue stands in a neighbouring square. There is a statue of General Louis Charles Desaix de Veygoux in the Place de Jaude. Montferrand has several interesting houses of the 15th and 16th centuries, and a church of the 13th, 14th and 15th centuries.

Clermont-Ferrand is the seat of a bishopric and a prefecture and headquarters of the XIII. army corps; it has tribunals of first instance and of commerce, a board of trade-arbitrators, a chamber of commerce, an exchange and a branch of the Bank of France. The town is the centre of an educational division (*académie*), and has faculties of science and of literature. It also has lycées and training colleges for both sexes, ecclesiastical seminaries, a preparatory school of medicine and pharmacy, schools of architecture, music, commerce and industry, museums of art and antiquities and natural history and a library. A great variety of industries is carried on, the chief being the manufacture of semolina and other farinaceous foods, confectionery, preserved fruit and jams, chemicals and rubber goods. Liqueurs, chicory, chocolate, candles, hats, boots and shoes, and woollen and linen goods are also made, and tanning is practised. Clermont is the chief market for the grain and other agricultural produce of Auvergne and Velay. Its waters are in local repute. On the bank of the Tiretaine there is a remarkable calcareous spring, the fountain of St Allyre, the copious deposits of which have formed a curious natural bridge over the stream.

Clermont is identified with the ancient *Augustonemetum*, the chief town of the Arverni, and it still preserves some remains of the Roman period. The present name, derived from Clarus Mons and originally applied only to the citadel, was used of the town as early as the 9th century. During the disintegration of the Roman empire Clermont suffered as much perhaps from capture and pillage as any city in the country; its history during the middle ages chiefly records the struggles between its bishops and the counts of Auvergne, and between the citizens and their overlord the bishop. It was the seat of seven ecclesiastical councils, held in the years 535, 549, 587, 1095, 1110, 1124 and 1130; and of these the council of 1095 is for ever memorable as that in which Pope Urban II. proclaimed the first crusade. In the wars against the English in the 14th and 15th centuries and the religious wars of the 16th century the town had its full participation; and in 1665 it acquired a terrible notoriety by the trial and execution of many members of the nobility of Auvergne who had tyrannized over the neighbouring districts. The proceedings lasted six months, and the episode is known as *les Grands Jours de Clermont*. Before the Revolution the town possessed several monastic establishments, of which the most important were the abbey of Saint Allyre, founded, it is said, in the 3rd century by St Austremonius (St Stremoine), the apostle of Auvergne and first bishop of Clermont, and the abbey of St André, where the counts of Clermont were interred.

CLERMONT-GANNEAU, CHARLES SIMON (1846-), French Orientalist, the son of a sculptor of some repute, was born in Paris on the 19th of February 1846. After an education at the École des Langues Orientales, he entered the diplomatic service as dragoman to the consulate at Jerusalem, and afterwards at Constantinople. He laid the foundation of his reputation by his discovery (in 1870) of the “stele” of Mesha (Moabite Stone), which bears the oldest Semitic inscription known. In 1874 he was employed by the British government to take charge of an archaeological expedition to Palestine, and was subsequently entrusted by his own government with similar missions to Syria and the Red Sea. He was made chevalier of the Legion of Honour in 1875. After serving as vice-consul at Jaffa from 1880 to 1882, he returned to Paris as “secrétaire-interprète” for oriental languages, and in 1886 was appointed consul of the first class. He subsequently accepted the post of director of the École des Langues Orientales and professor at the Collège de France. In 1889 he was elected a member of the Académie des Inscriptions et Belles Lettres, of which he had been a correspondent since 1880. In 1896 he was promoted to be consul-general, and was minister plenipotentiary in 1906. He was the first in England to expose the famous forgeries of

Hebrew texts offered to the British Museum by M.W. Shapira (*q.v.*) in 1883, and in 1903 he took a prominent part in the investigation of the so-called “tiara of Saïtapharnes.” This tiara had been purchased by the Louvre for 400,000 francs, and exhibited as a genuine antique. Much discussion arose as to the perpetrators of the fraud, some believing that it came from southern Russia. It was agreed, however, that the whole object, except perhaps the band round the tiara, was of modern manufacture.

His chief publications, besides a number of contributions to journals, are:—*Palestine inconnue* (1886), *Études d’archéologie orientale* (1880, &c.), *Les Fraudes archéologiques* (1885), *Recueil d’archéologie orientale* (1885, &c.), *Album d’antiquités orientales* (1897, &c.).

CLERMONT-L’HERAULT, or Clermont de Lodève, a town of southern France in the department of Hérault, 10 m. S.S.E. by rail of Lodève. Pop. (1906) 4731. The town is built on the slope of a hill which is crowned by an ancient castle and skirted by the Rhonel, a tributary of the Lergue. It has an interesting church of the 13th and 14th centuries. The chief manufacture is that of cloth for military clothing, and woollen goods, an industry which dates from the latter half of the 17th century. Tanning and leather-dressing are also carried on, and there is trade in wine, wool and grain. Among the public institutions are a tribunal of commerce, a chamber of arts and manufactures, a board of trade-arbitration and a communal college. The town was several times taken and retaken in the religious wars of the 16th century.

CLERMONT-TONNERRE, the name of a French family, members of which played some part in the history of France, especially in Dauphiné, from about 1100 to the Revolution. Sibaud, lord of Clermont in Viennois, who first appears in 1080, was the founder of the family. His descendant, another Sibaud, commanded some troops which aided Pope Calixtus II. in his struggle with the anti-pope Gregory VIII.; and in return for this service it is said that the pope allowed him to add certain emblems—two keys and a tiara—to the arms of his family. A direct descendant, Ainard (d. 1349), called vicomte de Clermont, was granted the dignity of captain-general and first baron of Dauphiné by his suzerain Humbert, dauphin of Viennois, in 1340; and in 1547 Clermont was made a county for Antoine (d. 1578), who was governor of Dauphiné and the French king’s lieutenant in Savoy. In 1572 Antoine’s son Henri was created a duke, but as this was only a “brevet” title it did not descend to his son. Henri was killed before La Rochelle in 1573. In 1596 Henri’s son, Charles Henri, count of Clermont (d. 1640), added Tonnerre to his heritage; but in 1648 this county was sold by his son and successor, François (d. 1679).

A member of a younger branch of Charles Henri’s descendants was Gaspard de Clermont-Tonnerre (1688-1781). This soldier served his country during a long period, fighting in Bohemia and Alsace, and then distinguishing himself greatly at the battles of Fontenoy and Lawfeldt. In 1775 he was created duke of Clermont-Tonnerre, and made a peer of France; as the senior marshal (cr. 1747) of France he assisted as constable at the coronation of Louis XVI. in 1774. His son and successor, Charles Henri Jules, governor of Dauphiné, was guillotined in July 1794, a fate which his grandson, Gaspard Charles, had suffered at Lyons in the previous year. A later duke, Aimé Marie Gaspard (1779-1865), served for some years as a soldier, afterwards becoming minister of marine and then minister of war under Charles X., and retiring into private life after the revolution of 1830. Aimé’s grandson, Roger, duke of Clermont-Tonnerre, was born in 1842.

Among other distinguished members of this family was Catherine (c. 1545-1603), only daughter of Claude de Clermont-Tonnerre. This lady, *dame d’honneur* to Henry II.’s queen, Catherine de’ Medici, and afterwards wife of Albert de Gondi, due de Retz, won a great reputation by her intellectual attainments, being referred to as the “tenth muse” and the “fourth grace.” One of her grandsons was the famous cardinal de Retz. Other noteworthy members of collateral branches of the family were: François (1629-1701), bishop of Noyon

from 1661 until his death, a member of the French Academy, notorious for his inordinate vanity; Stanislas M. A., comte de Clermont-Tonnerre (*q.v.*); and Anne Antoine Jules (1740-1830), cardinal and bishop of Châlons, who was a member of the states-general in 1789, afterwards retiring into Germany, and after the return of the Bourbons to France became archbishop of Toulouse.

CLERMONT-TONNERRE, STANISLAS MARIE ADELAIDE, Comte de (1757-1792), French politican, was born at Pont-à-Mousson on the 10th of October 1757. At the beginning of the Revolution he was a colonel, with some reputation as a freemason and a Liberal. He was elected to the states-general of 1789 by the noblesse of Paris, and was the spokesman of the minority of Liberal nobles who joined the Third Estate on the 25th of June. He desired to model the new constitution of France on that of England. He was elected president of the Constituent Assembly on the 17th of August 1789; but on the rejection by the Assembly of the scheme elaborated by the first constitutional committee, he attached himself to the party of moderate royalists, known as *monarchiens*, led by P.V. Malouet. His speech in favour of reserving to the crown the right of absolute veto under the new constitution drew down upon him the wrath of the advanced politicians of the Palais Royal; but in spite of threats and abuse he continued to advocate a moderate liberal policy, especially in the matter of removing the political disabilities of Jews and Protestants and of extending the system of trial by jury. In January 1790 he collaborated with Malouet in founding the Club des Impartiaux and the *Journal des Impartiaux*, the names of which were changed in November to the Société des Amis de la Constitution Monarchique and *Journal de la Société, &c.*. in order to emphasize their opposition to the Jacobins (Société des Amis de la Constitution). This club was denounced by Barnave in the Assembly (January 21st, 1791), and on the 28th of March it was attacked by a mob, whereupon it was closed by order of the Assembly. Clermont-Tonnerre was murdered by the populace during the rising of the 9th and 10th of August 1792. He was an excellent orator, having acquired practice in speaking, before the Revolution, in the masonic lodges. He is a good representative of the type of the *grands seigneurs* holding advanced and liberal ideas, who helped to bring about the movement of 1789, and then tried in vain to arrest its course.

See *Recueil des opinions de Stanislas de Clermont-Tonnerre* (4 vols., Paris, 1791), the text of his speeches as published by himself; A. Aulard, *Les Orateurs de la Constituante* (2nd ed., Paris, 1905).

CLERUCHY (Gr. κληρουχία, from κλῆρος, a lot, ἔχειν, to have), in ancient Greek history a kind of colony composed of Athenian[1] citizens planted, practically as a garrison, in a conquered country. Strictly, the settlers (cleruchs) were not colonists, inasmuch as they retained their status as citizens of Athens (*e.g.* ὁ δῆμος ὁ ἐν Ἡφαιστίᾳ), and their allotments were politically part of Attic soil. These settlements were of three kinds: (1) where the earlier inhabitants were extirpated or expatriated, and the settlers occupied the whole territory; (2) where the settlers occupied allotments in the midst of a conquered people; and (3) where the inhabitants gave up portions of land to settlers in return for certain pecuniary concessions. The primary object (cf. the 4000 cleruchs settled in 506 B.C. upon the lands of the conquered oligarchs of Euboea, known as the Hippobotae) was unquestionably military, and in the later days of the Delian League the system was the simplest precaution against disaffection on the part of the allies, the strength of whose resentment may be gathered from an inscription (Hicks and Hill, 101 [81]), which, in setting forth the terms of the second Delian Confederacy, expressly forbids the holding of land by Athenians in allied territory.

A secondary object of the cleruchies was social or agrarian, to provide a source of livelihood to the poorer Athenians. Plutarch (*Pericles*, 11) suggests that Pericles by this means rid the city of the idle and mischievous loafers; but it would appear that the cleruchs were selected by lot, and in any case a wise policy would not deliberately entrust important military duties to recognized wastrels. When we remember that in 50 years of the 5th

century some 10,000 cleruchs went out, it is clear that the drain on the citizen population was considerable.

It is impossible to decide precisely how far the state retained control over the cleruchs. Certainly they were liable to military service and presumably to that taxation which fell upon Athenians at home. That they were not liable for the tribute which members of the Delian League paid is clear from the fact that the assessments of places where cleruchs were settled immediately went down considerably (cf. the Periclean cleruchies, 450-445); indeed, this follows from their status as Athenian citizens, which is emphasized by the fact that they retained their membership of deme and tribe. In internal government the cleruchs adopted the Boulē and Assembly system of Athens itself; so we read of Polemarchs, Archons Eponymi, Agoranomi, Strategi, in various places. With a measure of local self-government there was also combined a certain central authority (*e.g.* in the matter of jurisdiction, some case being tried by the Nautodicae at Athens); in fact we may assume that the more important cases, particularly those between a cleruch and a citizen at home, were tried before the Athenian dicasts. In a few cases, the cleruchs, *e.g.* in the case of Lesbos (427), were apparently allowed to remain in Athens receiving rent for their allotments from the original Lesbian owners (Thuc. iii. 50); but this represents the perversion of the original idea of the cleruchy to a system of reward and punishment.

See G. Gilbert, *Constitutional Antiquities of Athens and Sparta* (Eng. trans., London, 1895), but note that Brea, wrongly quoted as an example, is not a cleruchy but a colony (Hicks and Hill, 41 [29]); A.H.J. Greenidge, *Handbook of Greek Constitutional Antiquities* (London, 1896); for the Periclean cleruchs see Pericles; Delian League.

1 It seems (Strabo, p. 635) that similar colonies were sent out by the Milesians, *e.g.* to Leros.

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