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VOLUME VI SLICE III

Chitral to Cincinnati

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CHITRAL, a native state in the North-West Frontier Province of India. The state of Chitral 251
(see also HINDU KUSH) is somewhat larger than Wales, and supports a population of about 35,000 rough, hardy hillmen. Previous estimates put the number far higher, but as the Mehtar assesses his fighting strength at 8000 only, this number is probably not far wrong. 252
Both the state and its capital are called Chitral, the latter being situated about 47 m. from the main watershed of the range of the Hindu Kush, which divides the waters flowing down to India from those which take their way into the Oxus. Chitral is an important state because of its situation at the extremity of the country over which the government of India exerts its influence, and for some years before 1895 it had been the object of the policy of the government of India to control the external affairs of Chitral in a direction friendly to British interests, to secure an effective guardianship over its northern passes, and to keep watch over what goes on beyond these passes. This policy resulted in a British agency being established at Gilgit (Kashmir territory), with a subordinate agency in Chitral, the latter being usually stationed at Mastuj (65 m. nearer to Gilgit than the Chitral capital), and occasional visits being paid to the capital. Chitral can be reached either by the long circuitous route from Gilgit, involving 200 m. of hill roads and the passage of the Shandur pass (12,250 ft.), or (more directly) from the Peshawar frontier at Malakand by 100 m. of route through the independent territories of Swat and Bajour, involving the passage of the Lowarai (10,450 ft). It is held by a small force as a British outpost.

The district of Chitral is called Kashgar (or Kashkar) by the people of the country; and as it was under Chinese domination in the middle of the 18th century, and was regarded as a Buddhist centre of some importance by the Chinese pilgrims in the early centuries of our era, it is possible that it then existed as an outlying district of the Kashgar province of Chinese Turkestan, where Buddhism once flourished in cities that have been long since buried beneath the sand-waves of the Takla Makan. The aboriginal population of the Chitral valley is probably to be recognized in the people called Kho (speaking a language called Khowar), who form the majority of its inhabitants. Upon the Kho a people called Ronas have been superimposed. The Ronas, who form the chief caste and fighting race of the Chitral districts, originally came from the north, but they have adopted the language and fashions of the conquered Chitrali.

The town of Chitral (pop. in 1901, 8128), is chiefly famous for a siege which it sustained in the spring of 1895. Owing to complications arising from the demarcation of the boundary of Afghanistan which was being carried out at that time, and the ambitious projects of Umra Khan, chief of Jandol, which was a tool in the hands of Sher Afzul, a political refugee from

Chitral supported by the amir at Kabul, the mehtar (or ruler) of Chitral was murdered, and a small British and Sikh garrison subsequently besieged in the fort. A large force of Afghan troops was at that time in the Chitral river valley to the south of Chitral, nominally holding the Kafirs in check during the progress of boundary demarcation. It is considered probable that some of them assisted the Chitralis in the siege. The position of the political agent Dr Robertson (afterwards Sir George Robertson) and his military force of 543 men (of whom 137 were non-combatants) was at one time critical. Two forces were organized for the relief. One was under Sir R. Low, with 15,000 men, who advanced by way of the Malakand pass, the Swat river and Dir. The other, which was the first to reach Chitral, was under Colonel Kelly, commanding the 32nd Pioneers, who was placed in command of all the troops in the Gilgit district, numbering about 600 all told, with two guns, and instructed to advance by the Shandur pass and Mastuj. This force encountered great difficulties owing to the deep snow on the pass (12,230 ft. high), but it easily defeated the Chitrali force opposed to it and relieved Chitral on the 20th of April, the siege having begun on the 4th of March. Sher Afzul, who had joined Umra Khan, surrendered, and eventually Chitral was restored to British political control as a dependency of Kashmir. During Lord Curzon's vice-royalty the British troops were concentrated at the extreme southern end of the Chitral country at Kila Drosh and the force was reduced, while the posts vacated and all outlying posts were handed over to levies raised for the purpose from the Chitralis themselves. The troops in Swat were also concentrated at Chakdara and reduced in strength. The mehtar, Shuja-ul-Mulk, who was installed in September 1895, visited the Delhi durbar in January 1903.

See Sir George Robertson, *Chitral* (1898).

(T. H. H.*)

CHITTAGONG, a seaport of British India, giving its name to a district and two divisions of Eastern Bengal and Assam. It is situated on the right bank of the Karnaphuli river, about 12 m. from its mouth. It is the terminus of the Assam-Bengal railway. The municipal area covers about 9 sq. m.; pop. (1901) 22,140. The sea-borne exports consist chiefly of jute, other items being tea, raw cotton, rice and hides. There is also a large trade by country boats, bringing chiefly cotton, rice, spices, sugar and tobacco. Since October 1905 Chittagong has become the chief port of the new province of Eastern Bengal and Assam.

The District of Chittagong is situated at the north-east corner of the province, occupying a strip of coast and hills between the sea and the mountains of Burma. Its area is 2492 sq. m. In 1901 the population was 1,353,250, showing an increase of 5% in the decade. A few unimportant ranges rise within the north-eastern portion, the highest hill being the sacred Sitakund, 1155 ft. high. The principal rivers are the Karnaphuli, on which Chittagong town is situated, navigable by sea-going ships as far as Chittagong port, and by large trading boats for a considerable distance higher up, and the Halda and the Sangu, which are also navigable by large boats. The wild animals are tigers, elephants, rhinoceros, leopards and deer. The climate is comparatively cool, owing to the sea breeze which prevails during the day; but for the same reason, the atmosphere is very moist, with heavy dews at night and fogs. Chittagong was ceded to the East India Company by Nawab Mir Kasim in 1760. The northern portion of the district is traversed by the Assam-Bengal railway. Tea cultivation is moderately successful.

The Chittagong Hill Tracts formed an independent district from 1860 to 1891, were then reduced to the status of a sub-division, but were again created a district in 1900. They occupy the ranges between Chittagong proper and the south Lushai hills. The area covers 5138 sq. m. In 1901 the population was 124,762, showing an increase of 16% in the decade. The inhabitants, who are either Arakanese or aboriginal tribes, are almost all Buddhists. The headquarters are at Rangamati, which was wrecked by the cyclone of October 1897.

The Division Of Chittagong lies at the north-east corner of the Bay of Bengal, extending northward along the left bank of the Meghna. It consists of the districts of Chittagong, the Hill Tracts, Noakhali and Tippera. Its area covers 11,773 sq. m.; the population in 1901 was 4,737,731.

CHITTUR, a town of British India, in the North Arcot district of Madras, with a station on the South Indian railway. Pop. (1901) 10,893. Formerly a military cantonment, it is now only the civil headquarters of the district. It has an English church, mission chapel, and Roman Catholic chapel, a high school, and several literary institutes.

CHITTY, SIR JOSEPH WILLIAM (1828-1899), English judge, was born in London. He was the second son of Thomas Chitty (himself son and brother of well-known lawyers), a celebrated special pleader and writer of legal text-books, in whose pupil-room many distinguished lawyers began their legal education. Joseph Chitty was educated at Eton and Balliol, Oxford, gaining a first-class in *Literae Humaniores* in 1851, and being afterwards elected to a fellowship at Exeter College. His principal distinctions during his school and college career had been earned in athletics, and he came to London as a man who had stroked the Oxford boat and captained the Oxford cricket eleven. He became a member of Lincoln's Inn in 1851, was called to the bar in 1856, and made a queen's counsel in 1874, electing to practise as such in the court in which Sir George Jessel, master of the rolls, presided. Chitty was highly successful in his method of dealing with a very masterful if exceedingly able judge, and soon his practice became very large. In 1880 he entered the house of commons as liberal member for Oxford (city). His parliamentary career was short, for in 1881 the Judicature Act required that the master of the rolls should cease to sit regularly as a judge of first instance, and Chitty was selected to fill the vacancy thus created in the chancery division. Sir Joseph Chitty was for sixteen years a popular judge, in the best meaning of the phrase, being noted for his courtesy, geniality, patience and scrupulous fairness, as well as for his legal attainments, and being much respected and liked by those practising before him, in spite of a habit of interrupting counsel, possibly acquired through the example of Sir George Jessel. In 1897, on the retirement of Sir Edward Kay, L.J., he was promoted to the court of appeal. There he more than sustained—in fact, he appreciably increased—his reputation as a lawyer and a judge, proving himself to possess considerable knowledge of the common law as well as of equity. He died in London on the 15th of February 1899. He married in 1858 Clara Jessie, daughter of Chief Baron Pollock, and left children who could thus claim descent from two of the best-known English legal families of the 19th century.

See E. Manson, *Builders of our Law* (1904).

CHIUSI (anc. *Clusium*), a town of Tuscany, Italy, in the province of Siena, 55 m. S.E. by rail from the town of Siena, and 26 m. N.N.W. of Orvieto. Pop. (1901) 6011. It is situated on a hill 1305 ft. above sea-level, and is surrounded by medieval walls, in which, in places, fragments of the Etruscan wall are incorporated. The cathedral of S. Mustiola is a basilica with a nave and two aisles, with eighteen columns of different kinds of marble, from ancient buildings. It has been restored and decorated with frescoes in modern times. The campanile belongs to the 13th century. The place was devastated by malaria in the middle ages, and did not recover until the Chiana valley was drained in the 18th century. For the catacombs see Clusium.

CHIVALRY (O. Fr. *chevalerie*, from Late Lat. *caballerius*), the knightly class of feudal times, possessing its own code of rules, moral and social (see Knighthood and Chivalry). The primary sense in the middle ages is "knights" or "fully armed and mounted fighting men." Thence the term came to mean that gallantry in battle and high sense of honour in general expected of knights. Thus "to do chivalry" was a medieval phrase for "to act the knight." Lastly, the word came to be used in its present very general sense of "courtesy." In English

law chivalry meant the tenure of land by knights' service. It was a service due to the crown, usually forty days' military attendance annually. The *Court of Chivalry* was a court instituted by Edward III., of which the lord high constable and earl marshal of England were joint judges. When both sat the court had summary criminal jurisdiction as regards all offences committed by knights, and generally as to military matters. When the earl marshal alone presided, it was a court of honour deciding as to precedence, coats of arms, &c. This court sat for the last time in 1737. The heraldic side of its duties are now vested in the earl marshal as head of the Heralds' College.

CHIVASSO, a town and episcopal see of Piedmont, Italy, in the province of Turin, 18 m. N.E. by rail from the town of Turin, 600 ft. above sea-level. Pop. (1901) 4169 (town), 9804 (commune). It is situated on the left bank of the Po, near the influx of the Orco. The cathedral is of the 15th century with a fine façade ornamented with statues in terra-cotta. It was an important fortress in the middle ages, and until 1804, when the French dismantled it. One tower only of the old castle of the marquesses of Monferrato, who possessed the town from 1164 to 1435, remains. Chivasso is on the main line from Turin to Milan, and is the junction of branches for Aosta and Casale Monferrato.

CHIVE (*Allium Schoenoprasum*), a hardy perennial plant, with small narrow bulbs tufted on short root-stocks and long cylindrical hollow leaves. It is found in the north of England and in Cornwall, and growing in rocky pastures throughout temperate and northern Europe and Asiatic Russia, and also in the mountain districts of southern Europe. It is cultivated for the sake of its leaves, which are used in salads and soups as a substitute for young onions. It will grow in any good soil, and is propagated by dividing the roots into small clumps in spring or autumn; these are planted from 8 to 12 in. apart and soon form large tufts. The leaves should be cut frequently so as to obtain them tender and succulent.

CHLOPICKI, GREGORZ JOZEF (1772-1854), Polish general, was born in March 1772 in Podolia. He was educated at the school of the Basilians at Szarogrod, from which in 1787 he ran away in order to enlist as a volunteer in the Polish army. He was present at all the engagements fought during 1792-1794, especially distinguishing himself at the battle of Raclawice, when he was General Rymkiewicz's adjutant. On the formation of the Italian legion he joined the second battalion as major, and was publicly complimented by General Oudinot for his extraordinary valour at the storming of Peschiera. He also distinguished himself at the battles of Modena, Busano, Casabianca and Ponto. In 1807 he commanded the first Vistulan regiment, and rendered good service at the battles of Eylau and Friedland. In Spain he obtained the legion of honour and the rank of a French baron for his heroism at the battle of Epila and the storming of Saragossa, and in 1809 was promoted to be general of brigade. In 1812 he accompanied the *Grande Armée* to Russia, was seriously wounded at Smolensk, and on the reconstruction of the Polish army in 1813 was made a general of division. On his return to Poland in 1814, he entered the Russian army with the rank of a general officer, but a personal insult from the grand duke Constantine resulted in his retiring into private life. He held aloof at first from the Polish national rising of 1830, but at the general request of his countrymen accepted the dictatorship on the 5th of December 1830; on the 23rd of January 1831, however, he resigned in order to fight as a common soldier. At Wavre (Feb. 19) and at Grochow (Feb. 20) he displayed all his old bravery, but was so seriously wounded at the battle of Olszyna that he had to be conveyed to Cracow, near which city he lived in complete retirement till his death in 1854.

See Jozef Maczynski, *Life and Death of Joseph Chlopicki* (Pol.) (Cracow, 1858); Ignacy

Pradzynski, *The Four Last Polish Commanders* (Pol.) (Posen, 1865).

CHLORAL, or TRICHLORACETALDEHYDE, $CCl_3{\cdot}CHO$, a substance discovered by J. von Liebig in 1832 (*Ann.*, 1832, 1, p. 189) and further studied by J.B.A. Dumas and Staedeler. It is a heavy, oily and colourless liquid, of specific gravity 1.541 at 0° C., and boiling-point 97.7° C. It has a greasy, somewhat bitter taste, and gives off a vapour at ordinary temperature which has a pungent odour and an irritating effect on the eyes. The word *chloral* is derived from the first syllables of *chlorine* and *alcohol*, the names of the substances employed for its preparation. Chloral is soluble in alcohol and ether, in less than its own weight of water, and in four times its weight of chloroform; it absorbs chlorine, and dissolves bromine, iodine, phosphorus and sulphur. Chloral deliquesces in the air, and is converted by water into a hydrate, with evolution of heat; it combines with alcohols and mercaptans. An ammoniacal solution of silver nitrate is reduced by chloral; and nascent hydrogen converts it into aldehyde. By means of phosphorus pentachloride, chlorine can be substituted for the oxygen of chloral, the body $CCl_3{\cdot}CCl_2H$ being produced; an analogous compound, $CCl_3{\cdot}C(C_6H_5)_2H$, is obtained by treating chloral with benzene and sulphuric acid. With an alkali, chloral gives chloroform (*q.v.*) and a formate; oxidizing agents give trichloracetic acid, $CCl_3{\cdot}CO(OH)$. When kept for some days, as also when placed in contact with sulphuric acid or a very small quantity of water, chloral undergoes spontaneous change into the polymeride *metachloral* $(C_2Cl_3OH)_3$, a white porcellaneous body, slowly volatile in the air, and reconverted into chloral without melting at 180° C. Chloral unites directly with hydrocyanic acid to form β-trichloracetonitrile, $CCl_3{\cdot}CH(OH)CN$, and with hydroxylamine it forms chlorglyoxime, $C_2H_3ClN_2O_2$.

Chloral is prepared by passing dry chlorine into absolute alcohol; the latter must be cooled at first, but towards the end of the operation has to be heated nearly to boiling. The alcohol is converted finally into a syrupy fluid, from which chloral is procured by treatment with sulphuric acid (see P. Fritsch, *Ann.*, 1894, pp. 279, 288). The crude chloral is distilled over lime, and is purified by further treatment with sulphuric acid, and by redistillation. A mixture of starch or sugar with manganese peroxide and hydrochloric acid may be employed instead of alcohol and chlorine for the manufacture of chloral (A. Staedeler, *Ann. Ch. Pharm.*, 1847, 61, p. 101). An isomer of chloral, *parachloralide*, is made by passing excess of dry chlorine into absolute methyl alcohol.

Chloral hydrate, $CCl_3{\cdot}CH(OH)_2$, forms oblique, often very short, rhombic prisms. The crystals are perfectly transparent, only slightly odorous, free from powder, and dry to the touch, and do not become white by exposure. The melting-point of pure chloral hydrate is 57°, the boiling-point 96-98° C. When heated with sulphuric acid it is converted into anhydrous chloral and *chloralide*, $C_6H_2Cl_6O_3$. When mixed with water, chloral hydrate causes a considerable degree of cold; and, as with camphor, small fragments of it placed on the surface of water exhibit gyratory movements. Chloral hydrate does not restore the colour to a solution of fuchsine which has been decolorized by sulphurous acid, and so one must assume that the water present is combined in the molecular condition (V. Meyer, *Ber.*, 1880, 13, p. 2343). Chloral may be estimated by distilling the hydrate with milk of lime and measuring the volume of chloroform produced (C.H. Wood, *Pharm. Journ.*, (3) 1, p. 703), or by hydrolysis with a known volume of standard alkali and back titration with standard acid (V. Meyer, *Ber.*, 1873, 6, p. 600). Chloral hydrate has the property of checking the decomposition of a great number of albuminous substances, such as milk and meat; and a mixture of it with glycerin, according to J. Personne, is suitable for the preservation of anatomical preparations. When heated with concentrated glycerin to a temperature of 110° to 230° C, chloral hydrate yields chloroform, $CHCl_3$, and allyl formate, $HCO(OC_3H_5)$.

Pharmacology and Therapeutics.—The breaking up of chloral hydrate, in the presence of alkalis, with the production of chloroform and formates, led Liebreich to the conjecture that a similar decomposition might be produced in the blood; and hence his introduction of the drug, in 1869, as an anaesthetic and hypnotic. It is now known, however, that the drug circulates in the blood unchanged, and is excreted in the form of urochloralic acid. The dose is from five to twenty grains or somewhat more, and it is often given in the form of the pharmacopoeial *Syrupus Chloral*, which contains ten grains of chloral hydrate to the fluid drachm. Chloral hydrate must be well diluted when given by the mouth, as otherwise it may cause considerable gastro-intestinal irritation. In large doses chloral hydrate is a depressant

to the circulation and the respiration, and also lowers the temperature. In the above doses the drug is a powerful and safe hypnotic, acting directly on the brain, and producing no preliminary stage of excitement. Very soon—perhaps twenty minutes—after taking such a dose, the patient falls into a sleep which lasts several hours, and is not distinguishable from natural sleep. When he wakes, it is without disagreeable after-symptoms, but with a feeling of natural refreshment. The pupils are always contracted under its influence, except in large doses. There is also rapidly induced a depression of the anterior horns of grey matter in the spinal cord, and as the symptoms of strychnine poisoning are due to violent stimulation of these areas, chloral hydrate is a valuable antidote in such cases. It should not be hypodermically injected. Its disadvantages are that it is powerless when there is pain, resembling in this feature nearly all hypnotics except opium (morphine) and hyoscin. Its action on the gastro-intestinal canal and on the respiratory and circulatory systems renders its use inadvisable when disease of these organs is present. Its action on the spinal cord has been employed with success in cases of tetanus, whooping-cough, urinary incontinence, and strychnine poisoning. In the latter case twenty grains in "normal saline" solution may be directly injected into a subcutaneous vein, but not into the subcutaneous tissues.

Toxicology.—In cases of acute poisoning by chloral hydrate, the symptoms may be summarized as those of profound coma. The treatment is to give a stimulant emetic such as mustard; to keep up the temperature by hot bottles, &c.; to prevent or disturb the patient's morbid sleep by the injection of hot strong coffee into the rectum; and by shouting, flipping with towels, &c.; to use artificial respiration in extreme cases; and to inject strychnine. Strychnine is much less likely, however, to save life after poisoning by chloral hydrate, than chloral hydrate is to save life in poisoning by strychnine.

Chronic poisoning by chloral is a most pernicious drug-habit. The vice is easily and very rapidly acquired. The victim is usually excited and loquacious. He is easily fatigued and suffers from attacks of easily induced syncope. There are signs of gastro-intestinal irritation, and a tendency to cutaneous eruptions of an erythematous type. The patient may succumb to a dose only slightly larger than usual. The treatment is on general principles, there being no specific remedy. The patient must be persuaded to put himself under restraint, and the drug must be stopped at once and entirely.

CHLORATES, the metallic salts of chloric acid; they are all solids, soluble in water, the least soluble being the potassium salt. They may be prepared by dissolving or suspending a metallic oxide or hydroxide in water and saturating the solution with chlorine; by double decomposition; or by neutralizing a solution of chloric acid by a metallic oxide, hydroxide or carbonate. They are all decomposed on heating, with evolution of oxygen; and in contact with concentrated sulphuric acid with liberation of chlorine peroxide. The most important is potassium chlorate, $KClO_3$, which was obtained in 1786 by C.L. Berthollet by the action of chlorine on caustic potash, and this method was at first used for its manufacture. The modern process consists in the electrolysis of a hot solution of potassium chloride, or, preferably, the formation of sodium chlorate by the electrolytic method and its subsequent decomposition by potassium chloride. (See ALKALI MANUFACTURE.) Potassium chlorate crystallizes in large white tablets, of a bright lustre. It melts without decomposition, and begins to give off oxygen at about 370° C. According to F.L. Teed (*Proc. Chem. Soc.*, 1886, p. 141), the decomposition of potassium chlorate by heat is not at all simple, the quantities of chloride and perchlorate produced depending on the temperature. A very gentle heating gives decomposition approximating to the equation of $22KClO_3 = 14KClO_4 + 8KCl + 5O_2$, whilst on a more rapid heating the quantities correspond more nearly to $10KClO_3 = 6KClO_4 + 4KCl + 3O_2$. The decomposition is rendered more easy and regular by mixing the salt with powdered manganese dioxide. The salt finds application in the preparation of oxygen, in the manufacture of matches, for pyrotechnic purposes, and in medicine. Sodium chlorate, $NaClO_3$, is prepared by the electrolytic process; by passing chlorine into milk of lime and decomposing the calcium chlorate formed by sodium sulphate; or by the action of chlorine on sodium carbonate at low temperature (not above 35° C). It is much more soluble in water than the potassium salt.

Potassium chlorate is very valuable in medicine. Given in large doses it causes rapid and characteristic poisoning, with alterations in the blood and rapid degeneration of nearly all the internal organs; but in small doses—5 to 15 grains—it partly undergoes reduction in the blood and tissues, the chloride being formed and oxygen being supplied to the body-cells in

nascent form. Its special uses are in ulceration of the mouth or tongue (*ulcerative stomatitis*), tonsillitis and pharyngitis. For these conditions it is administered in the form of a lozenge, but may also be swallowed in solution, as it is excreted by the saliva and so reaches the diseased surface. Its remarkable efficacy in healing ulcers of the mouth—for which it is the specific—has been ascribed to a decomposition effected by the carbonic acid which is given off from these ulcers. This releases chloric acid, which, being an extremely powerful antiseptic, kills the bacteria to which the ulcers are due.

CHLORINE (symbol Cl), atomic weight 35.46 (O = 16), a gaseous chemical element of the halogen group, taking its name from the colour, greenish-yellow (Gr. χλωρός). It was discovered in 1774 by Scheele, who called it *dephlogisticated muriatic acid*; about 1785, C.L. Berthollet, regarding it as being a compound of hydrochloric acid and oxygen, termed it *oxygenized muriatic acid*. This view was generally held until about 1810-1811, when Sir H. Davy showed definitely that it was an element, and gave it the name which it now bears.

Chlorine is never found in nature in the uncombined condition, but in combination with the alkali metals it occurs widely distributed in the form of rock-salt (sodium chloride); as sylvine and carnallite, at Stassfürt; and to a smaller extent in various other minerals such as matlockite and horn-mercury. In the form of alkaline chlorides it is found in sea-water and various spring waters, and in the tissues of animals and plants; while, as hydrochloric acid it is found in volcanic gases.

The preparation of chlorine, both on the small scale and commercially, depends on the oxidation of hydrochloric acid; the usual oxidizing agent is manganese dioxide, which, when heated with concentrated hydrochloric acid, forms manganese chloride, water and chlorine: —$MnO_2 + 4HCl = MnCl_2 + 2H_2O + Cl_2$. The manganese dioxide may be replaced by various other substances, such as red lead, lead dioxide, potassium bichromate, and potassium permanganate. Instead of heating hydrochloric acid with manganese dioxide, use is frequently made of a mixture of common salt and manganese dioxide, to which concentrated sulphuric acid is added and the mixture is then heated:—$MnO_2 + 2NaCl + 3H_2SO_4 = MnSO_4 + 2NaHSO_4 + 2H_2O + Cl_2$. Chlorine may also be obtained by the action of dilute sulphuric acid on bleaching powder.

Owing to the enormous quantities of chlorine required for various industrial purposes, many processes have been devised, either for the recovery of the manganese from the crude manganese chloride of the chlorine stills, so that it can be again utilized, or for the purpose of preparing chlorine without the necessity of using manganese in any form (see Alkali Manufacture).

> Owing to the reduction in the supply of available hydrochloric acid (on account of the increasing use of the “ammonia-soda” process in place of the “Leblanc” process for the manufacture of soda) Weldon tried to adapt the former to the production of chlorine or hydrochloric acid. His method consisted in using magnesia instead of lime for the recovery of the ammonia (which occurs in the form of ammonium chloride in the ammonia-soda process), and then by evaporating the magnesium chloride solution and heating the residue in steam, to condense the acid vapours and so obtain hydrochloric acid. One day before him E. Solvay had patented the same process, but neither of them was able to make the method a commercial success. However, in conjunction with Pechiney, of Salindres (near Alais, France), the Weldon-Pechiney process was worked out. The residual magnesium chloride of the ammonia-soda process is evaporated until it ceases to give off hydrochloric acid, and is then mixed with more magnesia: the magnesium oxychloride formed is broken into small pieces and heated in a current of air, when it gives up its chlorine, partly in the uncombined condition and partly in the form of hydrochloric acid, and leaves a residue of magnesia, which can again be utilized for the decomposition of more ammonium chloride (W. Weldon, *Journ. of Soc. of Chem. Industry*, 1884, p. 387). Greater success attended the efforts of Ludwig Mond, of the firm of Brunner, Mond & Co. In this process the ammonium chloride is volatilized in large iron retorts lined with Doulton tiles, and then led into large upright wrought-iron cylinders lined with fire-bricks. These cylinders are filled with pills, made of a mixture of magnesia, potassium chloride and fireclay, the object of the potassium chloride being to prevent any formation of hydrochloric acid, which might occur if the magnesia was not perfectly dry. At 300° C. the ammonium chloride is decomposed by the magnesia, with the formation of magnesium chloride and ammonia. The mixture is now heated to 600° C. in

a current of hot dry gas, containing no free oxygen (the gas from the carbonating plant being used), and then a current of air at the same temperature is passed in. Decomposition takes place and the issuing gas contains 18-20% of chlorine. This percentage drops gradually, and when it is reduced to about 3% the temperature of the apparatus is lowered, by the admission of air, to about 350° C., and the air stream containing the small percentage of chlorine is led off to a second cylinder of pills, which have just been treated with ammonium chloride vapour and are ready for the hot air current. With four cylinders the process is continuous (L. Mond, *British Assoc. Reports*, 1896, p. 734).

More recently, owing to the production of caustic soda by electrolytic methods, much chlorine has consequently been produced in the same manner (see ALKALI MANUFACTURE).

Chlorine is a gas of a greenish-yellow colour, and possesses a characteristic unpleasant and suffocating smell. It can be liquefied at -34° C. under atmospheric pressure, and at -102° C. it solidifies and crystallizes. Its specific heat at constant pressure is 0.1155, and at constant volume 0.08731 (A. Strecker, *Wied. Ann.*, 1877 [2], 13, p. 20); and its refractive index 1.000772, whilst in the liquid condition the refractive index is 1.367. The density is 2.4885 (air = 1) (Treadwell and Christie, *Zeit. anorg. Chem.*, 1905, 47, p. 446). Its critical temperature is 146° C. Liquid and solid chlorine are both yellow in colour. The gas must be collected either by downward displacement, since it is soluble in water and also attacks mercury; or over a saturated salt solution, in which it is only slightly soluble. At ordinary temperatures it unites directly with many other elements; thus with hydrogen, combination takes place in direct sunlight with explosive violence; arsenic, antimony, thin copper foil and phosphorus take fire in an atmosphere of chlorine, forming the corresponding chlorides. Many compounds containing hydrogen are readily decomposed by the gas; for example, a piece of paper dipped in turpentine inflames in an atmosphere of chlorine, producing hydrochloric acid and a copious deposit of soot; a lighted taper burns in chlorine with a dull smoky flame. The solution of chlorine in water, when freshly prepared, possesses a yellow colour, but on keeping becomes colourless, on account of its decomposition into hydrochloric acid and oxygen. It is on this property that its bleaching and disinfecting power depends (see BLEACHING). Water saturated with chlorine at 0° C. deposits crystals of a hydrate $Cl_2 \cdot 8H_2O$, which is readily decomposed at a higher temperature into its constituents. Chlorine hydrate has an historical importance, as by sealing it up in a bent tube, and heating the end containing the hydrate, whilst the other limb of the tube was enclosed in a freezing mixture, M. Faraday was first able to obtain liquid chlorine.

Chlorine is used commercially for the extraction of gold (*q.v.*) and for the manufacture of "bleaching powder" and of chlorates. It also finds an extensive use in organic chemistry as a substituting and oxidizing agent, as well as for the preparation of addition compounds. For purposes of substitution, the free element as a rule only works slowly on saturated compounds, but the reaction may be accelerated by the action of sunlight or on warming, or by using a "carrier." In these latter cases the reaction may proceed in different directions; thus, with the aromatic hydrocarbons, chlorine in the cold or in the presence of a carrier substitutes in the benzene nucleus, but in the presence of sunlight or on warming, substitution takes place in the side chain. Iodine, antimony trichloride, molybdenum pentachloride, ferric chloride, ferric oxide, antimony, tin, stannic oxide and ferrous sulphate have all been used as chlorine carriers.

The atomic weight of chlorine was determined by J. Berzelius and by F. Penny (*Phil, Trans.*, 1839, 13). J.S. Stas, from the synthesis of silver chloride, obtained the value 35.457 (O = 16), and C. Marignac found the value 34.462. More recent determinations are: H.B. Dixon and E.C. Edgar (*Phil. Trans.*, 1905); T.W. Richards and G. Jones (*Abst. J.C.S.*, 1907); W.A. Noyes and H.C. Weber (ibid., 1908), and Edgar (ibid., 1908).

Hydrochloric Acid.—Chlorine combines with hydrogen to form hydrochloric acid, HCl, the only known compound of these two elements. The acid itself was first obtained by J.R. Glauber in about 1648, but J. Priestley in 1772 was the first to isolate it in the gaseous condition, and Sir H. Davy in 1810 showed that it contained hydrogen and chlorine only, as up to that time it was considered to contain oxygen. It may be prepared by the direct union of its constituents (see Burgess and Chapman, *J.C.S.*, 1906, 89, p. 1399), but on the large scale and also for the preparation of small quantities it is made by the decomposition of salt by means of concentrated sulphuric acid, $NaCl + H_2SO_4 = NaHSO_4 + HCl$. It is chiefly obtained as a by-product in the manufacture of soda-ash by the Leblanc process (see ALKALI MANUFACTURE). The commercial acid is usually yellow in colour and contains many impurities, such as traces of arsenic, sulphuric acid, chlorine, ferric chloride and sulphurous acid; but these do not interfere with its application to the preparation of bleaching powder, in which it is chiefly consumed. Without further purification it is also used for "souring" in bleaching, and in tin and lead soldering.

It is a colourless gas, which can be condensed by cold and pressure to a liquid boiling at -83.7° C., and can also be solidified, the solid melting at -112.5° C. (K. Olszewski). Its critical temperature is 52.3° C., and its critical pressure is 86 atmos. The gas fumes strongly in moist air, and it is rapidly dissolved by water, one volume of water at 0° C. absorbing 503 volumes of the gas. The gas does not obey Henry's law, that is, its solubility in water is not proportional to its pressure. It is one of the "strong" acids, being ionized to the extent of about 91.4% in decinormal solution. The strongest aqueous solution of hydrochloric acid at 15° C. contains 42.9% of the acid, and has a specific gravity of 1.212. Perfectly dry hydrochloric acid gas has no action on metals, but in aqueous solution it dissolves many of them with evolution of hydrogen and formation of chlorides.

The salts of hydrochloric acid, known as *chlorides*, can, in most cases, be prepared by dissolving either the metal, its hydroxide, oxide, or carbonate in the acid; or by heating the metal in a current of chlorine, or by precipitation. The majority of the metallic chlorides are solids (stannic chloride, titanic chloride and antimony pentachloride are liquids) which readily volatilize on heating. Many are readily soluble in water, the chief exceptions being silver chloride, merçurous chloride, cuprous chloride and palladious chloride which are insoluble in water, and thallous chloride and lead chloride which are only slightly soluble in cold water, but are readily soluble in hot water. Bismuth and antimony chlorides are decomposed by water with production of oxychlorides, whilst titanium tetrachloride yields titanic acid under the same conditions. All the metallic chlorides, with the exception of those of the alkali and alkaline earth metals, are reduced either to the metallic condition or to that of a lower chloride on heating in a current of hydrogen; most are decomposed by concentrated sulphuric acid. They can be distinguished from the corresponding bromides and iodides by the fact that on distillation with a mixture of potassium bichromate and concentrated sulphuric acid they yield chromium oxychloride, whereas bromides and iodides by the same treatment give bromine and iodine respectively. Some metallic chlorides readily form double chlorides, the most important of these double salts being the platinochlorides of the alkali metals. The chlorides of the non-metallic elements are usually volatile fuming liquids of low boiling-point, which can be distilled without decomposition and are decomposed by water. Hydrochloric acid and its metallic salts can be recognized by the formation of insoluble silver chloride, on adding silver nitrate to their nitric acid solution, and also by the formation of chromium oxychloride (see above). Chlorides can be estimated quantitatively by conversion into silver chloride, or if in the form of alkaline chlorides (in the absence of other metals, and of any free acids) by titration with standard silver nitrate solution, using potassium chromate as an indicator.

Chlorine and oxygen do not combine directly, but compounds can be obtained indirectly. Three oxides are known: chlorine monoxide, Cl_2O, chlorine peroxide, ClO_2, and chlorine heptoxide, Cl_2O_7.

Chlorine monoxide results on passing chlorine over dry precipitated mercuric oxide. It is a pale yellow gas which can be condensed, on cooling, to a dark-coloured liquid boiling at 5° C. (under a pressure of 737.9 mm.). It is extremely unstable, decomposing with extreme violence on the slightest shock or disturbance, or on exposure to sunlight. It is readily soluble in water, with which it combines to form hypochlorous acid. Sulphur, phosphorus, carbon compounds, and the alkali metals react violently with the gas, taking fire with explosive decomposition. A.J. Balard determined the volume composition of the gas by decomposition over mercury on gentle warming, followed by the absorption of the chlorine produced with potassium hydroxide, and then measured the residual oxygen.

Chlorine peroxide was first obtained by Sir H. Davy in 1815 by the action of concentrated sulphuric acid on potassium chlorate. As this oxide is a dangerous explosive, great care must be taken in its preparation; the chlorate is finely powdered and added in the cold, in small quantities at a time, to the acid contained in a retort. After solution the retort is gently heated by warm water when the gas is liberated:—$3KClO_3 + 2H_2SO_4 = KClO_4 + 2KHSO_4 + H_2O + ClO_2$. A mixture of chlorine peroxide and chlorine is obtained by the action of hydrochloric acid on potassium chlorate, and similarly, on warming a mixture of potassium chlorate and oxalic acid to 70° C. on the water bath, a mixture of chlorine peroxide and carbon dioxide is obtained. Chlorine peroxide must be collected by displacement, as it is soluble in water and readily attacks mercury. It is a heavy gas of a deep yellow colour and possesses an unpleasant smell. It can be liquefied, the liquid boiling at 9.9° C., and on further cooling it solidifies at -79° C. It is very explosive, being resolved into its constituents by influence of light, on warming, or on application of shock. It is a very powerful oxidant; a mixture of potassium chlorate and sugar in about equal proportions spontaneously inflames when touched with a rod moistened with concentrated sulphuric acid, the chlorine peroxide liberated setting fire to the sugar, which goes on burning. Similarly, phosphorus can be burned under water by covering it with a little potassium chlorate and running in a thin stream of concentrated sulphuric acid (see papers by Bray, *Zeit. phys. Chem.*, 1906, et seq.).

Chlorine heptoxide was obtained by A. Michael by slowly adding perchloric acid to phosphoric oxide below -10° C.; the mixture is allowed to stand for a day and then gently warmed, when the oxide distils over as a colourless very volatile oil of boiling-point 82° C. It turns to a greenish-yellow colour in two or three days and gives off a greenish gas; it explodes violently on percussion or in contact with a flame, and is gradually converted into perchloric acid by the action of water. On the addition of iodine to this oxide, chlorine is liberated and a white substance is produced, which decomposes, on heating to 380° C, into iodine and oxygen; bromine is without action (see A. Michael, *Amer. Chem. Jour.*, 1900, vol. 23; 1901, vol. 25).

Several oxy-acids of chlorine are known, namely, hypochlorous acid, HClO, chlorous acid, $HClO_2$ (in the form of its salts), chloric acid, $HClO_3$, and perchloric acid, $HClO_4$. Hypochlorous acid is formed when chlorine monoxide dissolves in water, and can be prepared (in dilute solution) by passing chlorine through water containing precipitated mercuric oxide in suspension. Precipitated calcium carbonate may be used in place of the mercuric oxide, or a hypochlorite may be decomposed by a dilute mineral acid and the resulting solution distilled. For this purpose a filtered solution of bleaching-powder and a very dilute solution of nitric acid may be employed. The acid is only known in aqueous solution, and only dilute solutions can be distilled without decomposition. The solution has a pale yellow colour, and is a strong oxidizing and bleaching agent; it is readily decomposed by hydrochloric acid, with evolution of oxygen. The salts of this acid are known as hypochlorites, and like the acid itself are very unstable, so that it is almost impossible to obtain them pure. A solution of sodium hypochlorite (*Eau de Javel*), which can be prepared by passing chlorine into a cold aqueous solution of caustic soda, has been extensively used for bleaching purposes. One of the most important derivatives of hypochlorous acid is bleaching powder. Sodium hypochlorite can be prepared by the electrolysis of brine solution in the presence of carbon electrodes, having no diaphragm in the electrolytic cell, and mixing the anode and cathode products by agitating the liquid. The temperature should be kept at about 15° C., and the concentration of the hypochlorite produced must not be allowed to become too great, in order to prevent reduction taking place at the cathode.

Chlorous acid is not known in the pure condition; but its sodium salt is prepared by the action of sodium peroxide on a solution of chlorine peroxide: $2ClO_2 + Na_2O_2 = 2NaClO_2 + O_2$. The silver and lead salts are unstable, being decomposed with explosive violence at 100° C. On adding a caustic alkali solution to one of chlorine peroxide, a mixture of a chlorite and a chlorate is obtained.

Chloric acid was discovered in 1786 by C.L. Berthollet, and is best prepared by decomposing barium chlorate with the calculated amount of dilute sulphuric acid. The aqueous solution can be concentrated *in vacuo* over sulphuric acid until it contains 40% of chloric acid. Further concentration leads to decomposition, with evolution of oxygen and formation of perchloric acid. The concentrated solution is a powerful oxidizing agent; organic matter being oxidized so rapidly that it frequently inflames. Hydrochloric acid, sulphuretted hydrogen and sulphurous acid are rapidly oxidized by chloric acid. J.S. Stas determined its composition by the analysis of pure silver chlorate. The salts of this acid are known as chlorates (*q.v.*).

Perchloric acid is best prepared by distilling potassium perchlorate with concentrated sulphuric acid. According to Sir H. Roscoe, pure perchloric acid distils over at first, but if the distillation be continued a white crystalline mass of hydrated perchloric acid, $HClO_4 \cdot H_2O$, passes over; this is due to the decomposition of some of the acid into water and lower oxides of chlorine, the water produced then combining with the pure acid to produce the hydrated form. This solid, on redistillation, gives the pure acid, which is a liquid boiling at 39° C. (under a pressure of 56 mm.) and of specific gravity 1.764 (22/4)°. The crystalline hydrate melts at 50° C. The pure acid decomposes slowly on standing, but is stable in dilute aqueous solution. It is a very powerful oxidizing agent; wood and paper in contact with the acid inflame with explosive violence. In contact with the skin it produces painful wounds. It may be distinguished from chloric acid by the fact that it does not give chlorine peroxide when treated with concentrated sulphuric acid, and that it is not reduced by sulphurous acid. The salts of the acid are known as the *perchlorates*, and are all soluble in water; the potassium and rubidium salts, however, are only soluble to a slight extent. Potassium perchlorate, $KClO_4$, can be obtained by carefully heating the chlorate until it first melts and then nearly all solidifies again. The fused mass is then extracted with water to remove potassium chloride, and warmed with hydrochloric acid to remove unaltered chlorate, and finally extracted with water again, when a residue of practically pure perchlorate is obtained. The alkaline perchlorates are isomorphous with the permanganates.

CHLORITE, a group of green micaceous minerals which are hydrous silicates of aluminium, magnesium and ferrous iron. The name was given by A.G. Werner in 1798, from χλωρῖτις, “a green stone.” Several species and many rather ill-defined varieties have been described, but they are difficult to recognize. Like the micas, the chlorites (or “hydromicas”) are monoclinic in crystallization and have a perfect cleavage parallel to the flat face of the scales and plates. The cleavage is, however, not quite so prominent as in the micas, and the cleavage flakes though pliable are not elastic. The chlorites usually occur as salt (H=2-3) scaly aggregates of a dark-green colour. They vary in specific gravity between 2.6 and 3.0, according to the amount of iron present. Well-developed crystals are met with only in the species clinochlore and penninite; those of the former are six-sided plates and are optically biaxial, whilst those of the latter have the form of acute rhombohedra and are usually optically uniaxial. The species prochlorite and corundophilite also occur as more or less distinct six-sided plates. These four better crystallized species are grouped together by G. Tschermak as orthochlorites, the finely scaly and indistinctly fibrous forms being grouped by the same author as leptochlorites.

Chemically, the chlorites are distinguished from the micas by the presence of a considerable amount of water (about 13%) and by not containing alkalis; from the soft, scaly, mineral talc they differ in containing aluminium (about 20%) as an essential constituent. The magnesia (up to 36%) is often in part replaced by ferrous oxide (up to 30%), and the alumina to a lesser extent by ferric oxide; alumina may also be partly replaced by chromic oxide, as in the rose-red varieties kämmererite and kotschubeite. The composition of both clinochlore and penninite is approximately expressed by the formula $H_8(Mg,Fe)_5Al_2Si_3O_{18}$, and the formulae of prochlorite and corundophilite are $H_{40}(Mg,Fe)_{23}Al_{14}Si_{13}O_{90}$ and $H_{20}(Mg,Fe)_{20}Al_8Si_6O_{45}$ respectively. The variation in composition of these orthochlorites is explained by G. Tschermak by assuming them to be isomorphous mixtures of $H_4Mg_3Si_2O_9$ (the serpentine molecule) and $H_4Mg_3Al_2SiO_9$ (which is approximately the composition of the chlorite amesite). The leptochlorites are still more complex, and the intermixture of other fundamental molecules has to be assumed; the species recognized by Dana are daphnite, cronstedtite, thuringite, stilpnomelane, strigovite, diabantite, aphrosiderite, delessite and rumpfite.

The chlorites usually occur as alteration products of other minerals, such as pyroxene, amphibole, biotite, garnet, &c., often occurring as pseudomorphs after these, or as earthy material filling cavities in igneous rocks composed of these minerals. Many altered igneous rocks owe their green colour to the presence of secondary chlorite. Chlorite is also an important constituent of many schistose rocks and phyllites, and of chlorite-schist it is the only essential constituent. Well-crystallized specimens of the species clinochlore are found with crystals of garnet in cavities in chlorite-schist at Achmatovsk near Zlatoust, in the Urals, and at the Ala valley near Turin, Piedmont; also as large plates at West Chester in Pennsylvania and at other American localities. Crystals of penninite are found in serpentine at Zermatt in Switzerland and in the green schists of the Zillerthal in Tirol.

Closely allied to the chlorites is another group of micaceous minerals known as the vermiculites, which have resulted by the alteration of the micas, particularly biotite and phlogopite. The name is from the Latin *vermiculor*, “to breed worms,” because when heated before the blowpipe these minerals exfoliate into long worm-like threads. They have the same chemical constituents as the chlorites, but the composition is variable and indefinite, varying with that of the original mineral and the extent of its alteration. Several indistinct varieties have been named, the most important of which is jeffersonite.

(L. J. S.)

CHLOROFORM (trichlor-methane), $CHCl_3$, a valuable anaesthetic, a colourless liquid, possessing an agreeable smell and a pleasant taste. It may be prepared by the action of bleaching powder on many carbon compounds, such, for example, as ethyl alcohol and acetone (E. Soubeiran, *Ann. chim. phys.*, 1831 [2], 48, p. 131; J.v. Liebig, *Ann.*, 1832, I, p. 199), by heating chloral with alkalis (Liebig), $CCl_3CHO + NaHO = CHCl_3 + NaHCO_2$, or by heating trichloracetic acid with ammonia (J. Dumas, *Ann.*, 1839, 32, p. 113). In the preparation of chloroform by the action of bleaching powder on ethyl alcohol it is probable that the alcohol is first oxidized to acetaldehyde, which is subsequently chlorinated and then decomposed. Chloroform solidifies in the cold and then melts at -62° C.; it boils at 61.2° C.,

and has a specific gravity 1.52637 (0°/4°) (T.E. Thorpe). It is an exceedingly good solvent, especially for fats, alkaloids and iodine. It is not inflammable. The vapour of chloroform when passed through a red-hot tube yields hexachlorbenzene C_6Cl_6, perchlorethane C_2Cl_6, and some perchlorethylene C_2Cl_4 (W. Ramsay and S. Young, *Jahresberichte*, 1886, p. 628). Chromic acid converts it into *phosgene* (carbonyl chloride, $COCl_2$). It reacts with sodium ethylate to form ortho-formic ester, $CH(OC_2H_5)_3$, and when heated with aqueous ammonia for some hours at 200-220° C. gives carbon monoxide and ammonium formate, $2CHCl_3 + 7NH_3 + 3H_2O = NH_4{\cdot}HCO_2 + CO + 6NH_4Cl$ (G. André, *Jahresb.*, 1886, p. 627). When digested with phenols and caustic soda it forms oxyaldehydes (K. Reimer, *Ber.*, 1876, 9, p. 423); and when heated with alcoholic potash it is converted into potassium formate, $CHCl_3 + 4KHO = KHCO_2 + 3KCl + 2H_2O$. It combines with acetoacetic ester to form the aromatic compound meta-oxyuvitic acid, $C_6H_2{\cdot}CH_3{\cdot}OH{\cdot}(COOH)_2$. A hydrate, of composition $CHCl_3{\cdot}18H_2O$, has been described (G. Chancel, *Fresenius Zeitschrift f. anal. Chemie*, 1886, 25, p. 118); it forms hexagonal crystals which melt at 1.6° C.

Chloroform may be readily detected by the production of an isonitrile when it is heated with alcoholic potash and a primary amine; thus with aniline, phenyl isocyanide (recognized by its nauseating smell) is produced,

$$CHCl_3 + C_6H_5NH_2 + 3KHO = C_6H_5NC + 3KCl + 3H_2O.$$

For the action and use of chloroform as an anaesthetic, see Anaesthesia. Chloroform may be given internally in doses of from one to five drops. The *British Pharmacopoeia* contains a watery solution—the *Aqua Chloroformi*—which is useful in disguising the taste of nauseous drugs; a liniment which consists of equal parts of camphor liniment and chloroform, and is a useful counter-irritant; the *Spiritus Chloroformi* (erroneously known as “chloric ether”), which is a useful anodyne in doses of from five to forty drops; and the *Tinctura Chloroformi et Morphinae Composita*, which is the equivalent of a proprietary drug called chlorodyne. This tincture contains chloroform, morphine and prussic acid, and must be used with the greatest care.

Externally chloroform is an antiseptic, a local anaesthetic if allowed to evaporate, and a rubefacient, causing the vessels of the skin to dilate, if rubbed in. Its action on the stomach is practically identical with that of alcohol (*q.v.*), though in very much smaller doses. The uses of chloroform which fall to be mentioned here are:—as a counter-irritant; as a local anaesthetic for toothache due to caries, it being applied on a cotton-wool plug which is inserted into the carious cavity; as an antispasmodic in tetanus and hydrophobia; and as the best and most immediate and effective antidote in cases of strychnine poisoning.

CHLOROPHYLL (from Gr. χλωρός, green, φύλλον, a leaf), the green colouring matter of leaves. It is universally present in growing vegetable cells. The pigment of leaves is a complex mixture of substances; of these one is green, and to this the name, originally given in 1817 by Pelletier and Caventou, is sometimes restricted; xanthophyll (Gr. ξανθός, yellow) is dark brown; carotin is copper-coloured. Chlorophyll is related chemically to the proteids; a decomposition product, phylloporphyrin, being very closely related to haematoporphyrin, which is a decomposition product of haemoglobin, the red colouring matter of the blood. Chlorophyll is neutral in reaction, insoluble in water, but soluble in alcohol, ether, &c, the solutions exhibiting a green colour and a vivid red fluorescence. Magnesium is a necessary constituent. (See S.B. Schryver, *Science Progress*, 1909, 3, p. 425.)

CHLOROSIS (Gr. χλωρός, pale green), the botanical term for loss of colour in a plant-organ, a sign of disease; also in medicine, a form of anaemia (see Blood: *Pathology*).

CHLORPICRIN (Nitrochloroform), $C{\cdot}NO_2{\cdot}Cl_3$, the product of the distillation of many nitro compounds (picric acid, nitromethane, &c.) with bleaching powder; it can also be prepared by the action of concentrated nitric acid on chloral or chloroform. A. W. von Hofmann (*Annalen*, 1866, 139, p. 111) mixed 10 parts of bleaching powder into a paste with cold water and added a solution (saturated at 30° C.) of 1 part of picric acid. A violent reaction is set up and the chlorpicrin distils over, generally without the necessity for any external heating. It is a colourless liquid of boiling-point 112° C., and of specific gravity 1.692. It is almost insoluble in water, but is readily soluble in alcohol; it has a sharp smell, and its vapour affects the eyes very powerfully. Iron filings and acetic acid reduce it to trimethylamine, whilst alcoholic ammonia converts it into guanidine, $HN{:}C(NH_2)_2$, and sodium ethylate into ortho-carbonic ester, $C(OC_2H_5)_4$. The corresponding brompicrin is also known.

CHMIELNICKI, BOGDAN (c. 1593-1657), hetman of the Cossacks, son of Michael Chmielnicki, was born at Subatow, near Chigirin in the Ukraine, an estate given to the elder Chmielnicki for his lifelong services to the Polish crown. Bogdan, after learning to read and write, a rare accomplishment in those days, entered the Cossack ranks, was dangerously wounded and taken prisoner in his first battle against the Turks, and found leisure during his two years' captivity at Constantinople to acquire the rudiments of Turkish and French. On returning to the Ukraine he settled down quietly on his paternal estate, and in all probability history would never have known his name if the intolerable persecution of a neighbouring Polish squire, who stole his hayricks and flogged his infant son to death, had not converted the thrifty and acquisitive Cossack husbandman into one of the most striking and sinister figures of modern times. Failing to get redress nearer home, he determined to seek for justice at Warsaw, whither he had been summoned with other Cossack delegates to assist Wladislaus IV. in his long-projected war against the Turks. The king, perceiving him to be a man of some education and intelligence, appointed him *pisarz* or secretary of the registered Cossacks, and he subsequently served under Koniecpolski in the Ukraine campaign of 1646. His hopes of distinction were, however, cut short by a decree of the Polish diet, which, in order to vex the king, refused to sanction the continuance of the war. Chmielnicki, now doubly hateful to the Poles as being both a royalist and a Cossack, was again maltreated and chicaned, and only escaped from gaol by bribing his gaolers. Thirsting for vengeance, he fled to the Cossack settlements on the Lower Dnieper and thence sent messages to the khan of the Crimea, urging a simultaneous invasion of Poland by the Tatars and the Cossacks (1647).

On the 11th of April 1648, at an assembly of the Zaporozhians (see POLAND: *History*), he openly declared his intention of proceeding against the Poles, and was elected ataman by acclamation. At Zheltnaya Vodui (Yellow Waters) in the Ukraine he annihilated, on the 19th of May, a detached Polish army corps after three days' desperate fighting, and on the 26th routed the main Polish army under the grand hetman, Stephen Potocki, at Kruta Balka (Hard Plank), near the river Korsun. The immediate consequence of these victories was the outbreak of a "serfs' fury." Throughout the Ukraine the Polish gentry were hunted down, flayed and burnt alive, blinded and sawn asunder. Every manor-house was reduced to ashes. Every Uniat and Catholic priest was hung up before his own altar, along with a Jew and a hog. The panic-stricken inhabitants fled to the nearest strongholds, and soon the rebels were swarming all over the palatinates of Volhynia and Podolia. But the ataman was as crafty as he was cruel. Disagreeably awakened to the insecurity of his position by the refusal of the tsar and the sultan to accept him as a vassal, he feigned to resume negotiations with the Poles in order to gain time, dismissed the Polish commissioners in the summer of 1648 with impossible conditions, and on the 23rd of September, after a contest of three days, utterly routed the Polish chivalry, 40,000 strong, at Pildawa, where the Cossacks are said to have reaped an immense booty after the fight was over. All Poland now lay at his feet, and the road to the defenceless capital was open before him; but he wasted the precious months in vain before the fortress of Zamosc, and was then persuaded by the new king of Poland, John Casimir, to consent to a suspension of hostilities. In June 1649, arrayed in cloth-of-gold and mounted on a white charger, Chmielnicki made his triumphal entry into Kiev, where he was hailed as the Maccabaeus of the Orthodox faith, and permitted the committal of unspeakable atrocities on the Jews and Roman Catholics. At the ensuing peace congress at Pereyaslavl he demanded terms so extravagant that the Polish commissioners dared not

listen to them. In 1649, therefore, the war was resumed. A bloody battle ensued near Zborow, on the banks of the Strypa, when only the personal valour of the Polish king, the superiority of the Polish artillery, and the defection of Chmielnicki's allies the Tatars enabled the royal forces to hold their own. Peace was then patched up by the compact of Zborow (August 21, 1649), whereby Chmielnicki was virtually recognized as a semi-independent prince.

For the next eighteen months he was the absolute master of the Ukraine, which he divided into sixteen provinces, made his native place Chigirin the Cossack capital, and entered into direct relations with foreign powers. Poland and Muscovy competed for his alliance, and in his more exalted moods he meditated an Orthodox crusade against the Turk at the head of the northern Slavs. But he was no statesman, and his difficulties proved overwhelming. Instinct told him that his old ally the khan of the Crimea was unreliable, and that the tsar of Muscovy was his natural protector, yet he could not make up his mind to abandon the one or turn to the other. His attempt to carve a principality for his son out of Moldavia, which Poland regarded as her vassal, led to the outbreak in 1651 of a third war between subject and suzerain, which speedily assumed the dignity and the dimensions of a crusade. Chmielnicki was now regarded not merely as a Cossack rebel, but as the arch-enemy of Catholicism in eastern Europe, and the pope granted a plenary absolution to all who took up arms against him. But Bogdan himself was not without ecclesiastical sanction. The archbishop of Corinth girded him with a sword which had lain upon the Holy Sepulchre, and the metropolitan of Kiev absolved him from all his sins, without the usual preliminary of confession, before he rode forth to battle. But fortune, so long his friend, now deserted him, and at Beresteczko (July 1, 1651) the Cossack ataman was defeated for the first time. But even now his power was far from broken. In 1652 he openly interfered in the affairs of Transylvania and Walachia, and assumed the high-sounding title of "guardian of the Ottoman Porte." In 1653 Poland made a supreme effort, the diet voted 17,000,000 gulden in subsidies, and John Casimir led an army of 60,000 men into the Ukraine and defeated the arch-rebel at Zranta, whereupon Chmielnicki took the oath of allegiance to the tsar (compact of Pereyaslavl, February 19, 1654), and all hope of an independent Cossack state was at an end. He died on the 7th of August 1657. With all his native ability, Chmielnicki was but an eminent savage. He was the creature of every passing mood or whim, incapable of cool and steady judgment or of the slightest self-control—an incalculable weather-cock, blindly obsequious to every blast of passion. He could destroy, but he could not create, and other people benefited by his exploits.

See P. Kulish, *On the Defection of Malo-Russia from Poland* (Rus.) (Moscow, 1890); S.M. Solovev, *History of Russia* (Rus.) (Moscow, 1857, &c.), vol. x.; Robert Nisbet Bain, *The First Romanovs*, chaps. 3-4 (London, 1905).

(R. N. B.)

CHOATE, JOSEPH HODGES (1832-), American lawyer and diplomat, was born at Salem, Massachusetts, on the 24th of January 1832. He was the son of Dr George Choate, a physician of considerable note, and was a nephew of Rufus Choate. After graduating at Harvard College in 1852 and at the law school of Harvard University in 1854, he was admitted first to the Massachusetts (1855) and then (1856) to the New York bar, and entered the law office of Scudder & Carter in New York City. His success in his profession was immediate, and in 1860 he became junior partner in the firm of Evarts, Southmayd & Choate, the senior partner in which was William M. Evarts. This firm and its successor, that of Evarts, Choate & Beaman, remained for many years among the leading law firms of New York and of the country, the activities of both being national rather than local. During these busy years Mr Choate was associated with many of the most famous litigations in American legal history, including the Tilden, A.T. Stewart, and Stanford will cases, the Kansas prohibition cases, the Chinese exclusion cases, the Maynard election returns case, and the Income Tax Suit. In 1871 he became a member of the "Committee of Seventy" in New York City, which was instrumental in breaking up the "Tweed Ring," and later assisted in the prosecution of the indicted officials. In the retrial of the General Fitz John Porter case he obtained a reversal of the decision of the original court-martial. His greatest reputation was won perhaps in cross-examination. In politics he allied himself with the Republican party on its organization, being a frequent speaker in presidential campaigns, beginning with that of 1856. He never held political office, although he was a candidate for the Republican

senatorial nomination against Senator Thomas C. Platt in 1897. In 1894 he was president of the New York state constitutional convention. He was appointed, by President McKinley, ambassador to Great Britain to succeed John Hay in 1899, and remained in this position until the spring of 1905. In England he won great personal popularity, and accomplished much in fostering the good relations of the two great English-speaking powers. He was one of the representatives of the United States at the second Peace Congress at the Hague in 1907.

Several of his notable public addresses have been published. *The Choate Story Book* (New York, 1903) contains a few of his addresses and after-dinner speeches, and is prefaced by a brief biographical sketch.

CHOATE, RUFUS (1799-1859), American lawyer and orator, was born at Ipswich, Massachusetts, on the 1st of October 1799, the descendant of a family which settled in Massachusetts in 1667. As a child he was remarkably precocious; at six he is said to have been able to repeat large parts of the Bible and of *Pilgrim's Progress* by heart. He graduated as valedictorian of his class at Dartmouth College in 1819, was a tutor there in 1819-1820, spent a year in the law school of Harvard University, and studied for a like period at Washington, in the office of William Wirt, then attorney-general of the United States. He was admitted to the Massachusetts bar in 1823 and practised at what was later South Danvers (now Peabody) for five years, during which time he served in the Massachusetts House of Representatives (1825-1826) and in the state senate (1827). In 1828 he removed to Salem, where his successful conduct of several important law-suits brought him prominently into public notice. In 1830 he was elected to Congress as a Whig from the Salem district, defeating the Jacksonian candidate for re-election, B.W. Crowninshield (1772-1851), a former secretary of the navy, and in 1832 he was re-elected. His career in Congress was marked by a notable speech in defence of a protective tariff. In 1834, before the completion of his second term, he resigned and established himself in the practice of law in Boston. Already his fame as a speaker had spread beyond New England, and he was much sought after as an orator for public occasions. For several years he devoted himself unremittingly to his profession, but in 1841 succeeded Daniel Webster in the United States Senate. Shortly afterwards he delivered one of his most eloquent addresses at the memorial services for President Harrison in Faneuil Hall, Boston. In the Senate he made a series of brilliant speeches on the tariff, the Oregon boundary, in favour of the Fiscal Bank Act, and in opposition to the annexation of Texas. On Webster's re-election to the Senate, Choate resumed (1845) his law practice, which no amount of urging could ever persuade him to abandon for public office, save for a short term as attorney-general of Massachusetts in 1853-1854. In 1853 he was a member of the state constitutional convention. He was a faithful supporter of Webster's policy as declared in the latter's famous "Seventh of March Speech" (1850) and laboured to secure for him the presidential nomination at the Whig national convention in 1852. In 1856 he refused to follow most of his former Whig associates into the Republican party and gave his support to James Buchanan, whom he considered the representative of a national instead of a sectional party. In July 1859 failing health led him to seek rest in a trip to Europe, but he died on the 13th of that month at Halifax, Nova Scotia, where he had been put ashore when it was seen that he probably could not outlive the voyage across the Atlantic. Choate, besides being one of the ablest of American lawyers, was one of the most scholarly of American public men, and his numerous orations and addresses were remarkable for their pure style, their grace and elegance of form, and their wealth of classical allusion.

His *Works* (edited, with a memoir, by S.G. Brown) were published in 2 vols. at Boston in 1862. The *Memoir* was afterwards published separately (Boston, 1870). See also E.G. Parker's *Reminiscences of Rufus Choate* (New York, 1860); E.P. Whipple's *Some Recollections of Rufus Choate* (New York, 1879); and the *Albany Law Review* (1877-1878).

CHOBE, a large western affluent of the middle Zambezi (*q.v.*). The river was discovered by David Livingstone in 1851, and to him was known as the Chobe. It is also called the Linyante and the Kwando, the last name being that commonly used.

CHOCOLATE, a paste of the ground kernels of the cocoa bean, mixed with sugar, vanilla or other flavouring, made into a cake, which is used for the manufacture of various forms of sweetmeat, or in making the beverage, also known as "chocolate," obtained by dissolving cakes of chocolate in boiling water or milk (see COCOA). The word came into Eng. through the Fr. *chocolat* or Span. *chocolate* from the Mex. *chocolatl*. According to the *New English Dictionary* (quoting R. Siméon, *Dict. de la langue Nahuatl*), this was "an article of food made of ... the seeds of cacao and of the tree pochotl (*Bombax ceiba*)," and was etymologically distinct from the Mexican *cacauatl*, cacao, or cocoa.

CHOCTAWS, CHAHTAS, or CHACATOS (apparently a corruption of Span. *chato*, flattened), a tribe of North American Indians of Muskhogean stock. They are now settled in Oklahoma, but when first known to Europeans they occupied the district now forming the southern part of Mississippi and the western part of Alabama. On the settlement of Louisiana they formed an alliance with the French, and assisted them against the Natchez and Chickasaws; but by degrees they entered into friendly relations with the English, and at last, in 1786, recognized the supremacy of the United States by the treaty of Hopewell. Their emigration westward began about 1800, and the last remains of their original territory were ceded in 1830. In their new settlements the Choctaws continued to advance in prosperity till the outbreak of the Civil War, which considerably diminished the population and ruined a large part of their property. They sided with the Confederates, and their territory was occupied by Confederate troops; and accordingly at the close of the war they were regarded as having lost their rights. Part of their land they were forced to surrender to the government; their slaves were emancipated; and provision was claimed for them in the shape of either land or money. Since then they have considerably recovered their position. They long constituted a quasi-independent people under the title of the Choctaw nation, and were governed by a chief and a national council of forty members, according to a written constitution, dating in the main from 1838; they possessed a regular judicial system and employed trial by jury. Tribal government virtually ceased in 1906. The Choctaws number some 18,000. A few groups still linger in Mississippi and Louisiana. The Choctaw language has been reduced to writing, and brought to some degree of literary precision.

See INDIANS, NORTH AMERICAN; *Handbook of American Indians*, ed. F.W. Hodge (Washington, 1907).

CHODKIEWICZ, JAN KAROL (1560-1621), Polish general, was the son of Hieronymus Chodkiewicz, castellan of Wilna. After being educated at the Wilna academy he went abroad to learn the science of war, fighting in the Spanish service under Alva, and also under Maurice of Nassau. In 1593 he married the wealthy Sophia Mielecka, by whom he had one son who predeceased him. His first military service at home was against the Cossack rising of Nalewajko as lieutenant to Zolkiewski, and he subsequently assisted Zamoyski in his victorious Moldavian campaign. Honours and dignities were now showered upon him. In 1599 he was appointed starosta of Samogitia, and in 1600 acting commander-in-chief of Lithuania. In the war against Sweden for the possession of Livonia he brilliantly distinguished himself, capturing fortress after fortress and repulsing the duke of Sudermania, afterwards Charles IX, from Riga. In 1604 he captured Dorpat, twice defeated the Swedish generals at Bialy Kamien, and was rewarded with the grand bâton of Lithuania.

Criminally neglected by the diet, which from sheer niggardliness turned a deaf ear to all his requests for reinforcements and for supplies and money to pay his soldiers, Chodkiewicz nevertheless more than held his own against the Swedes. His crowning achievement was the great victory of Kirkholm (Aug. 27th, 1605), when with barely 5000 men he annihilated a threefold larger Swedish army; for which feat he received letters of congratulation from the pope, all the Catholic potentates, of Europe, and even from the sultan of Turkey and the shah of Persia. Yet this great victory was absolutely fruitless, owing to the domestic dissensions which prevailed in Poland during the following five years. Chodkiewicz's own army, unpaid for years, abandoned him at last *en masse* in order to plunder the estates of their political opponents, leaving the grand hetman to carry on the war as best he could with a handful of mercenaries paid out of the pockets of himself and his friends. Chodkiewicz was one of the few magnates who remained loyal to the king, and after helping to defeat the rebels in Poland a fresh invasion of Livonia by the Swedes recalled him thither, and once more he relieved Riga besides capturing Pernau. Meanwhile the war with Muscovy broke out, and Chodkiewicz was sent against Moscow with an army of 2000 men—though if there had been a spark of true patriotism in Poland he could easily have marshalled 100,000. Moreover, the diet neglected to pay for the maintenance even of this paltry 2000, with the result that they mutinied and compelled their leader to retreat through the heart of Muscovy to Smolensk. Not till the crown prince Wladislaus arrived with tardy reinforcements did the war assume a different character, Chodkiewicz opening a new career of victory by taking the fortress of Drohobu in 1617. The Muscovite war had no sooner been ended by the treaty of Deulina than Chodkiewicz was hastily despatched southwards to defend the southern frontier against the Turks, who after the catastrophe of Cecora (see Zolkiewski) had high hopes of conquering Poland altogether. An army of 160,000 Turkish veterans led by Sultan Osman in person advanced from Adrianople towards the Polish frontier, but Chodkiewicz crossed the Dnieper in September 1621 and entrenched himself in the fortress of Khotin right in the path of the Ottoman advance. Here for a whole month the Polish hero held the sultan at bay, till the first fall of autumn snow compelled Osman to withdraw his diminished forces. But the victory was dearly purchased by Poland. A few days before the siege was raised the aged grand hetman died of exhaustion in the fortress (Sept. 24th, 1621).

See Adam Stanislaw Naruszewicz, *Life of J.K. Chodkiewicz* (Pol.; 4th ed., Cracow, 1857-1858); Lukasz Golebiowski, *The Moral Side of J.K. Chodkiewicz as indicated by his Letters* (Pol.; Warsaw, 1854).

(R. N. B.)

CHODOWIECKI, DANIEL NICOLAS (1726-1801), German painter and engraver of Polish descent, was born at Danzig. Left an orphan at an early age, he devoted himself to the practice of miniature painting, the elements of which his father had taught him, as a means of support for himself and his mother. In 1743 he went to Berlin, where for some time he worked as clerk in an uncle's office, practising art, however, in his leisure moments, and gaining a sort of reputation as a painter of miniatures for snuff-boxes. The Berlin Academy, attracted by a small engraving of his, entrusted to him the illustration of its yearly almanac. After designing and engraving several subjects from the story of the Seven Years' War, Chodowiecki produced the famous "History of the Life of Jesus Christ," a set of admirably painted miniatures, which made him at once so popular that he laid aside all occupations save those of painting and engraving. Few books were published in Prussia for some years without plate or vignette by Chodowiecki. It is not surprising, therefore, that the catalogue of his works (Berlin, 1814) should include over 3000 items, of which, however, the picture of "Jean Calas and his Family" is the only one of any reputation. He became director of the Berlin Academy in 1797. The title of the German Hogarth, which he sometimes obtained, was the effect of an admiration rather imaginative than critical, and was disclaimed by Chodowiecki himself. The illustrator of Lavater's *Essays on Physiognomy*, the painter of the "Hunt the Slipper" in the Berlin museum, had indeed but one point in common with the great Englishman—the practice of representing actual life and manners. In this he showed skilful drawing and grouping, and considerable expressional power, but no tendency whatever to the use of the grotesque.

His brother Gottfried (1728-1781) and son Wilhelm (1765-1803) painted and engraved after the style of Daniel, and sometimes co-operated with him.

CHOERILUS. (1) An Athenian tragic poet, who exhibited plays as early as 524 B.C. He was said to have competed with Aeschylus, Pratinas and even Sophocles. According to F.G. Welcker, however, the rival of Sophocles was a son of Choerilus, who bore the same name. Suidas states that Choerilus wrote 150 tragedies and gained the prize 13 times. His works are all lost; only Pausanias (i. 14) mentions a play by him entitled *Alope* (a mythological personage who was the subject of dramas by Euripides and Carcinus). His reputation as a writer of satyric dramas is attested in the well-known line

ἡνίκα μὲν βασιλεὺς ἦν Χοιρίλος ἐν Σατύοις.

The Choerilean metre, mentioned by the Latin grammarians, is probably so called because the above line is the oldest extant specimen. Choerilus was also said to have introduced considerable improvements in theatrical masks and costumes.

See A. Nauck, *Tragicorum Graecorum Fragmenta* (1889); F.G. Welcker, *Die griechischen Tragödien*, pp. 18, 892.

(2) An epic poet of Samos, who flourished at the end of the 5th century B.C. After the fall of Athens he settled at the court of Archelaus, king of Macedonia, where he was the associate of Agathon, Melanippides, and Plato the comic poet. The only work that can with certainty be attributed to him is the Περσηίς or Περσικά, a history of the struggle of the Greeks against Persia, the central point of which was the battle of Salamis. His importance consists in his having taken for his theme national and contemporary events in place of the deeds of old-time heroes. For this new departure he apologizes in the introductory verses (preserved in the scholiast on Aristotle, *Rhetoric*, iii. 14), where he says that, the subjects of epic poetry being all exhausted, it was necessary to strike out a new path. The story of his intimacy with Herodotus is probably due to the fact that he imitated him and had recourse to his history for the incidents of his poem. The *Perseis* was at first highly successful and was said to have been read, together with the Homeric poems, at the Panathenaea, but later critics reversed this favourable judgment. Aristotle (*Topica*, viii. 1) calls Choerilus's comparisons far-fetched and obscure, and the Alexandrians displaced him by Antimachus in the canon of epic poets. The fragments are artificial in tone.

G. Kinkel, *Epicorum Graecorum Frag.* i. (1877); for another view of his relations with Herodotus see Müder in *Klio* (1907), 29-44.

(3) An epic poet of Iasus in Caria, who lived in the 4th century B.C. He accompanied Alexander the Great on his campaigns as court-poet. He is well known from the passages in Horace (*Epistles*, ii. 1, 232; *Ars Poëtica*, 357), according to which he received a piece of gold for every good verse he wrote in celebration of the glorious deeds of his master. The quality of his verses may be estimated from the remark attributed to Alexander, that he would rather be the Thersites of Homer than the Achilles of Choerilus. The epitaph on Sardanapalus, said to have been translated from the Chaldean (quoted in Athenaeus, viii. p. 336), is generally supposed to be by Choerilus.

See G. Kinkel, *Epicorum Graecorum Fragmenta*, i. (1877); A.F. Näke, *De Choerili Samii Aetate Vita et Poësi aliisque Choerilis* (1817), where the above poets are carefully distinguished; and the articles in Pauly-Wissowa's *Realencydopädie*, iii. 2 (1899).

CHOEROBOSCUS, GEORGIUS (c. A.D. 600), deacon and professor at the oecumenical school at Constantinople. He is also called *chartophylax* either as the holder of some ecclesiastical office or as superintendent of the university library. It is not known whether "Choeroboscus" (Gr. for "swineherd") is an allusion to his earlier occupation or an inherited family name. During his tenure of office he delivered a course of lectures on grammar, which has come down to us in the shape of notes taken by his pupils. He drew from the best authorities—Apollonius Dyscolus, Herodian, Orion, Theodosius of Alexandria. The lectures are written in simple style, but suffer from diffuseness. They were much used by Constantine Lascaris in his Greek grammar and by Urban of Belluno (end of 15th cent.). The

chief work of Choeroboscus, which we have in its complete form, is the commentary on the canons of Theodosius on Declension and Conjugation. Mention may also be made of a treatise on orthography, of which a fragment (on Quantity) has been preserved; a tract on prosody; commentaries on Hephaestion and Dionysius Thrax; and grammatical notes on the Psalms.

See C. Krumbacher, *Geschichte der byzantinischen Litteratur* (1897); A. Hilgard, *Grammatici Graeci*, iv. (1889-1894), containing the text of the commentary on Theodosius, and a full account of the life and writings of Choeroboscus; L. Kohn in Pauly-Wissowa's *Realencydopädie*, iii. 2 (1889); Reitzenstein, *Etymologika*, 190, n. 4.

CHOIR (O. Fr. *cuer* from Lat. *chorus*; pronounced *quire*, and until the end of the 17th century so spelt, the spelling being altered to agree with the Fr. *chœur*), the body of singers who perform the musical portion of the service in a church, or the place set apart for them. Any organized body of singers performing full part choral works or oratorios is also called a choir.

In English cathedrals the choir is composed of men (vicars-choral or lay clerks) and boys (choristers). They are divided into two sets, sitting on the north and south sides of the chancel respectively, called *cantoris* and *decani*, from being on the same side as the *cantor* (precentor) or the *decanus* (dean). This arrangement, together with the custom of vesting choirmen and choristers in surplices (traditional only in cathedrals and collegiate churches), has, since the middle of the 19th century, been adopted in a large number of parish and other churches. Surpliced choirs of women have occasionally been introduced, notably in America and the British colonies, but the practice has no warrant of traditional usage. In the Roman Catholic Church the choir plays a less conspicuous rôle than in the Church of England, its members not being regarded as ministers of the church, and non-Catholics are allowed to sing in it. The singers at Mass or other solemn services are usually placed in a gallery or some other inconspicuous place. The word "choir," indeed, formerly applied to all the clergy taking part in services of the church, and the restriction of the term to the singing men and boys, who were in their origin no more than the representatives (vicars) of the clergy, is a comparatively late development. The distinction between "choir services" (Mattins, Vespers, Compline, &c.)—consisting of prayers, lections, the singing of the psalms, &c.—and the service of the altar was sharply drawn in the middle ages, as in the modern Roman Church. "Choir vestments" (surplice, &c.) are those worn by the clergy at the former, as distinguished from those used at the Mass (see Vestments). In England at the Reformation the choir services (Mattins, Evensong) replaced the Mass as the principal popular services, and, in general, only the choir vestments were retained in use. In the English cathedrals the members of the choir often retain privileges reminiscent of an earlier definite ecclesiastical status. At Wells, for instance, the vicars-choral form a corporation practically independent of the dean and chapter; they have their own lodgings inside the cathedral precincts (Vicars' Close) and they can only be dismissed by a vote of their own body.

(W. A. P.)

In an architectural sense a "choir" is strictly that part of a church which is fitted up for the choir services, and is thus limited to the space between the choir screen and the presbytery. Some confusion has arisen owing to the term being employed by medieval writers to express the entire space enclosed for the performance of the principal services of the church, and therefore to include not only the choir proper, but the presbytery. In the case of a cruciform church the choir is sometimes situated under the central tower, or in the nave, and this is the case in Westminster Abbey, where it occupies four bays to the west of the transept. The choir is usually raised one step above the nave, and its sides are fitted up with seats or stalls, of which in large buildings there are usually two or three rows rising one behind the other.

In Romanesque churches there are eastern and western choirs, and in former times the term was given to chantries and subsidiary chapels, which were also called chancels. In the early Christian church the ambones where the gospels and epistles were read were placed one on either side of the choir and formed part of its enclosure, and this is the case in S. Clemente, S. Lorenzo and S. Maria in Cosmedin in Rome. In England the choir seems almost universally to have assembled at the eastern part of the church to recite the breviary

services, whereas on the continent it was moved from one place to another according to convenience. In Spanish churches it occupies the nave of the church, and in the church of the Escorial in Spain was at the west end above the entrance vestibule.

(R. P. S.)

CHOISEUL, CÉSAR, Duc de (1602-1675), French marshal and diplomatist, generally known for the best part of his life as the marshal du Plessis-Praslin, came of the old French family of Choiseul, which arose in the valley of the Upper Marne in the 10th century and divided into many branches, three of the names of which, Hostel, Praslin and du Plessis, were borne, at one time or another, by the subject of this article. Entering the army at the age of fourteen as proprietary colonel of an infantry regiment, he shared in almost all the exploits of the French arms during the reign of Louis XIII. He took part in the siege of La Rochelle, assisted to defend the island of Ré against the attacks of the English under the duke of Buckingham, and accompanied the French forces to Italy in 1629. In 1630 he was appointed ambassador at the court of the duke of Savoy, and was engaged in diplomatic and administrative work in Italy until 1635, when war was declared between France and Spain. In the war that followed Plessis-Praslin distinguished himself in various battles and sieges in Italy, including the action called the “Route de Quiers” and the celebrated four-cornered operations round Turin. In 1640 he was made governor of Turin, and in 1642 lieutenant-general, and after further service in Italy he was made a marshal of France (1645) and appointed second in command in Catalonia. During the first War of the Fronde, which broke out in 1649, he assisted Condé in the brief siege of Paris; and in the second war, remaining loyal to the queen regent and the court party, he won his greatest triumph in defeating Turenne and the allied Spaniards and rebels at Rethel (or Blanc-Champ) in 1650. He then held high office at the court of Louis XIV., became minister of state in 1652, and in November 1665 was created duc de Choiseul. He was concerned in some of the negotiations between Louis and Charles II. of England which led to the treaty of Dover, and died in Paris on the 23rd of December 1675.

CHOISEUL, ÉTIENNE FRANÇOIS, Duc de (1719-1785), French statesman, was the eldest son of François Joseph de Choiseul, marquis de Stainville (1700-1770), and bore in early life the title of comte de Stainville. Born on the 28th of June 1719, he entered the army, and during the War of the Austrian Succession served in Bohemia in 1741 and in Italy, where he distinguished himself at the battle of Coni, in 1744. From 1745 until 1748 he was with the army in the Low Countries, being present at the sieges of Mons, Charleroi and Maestricht. He attained the rank of lieutenant-general, and in 1750 married Louise Honorine, daughter of Louis François Crozat, marquis du Châtel (d. 1750), who brought her husband a large fortune and proved a most devoted wife.

Choiseul gained the favour of Madame de Pompadour by procuring for her some letters which Louis XV. had written to his cousin Madame de Choiseul, with whom the king had formerly had an intrigue; and after a short time as *bailli* of the Vosges he was given the appointment of ambassador to Rome in 1753, where he was entrusted with the negotiations concerning the disturbances called forth by the bull *Unigenitus*. He acquitted himself skilfully in this task, and in 1757 his patroness obtained his transfer to Vienna, where he was instructed to cement the new alliance between France and Austria. His success at Vienna opened the way to a larger career, when in 1758 he supplanted Antoine Louis Rouillé (1689-1761) as minister for foreign affairs and so had the direction of French foreign policy during the Seven Years’ War. At this time he was made a peer of France and created duc de Choiseul. Although from 1761 until 1766 his cousin César, duc de Choiseul-Praslin (1712-1785), was minister for foreign affairs, yet Choiseul continued to control the policy of France until 1770, and during this period held most of the other important offices of state. As the author of the “Family Compact” he sought to retrieve by an alliance with the Bourbon house of Spain the disastrous results of the alliance with Austria; but his action came too late. His vigorous policy in other departments of state was not, however, fruitless. Coming to power

in the midst of the demoralization consequent upon the defeats of Rossbach and Crefeld, by boldness and energy he reformed and strengthened both army and navy, and although too late to prevent the loss of Canada and India, he developed French colonies in the Antilles and San Domingo, and added Corsica and Lorraine to the crown of France. His management of home affairs in general satisfied the *philosophes*. He allowed the *Encyclopédie* to be published, and brought about the banishment of the Jesuits and the temporary abolition of the order by Pope Clement IV.

Choiseul's fall was caused by his action towards the Jesuits, and by his support of their opponent La Chalotais, and of the provincial parlements. After the death of Madame de Pompadour in 1764, his enemies, led by Madame Du Barry and the chancellor Maupeou, were too strong for him, and in 1770 he was ordered to retire to his estate at Chanteloupe. The intrigues against him had, however, increased his popularity, which was already great, and during his retirement, which lasted until 1774, he lived in the greatest affluence and was visited by many eminent personages. Greatly to his disappointment Louis XVI. did not restore him to his former position, although the king recalled him to Paris in 1774, when he died on the 8th of May 1785, leaving behind him a huge accumulation of debt which was scrupulously discharged by his widow.

Choiseul possessed both ability and diligence, and though lacking in tenacity he showed foresight and liberality in his direction of affairs. In appearance he was a short, ill-featured man, with a ruddy countenance and a sturdy frame. His *Mémoires* were written during his exile from Paris, and are merely detached notes upon different questions. Horace Walpole, in his *Memoirs*, gives a very vivid description of the duke's character, accuses him of exciting the war between Russia and Turkey in 1768 in order to be revenged upon the tsarina Catherine II., and says of his foreign policy, "he would project and determine the ruin of a country, but could not meditate a little mischief or a narrow benefit." "He dissipated the nation's wealth and his own; but did not repair the latter by plunder of the former," says the same writer, who in reference to Choiseul's private life asserts that "gallantry without delicacy was his constant pursuit." Choiseul's widow, a woman "in whom industrious malice could not find an imperfection," lived in retirement until her death on the 3rd of December 1808.

See *Mémoires du duc de Choiseul*, edited by F. Calmettes (Paris, 1904); P. Boutaric, *L'Ambassade de Choiseul à Vienne en 1757-1758* (Paris, 1872); Duc de Cars, *Mémoires* (Paris, 1890); F.J. de P., Cardinal de Bernis, *Mémoires et lettres* (Paris, 1878); Madame de Pompadour, *Correspondance* (Paris, 1878); *Revue historique*, tomes 82 and 87 (Paris, 1903-1905); Horace Walpole, *Memoirs of the Reign of George III.*, edited by G.F.R. Barker (London, 1894); G. Mangros, *Le duc et la duchesse de Choiseul* (Paris, 1903); and *La Disgrace du duc et de la duchesse de Choiseul* (Paris, 1903); E. Calmettes, *Choiseul et Voltaire* (Paris, 1902); A. Bourguet, *Études sur la politique étrangère du duc de Choiseul* (Paris, 1907); and *Le Duc de Choiseul et l'alliance espagnole* (Paris, 1906). See also the *Edinburgh Review* for July 1908.

CHOISEUL-STAINVILLE, CLAUDE ANTOINE GABRIEL, Duc de (1760-1838), French soldier, was brought up at Chanteloup, under the care of his relative, Étienne François, duc de Choiseul, who was childless. The outbreak of the Revolution found him a colonel of dragoons, and throughout those troublous times he was distinguished for his devotion to the royal house. He took part in the attempt of Louis XVI. to escape from Paris on the 20th of June 1791; was arrested with the king, and imprisoned. Liberated in May 1792, he emigrated in October, and fought in the "army of Condé" against the republic. Captured in 1795, he was confined at Dunkirk; escaped, set sail for India, was wrecked on the French coast, and condemned to death by the decree of the Directory. Nevertheless, he was fortunate enough to escape once more. Napoleon allowed him to return to France in 1801, but he remained in private life until the fall of the Empire. At the Restoration he was called to the House of Peers by Louis XVIII. At the revolution of 1830 he was nominated a member of the provisional government; and he afterwards received from Louis Philippe the post of aide-de-camp to the king and governor of the Louvre. He died in Paris on the 1st of December 1838.

CHOISY, FRANÇOIS TIMOLÉON, Abbé de (1644-1724), French author, was born in Paris on the 16th of August 1644, and died in Paris on the 2nd of October 1724. His father was attached to the household of the duke of Orleans, and his mother, who was on intimate terms with Anne of Austria, was regularly called upon to amuse Louis XIV. By a whim of his mother, the boy was dressed like a girl until he was eighteen, and, after appearing for a short time in man's costume, he resumed woman's dress on the advice—doubtless satirical—of Madame de La Fayette. He delighted in the most extravagant toilettes until he was publicly rebuked by the duc de Montausier, when he retired for some time to the provinces, using his disguise to assist his numerous intrigues. He had been made an abbé in his childhood, and poverty, induced by his extravagance, drove him to live on his benefice at Sainte-Seine in Burgundy, where he found among his neighbours a kindred spirit in Bussy-Rabutin. He visited Rome in the suite of the cardinal de Bouillon in 1676, and shortly afterwards a serious illness brought about a sudden and rather frivolous conversion to religion. In 1685 he accompanied the chevalier de Chaumont on a mission to Siam. He was ordained priest, and received various ecclesiastical preferments. He was admitted to the Academy in 1687, and wrote a number of historical and religious works, of which the most notable are the following:—*Quatre dialogues sur l'immortalitè de l'âme* ... (1684), written with the Abbé Dangeau and explaining his conversion; *Traduction de l'Imitation de Jésus-Christ* (1692); *Histoire de France sous les règnes de Saint Louis ... de Charles V et Charles VI* (5 vols., 1688-1695); and *Histoire de l'Église* (11 vols., 1703-1723) He is remembered, however, by his gossiping *Mémoires* (1737), which contain striking and accurate pictures of his time and remarkably exact portraits of his contemporaries, although he has otherwise small pretensions to historical accuracy.

The *Mémoires* passed through many editions, and were edited in 1888 by M. de Lescure. Some admirable letters of Choisy are included in the correspondence of Bussy-Rabutin. Choisy is said to have burnt some of his indiscreet revelations, but left a considerable quantity of unpublished MS. Part of this material, giving an account of his adventures as a woman, was surreptitiously used in an anonymous *Histoire de madame la comtesse de Barres* (Antwerp, 1735), and again with much editing in the *Vie de M. l'abbé de Choisy* (Lausanne and Geneva, 1742), ascribed by Paul Lacroix to Lenglet Dufresnoy; the text was finally edited (1870) by Lacroix as *Aventures de l'abbé de Choisy*. See also Sainte-Beuve, *Causeries du lundi*, vol. iii.

CHOLERA (from the Gr. χολή, bile, and ῥέειν, to flow), the name given to two distinct forms of disease, simple cholera and malignant cholera. Although essentially different both as to their causation and their pathological relationships, these two diseases may in individual cases present many symptoms of mutual resemblance.

Simple Cholera (synonyms, *Cholera Europaea*, *British Cholera*, *Summer* or *Autumnal Cholera*) is the cholera of ancient medical writers, as is apparent from the accurate description of the disease given by Hippocrates, Celsus and Aretaeus. Its occurrence in an epidemic form was noticed by various physicians in the 16th century, and an admirable account of the disease was subsequently given by Thomas Sydenham in 1669-1672. This disease is sometimes called *Cholera Nostras*, the word *nostras*, which is good Latin and used by Cicero, meaning "belonging to our country." The relations between it and Asiatic cholera (see below) are obscure. Clinically they may exactly resemble each other, and bacteriology has not been able to draw an absolute line between them. The real difference is epidemiological, cholera nostras having no epidemic significance.

The chief symptoms in well-marked cases are vomiting and purging occurring either together or alternately. The seizure is usually sudden and violent. The contents of the stomach are first ejected, and this is followed by severe retching and vomiting of thin fluid of bilious appearance and bitter taste. The diarrhoea which accompanies or succeeds the vomiting, and is likewise of bilious character, is attended with severe griping abdominal pain, while cramps affecting the legs or arms greatly intensify the suffering. The effect upon the system is rapid and alarming, a few hours of such an attack sufficing to reduce the strongest person to a state of extreme prostration. The surface of the body becomes cold, the pulse weak, the voice husky, and the whole symptoms may resemble in a striking manner those of malignant cholera, to be subsequently described. In unfavourable cases, particularly where the disorder is epidemic, death may result within forty-eight hours.

Generally, however, the attack is arrested and recovery soon follows, although there may remain for a considerable time a degree of irritability of the alimentary canal, rendering necessary the utmost care in regard to diet.

Attacks of this kind are of frequent occurrence in summer and autumn in almost all countries. They appear specially liable to occur when cold and damp alternate with heat. Occasionally the disorder prevails so extensively as to constitute an epidemic. The exciting causes of an attack are in many cases errors in diet, particularly the use of unripe fruit and new vegetables, and the excessive drinking of cold liquids during perspiration. Outbreaks of this disorder in a household or community can sometimes be traced to the use of impure water, or to noxious emanations from the sewers.

In the treatment, vomiting should be encouraged so long as it shows the presence of undigested food, after which opiates ought to be administered. Small opium pills, or Dover's powder, or the aromatic powder of chalk with opium, are likely to be retained in the stomach, and will generally succeed in allaying the pain and diarrhoea, while ice and effervescing drinks serve to quench the thirst and subdue the sickness. In aggravated cases where medicines are rejected, enemata of starch and laudanum, or the hypodermic injection of morphia, ought to be resorted to. Counter-irritation by mustard or turpentine over the abdomen is always of use, as is also friction with the hands where cramps are present. When sinking threatens, brandy and ammonia will be called for. During convalescence the food should be in the form of milk and farinaceous diet, or light soups, and all indigestible articles must be carefully avoided.

In the treatment of this disease as it affects young children (*Cholera Infantum*), most reliance is to be placed on the administration of chalk and the use of starch enemata. In their case opium in any form cannot be safely employed.

Malignant Cholera (synonyms, *Asiatic Cholera, Indian Cholera, Epidemic Cholera, Algide Cholera*) is one of the most severe and fatal diseases. In describing the symptoms it is customary to divide them into three stages, but it must be noted that these do not always present themselves in so distinct a form as to be capable of separate recognition. The first or premonitory stage consists in the occurrence of diarrhoea. Frequently of mild and painless character, and coming on after some error in diet, this symptom is apt to be disregarded. The discharges from the bowels are similar to those of ordinary summer cholera, which the attack closely resembles. There is, however, at first the absence of vomiting. This diarrhoea generally lasts for two or three days, and then if it does not gradually subside either may pass into the more severe phenomena characteristic of the second stage of cholera, or on the other hand may itself prove fatal.

The second stage is termed the stage of collapse or the algide or asphyxial stage. As above mentioned, this is often preceded by the premonitory diarrhoea, but not infrequently the phenomena attendant upon this stage are the first to manifest themselves. They come on often suddenly in the night with diarrhoea of the most violent character, the matters discharged being of whey-like appearance, and commonly termed the "rice-water" evacuations. They contain large quantities of disintegrated epithelium from the mucous membrane of the intestines. The discharge, which is at first unattended with pain, is soon succeeded by copious vomiting of matters similar to those passed from the bowels, accompanied with severe pain at the pit of the stomach, and with intense thirst. The symptoms now advance with rapidity. Cramps of the legs, feet, and muscles of the abdomen come on and occasion great agony, while the signs of collapse make their appearance. The surface of the body becomes cold and assumes a blue or purple hue, the skin is dry, sodden and wrinkled, indicating the intense draining away of the fluids of the body, the features are pinched and the eyes deeply sunken, the pulse at the wrist is imperceptible, and the voice is reduced to a hoarse whisper (the *vox cholerica*). There is complete suppression of the urine.

In this condition death often takes place in less than one day, but in epidemics cases are frequently observed where the collapse is so sudden and complete as to prove fatal in one or two hours even without any great amount of previous purging or vomiting. In most instances the mental faculties are comparatively unaffected, although in the later stages there is in general more or less apathy.

Reaction, however, may take place, and this constitutes the third stage. It consists in the arrest of the alarming symptoms characterizing the second stage, and the gradual but evident improvement in the patient's condition. The pulse returns, the surface assumes a natural hue, and the bodily heat is restored. Before long the vomiting ceases, and although diarrhoea may continue for a time, it is not of a very severe character and soon subsides, as do also the cramps. The urine may remain suppressed for some time, and on returning is

often found to be albuminous. Even in this stage, however, the danger is not past, for relapses sometimes occur which speedily prove fatal, while again the reaction may be of imperfect character, and there may succeed an exhausting fever (the so-called typhoid stage of cholera) which may greatly retard recovery, and under which the patient may sink at a period even as late as two or three weeks from the commencement of the illness.

Many other complications are apt to arise during the progress of convalescence from cholera, such as diphtheritic and local inflammatory affections, all of which are attended with grave danger.

When the attack of cholera is of milder character in all its stages than that above described, it has been named *Cholerine*, but the term is an arbitrary one and the disease is essentially cholera.

The bodies of persons dying of cholera are found to remain long warm, and the temperature may even rise after death. Peculiar muscular contractions have been observed to take place after death, so that the position of the limbs may become altered. The soft textures of the body are found to be dry and hard, and the muscles of a dark brown appearance. The blood is of dark colour and tarry consistence. The upper portion of the small intestines is generally found distended with the rice-water discharges, the mucous membrane is swollen, and there is a remarkable loss of its natural epithelium. The kidneys are usually in a state of acute congestion. This form of cholera belongs originally to Asia, more particularly to India, where, as well as in the Indian archipelago, epidemics are known to have occurred at various times for several centuries.

Much light has been thrown upon Asiatic cholera by Western experience; and the study of the disease by modern methods has resulted in important additions to our previous knowledge of its nature, causation, mode of dissemination and prevention.

Causation.

The cause is a micro-organism identified by Koch in 1883 (see Parasitic Diseases). For some years it was called the “comma bacillus,” from its supposed resemblance in shape to a comma, but it was subsequently found to be a vibrio or spirillum, not a bacillus. The discovery was received with much scepticism in some quarters, and the claim of Koch’s vibrio to be the true cause of cholera was long disputed, but is now universally acknowledged. Few micro-organisms have been more elaborately investigated, but very little is known of its natural history, and its epidemiological behaviour is still surrounded by obscurity. At an important discussion on the subject, held at the International Hygienic Congress in 1894, Professor Gruber of Vienna declared that the deeper investigators went the more difficult the problem became, while M. Elie Metschnikoff of the Pasteur Institute made a similar admission. The difficulty lies chiefly in the variable characters assumed by the organism and the variable effects produced by it. The type reached by cultivation through a few generations may differ so widely from the original in appearance and behaviour as to be hardly recognizable, while, on the other hand, of two organisms apparently indistinguishable one may be innocuous and the other give rise to the most violent cholera. This variability offers a possible explanation of the frequent failure to trace the origin of epidemic outbreaks in isolated places. It is commonly assumed that the micro-organism is of a specific character, and always introduced from without, when cholera appears in countries or places where it is not endemic. In some cases such introduction can be proved, and in others it can be inferred with a high degree of probability, but sometimes it is impossible to trace the origin to any possible channel of communication. A remarkable case of this kind occurred at the Nietleben lunatic asylum near Halle, in 1893, in the shape of a sudden, explosive and isolated outbreak of true Asiatic cholera. It was entirely confined to the institution, and the peculiar circumstances enabled a very exact investigation to be made. The facts led Professor Arndt, of Greifswald, to propound a novel and interesting theory. No cholera existed in the surrounding district and no introduction could be traced, but for several months in the previous autumn diarrhoea had prevailed in the asylum. The sewage from the establishment was disposed of on a farm, and the effluent passed into the river Saale above the intake of the water-supply for the asylum. Thus a circulation of morbid material through the persons of the inmates was established. Dr Arndt’s theory was that by virtue of this circulation cholera was gradually developed from previously existing intestinal disease of an allied but milder type. The outbreak occurred in winter, and coincided with the freezing of the filter-beds at the waterworks. The theory is worth notice, because a similar relation between the drainage and the water-supply frequently exists in places severely attacked by cholera, and it has repeatedly been observed that the latter is preceded by the prevalence of a milder form of intestinal disease. The inference is not that cholera can be developed *de novo*, but that the type is unstable, and that a virulent form may be evolved under favourable conditions from

another so mild as to be unrecognized, and consequently undetected in its origin or introduction. This is quite in keeping with the observed variability of the micro-organism, and with the trend of modern research with regard to the relations between other pathogenic germs and the multifarious gradations of type assumed by other zymotic diseases. The same thing has been suggested of diphtheria.

Epidemicity.

Cholera is endemic in the East over a wide area, ranging from Bombay to southern China, but its chief home is British India. It principally affects the alluvial soil near the mouths of the great rivers, and more particularly the delta of the Ganges. Lower Bengal is pre-eminently the standing focus and centre of diffusion. In some years it is quiescent, though never absent; in others it becomes diffused, for reasons of which nothing is known, and its diffusive activity varies greatly from equally inscrutable causes. At irregular intervals this property becomes so heightened that the disease passes its natural boundaries and is carried east, north and west, it may be to Europe or beyond to the American continent. We must assume that the micro-organism, like those of other epidemic diseases, acquires greater vitality and toxic energy, or greater power of reproduction at some times than at others, but the conditions that govern this behaviour are quite unknown, though no problem has a more important bearing on public health. Bacteriology, as already intimated, has thrown no light upon it, nor has meteorology. Some results of modern research, indeed, tend to assign increasing importance to the relations between surface soil and certain micro-organisms, and suggest that changes in the level of the subsoil water, to which Professor Max von Pettenkoffer long ago drew attention, may be a dominant factor in determining the latency or activity of pathogenic germs. But this is largely a matter of conjecture, and, so far as cholera is concerned, the conditions which turn an endemic into an epidemic disease must be admitted to be still unknown.

On the other hand, the mode of dissemination is now well understood. Diffusion takes place along the lines of human intercourse. The poison is carried chiefly by infected persons moving from place to place; but soiled clothes, rags and other articles that have come into contact with persons suffering from the disease may be the means of conveyance to a distance. There is no reason to suppose that it is air-borne, or that atmospheric influences have anything to do with its spread, except in so far as meteorological conditions may be favourable to the growth and activity of the micro-organisms. Beyond all doubt, the great manufactory of the poison is the human body, and the discharges from it are the great source of contagion. They may infect the ground, the water, or the immediate surroundings of the patient, and so pass from hand to hand, the poison finding entrance into the bodies of the healthy by means of food and drink which have become contaminated in various ways. Flies which feed upon excreta and other foul matters may be carriers of contagion. Of all the means of local dissemination, contaminated water is by far the most important, because it affects the greatest number of people, and this is particularly the case in places which have a public water-supply. A single contaminated source may expose the entire population to danger. All severe outbreaks of an explosive character are due to this cause. It is also possible that the cholera poison multiplies rapidly in water under favourable conditions, and that a reservoir, for instance, may form a sort of forcing-bed. But it would be a mistake to regard cholera as purely a water-borne disease, even locally. It may infect the soil in localities which have a perfectly pure water-supply, but have defective drainage or no drainage at all, and then it will be found more difficult to get rid of, though less formidable in its effects, than when the water alone is the source of mischief. In all these respects it has a great affinity to enteric fever. With regard to locality, no situation can be said to be free from attack if the disease is introduced and the sanitary conditions are bad; but, speaking generally, low-lying places on alluvial soil near rivers are more liable than those standing high or on a rocky foundation. Of meteorological conditions it can only be said with certainty that a high temperature favours the development of cholera, though a low one does not prevent it. In temperate climates the summer months, and particularly August and September, are the season of its greatest activity.

Western diffusion.

Cholera spreads westwards from India by two routes—(1) by sea to the shores of the Red Sea, Egypt and the Mediterranean; and (2) by land to northern India and Afghanistan, thence to Persia and central Asia, and so to Russia. In the great invasions of Europe during the 19th century it sometimes followed one route and sometimes the other. It was not till 1817 that the attention of European physicians was specially directed to the disease by the outbreak of a violent epidemic of cholera at Jessore in Bengal. This was followed by its rapid spread over a large portion of British India, where it caused immense destruction of life both among natives and Europeans. During the next three years cholera continued to rage all over India, as well as in Ceylon and others of the Indian islands. The disease now began to spread over a wider

extent than hitherto, invading China on the east and Persia on the west. In 1823 it had extended into Asia Minor and Russia in Asia, and it continued to advance steadily though slowly westwards, while at the same time fresh epidemics were appearing at intervals in India. From this period up till 1830 no great extension of cholera took place, but in the latter year it reappeared in Persia and along the shores of the Caspian Sea, and thence entered Russia in Europe. Despite the strictest sanitary precautions, the disease spread rapidly through that whole empire, causing great mortality and exciting consternation everywhere. It ravaged the northern and central parts of Europe, and spread onwards to England, appearing in Sunderland in October 1831, and in London in January 1832, during which year it continued to prevail in most cf the cities and large towns of Great Britain and Ireland. The disease subsequently extended into France, Spain and Italy, and crossing the Atlantic spread through North and Central America. It had previously prevailed in Arabia, Turkey, Egypt and the Nile district, and in 1835 it was general throughout North Africa. Up till 1837 cholera continued to break out in various parts of the continent of Europe, after which this epidemic disappeared, having thus within twenty years visited a large portion of the world.

About the year 1841 another great epidemic of cholera appeared in India and China, and soon began to extend in the direction traversed by the former, but involving a still wider area. It entered Europe again in 1847, and spread through Russia and Germany on to England, and thence to France, whence it passed to America, and subsequently appeared in the West Indies. This epidemic appears to have been even more deadly than the former, especially as regards Great Britain and France. A third great outbreak of cholera took place in the East in 1850, entering Europe in 1853. During the two succeeding years it prevailed extensively throughout the continent, and fell with severity on the armies engaged in the Crimean War. Although widely prevalent in Great Britain and Ireland it was less destructive than former epidemics. It was specially severe throughout both North and South America. A fourth epidemic visited Europe again in 1865-1866, but was on the whole less extensive and destructive than its predecessors.

By some writers the epidemic of 1853 is regarded as a recrudescence of that of 1847. The earlier ones followed the land route by way of Afghanistan and Persia, and took several years to reach Europe. That of 1865 travelled more rapidly, being carried from Bombay by sea to Mecca, from there to Suez and Alexandria, and then on to various Mediterranean ports. Within the year it had not only spread extensively in Europe, but had reached the West Indies. In 1866 it invaded England and the United States, but during the following year it died down in the West. The subsequent history of cholera in Europe may be stated chronologically.

1860-1874.—This invasion was traced to the great gathering of pilgrims at Hardwar on the Upper Ganges in the month of April 1867. From there the returning pilgrims carried it to the Punjab, Kashmir and Afghanistan, whence it spread to Persia and the Caspian, but it did not reach Russia until 1869. During the next four years a number of outbreaks occurred in central Europe, and notably one at Munich in the winter of 1873. The irregular character of these epidemics suggests that they were rather survivals from the pandemic wave of 1867 than fresh importations, but there is no doubt that cholera was carried overland into Russia in the manner described.

1883-1887.—This visitation, again, came by the Mediterranean. In 1883 a severe outbreak occurred in Egypt, causing a mortality of above 25,000. Its origin remained unknown. During this epidemic Koch discovered the comma bacillus. The following year cholera appeared at Toulon. It was said to have been brought in a troopship from Saigon in Cochin-China, but it may have been connected with the Egyptian epidemic. A severe outbreak followed and reached Italy, nearly 8000 persons dying in Naples alone. In 1885 the south of France, Italy, Sicily and Spain all suffered, especially the last, where nearly 120,000 deaths occurred. Portugal escaped, and the authorities there attributed their good fortune to the institution of a military cordon, in which they have had implicit confidence ever since. In 1886 the same countries suffered again, and also Austria-Hungary. From Italy the disease was carried to South America, and even travelled as far as Chile, where it had previously been unknown. In 1887 it still lingered in the Mediterranean, causing great mortality in Messina especially. According to Dr A.J. Wall, this epidemic cost 250,000 lives in Europe and at least 50,000 in America. A particular interest attaches to it in the fact that a localized revival of the disease was caused in Spain in 1890 by the disturbance of the graves of some of the victims who had died of cholera four years previously.

1892-1895.—This great invasion reverted again to the old overland route, but the march of the disease was of unprecedented rapidity. Within less than five months it travelled from the North-West Provinces of India to St Petersburg, and probably to Hamburg, and thence in a

few days to England and the United States. This speed, in such striking contrast to the slow advance of former occasions, was attributed, and no doubt rightly, to improved steam transit, and particularly the Transcaspian railway. The progress of the disease was traced from place to place, and almost from day to day, with great precision, showing how it moves along the chief highways and is obviously carried by man. The main facts are as follows:—Cholera was extensively and severely prevalent in India in 1891, causing 601,603 deaths, the highest mortality since 1877. In March 1892 it broke out at the Hardwar fair, a day or two before the pilgrims dispersed; on the 19th of April it was at Kabul, on the 1st of May at Herat, and on the 26th of May at Meshed. From Meshed it moved in three directions—due west to Teheran in Persia, north-east by the Transcaspian railway to Samarkand in Central Asia, and north-west by the same line in the opposite direction to Uzun-ada on the Caspian Sea. It reached Uzun-ada on the 6th of June; crossed to Baku, June 18th; Astrakhan, June 24th; then up the Volga to Nizhniy-Novgorod, arriving at Moscow and St Petersburg early in August. The part played by steam transit is clear from the fact that the disease took no longer to travel all the way from Meshed to St Petersburg by rail and steamboat than to traverse the short distance from Meshed to Teheran by road. On the 16th of August cases began to occur in Hamburg; on the 19th of August a fireman was taken ill at Grangemouth in Scotland, where he had arrived the day before from Hamburg; and on the 31st of August a vessel reached New York from the same port with cholera on board. On the 8th of September the disease appeared in Galicia, having moved somewhat slowly westwards across Russia into Poland, and on the 26th of September it was in Budapest. Holland and Servia were also attacked, while isolated cases were carried to Norway, Denmark and Italy. Meanwhile two entirely separate epidemics were in progress elsewhere. The first was confined to Arabia and the Somali coast of Africa, and was connected with the remains of an outbreak in Syria and Arabia in 1890-1891. The second arose mysteriously in France about the time when the overland invasion started from India. The first known case occurred in the prison at Nanterre, near Paris, on the 31st of March. Paris was affected in April, and Havre in July. The origin of this outbreak, which was of a much less violent character than that which came simultaneously by way of Russia, was never ascertained. Its activity was confined to France, particularly in the neighbourhood of Paris, together with Belgium and Holland, which was placed between two fires, but escaped with but little mortality. The number of persons killed by cholera in 1892, outside of India, was reckoned at 378,449, and the vast majority of those died within six months. The countries which suffered most severely were as follows:—European Russia, 151,626; Caucasus, 69,423; Central Asian Russia, 31,804; Siberia, 15,037—total for Russian empire, 267,890; Persia, 63,982; Somaliland, 10,000; Afghanistan, 7,000; Germany, 9563; France, 4550; Hungary, 1255; Belgium, 961. Curiously enough, the south of Europe, which had been the scene of the previous epidemic visitation, escaped. The disease was of the most virulent character. In European Russia the mortality was 45.8% of the cases, the highest rate ever known in that country; in Germany it was 51.3%; and in Austria-Hungary, 57.5%. Of all the localities attacked, the case of Hamburg was the most remarkable. The presence of cholera was first suspected on the 16th of August, when two cases occurred, but it was not officially declared until the 23rd of August. By that time the daily number of victims had already risen to some hundreds, while the experts and authorities were making up their minds whether they had cholera to deal with or not. Their decision eventually came too late and was superfluous, for by the 27th of August the people were being stricken down at the rate of 1000 a day. This rate was maintained for four days, after which the vehemence of the pestilence began to abate. It gradually declined, and ceased on the 14th of November. During those three months 16,956 persons were attacked and 8605 died, the majority within the space of a few weeks. The town, ordinarily one of the gayest places of business and pleasure on the continent, became a city of the dead. Thousands of persons fled, carrying the disease into all parts of Germany; the rest shut themselves indoors; the shops were closed, the trams ceased to run, the hotels and restaurants were deserted, and few vehicles or pedestrians were seen in the streets. At the cemetery, which lies about 10 m. from the town, some hundreds of men were engaged day and night digging long trenches to hold double rows of coffins, while the funerals formed an almost continuous procession along the roads; even so the victims could not be buried fast enough, and their bodies lay for days in sheds hastily run up as mortuaries. Hamburg had been attacked by cholera on fourteen previous occasions, beginning with 1831, but the mortality had never approached that of 1892; in the worst year, which was 1832, there were only 3687 cases and 1765 deaths. The disease was believed to have been introduced by Jewish emigrants passing through on their way from Russia, but the importation could not be traced. The Jews were segregated and kept under careful supervision from the middle of July onwards, and no recognized case occurred among them. The total number of places in Germany in which cholera appeared in 1892 was

269, but it took no serious hold anywhere save in Hamburg. The distribution was chiefly by the waterways, which seem to affect a larger number of places than the railways as carriers of cholera. In Paris 907 persons died, and in Havre 498. Between the 18th of August and the 21st of October 38 cases were imported into England and Scotland through eleven different ports, but the disease nowhere obtained a footing. Seven vessels brought 72 cases to the United States, and 16 others occurred on shore, but there was no further dissemination.

During the winter of 1892-1893 cholera died down, but never wholly ceased in Russia, Germany, Austria-Hungary and France. With the return of warm weather it showed renewed activity, and prevailed extensively throughout Europe. The recorded mortality for the principal countries was as follows:—Russia (chiefly western provinces), 41,047; Austria-Hungary, 4669; France, 4000; Italy, 3036; Turkey, 1500; Germany, 298; Holland, 376; Belgium, 372; England, 139. Hardly any country escaped altogether; but Europe suffered less than Arabia, Mesopotamia and Persia. Cholera broke out at Mecca in June, and owing to the presence of an exceptionally large number of pilgrims caused an appalling mortality. The chief shereef estimated the mortality at 50,000. The pilgrims carried the disease to Asia Minor and Constantinople. In Persia also a recrudescence took place and proved enormously destructive. Dr. Barry estimated the mortality at 70,000. At Hamburg, where new waterworks had been installed with sand filtration, only a few sporadic cases occurred until the autumn, when a sudden but limited rush took place, which was traced to a defect in the masonry permitting unfiltered Elbe water to pass into the mains. In England cholera obtained a footing on the Humber at Grimsby, and to a lesser extent at Hull, and isolated attacks occurred in some 50 different localities. Excluding a few ship-borne cases the registered number of attacks was 287, with 135 deaths, of which 9 took place in London. It is interesting to compare the mortality from cholera in England and Wales, and in London, for each year in which it has prevailed since registration began:—

Year.	England and Wales.		London.	
	Deaths.	Deaths per 10,000 living.	Deaths.	Deaths per 10,000 living.
1848	1,908	1.1	652	2.9
1849	53,293	30.3	14,137	61.8
1853	4,419	2.4	883	3.5
1854	20,097	10.9	10,738	42.8
1865	1,297	0.6	196	0.6
1866	14,378	6.8	5,596	18.4
1893	135	0.05	9	0.002
1894	nil	nil	nil	nil

In 1894 no deaths from cholera were recorded in England, but on the continent it still prevailed over a wide area. In Russia over 30,000 persons died of it, in Germany about 500, but the most violent outbreak was in Galicia, where upwards of 8000 deaths were registered. In 1895 it still lingered, chiefly in Russia and Galicia, but with greatly diminished activity. In that year Egypt, Morocco and Japan were attacked, the last severely. The disease then remained in abeyance until the severe epidemic in India in 1900.

Prevention

The great invasion just described was fruitful in lessons for the prevention of cholera. It proved that the one real and sufficient protection lies in a standing condition of good sanitation backed by an efficient and vigilant sanitary administration. The experience of Great Britain was a remarkable piece of evidence, but that of Berlin was perhaps even more striking, for Berlin lay in the centre of four fires, in direct and frequent communication with Hamburg, Russia, France and Austria, and without the advantage of a sea frontier. Cholera was repeatedly brought into Berlin, but never obtained a footing, and its successful repression was accomplished without any irksome interference with traffic or the ordinary business of life. The general success of Great Britain and Germany in keeping cholera in check by ordinary sanitary means completed the conversion of all enlightened nations to the policy laid down so far back as 1865 by Sir John Simon, and advocated by Great Britain at a series of international congresses—the policy of abandoning quarantine, which Great Britain did in 1873, and trusting to sanitary measures with medical inspection of persons arriving from infected places. This principle was formally adopted at the international conference ference held at Dresden in 1893, at which a convention was signed by the delegates of Germany, Austria, Belgium, France, Great Britain, Italy, Russia, Switzerland, Luxemburg, Montenegro and the Netherlands. Under this instrument the practice is broadly as follows, though the procedure varies a good deal in different countries:—Ships arriving from infected ports are inspected, and if healthy are not detained, but bilge-water and drinking-water are evacuated, and

persons landing may be placed under medical supervision without detention; infected ships are detained only for purposes of disinfection; persons suffering from cholera are removed to hospital; other persons landing from an infected ship are placed under medical observation, which may mean detention for five days from the last case, or, as in Great Britain, supervision in their own homes, for which purpose they give their names and places of destination before landing. All goods are freed from restrictions, except rags and articles believed to be contaminated by cholera matters. By land, passengers from infected places are similarly inspected at the frontiers and their luggage “disinfected”—in all cases a pious ceremony of no practical value, involving a short but often a vexatious delay; only those found suffering from cholera can be detained. Each nation is pledged to notify the others of the existence within its own borders of a “foyer” of cholera, by which is meant a focus or centre of infection. The precise interpretation of the term is left to each government, and is treated in a rather elastic fashion by some, but it is generally understood to imply the occurrence of non-imported cases in such a manner as to point to the local presence of infection. The question of guarding Europe generally from the danger of diffusion by pilgrims through the Red Sea was settled at another conference held in Paris in 1894. The provisions agreed on included the inspection of pilgrims at ports of departure, detention of infected or suspected persons, and supervision of pilgrim ships and of pilgrims proceeding overland to Mecca.

The substitution of the procedure above described for the old measures of quarantine and other still more drastic interferences with traffic presupposes the existence of a sanitary service and fairly good sanitary conditions if cholera is to be effectually prevented. No doubt if sanitation were perfect in any place or country, cholera, along with many other diseases, might there be ignored, but sanitation is not perfect anywhere, and therefore it requires to be supplemented by a system of notification with prompt segregation of the sick and destruction of infective material. These things imply a regular organization, and it is to the public health service of Great Britain that the complete mastery of cholera has mainly been due in recent years, and particularly in 1893. Of sanitary conditions the most important is unquestionably the water-supply. So many irrefragable proofs of this fact were given during 1892-1893 that it is no longer necessary to refer to the time-honoured case of the Broad Street pump. At Samarkand three regiments were encamped side by side on a level plain close to a stream of water. The colonel of one regiment took extraordinary precautions, placing a guard over the river, and compelling his men to use boiled water even for washing. Not a single case of cholera occurred in that regiment, while the others, in which only ordinary precautions were taken, lost over 100 men. At Askabad the cholera had almost disappeared, when a banquet was given by the governor in honour of the tsar’s name-day. Of the guests one-half died within twenty-four hours; a military band, which was present, lost 40 men out of 50; and one regiment lost half its men and 9 officers. Within forty-eight hours 1300 persons died out of a total population of about 13,000. The water supply came from a small stream, and just before the banquet a heavy rain-storm had occurred, which swept into the stream all surface refuse from an infected village higher up and some distance from the banks. But the classical example was Hamburg. The water-supply is obtained from the Elbe, which became infected by some means not ascertained. The drainage from the town also runs into the river, and the movement of the tide was sufficient to carry the sewage matter up above the water-intake. The water itself, which is no cleaner than that of the Thames at London Bridge, underwent no purification whatever before distribution. It passed through a couple of ponds, supposed to act as settling tanks, but owing to the growth of the town and increased demand for water it was pumped through too rapidly to permit of any subsidence. Eels and other fish constantly found their way into the houses, while the mains were lined with vegetation and crustacea. The water-pipes of Hamburg had a peculiar and abundant fauna and flora of their own, and the water they delivered was commonly called *Fleischbrühe*, from its resemblance to thick soup. On the other hand, at Altona, which is continuous with Hamburg, the water was filtered through sand. In all other respects the conditions were identical, yet in Altona only 328 persons died, against 8605 in Hamburg. In some streets one side lies in Hamburg, the other in Altona, and cholera stopped at the dividing line, the Hamburg side being full of cases and the Altona side untouched. In the following year, when Hamburg had the new filtered supply, it enjoyed equal immunity, save for a short period when, as we have said, raw Elbe water accidentally entered the mains.

But water, though the most important condition, is not the only one affecting the incidence of cholera. The case of Grimsby furnished a striking lesson to the contrary. Here the disease obtained a decided hold, in spite of a pure water-supply, through the fouling of the soil by cesspits and defective drainage. At Havre also its prevalence was due to a similar cause.

Further, it was conclusively proved at Grimsby that cholera can be spread by sewage-fed shell-fish. Several of the local outbreaks in England were traced to the ingestion of oysters obtained from the Grimsby beds. In short, it may be said that all insanitary conditions favour the prevalence of cholera in some degree. Preventive inoculation with an attenuated virus was introduced by W.M.W. Haffkine, and has been extensively used in India, with considerable appearance of success so far as the statistical evidence goes.

Treatment.

As already remarked, the latest manifestations of cholera show that it has lost none of its former virulence and fatality. The symptoms are now regarded as the effects of the toxic action of the poison formed by the micro-organisms upon the tissues and especially upon the nervous system. But this theory has not led to any effective treatment. Drugs in great variety were tried in the continental hospitals in 1892, but without any distinct success. The old controversy between the aperient and the astringent treatment reappeared. In Russia the former, which aims at evacuating the poison, was more generally adopted; in Germany the latter, which tries to conserve strength by stopping the flux, found more favour. Two methods of treatment were invariably found to give great relief, if not to prolong life and promote recovery—the hot bath and the injection of normal saline solution into the veins or the subcutaneous tissue. These two should always be tried in the cold and collapsed stages of cholera.

See *Local Government Board Reports, 1892-93-94-95*; Clemow, *The Cholera Epidemic of 1892 in the Russian Empire*; Wall, *Asiatic Cholera*; Notter, *Epidemiological Society's Transactions*, vol. xvii.; Emmerich and Gemünd,*München. med. Wochenschr*. (1904), pp. 1086-1157; Wherry, *Department of the Interior Bureau of Government Laboratories*, No. 19 (October 1904, Manila); Wherry and M'Dill, *Ibid.* No. 31 (May 1905, Manila).

CHOLET, a town of western France, capital of an arrondissement in the department of Maine-et-Loire, 41 m. S.E. of Nantes on the Ouest-État railway between that town and Poitiers. Pop. (1906) 16,554. Cholet stands on an eminence on the right bank of the Moine, which is crossed by a bridge of the 15th century. A public garden occupies the site of the old castle; the public buildings and churches, the finest of which is Notre-Dame, are modern. The public institutions include the sub-prefecture, a tribunal of first instance, a chamber of commerce, a board of trade-arbitrators, and a communal college. There are granite quarries in the vicinity of the town. The chief industry is the manufacture of linen and linen handkerchiefs, which is also carried on in the neighbouring communes on a large scale. Woollen and cotton fabrics are also produced, and bleaching and the manufacture of preserved foods are carried on. Cholet is the most important centre in France for the sale of fat cattle, sheep and pigs, for which Paris is the chief market. Megalithic monuments are numerous in the neighbourhood. The town owes the rise of its prosperity to the settlement of weavers there by Edouard Colbert, count of Maulévrier, a brother of the great Colbert. It suffered severely in the War of La Vendée of 1793, insomuch that for years afterwards it was almost without inhabitants.

CHOLON ("great market"), a town of French Indo-China, the largest commercial centre of Cochin China, 3½ m. S.W. of Saigon, with which it is united by railway, steam-tramway and canal. Cholon was founded by Chinese immigrants about 1780, and is situated on the Chinese arroyo at the junction of the Lo-Gom and a canal. Its waterways are frequented by innumerable boats and lined in some places with native dwellings built on piles, in others by quays and houses of French construction. Its population is almost entirely Asiatic, and has more than trebled since 1880. In that year it had only 45,000 inhabitants; in 1907 it numbered about 138,000. Of these, 42,000 were Chinese, 73,000 Annamese, and 155 French (exclusive of a garrison of 92); the remainder consisted of Cambodians and Asiatic foreigners. During the rice season the town is visited by a floating population of 21,000 persons. The Chinese are divided into congregations according to their place of origin. Cholon is administered by a municipal council, composed of French, Annamese and Chinese

traders. An administrator of native affairs, nominated by the governor, fills the office of mayor. There are a fine municipal hospital and municipal schools for boys and girls. The principal thoroughfares are lighted by electric light. The rice trade, almost monopolized by the Chinese, is the leading industry, the rice being treated in large steam mills. Tanning, dyeing, copper-founding, glass, brick and pottery manufacture, stone working, timber-sawing and junk building are also included among the industries.

CHOLONES, a tribe of South American Indians living on the left bank of the Huallaga river in the Amazon valley. The name is that given them by the Spanish. They were first met by the Franciscans, who established mission villages among them in 1676. They are a wild race but mild-mannered, very superstitious, and pride themselves on their skill as doctors. Their chief weapon is the blow-pipe, in the use of which they are adepts.

CHOLULA, an ancient town of Mexico, in the state and on the plateau of Puebla, 8 m. by rail W. by N. of the city of that name, and 6912 ft. above sea-level. Pop. (1900, estimate) 9000. The Interoceanic railway passes through Cholula, but the city’s commercial and industrial standing is overshadowed by that of its larger and more modern neighbour. At the time of the Spanish Conquest, Cholula—then known as Chololan—was a large and important town, consecrated to the worship of the god Quetzalcoatl, who had here one of the most imposing temples in Anahuac, built on the summit of a truncated pyramid, the largest of its kind in the world. This pyramid, constructed of sun-dried bricks and earth, 177 ft. high, and covering an area of nearly 45 acres, is the most conspicuous object in the town and is surmounted by a chapel dedicated to *Nuestra Señora de los Remedios*. A corner of the lower terrace of this great pyramid was cut through in the construction of the Puebla road, but nothing was discovered to explain its purpose, which was probably that of furnishing an imposing site for a temple. Nothing definite is known of its age and history, as the fanatical zeal of Cortez and his companions destroyed whatever historical data the temple may have contained. Cholula was visited by Cortez in 1519 during his eventful march inland to Montezuma’s capital, Tenochtitlan, when he treacherously massacred its inhabitants and pillaged the city, pretending to distrust the hospitable inhabitants. Cortez estimated that the town then had 20,000 habitations, and its suburbs as many more, but this was undoubtedly a deliberate exaggeration. The Cholulans were of Nahuatl origin and were semi-independent, yielding only a nominal allegiance to Montezuma. They were a trading people, holding fairs, and exchanging their manufactures of textiles and pottery for other produce. The pyramid is believed to have been built by a people occupying this region before the Cholulans.

CHOPIN, FREDERIC FRANÇOIS (1810-1849), Polish musical composer and pianist, was born at Zelazowa-Wola, near Warsaw, on the 22nd of February 1810 (*not* the 1st of March 1809). His father, of French origin, born at Nancy in 1770, had married a Polish lady, Justine Krzyzanowska. Frederic was their third child. His first musical education he received from Adalbert Ziwny, a Czech musician, who is said to have been a passionate admirer of J.S. Bach. He also received a good general education at one of the first colleges of Warsaw, where he was supported by Prince Antoine Radziwill, a generous protector of artistic talent and himself well known as the composer of music to Goethe’s *Faust* and other works. His musical genius opened to Chopin the best circles of Polish society, at that time unrivalled in Europe for its ease of intercourse, the beauty and grace of its women, and its liberal appreciation of artistic gifts. These early impressions were of lasting influence on Chopin’s development. While at college he received thorough instruction in the theory of his art from Joseph Elsner, a learned musician and director of the conservatoire at Warsaw. When in

1829 he left his native town for Vienna, where his *début* as a pianist took place, he was in all respects a perfectly formed and developed artist. There is in his compositions little of that gradual progress which, for instance, in Beethoven necessitates a classification of his works according to different periods. Chopin's individuality and his style were distinctly pronounced in that set of variations on "La ci darem" which excited the wondering enthusiasm of Robert Schumann. In 1831 he left Vienna with the intention of visiting London; but on his way to England he reached Paris and settled there for the rest of his life. Here again he soon became the favourite and musical hero of society. His connexion with Madame Dudevant, better known by her literary pseudonym of George Sand (*q.v.*), is an important feature of Chopin's life. When in 1839 his health began to fail, George Sand went with him to Majorca, and it was mainly owing to her tender care that the composer recovered his health for a time. Chopin declared that the destruction of his relations with Madame Dudevant in 1847 broke up his life. The association of these two artists has provoked a whole literature on the nature of their relations, of which the novelist's *Un Hiver à Majorque* was the beginning. The last ten years of Chopin's life were a continual struggle with the pulmonary disease to which he succumbed in Paris on the 17th of October 1849. The year before his death he visited England, where he was received with enthusiasm by his numerous admirers. Chopin died in the arms of his sister, who hastened from Poland to his death-bed. He was buried in the cemetery of Père Lachaise. A small monument was erected to the memory of the composer at Wasswan in 1880. Portraits and medallions of Chopin were executed by Ary Scheffer and Eugène Delacroix, and by the sculptors Bary and Clésinger.

A distinguished English amateur thus records his impressions of Chopin's style of pianoforte-playing compared with those of other masters. "His technical characteristics may be broadly indicated as negation of *bravura*, absolute perfection of finger-play, and of the *legatissimo* touch, on which no other pianist has ever so entirely leant, to the exclusion of that high relief and point which the modern German school, after the examples of Liszt and Thalberg, has so effectively developed. It is in these feature that we must recognize that *Grundverschiedenheit* (fundamental difference) which according to Mendelssohn distinguished Chopin's playing from that of these masters, and in no less degree from the example and teaching of Moscheles.... Imagine a delicate man of extreme refinement of mien and manner, sitting at the piano and playing with no sway of the body and scarcely any movement of the arms, depending entirely upon his narrow feminine hands and slender fingers. The wide arpeggios in the left hand, maintained in a continuous stream of tone by the strict legato and fine and constant use of the damper-pedal, formed an harmonious substructure for a wonderfully poetic cantabile. His delicate pianissimo, the ever-changing modifications of tone and time (tempo rubato) were of indescribable effect. Even in energetic passages he scarcely ever exceeded an ordinary mezzoforte. His playing as a whole was unique in its kind, and no traditions of it can remain, for there is no school of Chopin the pianist, for the obvious reason that he could never be regarded as a public player, and his best pupils were nearly all amateurs."

In looking through the list of his compositions, teeming with mazurkas, valses, polonaises, and other forms of national dance music, one could hardly suppose that here one of the most melancholy natures has revealed itself. This seeming paradox is solved by the type of Chopin's nationality, of which it has justly been said that its very dances are sadness intensified. But notwithstanding this strongly pronounced national type of his compositions, his music is always expressive of his individual feelings and sufferings to a degree rarely met with in the annals of the art. He is indeed the lyrical composer *par excellence* of the modern school, and the intensity of his expression finds its equal in literature only in the songs of Heinrich Heine, to whom Chopin has been justly compared. A sensation of such high-strung passion cannot be prolonged. Hence we see that the shorter forms of music, the étude, the nocturne, besides the national dances already alluded to, are chosen by Chopin in preference. Even when he treats the larger forms of the concerto or the sonata this concentrated, not to say pointed, character of Chopin's style becomes obvious. The more extended dimensions seem to encumber the freedom of his movements. The concerto for pianoforte with accompaniment of the orchestra in E may be instanced. Here the adagio takes the form of a romance, and in the final rondo the rhythm of a Polish dance becomes recognizable while the instrumentation throughout is meagre and wanting in colour. Chopin is out of his element, and even the beauty of his melodies and harmonies cannot wholly banish the impression of incongruity. Fortunately he himself knew the limits of his power, and with very few exceptions his works belong to that class of minor compositions of which he was an unrivalled master. Barring a collection of Polish songs, two concertos, and a very small number of concerted pieces of chamber music, almost all his works are written for the

pianoforte solo; the symphony, the oratorio, the opera, he never attempted.

Chopin's works group themselves firstly into the period from Op. 1 to 22, which includes nearly all his attempts at large or classical forms, *e.g.* the works with orchestra, Op. 2 (variations on *La ci darem*), Opp. 11 and 14 (concertos), Op. 13 (Polish fantasia), Op. 14 (*Krakowiak*, a concerto-rondo in mazurka-rhythm), and Op. 22 (Andante spianato and Polonaise), besides the solo rondos Opp. 1, 5, 16, and the variations Op. 12 and the essays in chamber music Opp. 3, 8, 65. Meanwhile, however, the mature lyric style of his second period already began with Op. 6 (4 mazurkas), and though it is not confined to small forms, the larger mature works (beginning with the ballade Op. 23 and excepting only the sonata Op. 58 and the Allegro de Concert Op. 46) are as independent of tradition as the smallest. It is well to sift the posthumous works from those published under Chopin's direction, for the last three mazurkas are the only things he did not keep back as misrepresenting him. On these principles his mature works are summed up in the 42 mazurkas (Opp. 6, 7, 17, 24, 30, 33, 41, 50, 56, 59, 63, and the beautiful contribution to the collection *Notre temps*); 7 polonaises (Opp. 26, 40, 53, 61); 24 preludes (in all the major and minor keys) Op. 28, and the single larger prelude Op. 45; 27 études (12 in Op. 10, 12 in Op. 25, and 3 written for the *Méthode des méthodes*); 18 nocturnes (Opp. 9, 15, 27, 32, 37, 48, 55, 62); 4 ballades, in forms of Chopin's own invention (Opp. 23, 38, 47, 52); 4 scherzos (Opp. 20, 31, 39, 54); 8 waltzes (Opp. 18, 34, 42, 64); and several pieces of various description, notably the great fantasia Op. 49 and the impromptus Opp. 29, 36, 51.

The posthumous works number 35 pieces, besides a small volume of songs a few of which are of great interest.

Franz Liszt wrote a charming sketch of Chopin's life and art (*F. Chopin*, par F. Liszt, Paris, 1851), and a very appreciative though somewhat eccentric analysis of his work appeared anonymously in 1842 (*An Essay on the Works of Frédéric Chopin*, London). The standard biography is the English work of Professor F. Niecks (Novello, 1888). See also W.H. Hadow, *Studies in Modern Music*, second series (1908). The editions of Chopin's works by his pupil Mikuli and by Klindworth are full of valuable elucidation as to methods of performance, but unfortunately they do not distinguish the commentary from the text. The critical edition published by Breitkopf and Härtel, with all its mistakes, is absolutely necessary for students who wish to know what Chopin wished to put into the hands of players of independent judgment.

CHOPSTICKS, the "pidgin-English" name for the pair of small tapering sticks used by the Chinese and Japanese in eating. "Chop" is pidgin-English for "quick," the Chinese word for the articles being *kwai-tsze*, meaning "the quick ones." "Chopsticks" are commonly made of wood, bone or ivory, somewhat longer and slightly thinner than a lead-pencil. Held between the thumb and fingers of the right hand, they are used as tongs to take up portions of the food, which is brought to table cut up into small and convenient pieces, or as means for sweeping the rice and small particles of food into the mouth from the bowl. Many rules of etiquette govern the proper conduct of the chopsticks; laying them across the bowl is a sign that the guest wishes to leave the table; they are not used during a time of mourning, when food is eaten with the fingers; and various methods of handling them form a secret code of signalling.

CHORAGUS (the Lat. form of Gr. χοραγός or χορηγός, leader of the chorus), the citizen chosen to undertake the expense of furnishing and instructing the chorus at the Dionysiac festivals at Athens (see Liturgy and Finance). The name is given to an assistant to the professor of music at the university of Oxford, whose office was founded, with that of the professor, in 1626 by Dr William Heather.

CHORALE (from the Lat. *choralis*, sc. *cantus*; the final *e* is added to show the Ger. pronunciation *chorāl*), a term in music used by English writers to indicate the hymn-tunes composed or adopted for use in church by the German reformers. German writers, however, apply the terms "*Choral*" and "*Chorale-gesang*," as Luther himself would apply them, to any solemn melody used in the church. It is thus the equivalent of *canto fermo*; and the German rhymed versions of the biblical and other ancient canticles, such as the Magnificat and the Te Deum, are set to curious corruptions of the corresponding Gregorian tunes, which adaptations the composers of classical German music called chorales with no more scruple than they applied the name to tunes of secular origin, German or foreign. The peculiarity of German chorale-music, however, is that its use, and consequently much of its invention, not only arose in connexion with the Reformation, by which the liturgy of the church became "understanded of the people," but also that it belongs to a musical epoch in which symmetry of melody and rhythm was beginning to assume artistic importance. The growing sense of form shown by some of Luther's own tunes (*e.g. Vom Himmel hoch, da komm' ich her*) soon advanced, especially in the tunes of Crüger, beyond any that was shown by folk-music; and it provided an invaluable bulwark against the chaos that was threatening to swamp music on all sides at the beginning of the 17th century. By Bach's time all the polyphonic instrumental and vocal art-forms of the 18th century were mature; and though he loved to derive the design as well as the details of a large movement from the shape of the chorale tune on which it was based, he became quite independent of any aid from symmetry in the tune as raw material. The chorus of his cantata *Jesus nun sei gepreiset* is one of the most perfectly designed and quite the longest of movements ever based upon a chorale-tune treated phrase by phrase. Yet the tune is one of the most intractable in the world, though its most unpromising portion is the basis of the most impressive feature in Bach's design (the slow middle section in triple time).

The national character of the German chorale, and the recent great development of interest in folk-music, together with the unique importance of Bach's work, have combined to tempt writers on music to over-estimate the distinctness of the art-forms based upon the German chorale. There is really nothing in these art-forms which is not continuous with the universal practice of writing counterpoint on a *canto fermo*. And it should never be forgotten that, however fascinating may be the study of the relation between artistic forms and the spirit of the age, no art can successfully express more of the spirit of the age than its own technical resources will admit. Choral music in all ages has tended to consist largely of counterpoint on a *canto fermo* (see Contrapuntal Forms). Where there are not many canto fermos in constant use in the church, composers will be driven to use them rather unsystematically as special effects, and to rely for the most part on other artistic devices, though any use of melodies in long notes against quicker counterpoint will be aesthetically indistinguishable from counterpoint on a *canto fermo*. Thus Handel in his Italian and English works wrote no entire chorale movements, yet what is the passage in the "Hallelujah" chorus from "the kingdom of this world" to the end but a treatment of the second part of the chorale *Wachet auf*? How shall we describe the treatment of the words "And their cry came up unto the Lord" in the first chorus of *Israel in Egypt*, except as the treatment of a phrase of chorale or *canto fermo*? Again, to return to the 16th century, what are the hymns of Palestrina but figured chorales? In what way, except in the lack of symmetry in the Gregorian phrasing, do they differ from the contemporary setting by Orlando di Lasso, also a Roman Catholic, of the German chorale *Vater unser im Himmelreich*? In modern times the use of German chorales, as in Mendelssohn's oratorios and organ-sonatas, has had rather the aspect of a revival than of a development; though the technique and spirit of Brahms's posthumous organ chorale-preludes is thoroughly modern and vital.

One of the most important, and practically the earliest collection of "Chorales" is that made by Luther and Johann Walther (1496-1570), the *Enchiridion*, published in 1524. Next in importance we may place the Genevan Psalter (1st ed., Strassburg, 1542, final edition 1562), which is now conclusively proved to be the work of Bourgeois. From this Sternhold and Hopkins borrowed extensively (1562). The psalter of C. Goudimel (Paris, 1565) is another among many prominent collections showing the steps towards congregational singing, *i.e.* the restriction to "note-against-note" counterpoint (sc. plain harmony), and, in twelve cases, the assigning of the melody to the treble instead of to the tenor. The first hymn-book in which this latter step was acted on throughout is Osiander's *Geistliche Lieder ... also gesetzt, dass ein christliche Gemein durchaus mitsingen kann* (1586). But many of the finest and most famous tunes are of much later origin than any such collections. Several (*e.g. Ich freue mich in dir*) cannot be traced before Bach, and were very probably composed by him.

(D. F. T.)

CHORIAMBIC VERSE, or CHORIAMBICS, the name given to Greek or Latin lyrical poetry in which the sound of the choriambus predominates. The choriambus is a verse-foot consisting of a trochee united with and preceding an iambus, -∪∪-. The choriambi are never used alone, but are usually preceded by a spondee and followed by an iambus. The line so formed is called an asclepiad, traditionally because it was invented by the Aeolian poet Asclepiades of Samos. Choriambic verse was first used by the poets of the Greek islands, and Sappho, in particular, produced magnificent effects with it. The measure, as used by the early Greeks, is essentially lyrical and impassioned. Mingled with other metres, it was constantly serviceable in choral writing, to which it was believed to give a stormy and mysterious character. The Greater Asclepiad was a term used for a line in which the wild music was prolonged by the introduction of a supplementary choriambus. This was much employed by Sappho and by Alcaeus, as well as in Alexandrian times by Callimachus and Theocritus. Among the Latins, Horace, in imitation of Alcaeus, made constant use of choriambic verse. Metrical experts distinguish six varieties of it in his Odes. This is an example of his greater asclepiad (*Od.* i. 11):—

- ∪∪- -∪ ∪- - ∪∪ -
Tu ne | quaesieris | scire nefas | quem mihi, quem | tibi
Finem | Di dederint | Leuconoë; | nee Babylon|ïos
Tentar|is numeros. | Ut melius | quicquid erit, | pati!
Seu plu|res hiemes, | seu tribuit | Jupiter ul|timam,
Quae nunc | oppositis | debilitat | pumicibus | mare
Tyrrhe|num.

In later times of Rome, both Seneca and Prudentius wrote choriambic verse with a fair amount of success. Swinburne even introduced it into English poetry:—

Love, what | ailed them to leave | life that was made | lovely, we thought | with love?
What sweet | vision of sleep | lured thee away | down from the light | above?

Such lines as these make a brave attempt to resuscitate the measured sound of the greater asclepiad.

(E. G.)

CHORICIUS, of Gaza, Greek sophist and rhetorician, flourished in the time of Anastasius I. (A.D. 491-518). He was the pupil of Procopius of Gaza, who must be distinguished from Procopius of Caesarea, the historian. A number of his declamations and descriptive treatises have been preserved. The declamations, which are in many cases accompanied by explanatory commentaries, chiefly consist of panegyrics, funeral orations and the stock themes of the rhetorical schools. The ΄Επιθαλάμιοι or wedding speeches, wishing prosperity to the bride and bridegroom, strike out a new line. Choricius was also the author of so-called ΄Εκφράσεις, descriptions of works of art after the manner of Philostratus. The moral maxims, which were a constant feature of his writings, were largely drawn upon by Macarius Chrysocephalas, metropolitan of Philadelphia (middle of the 14th century), in his *Rodonia* (rose-garden), a voluminous collection of ethical sayings. The style of Choricius is praised by Photius as pure and elegant, but he is censured for lack of naturalness. A special feature of his style is the persistent avoidance of hiatus, peculiar to what is called the school of Gaza.

Editions by J.F. Boissonade (1846, supplemented by C. Graux in *Revue de philologie*, 1877) and R. Förster (1882-1894); see also C. Kirsten, “Quaestiones Choricianae” in *Breslauer philologische Abhandlungen*, vii. (1894), and article by W. Schmid in Pauly-Wissowa’s *Realencyclopädie*, iii. 2 (1899). On the Gaza school see K. Seitz, *Die Schule von Gaza* (Heidelberg, 1892).

CHORIN, AARON (1766-1844), Hungarian rabbi and pioneer of religious reform. He favoured the use of the organ and of prayers in the vernacular, and was instrumental in founding schools on modern lines. Chorin was thus regarded as a leader of the newer Judaism. He also interested himself in public affairs; and his son Francis was a Hungarian deputy.

See L. Löw, *Gesammelte Schriften*, ii. 251.

CHORIZONTES ("separators"), the name given to the Alexandrian critics who denied the single authorship of the *Iliad* and *Odyssey*, and held that the latter poem was the work of a later poet. The most important of them were the grammarians Xeno and Hellanicus; Aristarchus was their chief opponent (see HOMER).

CHORLEY, HENRY FOTHERGILL (1808-1872), English musical critic, one of an old Lancashire family, began in a merchant's office, but soon took to musical journalism. He began to write for the *Athenaeum* in 1830, and remained its musical critic for more than a generation; and he also became musical critic for *The Times*. In these positions he had much influence; he had strong views, and was a persistent opponent of innovation. In addition to musical criticism, he wrote voluminously on literature and art, besides novels, dramas and verse, and various librettos; and he published several books, including *Modern German Music* (1854), *Handel Studies* (1859), and *Thirty Years' Musical Recollections* (1862). He died in London on the 16th of February 1872.

See his *Autobiography, Memoir and Letters*, edited by H.G. Hewlett (1873).

CHORLEY, a market town and municipal borough in the Chorley parliamentary division of Lancashire, England, on the river Yarrow, 202 m. N.W. by W. from London and 22 m. N.W. from Manchester, on the Lancashire & Yorkshire and London & North-Western railways and the Leeds & Liverpool Canal. Pop. (1891) 23,087; (1901) 26,852. The church of St Lawrence is of Perpendicular and earlier date, largely restored; it contains fine woodwork and some interesting monuments. Cotton spinning and the manufacture of cotton and muslin are extensively carried on, and there are also iron and brass foundries and boiler factories. Railway-wagon building is an important industry. The district contains a number of coal-mines and stone-quarries. Close to the town is the beautiful Elizabethan mansion of Astley Hall, which is said to have sheltered Oliver Cromwell after the battle of Preston (1648). The corporation consists of a mayor, 6 aldermen and 24 councillors. Area, 3614 acres.

CHORLU, TCHORLAU or SCHORLAU, a town of European Turkey, in the vilayet of Adrianople; on the left bank of the Chorlu, a small left-hand tributary of the Ergene, 20 m. N.E. of Rodosto. Pop. (1905) about 12,000, of whom one-half are Greeks, one-third Turks, and the remainder Armenians and Jews. Chorlu has a station on the Constantinople-Adrianople branch of the Oriental railways. It manufactures woollen cloth (*shayak*) and native carpets, and exports cereals, oil-cloth, carpets, cattle, poultry, fresh meat, game, fruits, wine, alcohol, hides and bones.

CHOROGRAPHY. (1) (From the Gr. χώρα, a tract of country, and γράφειν, to write), a description or delineation on a map of a district or tract of country; it is to be distinguished from “geography” and “topography,” which treat of the earth as a whole and of particular places respectively. The word is common in old geographical treatises, but is now superseded by the wider use of “topography.” (2) (From the Gr. χορος, dance), the art of dancing, or a system of notation to indicate the steps and movements in dancing.

CHÓRUM, the chief town of a sanjak of the Angora vilayet in Asia Minor, altitude 2300 ft., situated on the edge of a wide plain, almost equidistant from Amasia and Yuzgat. Pop. about 12,500, including a few Christians. Its importance is largely due to its situation on the great trade-route from Kaisaríeh (Caesarea) by Yuzgat and Marzivan to Samsun on the Black Sea. It corresponds to the ancient *Euchaïta*, which lay 15 m. E. Euchaïti was attacked by the Huns A.D. 508, and became a bishopric at an early period and a centre of religious enthusiasm, as containing the tomb of the revered St Theodore, who slew a dragon in the vicinity and became one of the great warrior saints of the Greek Church. Something of the old enthusiasm seems to have passed to the inhabitants of Chórum, whom most travellers have found bigoted and fanatical Mahommedans (see J.G.C. Anderson, *Studia Pontica*, pp. 6 ff.).

CHORUS (Gr. χορός) properly a dance, and especially the sacred dance, accompanied by song, of ancient Greece at the festivals of the gods. The word χορός seems originally to have referred to a dance in an enclosure, and is therefore usually connected with the root appearing in Gr. χόρτος, hedge, enclosure, Lat. *hortus*, garden, and in the Eng. “yard,” “garden” and “garth.” Of choral dances in ancient Greece other than those in honour of Dionysus we know of the Dance of the Crane at Delos, celebrating the escape of Theseus from the labyrinth, one telling of the struggle of Apollo and the Python at Delphi, and one in Crete recounting the saving of the new-born Zeus by the Curetes. In the chorus sung in honour of Dionysus the ancient Greek drama had its birth. From that of the winter festival, consisting of the κῶμος or band of revellers, chanting the “phallic songs,” with ribald dialogue between the leader and his band, sprang “comedy,” while from the dithyrambic chorus of the spring festival came “tragedy.” For the history of the chorus in Greek drama, with the gradual subordination of the lyrical to the dramatic side in tragedy and its total disappearance in the middle and new comedy, see DRAMA: *Greek Drama*.

The chorus as a factor in drama survived only in the various imitations or revivals of the ancient Greek theatre in other languages. A chorus is found in Milton’s *Samson Agonistes*. The Elizabethan dramatists applied the name to a single character employed for the recitation of prologues or epilogues. Apart from the uses of the term in drama, the word “chorus” has been employed chiefly in music. It is used of any organized body of singers, in opera, oratorio, cantata, &c., and, in the form “choir,” of the trained body of singers of the musical portions of a religious service in a cathedral or church. As applied to musical compositions, a “chorus” is a composition written in parts, each to be sung by groups of voices in a large body of singers, and differs from “glee” (*q.v.*), where each part is for a single voice. The word is also used of that part of a song repeated at the close of each verse, in which the audience or a body of singers may join with the soloist.

In the early middle ages the name *chorus* was given to a primitive bagpipe without a drone. The instrument is best known by the Latin description contained in the apocryphal letter of St Jerome, *ad Dardanum*: “Chorus quoque simplex, pellis cum duabus cicutis aereis, et per primam inspiratur per secundam vocem emittit.” Several illuminated MSS.[1] from the

9th to the 11th century give fanciful drawings, accompanied by descriptions in barbarous Latin, evidently meant to illustrate those described in the letter to Dardanus. The original MS., probably an illustrated transcript of this letter, which served as a copy for the others, was apparently produced at a time when the Roman bagpipe (*tibia utricularia*) had fallen into disuse in common with other musical instruments, and was unknown except to the few. The Latin description given above is correct and quite unmistakable to any one who knows the primitive form of bagpipe; the illustrations must therefore represent the effort of an artist to depict an unknown instrument from a description. Virdung, Luscinius and Praetorius seem to have had access to a MS. of the Dardanus letter now lost, and to have reproduced the drawings without understanding them. In a MS. of the 14th century at the British Museum,[2] containing a chronicle of the world's history to the death of King Edward I., the chorus is mentioned and described in similar words to those quoted above; in the margin is an elementary sketch of a primitive bagpipe with blowpipe and chaunter with three holes, but no drone. Bagpipes with drones abound on sculptured monuments and in miniatures of that century. Gerbert gives illustrations of the fanciful chorus from the Dardanus letter and of two other instruments of later date; one of these represents a musician playing the *Platerspiel*, the other the bagpipe known as *chevrette*, in which the whole skin of the animal (a kid or pig), with head and feet, has been used for the bag. Edward Buhle,[3] in his admirable work on the musical instruments in the illuminated MSS. of the middle ages, points out that Gerbert,[4] who gives the dates of his two MSS. as "6th and 9th centuries," has a singular method of reckoning the date of a MS.; he refers to the age of a MS. at the time of writing (18th century), not to the date at which it was produced. The MS. containing the two figures of musicians mentioned above, instead of being ascribed to the 6th century, was six centuries old when Gerbert wrote in 1774, and dates therefore from the 12th century. It is interesting to note that Giraldus Cambrensis[5] mentions the chorus as one of the three instruments of Wales and Scotland, ascribing superior musical skill to the latter. Historians record that King James I. of Scotland was renowned for his skill as a performer on various musical instruments, one of which was the chorus.[6] This bears out the traditional belief that the bagpipe had been a Scottish attribute from the earliest times. The word "chorus" occurs once or twice in French medieval poems with other instruments, but without indication as to the kind of instrument thus designated. The word was probably the French equivalent for the *Platerspiel*.

See also G. Kastner, *Danses des morts* (pp. 200 to 202, pl. xv., No. 103); and Dom Pedro Cerone, *El Melopeo y maestro* (Naples, 1613), p. 248.

(K. S.)

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1 The MSS. are a psalterium, 9th century, Bibl. publique, Angers, fol. 13a; Boulogne *Psalterium glossatum* c. A.D. 1000, MS. No. 20, Bibl. publique. For reproduction of musical instruments see *Annales archéologiques*, tome iv. (1846), p. 38; Cotton MS., Tiberius C. vi., 10th to 11th century, fol. 16b, British Museum, illustrated in Strutt's *Horda Angel-cynnan*, vol. ii. pls. xx. and xxi.; MS. psalter of St Emmeran, now in Munich Staatsbibliothek, clm. 14523, fol. 51b, 10th century, illustrated by Gerbert, *De Cantu et Mus. Sacra*, tome ii. pi. xxiii.; Paris, Bibl. Nat. Fonds Latin, 7211, 1Oth century, fol. 150 and 151a.

2 Cotton MS., Nero D. ii. f. 15a, *Chronicon ab orbe condito ad obitum Regis Edwardi I., 1307*.

3 *Die musikalischen Instrumente in den Miniaturen des frühen Mittelalters*, part i. "Die Blasinstrumente" (Leipzig, 1903), p. 7, note 1.

4 Op. cit. (1774), tome ii. pl. xxv. No. 13, pp. 130, 151, 152, and pl. xxxi. No. 12.

5 *Topographia Hiberniae*, cap. xi.

6 *Scotichronicon* (Fordun and Bower), xvi. 28; and Dalyell, *Musical Memoirs of Scotland*, p. 47, pls. x. and xi.

CHOSE (Fr. for "thing"), a term used in English law in different senses. *Chose local* is a thing annexed to a place, as a mill. A *chose transitory* is that which is movable, and can be carried from place to place. But the use of the word "chose" in these senses is practically obsolete, and it is now used only in the phrases *chose in action* and *chose in possession*. A "chose in action," sometimes called a chose in suspense, in its more limited meaning, denotes the right of enforcing by legal proceedings the payment of a debt, or the obtaining

money by way of damages for breach of contract, or as a recompense for a wrong. Less accurately, the money itself which could be recovered is frequently termed a chose in action, as is also sometimes the document evidencing a title to a chose in action, such as a bond or a policy of insurance, though strictly it is only the right to recover the money which can be so termed. Choses in action were, before the Judicature Acts, either *legal* or *equitable*. Where the chose could be recovered only by an action at law, as a debt (whether arising from contract or tort), it was termed a legal chose in action; where the chose was recoverable only by a suit in equity, as a legacy or money held upon a trust, it was termed an equitable chose in action. Before the Judicature Act, a legal chose in action was not assignable, *i.e.* the assignee could not sue at law in his own name. To this rule there were two exceptions:—(1) the crown has always been able to assign choses in action that are certain, such as an ascertained debt, but not those that are uncertain; (2) assignments valid by operation of law, *e.g.* on marriage, death or bankruptcy. On the other hand, however, by the law merchant, which is part of the law of England, and which disregards the rules of common law, bills of exchange were freely assignable. The consequence was that, with these and certain statutory exceptions (*e.g.* actions on policies of insurance), an action on an assigned chose in action must have been brought at law in the name of the assignor, though the sum recovered belonged in equity to the assignee. All choses in action being in equity assignable, except those which are altogether incapable of being assigned, in equity the assignee might have sued in his own name, making the assignor a party as co-plaintiff or as defendant. The Judicature Acts made the distinction between legal and equitable choses in action of no importance. The Judicature Act of 1873, s. 25 (6), enacted that the legal right to a debt or other legal chose in action could be passed by absolute assignment in writing under the hand of the assignor.

"Chose in possession" is opposed to chose in action, and denotes not only the right to enjoy or possess a thing, but also the actual or constructive enjoyment of it. The possession may be absolute or qualified. It is absolute when the person is fully and completely the proprietor or owner of the thing; it is qualified when he "has not an exclusive right, or not a permanent right, but a right which may sometimes subsist and at other times not subsist," as in the case of animals *ferae naturae*. A chose in possession is freely transferable by delivery. Previously to the Married Women's Property Act 1882, a wife's choses in possession vested in her husband immediately on her marriage, while her choses in action did not belong to the husband until he had reduced them into possession, but this difference is now practically obsolete.

CHOSROES, in Middle and Modern Persian *Khosrau* ("with a good name"), a very common Persian name, borne by a famous king of the Iranian legend (Kai Khosrau); by a Parthian king, commonly called by the Greeks Osroes (*q.v.*); and by the following two Sassanid kings.

1. Chosroes I., "the Blessed" (*Anushirvan*), 531-579, the favourite son and successor of Kavadh I., and the most famous of the Sassanid kings. At the beginning of his reign he concluded an "eternal" peace with the emperor Justinian, who wanted to have his hands free for the conquest of Africa and Sicily. But his successes against the Vandals and Goths caused Chosroes to begin the war again in 540. He invaded Syria and carried the inhabitants of Antioch to his residence, where he built for them a new city near Ctesiphon under the name of Khosrau-Antioch or Chosro-Antioch. During the next years he fought successfully in Lazica or Lazistan (the ancient Colchis, *q.v.*), on the Black Sea, and in Mesopotamia. The Romans, though led by Belisarius, could do little against him. In 545 an armistice was concluded, but in Lazica the war went on till 556. At last, in 562, a peace was concluded for 50 years, in which the Persians left Lazistan to the Romans, and promised not to persecute the Christians, if they did not attempt to make proselytes among the Zarathustrians; on the other hand, the Romans had again to pay subsidies to Persia. Meanwhile in the east the Hephthalites had been attacked by the Turks, who now appear for the first time in history. Chosroes united with them and conquered Bactria, while he left the country north of the Oxus to the Turks. Many other rebellious tribes were subjected. About 570 the dynasts of Yemen, who had been subdued by the Ethiopians of Axum, applied to Chosroes for help. He sent a fleet with a small army under Vahriz, who expelled the Ethiopians. From that time till the conquests of Mahomet, Yemen was dependent on Persia,

and a Persian governor resided here. In 571 a new war with Rome broke out about Armenia, in which Chosroes conquered the fortress Dara on the Euphrates, invaded Syria and Cappadocia, and returned with large booty. During the negotiations with the emperor Tiberius Chosroes died in 579, and was succeeded by his son Hormizd IV.

Although Chosroes had in the last years of his father extirpated the heretical and communistic Persian sect of the Mazdakites (see KAVADH) and was a sincere adherent of Zoroastrian orthodoxy, he was not fanatical or prone to persecution. He tolerated every Christian confession. When one of his sons had rebelled about 550 and was taken prisoner, he did not execute him; nor did he punish the Christians who had supported him. He introduced a rational system of taxation, based upon a survey of landed possessions, which his father had begun, and tried in every way to increase the welfare and the revenues of his empire. In Babylonia he built or restored the canals. His army was in discipline decidedly superior to the Romans, and apparently was well paid. He was also interested in literature and philosophical discussions. Under his reign chess was introduced from India, and the famous book of Kalilah and Dimnah was translated. He thus became renowned as a wise prince. When Justinian in 529 closed the university of Athens, the last seat of paganism in the Roman empire, the last seven teachers of Neoplatonism emigrated to Persia. But they soon found out that neither Chosroes nor his state corresponded to the Platonic ideal, and Chosroes, in his treaty with Justinian, stipulated that they should return unmolested.

2. CHOSROES II., "the Victorious" (*Parvez*), son of Hormizd IV., grandson of Chosroes I., 590-628. He was raised to the throne by the magnates who had rebelled against Hormizd IV. in 590, and soon after his father was blinded and killed. But at the same time the general Bahram Chobin had proclaimed himself king, and Chosroes II. was not able to maintain himself. The war with the Romans, which had begun in 571, had not yet come to an end. Chosroes fled to Syria, and persuaded the emperor Maurice (*q.v.*) to send help. Many leading men and part of the troops acknowledged Chosroes, and in 591 he was brought back to Ctesiphon. Bahram Chobin was beaten and fled to the Turks, among whom he was murdered. Peace with Rome was then concluded. Maurice made no use of his advantage; he merely restored the former frontier and abolished the subsidies which had formerly been paid to the Persians. Chosroes II. was much inferior to his grandfather. He was haughty and cruel, rapacious and given to luxury; he was neither a general nor an administrator. At the beginning of his reign he favoured the Christians; but when in 602 Maurice had been murdered by Phocas, he began war with Rome to avenge his death. His armies plundered Syria and Asia Minor, and in 608 advanced to Chalcedon. In 613 and 614 Damascus and Jerusalem were taken by the general Shahrbaraz, and the Holy Cross was carried away in triumph. Soon after, even Egypt was conquered. The Romans could offer but little resistance, as they were torn by internal dissensions, and pressed by the Avars and Slavs. At last, in 622, the emperor Heraclius (who had succeeded Phocas in 610) was able to take the field. In 624 he advanced into northern Media, where he destroyed the great fire-temple of Gandzak (Gazaca); in 626 he fought in Lazistan (Colchis), while Shahrbaraz advanced to Chalcedon, and tried in vain, united with the Avars, to conquer Constantinople. In 627 Heraclius defeated the Persian army at Nineveh and advanced towards Ctesiphon. Chosroes fled from his favourite residence, Dastagerd (near Bagdad), without offering resistance, and as his despotism and indolence had roused opposition everywhere, his eldest son, Kavadh II., whom he had imprisoned, was set free by some of the leading men and proclaimed king. Four days afterwards, Chosroes was murdered in his palace (February 628). Meanwhile, Heraclius returned in triumph to Constantinople, in 629 the Cross was given back to him and Egypt evacuated, while the Persian empire, from the apparent greatness which it had reached ten years ago, sank into hopeless anarchy.

See PERSIA: *Ancient History*. For the Roman wars see authorities quoted under MAURICE and HERACLIUS. (ED.M.)

CHOTA (or CHUTIA) **NAGPUR**, a division of British India in Bengal, consisting of five British districts and two feudatory states. It is a hilly, forest-clad plateau, inhabited mostly by aboriginal races, between the basins of the Sone, the Ganges and the Mahanadi. The five British districts are Hazaribagh, Ranchi, Palamau, Manbhum and Singhbhum. The total area of the British districts is 27,101 sq. m. The population in 1901 was 4,900,429. The tributary states are noticed separately below. The Chota Nagpur plateau is an offshoot of the great

Vindhyan range, and its mean elevation is upwards of 2000 ft. above the sea-level. In the W. it rises to 3600 ft., and to the E. and S. its lower steppe, from 800 to 1000 ft. in elevation, comprises a great portion of the Manbhum and Singhbhum districts. The whole is about 14,000 sq. m. in extent, and forms the source of the Barakhar, Damodar, Kasai, Subanrekha, Baitarani, Brahmani, Ib and other rivers. *Sal* forests abound. The principal jungle products are timber, various kinds of medicinal fruits and herbs, lac, tussur silk and *mahuá* flowers, which are used as food by the wild tribes and also distilled into a strong country liquor. Coal exists in large quantities, and is worked in the Jherria, Hazaribagh, Giridih and Gobindpur districts. The chief workings are at Jherria, which were started in 1893, and have developed into one of the largest coal-fields in India. Formerly gold was washed from the sands in the bed of the Subanrekha river, but the operations are now almost wholly abandoned. Iron-ores abound, together with good building stone. The indigenous inhabitants consist of non-Aryan tribes who were driven from the plains by the Hindus and took refuge in the mountain fastnesses of the Chota Nagpur plateau. The principal of them are Kols, Santals, Oraons, Dhangars, Mundas and Bhumij. These tribes were formerly turbulent, and a source of trouble to the Mahommedan governors of Bengal and Behar; but the introduction of British rule has secured peace and security, and the aboriginal races of Chota Nagpur are now peaceful and orderly subjects. The principal agricultural products are rice, Indian corn, pulses, oil-seeds and potatoes. A small quantity of tea is grown in Hazaribagh and Ranchi districts. Lac and tussur silk-cloth are largely manufactured. The climate of Chota Nagpur is dry and healthy. The Jherria extension branch of the East India railway runs to Katrasgarh, while the Bengal-Nagpur railway also serves the division.

The Chota Nagpur States were formerly nine in number. But the five states of Chang Bhakar, Korca, Sirguja, Udaipur and Jashpur were transferred from Bengal to the Central Provinces in October 1905, and the two Uriya-speaking states of Gangpur and Bonai were attached to the Orissa Tributary States. There now remain, therefore, only the two states of Kharsawan and Saraikela. At the decline of the Mahratta power in the early part of the 19th century, the Chota Nagpur states came under British protection. Before the rise of the British power in India their chiefs exercised almost absolute sovereignty in their respective territories.

See F.B. Bradley-Birt, *Chota Nagpore* (1903).

CHOUANS (a Bas-Breton word signifying screech-owls), the name applied to smugglers and dealers in contraband salt, who rose in insurrection in the west of France at the time of the Revolution and joined the royalists of La Vendée. It has been suggested that the name arose from the cry they used when approaching their nocturnal rendezvous; but it is more probable that it was derived from a nickname applied to their leader Jean Cottereau (1767-1794). Originally a contraband manufacturer of salt, Cottereau along with his brothers had several times been condemned and served sentence; but the Revolution, by destroying the inland customs, ruined his trade. On the 15th of August 1792, he led a band of peasants to prevent the departure of the volunteers of St Ouen, near Laval, and retired to the wood of Misdon, where they lived in huts and subterranean chambers. The Chouans then waged a guerrilla warfare against the republicans and, sustained by the royalists and from abroad, carried on their assassinations and brigandage with success. From Lower Maine the insurrection soon spread to Brittany, and throughout the west of France. In 1793 Cottereau came to Laval with some 500 men; the band grew rapidly and swelled into a considerable army, which assumed the name of La Petite Vendee. But after the decisive defeats at Le Mans and Savenay, Cottereau retired again to his old haunts in the wood of Misdon, and resumed his old course of guerrilla warfare. Misfortunes here increased upon him, until he fell into an ambuscade and was mortally wounded. He died among his followers in February 1794. Cottereau's brothers also perished in the war, with the exception of Rene, who lived until 1846. Royalist authors have made of Cottereau a hero and martyr, titles to which his claim is not established. After the death of Cottereau, the chief leaders of the Chouans were Georges Cadoudal (*q.v.*) and a man who went by the name of Jambe d'Argent. For several months the Chouans continued their petty warfare, which was disgraced by many acts of ferocity and rapine; in August 1795 they dispersed; but they were guilty of several conspiracies up to 1815. (See also Vendée.)

See the articles in *La Révolution française*, vol. 29, *La Chouannerie dans la Manche*; vol.

32, *La Chouannerie dans l'Eure*; vol. 40, *La Chouannerie dans le Morbihan (1793-1794)*; Sarot, *Les Tribunaux répressifs ordinaires de la Manche en matière politique pendant la première Révolution* (Paris, 1881), 4 vols.; Th. de Closmadeux, *Quiberon (1795), Émigrés et Chouans, commissions militaires, interrogations et jugements* (Paris, 1898), the only authority on the celebrated affair of Quiberon; E. Daudet, *La Police et les Chouans dans le Consulat et I'Empire, 1800-1815* (Paris, 1895). Also the works of Ch. L. Chessin mentioned under VENDÉE.

CHRESMOGRAPHION (from Gr. χρησμός, oracle, and γράφειν, to write), an architectural term sometimes given to the chamber between the pronaes and the cella in Greek temples where oracles were delivered.

CHRESTIEN, FLORENT (1541-1596), French satirist and Latin poet, the son of Guillaume Chrestien, an eminent French physician and writer on physiology, was born at Orleans on the 26th of January 1541. A pupil of Henri Estienne, the Hellenist, at an early age he was appointed tutor to Henry of Navarre, afterwards Henry IV., who made him his librarian. Brought up as a Calvinist, he became a convert to Catholicism. He was the author of many good translations from the Greek into Latin verse,—amongst others, of versions of the *Hero and Leander* attributed to Musaeus, and of many epigrams from the Anthology. In his translations into French, among which are remarked those of Buchanan's *Jephthé* (1567), and of Oppian *De Venatione* (1575)> he is not so happy, being rather to be praised for fidelity to his original than for excellence of style. His principal claim to a place among memorable satirists is as one of the authors of the *Satyre Ménippée*, the famous pasquinade in the interest of his old pupil, Henry IV., in which the harangue put into the mouth of cardinal de Pelvé is usually attributed to him. He died on the 3rd of October 1596 at Vendôme.

CHRÉTIEN, or CRESTIEN, **DE TROYES,** a native of Champagne, and the most famous of French medieval poets. Unfortunately we have few exact details as to his life, and opinion differs as to the precise dates to be assigned to his poems. We know that he wrote the *Chevalier de la Charrette* at the command of Marie, countess of Champagne (the daughter of Louis VII. and Eleanor, who married the count of Champagne in 1164), and *Le Conte del Graal* or *Perceval* for Philip, count of Flanders, who died of the plague before Acre in 1191. This prince was guardian to the young king, Philip Augustus, and held the regency from 1180 to 1182. As Chrétien refers to the story of the Grail as the best tale told *au cort roial*, it seems very probable that it was composed during the period of the count's regency. It was left unfinished, and added to at divers times by at least three writers, Wauchier de Denain, Gerbert de Montreuil and Manessier. The second of these states definitely that Chrétien died before he could finish his poem. Probably the period of his literary activity lies between the dates 1150 and 1182, when his patron, Count Philip, fell into disgrace at court. The extant poems of Chrtien de Troyes, in their chronological order are, *Érec et Énide, Cligés, Le Chevalier de la Charrette* (or *Lancelot*), *Le Chevalier au Lion* (or *Yvain*), and *Le Conte del Graal* (*Perceval*), all dealing with Arthurian legend. Besides these he states in the opening lines of *Cligés* that he had composed a *Tristan* (of which so far no trace has been found), and had made certain translations from Ovid's *Ars Amatoria* and *Metamorphoses*. A portion of the last has been found by Gaston Paris included in the translation of Ovid made by Chrétien Legouais. There exists also a poem, *Guillaume d' Angleterre*, purporting to be by Chrétien, but the authorship is a matter of debate. Professor Foerster claims it as genuine, and includes it in his edition of the poems, but Gaston Paris never accepted it.

Chrétien's poems enjoyed widespread favour, and of the three most popular (*Érec*, *Yvain* and *Perceval*) there exist old Norse translations, while the two first were admirably rendered into German by Hartmann von Aue. There is an English translation of the Yvain, *Ywain and Gawain*, and there are Welsh versions of all three stories, though their exact relation to the French has not been determined. Chrétien's style is easy and graceful, such as might be expected from a court poet; he is analytical, but not dramatic; in depth of thought and power of characterization he is decidedly inferior to Wolfram von Eschenbach, and as a poet he is probably to be ranked below Thomas, the author of the *Tristan*, and the translator of Thomas, Gottfried von Strassburg. Much that has been claimed as characteristic of his work has been shown by M. Willmotte to be merely reproductions of literary conceits employed by his predecessors; in the words of a recent writer, M. Bédier, "Chrétien semble moins avoir été un créateur épique qu'un habile arrangeur." The special interest of his pcems lies in the problems surrounding their origin. So far as the MSS. are concerned they are the earliest Arthurian romances we possess. Did Chrétien invent the *genre*, or did he simply turn to account the work of earlier, and less favoured, poets? Round this point the battle still rages hotly, and though the extensive claims made by the enthusiastic editor of his works are gradually yielding to the force of critical investigation, it cannot be said that the question is in any way settled (see ARTHURIAN LEGEND).

Chrétien's poems, except the *Perceval*, have been critically edited by Professor Foerster (4 vols.). There is no easily available edition of the *Perceval*, which was printed from the Mons MS. by M. Potvin (6 vols., 1866-1871), but is difficult to procure. For *Ywain and Gawain* see the edition by Schleich (1887). The German versions are in *Deutsche Classiker des Mittelalters*, 1888 (*Iwein*), 1893 (*Erec*); the Welsh, in Lady Charlotte Guest's translation of the *Mabinogion* (Nutt, 1902); Scandinavian translations, ed. E. Kölbing (1872). For general criticism see Willmotte, *L'Évolution du roman français aux environs de 1150* (1903); also *Legend of Sir Lancelot* and *Legend of Sir Percival* (Grimm Library); and M. Borodine, *La Femme et l'amour au XIIe siècle, d'après les poèmes de Chrétien de Troyes* (1909).

CHRISM (through Lat. *chrisma*, from Gr. χρῖσμα, an anointing substance, χρίειν, to anoint; through a Romanic form *cresma* comes the Fr. *crême*, and Eng. "cream"), a mixture of olive oil and balm, used for anointing in the Roman Catholic church in baptism, confirmation and ordination, and in the consecrating and blessing of altars, chalices, baptismal water, &c. The consecration of the "chrism" is performed by a bishop, and since the 5th century has taken place on Maundy Thursday. In the Orthodox Church the chrism contains, besides olive oil, many precious spices and perfumes, and is known as "muron" or "myron." The word is sometimes used loosely for the unmixed olive oil used in the sacrament of extreme unction. The "Chrisom" or "chrysom," a variant of "chrism," lengthened through pronunciation, is a white cloth with which the head of a newly baptized child was covered to prevent the holy oil from being rubbed off. If the baby died within a month of its baptism, it was shrouded in its chrisom; otherwise the cloth or its value was given to the church as an offering by the mother at her churching. Children dying within the month were called "chrisom-children" or "chrisoms," and up to 1726 such entries occur in bills of mortality. The word was also used generally for a very young and innocent child, thus Shakespeare, *Henry V.*, ii. 3, says of Falstaff: "A' made a finer end and went away an it had been any Chrisom Child."

CHRIST (Gr. Χριστός, Anointed), the official title given in the New Testament to Jesus of Nazareth, equivalent to the Hebrew *Messiah*. See JESUS CHRIST; MESSIAH; CHRISTIANITY.

CHRIST, WILHELM VON (1831-1906), German classical scholar, was born in Geisenheim in Hesse-Nassau on the 2nd of August 1831. From 1854 till 1860 he taught in the Maximiliansgymnasium at Munich, and in 1861 was appointed professor of classical philology in the university. His most important works are his *Geschichte der griechischen Literatur* (5th ed., 1908 f.), a history of Greek literature down to the time of Justinian, one of the best works on the subject; *Metrik der Griechen und Römer* (1879); editions of Pindar (1887); of the *Poëtica* (1878) and *Metaphysica* (1895) of Aristotle; *Iliad* (1884). His contributions to the *Sitzungsberichte* and *Abhandlungen* of the Bavarian Academy of Sciences are particularly valuable.

See O. Crusius, *Gedächtnisrede* (Munich, 1907).

CHRISTADELPHIANS (Χριστοῦ ἀδελφοι, "brothers of Christ"), sometimes also called Thomasites, a community founded in 1848 by John Thomas (1805-1871), who, after studying medicine in London, migrated to Brooklyn, N.Y., U.S.A. There he at first joined the "Campbellites," but afterwards struck out independently, preaching largely upon the application of Hebrew prophecy and of the Book of Revelation to current and future events. Both in America and in Great Britain he gathered a number of adherents, and formed a community which has extended to several English-speaking countries. It consists of exclusive "ecclesias," with neither ministry nor organization. The members meet on Sundays to "break bread" and discuss the Bible. Their theology is strongly millenarian, centering in the hope of a world-wide theocracy with its seat at Jerusalem. Holding a doctrine of "conditional immortality," they believe that they alone have the true exegesis of Scripture, and that the "faith of Christendom" is "compounded of the fables predicted by Paul." No statistics of the community are published. It probably numbers from two to three thousand members. A monthly magazine, *The Christadelphian*, is published in Birmingham.

See R. Roberts, *Dr Thomas, his Life and Work* (1884).

CHRISTCHURCH, a municipal and parliamentary borough of Hampshire, England, at the confluence of the rivers Avon and Stour, 1½ m. from the sea, and 104 m. S.W. by W. from London by the London & South Western railway. Pop. (1901) 4204. It is famous for its magnificent priory church of the Holy Trinity. The church is cruciform, lacking a central tower, but having a Perpendicular tower at the west end. The nave and transepts are principally Norman, and very fine; the choir is Perpendicular. Early English additions appear in the nave, clerestory and elsewhere, and the rood-screen is of ornate Decorated workmanship. Other noteworthy features are the Norman turret at the north-east angle of the north transept, covered with arcading and other ornament, the beautiful reredos, similar to that in Winchester cathedral, and several interesting monuments, among which is one to the poet Shelley. Only fragments remain of the old castle, but an interesting ruin adjoins it known as the Norman House, apparently dating from the later part of the 12th century. Hosiery, and chains for clocks and watches are manufactured, and the salmon fishery is valuable. There is a small harbour, but it is dry at low water. The parliamentary borough, returning one member, includes the town of Bournemouth. The municipal borough is under a mayor, 4 aldermen and 12 councillors. Area, 832 acres.

Christchurch is mentioned in Saxon documents under the name of Tweotneam or Tweonaeteam, which long survived in the form Christchurch Twineham. In 901 it was seized by Aethelwald, but was recaptured by Edward the Elder. In the Domesday Survey, under the name of Thuinam, it appears as a royal manor, comprising a mill and part of the king's forest; its value since the time of Edward the Confessor had decreased by almost one-half. Henry I. granted Christchurch to Richard de Redvers, who erected the castle. The first charter was granted by Baldwin earl of Exeter in the 12th century; it exempted the burgesses from certain tolls and customs, including the tolls on salt within the borough, and the custody of thieves. The 2nd Earl Baldwin granted to the burgesses the tolls of the fair at St Faith and common of pasture in certain meads. The above charters were confirmed by

Edward II., Henry VII. and Elizabeth. The Holy Trinity fair is mentioned in 1226. Christchurch was governed by a bailiff in the 13th century, and was not incorporated till 1670, when the government was vested in a mayor and 24 capital burgesses, but this charter was shortly abandoned. The borough was summoned to send representatives to parliament in 1307 and 1308, but no returns are registered until 1572, from which date it was represented by two members until the Reform Act of 1832 reduced the number to one. The secular canons of the church of Holy Trinity held valuable possessions in Hampshire at the time of Edward the Confessor, including a portion of Christchurch, and in 1150 the establishment was constituted a priory of regular canons of St Augustine. Baldwin de Redvers confirmed the canons in their right to the first salmon caught every year and the tolls of Trinity fair. The priory, which attained to such fame that its name of Christchurch finally replaced the older name of Twineham, was dissolved in 1539.

See *Victoria County History—Hampshire*; Benjamin Ferrey, *Antiquities of the Priory of Christchurch*, 2nd edition, revised by J. Britton (London, 1841).

CHRISTCHURCH, a city near the east coast of South Island, New Zealand, to the north of Banks Peninsula, in Selwyn county, the capital of the provincial district of Canterbury and the seat of a bishop. Pop. (1906) 49,928; including suburbs, 67,878. It stands upon the great Canterbury plain, which here is a dead level, though the monotony of the site has been much relieved by extensive plantations of English and Australian trees. A background is supplied by the distant mountains to the west, and by the nearer hills to the south. The small river Avon winds through the city, pleasantly bordered by terraces and gardens. The wide streets cross one another for the most part at right angles. The predominance of stone and brick as building materials, the dominating cathedral spire, and the well-planted parks, avenues and private gardens, recall the aspect of an English residential town. Christchurch is mainly dependent on the rich agricultural district which surrounds it, the plain being mainly devoted to cereals and grazing. Wool is extensively worked, and meat is frozen for export. Railways connect with Culverden to the north and with Dunedin and the south coast, with many branches through the agricultural districts; also with Lyttelton, the port of Christchurch, 8 m. S.E. There are tramways in the city, and to New Brighton, a seaside suburb, and other residential quarters. The principal public buildings are the government buildings and the museum, with its fine collection of remains of the extinct bird, moa. The cathedral is the best in New Zealand, built from designs of Sir G. Gilbert Scott in Early English style, with a tower and spire 240 ft. high. Among educational foundations are Canterbury College (for classics, science, engineering, &c), Christ’s College (mainly theological) and grammar school, and a school of art. There is a Roman Catholic pro-cathedral attached to a convent of the Sacred Heart. A large extent of open ground, to the west of the town, finely planted, and traversed by the river, comprises Hagley Park, recreation grounds, the Government Domain and the grounds of the Acclimatization Society, with fish-ponds and a small zoological garden. The foundation of Christchurch is connected with the so-called “Canterbury Pilgrims,” who settled in this district in 1850. Lyttelton was the original settlement, but Christchurch came into existence in 1851, and is thus the latest of the settlements of the colony. It became a municipality in 1862. In 1903 several populous suburban boroughs were amalgamated with the city.

CHRISTIAN II. (1481-1559), king of Denmark, Norway and Sweden, son of John (Hans) and Christina of Saxony, was born at Nyborg castle in 1481, and succeeded his father as king of Denmark and Norway in 1513. As viceroy of Norway (1506-1512) he had already displayed a singular capacity for ruling under exceptionally difficult circumstances. Patriotism, insight, courage, statesmanship, energy,—these great qualities were indisputably his; but unfortunately they were vitiated by obstinacy, suspicion and a sulky craftiness, beneath which simmered a very volcano of revengeful cruelty. Another peculiarity, more fatal to him in that aristocratic age than any other, was his fondness for the common people, which was increased by his passion for a pretty Dutch girl, named Dyveke, who became his

mistress in 1507 or 1509.

Christian's succession to the throne was confirmed at the *Herredag*, or assembly of notables from the three northern kingdoms, which met at Copenhagen in 1513. The nobles and clergy of all three kingdoms regarded with grave misgivings a ruler who had already shown in Norway that he was not afraid of enforcing his authority to the uttermost. The *Rigsraads* of Denmark and Norway insisted, in the *haandfaestning* or charter extorted from the king, that the crowns of both kingdoms were elective and not hereditary, providing explicitly against any transgression of the charter by the king, and expressly reserving to themselves a free choice of Christian's successor after his death. But the Swedish delegates could not be prevailed upon to accept Christian as king at all. "We have," they said, "the choice between peace at home and strife here, or peace here and civil war at home, and we prefer the former." A decision as to the Swedish succession was therefore postponed. On the 12th of August 1515 Christian married Isabella of Burgundy, the grand-daughter of the emperor Maximilian. But he would not give up his liaison with Dyveke, and it was only the death of the unfortunate girl in 1517, under suspicious circumstances, that prevented serious complications with the emperor Charles V. Christian revenged himself by executing the magnate Torben Oxe, who, on very creditable evidence, was supposed to have been Dyveke's murderer, despite the strenuous opposition of Oxe's fellow-peers; and henceforth the king lost no opportunity of depressing the nobility and raising plebeians to power. His chief counsellor was Dyveke's mother Sigbrit, a born administrator and a commercial genius of the first order. Christian first appointed her controller of the Sound tolls, and ultimately committed to her the whole charge of the finances. A *bourgeoise* herself, it was Sigbrit's constant policy to elevate and extend the influence of the middle classes. She soon became the soul of a middle-class inner council, which competed with *Rigsraad* itself. The patricians naturally resented their supersession and nearly every unpopular measure was attributed to the influence of "the foul-mouthed Dutch sorceress who hath bewitched the king."

Meanwhile Christian was preparing for the inevitable war with Sweden, where the patriotic party, headed by the freely elected governor Sten Sture the younger, stood face to face with the philo-Danish party under Archbishop Gustavus Trolle. Christian, who had already taken measures to isolate Sweden politically, hastened to the relief of the archbishop, who was beleagured in his fortress of Stäke, but was defeated by Sture and his peasant levies at Vedla and forced to return to Denmark. A second attempt to subdue Sweden in 1518 was also frustrated by Sture's victory at Bränkyrka. A third attempt made in 1520 with a large army of French, German and Scottish mercenaries proved successful. Sture was mortally wounded at the battle of Börgerund, on the 19th of January, and the Danish army, unopposed, was approaching Upsala, where the members of the Swedish *Riksråd* had already assembled. The senators consented to render homage to Christian on condition that he gave a full indemnity for the past and a guarantee that Sweden should be ruled according to Swedish laws and custom; and a convention to this effect was confirmed by the king and the Danish *Rigsraad* on the 31st of March. But Sture's widow, Dame Christina Gyllenstjerna, still held out stoutly at Stockholm, and the peasantry of central Sweden, stimulated by her patriotism, flew to arms, defeated the Danish invaders at Balundsäs (March 19th), and were only with the utmost difficulty finally defeated at the bloody battle of Upsala (Good Friday, April 6th). In May the Danish fleet arrived, and Stockholm was invested by land and sea; but Dame Christina resisted valiantly for four months longer, and took care, when she surrendered on the 7th of September, to exact beforehand an amnesty of the most explicit and absolute character. On the 1st of November the representatives of the nation swore fealty to Christian as hereditary king of Sweden, though the law of the land distinctly provided that the Swedish crown should be elective. On the 4th of November he was anointed by Gustavus Trolle in Stockholm cathedral, and took the usual oath to rule the realm through native-born Swedes alone, according to prescription. The next three days were given up to banqueting, but on the 7th of November "an entertainment of another sort began." On the evening of that day Christian summoned his captains to a private conference at the palace, the result of which was quickly apparent, for at dusk a band of Danish soldiers, with lanterns and torches, broke into the great hall and carried off several carefully selected persons. By 10 o'clock the same evening the remainder of the king's guests were safely under lock and key. All these persons had previously been marked down on Archbishop Trolle's proscription list. On the following day a council, presided over by Trolle, solemnly pronounced judgment of death on the proscribed, as manifest heretics. At 12 o'clock that night the patriotic bishops of Skara and Strängnäs were led out into the great square and beheaded. Fourteen noblemen, three burgomasters, fourteen town-councillors and about twenty common citizens of Stockholm were then drowned or decapitated. The executions continued throughout the following day;

in all, about eighty-two people are said to have been thus murdered. Moreover, Christian revenged himself upon the dead as well as upon the living, for Sten Sture's body was dug up and burnt, as well as the body of his little child. Dame Christina and many other noble Swedish ladies were sent prisoners to Denmark. It has well been said that the manner of this atrocious deed (the "Stockholm Massacre" as it is generally called) was even more detestable than the deed itself. Christian suppressed his political opponents under the pretence of defending an ecclesiastical system which in his heart he despised. Even when it became necessary to make excuses for his crime, we see the same double-mindedness. Thus, while in a proclamation to the Swedish people he represented the massacre as a measure necessary to avoid a papal interdict, in his apology to the pope for the decapitation of the innocent bishops he described it as an unauthorized act of vengeance on the part of his own people.

It was with his brain teeming with great designs that Christian II. returned to his native kingdom. That the welfare of his dominions was dear to him there can be no doubt. Inhuman as he could be in his wrath, in principle he was as much a humanist as any of his most enlightened contemporaries. But he would do things his own way; and deeply distrusting the Danish nobles with whom he shared his powers, he sought helpers from among the wealthy and practical middle classes of Flanders. In June 1521 he paid a sudden visit to the Low Countries, and remained there for some months. He visited most of the large cities, took into his service many Flemish artisans, and made the personal acquaintance of Quentin Matsys and Albrecht Dürer, the latter of whom painted his portrait. Christian also entertained Erasmus, with whom he discussed the Reformation, and let fall the characteristic expression: "Mild measures are of no use; the remedies that give the whole body a good shaking are the best and surest."

Never had King Christian seemed so powerful as on his return to Denmark on the 5th of September 1521, and with the confidence of strength he at once proceeded recklessly to inaugurate the most sweeping reforms. Soon after his return he issued his great *Landelove*, or Code of Laws. For the most part this is founded on Dutch models, and testifies in a high degree to the king's progressive aims. Provision was made for the better education of the lower, and the restriction of the political influence of the higher clergy; there were stern prohibitions against wreckers and "the evil and unchristian practice of selling peasants as if they were brute beasts"; the old trade gilds were retained, but the rules of admittance thereto made easier, and trade combinations of the richer burghers, to the detriment of the smaller tradesmen, were sternly forbidden. Unfortunately these reforms, excellent in themselves, suggested the standpoint not of an elected ruler, but of a monarch by right divine. Some of them were even in direct contravention of the charter; and the old Scandinavian spirit of independence was deeply wounded by the preference given to the Dutch. Sweden too was now in open revolt; and both Norway and Denmark were taxed to the uttermost to raise an army for the subjection of the sister kingdom. Foreign complications were now superadded to these domestic troubles. With the laudable object of releasing Danish trade from the grinding yoke of the Hansa, and making Copenhagen the great emporium of the north, Christian had arbitrarily raised the Sound tolls and seized a number of Dutch ships which presumed to evade the tax. Thus his relations with the Netherlands were strained, while with Lübeck and her allies he was openly at war. Finally Jutland rose against him, renounced its allegiance and offered the Danish crown to Duke Frederick of Holstein (January 20th, 1523). So overwhelming did Christian's difficulties appear that he took ship to seek help abroad, and on May 1st landed at Veere in Zealand. Eight years later (October 24th, 1531) he attempted to recover his kingdoms, but a tempest scattered his fleet off the Norwegian coast, and on the 1st of July 1532, by the convention of Oslo, he surrendered to his rival, King Frederick, and for the next 27 years was kept in solitary confinement, first in the Blue Tower at Copenhagen and afterwards at the castle of Kabendborg. He died in January 1559.

See K.P. Arnoldson, *Nordens enhet och Kristian II.* (Stockholm, 1899); Paul Frederik Barfod, *Danmarks Historie fra 1319 til 1536* (Copenhagen, 1885); *Danmarks Riges Historie*, vol. 3 (Copenhagen, 1897-1905); Robert Nisbet Bain, *Scandinavia*, chap 2 (Cambridge, 1905).

(R. N. B.)

CHRISTIAN III. (1503-1559), king of Denmark and Norway, was the son of Frederick I. of Denmark and his first consort, Anne of Brandenburg. His earliest teacher, Wolfgang von Utenhof, who came straight from Wittenberg, and the Lutheran Holsteiner Johann Rantzau, who became his tutor, were both able and zealous reformers. In 1521 Christian travelled in Germany, and was present at the diet of Worms, where Luther's behaviour profoundly impressed him. On his return he found that his father had been elected king of Denmark in the place of Christian II., and the young prince's first public service was the reduction of Copenhagen, which stood firm for the fugitive Christian II. He made no secret of his Lutheran views, and his outspokenness brought him into collision, not only with the Catholic *Rigsraad*, but also with his cautious and temporizing father. At his own court at Schleswig he did his best to introduce the Reformation, despite the opposition of the bishops. Both as stadtholder of the Duchies in 1526, and as viceroy of Norway in 1529, he displayed considerable administrative ability, though here too his religious intolerance greatly provoked the Catholic party. There was even some talk of passing him over in the succession to the throne, in favour of his half-brother Hans, who had been brought up in the old religion. On his father's death Christian was proclaimed king at the local diet of Viborg, and took an active part in the "Grevens Fejde" or "Count's War."

The triumph of so fanatical a reformer as Christian brought about the fall of Catholicism, but the Catholics were still so strong in the council of state that Christian was forced to have recourse to a *coup d'état*, which he successfully accomplished by means of his German mercenaries (12th of August 1536), an absolutely inexcusable act of violence loudly blamed by Luther himself, and accompanied by the wholesale spoliation of the church. Christian's finances were certainly readjusted thereby, but the ultimate gainers by the confiscation were the nobles, and both education and morality suffered grievously in consequence. The circumstances under which Christian III. ascended the throne naturally exposed Denmark to the danger of foreign domination. It was with the help of the gentry of the duchies that Christian had conquered Denmark. German and Holstein noblemen had led his armies and directed his diplomacy. Naturally, a mutual confidence between a king who had conquered his kingdom and a people who had stood in arms against him was not attainable immediately, and the first six years of Christian III.'s reign were marked by a contest between the Danish *Rigsraad* and the German counsellors, both of whom sought to rule "the pious king" exclusively. Though the Danish party won a signal victory at the outset, by obtaining the insertion in the charter of provisions stipulating that only native-born Danes should fill the highest dignities of the state, the king's German counsellors continued paramount during the earlier years of his reign. The ultimate triumph of the Danish party dates from 1539, the dangers threatening Christian III. from the emperor Charles V. and other kinsmen of the imprisoned Christian II. convincing him of the absolute necessity of removing the last trace of discontent in the land by leaning exclusively on Danish magnates and soldiers. The complete identification of the Danish king with the Danish people was accomplished at the *Herredag* of Copenhagen, 1542, when the nobility of Denmark voted Christian a twentieth part of all their property to pay off his heavy debt to the Holsteiners and Germans.

The pivot of the foreign policy of Christian III. was his alliance with the German Evangelical princes, as a counterpoise to the persistent hostility of Charles V., who was determined to support the hereditary claims of his nieces, the daughters of Christian II., to the Scandinavian kingdoms. War was actually declared against Charles V. in 1542, and, though the German Protestant princes proved faithless allies, the closing of the Sound against Dutch shipping proved such an effective weapon in King Christian's hand that the Netherlands compelled Charles V. to make peace with Denmark at the diet of Spires, the 23rd of May 1544. The foreign policy of Christian's later days was regulated by the peace of Spires. He carefully avoided all foreign complications; refused to participate in the Schmalkaldic war of 1546; mediated between the emperor and Saxony after the fall of Maurice of Saxony at the battle of Sievershausen in 1553, and contributed essentially to the conclusion of peace. King Christian III. died on New Year's Day 1559. Though not perhaps a great, he was, in the fullest sense of the word, a good ruler. A strong sense of duty, genuine piety, and a cautious but by no means pusillanimous common-sense coloured every action of his patient, laborious and eventful life. But the work he left behind him is the best proof of his statesmanship. He found Denmark in ruins; he left her stronger and wealthier than she had ever been before.

See *Danmarks Riges Historie*, vol. 3 (Copenhagen, 1897-1901); Huitfeld, *King Christian III.'s Historie* (Copenhagen, 1595); Bain, *Scandinavia*, cap. iv. v. (Cambridge, 1905).

(R. N. B.)

CHRISTIAN IV. (1577-1648), king of Denmark and Norway, the son of Frederick II., king of Denmark, and Sophia of Mecklenburg, was born at Fredriksborg castle in 1577, and succeeded to the throne on the death of his father (4th of April 1588), attaining his majority on the 17th of August 1596. On the 27th of November 1597 he married Anne Catherine, a daughter of Joachim Frederick, margrave of Brandenburg. The queen died fourteen years later, after bearing Christian six children. Four years after her death the king privately wedded a handsome young gentlewoman, Christina Munk, by whom he had twelve children, —a connexion which was to be disastrous to Denmark.

The young king's court was one of the most joyous and magnificent in Europe; yet he found time for work of the most various description, including a series of domestic reforms (see DENMARK: *History*). He also did very much for the national armaments. New fortresses were constructed under the direction of Dutch engineers. The Danish navy, which in 1596 consisted of but twenty-two vessels, in 1610 rose to sixty, some of them being built after Christian's own designs. The formation of a national army was more difficult. Christian had to depend mainly upon hired troops, supported by native levies recruited for the most part from the peasantry on the crown domains. His first experiment with his newly organized army was successful. In the war with Sweden, generally known as the "Kalmar War," 277 because its chief operation was the capture by the Danes of Kalmar, the eastern fortress of Sweden, Christian compelled Gustavus Adolphus to give way on all essential points (treaty of Knäred, 20th of January 1613). He now turned his attention to Germany. His object was twofold: first, to obtain the control of the great German rivers the Elbe and the Weser, as a means of securing his dominion of the northern seas; and secondly, to acquire the secularized German bishoprics of Bremen and Werden as appanages for his younger sons. He skilfully took advantage of the alarm of the German Protestants after the battle of White Hill in 1620, to secure the coadjutorship to the see of Bremen for his son Frederick (September 1621), a step followed in November by a similar arrangement as to Werden; while Hamburg by the compact of Steinburg (July 1621) was induced to acknowledge the Danish overlordship of Holstein. The growing ascendancy of the Catholics in North Germany in and after 1623 almost induced Christian, for purely political reasons, to intervene directly in the Thirty Years' War. For a time, however, he stayed his hand, but the urgent solicitations of the western powers, and, above all, his fear lest Gustavus Adolphus should supplant him as the champion of the Protestant cause, finally led him to plunge into war against the combined forces of the emperor and the League, without any adequate guarantees of co-operation from abroad. On the 9th of May 1625 Christian quitted Denmark for the front. He had at his disposal from 19,000 to 25,000 men, and at first gained some successes; but on the 27th of August 1626 he was utterly routed by Tilly at Lutter-am-Barenberge, and in the summer of 1627 both Tilly and Wallenstein, ravaging and burning, occupied the duchies and the whole peninsula of Jutland. In his extremity Christian now formed an alliance with Sweden (1st of January 1628), whereby Gustavus Adolphus pledged himself to assist Denmark with a fleet in case of need, and shortly afterwards a Swedo-Danish army and fleet compelled Wallenstein to raise the siege of Stralsund. Thus the possession of a superior sea-power enabled Denmark to tide over her worst difficulties, and in May 1629 Christian was able to conclude peace with the emperor at Lübeck, without any diminution of territory.

Christian IV. was now a broken man. His energy was temporarily paralysed by accumulated misfortunes. Not only his political hopes, but his domestic happiness had suffered shipwreck. In the course of 1628 he discovered a scandalous intrigue of his wife, Christina Munk, with one of his German officers; and when he put her away she endeavoured to cover up her own disgrace by conniving at an intrigue between Vibeke Kruse, one of her discharged maids, and the king. In January 1630 the rupture became final, and Christina retired to her estates in Jutland. Meanwhile Christian openly acknowledged Vibeke as his mistress, and she bore him a numerous family. Vibeke's children were of course the natural enemies of the children of Christina Munk, and the hatred of the two families was not without influence on the future history of Denmark. Between 1629 and 1643, however, Christian gained both in popularity and influence. During that period he obtained once more the control of the foreign policy of Denmark as well as of the Sound tolls, and towards the end of it he hoped to increase his power still further with the assistance of his sons-in-law, Korfits Ulfeld and Hannibal Sehested, who now came prominently forward.

Even at the lowest ebb of his fortunes Christian had never lost hope of retrieving them, and between 1629 and 1643 the European situation presented infinite possibilities to politicians with a taste for adventure. Unfortunately, with all his gifts, Christian was no statesman, and was incapable of a consistent policy. He would neither conciliate Sweden, henceforth his most dangerous enemy, nor guard himself against her by a definite system of counter-alliances. By mediating in favour of the emperor, after the death of Gustavus Adolphus in 1632, he tried to minimize the influence of Sweden in Germany, and did glean some minor advantages. But his whole Scandinavian policy was so irritating and vexatious that Swedish statesmen made up their minds that a war with Denmark was only a question of time; and in the spring of 1643 it seemed to them that the time had come. They were now able, thanks to their conquests in the Thirty Years' War, to attack Denmark from the south as well as the east; the Dutch alliance promised to secure them at sea, and an attack upon Denmark would prevent her from utilizing the impending peace negotiations to the prejudice of Sweden. In May the Swedish *Riksråd* decided upon war; on the 12th of December the Swedish marshal Lennart Torstensson, advancing from Bohemia, crossed the northern frontier of Denmark; by the end of January 1644 the whole peninsula of Jutland was in his possession. This totally unexpected attack, conducted from first to last with consummate ability and lightning-like rapidity, had a paralysing effect upon Denmark. Fortunately, in the midst of almost universal helplessness and confusion, Christian IV. knew his duty and had the courage to do it. In his sixty-sixth year he once more displayed something of the magnificent energy of his triumphant youth. Night and day he laboured to levy armies and equip fleets. Fortunately too for him, the Swedish government delayed hostilities in Scania till February 1644, so that the Danes were able to make adequate defensive preparations and save the important fortress of Malmö. Torstensson, too, was unable to cross from Jutland to Fünen for want of a fleet, and the Dutch auxiliary fleet which came to his assistance was defeated between the islands of Sylt and Rönnö on the west coast of Schleswig by the Danish admirals. Another attempt to transport Torstensson and his army to the Danish islands by a large Swedish fleet was frustrated by Christian IV. in person on the 1st of July 1644. On that day the two fleets encountered off Kolberge Heath, S.E. of Kiel Bay, and Christian displayed a heroism which endeared him ever after to the Danish nation and made his name famous in song and story. As he stood on the quarter-deck of the "Trinity" a cannon close by was exploded by a Swedish bullet, and splinters of wood and metal wounded the king in thirteen places, blinding one eye and flinging him to the deck. But he was instantly on his feet again, cried with a loud voice that it was well with him, and set every one an example of duty by remaining on deck till the fight was over. Darkness at last separated the contending fleets; and though the battle was a drawn one, the Danish fleet showed its superiority by blockading the Swedish ships in Kiel Bay. But the Swedish fleet escaped, and the annihilation of the Danish fleet by the combined navies of Sweden and Holland, after an obstinate fight between Fehmarn and Laaland at the end of September, exhausted the military resources of Denmark and compelled Christian to accept the mediation of France and the United Provinces; and peace was finally signed at Brömsebro on the 8th of February 1645.

The last years of the king were still further embittered by sordid differences with his sons-in-law, especially with the most ambitious of them, Korfits Ulfeld. On the 21st of February 1648, at his earnest request, he was carried in a litter from Fredriksborg to his beloved Copenhagen, where he died a week later. Christian IV. was a good linguist, speaking, besides his native tongue, German, Latin, French and Italian. Naturally cheerful and hospitable, he delighted in lively society; but he was also passionate, irritable and sensual. He had courage, a vivid sense of duty, an indefatigable love of work, and all the inquisitive zeal and inventive energy of a born reformer. Yet, though of the stuff of which great princes are made, he never attained to greatness. His own pleasure, whether it took the form of love or ambition, was always his first consideration. In the heyday of his youth his high spirits and passion for adventure enabled him to surmount every obstacle with *élan*. But in the decline of life he reaped the bitter fruits of his lack of self-control, and sank into the grave a weary and broken-hearted old man.

See *Life* (Dan.), by H.C. Bering Lüsberg and A.L. Larsen (Copenhagen, 1890-1891); *Letters* (Dan.), ed. Carl Frederik Bricka and Julius Albert Fridericia (Copenhagen, 1878); *Danmarks Riges Historie*, vol. 4 (Copenhagen, 1897-1905); Robert Nisbet Bain, *Scandinavia*, cap. vii. (Cambridge, 1905).

(R. N. B.)

CHRISTIAN V. (1646-1699), king of Denmark and Norway, the son of Frederick III. of Denmark and Sophia Amelia of Brunswick-Lüneburg, was born on the 15th of April 1646 at Flensberg, and ascended the throne on the 9th of February 1670. He was a weak despot with an exaggerated opinion of his dignity and his prerogatives. Almost his first act on ascending the throne was publicly to insult his consort, the amiable Charlotte Amelia of Hesse-Cassel, by introducing into court, as his officially recognized mistress, Amelia Moth, a girl of sixteen, the daughter of his former tutor, whom he made countess of Samsö. His personal courage and extreme affability made him highly popular among the lower orders, but he showed himself quite incapable of taking advantage permanently of the revival of the national energy, and the extraordinary overflow of native middle-class talent, which were the immediate consequences of the revolution of 1660. Under the guidance of his great chancellor Griffenfeldt, Denmark seemed for a brief period to have a chance of regaining her former position as a great power. But in sacrificing Griffenfeldt to the clamour of his adversaries, Christian did serious injury to the monarchy. He frittered away the resources of the kingdom in the unremunerative Swedish war of 1675-79, and did nothing for internal progress in the twenty years of peace which followed. He died in a hunting accident on the 25th of August 1699.

See Peter Edvard Holm, *Danmarks indre Historie under Enevaelden* (Copenhagen, 1881-1886); Adolf Ditleva Jörgensen, *Peter Griffenfeldt* (Copenhagen, 1893); Robert Nisbet Bain, *Scandinavia* cap. x., xi. (Cambridge, 1905).

CHRISTIAN VII. (1749-1808), king of Denmark and Norway, was the son of Frederick V., king of Denmark, and his first consort Louisa, daughter of George II. of Great Britain. He became king on his father’s death on the 14th of January 1766. All the earlier accounts agree that he had a winning personality and considerable talent, but he was badly educated, systematically terrorized by a brutal governor and hopelessly debauched by corrupt pages, and grew up a semi-idiot. After his marriage in 1766 with Caroline Matilda (1751-1775), daughter of Frederick, prince of Wales, he abandoned himself to the worst excesses. He ultimately sank into a condition of mental stupor, and became the obedient slave of the upstart Struensee (*q.v.*). After the fall of Struensee (the warrant for whose arrest he signed with indifference), for the last six-and-twenty years of his reign, he was only nominally king. He died on the 13th of March 1808. In 1772 the king’s marriage with Caroline Matilda, who had been seized and had confessed to criminal familiarity with Struensee, was dissolved, and the queen, retaining her title, passed her remaining days at Celle, where she died on the 11th of May 1775.

See E.S.F. Reverdil, *Struensee et la cour de Copenhague, 1760-1772* (Paris, 1858); *Danmarks Riges Historie*, vol. v. (Copenhagen, 1897-1905); and for Caroline Matilda, Sir F.C.L. Wraxall, *Life and Times of Queen Caroline Matilda* (1864), and W.H. Wilkins, *A Queen of Tears* (1904).

CHRISTIAN VIII. (1786-1848), king of Denmark and Norway, the eldest son of the crown prince Frederick and Sophia Frederica of Mecklenburg-Schwerin, was born on the 18th of September 1786 at Christiansborg castle. He inherited the talents of his highly gifted mother, and his amiability and handsome features made him very popular in Copenhagen. His unfortunate first marriage with his cousin Charlotte Frederica of Mecklenburg-Schwerin was dissolved in 1810. In May 1813 he was sent as stadtholder to Norway to promote the loyalty of the Northmen to the dynasty, which had been very rudely shaken by the disastrous results of Frederick VI.’s adhesion to the falling fortunes of Napoleon. He did all he could personally to strengthen the bonds between the Norwegians and the royal house of Denmark, and though his endeavours were opposed by the so-called Swedish party, which desired a dynastic union with Sweden, he placed himself at the head of the Norwegian party of independence, and was elected regent of Norway by an assembly of notables on the 16th of February 1814. This election was confirmed by a *Storthing* held at Eidsvold on the 10th of

April, and on the 17th of May Christian was elected king of Norway, despite the protests of the Swedish party. Christian next attempted to interest the great powers in his cause, but without success. On being summoned by the commissioners of the allied powers at Copenhagen to bring about a union between Norway and Sweden in accordance with the terms of the treaty of Kiel, and then return to Denmark, he replied that, as a constitutional king, he could do nothing without the consent of the *Storthing*, to the convocation of which a suspension of hostilities on the part of Sweden was the condition precedent. Sweden refusing Christian's conditions, a short campaign ensued, in which Christian was easily worsted by the superior skill and forces of the Swedish crown prince (Bernadotte). The brief war was finally concluded by the convention of Moss on the 14th of August 1814 (see NORWAY: *History*). Henceforth Christian's suspected democratic principles made him *persona ingratissima* at all the reactionary European courts, his own court included, and he and his second wife, Caroline Amelia of Augustenburg, whom he married in 1815, lived in comparative retirement as the leaders of the literary and scientific society of Copenhagen. It was not till 1831 that old King Frederick gave him a seat in the council of state. On the 13th of December 1839 he ascended the Danish throne as Christian VIII. The Liberal party had high hopes of "the giver of constitutions," but he disappointed his admirers by steadily rejecting every Liberal project. Administrative reform was the only reform he would promise. He died of blood-poisoning on the 20th of January 1848.

See Just Matthias Thiele, *Christian den Ottende* (Copenhagen, 1848); Yngvar Nielsen, *Bidrag til Norges Historie* (Christiania, 1882-1886).

CHRISTIAN IX. (1818-1906), king of Denmark, was a younger son of William, duke of Schleswig-Holstein-Sonderburg-Glücksburg (d. 1831), a direct descendant of the Danish king Christian III. by his wife Louise, a daughter of Charles, prince of Hesse-Cassel (d. 1836), and grand-daughter of King Frederick V. Born at Gottorp on the 8th of April 1818, Christian entered the army, and alone among the members of his family served with the Danish troops in Schleswig during the insurrection of 1848; but he was a personage of little importance until about 1852, ten years after his marriage with Louise (1817-1898), daughter of William, prince of Hesse-Cassel (d. 1867), and cousin of King Frederick VII. At this time it became imperative that satisfactory provision should be made for the succession to the Danish throne. The reigning king, Frederick VII., was childless, and the representatives of the great powers met in London and settled the crown on Prince Christian and his wife (May 1852), an arrangement which became part of the law of Denmark in 1853. The "protocol king," as Christian was sometimes called, ascended the throne on Frederick's death in November 1863, and was at once faced by formidable difficulties. Reluctantly he assented to the policy which led to war with the combined power of Austria and Prussia, and to the separation of the duchies of Schleswig, Holstein and Lauenburg from Denmark (see SCHLESWIG-HOLSTEIN QUESTION). Within the narrowed limits of his kingdom Christian's difficulties were more protracted and hardly less serious. During almost the whole of his reign the Danes were engaged in a political struggle between the "Right" and the "Left," the party of order and the party of progress, the former being supported in general by the *Landsting*, and the latter by the *Folketing*. The king's sympathies lay with the more conservative section of his subjects, and for many years he was successful in preventing the Radicals from coming into office. The march of events, however, was too strong for him, and in 1901 he assented in a dignified manner to the formation of a "cabinet of the Left" (see DENMARK: *History*). In spite of these political disturbances Christian's popularity with his people grew steadily, and was enhanced by the patriarchal and unique position which in his later years he occupied in Europe. With his wife, often called "the aunt of all Europe," he was related to nearly all the European sovereigns. His eldest son Frederick had married a daughter of Charles XV. of Sweden; his second son George had been king of the Hellenes since 1863; and his youngest son Waldemar (b. 1858) was married to Marie d'Orléans, daughter of Robert, duc de Chartres. Of his three daughters, Alexandra married Edward VII. of Great Britain; Dagmar (Marie), the tsar Alexander III.; and Thyra, Ernest Augustus, duke of Cumberland. One of his grandsons, Charles, became king of Norway as Haakon VII. in 1905, and another, Constantine, crown prince of Greece, married a sister of the German emperor William II. Christian was also the ruler of Iceland, where he was received with great enthusiasm when he visited the island in 1874. He died at Copenhagen on the 29th of January 1906, and was buried at Roskilde.

See Barfod, *Kong Kristian IX.'s Regerings-Dagbog* (Copenhagen, 1876); and *Hans Majestet Kong Kristian IX.* (Copenhagen, 1888).

CHRISTIAN, WILLIAM (1608-1663), Manx politician, a son of Ewan Christian, one of the Manx deemsters, was born on the 14th of April 1608, and was known as *Illiam Dhone*, or Brown William. In 1648 the lord of the Isle of Man, James Stanley, 7th earl of Derby, appointed Christian his receiver-general; and when in 1651 the earl crossed to England to fight for Charles II. he left him in command of the island militia. Derby was taken prisoner at the battle of Worcester, and his famous countess, Charlotte de la Tremouille, who was residing in Man, sought to obtain her husband's release by negotiating with the victorious parliamentarians for the surrender of the island. At once a revolt headed by Christian broke out, partly as a consequence of this step, partly owing to the discontent caused by some agrarian arrangements recently introduced by the earl. The rebels seized many of the forts; then Christian in his turn entered into negotiations with the parliamentarians; and probably owing to his connivance the island was soon in the power of Colonel Robert Duckenfield, who had brought the parliamentary fleet to Man in October 1651. The countess of Derby was compelled to surrender her two fortresses, Castle Rushen and Peel castle, while Christian remained receiver-general, becoming governor of the island in 1656. Two years later, however, he was accused of misappropriating some money; he fled to England, and in 1660 was arrested in London. Having undergone a year's imprisonment he returned to Man, hoping that his offence against the earl of Derby would be condoned under the Act of Indemnity of 1661; but, anxious to punish his conduct, Charles, the new earl of Derby, ordered his seizure; he refused to plead, and a packed House of Keys declared that in this case his life and property were at the mercy of the lord of the island. The deemsters then passed sentence, and in accordance therewith Christian was executed by shooting on the 2nd of January 1663. This arbitrary act angered Charles II. and his advisers; the deemsters and others were punished, and some reparation was made to Christian's family. Christian is chiefly celebrated through the Manx ballad *Baase Illiam Dhone*, which has been translated into English by George Borrow, and through the references to him in Sir Walter Scott's *Peveril of the Peak*.

See A.W. Moore, *History of the Isle of Man* (1900).

CHRISTIAN OF BRUNSWICK (1590-1626), bishop of Halberstadt and a general during the earlier part of the Thirty Years' War, a younger son of Henry Julius, duke of Brunswick-Wolfenbüttel, was born at Gröningen on the 20th of September 1599. Having succeeded his father as "bishop" of Halberstadt in 1616, he obtained some experience of warfare under Maurice, prince of Orange, in the Netherlands. Raising an army he entered the service of Frederick V., elector palatine of the Rhine, just after that prince had been driven from Bohemia; glorying in his chivalrous devotion to Frederick's wife Elizabeth, he attacked the lands of the elector of Mainz and the bishoprics of Westphalia. After some successes he was defeated by Tilly at Höchst in June 1622; then, dismissed from Frederick's service, he entered that of the United Provinces, losing an arm at the battle of Fleurus, a victory he did much to win. In 1623 he gathered an army and broke into lower Saxony, but was beaten by Tilly at Stadtlohn and driven back to the Netherlands. When in 1625 Christian IV., king of Denmark, entered the arena of the war, he took the field again in the Protestant interest, but after some successes he died at Wolfenbüttel on the 16th of June 1626. Christian, who loved to figure as "the friend of God, the enemy of the priests," is sometimes called "the mad bishop," and was a merciless, coarse, and blasphemous man.

CHRISTIAN CATHOLIC CHURCH, the name assumed by a religious organization founded at Zion City near Chicago, Illinois, U.S.A., in 1896, by John Alexander Dowie (*q.v.*). Its members added to the usual tenets of Christianity a special belief in faith-healing, and laid much stress on united consecration services and the threefold immersion of believers. To assist Dowie, assistant overseers were appointed, and the operations of the community included religious, educational and commercial departments. Small branches sprang up in other parts of the United States, Mexico, Canada, Europe and Australasia. At the end of 1901 there were nearly 12,000 baptized believers. After 1903 considerable dissension arose among Dowie's followers: he was deposed in 1906; and after his death (1907) the city gradually became a community of normal type.

CHRISTIAN CONNECTION, a denomination of Christians in North America formed by secession, under James O'Kelly (1735-1826), of members of the Methodist Episcopal Church in North Carolina in 1793. The movement resembled those under the Campbells and Stone in Kentucky in 1801-1804, and in Lyndon, Vermont, among the Baptists in 1800. The predisposing cause in each case was the desire to be free from the "bondage of creed." Some of O'Kelly's followers joined the Disciples of Christ (*q.v.*). Their form of church government is Congregational; they take the Bible as the sole rule of faith and practice, and while adopting immersion as the proper mode of baptism, freely welcome Christians of every sect to their communion. They number about 100,000 members, mainly in the states of Ohio, Indiana and Illinois. The original seceders in Virginia and North Carolina bore for a time the name "Republican Methodists," and then called themselves simply "Christians," a designation which with the pronunciation "Christ-yans" is still often applied to them. Their position is curiously akin to that outlined by William Chillingworth (*q.v.*) in his famous work *The Religion of Protestants* (1637-1638).

CHRISTIAN ENDEAVOUR SOCIETIES, organizations formed for the purpose of promoting spiritual life among young people. They date from 1881, in which year Dr Francis E. Clark (*q.v.*) formed a Young People's Society of Christian Endeavour in his (Congregational) church at Portland, Maine, U.S.A. The idea was taken up elsewhere in America and spread to other countries, till, under the presidency of Dr Clark, a huge number of affiliated societies came into operation throughout the world. They take as their motto "For Christ and the Church," and have done much, especially in the non-episcopal churches, to prepare young men and women for active services in the Church. The organization is international and interdenominational, a World's Christian Endeavour Union being formed in 1895. The members do not form a separate denomination, but remain attached to their respective churches, being grouped in voluntary district federations.

CHRISTIANIA (officially KRISTIANIA), the capital of Norway, forming a separate county (*amt*), and the seat of a bishopric (*stift*). Pop. (1901) 229,101. It lies on the south-eastern coast, at the head of Christiania Fjord, about 80 m. from the open waters of the Skagerrack, is 59° 54′ N. (about the latitude of the southern extremity of the Shetland Islands) and 10° 45′ E., mainly on the west bank of the small Aker river. The situation is very beautiful, pine-wooded hills rising sharply behind the city, while several islands stud the fjord. The town is mainly modern, having increased rapidly in and since the second half of the 19th century, when brick and stone largely superseded wood as the building material. It is the seat of government, of the supreme courts, of the parliament (*Storthing*), and of a university. The harbour is of two parts, the Björvik, where the larger steamers lie, and the Pipervik, west of this. On the promontory intervening between these two inlets stands the old fortress of

Akershus, occupied as an arsenal and prison, and having a pleasant promenade upon its ramparts. Until 1719 it was a royal palace. At the head of the Björvik the principal railway station (*Hovedbanegaard*) stands in the Jernbanetorv (railway square), and north-west from this runs the principal street, Karl-Johans-gade. In this street, passing the Vor Frelsers Kirke (Church of our Saviour), the Storthings-Bygning (parliament-house, 1866) is seen, facing a handsome square planted with trees. Beyond this is the National theatre (1899), with colossal statues of the dramatists Ibsen and Björnsen. It faces the Fridericiana University, housed in three buildings dating from 1853, but founded by Frederick VI. of Denmark in 1811, embracing the five faculties of theology, law, medicine, history and philology, mathematics and natural sciences. The equipment of the university is very complete: it has attached to it a large and valuable library, natural history, ethnological and numismatic collections, with one of Scandinavian antiquities; also botanical gardens and an observatory. The Karl-Johans-gade gives upon the beautiful Slotspark, a wooded elevation crowned with the royal palace (*slot*), a plain building completed in 1848. North of the university is the museum of art, containing a noteworthy collection of sculpture and paintings of ancient and modern foreign masters, and of native works. The historical museum adjoining this contains northern antiquities, including two viking's ships, excavated, in 1867 and 1880 respectively, from the burial-places of the viking chiefs who owned and, according to custom, were buried in them. Another noteworthy collection is that of industrial art. The Bank of Norway, the exchange, and the courts of law lie between the harbours. Other institutions are the Freemasons' Lodge, housed in one of the handsomest buildings in the city (1844), a conservatory of music, naval, military and art schools, Athenaeum, and the great Dampkjökken or kitchen (1858), where dinners are provided for the poor.

The suburbs of Christiania are attractive and rapidly growing. On the east side of the river Aker is that of Oslo, with the existing episcopal palace, and an old bishop's palace, in which James VI. of Scotland (I. of England) was betrothed to Princess Anne of Denmark (1589). In the environs of the city are the royal pleasure castle of Oscarshal (1847-1852), on the peninsula Bygdö (Ladugaard) to the west of the city, and the Norwegian national museum (1881), containing industrial and domestic exhibits from the various provinces. Close at hand is an interesting collection of old Norwegian buildings, brought here from all parts, and re-erected, including an example of the timber church of the 12th century (*Stavekirke*). A collection of ancient agricultural implements is also shown. On Hovedö (Head Island) in the fjord, immediately opposite to the Akershus, are the ruins of a Cistercian monastery, founded in 1147 by monks from Kirkstead in Lincolnshire, England, and burnt down in 1532. There are sanatoria and inns among the surrounding hills, on which beautiful gardens are laid out, such as Hans Haugen, Frognersaeter, Holmenkollen, where the famous *ski* (snow-shoe) races are held in February, and Voksenkollen. Electric tramways connect the city and suburbs, and local steamers run from the Pipervik to the neighbouring islands and fjord-side towns and villages.

Christiania has two railway stations, the Hovedbanegaard by the Björvik, and the Vestbanegaard by the Pipervik. From the first trains run south to Fredrikshald and Gothenburg, east to Charlottenberg and Stockholm, north to Hamar and Trondhjem, and Otta in Gudbrandsdal, and to Gjövik and the Valdres district. From the west station start the lines to Drammen, Laurvik, Skien and Kongsberg (for the Telemark district). The eastward extension of the railway between Bergen and Vossevangen, undertaken in 1896, had as its ultimate object the connexion of Christiania and Bergen by rail. With these extensive land communications Christiania is at once the principal emporium of southern Norway, and a favourite centre of the extensive tourist traffic. Regular passenger steamers serve the port from Hull, Newcastle, Grangemouth and London, from Trondhjem, Bergen and the Norwegian coast towns, from Hamburg, Amsterdam, Antwerp, &c. Except for two large shipbuilding yards, one with a floating dock, the other with a dry dock, most of the manufactories are concentrated in the suburb of Sagene, on the north side of the city, deriving their motive power from the numerous falls of the river Aker. They embrace factories for cotton and woollen spinning and weaving, paper, flour, soap and oil, bricks and tiles, matches, nails (especially horse-shoe nails), margarine, foundries and engineering shops, wood-pulp, tobacco, matches, linen, glass, sail-cloth, hardware, gunpowder, chemicals, with sawmills, breweries and distilleries. There is also a busy trade in the preparation of granite paving-stones, and in the storing and packing of ice. Imports greatly exceed exports, the annual values being about 7½ and 1½ millions sterling respectively. The former consist principally of grain and flour, cottons and woollens, coffee, iron (raw and manufactured), coal, bacon and salt meat, oils, sugar, machinery, flax, jute and hemp, paper-hangings, paints, colours, &c., wines and spirits, raw tobacco, copper, zinc, lead and tin, silk, molasses and other commodities. The principal exports are wood-pulp, timber, nails,

paper, butter and margarine, matches, condensed milk, fish, leather and hides, ice, sealskins, &c. Of the imports, Great Britain supplies the greater part of the cotton and woollen yarn, the machinery (including ships), and the raw metals; the United States about one-half of the oils and fats, and a large proportion of the food-stuffs, and skins, feathers, &c. Of the exports, almost the whole of the timber goes to Great Britain, together with the larger portion of the paper and food-stuffs (butter, &c.). The harbour is ice-bound for three or four months in the winter, when ships lie at Dröbak, lower down the fjord; but ice-breakers are also used. Early in 1899 the municipality voted £47,000 for the construction of a pier, a harbour for fishing-boats, protected by a mole, and a quay, 345 ft. long, on the shore underneath the Akershus. These works signalized a great scheme of improvement, involving a general rearrangement of the entire harbour.

The present suburb of Oslo represents the original city, which was founded on this site under that name (or Opslo) by Harald Sigurdsson in 1048. By the close of the 14th century it was established as the chief city of Norway. Trade was long dominated by the powerful Hanseatic League, at least until the beginning of the 16th century. The town, built mainly of wood, was no less subject to fires than all Norwegian towns have always been, and after one of these King Christian IV. refounded the capital on the new site it now occupies, and gave his name to it in 1624. By the close of the century it was fortified, but this did not prevent Charles XII. from gaining possession of it in 1716.

See L. Daae, *Det gamle Christiania, 1624-1824* (Christiania, 1890); Y. Nielsen, *Christiania und Umgegend* (Christiania, 1894); G. Amnéus, *La Ville de Christiania ... Résumé historique, &c.* (Christiania, 1900).

CHRISTIANITY, the religion which accepts Jesus Christ as Lord and Saviour, embracing all who profess and call themselves Christians, the term derived from his formal title (χριστός, *i.e.* the anointed). Within this broad characterization are found many varieties of cult, organization and creed (see Church History). Christianity is classed by the students of the science of religion as a universal religion; it proclaims itself as intended for all men without distinction of race or caste, and as in possession of absolute truth. In fact, Christianity has been widely accepted by varied races in very different stages of culture, and it has maintained itself through a long succession of centuries in lands where the transformations in political structure, the revolutions in social conditions, and the changes in science and philosophy, have been numerous and extreme.

Beginning in Asia, Christianity extended itself rapidly throughout the Roman empire and beyond its borders among the barbarians. When the Empire in the 4th century adopted it, its cult, organization and teaching were carried throughout the western world. The influences and motives and processes which led to the result were many and varied, but ultimately in one way or another it became the religion of Europe and of the nations founded by the European races beyond the seas and in the northern part of Asia called Siberia. Beyond these bounds it has not greatly prospered. The explanation of the apparent bounding of Christianity by Europe and its offspring is not, however, to be found in any psychological peculiarity separating the European races from those of other continents, nor in any special characteristic of Christianity which fits it for European soil. For not only were its founder and his disciples Asiatics, and the original authoritative writings Semitic, but Asiatic tribes and nations coming into Europe have been readily converted. Missions in Asia too have achieved sufficient success to prove that there exists no inherent obstacle either in the gospel or in the Asiatic mind. Moreover, Christianity was once represented in Asia by a powerful organization extending throughout Persia and central Asia into India (see Persia). *Mutatis mutandis*, the same applies to Africa also, and Christianity still survives in both continents in the Coptic, Abyssinian and Armenian Churches. The explanation is rather to be sought in the political condition of the early centuries of the Christian era, especially in the rise of Mahommedanism. This may be regarded indeed as a form of Christianity, for it is not more foreign perhaps to the prevailing type than are some sects which claim the name. It exerted a strong influence upon Europe, but its followers have been peculiarly unsusceptible to missionary labours, and even in Europe have retained the faith of the Prophet. In the limitations of the Roman empire and in the separation of East and West consequent upon its decline, Christianity, as a dominant religion, was confined for a thousand years to Europe, and even portions of this continent for centuries were in the hands of its great foe. The East

appeared as the Mahommedan dominions, and beyond these the continents of Asia and Africa were so dimly discerned that little reciprocal influence was felt. Thus the development of the two great civilized portions of the race in Europe and Asia followed independent lines in religion as in all else; and Africa, excepting its northern border, was left untouched by the progress of enlightenment.

Not only is Christianity thus the religion of a wide variety of races but across the divisions there cut other lines. In its organization Christianity exists in three great divisions, Roman, Greek and Protestant, and in various ancient sects in the Orient. The Roman Catholic and Greek divisions of the Christian Church are homogeneous in organization, but in Protestantism certain denominations are national, established by differing governments, and others are independent of governmental aid, making a large number of differing denominations. Some of these divisions are mutually antagonistic, denying to each other the name of Christian and even the hope of salvation.

According to a second classification, Christianity may be placed among the "individual" religions, since it traces its origin, like Islam and Buddhism, to an individual as its founder. This beginning is not in the dimness of antiquity nor in a multitude of customs, beliefs, traditions, rites and personalities, as is the case with the so-called "natural" religions. It is not implied that in the formation of the "natural" religions individuals were not of great importance, nor, on the other hand, that in individual religions the founder formed his faith independently of the community of which he was a part; but only that as undoubted historic facts certain religions, in tracing their lines to individuals, thereby acquired a distinctive character, and retain the impress of their founder. Such religions begin as a reform or a protest or revolt. They proclaim either a new revelation, or the return to an ancient truth which has been forgotten or distorted. They demand repentance and change of heart, *i.e.* the renouncing of the ordinary faith of the community and the acceptance of a new gospel. Thus demanding an act of will on the part of individuals, they are classed once more as "ethical" religions. To be sure, the new is built upon the old—in part unconsciously—and the rejection of the faith of the past, however violent, is never thoroughgoing. In consequence the old affects the new in various ways. Thus in Buddhism the presuppositions which Buddha uncritically took over work out their logical results in the Mahāyāna, so that great sects calling themselves "Buddhist" affirm what the Master denied and deny what he taught. Christianity takes Judaism (see Hebrew Religion) for granted—rejects it in part as a merely preparatory stage, in part reinterprets it, and does not submit what it accepts to rigorous scrutiny. As a result the Old Testament (see Bible) remains not only as the larger part of the Christian canon, but, sometimes, in some churches, as obscuring its distinctive truth. Moreover, in the transference of Christianity from the Jewish to the Greek-Roman world again various elements were taken into it. More properly perhaps we might consider the Greek and Roman civilization as the permanent element—so that the relationship to it was not different from the relationship to Judaism—in part it was denied, in part it was of purpose accepted, in still larger part unconsciously the Greek-Roman converts took over with them the presuppositions of their older world view—and thus formed the moulds into which the Christian truth was run. Here again, in some instances the pre-Christian elements so asserted themselves as to obscure the new and distinctive teaching.

Relation with Judaism.

Christianity, regarded objectively as one of the great religions of the world, owes its rise to Jesus of Nazareth, in ancient Galilee. (See Jesus Christ.) By reverent disciples his ancestry was traced to the royal family of David, and his birth is ascribed by the church to the miraculous act of God. His life was spent, until the beginning of his public ministry, in humble circumstances as the son of a carpenter and his wife, Joseph and Mary. Of Joseph we hear nothing after the boyhood of Jesus, who followed the same trade, supporting himself and perhaps his mother and younger brothers and sisters. Of this period we have only a few fragmentary anecdotes and a stray reference or two. At thirty years of age he appeared in public, and after a short period (we cannot determine how long, but possibly eighteen months) he was crucified, upon the accusation of his countrymen, by the Roman authorities. He was without technical education, but he had been carefully trained in the sacred books, as was usual with his people. Belonging neither to the aristocracy nor to the learned class, he was one of the common people yet separate from them—a separation not of race or caste or education, but of unique personality.

His career is understood only in the light of his relations to Judaism (see Hebrew Religion). This faith, in a peculiarly vivid fashion, illustrates the growth and development of religion, for its great teachers in the highest degree possessed what the Germans call God-consciousness. The Hebrew national literature centres in the thought of God. It is Yahweh

who is all and in all, the father, the leader, the hope, the hero of his people. No other national literature is so continuously and so highly religious. Another factor gives it still greater interest for the student of religion,—in it the progress of religious thought can be traced, and the varying elements of the religious life seen in harmony and in conflict.

In the early period the Hebrew religion was of the ordinary Semitic type. In its ancient stories were remnants of primitive religion, of tabu, of anthropomorphic gods, of native forms of worship, of magic and divination, of local and tribal cults. Out of these developed, by the labours of the prophets, a religion of high spirituality and exalted ethical ideals. According to it God demands not ritual nor sacrifice nor offerings. He does not delight in prayers and praise, but he demands truth in the soul and bids man to walk humbly and deal righteously and mercifully with his brother (Micah vi. 6-8; Isa. i. 2-20). He requires kindness, forgiveness and loving sacrifice from all to all (Isa. lviii. 3-12). This conception of God revealed itself as so essential to the prophets that their intense national feeling was modified. God would not deliver Israel because it was his people, descended from Abraham, his chosen, but he would punish it even more severely than the other nations because it denied him by its sins (Amos iii. 1-2). Yet Israel would not be destroyed, for a spiritual remnant, loving and obeying God, would be saved and purified (Ezek. xxxvi.-xxxvii.). Thus Israel survived its misfortunes. When the national independence was destroyed, the prophetic teaching held the people together in the hope of a re-establishment of the Kingdom when all nations should be subject to it and blessed in its everlasting reign of righteousness and peace (Isa. xlix., lx.).

Some of the prophets associated the restoration of the Kingdom with the coming of the Messiah, the anointed one, who should re-establish the line of David (Isa. ix. 6 f., xi. 1 f.; Micah v. 2; Ezek. xxxiv. 23, xxxvii. 24; Zech. ix. 9; Ps. ii. 72). Others said nothing of such a one, but seemed to expect the regeneration of Israel through the labours, sufferings and triumphs of the righteous remnant (Isa. liii., Ezek. xxxvi.-xxxvii.). By the strong emphasis upon righteousness, the tribal Lord of Israel was revealed as the universal God, of one relationship to all men. This monotheism was not primarily cosmological nor metaphysical, but ethical. The Jews showed little capacity for abstract reasoning and never pursued their inquiries to the discovery of ultimate principles. Thus they did not develop a systematic cosmology, nor formulate a system of metaphysics. Their religion was pre-eminently “theocratic”; God was thought of as King, enthroned in heaven and supreme. In the beginning as a tribal deity his powers were limited and he was involved in the fortunes of his people. But as the conception of Yahweh was deepened and broadened, and, especially after the development of ethical monotheism, not only was he believed to possess power sufficient to ensure the triumph of his chosen people, but to be the creator and ruler of all things in heaven and on earth, the God whom all peoples should worship and obey.

But the prophetic teaching was obscured in part by the nationalism of the prophets themselves, who exalted Israel as at once God’s instrument and the peculiar object of his love; and in part by the triumph of a legal-ritualistic sacrificial system. In the downfall of Jerusalem, the experiences of the exile in Babylon, and the return to Judaea, the nation was transformed into a church. Apart from the brief Maccabaean period, the intense patriotism of the people centred in the ecclesiastical organization. As a result, cult and organization and code hardened, forming a shell which proved strong enough to resist all disintegrating tendencies. Inevitably the freedom, spirituality and universality of the prophetic teaching were obscured. In the 1st century A.D. the national and priestly elements controlled; doubtless many individuals still were faithful to the purer prophetic message, though also zealous for the system of ritual and sacrifice, but for the ruling majority ritualistic service was the chief thing, justice, purity and mercy being subordinate. Hence in their view all who did not participate in the national worship and conform to the national usages were outcasts. The triumph of Israel was to be accomplished by the miraculous power of a Messiah who should descend out of heaven. His coming was delayed, in part by the opposition of demons, in part by the failure of the people to obey the law. This law embraced both moral and ceremonial elements derived from varied sources, but in the apprehension of the people it was all alike regarded as of divine origin. It was to be obeyed without question and without inquiry as to its meaning, because established by God. It was contained in the Sacred Scriptures (see Bible: *Old Testament*), which had been revealed by God supernaturally, and its meaning was set forth by schools of learned men whose interpretations were authoritative. The conception of salvation was mingled with ideas derived from the East during and after the period of captivity. The priesthood held still the ancient ideas. Salvation was for the nation, and the individual was not necessarily participant in it. Life after death was disbelieved or held as the existence of shades. There could be no resurrection of the body and no immortality (in the Greek sense). With these

beliefs were associated a certain worldliness and want of fervour. The more actively and aggressively religious party, on the other hand, adopted the belief in the resurrection of the body, and in the individual's participation in the Messiah's kingdom; all the pious would have their share in it, while the wicked would be outcast. But these doctrines were variously conceived. By some the Messianic kingdom was thought of as permanent, by others as intermediary, the external kingdom being transcendent. So too some thought of a literal resurrection of the body of flesh and blood, while others thought that it would be transformed. The rudiments of some of these ideas can be found in the prophets, but their development took place after the exile, and indeed for the most part after the conclusion of the writings accounted canonical. Thus too the belief in a kingdom of demons held a large place in the mind of the people, though the references to such evil beings are almost absent from the sacred writings of the Old Testament. Again it is to the East that we must look for the origin of these ideas.

The teaching of Jesus.

Jesus completed the prophetic teachings. He employed the old phraseology and imagery, but he was conscious that he used them in a new sense, and that he preached a new gospel of great joy. Jesus was not a historian, a critic or a theologian. He used the words of common men in the sense in which common men understood them. He did not employ the Old Testament as now reconstructed by scholarship or judged by criticism, but in its simple and obvious and traditional sense. And his background is the intellectual and religious thinking of his time. The ideas of demons and of the future, of the Bible and many other traditional conceptions, are taken over without criticism. So the idea of God which he sets forth is not that of a theologian or a metaphysician, but that of the unlearned man which even the child could understand. Yet though thus speaking in untechnical language, he revolutionized his terms and filled them with new meaning. His emphasis is his own, and the traditional material affords merely the setting for his thought. He was not concerned with speculative questions about God, nor with abstract theories of his relationship to the soul and to the world. God's continual presence, his fatherly love, his transcendent righteousness, his mercy, his goodness, were the facts of immediate experience. Not in proofs by formal logic but in the reality of consciousness was the certainty of God. Thus religion was freed from all particular and national elements in the simplest way. For Jesus did not denounce these elements, nor argue against them, nor did he seek converts outside of Israel, but he set forth communion with God as the most certain fact of man's experience and as simple reality made it accessible to every one. Thus his teaching contains the note of universality—not in terms and proclamations but as plain matter of fact. His way for others to this reality is likewise plain and level to the comprehension of the unlearned and of children.

For him repentance is put first, for how vastly changed is the conception of the religious life! The intricacies of ritual and theology are ignored, and ancient laws which contradict the fundamental beliefs are unhesitatingly abrogated or denied. He seizes upon the most spiritual passages of the prophets, and revives and deepens them. He sums up his teaching in supreme love to God and a love for fellow-man like that we hold for ourselves (Mark xii. 29-31). This supreme love to God is a complete oneness with him in will, a will which is expressed in service to our fellow-men in the simplest and most natural relationship (Luke x. 25-37). Thus religion is ethical through and through, as God's inner nature, expressed in forgiveness, mercy, righteousness and truth, is not something transcendental, but belongs to the realm of daily life. We become children of God and he our Father in virtue of a moral likeness (Matt. v. 43-48), while of any metaphysical, or (so to speak) physical relationship to God Jesus says nothing. With this clearly understood, man is to live in implicit trust in the divine love, power, knowledge and forgiveness. Hence he attains salvation, being delivered from sin and fear and death, for the divine attributes are not ontological entities to be discussed and defined in the schools, but they are realities, entering into the practical daily life. Indeed they are to be repeated in us also, so that we are to forgive our brethren as we ask to be forgiven (Matt. vi. 12; Luke xi. 4).

As religion thus becomes thoroughly ethical, so is the notion of the Messianic kingdom transformed. Its essential characteristic is the doing of the Father's will on earth as in heaven. Jesus uses parable after parable to establish its meaning. It is a seed cast into the ground which grows and prospers (Matt. xiii. 31-32). It is a seed sown in good ground and bringing forth fruit, or in bad ground and fruitless (Luke viii. 5-8; Mark iv. 1-32). It is a pearl of great price for which a man should sell all that he possesses (Matt. xiii. 44-46). It is not come "with observation," so that men shall say "lo here and lo there" (Luke xvii. 20-21). It is not of this world, and does not possess the characteristics or the glory of the kingdom of the earth (Luke xxii. 24-26; Mark x. 13-16). It is already present among men (Luke xvii. 21). Together with these statements in our sources are still mingled fragments of the more

ordinary cataclysmic, apocalyptic conceptions, which in spite of much ingenious exegesis, cannot be brought into harmony with Christ's predominant teaching, but remain as foreign elements in the words of the Master, possibly brought back through his disciples, or, more probably, used by Jesus uncritically—a part of the current religious imagery in which he shared.

His originality.

It is often declared that in these teachings there is nothing new, and indeed analogies can be found for many sayings; yet nowhere else do we gain so strong an impression of originality. The net result is not only new but revolutionary; so was it understood by the Pharisees. They and Jesus spoke indeed the same words and appealed to the same authorities, but they rightly saw in him a revolutionist who threatened the existence of their most cherished hopes. The Messianic kingdom which they sought was opposed point by point to the kingdom of which he spoke, and their God and his Father—though called by the same sacred name—were different. Hence almost from the beginning of his public ministry they constantly opposed him, the conflict deepening into complete antagonism.

Jesus has already been termed unique, one of the common people yet separated from them, and this description applies to the breadth, depth and reality of his sympathy. In the meagre records of his life there is evidence that he deemed no form of suffering humanity foreign to himself. This was not a mere sentiment, nor was his sympathy superficial, for it constituted the essential characteristic of his personality—"He went about doing good." In him the will of the Father for the redemption of the race was incarnate. This led him into the society of those outcasts who were condemned and rejected by the respectable and righteous classes. In contemptuous condemnation he was called the friend of the outcasts (Matt. xi. 19; Mark ii. 16-17), and on his part he proclaimed that these sinners would enter into the Kingdom of Heaven before the self-righteous saints (Matt. xxi. 31). Even the most repulsive forms of disease and sin drew from him only loving aid, while he recognized in all other men who laboured for the welfare of their fellows the most intimate relationship to himself. These constituted his family, and these were they whom his Father will bless.

Jesus recognized his unique position; he could not be ignorant of his powers. Even the prophets had spoken in the name of God; they accepted neither book nor priesthood as authoritative, but uttered their truth as they were inspired to speak, and commanded men to listen and obey. As in Jesus the whole prophetic line culminates, so does its consciousness. Reverent toward the Holy Scriptures, he spoke not as their expositor but with a divine power which invests his words with immediate and full authority. The prophets use the formula, "Thus saith the Lord," but he goes beyond them and speaks in his own name, "Amen, I say unto you." He knew himself as greater than the prophets, indeed as him of whom the prophets spoke—the Messiah. Only through this self-consciousness can we explain his mission and the career of his disciples. The prophets up to John foretold the coming of the kingdom (Matt. xi. 11-13; Luke xvi. 16), but Jesus opened its doors and made possible entrance into it. Where he is there it is, and hence those who follow him are God's children, and those who refuse his message are left outside in darkness. He is to sit as enthroned, judge and king, and by him is men's future to be determined (Matt. xxv. 31 f.; Mark xiii. 26). Indeed it was his presence more than his teaching which created his church. Great as were his words, greater was his personality. His disciples misunderstood what he said, but they trusted and followed him. By him they felt themselves freed from sin and fear—and under the influence of a divine power.

His Messianic claims.

Though his claims to authoritative pre-eminence thus took him out of the class of prophets and put him even above Elijah and Moses (Mark ix. 2-7; Luke vii. 28; Luke x. 23-24), and though naturally this self-assertion seemed blasphemous to those who did not accept him, yet as he had transformed the traditional notion of the kingdom, so did he the current thought of the Messiah. The pre-eminence was not to be of rank and glory but of service and self-sacrifice. In his kingdom there can be no strife for precedence, since its King comes not to be ministered unto but to minister and to give his life in the service of others (Mark ix. 33 f., x. 42-45). The formal acknowledgment of the Messiah's worth and position matters little, for to call him Lord does not ensure entrance into his kingdom (Matt. vii. 21-23). It is those who fail to recognize the spirit of sympathy and self-sacrificing service as divine and blaspheme redeeming love, who are in danger of eternal sin (Mark iii. 28-29). All who do the will of the Father, *i.e.* who serve their fellows, are the brethren of Christ, even though they do not call him Lord (Mark iii. 31-35; Matt. vii. 21): and those are blessed who minister to the needy even though ignorant of any relation to himself (Matt. xxv. 37-40). Finally, membership in his own selected company, or a place in the chosen people, is not of prime importance (Mark

ix. 38-40; Luke xiii. 24-30).

Jesus also refuses to conform to the current ideas as to the establishment of the kingdom. He wrought miracles, it is true, because of his divine sympathy and compassion, but he refused to show miraculous signs as a proof of his Messianic character (Mark viii. 12). The tradition of the people implied a sudden appearance of the Messiah, but Jesus made no claims to a supernatural origin and was content to be known as the son of Joseph and Mary (Mark vi. 3-4). His kingdom is not to be set up by wonders and miraculous powers, nor is it to be established by force (Matt. xxvi. 52). Such means would contradict its fundamental character, for as the kingdom of loving service it can be established only by loving service. And as God is love, he can be revealed not by prodigies of power but only by a love which is faithful unto death.

Even the disciples of Jesus could not grasp the simplicity and profundity of his message; still less could his opponents. When the crisis came, he alone remained unshaken in his faith. He was accused of blasphemy to the ecclesiastical authorities and of insurrection to the civil rulers. He was condemned and crucified. His followers were scattered every man to his own place as sheep without a shepherd. Of his work nothing remained, not a written word, nor more than the rudiments of an organization. The decisive event, which turned defeat into victory and re-established courage and faith, was the resurrection of Jesus from the dead and his reappearance to his disciples. Our sources will not permit the precise determination of the order or the nature of these appearances, but in any case from them arose the faith which was the basis of the Christian Church and the starting-point of its theology.

The death of Jesus as a criminal, and his resurrection, profoundly aroused the belief and hopes of the little group of Jews who were his followers. His person and mission assumed the first place in their affections and their thinking. He had been to them a prophet, mighty in word and deed, but he now becomes to them the Messiah, Christ. It is not his word but his person which assumes first place, and faith is acceptance of him—crucified and risen—as Messiah. Hence his followers early acquire the name Christians from the Greek form of the word. With this emphasis upon the Messiah the Jewish element would seem to be predominant, but as a matter of fact it was not so. The earlier group of disciples, it is true, did not appreciate the universality of the teaching of Jesus, and they continued zealous for the older forms, but St Paul through his prophetic consciousness grasped the fundamental fact and became Jesus' true interpreter. As a result Christianity was rejected by the Jews and became the conquering religion of the Roman empire. In this it underwent another modification of far-reaching consequence.

Christianity and Greek thought.

In our earliest sources—the epistles of St Paul—Christ is the pre-existent man from heaven, who had there existed in the form of God, and had come to earth by a voluntary act of self-humiliation. He is before and above all things. By him all things exist. In the Johannine writings he is the Son of God—the Logos who in the beginning was with God—of whom are all things—who lightens every man—and who was incarnate in Jesus. Here the cosmological element is again made prominent though not yet supreme, and the metaphysical problems are so close at hand that their discussion is imperative. Even in Paul the term Messiah thus had lost its definite meaning and became almost a proper name. Among the Greek Christians this process was complete. Jesus is the "Son of God"; and the great problem of theology becomes explicit. Religion is in our emotions of reverence and dependence, and theology is the intellectual attempt to describe the object of worship. Doubtless the two do not exactly coincide, not only because accuracy is difficult or even impossible, but also because elements are admitted into the definition of God which are derived from various sources quite distinct from the religious experience. Like all concepts the meaning of religious terms is changed with a changing experience and a changing world-view. Transplanted into the Greek world-view, inevitably the Christian teaching was modified—indeed transformed. Questions which had never been asked came into the foreground, and the Jewish presuppositions tended to disappear. Especially were the Messianic hopes forgotten or transferred to a transcendent sphere beyond death. When the empire became Christian in the 4th century, the notion of a kingdom of Christ on earth to be introduced by a great struggle all but disappeared, remaining only as the faith of obscure groups. Immortality—the philosophical conception—took the place of the resurrection of the body. Nevertheless the latter continues because of its presence in the primary sources, but it is no longer a determining factor, since its presupposition—the Messianic kingdom on earth—has been obscured. As thus the background is changed from Jewish to Greek, so are the fundamental religious conceptions.

The Semitic peoples were essentially theocratic in their religion; they used the forms of the sensuous imagination in setting forth the realities of the unseen world. They were not given to metaphysical speculation, nor long insistent in their inquiries as to the meaning and origin of things. With the Greeks it was far otherwise. For them ideas and not images set forth fundamental reality, and their restless intellectual activity would be content with nothing else than the ultimate truth. Their speculation as to the nature of God had led them gradually to separate him by an infinite distance from all creation, and to feel keenly the opposition of the finite and the infinite, the perfect and the imperfect, the eternal and the temporal. To them, therefore, Christianity presented itself not primarily as the religion of a redemption through the indwelling power of a risen saviour, as with Paul, nor even as the solution of the problem how the sins of men could be forgiven, but as the reconciliation of the antinomy of the intellect, indicated above. The incarnation became the great truth: God is no longer separated by a measureless distance from the human race, but by his entering into humanity he redeems it and makes possible its ultimate unity with himself. Such lines of thought provoke discussion as to the relationship of Jesus to God the Father, and, at a later period, of the nature of the Holy Spirit who enters into and transforms believers.

Greek philosophy in the second century A.D. had sunk for the most part into scepticism and impotence; its original impulse had been lost, and no new intellectual power took its place; only in Alexandria was there a genuine effort made to solve the fundamental problems of God and the world. Plato had made God accessible to the highest knowledge as the transcendent idea, remote from the world. For Aristotle, too, God in his essence is far above the world and at most its first mover. The stoics, on the other hand, taught his immanence, while the eclectics sought truth by the mingling of the two ideas. They accomplished their purpose in various ways, by distinguishing between God and his power—or by the notion of a hierarchy of super-sensible beings, or in a doctrine which taught that the operations of nature are the movement of pure spirit; or by the use of the “Word” of “Wisdom,” half personified as intermediate between God and the world. While these monotheistic, pantheistic doctrines were taught in the schools, the people were left to a debased polytheism and to new superstitions imported from the Orient; the philosophers themselves were by no means unaffected by the popular beliefs. Mingled with all these were the ancient legends of gods and heroes, accepted as inspired scripture by the people, and by philosophers in part explained away by an allegorical exegesis and in part felt increasingly as a burden to the intelligence. In this period of degeneracy there were none the less an awakening to religious needs and a profound longing for a new revelation of truth, which should satisfy at once the intellect and the religious emotions.

Christianity came as supplying a new power; it freed philosophy from scepticism by giving a definite object to its efforts and a renewed confidence in its mission. Monotheism henceforth was to be the belief not of philosophers only but even of the ignorant, and in Jesus Christ the union of the divine and the human was effected. The Old Testament, allegorically explained, became the substitute for the outgrown mythology; intellectual activity revived; the new facts gained predominant influence in philosophy, and in turn were shaped according to its canons. In theology the fundamental problems of ontological philosophy were faced; the relationship of unity to multiplicity, of noumenon to phenomena, of God to man. The new element is the historical Jesus, at once the representative of humanity and of God. As in philosophy, so now in theology, the easiest solution of the problem was the denial of one of its factors: and successively these efforts were made, until a solution was found in the doctrine of the Trinity, which satisfied both terms of the equation and became the fundamental creed of the church. Its moulds of thought are those of Greek philosophy, and into these were run the Jewish teachings. We have thus a peculiar combination—the religious doctrines of the Bible, as culminating in the person of Jesus, run through the forms of an alien philosophy.

The doctrine of the Trinity.

The Jewish sources furnished the terms Father, Messiah, Son and Spirit. Jesus seldom employed the last term and St Paul’s use of it is not altogether clear. Already in Jewish literature it had been all but personified (cf. the Wisdom of Solomon). Thus the material is Jewish, though already modified doubtless by Greek influence. But the problem is Greek. It is not primarily ethical nor even religious, but it is metaphysical. What is the ontological relationship between these three factors? The answer is given in the Nicene formula, which is characteristically Greek. By it we perceive how God, the infinite, the absolute, the eternal, is yet not separated from the finite, the temporal, the relative, but, through the incarnation, enters into humanity. We further see how this entering into humanity is not an isolated act but continues in all the children of God by the indwelling spirit. Thus, according to the canons of the ancient philosophy, justice is done to all the factors of our problem—God

remains as Father, the infinitely remote and absolute source of all; as Son, the Word who is revealed to man and incarnate in him; as Spirit, who dwells even in our own souls and by his substance unites us to God.

While thus the Greek philosophy furnished the dialectic and the mould for the characteristic Christian teaching, the doctrine of the Trinity preserved religious values. By Jesus the disciples had been led to God, and he was the central fact of faith. After the resurrection he was the object of praise, and soon prayers were offered in his name and to him. Already to the apostle Paul he dominates the world and is above all created things, visible and invisible, so that he has the religious value of God. It is not God as abstract, infinite and eternal, as the far-away creator of the universe, or even as the ruler of the world, which Paul worships, but it is God revealed in Jesus Christ, the Father of Jesus Christ, the grace and mercy in Jesus Christ which deliver from evil. Metaphysics and speculative theories were valueless for Paul; he was conscious of a mighty power transforming his own life and filling him with joy, and that this power was identical with Jesus of Nazareth he knew. In all this Paul is the representative of that which is highest and best in early Christianity. Speculation and hyperspiritualization were ever tending to obscure this fundamental religious fact: in the interest of a higher doctrine of God his true presence in Jesus was denied, and by exaggeration of Paul's doctrine of "Christ in us" the significance of the historic Jesus was given up. The Johannine writings, which presupposed the Pauline movement, are a protest against the hyperspiritualizing tendency. They insist that the Son of God has been incarnate in Jesus of Nazareth, and that our hands have handled and our eyes have seen the word of life. This same purpose, namely, to hold fast to the historic Jesus, triumphed in the doctrine of the Trinity; Jesus was not to be resolved into an aeon or into some mysterious *tertium quid*, neither God nor man, but to be recognized as very God who redeemed the soul. Through him men were to understand the Father and to understand themselves as God's children. Thus the doctrine of the Trinity satisfied at once the philosophic intelligence of scholars and the religious needs of Christians. Only thus can its adoption and ultimate acceptance be explained. Its doctrinal form is the philosophic statement of beliefs held by the common people, who had little interest in theology, but whose faith centred in Jesus. It marks the naturalization of Christianity in the Greek world for the common people who believed in Christ, and for the philosophers who justified the faith to reason.

The historic and religious values of the doctrine of the Trinity may be illustrated by way of contrast. The Mahāyāna systems are the union of Buddha's teaching with the forms of the Brahman philosophy. The historic Buddha—the man Gautama—is taught as only one of a limitless series of incarnations or (better) appearances. For his life on earth with his material body was only an appearance, a seeming, a phenomenon, and simultaneously with its activities the true Buddha existed unmoved and eternal. Thus the way was opened for other apparitional Buddhas, and different sects take different ones as the objects of faith and worship. Moreover, our true nature is also Buddha. The conscious life of all men is apparitional and illusive. Salvation is the comprehension of this fact, and in the apprehension of our essential oneness with the absolute. Hence the way of salvation is by knowledge. In the Mahāyāna gnosticism was triumphant, and the historic values of Gautama's teaching and personality are lost. The Mahãyãna illustrates in part what would have followed the triumph of gnosticism in Christianity, for not only would the historic value of the life and teaching of Jesus have been lost, but with it the significance of humanity.

It is apparent that such a doctrine as the Trinity is itself susceptible of many explanations, and minds differently constituted lay emphasis upon its different elements. Especially is this true as its Greek terminology was translated into Latin, and from Latin came into modern languages—the original meaning being obscured or disguised, and the original issues forgotten. For some the first thought of God, the infinite and ultimate reality lying beyond and behind all phenomena, predominates. With these the historic manifestation of Jesus becomes only a guide to lead us to that immediate apprehension of God which is the end of theology, and to that immediate union with God which is the end of religion. Such an end is accomplished either by means of pure thought or by a oneness of pure feeling, giving as results the theological or philosophical construction of the concept God, or a mystical ecstasy which is itself at once immediate, inexplicable and indescribable. On the other hand, minds of a different and more concrete character so emphasize the distinctions God, Son and Holy Spirit, that a tritheistic construction appears—three individuals in the one Godhead: these individuals appearing, as for example in the Father and the Son, even in opposition to each other. In general we may say then that the Trinity takes on four differing aspects in the Christian church: in its more common and easily apprehended form as three Gods, in its ecclesiastical form as a mystery which is above reason to be accepted by faith, in

its philosophic form as the highest reason which solves the ultimate problems of the universe, and finally, as a mode by which the spirit through an emotional content enters into communion with God himself.

To some Christians the doctrine of the Trinity appeared inconsistent with the unity of God which is emphasized in the Scriptures. They therefore denied it, and accepted Jesus Christ, not as incarnate God, but as God's highest creature by whom all else was created, or as the perfect man who taught the true doctrine of God. The first view in the early Church long contended with the orthodox doctrine, but finally disappeared, and the second doctrine in the modern Church was set forth as easily intelligible, but has remained only as the faith of sects relatively small in number.

Allied with the doctrine of God which seeks the solution of the ultimate problem of all philosophy, the doctrine of salvation has taken the most prominent place in the Christian faith: so prominent, indeed, that to a large portion of believers it has been the supreme doctrine, and the doctrine of the deity of Jesus has been valued only because of its necessity on the effect of the atonement. Jesus alone of the great founders of religion suffered an early and violent death, even the death of a criminal. It became therefore the immediate task of his followers to explain this fact. This explanation was the more urgent because under the influence of Jewish monotheism the rule of God was accepted as an undoubted presupposition, so that the death of Jesus must be in accordance with his will. The early Church naturally used the terms and phrases of the prophets. He died the death of a criminal, not for his sins, but for ours. Isaiah liii. was suggested at once and became the central explanation: Christ is the suffering servant who is numbered with the transgressors and who bears the sins of many.

The doctrine of the cross.

Jesus faced this problem perhaps before the opening of his ministry, certainly from his break with the ecclesiastical authorities. As his violent death drew near, his words indicated how he preserved his deep faith unshaken while yet recognizing the seeming failure of his mission. He devotes himself more exclusively to the little body of his faithful friends and commits his mission to them. As his work is sealed by his death his body is broken and his blood is shed for them. Through this is to come the victory which is denied to his life, as the seed cast into the ground and dead brings forth fruit. Our hints are few of Jesus' teaching, but this much, at least, we cannot doubt unless we suppose that death took him unawares, or that his explanation of the impending fact took on some un-Jewish form; and further, that the earliest tradition misrepresents him. But these hypotheses do not commend themselves, and we accept the tradition that Jesus taught that his death was an atonement for others.

Beyond this the gospel does not go. Why vicarious suffering is needed, or why the God who is the loving Father does not simply forgive, as in the parable of the prodigal son, is not asked. For after all it is not theory which is central, but the fact of the death, and the reason assigned is simply "for others."

In St Paul we find the beginnings of explanation, indeed of two explanations, and in the Epistle to the Hebrews the whole sacrificial system is found to culminate in Christ, of whom all priests and sacrifices are symbols, so that they are abolished with the coming of the great reality.

In the Greek world further questions are raised and the thought of the death as a ransom is prominent. To whom was the ransom paid? For a thousand years the answer was "to the devil." He had gained control of man by man's sin, and Christ set man free. God then, who is love, delivers us from evil through Christ, who pays the penalty of our transgression to the enemy of God and man. There were other theories also, indeed the germs of all later theories existed even in the second century, but this one prevailed. The heretic Marcion taught a variant, namely, the existence of two Gods, one of the Old Testament of law, the other of the New Testament of grace. Christ, unjustly condemned by the God of law, is given as reparation for all men who put their trust in him. From Anselm's time (12th century A.D.) this theory of Marcion's is held as orthodox in substance but is made monotheistic in form. St Anselm denied that any penalty was due to the devil, and in terms of feudal honour restated the problem. The conflict here is in God himself, so to speak, between his immutable righteousness and his limitless grace. In the sacrifice of Jesus these are reconciled. This doctrine of St Anselm's attaches itself readily to texts of St Paul, for his teachings contain undeniably the vicarious propitiatory element.

These theories have to do with the being to whom the ransom is paid or the sacrifice offered. Another group of theories deals with the effect of the death of Christ upon the sinner. One of these is the so-called governmental theory, wherein the death of Christ is set

forth as for the sake of good government, so that the forgiveness of sins shall not be thought a sign of laxity. Again, by other theologians the death of Jesus is extolled because of the moral influence it exerts, since Christ's devotion unto death incites a like devotion in us.

Excepting in relatively narrow circles these theories have been seriously studied only by professed theologians. That Christ died for us, and that we are saved by him, is indeed the living truth of the Church in all ages, and a false impression of the fact is given by dwelling upon theories as if they were central. At best they bear only the relationship of philosophy to life.

Another explanation, or (better) system of beliefs, has been far more influential in the Church. Belief in mysterious powers attached to food, feasts, ceremonial rites and sacred things is all but universal. Primitive man seldom connects sacrifice with notions of propitiation, indeed only in highly ethicized religions is the consciousness of sin or of guilt pre-eminent. Sacrifice was believed to exert an influence on the deity which is quasi-physical, and in sacrificial feasts God and worshipper are in mysterious union. Sometimes, indeed, such contact with deity is thought to be dangerous, and the rites indicate avoidance (tabu), and sometimes it is thought desirable.

So universal are such ideas that the problem in particular religions is not their origin but their form. In the Old Testament repeatedly they are found in conflict with the prophetic ideals. Sometimes the prophets denounce them, sometimes ignore them, sometimes attempt to reform and control them. Jesus ignores them, his emphasis being so strong upon the ethical and spiritual that the rest is passed by. In the early Church, still Jewish, the belief was in the coming of a mysterious power from God which produced ecstasy and worked wonders. St Paul also believes in this, but insists that it is subordinate to the peaceable fruits of righteousness. With the naturalization of the Church in the Gentile world ethical ideas became less prominent, and the sacramental system prevailed. By baptism and the Lord's Supper grace is given (*ex opere operato*), so that man is renewed and made capable of salvation. Already in the 2nd century baptism was described as a bath in which the health of the soul is restored, and the Lord's Supper as the potion of immortality. Similar notions present in the ethnic faiths take the Christian facts into their service, the belief of the multitude without essential change remaining vague and undefined. While the theologians discussed doctrine the people longed for mystery, as it satisfied their religious natures. By sacraments they felt themselves brought into the presence of God, and to sacraments they looked for aid. Many sacraments were adopted by portions of the Church, until at last the sacred number seven was agreed upon.

As the way of salvation was modified, so too was the idea of salvation: the dream of a Messianic kingdom on earth, with its corollary the resurrection of the physical body, faded away, especially after the Roman empire adopted Christianity; It was no longer the Jewish nation against the heathen empire, for the Jewish nation had ceased to be, and the empire and the Church were one. Salvation henceforth is not the descent of the New Jerusalem out of heaven, but the ascent of the saints to heaven; for the individual it is not the resurrection of the body but the immortality of the soul. So Jesus is no longer Christ or Messiah, but the Son of God. These terms again are variously interpreted: heaven is still thought of by many under the imagery of the book of Revelation, and by others it is conceived as a mystical union of the soul with God through the intelligence or of feelings. Yet the older conceptions still continue, Christianity not becoming purely and simply Greek. Again and again individuals and groups turn back to the Semitic cycle of hopes and ideas, while the reconciliation of the two systems, Jewish and Graeco-Roman, becomes the task of exegetes and theologians.

The concepts of salvation.

These hopes and theories of salvation, however, do not explain the power of Christianity. Jesus wearied himself with the healing of man's physical ailments, and he was remembered as the great physician. Early Christian literature is filled with medical terms, applied (it is true) for the greater part to the cure of souls. The records of the Church are also filled with the efforts of Jesus' followers to heal the diseases and satisfy the wants of men. A vast activity animated the early Church: to heal the sick, to feed the hungry, to succour the diseased, to rescue the fallen, to visit the prisoners, to forgive the erring, to teach the ignorant, were ministries of salvation. A mighty power impelled men to deny themselves in the service of others, and to find in this service their own true life. None the less the first place is given to the salvation of the soul, since, created for an unending existence, it is of transcendent importance. While man is fallen and by nature vile, nevertheless his possibilities are so vast that in comparison the affairs of earth are insignificant. The word, "What shall it profit a man if he gain the whole world and lose his own soul?" comes to mean that the individual soul outvalues the whole world. With emphasis upon God as creator and

ruler, and upon man as made in God's image, endowed with an unending existence, and subject to eternal torture if not redeemed, the concept of personality has been exalted at the expense of that of nature, and the future has been magnified at the expense of the present. Thus a future heaven is man's true home, and theology instead of philosophy or natural science is his proper study.

Indeed, intellectual interest centred in religion. Natural science was forsaken, except in so far as it ministered to theology. Because the Old Testament contained references to the origin and the objects of the universe, a certain amount of natural science was necessary, but it was only in this connexion that it had any value. By Augustine's time this process is complete. His writings contain most of the knowledge of his age, but it is strictly subordinate to his theological purpose. Hence, when the barbarians submerged southern Europe, theology alone survived. The Church entered upon a new task. In the beginning Christianity had been the teacher of religion to highly civilized peoples—now it became the civilizing agent to the barbarians, the teacher of better customs, the upholder of law and the source of knowledge. The learned men were monks and priests, the universities were Church institutions, and theology was the queen of the sciences.

Theology and worship.

The relation of cult to creed is still undetermined. Theoretically the first depends on the second, for its purpose is twofold: the excitation of worthy religious emotions and the attaining of our desires; and how shall these objects be attained unless we know him whom we worship and to whom we pray? But it is plausibly maintained that the reverse is true, namely, that theology rests on cult. In the beginnings of consciousness instinctive reactions precede definite thoughts, and even in mature life thoughts often follow acts instead of preceding them. Our religious consciousness is simply our ordinary consciousness obeying its laws. So unpurposed does cult grow up that it combines many elements of diverse origin, and is seldom precisely and wholly in accordance with the creed. No doubt the two interact, cult influencing creed and creed modifying cult—cult, perhaps, being most powerful in forming the actual religious faith of the multitude. Cult divides into two unequal parts, the stimulation of the religious emotions and the control of piety. In the Church service it came early to centre in the sacrament of the Eucharist (*q.v.*). In the earliest period the services were characterized by extreme freedom, and by manifestations of ecstasy which were believed to indicate the presence of the spirit of God; but as the years went by the original enthusiasm faded away, the cult became more and more controlled, until ultimately it was completely subject to the priesthood, and through the priesthood to the Church. In the Roman communion the structure of the sacred edifice, the positions and attitudes of the priest and the congregation, the order of service, emphasize the mystery and the divine efficacy of the sacrament. The worshipper feels himself in the immediate presence of God, and enters into physical relations with him. Participation in the mass also releases from guilt, as the Lamb of God offered up atones for sin and intercedes with the Father in our behalf. Thus in this single act of devotion both objects of all cults are attained.

Polity.

As the teaching and person of Jesus were fitted into the framework of the Greek philosophy, and the sacraments into the deeper and broader forms of popular belief, so was the organization shaped by the polity of the Roman empire. Jesus gathered his group of followers and committed to it his mission, and after his resurrection the necessities of the situation brought about the choice of quasi-officials. Later the familiar polity of the synagogue was loosely followed. A completer organization was retarded by two factors, the presence of the apostles and the inspiration of the prophets. But when the apostles died and the early enthusiasm disappeared, a stricter order arose. Practical difficulties called for the enforcement of discipline, and differences of opinion for authority in doctrine; and, finally, the sacramentarian system required a priesthood. In the 2nd century the conception of a Catholic Church was widely held and a loose embodiment was given it; after the conversion of the empire the organization took on the official forms of the empire. Later it was modified by the rise of the feudal system and the re-establishment of the modern European nationalities (see Church History).

Penance.

The polity of the Church was more than a formal organization; it touched the life of each believer. Very early, Christianity was conceived to be a new system of law, and faith was interpreted as obedience. Legalism was joined with sacramentarianism, doubling the power of the priest. Through him Church discipline was administered, a complete system of ecclesiastical penalties, *i.e.* penance, growing up. It culminated in the doctrine of purgatory, a place of discipline, of purifying suffering after death. The Roman genius for law strengthened and systematized this tendency.

The hierarchy which centres in the pope constitutes the Church of which the sacramental system is the inner life and penance is the sanction. It is thus a divine-human organization. It teaches that the divine-human Son of God established it, and returning to heaven committed to the apostles, especially to St Peter, his authority, which has descended in an unbroken line through the popes. This is the charter of the Church, and its acceptance is the first requisite for salvation; for the Church determines doctrine, exercises discipline and administers sacraments. Its authority is accompanied by the spirit of God, who guides it into truth and gives it miraculous power. Outside the Church there are only the "broken lights" of man's philosophy and the vain efforts of weak human nature after virtue.

Christianity in its complete Roman development is thus the coming of the supernatural into the natural. The universe falls into these orders, the second for the sake of the first, as nature is of and for God. Without him nature at its highest is like a beautiful statue, devoid of life; it is of secondary moment compared even to men, for while it passes away he continues for ever. He is dependent, therefore, not upon nature, but upon God's grace for salvation, and this comes through the Church. In the book of Revelation the New Jerusalem descending from heaven to the earth may be taken as a symbol of a continuing process: the human receives the divine, as the Virgin Mary received the Holy Spirit and brought forth Jesus, perfect man and perfect God. Thus the Church ever receives God and has a twofold nature; its sacraments through material and earthly elements impart a divine power; its teachings agree with the highest truths of philosophy and science, yet add to these the knowledge of mysteries which eye hath not seen, nor ear heard, neither hath it entered into the heart of man to conceive; it sanctifies human relationships, but the happiness of earth at purest and best is only a shadow of the divine bliss which belongs to the redeemed soul. Hence man should deny the world for the sake of the other world, and the title "religious" belongs distinctly to the monastic and priestly life. Theology is the queen of the sciences, and nothing should be taught in school or university which contradicts its conclusions. Moreover, nothing should be done by the state which interferes with the transcendent interest committed to the Church. Thus the Church touches and controls all realms of life, and the cycle is complete. It began as separate from the world and proscribed by it; next it adapted itself to the learning, the customs and the polity of the world. Finally it asserted its mastery and assumed sovereign power over all. The Church in its completed form was the outcome of a long development; if the seed was Jewish the environment was Gentile. Into the full tree were gathered the effects, not only of the initial energy, but of the forces of earth, air, water and sun. The Roman Church expressed the beliefs and answered the needs of the people, and this explains in part both its forms and its power, its long continuance and wide supremacy.

The completed doctrine of the Roman Church.

The Church was never completely successful in unifying its organization. In part it shared the destiny of the Roman empire, and with it fell into two parts, East separating from West. Indeed the East never really acknowledged the Roman primacy nor shared in its development, and it still remains apart. With characteristic oriental conservatism it claims the title of "Orthodox," and retains the creed and organization of the early Church. In general its conception of the relation of the world to the super-world is identical with that of the Roman Church, though somewhat less defined, as its organization is less complete. It has remained in the second stage mentioned above; established, as in Russia, by the empire, it is dependent upon it and in alliance with it. In the Mahommedan dominions it has been recognized as a state within the state, and in these communities faith and patriotism are one.

The Eastern Church.

The idea of the Roman Church was imperfectly embodied at the best; the divine gift was in earthen vessels. The world was never completely cast out; indeed the Church became the scene for ambition and the home of luxury and pleasure. It was entangled also in the political strife of the feudal ages and of the beginning of modern empires. Its control of the sciences embroiled it with its own philosophers and scholars, while saints and pure-minded ecclesiastics attempted, without success, its reform from within. Finally, through Luther, the explosion came, and western Christendom broke into two parts—Catholic and Protestant.

The Reformation.

Protestantism in its primary principle is the return to primitive Christianity. The whole development which we have traced, culminating in the ecclesiastical-doctrinal system of the Roman Church, is regarded as a corruption, since foreign and even heathen elements have been brought in, so that the religion established by Christ is obscured or lost. For Protestants the Bible only now becomes the infallible, inspired authority in faith and morals. Interpretations by the Fathers or by the councils are to be taken only as aids to its

understanding. With this principle is associated a second, the liberty of the individual; he reads the sacred Scriptures and interprets them for himself without the intervention of priests or church; and he enters by faith in Christ into communion with God, so that all believers are priests. Here may be noted a fundamental difference in the psychology of religion, since in the Roman Church the chief appeal is to the emotions, while in the Reformed it is to the intelligence. Yet this appeal to the intelligence is not rationalism: the latter makes reason the supreme authority, rejecting all which does not conform to it; the Bible is treated like any other book, to be accepted or rejected in part or in whole as it agrees with our canons of logic and our general science, while religion submits to the same process as do other departments of knowledge. But in Protestantism reason and the light of nature are in themselves as impotent as in the Roman Church. The Bible interpreted by man's unaided intelligence is as valueless as other writings, but it has a sacramental value when the Holy Spirit accompanies its teaching, and the power of God uses it and makes the soul capable of holiness. In all this the supernatural is as vividly realized as in the Roman Church; it is only its mediation which is different.

These principles are variously worked out in the different churches and variously expressed. In part because of historical circumstances, the divergence from the older systems is more marked in some Protestant churches than in others, yet on the whole these two principles determine cult and in part organization. As in the Roman Church cult centres in the mass, so in the Reformed Church it centres in the sermon. The Holy Spirit, the determining factor in the religious life, uses the Bible as his means, and calls the intelligence into action. The clergyman is primarily the preacher, renewed by God's power and enlightened by the Spirit, so that he speaks with divine authority. The ancient Jewish prophetic office is revived, yet with a difference: the ancient prophets acknowledged no external authority, but the Protestant preacher is strictly subordinate to the Scriptures of which he is the interpreter. Beside the sermon the sacraments are observed as established by Christ—two in number, baptism and the Lord's Supper. But these do not exert a quasi-physical or magical influence, *ex opere operato*. Unless there be faith in the recipient, an understanding of the meaning of the sacrament and an acceptance of it, it is valueless or harmful. Prayer and praise also are effective only as the congregation intelligently join in them; hence they are not to be solely by a priest nor in a strange tongue, as the clergyman is simply the leader of the devotions of the people. In large portions of the Church also opportunity for the free expression of the religious experience of the laity is found.

Protestantism.

The emphasis upon the believer and his freedom from all external authority do not result in a thoroughgoing individualism. Luther clearly held to the unity of all Christians, and Protestants are agreed in this. For them, as for the Roman Church, there is a belief in a catholic or all-embracing Church, but the unity is not that of an organization; Christians are one through an indwelling spirit; they hold the same faith, undergo the same experience and follow the same purpose. This inner life constitutes the oneness of believers and forms the true Church which is invisible. It expresses itself in outward forms, yet there are not two Churches visible and invisible, but only one. The spiritual experience of the individual utters itself in words, and desires association with others who know the same grace. There is formed a body of teaching in which all agree, and an organization in which the common experience finds expression and aid. While then membership in this organization is not primary, it assumes a higher and even a vital importance, since a true experience recognizes the common faith and the common fellowship. Were it to refuse assent to these, doubt would be thrown upon its own trustworthiness.

Historically these principles were only in part embodied, for the Reformation was involved in political strife. The Reformers turned to the government for aid and protection, and throughout Europe turmoil and war ensued. In consequence, in the Protestant nations the state assumed the ultimate authority over the Church. Moreover, in the early days of the Reformation the Catholic Church charged it with a lawless individualism, a charge which was seemingly made good by an extreme divergence in theological opinion and by riots in various parts of the Protestant world. The age was indeed one of ferment, so that the foundations of society and of religion seemed threatened. The Reformers turned to the state for protection against the Roman Church, and ultimately as a refuge from anarchy, and they also returned to the theology of the Fathers as their safeguard against heresy. Instead of the simplicity of Luther's earlier writings, a dogmatic theology was formed, and a Protestant ecclesiasticism established, indistinguishable from the Roman Church in principle. The main difference was in the attitude to the Roman allegiance and to the sacramentarian system. There was thus by no means a complete return to the Bible as the sole authority, but the Bible was taken as interpreted by the earlier creeds and as worked into a doctrinal system

by the scholastic philosophy. Thus Protestantism also came to identify theology with the whole range of human knowledge, and in its official forms it was as hostile to the progress of science as was the Roman Church itself.

Many Protestants rebelled against this radical departure from the principles of the Reformation and of Biblical Christianity. To them it seemed the substitution of the authority of the Church for the authority of a living experience and of intellectual adherence to theological propositions for faith. The freedom of the individual was denied when the state enforced religious conformity. Thus a struggle within Protestantism arose, with persecutions of Protestants by Protestants. Moreover, many failed to find the expression of their faith in the official creed or in the established organization, and Protestantism divided into many sects and denominations, founded upon special types of religious experience or upon particular points in doctrine or in cult. Thus Protestantism presents a wide diversity in comparison with the regularity of the Roman Church. This we should expect indeed from its insistence upon individual freedom; yet, notwithstanding certain notable exceptions, amid the diversity there is a substantial unity, a unity which in our day finds expression in common organizations for great practical ends, for example in the “Bible Societies,” “Tract Societies,” the “Young Men’s Christian Associations,” “Societies of Christian Endeavour,” &c., which disregard denominational lines.

Christianity and the modern world.

The coming of the northern peoples into the Roman world profoundly modified Christianity. It shared indeed in the dreariness and corruption of the times commonly called the “dark ages,” but when at last a productive period began the Church was the first to profit by it. Since all educated men were priests, it assimilated the new learning—the revived Aristotelianism—and continued its control of the universities. In the 13th century it was supreme, and Christianity was identified with world systems of knowledge and politics. Both were deemed alike divine in origin, and to question their validity was an offence against God. Christianity thus had passed through three stages in politics as in science. At first it was persecuted by the state, then established by it, and finally dominated over it; so its teaching was at first alien to philosophy and despised by it, next was accepted by it and given form and rights through it, and finally became queen of the sciences as theology and ruled over the whole world of human knowledge. But the triumph by its completeness ensured new conflicts; from the disorder of the middle ages arose states which ultimately asserted complete autonomy, and in like fashion new intellectual powers came forth which ultimately established the independence of the sciences.

In the broadest sense the underlying principle of the struggle is the reassertion of interest in the world. It is no longer merely the scene for the drama of the soul and God, nor is man independent of it, but man and nature constitute an organism, humanity being a part of the vaster whole. Man’s place is not even central, as he appears a temporary inhabitant of a minor planet in one of the lesser stellar systems. Every science is involved, and theology has come into conflict with metaphysics, logic, astronomy, physics, chemistry, geology, zoology, biology, history and even economics and medicine. From the modern point of view this is unavoidable and even desirable, since “theology” here represents the science of the 13th century. As in the political world the states gained first the undisputed control of matters secular, rejecting even the proffered counsel of the Church, and then proceeded to establish their sovereignty over the Church itself, so was it in the empire of the mind. The rights gained for independent research were extended over the realm of religion also; the two indeed cannot remain separate, and man must subordinate knowledge to the authority of religion—or make science supreme, submitting religion to its scrutiny and judging it like other phenomena. Under this investigation Christianity does not appear altogether exceptional. Its early logic, ontology and cosmology, with many of its distinctive doctrines, are shown to be the natural offspring of the races and ages which gave them birth. Put into their historical environment they are freed from adverse criticism, and indeed valued as steps in the intellectual development of man’s mind. Advanced seriously, however, as truths to-day, they are put aside as anachronisms not worthy of dispute. The Bible is studied like other works, its origins discovered and its place in comparative religion assigned. It does not appear as altogether unique, but it is put among the other sacred books. For the great religions of the world show similar cycles of development, similar appropriations of prevalent science and philosophy, similar conservative insistence upon ancient truth, and similar claims to an exclusive authority.

With this interest is involved an attitude of mind toward the supernatural. As already pointed out, nature and super-nature were taken as physically and spatially distinct. The latter could descend upon the former and be imparted to it, neither subject to nature nor

intelligible by reason. In science the process has been reversed; nature ascends, so to speak, into the region of the supernatural and subdues it to itself; the marvellous or miraculous is brought under the domain of natural law, the canons of physics extend over metaphysics, and religion takes its place as one element in the natural relationship of man to his environment. Hence the new world-view threatens the foundations of the ecclesiastical edifice. This revolution in the world-view is no longer the possession of philosophers and scholars, but the multitude accepts it in part. Education in general has rendered many familiar with the teachings of science, and, moreover, its practical benefits have given authority to its maxims and theories. The world's problem is not only therefore acute, but the demand for its solution is wider than ever before.

The attitude of the Roman Church.

The Roman Catholic Church uncompromisingly reasserts its ancient propositions, political and theological. The cause is lost indeed in the political realm, where the Church is obliged to submit, but it protests and does not waive or modify its claims (see the Syllabus of 1864, paragraphs 19 ff., 27, 54 and 55). In the Greek and Protestant churches this situation cannot arise, as they make no claims to governmental sovereignty. In the intellectual domain the situation is more complex. Again the Roman Church unhesitatingly reaffirms the ancient principles in their extreme form (Syllabus, paragraphs 8-9-13; Decrees of the Vatican Council, chapter 4, note especially canon 4-2). The works of St Thomas Aquinas are recommended as the standard authority in theology (Encyc. of Leo XIII., *Aeterni Patris*, Aug. 4, 1879). In details also the conclusions of modern science are rejected, as for example the origin of man from lower species, and, in a different sphere, the conclusions of experts as to the origins of the Bible. Faith is defined as "assent upon authority," and the authority is the Church, which maintains its right to supremacy over the whole domain of science and philosophy.

The Greek and Protestant Churches.

The Greek Church remains untouched by the modern spirit, and the Protestant Churches also are bound officially to the scholastic philosophy of the 17th century; their confessions of faith still assert the formation of the world in six days, and require assent to propositions which can be true only if the old cosmology be correct. Officially then the Church identifies Christianity with the position outlined above, and hostile critics agree to this identification, rejecting the faith in the name of philosophic and scientific truth.

Compromises.

On the other hand there are not wanting individuals and even large bodies of Christians who are intent upon a reinterpretation. Even in the official circles of the Church, not excepting the Roman Church, there are many scholars who find no difficulty in remaining Christian while accepting the modern scientific view of the world. This is possible to some because the situation in its sharp antithesis is not present to their minds: by making certain compromises on the one side and on the other, and by framing private interpretations of important dogmas, they can retain their faith in both and yet preserve their mental integrity. A large literature is produced, reconciling science and theology by softening and compromising and adapting; a procedure in accordance with general historical development, for men do not love sharp antagonisms, nor are they prepared to carry principles to their logical conclusions. By a fortunate power of mind they are able to believe as truths mutually inconsistent propositions.

Thus the crisis is in fact not so acute as it might seem. No great institution lives or dies by logic. Christianity rests on great religious needs which it meets and gratifies, so that its life (like all other lives) is in unrationalized emotions. Reason seeks ever to rationalize these, an attempt which seems to destroy yet really fulfils. As thus the restless reason tests the emotions of the soul, criticizes the traditions to which they cling, rejects the ancient dogmas in which they have been defined, the Church slowly participates in the process: silently this position and that are forsaken, legends and beliefs once of prime importance are forgotten, or when forced into controversy many ways are found by which the old and the new are reconciled: the sharpness of distinctions can be rubbed off, expressions may be softened, definitions can be modified and half-way resting-places afforded, until the momentous transition has been made and the continuity of tradition is maintained. Finally, as the last step, even the official documents may be revised. Such a process in Christianity is everywhere in evidence, for even the Roman Church admits the modern astronomy. So too it accepts the changes in the world of politics with qualified approval. In the Syllabus of 1864 the separation of state and church was anathematized, yet in 1906 this separation in the United States was held up as an example to be followed by the French government. In the Protestant Churches the process is precisely similar. No great church has yet modified its articles of religion so as to admit, for example, that the Garden of Eden was not a definite

place where Eve was tempted, yet the doctrine is contradicted with approval by individuals, and the results of modern science are accepted and taught without rebuke. In all this the Church shows its essential oneness with other organizations of society, the government, the family, which are at once deeply rooted in the past, and yet subject to the influences of the present. For Christianity is by no means wholly intellectual, nor chiefly so. It would be fully as true to facts to describe this religion as a vast scheme for the amelioration of the condition of humanity. In education, in care for the sick, the poor, the outcast, it has retained the spirit of its Lord. Though it has at times denied this spirit, been guilty of crimes, persecutions, wars and greed—still the Church has never quite forgotten him who went about doing good, nor freed itself from the contagion of his example. No age has been so responsive to the needs of man as our own; whatever doubts men have as to the doctrines or the cults there is an agreement wider than in the past in the good works whose inspiration is a divine love.

Yet the intellectual crisis cannot be ignored in the interest of the practical life. Men must rationalize the universe. On the one hand there are churchmen who attempt to repeat the historical process which has naturalized the Church in alien soils by appropriating the forces of the new environment, and who hold that the entire process is inspired and guided by the spirit of God. Hence Christianity is the absolute religion, because it does not preclude development but necessitates it, so that the Christianity that is to come shall not only retain all that is important in the Christianity of the past and present but shall assimilate new truth. On the other hand some seek the essential Christianity in a life beneath and separable from the historic forms. In part under the influence of the Hegelian philosophy, and in part because of the prevalent evolutionary scientific world-view, God is represented under the form of pure thought, and the world process as the unfolding of himself. Such truth can be apprehended by the multitude only in symbols which guide the will through the imagination, and through historic facts which are embodiment of ideas. The Trinity is the essential Christian doctrine, the historic facts of the Christian religion being the embodiment of religious ideas. The chief critical difficulty felt by this school is in identifying any concrete historic fact with the unchanging idea, that is, in making Jesus of Nazareth the incarnation of God. God is reinterpreted, and in place of an extra-mundane creator is an omnipresent life and power. The Christian attainment is nothing else than the thorough intellectual grasp of the absolute idea and the identification of our essential selves with God. With a less thorough-going intellectualism other scholars reinterpret Christianity in terms of current scientific phraseology. Christianity is dependent upon the understanding of the universe; hence it is the duty of believers to put it into the new setting, so that it adopts and adapts astronomy, geology, biology and psychology. With this accomplished, Christianity will resume its ancient place. Consciously and of purpose the attempt is made to do once more what has been done repeatedly before, to restate Christianity in the terms of current science.

Theories of development.

From all these efforts to reconstruct systematic theology with its appropriations of philosophy and science, groups of Christians turn to the inner life and seek in its realities to find the confirmation of their faith. They also claim oneness with a long line of Christians, for in every age there have been men who have ignored the dogma and the ritual of the Church, and in contemplation and retirement have sought to know God immediately in their own experience. To them at best theology with its cosmology and its logic is only a shadow of shadows, for God reveals himself to the pure in heart, and it matters not what science may say of the material and fleeting world. This spirit manifests itself in wide circles in our day. The Gordian knot is cut, for philosophy and religion no longer touch each other but abide in separate realms.

In quite a different way a still more influential school seeks essential Christianity in the sphere of the ethical life. It also would disentangle religion from cosmology and formal philosophy. It studies the historic development of the Church, noting how element after element has been introduced into the simplicity of the gospel, and from all these it would turn back to the Bible itself. In a thorough-going fashion it would accomplish what Luther and the Reformation attempted. It regards even the earliest creeds as only more or less satisfactory attempts to translate the Christian facts into the current language of the heathen world. But the process does not stop with this rejection of the ancient and the scholastic theology. It recognizes the scientific results attained in the study of the Bible itself, and therefore it does not seek the entire Bible as its rule of truth. To it Jesus Christ, and he alone, is supreme, but this supremacy does not carry with it infallibility in the realm of cosmology or of history. In these too Jesus participated in the views of his own time; even his teaching of God and of the future life is not lacking in Jewish elements, yet none the less

he is the essential element in Christianity, and to his life-purpose must all that claims to be Christianity be brought to be judged. To this school Christianity is the culmination of the ethical monotheism of the Old Testament, which finds its highest ideal in self-sacrificing love. Jesus Christ is the complete embodiment of this ideal, in life and in death. This ideal he sets before men under the traditional forms of the kingdom of God as the object to be attained, a kingdom which takes upon itself the forms of the family, and realizes itself in a new relationship of universal brotherhood. Such a religion appeals for its self-verification not to its agreement with cosmological conceptions, either ancient or modern, or with theories of philosophy, however true these may be, but to the moral sense of man. On the one hand, in its ethical development, it is nothing less than the outworking of that principle of Jesus Christ which led him not only to self-sacrificing labour but to the death upon the cross. On the other hand, it finds its religious solution in the trust in a power not ourselves which makes for the same righteousness which was incarnate in Jesus Christ.

Thus Christianity, as religion, is on the one hand the adoration of God, that is, of the highest and noblest, and this highest and noblest as conceived not under forms of power or knowledge but in the form of ethical self-devotion as embodied in Jesus Christ, and on the other hand it meets the requirements of all religion in its dependence, not indeed upon some absolute idea or omnipotent power, but in the belief that that which appeals to the soul as worthy of supreme worship is also that in which the soul may trust, and which shall deliver it from sin and fear and death. Such a conception of Christianity can recognize many embodiments in ritual, organization and dogma, but its test in all ages and in all lands is conformity to the purpose of the life of Christ. The Lord’s Prayer in its oldest and simplest form is the expression of its faith, and Christ’s separation of mankind on the right hand and on the left in accordance with their service or refusal of service to their fellow-men is its own judgment of the right of any age or church to the name Christian. This school also represents historic Christianity, and maintains the continuity of its life through all the ages past with Christ himself. But this continuity is not then in theological systems or creeds, nor in sacraments and cult, nor in organization, but in the noble company of all who have lived in simple trust in God and love to humanity. It is this true Church of the spirit and purpose of Jesus which has been the supreme force for the uplifting of humanity.

Christianity has passed through too many changes, and it has found too many interpretations possible, to fear the time to come. Thoroughgoing reconstruction in every item of theology and in every detail of polity there may be, yet shall the Christian life go on—the life which finds its deepest utterance in the words of Christ, “Thou shalt love the Lord thy God with all thy heart and thy neighbour as thyself”; the life which expresses its profoundest faith in the words Christ taught it to pray, “Our Father”; the life which finds its highest rule of conduct in the words of its first and greatest interpreter, “Let this mind be in you which was also in Christ Jesus our Lord.”

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(G. W. KN.)

CHRISTIANSAND (KRISTIANSAND), a fortified seaport of Norway, the chief town of a diocese (*stift*), on a fjord of the Skagerrack, 175 m. S.W. of Christiania by sea. Pop. (1900) 14,701. It stands on a square peninsula flanked by the western and eastern harbours and by the Otter river. The situation, with its wooded hills and neighbouring islands, is no less beautiful than that of other south-coast towns, but the substitution of brick for wood as building material after a fire in 1892 made against the picturesqueness of the town. There is a fine cathedral, rebuilt in Gothic style after a fire in 1880. Christiansand is an important fishing centre (salmon, mackerel, lobsters), and sawmills, wood-pulp factories, shipbuilding yards and mechanical workshops are the principal industrial works. The port is the largest on the south coast, and all the coast steamers, and those serving Christiania from London, Hull, Grangemouth, Hamburg, &c., touch here. The Saetersdal railway follows that valley north to Byglandsfiord (48 m.), whence a good road continues to Viken i Valle at the head of the valley. Flekkerö, a neighbouring island, is a favourite pleasure resort. The town was founded in 1641 by Christian IV., after whom it was named.

CHRISTIAN SCIENCE, a system of theosophic and therapeutic doctrine, which was

originated in America about 1866 by Mrs Mary Baker Glover Eddy, and has in recent years obtained a number of adherents both in the United States and in European countries. Mrs. Eddy (1821-1910; *née* Baker) was born near Concord, New Hampshire; in 1843 she married Colonel G.W. Glover (d. 1844), in 1853 she married Daniel Patterson (divorced 1873), and in 1877 Dr Asa Gilbert Eddy (d. 1883). About the year 1867 she came forward as a healer by mind-cure. She based her teaching on the Bible, and on the principles that man's essential nature is spiritual, and that, the Spirit of God being Love and Good, moral and physical evil are contrary to that Spirit, and represent an absence of the True Spirit which was in Jesus Christ. There is but one Mind, one God, one Christ, and nothing real but Mind. Matter and sickness are subjective states of error, delusions which can be dispelled by the mental process of a true knowledge of God and Christ, or Christian science. Ordinary *medical* science—using drugs, &c.—is therefore irrelevant; spiritual treatment is the only cure of what is really mental error. Jesus himself healed by those means, which were therefore natural and not miraculous, and promised that those who believed should do curative works like his. In 1876 a Christian Scientist Association was organized. Mrs Eddy had published in the preceding year a book entitled *Science and Health, with Key to the Scriptures*, which has gone through countless editions and is the gospel of Christian Science. In 1879 she became the pastor of a "Church of Christ, Scientist," in Boston, and also founded there the "Massachusetts Metaphysical College" (1881; closed 1889) for the furtherance of her tenets. The first denominational chapel outside Boston was built at Oconto, Wisconsin, in 1886; and in 1894 (enlarged and reconstructed in 1906) a great memorial church was erected in Boston. Mrs Eddy's publications also include *Retrospection and Introspection* (1891), *Unity of Good and Unreality of Evil* (1887), *Rudimental Divine Science* (1891), *Christian Healing* (1886), &c. The progress of the cult of Christian Science has been remarkable, and by the beginning of the 20th century many hundreds of Christian Science churches had been established; and the new religion found many adherents also in England. A purely local and congregational form of government was adopted, but Christian Scientists naturally looked to the mother church in Boston, with Mrs Eddy as its guiding influence, as their centre. A monthly magazine, *The Christian Science Journal* (founded in 1883), and the weekly *Christian Science Sentinel* are published officially in Boston.

The profession of the paid Christian Science "healer" has been very prominent in recent years both in America and in England; and very remarkable successes have been claimed for the treatment. In some serious cases of death after illness, where a coroner's inquest has shown that the only medical attendance was that of a Christian Science "healer," the question of criminal responsibility has been prominently canvassed; but an indictment in England against a healer for manslaughter in 1906 resulted in an acquittal. The theosophic and the medical aspects of Christian Science may perhaps be distinguished; the latter at all events is open to grave abuse. But the modern reaction in medical practice against drugs, and the increased study of the subject of "suggestion," have done much to encourage a belief in faith-healing and in "psychotherapy" generally. In 1908, indeed, a separate movement (Emmanuel), inspired by the success of Christian Science, and also emanating from America, was started within the Anglican Communion, its object being to bring prayer to work on the curing of disease; and this movement obtained the approval of many leaders of the church in England.

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CHRISTIANSUND (Kristiansund), a seaport on the west coast of Norway, in Romsdal *amt* (county), 259 m. N.E. by N. of Bergen, in the latitude of the Faeroe Islands. Pop. (1901) 11,982. It is built on four small islands, by which its harbour is enclosed. The chief exports are wood, cod, herrings and fish products, and butter to Great Britain. The town is served by the principal steamers between the south Norwegian ports, Hull, Hamburg, &c, and Trondhjem, and it is the chief port of the district of Nordmöre. Local steamers serve the neighbouring fjords, including the Sundalsfjord, from which at Sundalsören a driving road past the fine Dovrefjeld connects with the Gudbrandsdal route. Till 1742, when it received

town privileges from Christian VI., Christiansund was called Lille-Fosen.

CHRISTIE, RICHARD COPLEY (1830-1901), English scholar and bibliophile, was born on the 22nd of July 1830 at Lenton in Nottinghamshire, the son of a millowner. He was educated at Lincoln College, Oxford, and was called to the bar at Lincoln's Inn in 1857, and in 1872 became chancellor of the diocese of Manchester. This he resigned in 1893. He held numerous appointments, notably the professorships of history (from 1854 to 1856) and of political economy (from 1855 to 1866) at Owens College, Manchester. He always took an active interest in this college, of which he was one of the governors; in 1893 he gave the Christie library building designed by Alfred Waterhouse, and in 1897 he devoted £50,000 of the funds at his disposal as a trustee of Sir Joseph Whitworth's estate for the building of Whitworth Hall, which completed the front quadrangle of the college. He was an enthusiastic book collector, and bequeathed to Owens College his library of about 75,000 volumes, rich in a very complete set of the books printed by Dolet, a wonderful series of Aldines, and of volumes printed by Sebastian Gryphius. His *Étienne Dolet, the Martyr of the Renaissance* (1880), is the most exhaustive work on the subject. He died at Ribsden on the 9th of January 1901.

CHRISTINA (1626-1689), queen of Sweden, daughter of Gustavus Adolphus and Maria Eleonora of Brandenburg, was born at Stockholm on the 8th of December 1626. Her father died when she was only six years old. She was educated, principally, by the learned Johannes Matthiae, in as masculine a way as possible, while the great Oxenstjerna himself instructed her in politics. Christina assumed the sceptre in her eighteenth year (Dec. 8, 1644). From the moment when she took her seat at the head of the council board she impressed her veteran counsellors with the conviction of her superior genius. Axel Oxenstjerna himself said of her, when she was only fifteen: "Her majesty is not like women-folk, but is stout-hearted and of a good understanding, so that, if she be not corrupted, we have good hopes of her." Unfortunately her brilliant and commanding qualities were vitiated by an inordinate pride and egoism, which exhibited themselves in an utter contempt for public opinion, and a prodigality utterly regardless of the necessities of the state. She seemed to consider Swedish affairs as far too petty to occupy her full attention; while her unworthy treatment of the great chancellor was mainly due to her jealousy of his extraordinary reputation and to the uneasy conviction that, so long as he was alive, his influence must at least be equal to her own. Recognizing that he would be indispensable so long as the Thirty Years' War lasted, she used every effort to bring it to an end; and her impulsive interference seriously hampered the diplomacy of the chancellor, and materially reduced the ultimate gains of Sweden. The general peace congress was not opened till April 1645. The Swedish plenipotentiaries were Johan Oxenstjerna, the chancellor's son, and Adler Salvius. From the first the relations between them were strained. Young Oxenstjerna, haughty and violent, claimed, by right of birth and rank, to be *caput legationis*. The chancellor, at home, took his son's part, while Salvius was warmly supported by Christina, who privately assured him of her exclusive favour and encouraged him to hold his own. So acute did the quarrel become that there was a violent scene in full senate between the queen and the chancellor; and she urged Salvius to accelerate the negotiations, against the better judgment of the chancellor, who hoped to get more by holding out longer.

The longer Christina ruled, the more anxious for the future fate of her empire grew the men who had helped to build it up. Yet she gave fresh privileges to the towns; she encouraged trade and manufactures, especially the mining industries of the Dales; in 1649 she issued the first school ordinance for the whole kingdom; she encouraged foreign scholars to settle in Sweden; and native science and literature, under her liberal encouragement, flourished as they had never flourished before. In one respect, too, she showed herself wiser than her wisest counsellors. The senate and the estates, naturally anxious about the succession to the throne, had repeatedly urged her majesty to marry, and had indicated her cousin, Charles Gustavus, as her most befitting consort. Wearied of their

importunities, yet revolting at the idea of submission to any member of the opposite sex, Christina settled the difficulty by appointing Charles her successor, and at the *Riksdag* of 1650 the Swedish crown was declared hereditary in Charles and his heirs male. In the summer of 1651 Christina was, with difficulty, persuaded to reconsider her resolution to abdicate, but three years later the nation had become convinced that her abdication was highly desirable, and the solemn act took place on the 6th of July 1654 at the castle of Upsala, in the presence of the estates and the great dignitaries of the realm. Many were the causes which predisposed her to what was, after all, anything but an act of self-renunciation. First of all she could not fail to remark the increasing discontent with her arbitrary and wasteful ways. Within ten years she had created 17 counts, 46 barons and 428 lesser nobles; and, to provide these new peers with adequate appanages, she had sold or mortgaged crown property representing an annual income of 1,200,000 rix-dollars. Signs are also not wanting that Christina was growing weary of the cares of government; while the importunity of the senate and *Riksdag* on the question of her marriage was a constant source of irritation. In retirement she could devote herself wholly to art and science, and the opportunity of astonishing the world by the unique spectacle of a great queen, in the prime of life, voluntarily resigning her crown, strongly appealed to her vivid imagination. Anyhow, it is certain that, towards the end of her reign, she behaved as if she were determined to do everything in her power to make herself as little missed as possible. From 1651 there was a notable change in her behaviour. She cast away every regard for the feelings and prejudices of her people. She ostentatiously exhibited her contempt for the Protestant religion. Her foreign policy was flighty to the verge of foolishness. She contemplated an alliance with Spain, a state quite outside the orbit of Sweden’s influence, the firstfruits of which were to have been an invasion of Portugal. She utterly neglected affairs in order to plunge into a whirl of dissipation with her foreign favourites. The situation became impossible, and it was with an intense feeling of relief that the Swedes saw her depart, in masculine attire, under the name of Count Dohna. At Innsbruck she openly joined the Catholic Church, and was rechristened Alexandra. In 1656, and again in 1657, she visited France, on the second occasion ordering the assassination of her major-domo Monaldischi, a crime still unexplained. Twice she returned to Sweden (1660 and 1667) in the vain hope of recovering the succession, finally settling in Rome, where she died on the 19th of April 1689, poor, neglected and forgotten.

See Francis William Bain, *Queen Christina of Sweden* (London, 1890); Robert Nisbet Bain, *Scandinavia* (Cambridge, 1905); *Christina de Suède et le Cardinal Azzolino* (Paris, 1899); Claretta Gaudenzio, *La Regina Christina de Suezia in Italia* (Turin, 1892); Hans Emil Friis, *Dronning Christina* (Copenhagen, 1896); C.N.D. Bildt, *Christina de Suède et le conclave de Clement X* (Paris, 1906); *Drottning Kristinas sista dagar* (Stockholm, 1897); and J.A. Taylor, *Christina of Sweden* (1909).

(R. N. B.)

CHRISTINA [Maria Christina Henrietta Désirée Félicité Rénière], for some years queen-regent of Spain (1858-), widow of Alphonso XII. and mother of Alphonso XIII., was born at Gross Seelowitz, in Austria, on the 21st of July 1858, being the daughter of the archduke Charles Ferdinand and the archduchess Elizabeth of Austria. She was brought up by her mother as a rigid Catholic, and great care was taken with her education. At eighteen she was appointed by the emperor Francis Joseph, abbess of the House of Noble Ladies of Saint Theresa in Prague, where she made herself very popular and distinguished herself by her intellectual parts. It is said that at the court of Vienna the archduchess saw the young prince Alphonso of Spain when he was only a pretender in exile, before the restoration of the Bourbons. A few years later, when Alphonso XII. had lost his first wife and cousin, Queen Mercedes, daughter of the duc de Montpensier, his ministers, especially Señor Canovas, urged him to marry again. He told them that if he did so it would only be with the young Austrian archduchess Maria Christina. After some negotiations between the two courts and governments it was agreed that the archduchess Elizabeth and her daughter should meet Alphonso XII. at Arcachon, in the south of France, where a few days’ personal acquaintance was sufficient to make both come to a decision. The duke of Bailen went officially to Vienna to get the emperor of Austria’s authorization, and on the 14th of November 1879, in the throne-room of the Imperial palace, the archduchess solemnly abdicated all her rights of succession in Austria, in accordance with the law obliging all princesses of the imperial

house to do so when they wed a foreign prince. On the 17th of November the archduchess and her mother, with a numerous suite, started for Spain, arriving at the royal castle of El Pardo, near Madrid, on the 24th of November. The wedding took place in the Atocha cathedral, on the 29th of November, in great state, and was followed by splendid festivities. Queen Christina bore her husband two daughters before he died in 1885—Dona Mercedes, born on the 11th of September 1880, and Dona Maria Theresa, born on the 12th of November 1882. During her husband's lifetime the young queen kept studiously apart from politics, so much so that her inexperience caused much anxiety in November 1885, when she was called upon to take the arduous duties of regent. During the long minority of the posthumous son of Alphonso XII., afterwards King Alphonso XIII., the Austrian queen-regent acted in a way that obliged even the adversaries of the throne and the dynasty to respect the mother and the woman. The people of Spain, and the ever-restless civil and military politicians, found that the gloved hand of their constitutional ruler was that of a strong-minded and tenacious regent, who often asserted herself in a way that surprised them much, but always, somehow, enforced obedience and respect. More could not be expected by a foreign ruler from a nation little prone to waste attachment or demonstrative loyalty upon anybody not Castilian born and bred.

CHRISTISON, SIR ROBERT, Bart. (1797-1882), Scottish toxicologist and physician, was born in Edinburgh on the 18th of July 1797. After graduating at the university of that city in 1819, he spent a short time in London, studying under John Abernethy and Sir William Lawrence, and in Paris, where he learnt analytical chemistry from P.J. Robiquet and toxicology from M.J.B. Orfila. In 1822 he returned to Edinburgh as professor of medical jurisprudence, and set to work to organize the study of his subject on a sound basis. On poisons in particular he speedily became a high authority; his well-known treatise on them was published in 1829, and in the course of his inquiries he did not hesitate to try such daring experiments on himself as taking large doses of Calabar bean. His attainments in medical jurisprudence and toxicology procured him the appointment, in 1829, of medical officer to the crown in Scotland, and from that time till 1866 he was called as a witness in many celebrated criminal cases. In 1832 he gave up the chair of medical jurisprudence and accepted that of medicine and therapeutics, which he held till 1877; at the same time he became professor of clinical medicine, and continued in that capacity till 1855. His fame as a toxicologist and medical jurist, together with his work on the pathology of the kidneys and on fevers, secured him a large private practice, and he succeeded to a fair share of the honours that commonly attend the successful physician, being appointed physician to Queen Victoria in 1848 and receiving a baronetcy in 1871. Among the books which he published were a treatise on *Granular Degeneration of the Kidneys* (1839), and a *Commentary on the Pharmacopoeias of Great Britain* (1842). Sir Robert Christison, who retained remarkable physical vigour and activity down to extreme old age, died at Edinburgh on the 23rd of January 1882.

See the *Life* by his sons (1885-1886).

CHRISTMAS (*i.e.* the Mass of Christ), in the Christian Church, the festival of the nativity of Jesus Christ. The history of this feast coheres so closely with that of Epiphany (*q.v.*), that what follows must be read in connexion with the article under that heading.

The earliest body of gospel tradition, represented by Mark no less than by the primitive non-Marcan document embodied in the first and third gospels, begins, not with the birth and childhood of Jesus, but with his baptism; and this order of accretion of gospel matter is faithfully reflected in the time order of the invention of feasts. The great church adopted Christmas much later than Epiphany; and before the 5th century there was no general consensus of opinion as to when it should come in the calendar, whether on the 6th of January, or the 25th of March, or the 25th of December.

The earliest identification of the 25th of December with the birthday of Christ is in a

passage, otherwise unknown and probably spurious, of Theophilus of Antioch (A.D. 171-183), preserved in Latin by the Magdeburg centuriators (i. 3, 118), to the effect that the Gauls contended that as they celebrated the birth of the Lord on the 25th of December, whatever day of the week it might be, so they ought to celebrate the Pascha on the 25th of March when the resurrection befell.

The next mention of the 25th of December is in Hippolytus' (c. 202) commentary on Daniel iv. 23. Jesus, he says, was born at Bethlehem on the 25th of December, a Wednesday, in the forty-second year of Augustus. This passage also is almost certainly interpolated. In any case he mentions no feast, nor was such a feast congruous with the orthodox ideas of that age. As late as 245 Origen, in his eighth homily on Leviticus, repudiates as sinful the very idea of keeping the birthday of Christ "as if he were a king Pharaoh." The first certain mention of Dec. 25 is in a Latin chronographer of A.D. 354, first published entire by Mommsen.[1] It runs thus in English: "Year 1 after Christ, in the consulate of Caesar and Paulus, the Lord Jesus Christ was born on the 25th of December, a Friday and 15th day of the new moon." Here again no festal celebration of the day is attested.

There were, however, many speculations in the 2nd century about the date of Christ's birth. Clement of Alexandria, towards its close, mentions several such, and condemns them as superstitions. Some chronologists, he says, alleged the birth to have occurred in the twenty-eighth year of Augustus, on the 25th of Pachon, the Egyptian month, *i.e.* the 20th of May. These were probably the Basilidian gnostics. Others set it on the 24th or 25th of Pharmuthi, *i.e.* the 19th or 20th of April. Clement himself sets it on the 17th of November, 3 B.C. The author of a Latin tract, called the *De Pascha computus*, written in Africa in 243, sets it by private revelation, *ab ipso deo inspirati*, on the 28th of March. He argues that the world was created perfect, flowers in bloom, and trees in leaf, therefore in spring; also at the equinox, and when the moon just created was full. Now the moon and sun were created on a Wednesday. The 28th of March suits all these considerations. Christ, therefore, being the Sun of Righteousness, was born on the 28th of March. The same symbolical reasoning led Polycarp[2] (before 160) to set his birth on Sunday, when the world's creation began, but his baptism on Wednesday, for it was the analogue of the sun's creation. On such grounds certain Latins as early as 354 may have transferred the human birthday from the 6th of January to the 25th of December, which was then a Mithraic feast and is by the chronographer above referred to, but in another part of his compilation, termed *Natalis invicti solis*, or birthday of the unconquered Sun. Cyprian (*de orat. dom. 35*) calls Christ *Sol verus*, Ambrose *Sol novus noster* (Sermo vii. 13), and such rhetoric was widespread. The Syrians and Armenians, who clung to the 6th of January, accused the Romans of sun-worship and idolatry, contending with great probability that the feast of the 25th of December had been invented by disciples of Cerinthus and its lections by Artemon to commemorate the *natural* birth of Jesus. Chrysostom also testifies the 25th of December to have been from the beginning known in the West, from Thrace even as far as Gades. Ambrose, *On Virgins*, in. ch. 1, writing to his sister, implies that as late as the papacy of Liberius 352-356, the Birth from the Virgin was feasted together with the Marriage of Cana and the Banquet of the 4000 (Luke ix. 13), which were never feasted on any other day but Jan. 6.

Chrysostom, in a sermon preached at Antioch on Dec. 20, 386 or 388, says that some held the feast of Dec. 25 to have been held in the West, from Thrace as far as Cadiz, from the beginning. It certainly originated in the West, but spread quickly eastwards. In 353-361 it was observed at the court of Constantius. Basil of Caesarea (died 379) adopted it. Honorius, emperor (395-423) in the West, informed his mother and brother Arcadius (395-408) in Byzantium of how the new feast was kept in Rome, separate from the 6th of January, with its own *troparia* and *sticharia*. They adopted it, and recommended it to Chrysostom, who had long been in favour of it. Epiphanius of Crete was won over to it, as were also the other three patriarchs, Theophilus of Alexandria, John of Jerusalem, Flavian of Antioch. This was under Pope Anastasius, 398-400. John or Wahan of Nice, in a letter printed by Combefis in his *Historia monothelitarum*, affords the above details. The new feast was communicated by Proclus, patriarch of Constantinople (434-446), to Sahak, Catholicos of Armenia, about 440. The letter was betrayed to the Persian king, who accused Sahak of Greek intrigues, and deposed him. However, the Armenians, at least those within the Byzantine pale, adopted it for about thirty years, but finally abandoned it together with the decrees of Chalcedon early in the 8th century. Many writers of the period 375-450, *e.g.* Epiphanius, Cassian, Asterius, Basil, Chrysostom and Jerome, contrast the new feast with that of the Baptism as that of the birth *after the flesh*, from which we infer that the latter was generally regarded as a birth according to the Spirit. Instructive as showing that the new feast travelled from West eastwards is the fact (noticed by Usener) that in 387 the new feast was reckoned according to the Julian calendar by writers of the province of Asia, who in referring to other feasts use

the reckoning of their local calendars. As early as 400 in Rome an imperial rescript includes Christmas among the three feasts (the others are Easter and Epiphany) on which theatres must be closed. Epiphany and Christmas were not made judicial *non dies* until 534.

For some years in the West (as late as 353 in Rome) the birth feast was appended to the baptismal feast on the 6th of January, and in Jerusalem it altogether supplanted it from about 360 to 440, when Bishop Juvenal introduced the feast of the 25th of December. The new feast was about the same time (440) finally established in Alexandria. The *quadragesima* of Epiphany (*i.e.* the feast of the presentation in the Temple, or *hupapantē*) continued to be celebrated in Jerusalem on the 14th of February, forty days after the 6th of January, until the reign of Justinian. In most other places it had long before been put back to the 2nd of February to suit the new Christmas. Armenian historians describe the riots, and display of armed force, without which Justinian was not able in Jerusalem to transfer this feast from the 14th to the 2nd of February. 294

The grounds on which the Church introduced so late as 350-440 a Christmas feast till then unknown, or, if known, precariously linked with the baptism, seem in the main to have been the following. (1) The transition from adult to infant baptism was proceeding rapidly in the East, and in the West was well-nigh completed. Its natural complement was a festal recognition of the fact that the divine element was present in Christ from the first, and was no new stage of spiritual promotion coeval only with the descent of the Spirit upon him at baptism. The general adoption of child baptism helped to extinguish the old view that the divine life in Jesus dated from his baptism, a view which led the Epiphany feast to be regarded as that of Jesus' spiritual rebirth. This aspect of the feast was therefore forgotten, and its importance in every way diminished by the new and rival feast of Christmas. (2) The 4th century witnessed a rapid diffusion of Marcionite, or, as it was now called, Manichaean propaganda, the chief tenet of which was that Jesus either was not born at all, was a mere phantasm, or anyhow did not take flesh of the Virgin Mary. Against this view the new Christmas was a protest, since it was peculiarly the feast of his birth in the flesh, or as a man, and is constantly spoken of as such by the fathers who witnessed its institution.

In Britain the 25th of December was a festival long before the conversion to Christianity, for Bede (*De temp. rat.* ch. 13) relates that "the ancient peoples of the Angli began the year on the 25th of December when we now celebrate the birthday of the Lord; and the very night which is now so holy to us, they called in their tongue *modranecht* (*môdra niht*), that is, the mothers' night, by reason we suspect of the ceremonies which in that night-long vigil they performed." With his usual reticence about matters pagan or not orthodox, Bede abstains from recording who the mothers were and what the ceremonies. In 1644 the English puritans forbad any merriment or religious services by act of Parliament, on the ground that it was a heathen festival, and ordered it to be kept as a fast. Charles II. revived the feast, but the Scots adhered to the Puritan view.

Outside Teutonic countries Christmas presents are unknown. Their place is taken in Latin countries by the *strenae*, French *étrennes*, given on the 1st of January; this was in antiquity a great holiday, wherefore until late in the 4th century the Christians kept it as a day of fasting and gloom. The setting up in Latin churches of a Christmas *crèche* is said to have been originated by St Francis.

AUTHORITIES.—K.A.H. Kellner, *Heortologie* (Freiburg im Br., 1906), with Bibliography; Hospinianus, *De festis Christianorum* (Genevae, 1574); Edw. Martène, *De Antiquis Ecclesiae Ritibus*, iii. 31 (Bassani, 1788); J.C.W. Augusti, *Christl. Archäologie*, vols. i. and v. (Leipzig, 1817-1831); A.J. Binterim, *Denkwürdigkeiten*, v. pt. i. p. 528 (Mainz, 1825, &c.); Ernst Friedrich Wernsdorf, *De originibus Solemnium Natalis Christi* (Wittenberg, 1757, and in J.E. Volbeding, *Thesaurus Commentationum*, Lipsiae, 1847); Anton. Bynaeus, *De Natali Jesu Christi* (Amsterdam, 1689); Hermann Usener, *Religionsgeschichtliche Untersuchungen* (Bonn, 1889); Nik. Nilles, S.J., *Kalendarium Manuale* (Innsbruck, 1896); L. Duchesne, *Origines du culte chrétien* (3e éd., Paris, 1889).

(F. C. C.)

1 In the *Abhandlungen der sächsischen Akademie der Wissenschaften* (1850). Note that in A.D. 1, Dec. 25 was a Sunday and not a Friday.

2 In a fragment preserved by an Armenian writer, Ananias of Shirak.

CHRISTMAS ISLAND, a British possession under the government of the Straits Settlements, situated in the eastern part of the Indian Ocean (in 10° 25′ S., 105° 42′ E.), about 190 m. S. of Java. The island is a quadrilateral with hollowed sides, about 12 m. in greatest length and 9 in extreme breadth. It is probably the only tropical island that had never been inhabited by man before the European settlement. When the first settlers arrived, in 1897, it was covered with a dense forest of great trees and luxuriant under-shrubbery. The settlement in Flying Fish Cove now numbers some 250 inhabitants, consisting of Europeans, Sikhs, Malays and Chinese, by whom roads have been cut and patches of cleared ground cultivated.

The island is the flat summit of a submarine mountain more than 15,000 ft. high, the depth of the platform from which it rises being about 14,000 ft., and its height above the sea being upwards of 1000 ft. The submarine slopes are steep, and within 20 m. of the shore the depth of the sea reaches 2400 fathoms. It consists of a central plateau descending to the water in three terraces, each with its “tread” and “rise.” The shore terrace descends by a steep cliff to the sea, forming the “rise” of a submarine “tread” in the form of fringing reef which surrounds the island and is never uncovered, even at low water, except in Flying Fish Cove, where the only landing-place exists. The central plateau is a plain whose surface presents “rounded, flat-topped hills and low ridges and reefs of limestone,” with narrow intervening valleys. On its northern aspect this plateau has a raised rim having all the appearances of being once the margin of an atoll. On these rounded hills occurs the deposit of phosphate of lime which gives the island its commercial value. The phosphatic deposit has doubtless been produced by the long-continued action of a thick bed of sea-fowl dung, which converted the carbonate of the underlying limestone into phosphate. The flat summit is formed by a succession of limestones—all deposited in shallow water—from the Eocene (or Oligocene) up to recent deposits in the above-mentioned atoll with islands on its reef. The geological sequence of events appears to have been the following:—After the deposition of the Eocene (or Oligocene) limestone—which reposes upon a floor of basalts and trachytes—basalts and basic tuffs were ejected, over which, during a period of very slow depression, orbitoidal limestones of Miocene age—which seem to make up the great mass of the island—were deposited; then elapsed a long period of rest, during which the atoll condition existed and the guano deposit was formed; from then down to the present time there has succeeded a series of sea-level subsidences, resulting in the formation of the terraces and the accummulation of the detritus now seen on the first inland cliff, the old submarine slope of the island. The occurrence of such a series of Tertiary deposits appears to be unknown elsewhere. The whole series was evidently deposited in shallow water on the summit of a submarine volcano standing in its present isolation, and round which the ocean floor has probably altered but a few hundred feet since the Eocene age. Thus although the rocks of the southern coast of Java in their general character and succession resemble those of Christmas Island, there lies between them an abysmal trough 18,000 ft. in depth, which renders it scarcely possible that they were deposited in a continuous area, for such an enormous depression of the sea-floor could hardly have occurred since Miocene times without involving also Christmas Island. One of the main purposes of the exploration was to obtain light on the question of the foundation of atolls.

The flora consists of 129 species of angiosperms, 1 *Cycas*, 22 ferns, and a few mosses, lichens and fungi, 17 of which are endemic, while a considerable number—not specifically distinct—form local varieties nearly all presenting Indo-Malayan affinities, as do the single *Cycas*, the ferns and the cryptogams. As to its fauna, the island contains 319 species of animals—54 only being vertebrates—145 of which are endemic. A very remarkable distributional fact in regard to them, and one not yet fully explained, is that a large number show affinity with species in the Austro-Malayan rather than in the Indo-Malayan, their nearer, region. The ocean currents, the trade-winds blowing from the Australian mainland, and north-westerly storms from the Malayan islands, are no doubt responsible for the introduction of many, but not all, of these Malayan and Australasian species. The climate is healthy, the temperature varying from 75° to 84° F. The prevailing wind is the S.E. trade, which blows the greater part of the year. The rainfall in the wet season is heavy, but not excessive, and during the dry season the ground is refreshed with occasional showers and heavy dews. Malarial fever is not prevalent, and it is interesting to note that there are no swamps or standing waters on the island.

It is not known when and by whom the island was discovered, but under the name of *Moni* it appears on a Dutch chart of 1666. It was first visited in 1688 by Dampier, who found it uninhabited. In 1886 Captain Maclear of H.M.S. “Flying Fish,” having discovered an anchorage in a bay which he named Flying Fish Cove, landed a party and made a small but interesting collection of the flora and fauna. In the following year Captain Aldrich on H.M.S.

“Egeria” visited it, accompanied by Mr J.J. Lister, F.R.S., who formed a larger biological and mineralogical collection. Among the rocks then obtained and submitted to Sir John Murray for examination there were detected specimens of nearly pure phosphate of lime, a discovery which eventually led, in June 1888, to the annexation of the island to the British crown. Soon afterwards a small settlement was established in Flying Fish Cove by Mr G. Clunies Ross, the owner of the Keeling Islands, which lie about 750 m. to the westward. In 1891 Mr Ross and Sir John Murray were granted a lease, but on the further discovery of phosphatic deposits they disposed of their rights in 1897 to a company. In the same year a thorough scientific exploration was made, at the cost of Sir John Murray, by Mr C.W. Andrews, of the British Museum.

See C.W. Andrews, *A Monograph of Christmas Island (Indian Ocean)*, (London, 1900).

CHRISTODORUS, of Coptos in Egypt, epic poet, flourished during the reign of Anastasius I. (A.D. 491-518). According to Suidas, he was the author of Πάτρια, accounts of the foundation of various cities; Λυδιακά, the mythical history of Lydia; Ἰσαυρικά, the conquest of Isauria by Anastasius; three books of epigrams; and many other works. In addition to two epigrams (*Anthol. Pal.* vii. 697, 698) we possess a description of eighty statues of gods, heroes and famous men and women in the gymnasium of Zeuxippus at Constantinople. This ἔκφρασις, consisting of 416 hexameters, forms the second book of the Palatine Anthology. The writer’s chief models are Homer and Nonnus, whom he follows closely in the structure of his hexameters. Opinions are divided as to the merits of the work. Some critics regard it as of great importance for the history of art and a model of description; others consider it valueless, alike from the historical, mythological and archaeological points of view.

See F. Baumgarten, *De Christodoro poëta Thebano* (1881), and his article in Pauly-Wissowa’s *Realencyclopädie*, iii. 2 (1899); W. Christ, *Geschichte der griechischen Litteratur* (1898).

CHRISTOPHER, SAINT (*Christophorus, Christoferus*), a saint honoured in the Roman Catholic (25th of July) and Orthodox Eastern (9th of May) Churches, the patron of ferrymen. Nothing that is authentic is known about him. He appears to have been originally a pagan and to have been born in Syria. He was baptized by Babylas, bishop of Antioch; preached with much success in Lycia; and was martyred about A.D. 250 during the persecution under the emperor Decius.[1] Round this small nucleus of possibility, however, a vast mass of legendary matter gradually collected. All accounts agree that he was of great stature and singularly handsome, and that this helped him not a little in his evangelistic work. But according to a story reproduced in the *New Uniat Anthology* of Arcudius, and mentioned in Basil’s *Monologue*, Christopher was originally a hideous man-eating ogre, with a dog’s face, and only received his human semblance, with his Christian name, at baptism. Most of his astounding miracles are of the ordinary type. He thrusts his staff into the ground; whereupon it sprouts into a date palm, and thousands are converted. Courtesans sent to seduce him are turned by his mere aspect into Christians and martyrs. The Roman governor is confounded by his insensibility to the most refined and ingenious tortures. He is roasted over a slow fire and basted with boiling oil, but tells his tormentors that by the grace of Jesus Christ he feels nothing. When at last, in despair, they cut off his head, he had converted 48,000 people.

The more conspicuous of these legends are included in the Mozarabic *Breviary* and *Missal*, and are given in the thirty-third sermon of Peter Damien, but the best-known story is that which is given in the *Golden Legend* of Jacopus de Voragine. According to this, Christopher —or rather Reprobus, as he was then called—was a giant of vast stature who was in search of a man stronger than himself, whom he might serve. He left the service of the king of Canaan because the king feared the devil, and that of the devil because the devil feared the Cross. He was converted by a hermit; but as he had neither the gift of fasting nor that of prayer, he decided to devote himself to a work of charity, and set himself to carry wayfarers

over a bridgeless river. One day a little child asked to be taken across, and Christopher took him on his shoulder. When half way over the stream he staggered under what seemed to him a crushing weight, but he reached the other side and then upbraided the child for placing him in peril. “Had I borne the whole world on my back,” he said, “it could not have weighed heavier than thou!” “Marvel not!” the child replied, “for thou hast borne upon thy back the world and him who created it!” It was this story that gave Christopher his immense popularity throughout Western Christendom.

See Bolland, *Acta Sanct.* vi. 146; Guenebault, *Dict. iconographique des attributs des figures et des légendes des saints* (Par., 1850); Smith and Wace, *Dict. of Christ. Biog.* (London, 1877, &c., 4 vols.); A. Sinemus, *Die Legende vom h. Christophorus* (Hanover, 1868); and other literature cited in Herzog-Hauck, *Realencyk.* iv. 60.

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1 Or Dagnus—perhaps to be identified with Maximinus Daza, joint emperor (with Galerius) in the East 305-311, and sole emperor 311-313.

CHRISTOPHORUS, pope or anti-pope, elected in 903 against Leo V., whom he threw into prison. In January 904 he was treated in the same fashion by his competitor, Sergius III., who had him strangled.

CHRISTOPOULOS, ATHANASIOS (1772-1847), Greek poet, was born at Castoria in Macedonia. He studied at Buda and Padua, and became teacher of the children of the Vlach prince Mourousi. After the fall of that prince in 1811, Christopoulos was employed by Prince Caradja, who had been appointed hospodar of Moldavia and Walachia, in drawing up a code of laws for that country. On the removal of Caradja, he retired into private life and devoted himself to literature. He wrote drinking songs and love ditties which are very popular among the Greeks. He is also the author of a tragedy, of *Politika Parallela* (a comparison of various systems of government), of translations of Homer and Herodotus, and of some philological works on the connexion between ancient and modern Greek.

His *Hellenika Archaiologemata* (Athens, 1853) contains an account of his life.

CHRIST’S HOSPITAL (the “Blue-coat School”), a famous English educational and charitable foundation. It was originally one of three royal hospitals in the city of London, founded by Edward VI., who is said to have been inspired by a sermon of Bishop Ridley on charity. Christ’s hospital was specially devoted to fatherless and motherless children. The buildings of the monastery of Grey Friars, Newgate Street, were appropriated to it; liberal public subscription added to the king’s grant endowed it richly; and the mayor, commonalty and citizens of London were nominated its governors in its charter of 1553. At first Christ’s hospital shared a common fund with the two other hospitals of the foundation (Bridewell and St Thomas’s), but the three soon became independent. Not long after its opening Christ’s was providing home and education (or, in the case of the very young, nursing) for 400 children. The popular name of the Blue-coat school is derived from the dress of the boys—originally (almost from the time of the foundation) a blue gown, with knee-breeches, yellow petticoat and stockings, neck-bands and a blue cap. The petticoat and cap were given up in the middle of the 19th century, and thereafter no head-covering was worn. The buildings on the Newgate Street site underwent reconstruction from time to time, and in 1902 were vacated by the school, which was moved to extensive new buildings at Horsham. The London buildings were subsequently taken down. The school at Horsham is conducted on the ordinary lines of a public school, and can accommodate over 800 boys. It includes a

preparatory school for boys, established in 1683 at Hertford, where the buildings have been greatly enlarged for the use of the girls' school on the same foundation. This was originally in Newgate Street, but was moved to Hertford in 1778. In the boys' school the two highest classes retain their ancient names of Grecians and Deputy Grecians. Children were formerly admitted to the schools only on presentation. Admission is now (1) by presentation of donation governors (*i.e.* the royal family, and contributors of £500 or more to the funds), of the council of almoners (which administers the endowments), or of certain of the city companies; (2) by competition, on the nomination of a donation governor (for boys only), or from public elementary schools in London, certain city parishes and certain endowed schools elsewhere. The main school is divided into two parts—the Latin school, corresponding to the classical side in other schools, and the mathematical school or modern side. Large pension charities are administered by the governing body, and part of the income of the hospital (about £60,000 annually) is devoted to apprenticing boys and girls, to leaving exhibitions from the school, &c.

CHRISTY, HENRY (1810-1865), English ethnologist, was born at Kingston-on-Thames on the 26th of July 1810. He entered his father's firm of hatters, in London, and later became a director of the London Joint-Stock Bank. In 1850 he started on a series of journeys, which interested him in ethnological studies. Encouraged by what he saw at the Great Exhibition of 1851, Christy devoted the rest of his life to perpetual travel and research, making extensive collections illustrating the early history of man, now in the British Museum. He travelled in Norway, Sweden, Denmark, Mexico, British Columbia and other countries; but in 1858 came the opportunity which brought him fame. It was in that year that the discoveries by Boucher de Perthes of flint-implements in France and England were first held to have clearly proved the great antiquity of man. Christy joined the Geological Society, and in company with his friend Edouard Lartet explored the caves in the valley of the Vézère, a tributary of the Dordogne in the south of France. To his task Christy devoted money and time ungrudgingly, and an account of the explorations appeared in *Comptes rendus* (Feb. 29th, 1864) and *Transactions of the Ethnological Society of London* (June 21st, 1864). He died, however, on the 4th of May 1865, of inflammation of the lungs supervening on a severe cold contracted during excavation work at La Palisse, leaving a half-finished book, entitled *Reliquiae Aquitanicae, being contributions to the Archaeology and Palaeontology of Perigord and the adjacent provinces of Southern France*; this was issued in parts and completed at the expense of Christy's executors, first by Lartet and, after his death in 1870, by Professor Rupert Jones. By his will Christy bequeathed his magnificent archaeological collection to the nation. In 1884 it found a home in the British Museum. Christy took an earnest part in many philanthropic movements of his time, especially identifying himself with the efforts to relieve the sufferers from the Irish famine of 1847.

CHROMATIC (Gr. χρωματικός, coloured, from χρῶμα, colour), a term meaning "coloured," chiefly used in science, particularly in the expression "chromatic aberration" or "dispersion" (see Aberration). In Greek music χρωματικὴ μουσική was one of three divisions —diatonic, chromatic and enharmonic—of the tetrachord. Like the Latin *color*, χρῶμα was often used of ornaments and embellishments, and particularly of the modification of the three *genera* of the tetrachord. The chromatic, being subject to three such modifications, was regarded as particularly "coloured." To the Greeks chromatic music was sweet and plaintive. From a supposed resemblance to the notes of the chromatic tetrachord, the term is applied to a succession of notes outside the diatonic scale, and marked by accidentals. A "chromatic scale" is thus a series of semi-tones, and is commonly written with sharps in ascending and flats descending. The most correct method is to write such accidentals as do not involve a change of key.

CHROMITE, a member of the spinel group of minerals; an oxide of chromium and ferrous iron, $FeCr_2O_4$. It is also known as chromic iron or as chrome-iron-ore, and is the chief commercial source of chromium and its compounds. It crystallizes in regular octahedra, but is usually found as grains or as granular to compact masses. In its iron-black colour with submetallic lustre and absence of cleavage it resembles magnetite (magnetic iron-ore) in appearance, but differs from this in being only slightly if at all magnetic and in the brown colour of its powder. The hardness is 5½; specific gravity 4.5. The theoretical formula $FeCr_2O_4$ corresponds with chromic oxide (Cr_2O_3) 68%, and ferrous oxide 32%; the ferrous oxide is, however, usually partly replaced by magnesia, and the chromic oxide by alumina and ferric oxide, so that there may be a gradual passage to picotite or chromespinel. Much of the material mined as ore does not contain more than 40 to 50% of chromic oxide. In the form of isolated grains the mineral is a characteristic constituent of ultrabasic igneous rocks, namely the peridotites and the serpentines which have resulted from their alteration. It is also found under similar conditions in meteoric stones and irons. Often these rocks enclose large segregated masses of granular chromite. The earliest worked deposits were those in the serpentine of the Bare Hills near Baltimore, Maryland, U.S.A.; it was also formerly extensively mined in Lancaster county, Pennsylvania, and is now mined in California, as well as in Turkey, the Urals, Dun Mountain near Nelson in New Zealand, and Unst in the Shetlands.

Chrome-iron-ore is largely used in the preparation of chromium compounds for use as pigments (chrome-yellow, &c.) and in calico-printing; it is also used in the manufacture of chrome-steel.

(L. J. S.)

CHROMIUM (symbol Cr. atomic weight 52.1), one of the metallic chemical elements, the name being derived from the fine colour (Gr. χρῶμα) of its compounds. It is a member of the sixth group in the periodic classification of the elements, being included in the natural family of elements containing molybdenum, tungsten and uranium. The element is not found in the free state in nature, nor to any large extent in combination, occurring chiefly as chrome-ironstone, $Cr_2O_3{\cdot}FeO$, and occasionally being found as crocoisite, $PbCrO_4$, chrome-ochre, Cr_2O_3, and chrome-garnet, $CaO{\cdot}Cr_2O_3{\cdot}3SiO_2$, while it is also the cause of the colour in serpentine, chrome-mica and the emerald. It was first investigated in 1789 by L.N. Vauquelin and Macquart, and in 1797 by Vauquelin, who found that the lead in crocoisite was in combination with an acid, which he recognized as the oxide of a new metal.

The metal can be obtained by various processes. Thus Sainte Claire Deville prepared it as a very hard substance of steel-grey colour, capable of taking a high polish, by strong ignition of chromic oxide and sugar charcoal in a lime crucible. F. Wöhler reduced the sesquioxide by zinc, and obtained a shining green powder of specific gravity 6.81, which tarnished in air and dissolved in hydrochloric acid and warm dilute sulphuric acid, but was unacted upon by concentrated nitric acid. H. Moissan (*Comptes rendus*, 1893, 116, p. 349; 1894, 119, p. 185) reduces the sesquioxide with carbon, in an electric furnace; the product so obtained (which contains carbon) is then strongly heated with lime, whereby most of the carbon is removed as calcium carbide, and the remainder by heating the purified product in a crucible lined with the double oxide of calcium and chromium. An easier process is that of H. Goldschmidt (*Annalen*, 1898, 301, p. 19) in which the oxide is reduced by metallic aluminium; and if care is taken to have excess of the sesquioxide of chromium present, the metal is obtained quite free from aluminium. The metal as obtained in this process is lustrous and takes a polish, does not melt in the oxyhydrogen flame, but liquefies in the electric arc, and is not affected by air at ordinary temperatures. Chromium as prepared by the Goldschmidt process is in a passive condition as regards dilute sulphuric acid and dilute hydrochloric acid at ordinary temperatures; but by heating the metal with the acid it passes into the active condition, the same effect being produced by heating the inactive form with a solution of an alkaline halide. W. Hittorf thinks that two allotropic forms of chromium exist (*Zeit. für phys. Chem.*, 1898, 25, p. 729; 1899, 30, p. 481; 1900, 34, p. 385), namely active and inactive chromium; while W. Ostwald (ibid., 1900, 35, pp. 33, 204) has observed that on dissolving chromium in dilute acids, the rate of solution as measured by the evolution of gas is not continuous but periodic. It is largely made as ferro-chrome, an alloy containing about 60-70% of chromium, by reducing chromite in the electric furnace or by aluminium.

Chromium and its salts may be detected by the fact that they give a deep green bead when heated with borax, or that on fusion with sodium carbonate and nitre, a yellow mass of an alkaline chromate is obtained, which, on solution in water and acidification with acetic acid, gives a bright yellow precipitate on the addition of soluble lead salts. Sodium and potassium hydroxide solutions precipitate green chromium hydroxide from solutions of chromic salts; the precipitate is soluble in excess of the cold alkali, but is completely thrown down on boiling the solution. Chromic acid and its salts, the chromates and bichromates, can be detected by the violet coloration which they give on addition of hydrogen peroxide to their dilute acid solution, or by the fact that on distillation with concentrated sulphuric acid and an alkaline chloride, the red vapours of chromium oxychloride are produced. The yellow colour of normal chromates changes to red on the addition of an acid, but goes back again to yellow on making the solution alkaline. Normal chromates on the addition of silver nitrate give a red precipitate of silver chromate, easily soluble in ammonia, and with barium chloride a yellow precipitate of barium chromate, insoluble in acetic acid. Reducing agents, such as sulphurous acid and sulphuretted hydrogen, convert the chromates into chromic salts. Chromium in the form of its salts may be estimated quantitatively by precipitation from boiling solutions with a slight excess of ammonia, and boiling until the free ammonia is nearly all expelled. The precipitate obtained is filtered, well washed with hot water, dried and then ignited until the weight is constant. In the form of a chromate, it may be determined by precipitation, in acetic acid solution, with lead acetate; the lead chromate precipitate collected on a tared filter paper, well washed, dried at 100° C. and weighed; or the chromate may be reduced by means of sulphur dioxide to the condition of a chromic salt, the excess of sulphur dioxide expelled by boiling, and the estimation carried out as above.

The atomic weight of chromium has been determined by S.G. Rawson, by the conversion of pure ammonium bichromate into the trioxide (*Journal of Chem. Soc.*, 1899, 55, p. 213), the mean value obtained being 52.06; and also by C. Meinecke, who estimated the amount of silver, chromium and oxygen in silver chromate, the amount of oxygen in potassium bichromate, and the amount of oxygen and chromium in ammonium bichromate (*Ann.*, 1891, 261, p. 339), the mean value obtained being 51.99.

Chromium forms three series of compounds, namely the chromous salts corresponding to CrO, chromous oxide, chromic salts, corresponding to Cr_2O_3, chromium sesquioxide, and the chromates corresponding to CrO_3, chromium trioxide or chromic anhydride. Chromium sesquioxide is a basic oxide, although like alumina it acts as an acid-forming oxide towards strong bases, forming salts called chromites. Various other oxides of chromium, intermediate in composition between the sesquioxide and trioxide, have been described, namely chromium dioxide, $Cr_2O_3 \cdot CrO_3$, and the oxide $CrO_3 \cdot 2Cr_2O_3$.

Chromous oxide, CrO, is unknown in the free state, but in the hydrated condition as $CrO \cdot H_2O$ or $Cr(OH)_2$ it may be prepared by precipitating chromous chloride by a solution of potassium hydroxide in air-free water. The precipitate so obtained is a brown amorphous solid which readily oxidizes on exposure, and is decomposed by heat with liberation of hydrogen and formation of the sesquioxide. The sesquioxide, Cr_2O_3, occurs native, and can be artificially obtained in several different ways, *e.g.*, by igniting the corresponding hydroxide, or chromium trioxide, or ammonium bichromate, or by passing the vapours of chromium oxychloride through a red-hot tube, or by ignition of mercurous chromate. In the amorphous state it is a dull green, almost infusible powder, but as obtained from chromium oxychloride it is deposited in the form of dark green hexagonal crystals of specific gravity 5.2. After ignition it becomes almost insoluble in acids, and on fusion with silicates it colours them green; consequently it is used as a pigment for colouring glass and china. By the fusion of potassium bichromate with boric acid, and extraction of the melt with water, a residue is left which possesses a fine green colour, and is used as a pigment under the name of Guignet’s green. In composition it approximates to $Cr_2O_3 \cdot H_2O$, but it always contains more or less boron trioxide. Several forms of hydrated chromium sesquioxide are known; thus on precipitation of a chromic salt, free from alkali, by ammonia, a light blue precipitate is formed, which after drying over sulphuric acid, has the composition $Cr_2O_3 \cdot 7H_2O$, and this after being heated to 200° C. in a current of hydrogen leaves a residue of composition $CrO \cdot OH$ or $Cr_2O_3 \cdot H_2O$ which occurs naturally as chrome ochre. Other hydrated oxides such as $Cr_2O_3 \cdot 2H_2O$ have also been described. Chromium trioxide, CrO_3, is obtained by adding concentrated sulphuric acid to a cold saturated solution of potassium bichromate, when it separates in long red needles; the mother liquor is drained off and the crystals are washed with concentrated nitric acid, the excess of which is removed by means of a current of dry air. It is readily soluble in water, melts at 193° C., and is decomposed at a higher temperature into chromium sesquioxide and oxygen; it is a very powerful oxidizing agent, acting violently on alcohol, converting it into acetaldehyde, and in glacial acetic acid solution converting naphthalene and anthracene into the corresponding quinones. Heated with

concentrated hydrochloric acid it liberates chlorine, and with sulphuric acid it liberates oxygen. Gaseous ammonia passed over the oxide reduces it to the sesquioxide with formation of nitrogen and water. Dissolved in hydrochloric acid at -20°, it yields with solutions of the alkaline chlorides compounds of the type $MCl \cdot CrOCl_3$, pointing to pentavalent chromium. For salts of this acid-forming oxide and for perchromic acid see BICHROMATES.

The chromites may be looked upon as salts of chromium sesquioxide with other basic oxides, the most important being chromite (*q.v.*).

Chromous chloride, $CrCl_2$, is prepared by reducing chromic chloride in hydrogen; it forms white silky needles, which dissolve in water giving a deep blue solution, which rapidly absorbs oxygen, forming basic chromic salts, and acts as a very strong reducing agent. The bromide and iodide are formed in a similar manner by heating the metal in gaseous hydrobromic or hydriodic acids.

Chromous sulphate, $CrSO_4 \cdot 7H_2O$, isomorphous with ferrous sulphate, results on dissolving the metal in dilute sulphuric acid or, better, by dissolving chromous acetate in dilute sulphuric acid, when it separates in blue crystals on cooling the solution. On pouring a solution of chromous chloride into a saturated solution of sodium acetate, a red crystalline precipitate of chromous acetate is produced; this is much more permanent in air than the other chromous salts and consequently can be used for their preparation. Chromic salts are of a blue or violet colour, and apparently the chloride and bromide exist in a green and violet form.

Chromic chloride, $CrCl_3$, is obtained in the anhydrous form by igniting a mixture of the sesquioxide and carbon in a current of dry chlorine; it forms violet laminae almost insoluble in water, but dissolves rapidly in presence of a trace of chromous chloride; this action has been regarded as a catalytic action, it being assumed that the insoluble chromic chloride is first reduced by the chromous chloride to the chromous condition and the original chromous chloride converted into soluble chromic chloride, the newly formed chromous chloride then reacting with the insoluble chromic chloride. Solutions of chromic chloride in presence of excess of acid are green in colour. According to A. Werner, four hydrated chromium chlorides exist, namely the green and violet salts, $CrCl_3 \cdot 6H_2O$, a hydrate, $CrCl_3 \cdot 10H_2O$ and one $CrCl_3 \cdot 4H_2O$. The violet form gives a purple solution, and all its chlorine is precipitated by silver nitrate, the aqueous solution containing four ions, probably $Cr(OH_2)_6$ and three chlorine ions. The green salt appears to dissociate in aqueous solution into two ions, namely $CrCl_2(OH_2)_4$ and one chlorine ion, since practically only one-third of the chlorine is precipitated by silver nitrate solution at 0° C. Two of the six water molecules are easily removed in a desiccator, and the salt formed, $CrCl_3 \cdot 4H_2O$, resembles the original salt in properties, only one-third of the chlorine being precipitated by silver nitrate. In accordance with his theory of the constitution of salts Werner formulates the hexahydrate as $CrCl_2 \cdot (OH_2)_4 \cdot Cl \cdot 2H_2O$.

Chromic bromide, $CrBr_3$, is prepared in the anhydrous form by the same method as the chloride, and resembles it in its properties. The iodide is unknown.

The fluoride, CrF_3, results on passing hydrofluoric acid over the heated chloride, and sublimes in needles. The hydrated fluoride, $CrF_3 \cdot 9H_2O$, obtained by adding ammonium fluoride to cold chromic sulphate solution, is sparingly soluble in water, and is decomposed by heat.

Oxyhalogen derivatives of chromium are known, the oxychloride, CrO_2Cl_2, resulting on heating potassium bichromate and common salt with concentrated sulphuric acid. It distils over as a dark red liquid of boiling point 117° C., and is to be regarded as the acid chloride corresponding to chromic acid, $CrO_2(OH)_2$. It dissolves iodine and absorbs chlorine, and is decomposed by water with formation of chromic and hydrochloric acids; it takes fire in contact with sulphur, ammonia, alcohol, &c., and explodes in contact with phosphorus; it also acts as a powerful oxidizing agent. Heated in a closed tube at 180° C. it loses chlorine and leaves a black residue of trichromyl chloride, $Cr_3O_6Cl_2$, which deliquesces on exposure to air. Analogous bromine and iodine compounds are unknown, since bromides and iodides on heating with potassium bichromate and concentrated sulphuric acid give free bromine or free iodine.

The oxyfluoride, CrO_2F_2, is obtained in a similar manner to the oxychloride by using fluorspar in place of common salt. It may be condensed to a dark red liquid which is decomposed by moist air into chromic acid and chromic fluoride.

The semi-acid chloride, $CrO_2 \cdot Cl \cdot OH$, chlorochromic acid, is only known in the form of its salts, the chlorochromates.

Potassium chlorochromate, $CrO_2{\cdot}Cl{\cdot}OK$, is produced when potassium bichromate is heated with concentrated hydrochloric acid and a little water, or from chromium oxychloride and saturated potassium chloride solution, when it separates as a red crystalline salt. By suspending it in ether and passing ammonia, potassium amidochromate, $CrO_2{\cdot}NH_2{\cdot}OK$, is obtained; on evaporating the ether solution, after it has stood for 24 hours, red prisms of the amidochromate separate; it is slowly decomposed by boiling water, and also by nitrous acid, with liberation of nitrogen.

Chromic sulphide, Cr_2S_3, results on heating chromium and sulphur or on strongly heating the trioxide in a current of sulphuretted hydrogen; it forms a dark green crystalline powder, and on ignition gives the sesquioxide.

Chromic sulphate, $Cr_2(SO_4)_3$, is prepared by mixing the hydroxide with concentrated sulphuric acid and allowing the mixture to stand, a green solution is first formed which gradually changes to blue, and deposits violet-blue crystals, which are purified by dissolving in water and then precipitating with alcohol. It is soluble in cold water, giving a violet solution, which turns green on boiling. If the violet solution is allowed to evaporate slowly at ordinary temperatures the sulphate crystallizes out as $Cr_2(SO_4)_3{\cdot}15H_2O$, but the green solution on evaporation leaves only an amorphous mass. Investigation has shown that the change is due to the splitting off of sulphuric acid during the process, and that green-coloured chrom-sulphuric acids are formed thus—

$$\underset{\text{(violet)}}{2Cr_2(SO_4)_3} + H_2O = H_2SO_4 + \underset{\text{(green)}}{[Cr_4O{\cdot}(SO_4)_4]SO_4}$$

since, on adding barium chloride to the green solution, only one-third of the total sulphuric acid is precipitated as barium sulphate, whence it follows that only one-third of the original SO_4 ions are present in the green solution. The green salt in aqueous solution, on standing, gradually passes back to the violet form. Several other complex chrom-sulphuric acids are known, *e.g.*

$$[Cr_2(SO_4)_4]H_2;\ [Cr_2(SO_4)_5]H_4;\ [Cr_2(SO_4)_6]H_6$$

(see A. Recoura, *Annales de Chimie et de Physique*, 1895 (7), 4, p. 505.)

Chromic sulphate combines with the sulphates of the alkali metals to form double sulphates, which correspond to the alums. Chrome alum, $K_2SO_4{\cdot}Cr_2(SO_4)_3{\cdot}24H_2O$, is best prepared by passing sulphur dioxide through a solution of potassium bichromate containing the calculated quantity of sulphuric acid,

$$K_2Cr_2O_7 + 3SO_2 + H_2SO_4 = H_2O + K_2SO_4 + Cr_2(SO_4)_3.$$

On evaporating the solution dark purple octahedra of the alum are obtained. It is easily soluble in warm water, the solution being of a dull blue tint, and is used in calico-printing, dyeing and tanning. Chromium ammonium sulphate, $(NH_4)_2SO_4{\cdot}Cr_2(SO_4)_3{\cdot}24H_2O$, results on mixing equivalent quantities of chromic sulphate and ammonium sulphate in aqueous solution and allowing the mixture to crystallize. It forms red octahedra and is less soluble in water than the corresponding potassium compound. The salt $CrClSO_4{\cdot}8H_2O$ has been described. By passing ammonia over heated chromic chloride, the nitride, CrN, is formed as a brownish powder. By the action of concentrated sulphuric acid it is transformed into chromium ammonium sulphate.

The nitrate, $Cr(NO_3)_3{\cdot}9H_2O$, crystallizes in purple prisms and results on dissolving the hydroxide in nitric acid, its solution turns green on boiling. A phosphide, PCr, is known; it burns in oxygen forming the phosphate. By adding sodium phosphate to an excess of chrome alum the violet phosphate, $CrPO_4{\cdot}6H_2O$, is precipitated; on heating to 100° C. it loses water and turns green. A green precipitate, perhaps $CrPO_4{\cdot}3H_2O$, is obtained on adding an excess of sodium phosphate to chromic chloride solution.

Carbides of chromium are known; when the metal is heated in an electric furnace with excess of carbon, crystalline, C_2Cr_3, is formed; this scratches quartz and topaz, and the crystals are very resistant to the action of acids; CCr_4 has also been described (H. Moissan, *Comptes rendus*, 1894, 119, p. 185).

Cyanogen compounds of chromium, analogous to those of iron, have been prepared; thus potassium chromocyanide, $K_4Cr(CN)_6{\cdot}2H_2O$, is formed from potassium cyanide and chromous acetate; on exposure to air it is converted into the chromicyanide, $K_3Cr(CN)_6$, which can also be prepared by adding chromic acetate solution to boiling potassium cyanide solution. Chromic thiocyanate, $Cr(SCN)_3$, an amorphous deliquescent mass, is formed by dissolving the hydroxide in thiocyanic acid and drying over sulphuric acid. The double

thiocyanate, $Cr(SCN)_3 \cdot 3KCNS \cdot 4H_2O$, is also known.

Chromium salts readily combine with ammonia to form complex salts in which the ammonia molecule is in direct combination with the chromium atom. In many of these salts one finds that the elements of water are frequently found in combination with the metal, and further, that the ammonia molecule may be replaced by such other molecular groups as $-NO_2$, &c. Of the types studied the following may be mentioned: the diammine chromium thiocyanates, $M[Cr(NH_3)_2 \cdot (SCN)_4]$, the chloraquotetrammine chromic salts, $R^1{}_2[Cr(NH_3)_4 \cdot H_2O \cdot Cl]$, the aquopentammine or roseo-chromium salts, $R^1{}_3[Cr(NH_3)_5 \cdot H_2O]$, the chlorpentammine or purpureo-chromium salts, $R^1{}_2[Cr(NH_3)_5 \cdot Cl]$, the nitrito pentammine or xanthochromium salts, $R^1{}_2[NO_2 \cdot (NH_3)_5 \cdot Cr]$, the luteo or hexammine chromium salts, $R^1{}_3[(NH_3)_6 \cdot Cr]$, and the rhodochromium salts: where R^1 = a monovalent acid radical and M = a monovalent basic radical. For the preparation and properties of these salts and a discussion on their constitution the papers of S.F. Jörgensen and of A. Werner in the *Zeitschrift für anorganische Chemie* from 1892 onwards should be consulted.

P. Pfeiffer (*Berichte*, 1904, 37, p. 4255) has shown that chromium salts of the type $[Cr\{C_2H_4(NH_2)_2\}_2X_2]X$ exist in two stereo-isomeric forms, namely, the cis- and trans- forms, the dithiocyan-diethylene-diamine-chromium salts being the trans- salts. Their configuration was determined by their relationship to their oxalo-derivatives; the cis-dichloro chloride, $[CrC_2H_4(NH_2)_2Cl_2]Cl \cdot H_2O$, compound with potassium oxalate gave a carmine red crystalline complex salt, $[Cr\{C_2H_4(NH_2)_2\}C_2O_4][CrC_2H_4(NH_2)_2 \cdot (C_2O_4)_2]1\frac{1}{2}H_2O$, while from the trans-chloride a red complex salt is obtained containing the unaltered trans-dichloro group $[CrC_2H_4(NH_2)_2 \cdot Cl_2]$.

CHROMOSPHERE (from Gr. χρῶμα, colour, and σφαῖρα, a sphere), in astronomy, the red-coloured envelope of the sun, outside of the photosphere. It can be seen with the eye at the beginning or ending of a total eclipse of the sun, and with a suitable spectroscope at any time under favourable conditions. (See Sun and Eclipse.)

CHRONICLE (from Gr. χρόνος, time). The historical works written in the middle ages are variously designated by the terms “histories,” “annals,” or “chronicles”; it is difficult, however, to give an exact definition of each of these terms, since they do not correspond to determinate classes of writings. The definitions proposed by A. Giry (in *La Grande Encyclopédie*), by Ch. V. Langlois (in the *Manuel de bibliographie historique*), and by E. Bernheim (in the *Lehrbuch der historischen Methode*), are manifestly insufficient. Perhaps the most reasonable is that propounded by H.F. Delaborde at the École des Chartes, that chronicles are accounts of a universal character, while annals relate either to a locality, or to a religious community, or even to a whole people, but without attempting to treat of all periods or all peoples. The primitive type, he says, was furnished by Eusebius of Caesarea, who wrote (c. 303) a chronicle in Greek, which was soon translated into Latin and frequently recopied throughout the middle ages; in the form of synoptic and synchronistic tables it embraced the history of the world, both Jewish and Christian, since the Creation. This ingenious opinion, however, is only partially exact, for it is certain that the medieval authors or scribes were not conscious of any well-marked distinction between annals and chronicles; indeed, they often apparently employed the terms indiscriminately.

Whether or not a distinction can be made, chronicles and annals (*q.v.*) have points of great similarity. Chronicles are accounts generally of an impersonal character, and often anonymous, composed in varying proportions of passages reproduced textually from sources which the chronicler is seldom at pains to indicate, and of personal recollections the veracity of which remains to be determined. Some of them are written with so little intelligence and spirit that one is led to regard the work of composition as a piece of drudgery imposed on the clergy and monks by their superiors. To distinguish what is original from what is borrowed, to separate fact from falsehood, and to establish the value of each piece of evidence, are in such circumstances a difficult undertaking, and one which has exercised the

sagacity of scholars, especially since the 17th century. The work, moreover, is immense, by reason of the enormous number of medieval chronicles, both Christian and Mahommedan.

The Christian chronicles were first written in the two learned languages, Greek and Latin. At an early stage we have proof of the employment of national languages, the most famous instances being found at the two extremities of Europe, the Anglo-Saxon Chronicle (*q.v.*), the most ancient form of which goes back to the 10th century, and the so-called Chronicle of Nestor, in Palaeo-Slavonic, written in the 11th and 12th centuries. In the 13th and 14th centuries the number of chronicles written in the vulgar tongue continued to increase, at least in continental Europe, which far outpaced England in this respect. From the 15th century, with the revived study of Greek and Roman literature, the traditional form of chronicles, as well as of annals, tended to disappear and to be replaced by another and more scientific form, based on the models of antiquity—that of the historical composition combining skilful arrangement with elegance of literary style. The transition, however, was very gradual, and it was not until the 17th century that the traditional form became practically extinct.

See E. Bernheim, *Lehrbuch der historischcn Methode* (4th ed., 1903); H. Bloch, "Geschichte der deutschen Geschichtsschreibung im Mittelalter" in the *Handbuch* of G. von Below and F. Meinecke (Munich, 1903 seq.); Max Jansen, "Historiographie und Quellen der deutschen Geschichte bis 1500," in Aloïs Meister's *Grundris* (Leipzig, 1906); and the Introduction (1904) to A. Molinier's *Les Sources de l'histoire de France*.

(C. B.*)

CHRONICLES, BOOKS OF, two Old Testament books of the Bible. The name is derived from *Chronicon*, first suggested by Jerome as a rendering of the title which they bear in the Hebrew Canon, viz. *Events of the Times*. The full Hebrew title would be *Book of Events of the Times*, and this again appears to have been a designation commonly applied to special histories in the more definite shape—*Events of the Times of King David*, or the like (1 Chron. xxvii. 24; Esth. x. 2, &c.). The Greek translators divided the long book into two, and adopted the title Παραλειπόμενα, *Things omitted* [scil. in the other historical books].

Position and date.

The book of Chronicles begins with Adam and ends abruptly in the middle of Cyrus's decree of restoration, which reappears complete at the beginning of Ezra. A closer examination of those parts of *Ezra* and *Nehemiah* which are not extracted from earlier documents or original memoirs leads to the conclusion that *Chronicles-Ezra-Nehemiah* was originally one work, displaying throughout the peculiarities of language and thought of a single editor, who, however, cannot be Ezra himself as tradition would have it. Thus the fragmentary close of 2 Chronicles marks the disruption of a previously-existing continuity,—due, presumably, to the fact that in the gradual compilation of the Canon the necessity for incorporating in the Holy Writings an account of the establishment of the post-Exile theocracy was felt, before it was thought desirable to supplement *Samuel* and *Kings* by adding a second history of the period before the Exile. Hence *Chronicles* is the last book of the Hebrew Bible, following the book of *Ezra-Nehemiah*, which properly is nothing else than the sequel of *Chronicles*.

Of the authorship of *Chronicles* we know only what can be determined by internal evidence. The style of the language, and also the position of the book in the Jewish Canon, stamp the book as one of the latest in the Old Testament, but lead to no exact determination of the date.[1] In 1 Chron. xxix. 7, which refers to the time of David, a sum of money is reckoned by *darics*, which certainly implies that the author wrote after this Persian coin had been long current in Judaea. In 1 Chron. iii. 19 sqq. the descendants of Zerubbabel seem to be reckoned to six generations (the Septuagint reads it so as to give as many as eleven generations), and this agrees with the suggestion that Hattush (verse 22), who belongs to the fourth generation from Zerubbabel, was a contemporary of Ezra (Ezra viii. 2). Thus the compiler lived at least two generations after Ezra. With this it accords that in Nehemiah five generations of high priests are enumerated from Joshua (xii. 10 seq.), and that the last name is that of Jaddua, who, according to Josephus, was a contemporary of Alexander the Great (333 B.C.). That the compiler wrote after the fall of the Persian monarchy has been argued by Ewald and others from the use of the title king of Persia (2 Chron. xxxvi. 23), and from the

reference made in Neh. xii. 22 to Darius III. (336-332 B.C.). A date some time after 332 B.C. is now accepted by most modern critics. See further Ezra and Nehemiah.

Character of the work.

What seems to be certain and important for a right estimate of the book is that the writer lived a considerable time after Ezra, and stood entirely under the influence of the religious institutions of the new theocracy. This standpoint determined the nature of his interest in the early history of his people. The true importance of Hebrew history had always centred in the fact that this petty nation was the people of Yahweh, the spiritual God. The tragic interest which distinguishes the annals of Israel from the forgotten history of Moab or Damascus lies wholly in that long contest which finally vindicated the reality of spiritual things and the supremacy of Yahweh's purpose, in the political ruin of the nation which was the faithless depository of these sacred truths. After the return from the Exile it was impossible to write the history of Israel's fortunes otherwise than in a spirit of religious pragmatism. But within the limits of the religious conception of the plan and purpose of the Hebrew history more than one point of view might be taken up. The book of Kings looks upon the history in the spirit of the prophets—in that spirit which is still echoed by Zech. i. 5 seq., but which had become extinct before the Chronicler wrote. The New Jerusalem of Ezra was organized as a municipality and a church, not as a nation. The centre of religious life was no longer the living prophetic word but the ordinances of the Pentateuch and the liturgical service of the sanctuary. The religious vocation of Israel was no longer national but ecclesiastical or municipal, and the historical continuity of the nation was vividly realized only within the walls of Jerusalem and the courts of the Temple, in the solemn assembly and stately ceremonial of a feast day. These influences naturally operated most strongly on those who were officially attached to the sanctuary. To a Levite, even more than to other Jews, the history of Israel meant above all things the history of Jerusalem, of the Temple, and of the Temple ordinances. Now the writer of Chronicles betrays on every page his essentially Levitical habit of mind. It even seems possible from a close attention to his descriptions of sacred ordinances to conclude that his special interests are those of a common Levite rather than of a priest, and that of all Levitical functions he is most partial to those of the singers, a member of whose guild he may have been. From the standpoint of the post-exilic age, the older delineation of the history of Israel, especially in the books of Samuel and Kings, could not but appear to be deficient in some directions, while in other respects its narrative seemed superfluous or open to misunderstanding, as for example by recording, and that without condemnation, things inconsistent with the later, post-exilic law. The history of the ordinances of worship holds a very small place in the older record. Jerusalem and the Temple have not that central place in the book of Kings which they occupied in the minds of the Jewish community after the Exile. Large sections of the old history are devoted to the religion and politics of the ten tribes, which are altogether unintelligible and uninteresting when measured by a strictly Levitical standard; and in general the whole problems and struggles of the prophetic period turn on points which had ceased to be cardinal in the life of the New Jerusalem, which was no longer called to decide between the claims of the Word of Yahweh and the exigencies of political affairs and social customs, and which could not comprehend that men absorbed in deeper spiritual contests had no leisure for the niceties of Levitical legislation. Thus there seemed to be room for a new history, which should confine itself to matters still interesting to the theocracy of Zion, keeping Jerusalem and the Temple in the foreground, and developing the divine pragmatism of the history, not so much with reference to the prophetic word as to the fixed legislation of the Pentateuch, so that the whole narrative might be made to teach that the glory of Israel lies in the observance of the divine law and ritual.

Contents.

For the sake of systematic completeness the book begins with Adam, as is the custom with later Oriental writers. But there was nothing to add to the Pentateuch, and the period from Moses to David contained little that served the purpose. The early history is therefore contracted into a series of tribal and priestly genealogies, which were doubtless by no means the least interesting part of the work at a time when every Israelite was concerned to prove the purity of his Hebrew descent (cp. Ezra ii. 59, 62). Commencing abruptly (after some Benjamite genealogies) with the death of Saul, the history becomes fuller and runs parallel with the books of Samuel and Kings. The limitations of the compiler's interest in past times appear in the omission, among other particulars, of David's reign in Hebron, of the disorders in his family and the revolt of Absalom, of the circumstances of Solomon's accession, and of many details as to the wisdom and splendour of that sovereign, as well as of his fall into idolatry. In the later history the ten tribes are quite neglected ("Yahweh is not with Israel," 2 Chron. xxv. 7), and political affairs in Judah receive attention, not in proportion to their intrinsic importance, but according as

they serve to exemplify God's help to the obedient and His chastisement of the rebellious. That the compiler is always unwilling to speak of the misfortunes of good rulers is not necessarily to be ascribed to a deliberate suppression of truth, but shows that the book was throughout composed not in purely historical interests, but with a view to inculcating a single practical lesson. The more important additions to the older narrative consist partly of statistical lists (1 Chron. xii.), partly of full details on points connected with the history of the sanctuary and the great feasts or the archaeology of the Levitical ministry (1 Chron. xiii., xv., xvi., xxii.-xxix.; 2 Chron. xxix.-xxxi., &c.), and partly of narratives of victories and defeats, of sins and punishments, of obedience and its reward, which could be made to point a plain religious lesson in favour of faithful observance of the law (2 Chron. xiii., xiv. 9 sqq.; xx., xxi. 11 sqq., &c.). The minor variations of *Chronicles* from the books of Samuel and Kings are analogous in principle to the larger additions and omissions, so that the whole work has a consistent and well-marked character, presenting the history in quite a different perspective from that of the old narrative.

Sources.

The chronicler makes frequent reference to earlier histories which he cites by a great variety of names. That the names "Book of the Kings of Israel and Judah," "Book of the Kings of Judah and Israel," "Book of the Kings of Israel," and "Affairs of the Kings of Israel" (2 Chron. xxxiii. 18), refer to a single work is not disputed. Under one or other title this book is cited some ten times. Whether it is identical with the Midrash[2] of the book of Kings (2 Chron. xxiv. 27) is not certain. That the work so often cited is not the Biblical book of the same name is manifest from what is said of its contents. It must have been quite an extensive work, for among other things it contained genealogical statistics (1 Chron. ix. 1), and it incorporated certain older prophetic writings—in particular, the *debārīm* ("words" or "history") of Jehu the son of Hanani (2 Chron. xx. 34) and possibly the vision of Isaiah (2 Chron. xxxii. 32). Where the chronicler does not cite this comprehensive work at the close of a king's reign he generally refers to some special authority which bears the name of a prophet or seer (2 Chron. ix. 29; xii. 15, &c.). But the book of the Kings and a special prophetic writing are not cited for the same reign. It is therefore probable that in other cases than those of Isaiah and Jehu the writings of, or rather, about the prophets which are cited in *Chronicles* were known only as parts of the great "book of the Kings." Even the genealogical lists may have been derived from that work (1 Chron. ix. 1), though for these other materials may have been accessible.

The two chief sources of the canonical book of Kings were entitled *Annals* ("events of the times") *of the Kings of Israel* and *Judah* respectively (see Kings). That the lost source of the *Chronicles* was not independent of these works appears probable both from the nature of the case and from the close and often verbal parallelism between many sections of the two Biblical narratives. But while the canonical book of Kings refers to separate sources for the northern and southern kingdoms, the source of *Chronicles* was a history of the two kingdoms combined, and so, no doubt, was a more recent work which in great measure was doubtless based upon older annals. Yet it contained also matter not derived from these works, for it is pretty clear from 2 Kings xxi. 17 that the *Annals of the Kings of Judah* gave no account of Manasseh's repentance, which, according to 2 Chron. xxxiii. 18, 19, was narrated in the great book of the Kings of Israel. It was the opinion of Bertheau, Keil and others, that the parallelisms of *Chronicles* with *Samuel* and *Kings* are sufficiently explained by the ultimate common source from which both narratives drew. But most critics hold that the chronicler also drew directly from the canonical books of Samuel and Kings as he apparently did from the Pentateuch. This opinion is not improbable, as the earlier books of the Old Testament cannot have been unknown in his age; and the critical analysis of the canonical book of Kings is advanced enough to enable us to say that in some of the parallel passages the chronicler uses words which were not written in the annals but by one of the compilers of *Kings* himself. In particular, *Chronicles* agrees with *Kings* in those short notes of the moral character of individual monarchs which can hardly be ascribed to an earlier hand than that of the redactor of the latter book.[3]

Treatment of history.

For the criticism of the book it is important to institute a careful comparison of Chronicles with the parallel narratives in *Samuel-Kings*.[4] It is found that in the cases where *Chronicles* directly contradicts the earlier books there are few in which an impartial historical judgment will decide in favour of the later account, and in any point that touches difference of usage between its time and that of the old monarchy it is of no authority. The characteristic feature of the post-exilic age was the re-shaping of older tradition in the interest of parenetic and practical purposes, and for this object a certain freedom of literary form was always allowed to ancient historians. The typical speeches in Chronicles are of little value for the periods to which they relate, and where they are inconsistent with the evidence from earlier writings or contain

inherent improbabilities are scarcely of historical worth. According to the ordinary laws of research, the book, being written at a time long posterior to the events it records, can have only a secondary value, although that is no reason why here and there valuable material should not have been preserved. But the general picture which it gives of life under the old monarchy cannot have the same value for us as the records of the book of Kings. On the other hand, it is of distinct value for the history of its time, and presents a clear picture of the spirit of the age. The "ecclesiastical chronicle of Jerusalem," as Reuss has aptly called it, represents the culminating point (as far as the O.T. Canon is concerned) of that theory of which examples recur in Judges, Samuel and Kings, and this treatment of history in accordance with religious or ethical doctrines finds its continuation in the didactic aims which characterize the later non-canonical writings (cf. JUBILEES; MIDRASH).

The most prominent examples of disagreement with earlier sources may be briefly noticed. Thus, it would appear that the book has confused Jehoiakim and Jehoiachin (2 Chron. xxxvi. 5-8) and has statements which directly conflict with 2 Sam. xxi. 19 (1 Chron. xx. 5; see GOLIATH), and 1 Kings ix. 10 seq. (2 Chron. viii. 2); it has changed Hezekiah's submission (2 Kings xviii.) into a brave resistance (2 Chron. xxxii. 1-8) and ignored the humiliating payment of tribute by this king and by Joash (2 Kings xii. 18; 2 Chron. xxiv. 23 sqq.).[5] That Satan, and not Yahweh incited David to number Israel (1 Chron. xxi.; 2 Sam. xxiv. 1) accords with later theological development. 301

A particular tendency to arrange history according to a mechanical rule appears in the constant endeavour to show that recompense and retribution followed immediately on good or bad conduct, and especially on obedience or disobedience to prophetic advice. Thus, the invasion of Shishak (see REHOBOAM) becomes a typical romance (2 Chron. xii.); the illness of Asa is preceded by a denunciation for relying upon Syria, and the chronology is changed to bring the fault near the punishment (2 Chron. xv. seq.). The ships which Jehoshaphat made were wrecked at Ezion-geber because he had allied himself with Ahaziah of Israel despite prophetic warning (2 Chron. xx. 35 sqq.; 1 Kings xxii. 48; cf. similarly the addition in 2 Chron. xix. 1-3), and the later writer supposes that the "Tarshish ships" (large vessels such as were used in trading with Spain—cf. "Indiamen") built in the Red Sea were intended for the Mediterranean trade (cf. 2 Chron. ix. 21 with 1 Kings x. 22). The Edomite revolt under Jehoram of Judah becomes the penalty for the king's apostasy (2 Chron. xxi. 10-20; 2 Kings viii. 22), Ahaziah was slain because of his friendship with Jehoram (2 Chron. xxii. 7). The Aramaean invasion in the time of Joash of Judah was a punishment for the murder of Jehoiada's son (2 Chron. xxiv.; 2 Kings xii.). Amaziah, after defeating Edom (2 Chron. xxv., esp. verses 19-21; see 2 Kings xiv. 10 seq.), worshipped strange gods, for which he was defeated by Joash of Israel, and subsequently met with his death (2 Chron. xxv. 27; 2 Kings xiv. 19). Uzziah's leprosy is attributed to a ritual fault (2 Chron. xxvi. 4 seq., 16 sqq.; cf. 2 Kings xv. 3-5; see UZZIAH). The defeat and death of the good king Josiah came through disobedience to the Divine will (2 Chron. xxxv. 21 seq.; see 2 Kings xxiii. 26 sqq.).

In addition to such supplementary information, another tendency of the chronicler is the alteration of narratives that do not agree with the later doctrines of the uniformity of religious institutions before and after the exile. Thus, the reformation of Josiah has been thrust back from his eighteenth to his twelfth year (when he was nineteen years old) apparently because it was felt that so good a king would not have tolerated the abuses of the land for so long a period,[6] but the result of this is to leave an interval of ten years between his conversion and the subsequent act of repentance (2 Chron. xxxiv. 3-6; 2 Kings xxii. seq.). References to Judaean idolatry are omitted (1 Kings xiv. 22-24; see 2 Chron. xii. 14; 2 Kings xviii. 4; 2 Chron. xxxi. 1) or abbreviated (2 Kings xxiii. 1-20; 2 Chron. xxxiv. 29-33); and if the earlier detailed accounts of Judaean heathenism were repulsive, so the tragic account of the fate of Jerusalem was a painful subject upon which the chronicler's age did not care to dwell (contrast 2 Kings xxiv. 8-xxv. with the brief 2 Chron. xxxvi. 9-21). At an age when the high places were regarded as idolatrous it was considered only natural that the good kings should not have tolerated them. So 2 Chron. xiv. 5, xvii. 6 (from unknown sources) contradict 1 Kings xv. 14, xxii. 43 (that Asa and Jehoshaphat did *not* demolish the high places), whereas xv. 16-18, xx. 31-34, are quoted from the book of Kings and give the older view. The example is an illustration of the simple methods of early compilers. Further, it is assumed that the high place at Gibeon was a legitimate sanctuary (2 Chron. i. 3-6; 1 Kings iii. 2-4; 1 Chron. xxi. 28-30; 2 Sam. xxiv.); that the ark was borne not by priests (1 Kings viii. 3) but by Levites (2 Chron. v. 4), in accordance with post-exilic usage; and that the Levites, and not the foreign bodyguard of the temple, helped to place Joash on the throne (2 Chron. xxiii.).[7] Conversely 1 Chron. xv. 12 seq. explains xiii. 10 (2 Sam. vi. 7) on the view that Uzza was not a Levite, hence the catastrophe.

Throughout it is assumed that the Levitical organization had been in existence from the days of David, to whom its foundation is ascribed. In connexion with the installation of the ark considerable space is devoted to the arrangements for the maintenance of the temple-

service, upon which the earlier books are silent, and elaborate notices of the part played by the Levites and singers give expression to a view of the history of the monarchy which the book of Kings does not share.[8] Along with the exceptional interest taken in Levitical and priestly lists should be noticed the characteristic preference for genealogies. Particular prominence is given to the tribe and kings of Judah (1 Chron. ii.-iv.), and to the priests and Levites (1 Chron. vi., xv. sq., xxiii.-xxv.; with ix. 1-34 cf. Neh. xi.). The historical value of these lists is very unequal; a careful study of the names often proves the lateness of the source, although an appreciation of the principles of genealogies sometimes reveals important historical information; see Caleb, Genealogy, Judah. But the Levitical system as it appears in its most complete form in Chronicles is the result of the development of earlier schemes, of which some traces are still preserved in *Chronicles* itself and in *Ezra-Nehemiah*. (See further Levites.)

The tendency of numbers to grow is one which must always be kept in view—cf. 1 Chron. xviii. 4, xix. 18 (2 Sam. viii. 4 [but see LXX.], x. 18), 1 Chron. xxi. 5, 25 (2 Sam. xxiv. 9, 24); consequently little importance can be attached to details which appear to be exaggerated (1 Chron. v. 21, xii., xxii. 14; 2 Chron. xiii. 3, 17), and are found to be quite in accordance with similar peculiarities elsewhere (Num. xxxi. 32 seq.; Judg. xx. 2, 21, 25).

Historical value.

But when allowance is made for all the above tendencies of the late post-exilic age, there remains a certain amount of additional matter in *Chronicles* which may have been derived from relatively old sources. These items are of purely political or personal nature and contain several details which taken by themselves have every appearance of genuineness. Where there can be no suspicion of such "tendency" as has been noticed above there is less ground for scepticism, and it must be remembered that the earlier books contain only a portion of the material to which the compilers had access. Hence it may well happen that the details which unfortunately cannot be checked were ultimately derived from sources as reputable as those in the books of Samuel, Kings, &c. As examples may be cited Rehoboam's buildings, &c. (2 Chron. xi. 5-12, 18 sqq.); Jeroboam's attack upon Abijah (2 Chron. xiii., cf. 1 Kings xv. 7); the invasion of Zerah in Asa's reign (2 Chron. xiv.; see Asa); Jehoshaphat's wars and judicial measures (2 Chron. xvii. xx.; see 1 Kings xxii. 45); Jehoram's family (2 Chron. xxi. 2-4); relations between Jehoiada and Joash (2 Chron. xxiv. 3, 15 sqq.); conflicts between Ephraim and Judah (2 Chron. xxv. 6-13); wars of Uzziah and Jotham (2 Chron. xxvi. seq.); events in the reign of Ahaz (2 Chron. xxviii. 8-15, 18 seq.); reforms of Hezekiah (2 Chron. xxix. sqq., cf. Jer. xxvi. 19); Manasseh's captivity, repentance and buildings (2 Chron. xxxiii. 10-20; see 2 Kings xxi. and Manasseh); the death of Josiah (2 Chron. xxxv. 20-25). In addition to this reference may be made to such tantalizing statements as those in 1 Chron. ii. 23 (R.V.), iv. 39-41, v. 10, 18-22, vii. 21 seq., viii. 13, xii. 15, examples of the kind of tradition, national and private, upon which writers could draw. Although in their present form the additional *narratives* are in the chronicler's style, it is not necessary to deny an older traditional element which may have been preserved in sources now lost to us.[9]

Bibliography.—Robertson Smith's article in the 9th ed. of the *Ency. Brit.* was modified by his later views in *Old Test. in the Jewish Church*[2], pp. 140-148. Recent literature is summarized by S.R. Driver in his revision of Smith's article in *Ency. Bib.* and in his *Lit. of Old Test.*, and by F. Brown in Hastings' *Dict. Bib.* (a very comprehensive article). Many parts of the book offer a very hard task to the expositor, especially the genealogies, where to other troubles are added the extreme corruption and many variations of the proper names in the versions; on these see the articles in the *Ency. Bib.* Valuable contributions to the exegesis of the book will be found in Wellhausen's *Prolegomena* (Eng. trans.), pp. 171-227; Benzinger in Marti's *Hand-Kommentar* (1901); Kittel in *Sacred Books of the Old Test.* (1895), *History of the Hebrews*, ii. 224 sqq. (1896), and in Nowack's *Hand-Kommentar* (1902). W.H. Bennett in *Expositor's Bible* (1894), W.E. Barnes in *Cambridge Bible* (1899), and Harvey-Jellie in the *Century Bible* (1906), are helpful. Among more recent investigations are those of Howorth, *Proc. Soc. of Bibl. Archael.* xxvii. 267-278 (Chronicles a late translation from the Aramaic).

(W. R. S.; S. A. C.)

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1 See the lists in Driver, *Lit. of Old Test.* pp. 502 sqq.; and the exhaustive summary by Fr. Brown in Hastings' *Dict. Bible*, i. 289 sqq.

2 R.V. "commentary," properly, an edifying religious work, a didactic or homiletic exposition. A distinct tendency to Midrash is found even here and there in the earlier books.

3 The problem of the sources is one of considerable intricacy and cannot be discussed here; the introduction to the commentaries of Benzinger and Kittel (see *Bibliography* below) should be consulted. The questions depend partly upon the view taken of the origin and structure of the book of Kings (*q.v.*) and partly upon the results of historical criticism.

4 "A careful comparison of Chronicles with Samuel and Kings is a striking object lesson in ancient historical composition. It is an almost indispensable introduction to the criticism of the Pentateuch and the older historical works" (W.H. Bennett, *Chronicles*, p. 20 seq.).

5 But xxxii. 1-8 may preserve a tradition of the account of the city's wonderful deliverance mentioned in *Kings* (see HEZEKIAH), and the details of the invasion of Judah in the time of Joash differ essentially from those in the earlier source. Even 2 Chron. viii. 2 cannot be regarded as a *deliberate* alteration since the writer does not appear to be quoting from 1 Kings ix. 10 sqq. (the two passages should be carefully compared), and his view of Solomon's greatness is already supported by allusions in the earlier but extremely composite sources in *Kings* (see SOLOMON).

6 But that this was not the invention of the chronicler appears possible from Jer. xxv. 3. Similarly, Hezekiah's reforms are dated in his first year (2 Chron. xxix. 3), against all probability; see HEZEKIAH (end).

7 2 Chron. xxiii. is an excellent specimen of the redaction to which older narratives were submitted; cf. also 2 Chron. xxiv. 5 seq. (2 Kings xi. 4 seq.), xxxiv. 9-14 (2 Kings xxii.), xxxv. 1-19 (2 Kings xxiii. 21-23).

8 Passages in the books of Samuel and Kings which might appear to point to the contrary require careful examination; they prove to be glosses or interpolations, or are relatively late as a whole.

9 The view that the chronicler *invented* such narratives is inconceivable, and in the present stage of historical criticism is as unsound as an implicit reliance upon those sources in the earlier books, which in their turn are often long posterior to the events they record. Although Graf, in a critical and exhaustive study (*Geschichtlichen Bücher des A.T.*, Leipzig, 1866), concluded that the Chronicles have almost no value as a documentary source of the ancient history, he subsequently admitted in private correspondence with Bertheau that this statement was too strong (preface to Bertheau's *Commentary*, 2nd ed., 1873).

CHRONOGRAPH (from Gr. χρόνος, time, and γράφειν, to write). Instruments whereby periods of time are measured and recorded are commonly called chronographs, but it would be more correct to give the name to the records produced. Instruments such as "stop watches" (see WATCH), by means of which the time between events is shown on a dial, are also called chronographs; they were originally rightly called chronoscopes (σκοπεῖν, to see).

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In the first experiments in ballistics by B. Robins, Count Rumford and Charles Hutton, the velocity of a projectile was found by means of the ballistic pendulum, in which the principle of momentum is applied in finding the velocity of a projectile (*Principles of Gunnery*, by Benjamin Robins, edited by Hutton, 1805, p. 84). It consisted of a pendulum of considerable weight, which was displaced from its position of rest by the impact of the bullet, the velocity of which was required. A modification of the ballistic pendulum was also employed by W.E. Metford (1824-1899) in his researches on different forms of rifling; the bob was made in the form of a long cylinder, weighing about 140 ℔, suspended with its axis horizontal from four wires at each end, all moving points being provided with knife edges. The true length of suspension was deduced from observations of the time of a complete small oscillation. The head of the pendulum was furnished with a wooden block, which caught the fragments of bullets fired at it, and its displacement was recorded by a rod moved by the bob (*The Book of the Rifle*, by the Hon. T.F. Fremantle, p. 336). An improved ballistic pendulum in which the geometric method of suspension is introduced has been used by A. Mallock, to determine the resistance of the air to bullets having a velocity up to 4500 F/S. (*Proc. Roy. Soc.*, Nov. 1904). A ballistic pendulum, carried by a geometric suspension from five points, has also been employed by C.V. Boys in a research on the elasticity of golf balls, the displacement of the bob being recorded on a sheet of smoked glass.[1] For further information on the dynamics of the subject see *Text Book of Gunnery*, 1897, p. 101.

In nearly all forms of chronographs in which the ballistic pendulum method is not used, the beginning and end of a period of time is recorded by means of some kind of electrically controlled mechanism; and in order that small fractions of a second may be measured, tuning-forks are employed, giving any convenient number of vibrations per second, a light style or scribing point, usually of aluminium, being attached to one of the legs of the tuning-fork. A trace of the vibration is made on a surface blackened with the deposit from the smoke of a lamp. Glazed paper is often employed when the velocity of the surface is slow, but when a high velocity of smoked surface is necessary, smoked glass offers far the least resistance to the movement of the scribing points. If the surface be cylindrical, thin sheet

mica attached to it, and smoked, gives excellent results, and offers but little resistance to all the scribing points employed. The period of vibration of tuning-forks is determined by direct or indirect comparison with the mean solar second, taken from a standard clock, the rate of which is known from transit observations (“Recherches sur les vibrations d’un diapason étalon,” R. Koenig, *Wied. Ann.*, 1880). In the celebrated ballistic experiments of the Rev. F. Bashforth, the time markings were made electrically from a standard clock, and fractions of a second were estimated by interpolation. Regnault (*Mémoires de l’acad. des sciences*, t. xxxvii.) employed both a standard clock and a tuning-fork in his determination of the velocity of sound. The effect of temperature on tuning-forks has been determined by Lord Rayleigh and Professor H. McLeod (*Proc. Roy. Soc.*, 1880, 26, p. 162), who found the coefficient to be 0.00011 per degree C. between 9° C. and 27° C. The beginning and end of a time period is marked on a moving surface in many ways. Usually an electromagnetic stylus is employed, in which a scribing point suddenly moves when the electric circuit is broken by a projectile. Another method is to arrange the terminals of the secondary circuit of an induction coil, so that when the primary circuit is opened a small spark punctures or marks a moving surface (Helmholtz, *Phil. Mag.*, 1853, p. 6). A photographic plate or film, moving in a dark chamber, is also used to receive markings produced by a beam of light interrupted by a small screen attached to an electromagnetic stylus, or by the legs of a tuning-fork, or by the mercury column of a capillary electrometer. In certain researches on the explosive wave of gases the light given by the burning gases made the time trace on a rapidly moving photographic film (H.B. Dixon, *Phil. Trans.*, 1903, 200, p. 323). In physiological chronography the stylus is in many cases actuated directly by the piece of muscle to which it is attached; when the muscle is stimulated its contraction moves the stylus on the moving surface of the myograph (M. Foster, *Text Book of Physiology*, 1879, p. 39).

Gun Chronographs.—Probably the earliest forms of chronographs, not based on the ballistic pendulum method, are due to Colonel Grobert, 1804, and Colonel Dabooz, 1818, both officers of the French army. In the instrument by Grobert two large disks, attached to the same axle 13 ft. apart, were rapidly rotated; the shot pierced each disk, the angle between two holes giving the time of flight of the ball, when the angular velocity of the disks was known. In the instrument by Colonel Dabooz a cord passing over two light pulleys, one close to the gun, the other at a given distance from it, was stretched by a weight at the gun end and by a heavy screen at the other end. Behind this screen there was a fixed screen. The shot cut the cord and liberated the screen, which was perforated during its fall. The height of fall was measured by superposing the hole in the moving screen upon that in the fixed one. This gave the approximate time of flight of the shot over a given distance, and hence its velocity.

Grobert and Dabooz.

In the early form of chronoscope invented by Sir C. Wheatstone in 1840 the period of time was measured by means of a species of clock, driven by a weight; the dial pointer was started and stopped by the action of an electromagnet which moved a pawl engaging with a toothed wheel fixed on the axle to which the dial pointer was attached. The instrument applied to the determination of the velocity of shot is described thus by Wheatstone:—“A wooden ring embraced the mouth of the gun, and a wire connected the opposite sides of the ring. At a proper distance the target was erected, and so arranged that the least motion given to it would establish a permanent contact between two metal points. One of the extremities of the wire of the electromagnet (before mentioned) was attached to one pole of a small battery; to the other extremity of the electromagnet were attached two wires, one of which communicated with the contact piece of the target, and the other with one of the ends of the wire stretched across the mouth of the gun; from the other extremity of the voltaic battery two wires were taken, one of which came to the contact piece of the target, and the other to the opposite extremity of the wire across the mouth of the gun. Before the firing of the gun a continuous circuit existed, including the gun wire; when the target was struck the second circuit was completed; but during the passage of the projectile both circuits were interrupted, and the duration of this interruption was indicated by the chronoscope.”

Wheatstone.

Professor Joseph Henry (*Journal Franklin Inst.*, 1886) employed a cylinder driven by clockwork, making ten revolutions per second. The surface was divided into 100 equal parts, each equal to 1/1000 second. The time marks were made by two galvanometer needles, when successive screens were broken by a shot. Henry also used an induction-coil spark to make the cylinder, the primary of the coil being in circuit with a battery and screen. This form of chronograph is in many respects similar to the instrument of Konstantinoff, which was constructed by L.F.C. Breguet and has been sometimes attributed to him (*Comptes rendus*, 1845). This chronograph consisted of a cylinder 1 metre in circumference and 0.36 metre long, driven by clockwork, the rotation being regulated by a governor provided with wings. A small carriage geared to the wheelwork traversed its length, carrying electromagnetic signals. The electric

Henry.

chronograph signal usually consists of a small armature (furnished with a style which marks a moving surface) moving in front of an electromagnet, the armature being suddenly pulled off the poles of the electromagnet by a spring when the circuit is broken (*Journal of Physiology*, ix. 408). The signals in Breguet's instrument were in a circuit, including the screens and batteries of a gun range. The measurement of time depended on the regularity of rotation of the cylinder, on which each mm. represented 1/1000 second.

In the chronograph of A.J.A. Navez (1848) the time period is found by means of a pendulum held at a large angle from the vertical by an electromagnet, which is in circuit with a screen on the gun range. When the shot cuts this screen the circuit is broken and the pendulum liberated and set swinging. When the next screen on the range is broken by the shot, the position of the pendulum is recorded and the distance it has passed through measured on a divided arc. From this the time of traversing the space between the screens is deduced. By means of an instrument known as a disjunctor the instrumental time-loss or latency of the chronograph is determined.

Navez.

In Benton's chronograph (1859) two pendulums are liberated, in the same manner as in the instrument of Navez, one on the cutting of the first screen, the other on the cutting of the second. The difference between the swings of the two pendulums gives the time period sought for. The disjunctor is also used in connexion with this instrument. In Vignotti's chronograph (1857) again a pendulum is employed, furnished with a metal point, which moves close to paper impregnated with ferro-cyanide of potassium. The gun-range screens are included in the primary circuits of induction coils; when these circuits are broken a spark from the pointer marks the paper. From these marks the time of traverse of the shot between the screens is determined.

Benton.

In the Bashforth chronograph a platform, arranged to descend slowly alongside of a vertical rotating cylinder, carries two markers, controlled by electromagnets, which describe a double spiral on the prepared surface of the cylinder. One electromagnet is in circuit with a clock, and the marker actuated by it marks seconds on the cylinder; the circuit of the other is completed through a series of contact pieces attached to the screens through which the shot passes in succession. On the gun range, when the shot reaches the first screen, it breaks a weighted cotton thread, which keeps a flexible wire in contact with a conductor. When the thread is broken by a shot, the wire leaves the conductor and almost immediately establishes the circuit through the next screen, by engaging with a second contact, the time of the rupture being recorded on the cylinder by the second marker. The velocity with which the cylinder rotates is such that the distance between successive clock marks indicating seconds is about 18 in.; hence the marks corresponding with the severance of a thread can be allotted their value in fractions of seconds with great accuracy. The times when the shot passes successive screens being thus recorded on the spiral described by the second marker, and the distance between each screen being known, the velocity of the shot can be calculated.

Bashforth.

The chronoscope invented by Sir Andrew Noble is so well adapted to the measurement of very small intervals of time that it is usually employed to ascertain the velocity acquired by a shot at different parts of the bore in moving from a state of rest inside the gun. A series of "cutting plugs" is screwed into the sides of the gun at measured intervals, and in each is inserted a loop of wire which forms part of the primary circuit of an induction coil. On the passage of a shot this wire is severed by means of a small knife which projects into the bore and is actuated by the shot as it passes; the circuit being thus broken, a spark passes between the terminals of the secondary of the coil. There is a separate coil and circuit for each plug. The recording arrangement consists of a series of disks, one for each plug, mounted on one axle and rotating at a high angular velocity. The edges of these disks are covered with a coating of lamp-black, and the secondaries of the coils are caused to discharge against them, so that a minute spot burnt in the lamp-black of each disk indicates the moment of the cutting of the wire in the corresponding plug. Hence measurement of the distance between two successive spots gives the time occupied by the shot in moving over the portion of the bore between two successive plugs. By the aid of a vernier, readings are made to thousandths of an inch, and the peripheral velocity of the disks being 1100 in. a second, the machine indicates portions of time rather less than one-millionth of a second; it is, in fact, practically correct to hundred-thousandths of a second (*Phil. Trans.*, 1875, pt. i.).

Noble.

In the Le Boulengé chronograph ("Chronograph le Boulengé," par M. Bréger, Commission de Gâvre, Sept. 1880) two screens are used. The wire of the first forms part of the circuit of an electromagnet which, so long as it is energized, supports a vertical rod called the "chronometer." Hence when the circuit is broken by the passage of a shot through the screen this rod drops. The wire of the second screen conveys a current through another electromagnet which supports a much shorter rod. This

Le Boulengé.

"registrar," as it is called, when released by the shot severing the wire of the second screen, falls on a disk which sets free a spring, and causes a horizontal knife to fly forward and nick a zinc tube with which the chronometer rod is sheathed. Hence the long rod will be falling for a certain time, while the shot is travelling between the two screens, before the short rod is released; and the longer the shot takes to travel this distance, the farther the long rod falls, and the higher up on it will be the nick made by the knife. A simple calculation connects the distance through which the rod falls with the time occupied by the shot in travelling over the distance between the screens, and thus its velocity ascertained. The nick made by the knife, if released while the chronometer rod is still suspended, is the zero point. If both rods are released simultaneously, as is done by breaking both circuits at once by means of a "disjunctor," a certain time is consumed by the short rod in reaching the disk, setting free the spring and cutting a nick in the zinc; and during this time the long rod is falling into a recess in the stand deep enough to receive its full length. The instrument is so adjusted that the nick thus made is 4.435 in. above the zero point, corresponding to 0.15 sec. This is the disjunctor reading, and requires to be frequently corrected during experiments. The instrument was modified and improved by Colonel H.C. Holden, F.R.S. For further information respecting formulae relating to it see *Text Book of Gunnery* (1857).

Watkin.

The electric chronograph of the late H.S.S. Watkin consists of two long cylinders rotating on vertical axes, and between them a cylindrical weight, having a pointed head, is free to fall. The weight is furnished with an insulated wire which passes through it at right angles to its longest axis. When the weight falls the ends of the insulated wire move very close to the surfaces of the cylinders which form part of a secondary circuit of an induction coil, the primary circuit of which is opened when a screen is ruptured by a shot. A minute mark is made by the induced spark on the smoked paper with which the cylinders are covered. The time period between events is deduced from the space fallen through by the weight, and by means of a scale, graduated for a given distance between the screens, the velocity of a shot is at once found. It may be noted that the method of release is such that the falling weight is not subjected, after it has begun to fall, to a diminishing magnetic field, which would be the case if it were directly supported by an electromagnet. An iron rod when falling from an electromagnet, during a minute portion of its fall, is subject to a diminishing force acting in the opposite sense to that of gravity, whereby its time of fall is slightly changed.

Sebert.

Colonel Sebert (*Extraits du mémorial de l'artillerie de la marine*) devised a chronograph to indicate graphically the motion of recoil of a cannon when fired. A pillar fixed to the ground at the side of the gun-carriage supported a tuning-fork, the vibration of which was maintained electrically. The fork was provided with a tracing point attached to one of the prongs, and so adjusted that it drew its path on a polished sheet of smoke-blackened metal attached to the gun-carriage, which traversed past the tracing point when the gun ran back. The fork used made 500 complete vibrations per second. A central line was drawn through the curved path of the tracing point, and every entire vibration cut the straight line twice, the interval between each intersection equalling 1/1000 second. The diagram so produced gave ihe total time of the accelerated motion of recoil of the gun, the maximum velocity of recoil, and the rate of acceleration of recoil from the beginning to the end of the motion. By means of an instrument furnished with a microscope and micrometers, the length and amplitude, and the angle at which the curved line cut the central line, were measured. At each intersection (according to the inventor) the velocity could be deduced. The motion at any intersection being compounded of the greatest velocity of the fork, while passing through the midpoint of the vibration and the velocity of recoil, the tangent made by the curve with the straight line represents the ratio of the velocity of the fork to the velocity of recoil. If a be the amplitude of vibration, considered constant, v the velocity of the fork at the midpoint of its path, r the velocity of recoil, α the angle made by the tangent to the curve with the straight line at the point of intersection, and t the line of a complete vibration; then, $v = 2\pi a/t$; $r = v/\tan \alpha$.

Jervis-Smith.

F. Jervis-Smith's tram chronograph (*Patents*, 1894, 1897, 1903) was devised for measuring periods of time varying from about one-fourth to one twenty-thousandth part of a second (*Proc. Roy. Soc.*, 1889, 45, p. 452; *The Tram Chronograph*, by F. Jervis-Smith, F.R.S.). It consists of a metal girder having a T-shaped end. This carries two parallel steel rails, the edges of which lie in the same vertical plane. The girder, which is slightly inclined to the horizontal plane, is geometrically supported, being carried at its end, and at the extremities of the T-piece, on a V-groove, trihedral hole and plane. A carriage or tram furnished with three grooved wheels runs on the rails, and a slightly smoked glass plate is attached to its vertical side. The tram in the original instrument was propelled by a falling weight, but in an improved form one or more spiral springs are employed. All time traces are made immediately after the propelling force has ceased to act. The tram is brought to rest by a gradually applied brake, consisting of two crossed leather bands stretched by two springs; a projection from the tram runs between the

bands, and brings it to rest with but little lateral pressure. When, for certain physiological experiments, a low velocity of traverse is required, a heavy fly-wheel is mounted on the tram and geared to its wheels. A pillar also mounted geometrically, placed vertically in front of the carriage, carries the electromagnet style or signals and tuning-fork which can be brought into contact with the glass by means of a lever. Also styli are used which depend for their action on the displacement of one or more wires under tension or torsion carrying a current in a magnetic field, the condition being such that no magnetic lag due to iron armatures and cores exists. Two motions of a slide on the pillar, viz. of rotation and translation, allow a number of observations to be made. The traces are counted out on a sloping glass desk, and the time of flight of a projectile between two or more screens is found. When very close readings are required, they are made by means of a traversing geometric micrometer microscope. When the distance between the screens is known, and also the time of flight, the midpoint velocity is found by applying Bashforth's formula. When the velocity of shot from a shot-gun has to be found, a thin wire stretched across the muzzle takes the place of the first screen, and a thin sheet of metal or cardboard carrying an electric contact, or a Branly coherer, the conductivity of which is restored by means of an induced current, takes the place of the second screen. The electric firing circuit is provided with a safety key attached by a cord to the man who loads the gun and prepares the electric fuse. The firing circuit is closed by inserting the key in a switch at the rear of the gun, thus preventing him from getting into the line of fire when the gun is fired by the chronograph. The tram, when the instrument is adjusted, has a practically constant velocity of traverse.

The polarizing photo-chronograph, designed and used by A.C. Crehore and G.O. Squier at the United States Artillery School (*Trans. Amer. Inst. Elect. Eng.* vol. 14, and *Journal United States Artillery*, 1895, 6, p. 271), depends for its indications upon the rotation of a beam of light by a magnetic field, produced by a solenoidal current which is opened and closed by the passage of the projectile. The general arrangement is as follows:—A beam of light from an electric lamp traverses a lens, then a Nicol prism, next a glass cylinder furnished with plane glass ends and coiled with insulated wire, then an analyser and two lenses, finally impinging on a photographic plate to which rotation is given by an electric motor, the plane of rotation being perpendicular to the direction of the beam of light. The same plate also records the shadow of a pierced projection attached to a tuning-fork, light from the electric lamp being diverted by a mirror for this purpose. The solenoid used to produce a magnetic field across the glass cylinder, which is filled with carbon bisulphide, is in circuit with a dynamo, resistances, and the screens on the gun range. It is a well-known phenomenon in physics that when, with the above-mentioned combination of polarizing Nicol prism and analyser, the light is shut off by rotating the analyser, it is instantly restored when the carbon bisulphide is placed in a magnetic field. This phenomenon is utilized in this instrument. The projectile, by cutting the wire screens, causes the magnetic field to cease and light to pass. By means of an automatic switch the projectile, after cutting a screen, restores the electric circuit, so that successive records are registered. After a record has been made it is read by means of a micrometer microscope, the angle moved through by the photographic disk is found, and hence the time period between two events. In the photo-chronograph described in *Untersuchungen über die Vibration des Gewehrlaufs*, by C. Cranz and K.R. Koch (Munich, 1899), also note on the same, *Nature*, 61, p. 58, a sensitive plate moving in a straight line receives the record of the movement of the barrels of firearms when discharged. It was mainly used to determine the "angle or error of departure" in ballistics.

Crehore-Squier.

In a second chronograph by Watkin ("Chronographs and their Application to Gun Ballistics," *Proc. Roy. Inst.*, 1896), a metal drum, divided on its edge so that when a vernier is used a minute of angle may be read, is rotated rapidly by a motor at a practically uniform speed. The points of a row of steel-pointed pins, screwed into a frame of ebonite, can be brought within 1/200 in. of the surface of the drum. Each pin is a part of the secondary circuit of an induction coil, the space between the pins and the drum forming spark-gaps. The drum is rubbed over with a weak solution of paraffin wax in benzol, which causes the markings produced by the sparks to be well defined. The records are read by means of a fine hair stretched along the drum and just clear of it, the dots being located under the hair by means of a lens. The velocity of rotation is found by obtaining spark marks, due to the primary circuits of two induction coils being successively broken by a weight falling and breaking the two electric circuits of the coils in succession at a known distance apart. This chronograph has been used for finding the velocity of projectiles after leaving the gun, and also for finding the rate at which a shot traverses the bore. For the latter purpose the shot successively cuts insulated wires fixed in plugs screwed into the gun at known intervals; each wire forms a part of the primary of an induction coil, and as each is cut a dot is made on the rotating drum by the induced spark.

Watkin.

In the chronograph of Marcel Deprez, a cylinder for receiving records is driven at a high velocity, 4 to 5 metres per second surface velocity. The velocity is determined by means of

Deprez. an electrically-driven tuning-fork, the traces being read by means of a vernier gauge. A mercury speed indicator of the Ramsbottom type enables the rotation to be continuously controlled (A. Favarger, *L'Électricité et ses applications à la chronométrie*).

Astronomical Chronographs.—The astronomical chronograph is an instrument whereby an observer is enabled to register the time of transit of a star on a sheet of paper attached to a revolving cylinder. A metal cylinder covered with a sheet of paper is rotated by clockwork controlled by a conical pendulum, or by a centrifugal clock governor such as is used for driving a telescope. By means of a screw longer than the cylinder, mounted parallel with the axis of the cylinder and rotated by the clockwork, a carriage is made to traverse close to the paper. In some instruments this carriage is furnished with a metal point, and in others with a stylographic ink pen. The point or pen is made to touch the paper by an electromagnet, the electric current of which is closed by the observer at the transit instrument, and a mark is recorded on the revolving cylinder. The movement of the same point or pen is also controlled by a standard clock, so that at the end of each second a mark is made. The cylinder makes one revolution per minute, and the minute is indicated by the omission of the mark. In E.J. Dent's form (*Nature*, 23, p. 59) continuous observations can be recorded for $6\frac{2}{3}$ hours. The conical pendulum used to govern the rotation of the cylinder was the invention of Sir G.B. Airy. The lower end is geared to a metal plate which sweeps through an annular trough filled with glycerin and water. When the path of the pendulum exceeds a certain diameter it causes the plate to enter the liquid more deeply, its motion being thereby checked; also, when the pendulum moves in a smaller circle the plate is lifted out of the liquid and the resistance is diminished in the same proportion as the force. The compensatory action is considerable; doubling the driving power produces no perceptible difference in the time. To prevent the injury of the conical pendulum and the wheel work by any sudden check of the cylinder, a ratch-wheel connexion is placed between the cylinder and the train of wheel work; this enables the pendulum to run on until it gradually comes to rest. The pendulum, which weighs about 18 lb, is compensated, and makes one revolution in two seconds; it is suspended from a bracket by means of two flexible steel springs placed at right angles to one another.

Dent.

The observatory of Washburn, University of Wisconsin, is furnished with a chronograph of the same type as that of Dent (*Annals Harvard Coll. Obs.* vol. i. pt. ii. p. 34), but in this instrument the rotation of the cylinder is controlled by a double conical pendulum governor of peculiar construction. When the balls fly out beyond a certain point, one of them engages with a hook attached to a brass cylinder which embraces the vertical axle loosely. When this mass is pulled aside the work done on it diminishes the speed of the governor. The pendulum ball usually strikes the hook from 60 to 70 times per minute. Governors on this principle were adopted by Alvan Clark for driving heliostats in the United States Transit of Venus Expedition, 1874.

In the astronomical chronograph designed by Sir Howard Grubb (*Proc. Inst. Mech. Eng.*, July 1888), the recording cylinders—two in number—are driven by a weight acting on a train of wheel work controlled by an astronomical telescope governor. The peculiar feature of this instrument is that the axle is geared to a shaft which communicates motion to the cylinders through a mechanism whereby the speed of rotation is constantly corrected by a standard clock. Should the rotation fall below the correct speed it is automatically accelerated, and if its speed of rotation rises above the correct one it is retarded. The accelerator and retarder are thrown into action by electromagnets, controlled by a "detector" mounted on the same shaft. The rather complicated mechanism employed to effect the correction is described and fully illustrated in the reference given. The cylinders are covered with paper, but all the markings are made with a stylographic pen. The marks indicating seconds are dots, but those made by the observer are short lines. When an observation is about to be made the observer first notes the hour and minute, and, by pressing a contact key attached to a flexible cord at the transit instrument, marks the paper with a letter in Morse telegraph characters, indicating the hour and minute; he then waits till a micrometer wire cuts a star and at the instant closes the circuit, so that the second and fraction of a second are registered on the chronograph paper. When a set of observations have been taken, the paper is removed from the cylinder, and the same results are obtained by applying a suitably divided rule to the marked paper, fractions of a second being estimated by applying a piece of glass ruled with eleven straight lines converging to a point. The ends of these lines on the base of the triangle so formed are equidistant on one edge of the glass, so that when the first and last lines are so placed as to coincide with the beginning and end of the markings of a second, that second is divided into ten equal parts. The base of the triangle is always kept parallel with the line of dots. The papers, after they have been examined and the results registered, are kept for reference.

Grubb.

In the astronomical chronograph of Hipp, used in determining longitudes, the movement of a recording cylinder is regulated by means of a toothed wheel, the last of a clockwork train, controlled by a vibrating metal tongue; this important feature is described in detail in Favarger's work cited above.

Hipp.

Acoustic Chronographs.—In the chronograph devised by H.V. Regnault (*Acad. des Sc.*, 1868) to determine the velocity of sound propagated through a great length of pipe, a band of paper 27 mm. wide was continuously unrolled from a bobbin by means of an electromagnetic engine. In its passage over a pulley it passed over a smoky lamp flame, which covered it with a thin deposit of carbon. It next passed over a cylinder in contact with the style of a tuning-fork kept in vibration by electromagnets placed on either side of its prongs, the current being interrupted by the fork; it was also in contact with an electric signal controlled by a standard clock. Also an electromagnetic signal marked the beginning and end of a time period. Thus three markings were registered on the band, viz. the time of the pendulum, the vibrations of the fork, and the marking of the signal due to the opening and closing of the current by electrical contacts attached to diaphragms on which the sound wave acted. The contacts consisted of minute hammers resting on metal points fixed to the centre of diaphragms which closed the end of the experimental pipes. The signal marked the instant at which a sound wave impinged on a diaphragm. The markings on the paper band gave the period of time between two events, and the number of vibrations of the tuning-fork per second was estimated by means of markings due to the clock. The sound wave was usually originated by firing a pistol into the pipe furnished with diaphragms and contact pieces.

Regnault.

In the chronographic use of the Morse telegraph instrument (Stewart and Gee, *Elementary Practical Phys.* p. 234) a circuit is arranged which includes a seconds' pendulum furnished with a fine platinum wire below the bob, which sweeps through a small mass of mercury forming a part of the circuit. There is a Morse key for closing the circuit. A fast-running Morse instrument and a battery are placed across this circuit as a shunt. A succession of dots is made on the paper ribbon by the circuit being closed by the pendulum, and the space between each adjacent dot indicates a period of one second's duration. Also, when the key is depressed, a mark is made on the paper. To measure a period of time, the key is depressed at the beginning and end of the period, causing two dots to be made on the ribbon; the interval between these, when measured by the intervals due to the pendulum, gives the length of the period in seconds, and also in fractions of a second, when the seconds' interval is subdivided into convenient equal parts. This apparatus has been used in determination of the velocity of sound. In the break circuit arrangement of pendulum key and Morse instrument the markings appear as breaks in a line which would otherwise be continuous. This combination was employed by Professors W.E. Ayrton and J. Perry in their determination of the acceleration of gravity at Tokio, 1877-1878 (*Proc. Phys. Soc. Lond.* 3, p. 268).

Ayrton and Perry.

In the tuning-fork electro-chronograph attributed to Hipp a metal cylinder covered with smoked glazed paper is rotated uniformly by clockwork, a tuning-fork armed with a metallic style being so adjusted that it makes a clear fine line on the smoked paper. The tuning-fork is placed in the secondary circuit of an induction coil, so that when the primary circuit is broken an induced spark removes a speck of black from the paper and leaves a mark. The time period is deduced by counting the number of vibrations and fractions of vibration of the tuning-fork as recorded by a sinuous line on the cylinder. In later forms of this instrument the cylinder advances as it rotates, and a spiral line is traced. To obtain good results the spark must be very small, for when large it often leaps laterally from the end of the style, and does not give the true position of the style when the circuit is broken. The same arrangement of tuning-fork and revolving cylinder, with the addition of a standard clock, has been used by A.M. Mayer (*Trans. Nat. Acad. Sci. U.S.A.* vol. iii.) and others for calibrating tuning-forks, and comparing their vibrations directly with the beats of the pendulum of a standard clock the rate of which is known. The pendulum marks and breaks the primary circuit by carrying a small platinum wire through a small mercury meniscus. Better and apparently certain contacts can be obtained from platinum contact-pieces, brought together above the pendulum by means of a toothed wheel on the scape-wheel arbor. Sparking at the contact points is greatly reduced by placing a couple of lead plates in dilute sulphuric acid as a shunt across the battery circuit.

Hipp.

Mayer.

For Physiological Purposes.—A. Fick's pendulum myograph or muscle-trace recorder is described in *Vierteljahrsschr. der naturforsch. Ges. in Zürich*, 1862, S. 307, and in *Text-book of Physiology*, M. Foster, pp. 42, 45. It was used to obtain a record of the contraction of a muscle when stimulated. In many respects the instrument is similar to the electro-ballistic chronograph of Navez. A long pendulum, consisting of a braced metal frame, carries at its lower end a sheet of smoked glass. The

Fick.

pendulum swings about an axis supported by a wall bracket. Previous to an experiment, the pendulum is held on one side of its lowest position by a spring catch; when this is depressed it is free to swing. At the end of its swing it engages with another spring catch. In front of the moving glass plate a tuning-fork is fixed, also a lever actuated by the muscle to be electrically stimulated. When the pendulum swings through its arc, it knocks over the contact key in the primary circuit of an induction coil, the secondary of which is in connexion with the muscle. The smoked plate receives the traces of the style of the tuning-fork and of the lever attached to the muscle, and also the trace of an electromagnetic signal which marks the instant at which the primary circuit is broken. After the traces are made, they are ruled through with radial lines, cutting the three traces, and the time intervals between different parts of the muscle curve are measured in terms of the period of vibration of the tuning-fork, as in other chronographs in which the tuning-fork is employed.

Du Bois Reymond.

In the spring myograph of E. Du Bois Reymond (Munk's *Physiologie des Menschen*, p. 398) a smoked glass plate attached to a metal rod is shot by a spiral spring along two guides with a velocity which is not uniform. The traces of a style moved by the muscle under examination, and of a tuning-fork, are recorded on the glass plate, the shooter during its traverse knocking over one or more electric keys, which break the primary circuit of an induction coil, the induced current stimulating the muscle.

Burch.

In the photo-electric chronograph devised by G.J. Burch, F.R.S. (*Journ. of Physiology*, 18, p. 125; *Electrician*, 37, p.436), the rapid movements of the column of mercury in a capillary electrometer used in physiological research are recorded on a sensitive plate moving at a uniform angular velocity. The trace of the vibrating prongs of a tuning-fork of known period is also recorded on the plate, the light used being that of the electric arc. The images of the meniscus of the mercury column and of the moving fork are focused on the plate by a lens. Excellent results have been obtained with this instrument.

Marey.

An important development of a branch of chronography is due to E.J. Marey (*Comptes rendus*, 7. août 1882, and *Le Mouvement*, par E.J. Marey, Paris, 1894), who employed a photographic plate for receiving successive pictures of moving objects, at definite times, when investigating the movements of animals, birds, fishes, insects, and also microscopic objects such as vorticellae. The instrument in one of its forms consisted of a camera and lens. In front of the sensitive plate and close to it a disk, pierced with radial slits, revolved at a given angular velocity, and each time a slit passed by the plate was exposed. But since, in the time of passage of the space between the slits, the object had moved by a certain amount across the field of view, a fresh impression was produced at each exposure. The object, well illuminated by sunlight, moved in front of a black background. Since the angular velocity of the disk was known, and the number of slits, the time between the successive positions of the object was also known.

Marey (*La Méthode graphique*, pp. 133, 142, 456), by means of pneumatic signals and a rotating cylinder covered with smoked glazed paper, measured the time of the movements of the limbs of animals. The instrument consists of a recording cylinder rotated at a uniform angular velocity by clockwork controlled by a fan governor, and pneumatic signal, constructed thus. One end of a closed shallow cylinder, about 4 cm. dia., is furnished with a stretched rubber membrane. A light lever, moving about an axis near the edge of the cylinder, is attached to the centre of the membrane by a short rod, its free end moving as the membrane is distended. The cylinder is connected by a flexible tube with a similar cylinder and membrane, but without a lever, which is attached to that part of the body of the animal the movement of which is under investigation. The system is full of air, so that when the membrane attached to the animal is compressed, the membrane which moves the lever is distended and the lever moved. Its end, which carries a scribing point, marks the smoked paper on the rotating cylinder. The pneumatic signal is called by Marey "tambour à levier."

References to Chronographic Methods:—(1) Chronographs used in Physiology: Helmholtz, "On Methods of measuring very small Portions of Time," *Phil. Mag.* (1853), 6; Id., *Verhandlungen der physikalisch-medicinischen Gesellschaft in Würzburg* (1872); Harless, "Das Attwood'sche Myographion," *Abhandlungen der k. bayerischen Akademie der Wissenschaften* (1862); Id., *Fall-Myographion aufgestellt in der Wiener Weltausstellung in der Abteilung für das Unterrichtswesen von Ungarn* (Budapest, 1873); Hensen, "Myographion mit vibratorischer Bewegung," *Arbeiten aus dem Kieler physiol. Instit.* (1868); Brücke, *Sitzungsber. d Wien. Acad.* (1877); Pflüger, "Myographion ohne Bewegung," *Untersuchungen über die Physiologie des Electrotonus* (1859); Pouillet, *Compt. rend.* (1844); I. Munk, *Physiologie des Menschen* (for Pflüger's cylinder governed by conical pendulum); J.G. M'Kendrick, *Life in Motion* (1892) (for early form of cylinder chronograph by Thomas Young); Stirling, *Outlines of Practical Physiology* (for reaction-time chronographs of F. Galton and Exner). (2) Chronographs used in gun work and for other purposes: Sabine, *Phil.*

Mag. (1876); Moisson, *Notice sur la chronographie système Schultz* (Paris, 1875); Paul la Cour, *La Roue phonique* (Copenhagen, 1878); Mach, "Collected Papers on Chronographs," *Nature*, 42, p. 250; C.V. Boys, "Bullets photographed in Flight," *Nature*, 47, p. 415; Pneumatic Tube Co., Paris, "Chronograph," *Nature*, 9, p. 105; G.C. Foster, "Laboratory Chronograph," *Nature*, 13, p. 139; E.S. Holden, "Astronomical Chronograph," *Nature*, 26, p. 368; D'Arsonval, *La Lumière électrique* (1887); Dunn, "The Photo-retardograph," *Journal United States Artillery*, 8, p. 29; E.J. Marey, *La Méthode graphique* (for Deprez accélérographe); Werner Siemens, "Electric Spark Chronograph," *Wied. Ann.* (1845), 66.

(F. J. J. -S.)

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1 The velocity of the projectile is found thus. Let V be the velocity of the bob, due to the impact of the projectile, *v* the velocity of the projectile, *h* the height through which the bob is raised vertically, then

$$h = \frac{V^2}{2g}, \text{ and } V = \sqrt{2gh}.$$

If W be the weight of the bob, and *w* the weight of the projectile, then

$$wv = (W + w)V, \text{ and } v = \left(\frac{W}{w} + 1\right)\sqrt{2gh}.$$

If *l* be the true length of suspension, and C the length of the chord of the arc of displacement of the bob after being struck, then

$$C^2 = 2hl, \text{ and } v = \left(\frac{W}{w} + 1\right)\sqrt{\frac{g}{l}}.\ C.$$

Also if T be the time of a complete small oscillation of the pendulum,

$$\frac{2\pi}{T} = \sqrt{\frac{g}{l}},$$

so that

$$v = \left(\frac{W}{w} + 1\right)\frac{2\pi C}{T}.$$

CHRONOLOGY (Gr. χρονολογία, computation of time, χρόνος), the science which treats of time, its object being to arrange and exhibit the various events which have occurred in the history of the world in the order of their succession, and to ascertain the intervals of time between them. The term "chronology" is also used of the order in time itself, as adopted, and of the system by which the order is fixed.

The preservation of any record, however rude, of the lapse of time implies some knowledge of the celestial motions, by which alone time can be accurately measured, and some advancement in the arts of civilized life, which could be attained only by the accumulated experience of many generations (see Time). Before the invention of letters the 306
memory of past transactions could not be preserved beyond a few years with any tolerable degree of accuracy. Events which greatly affected the physical condition of the human race, or were of a nature to make a deep impression on the minds of the rude inhabitants of the earth, might be vaguely transmitted through several ages by traditional narrative; but intervals of time, expressed by abstract numbers, and these constantly varying besides, would soon escape the memory. The invention of the art of writing afforded the means of substituting precise and permanent records for vague and evanescent tradition; but in the infancy of the world, mankind had learned neither to estimate accurately the duration of time, nor to refer passing events to any fixed epoch.

For these reasons the attempt at an accurate chronology of the early ages of the world is only of recent origin. After political relations began to be established, the necessity of preserving a register of passing seasons and years would soon be felt, and the practice of recording important transactions must have grown up as a necessary consequence of social life. But of these deliberate early records a very small portion only has escaped the ravages of time and barbarism.

The earliest written annals of the Greeks, Etruscans and Romans are irretrievably lost.

The traditions of the Druids perished with them. A Chinese emperor has the credit of burning “the books” extant in his day (about 220 B.C.), and of burying alive the scholars who were acquainted with them. And a Spanish adventurer destroyed the picture records which were found in the *pueblo* of Montezuma.

Of the more formal historical writings in which the first ineffectual attempts were made in the direction of systematic chronology we have no knowledge at first-hand. Of Hellanicus, the Greek logographer, who appears to have lived through the greater part of the 5th century B.C., and who drew up a chronological list of the priestesses of Here at Argos; of Ephorus, who lived in the 4th century B.C., and is distinguished as the first Greek who attempted the composition of a universal history; and of Timaeus, who in the following century wrote an elaborate history of Sicily, in which he set the example of using the Olympiads as the basis of chronology, the works have perished and our meagre knowledge of their contents is derived only from fragmentary citations in later writers. The same fate has befallen the works of Berossus and Manetho, Eratosthenes and Apollodorus. Berossus, a priest of Belus living at Babylon in the 3rd century B.C., added to his historical account of Babylonia a chronological list of its kings, which he claimed to have compiled from genuine archives preserved in the temple. Manetho, likewise a priest, living at Sebennytus in Lower Egypt in the 3rd century B.C., wrote in Greek a history of Egypt, with an account of its thirty dynasties of sovereigns, which he professed to have drawn from genuine archives in the keeping of the priests. Of these works fragments only, more or less copious and accurate, have been preserved. Eratosthenes, who in the latter half of the 2nd century B.C. was keeper of the famous Alexandrian library, not only made himself a great name by his important work on geography, but by his treatise entitled *Chronographia*, one of the first attempts to establish an exact scheme of general chronology, earned for himself the title of “father of chronology.” His method of procedure, however, was usually conjectural; and guess-work, however careful, acute and plausible, is still guess-work and not testimony. Apollodorus, an Athenian who flourished in the middle of the 2nd century B.C., wrote a metrical chronicle of events, ranging from the supposed period of the fall of Troy to his own day. These writers were followed by other investigators and systematizers in the same field, but their works are lost. Of the principal later writers whose works are extant, and to whom we owe what little knowledge we possess of the labours of their predecessors, mention will be made hereafter.

The absence or incompleteness of authentic records, however, is not the only source of obscurity and confusion in the chronology of remote ages. There can be no exact computation of time or placing of events without a fixed point or epoch from which the reckoning takes its start. It was long before this was apprehended. When it began to be seen, various epochs were selected by various writers; and at first each small separate community had its own epoch and method of time-reckoning. Thus in one city the reckoning was by succession of kings, in another by archons or annual magistrates, in a third by succession of priests. It seems now surprising that vague counting by generations should so long have prevailed and satisfied the wants of inquiring men, and that so simple, precise and seemingly obvious a plan as counting by years, the largest natural division of time, did not occur to any investigator before Eratosthenes.

Precision, which was at first unattainable for want of an epoch, was afterwards no less unattainable from the multiplicity, and sometimes the variation, of epochs. But by a natural process the mischief was gradually and partially remedied. The extension of intercourse between the various small groups or societies of men, and still more their union in larger groups, made a common epoch necessary, and led to the adoption of such a starting point by each larger group. These leading epochs continued in use for many centuries. The task of the chronologer was thus simplified and reduced to a study and comparison of dates in a few leading systems.

The most important of these systems in what we call ancient times were the Babylonian, the Greek and the Roman. The Jews had no general era, properly so called. In the history of Babylonia, the fixed point from which time was reckoned was the era of Nabonassar, 747 B.C. Among the Greeks the reckoning was by Olympiads, the point of departure being the year in which Coroebus was victor in the Olympic Games, 776 B.C. The Roman chronology started from the foundation of the city, the year of which, however, was variously given by different authors. The most generally adopted was that assigned by Varro, 753 B.C. It is noteworthy how nearly these three great epochs approach each other,—all lying near the middle of the 8th century B.C. But it is to be remembered that the beginning of an era and its adoption and use as such are not the same thing, nor are they necessarily synchronous. Of the three ancient eras above spoken of, the earliest is that of the Olympiads, next that of the foundation of Rome, and the latest the era of Nabonassar. But in order of adoption and

actual usage the last is first. It is believed to have been in use from the year of its origin. It is not known when the Romans began to use their era. The Olympiads were not in current use till about the middle of the 3rd century B.C., when Timaeus, as already mentioned, set the example of reckoning by them.

Even after the adoption in Europe of the Christian era, a great variety of methods of dating—national, provincial and ecclesiastical—grew up and prevailed for a long time in different countries, thus renewing in modern times the difficulties experienced in ancient times from diversities of reckoning. An acquaintance with these various methods is indispensable to the student of the charters, chronicles and legal instruments of the middle ages.

In reckoning years from any fixed epoch in constant succession, the number denoting the years is necessarily always on the increase. But rude nations and illiterate people seldom attach any definite idea to large numbers. Hence it has been a practice, very extensively followed, to employ cycles or periods, consisting of a moderate number of years, and to distinguish and reckon the years by their number in the cycle. The Chinese and other nations of Asia reckon, not only the years, but also the months and days, by cycles of sixty. The Saros of the Chaldaeans, the Olympiad of the Greeks, and the Roman Indiction are instances of this mode of reckoning time. Several cycles were formerly known in Europe; but most of them were invented for the purpose of adjusting the solar and lunar divisions of time, and were rather employed in the regulation of the calendar than as chronological eras. They are frequently, however, of very great use in fixing dates that have been otherwise imperfectly expressed, and consequently form important elements of chronology.

(W. L. R. C.)

Modern Results of Archaeological Research.

When Queen Victoria came to the English throne, 4004 B.C. was still accepted, in all sobriety, as the date of the creation of the world. Perhaps no single statement could more vividly emphasize the change in the point of view from which scholars regard the chronology of ancient history than the citation of this indisputable fact. To-day, though Bibles are still printed with the year 4004 B.C. in the margin of the first chapter of Genesis, no scholar would pretend to regard this reference seriously. On the contrary, the scholarship of to-day regards the fifth millennium B.C. as well within the historical period for such nations as the Egyptians and the Babylonians. It has come to be fully accepted that when we use such a phrase as “the age of the world” we are dealing with a period that must be measured not in thousands but in millions of years; and that to the age of man must be allotted a period some hundreds of times as great as the five thousand and odd years allowed by the old chronologists. This changed point of view, needless to say, has not been reached without ardent and even bitter controversy. Yet the transformation is unequivocal; and the revised conception no longer seems to connote the theological implications that were at first ascribed to it. It has now become obvious that the data afforded by the Hebrew writings should never have been regarded as sufficiently accurate for the purpose of exact historical computations: that, in short, no historian working along modern scientific lines could well have made the mistake of supposing that the genealogical lists of the Pentateuch afforded an adequate chronology of world-history. But it should not be forgotten that to many generations of close scholarship these genealogical lists seemed to convey such knowledge in the most precise terms, and that at so recent a date as, for example, the year in which Queen Victoria came to the throne, it was nothing less than a rank heresy to question the historical accuracy and finality of chronologies which had no other source or foundation.

This changed point of view regarding the chronology of history may without hesitation be ascribed to the influence of evidence obtained in a single field of inquiry, the field, namely, of archaeology. No doubt the evidence as to the age of the earth and as to the antiquity of man was gathered by a class of workers not formally included in the ranks of the archaeologist: workers commonly spoken of as palaeontologists, anthropologists, ethnologists and the like. But the distinction scarcely covers a real difference. The scope of the archaeologist’s studies must include every department of the ancient history of man as preserved in antiquities of whatever character, be they tumuli along the Baltic, fossil skulls and graven bones from the caves of France, the flint implements, pottery, and mummies of Egypt, tablets and bas-reliefs from Mesopotamia, coins and sculptures of Greece and Rome, or inscriptions, waxen tablets, parchment rolls, and papyri of a relatively late period of classical antiquity. If at one time the monuments of Greece and Rome claimed the almost undisputed attention of the archaeologist, that time has long since passed. For the most important historical records that have come to us in recent decades we have to thank the

Orientalist, though the classical explorer has been by no means idle. It will be sufficient here to point out in general terms the import of the message of archaeological discovery in the Victorian Era in its bearings upon the great problems of world-history.

Chronology of ancient history.

A start was made through the efforts of the palaeontologists and geologists, with only indirect or incidental aid from the archaeologists. The new movement began actively with James Hutton in the later years of the 18th century, and was forwarded by the studies of William Smith in England and of Cuvier in France; but the really efficient champion of the conception that the earth is very old was Sir Charles Lyell, who published the first edition of his epoch-making *Principles of Geology* only a few years before Queen Victoria came to the throne. Lyell demonstrated to the satisfaction, or—perhaps it should rather be said—to the dissatisfaction, of his contemporaries that the story of the geological ages as recorded in the strata of the earth becomes intelligible only when vast stretches of time are presupposed. Of course the demonstration was not accepted at once. On the contrary, the champions of the tradition that the earth was less than six thousand years old held their ground most tenaciously, and the earlier years of the Victorian era were years of bitter controversy. The result of the contest was never in doubt, however, for the geological evidence, once it had been gathered, was unequivocal; and by about the middle of the century it was pretty generally admitted that the age of the earth must be measured by an utterly different standard from that hitherto in vogue. This concession, however, by no means implied a like change of view regarding the age of man. A fresh volume of evidence required to be gathered, and a new controversy to be waged, before the old data for the creation of man could be abandoned. Lyell again was in the forefront of the progressive movement, and his work on *The Antiquity of Man*, published in 1863, gave currency for the first time to the new opinions. The evidence upon which these opinions were based had been gathered by such anthropologists as Schmerling, Boucher de Perthes and others, and it had to do chiefly with the finding of implements of human construction associated with the remains of extinct animals in the beds of caves, and with the recovery of similar antiquities from alluvial deposits the great age of which was demonstrated by their depth. Every item of the evidence was naturally subjected to the closest scrutiny, but at last the conservatives were forced reluctantly to confess themselves beaten. Their traditional arguments were powerless before the array of data marshalled by the new science of prehistoric archaeology. Looking back even at the short remove of a single generation, it is difficult to appreciate how revolutionary was the conception of the antiquity of man thus inculcated. It rudely shocked the traditional attitude of scholarship towards the history of our race. It disturbed the most cherished traditions and the most sacred themes. It seemed to threaten the very foundations of religion itself. Yet the present generation accepts the antiquity of man as a mere matter of fact. Here, as so often elsewhere, the heresy of an elder day has come to seem almost an axiomatic truth.

If we go back in imagination to the beginning of the Victorian era and ask what was then known of the history of Ancient Egypt, Mesopotamia and Asia Minor, we find ourselves confronted with a startling paucity of knowledge. The key to the mysteries of Egyptian history had indeed been found, thanks to the recent efforts of Thomas Young and Champollion, but the deciphering of inscriptions had not yet progressed far enough to give more than a vague inkling of what was to follow. It remained, then, virtually true, as it had been for two thousand years, that for all that we could learn of the history of the Old Orient in pre-classical days, we must go solely to the pages of the Bible and to a few classical authors, notably Herodotus and Diodorus. A comparatively few pages summed up, in language often vague and mystical, all that the modern world had been permitted to remember of the history of the greatest nations of antiquity. To these nations the classical writers had ascribed a traditional importance, the glamour of which still lighted their names, albeit revealing them in the vague twilight of tradition rather than in the clear light of history. It would have been a bold, not to say a reckless, dreamer who dared predict that any future researches could restore to us the lost knowledge that had been forgotten for more than two millenniums. Yet the Victorian era was scarcely ushered in before the work of rehabilitation began, which was to lead to the most astounding discoveries and to an altogether unprecedented extension of historical knowledge. Early in the ‘forties the Frenchman Botta, quickly followed by Sir Henry Layard, began making excavations on the site of ancient Nineveh, the name and fame of which were a tradition having scarcely more than mythical status. The spade of the discoverer soon showed that all the fabled glories of the ancient Assyrian capital were founded on realities, and evidence was afforded of a state of civilization and culture such as few men supposed to have existed on the earth before the Golden Age of Greece. Not merely were artistic sculptures and bas-reliefs found that demonstrated a high development of artistic genius, but great libraries were soon revealed,

—books consisting of bricks of various sizes, or of cylinders of the same material, inscribed while in the state of clay with curious characters which became indelible when baking transformed the clay into brick. No one was able to guess, even in the vaguest way, the exact interpretation of these odd characters; but, on the other hand, no one could doubt that they constituted a system of writing, and that the piles of inscribed tablets were veritable books. There were numerous sceptics, however, who did not hesitate to assert that the import of the message so obviously locked in these curious inscriptions must for ever remain an absolute mystery. Here, it was said, were inscriptions written in an unknown character and in a language that for at least two thousand years had been absolutely forgotten. In such circumstances nothing less than a miracle could enable human ingenuity to fathom the secret. Yet the feat pronounced impossible by mid-century scepticism was accomplished by contemporary scholarship, amidst the clamour of opposition and incredulity. Its success contains at once a warning to those doubters who are always crying out that we have reached the limitations of knowledge, and an encouragement and stimulus to would-be explorers of new intellectual realms.

In a few words the manner of the discovery was this. It appears at a glance that the Assyrian written character consists of groups of horizontal, vertical or oblique strokes. The characters thus composed, though so simple as to their basal unit, are appallingly complex in their elaboration. The Assyrians with all their culture, never attained the stage of analysis which demonstrates that only a few fundamental sounds are involved in human speech, and hence that it is possible to express all the niceties of utterance with an alphabet of little more than a score of letters. Halting just short of this analysis, the Assyrian ascribed syllabic values to the characters of his script, and hence, instead of finding twenty odd characters sufficient, he required about five hundred. There was a further complication in that each one of these characters had at least two different phonetic values; and there were other intricacies of usage which, had they been foreknown by inquirers in the middle of the 19th century, might well have made the problem of decipherment seem an utterly hopeless one. Fortunately it chanced that another people, the Persians, had adopted the Assyrian wedge-shaped stroke as the foundation of a written character, but making that analysis of which the Assyrians had fallen short, had borrowed only so many characters as were necessary to represent the alphabetical sounds. This made the problem of deciphering Persian inscriptions a relatively easy one. In point of fact this problem had been partially solved in the early days of the 19th century, thanks to the sagacious guesses of the German philologist Grotefend. Working with some inscriptions from Persepolis which were found to contain references to Darius and Xerxes, Grotefend had established the phonetic values of certain of the Persian characters, and his successors were perfecting the discovery just about the time when the new Assyrian finds were made. It chanced that there existed on the polished surface of a cliff at Behistun in western Persia a tri-lingual inscription which, according to Diodorus, had been made by Queen Semiramis of Nineveh, but which, as is now known, was really the work of King Darius. One of the languages of this inscription was Persian; another, as it now appeared, was Assyrian, the language of the newly discovered books from the libraries of Nineveh. There was reason to suppose that the inscriptions were identical in meaning; and fortunately it proved, when the inscriptions were made accessible to investigation through the efforts of Sir Henry Rawlinson, that the Persian inscription contained a large number of proper names. It was well known that proper names are usually transcribed from one language into another with a tolerably close retention of their original sounds. For example, the Greek names *Ptolemaios* and *Kleopatra* became a part of the Egyptian language and appeared regularly in Egyptian inscriptions after Alexander's general became king of Egypt. Similarly, the Greek names *Kyros*, *Dareios* and *Xerxes* were as close an imitation as practicable of the native names of these Persian monarchs. Assuming, then, that the proper names found in the Persian portion of the Behistun inscription occurred also in the Assyrian portion, retaining virtually the same sound in each, a clue to the phonetic values of a large number of the Assyrian characters was obviously at hand. Phonetic values known, Assyrian was found to be a Semitic language cognate to Hebrew.

These clues were followed up by a considerable number of investigators, with Sir Henry Rawlinson in the van. Thanks to their efforts, the new science of Assyriology came into being, and before long the message of the Assyrian books had ceased to be an enigma. Of course this work was not accomplished in a day or in a year, but, considering the difficulties to be overcome, it was carried forward with marvellous expedition. In 1857 the new scholarship was put to a famous test, in which the challenge thrown down by Sir George Cornewall Lewis and Ernest Renan was met by Rawlinson, Hincks, Oppert and Fox Talbot in a conclusive manner. The sceptics had declared that the new science of Assyriology was

itself a myth: that the investigators, self-deceived, had in reality only invented a language and read into the Assyrian inscriptions something utterly alien to the minds of the Assyrians themselves. But when a committee of the Royal Asiatic Society, with George Grote at its head, decided that the translations of an Assyrian text made independently by the scholars just named were at once perfectly intelligible and closely in accord with one another, scepticism was silenced, and the new science was admitted to have made good its claims.

Naturally the early investigators did not fathom all the niceties of the language, and the work of grammatical investigation has gone on continuously under the auspices of a constantly growing band of workers. Doubtless much still remains to be done; but the essential thing, from the present standpoint, is that a sufficient knowledge of the Assyrian language has been acquired to ensure trustworthy translations of the cuneiform texts. Meanwhile, the material found by Botta and Layard, and other successors, in the ruins of Nineveh, has been constantly augmented through the efforts of companies of other investigators, and not merely Assyrian, but much earlier Babylonian and Chaldaean texts in the greatest profusion have been brought to the various museums of Europe and America. The study of these different inscriptions has utterly revolutionized our knowledge of Oriental history. Many of the documents are strictly historical in their character, giving full and accurate contemporary accounts of events that occurred some thousands of years ago. Exact dates are fixed for long series of events that previously were quite unknown. Monarchs whose very names had been forgotten are restored to history, and the records of their deeds inscribed under their very eyes are before us,—contemporary documents such as neither Greece nor Rome could boast, nor any other nation, with the single exception of Egypt, until strictly modern times. There are, no doubt, gaps in the record; there are long periods for which the chronology is still uncertain. Naturally there is an increasing vagueness as one recedes farther into the past, and for the earlier history of Chaldaea there is great uncertainty. Nevertheless, the Assyriologist speaks with a good deal of confidence of dates as remote as 3800 B.C., the time ascribed to King Sargon, who was once regarded as a mythical person, but is now known to have been an actual monarch. Indeed, there are tablets in the British Museum labelled 4500 B.C.; and later researches, particularly those of the expedition of the University of Pennsylvania at Nippur, have brought us evidence which, interpreted with the aid of estimates as to the average rate of accumulation of dust deposits, leads to the inference that a high state of civilization had been attained in Mesopotamia at least 9000 years ago.

While the Assyriologists have been making these astonishing revelations, the Egyptologists have not been behindhand. Such scholars as Lepsius, Brugsch, de Rougé, Lenormant, Birch, Mariette, Maspero and Erman have perfected the studies of Young and Champollion; while at the same time these and a considerable company of other explorers, most notable of whom are Gardner Wilkinson and Professor Flinders Petrie, have brought to light a vast accumulation of new material, much of which has the highest importance from the standpoint of the historian. Lists of kings found on the temple wall at Abydos, in the fragments of the Turin papyrus and elsewhere, have cleared up many doubtful points in the lists of Manetho, and at the same time, as Professor Petrie has pointed out, have proved to us how true a historian that much-discussed writer was. Manetho, it will be recalled, was the Egyptian who wrote the history of Egypt in Greek in the time of the Ptolemies. His work in the original unfortunately perished, and all that we know of it we learn through excerpts made by a few later classical writers. These fragments have until recently, however, given us our only clue to the earlier periods of Egyptian history. Until corroboration was found in the Egyptian inscriptions themselves, not only were Manetho's lists in doubt, but scepticism had been carried to the point of denying that Manetho himself had ever existed. This is only one of many cases where the investigations of the archaeologist have proved not iconoclastic but reconstructive, tending to restore confidence in classical traditions which the scientific historians of the age of Niebuhr and George Cornewall Lewis regarded with scepticism.

As to the exact dates of early Egyptian history there is rather more of vagueness than for the corresponding periods of Mesopotamia. Indeed, approximate accuracy is not attained until we are within sixteen hundred years of our own era; but the sequence of events of a period preceding this by two thousand years is well established, and the recent discoveries of Professor Petrie carry back the record to a period which cannot well be less than five thousand, perhaps not less than six thousand years B.C. Both from Egypt and Mesopotamia, then, the records of the archaeologist have brought us evidence of the existence of a highly developed civilization for a period exceeding by hundreds, perhaps by thousands, of years the term which had hitherto been considered the full period of man's existence.

We may note at once how these new figures disturb the historical balance. If our

forerunners of eight or nine thousand years ago were in a noonday glare of civilization, where shall we look for the much-talked-of “dawnings of history”? By this new standard the Romans seem our contemporaries in latter-day civilization; the “Golden Age” of Greece is but of yesterday; the pyramid-builders are only relatively remote. The men who built the temple of Bel at Nippur, in the year (say) 5000 B.C., must have felt themselves at a pinnacle of civilization and culture. As Professor Mahaffy has suggested, the era of the Pyramids may have been the veritable autumn of civilization. Where, then, must we look for its springtime? The answer to that question must come, if it come at all, from what we now speak of as prehistoric archaeology; the monuments from Memphis and Nippur and Nineveh, covering a mere ten thousand years or so, are the records of recent history.

Archaeology and Bible history.

The efforts of the students of Oriental archaeology have been constantly stimulated by the fact that their studies brought them more or less within the field of Bible history. A fair proportion of the workers who have delved so enthusiastically in the fields of Egyptian and Assyrian exploration would never have taken up the work at all but for the hope that their investigations might substantiate the Hebrew records. For a long time this hope proved illusory, and in the case of Egyptian archaeology the results have proved disappointing even up to the very present. Considering the important part played by the Egyptian sojourn of the Hebrews, as narrated in the Scriptures, it was certainly not an over-enthusiastic prediction that the Egyptian monuments when fully investigated would divulge important references to Joseph, to Moses, and to the all-important incidents of the Exodus; but half a century of expectant attention in this direction has led only to disappointment. It would be rash, considering the buried treasures that may yet await the future explorer, to assert that such records as those in question can never come to light. But, considering the fulness of the contemporary Egyptian records of the XIXth dynasty that are already known, it becomes increasingly doubtful whether the Hebrews in Egypt played so important a part in history, when viewed from the Egyptian standpoint, as their own records had seemed to imply. As the forgotten history of Oriental antiquity has been restored to us, it has come to be understood that, politically speaking, the Hebrews were a relatively insignificant people, whose chief importance from the standpoint of material history was derived from the geographical accident that made them a sort of buffer between the greater nations about them. Only once, and for a brief period, in the reigns of David and Solomon did the Hebrews rise to anything like an equal plane of political importance with their immediate neighbours. What gave them a seeming importance in the eyes of posterity was the fact that the true history of the Egyptians, Mesopotamians, Arabians and Hittites had been well-nigh forgotten. The various literatures of these nations were locked from view for more than two thousand years, while the literature of Israel had not merely been preserved, but had come to be regarded as inspired and sacred among all the cultured nations of the Western world. Now that the lost literatures have been restored to us, the status of the Hebrew writings could not fail to be disturbed. Their very isolation had in some measure accounted for their seeming importance.

All true historical perspective is based upon comparison, and where only a single account has been preserved of any event or of any period of history, it is extremely difficult to judge that account with historical accuracy. An illustration of this truth is furnished in profane history by the account which Thucydides has given us of the Peloponnesian War. For most of the period in question Thucydides is the only source; and despite the inherent merits of a great writer, it can hardly be doubted that the tribute of almost unqualified praise that successive generations of scholars have paid to Thucydides must have been in some measure qualified if, for example, a Spartan account of the Peloponnesian War had been preserved to us. Professor Mahaffy has pointed out that many other events in Greek history are viewed by us in somewhat perverted perspective because the great writers of Greece were Athenians rather than Spartans or Thebans. Even in so important a matter as the great conflict between Persia and Greece it has been suggested more than once that we should be able to gain a much truer view were Persian as well as Greek accounts accessible.

Not many years ago it would have been accounted a heresy to suggest that the historical books of the Old Testament had conveyed to our minds estimates of Oriental history that suffered from this same defect; but to-day no one who is competent to speak with authority pretends to doubt that such is really the fact. Even conservative students of the Bible urge that its historical passages must be viewed precisely in the light of any other historical writings of antiquity; and the fact that the oldest Hebrew manuscript dates only from the 8th century A.D., and therefore of necessity brings to us the message of antiquity through the fallible medium of many generations of copyists, is far more clearly kept in mind than it formerly was. Every belief of mankind is in the last analysis amenable to reason, and finds

its origin in evidence that can appeal to the arbitrament of common sense. This evidence may in certain cases consist chiefly of the fact that generations of our predecessors have taken a certain view regarding a certain question; indeed most of our cherished beliefs have this foundation. But when such is the case, mankind has never failed in the long run to vindicate its claim to rationality by showing a readiness to give up the old belief whenever tangible evidence of its fallaciousness was forthcoming. The case of the historical books of the Old Testament furnishes no exception. These had been sacred to almost a hundred generations of men, and it was difficult for the eye of faith to see them as other than absolutely infallible documents. Yet the very eagerness with which the champions of the Hebrew records searched for archaeological proofs of their validity was a tacit confession that even the most unwavering faith was not beyond the reach of external evidence. True, the believer sought corroboration with full faith that he would find it; but the very fact that 310
he could think such external corroboration valuable implied, however little he may have realized it, the subconscious concession that he must accept external evidence at its full value, even should it prove contradictory. If, then, an Egyptian inscription of the XIXth dynasty had come to hand in which the names of Joseph and Moses, and the deeds of the Israelites as a subject people who finally escaped from bondage by crossing the Red Sea, were recorded in hieroglyphic characters, such a monument would have been hailed with enthusiastic delight by every champion of the Pentateuch, and a wave of supreme satisfaction would have passed over all Christendom. It is not too much, then, to say that failure to find such a monument has caused deep disappointment to Bible scholars everywhere. It does not follow that faith in the Bible record is shaken, although in some quarters there has been a pronounced tendency to regard the history of the Egyptian sojourn as mythical; yet it cannot be denied that Egyptian records, corroborating at least some phases of the Bible story, would have been a most welcome addition to our knowledge. Some recent finds have, indeed, seemed to make inferential reference to the Hebrews, and the marvellous collection of letters of the XVIIIth dynasty found at Tel el-Amarna—letters to which we shall refer later—have the utmost importance as proving a possible early date for the Mosaic accounts. But such inferences as these are but a vague return for the labour expended, and an almost cruelly inadequate response to seemingly well-founded expectations.

When we turn to the field of Babylonian and Assyrian archaeology, however, the case is very different. Here we have documents in abundance that deal specifically with events more or less referred to in the Bible. The records of kings whose names hitherto were known to us only through Bible references have been found in the ruins of Nineveh and Babylon, and personages hitherto but shadowy now step forth as clearly into the light of history as an Alexander or a Caesar. Moreover, the newly discovered treasures deal with the beliefs of the people as well as with their history proper. The story of the books now spoken of as the “Creation” and “Deluge” tablets of the Assyrians, in the British Museum, which were discovered in the ruins of Nineveh by Layard and by George Smith, has been familiar to every one for a good many years. The acute interest which they excited when George Smith deciphered their contents in 1872 has to some extent abated, but this is only because scholars are now pretty generally agreed as to their bearing on the corresponding parts of Genesis. The particular tablets in question date only from about the 7th century B.C., but it is agreed among Assyriologists that they are copies of older texts current in Babylonia for many centuries before, and it is obvious that the compilers of Genesis had access to the Babylonian stories. In a word, the Hebrew Genesis shows unequivocal evidence of Babylonian origin, but, in the words of Professor Sayce, it is but “a paraphrase and not a translation.” However disconcerting such a revelation as this would have been to the theologians of an elder day, the Bible scholars of our own generation are able to regard it with entire composure.

From the standpoint of the historian even greater interest attaches to the records of the Assyrian and Babylonian kings when compared with the historical books of the Old Testament. For some centuries the inhabitants of Palestine were subject to periodical attacks from the warlike inhabitants of Mesopotamia, as even the most casual reader of the Bible is aware. When it became known that the accounts of these invasions formed a part of the records preserved in the Assyrian libraries, historian and theologian alike waited with breathless interest for the exact revelations in store; and this time expectation was not disappointed. As, one after another, the various tablets and cylinders and annalistic tablets have been translated, it has become increasingly clear that here are almost inexhaustible fountains of knowledge, and that sooner or later it may be possible to check the Hebrew accounts of the most important periods of their history with contemporaneous accounts written from another point of view. It is true that the cases are not very numerous where

precisely the same event is described from opposite points of view, but, speaking in general terms rather than of specific incidents, we are already able to subject considerable portions of history to this test. The records of Shalmaneser II., Tiglath-Pileser III. and Sennacherib, kings of Assyria, of Nebuchadrezzar, king of Babylon, and of Cyrus, king of Persia, all contain direct references to Hebrew history. An obelisk of Shalmaneser II. contains explicit reference to the tribute of Jehu of Samaria, and graphically depicts the Hebrew captives. Tiglath-Pileser III., a usurper who came to the throne of Assyria in 745 B.C., and whose earlier name of Pul proved a source of confusion to the later Hebrew writers, left records that have served to clear up the puzzling chronology of a considerable period of the history of Samaria. Most interesting of all, perhaps, are the annals of Sennacherib, the destruction of whose hosts by the angel of God is so strikingly depicted in the Book of Kings. The court historian of Sennacherib naturally does not dwell upon this event, but he does tell of an invasion and conquest of Palestine. The Hebrew account of the death of Sennacherib is corroborated by a Babylonian inscription. Here, however, there is an interesting qualification. The account in the Book of Kings is so phrased that one might naturally infer from it that Sennacherib was assassinated by his sons immediately after his return from the disastrous campaign in Palestine; but in point of fact, as it now appears, the Assyrian king survived that campaign by twenty years. One cannot avoid the suspicion that in this instance the Hebrew chronicler purposely phrased his account to convey the impression that Sennacherib's tragic end was but the slightly delayed culmination of the punishment inflicted for his attack upon the "chosen people." On the other hand, the ambiguity may be quite unintentional, for the Hebrew writers were notoriously lacking in the true historical sense, which shows itself in a full appreciation of the value of chronology.

One of the most striking instances of the way in which mistakes of chronology may lead to the perversion of historical records is shown in the Book of Daniel in connexion with the familiar account of the capture of Babylon by Cyrus. Within the past generation records of Cyrus have been brought to light, as well as records of the conquered Babylonian king himself, which show that the Hebrew writers of the later day had a peculiarly befogged impression of a great historical event—their misconception being shared, it may be added, by the Greek historian Herodotus. When the annalistic tablet of Cyrus was translated, it was made to appear, to the consternation of Bible scholars, that the city of Babylon had capitulated to the Persian—or more properly to the Elamite—conqueror without a struggle. It appeared, further, that the king ruling in Babylon at the time of the capitulation was named not Belshazzar, but Nabonidos. This king, as appears from his own records, had a son named Belshazzar, who commanded Babylonian armies in outlying provinces, but who never came to the throne. Nothing could well be more disconcerting than such a revelation as this. It is held, however, that the startling discrepancies are not so difficult to explain as may appear at first sight. The explanation is found, so the Assyriologist assures us, in the fact that both Hebrew and Greek historians, writing at a considerable interval after the events, and apparently lacking authentic sources, confused the peaceful occupation of Babylon by Cyrus with its siege and capture by a successor to that monarch, Darius Hystaspes. As to the confusion of Babylonian names—in which, by the way, the Hebrew and Greek authors do not agree—it is explained that the general, Belshazzar, was perhaps more directly known in Palestine than his father the king. But the vagueness of the Hebrew knowledge is further shown by the fact that Belshazzar, alleged king, is announced as the son of Nebuchadrezzar (misspelled Nebuchadnezzar in the Hebrew writings), while the three kings that reigned after Nebuchadrezzar, and before Nabonidos usurped the throne, are quite overlooked.

Our present concern with the archaeological evidence thus briefly outlined, and with much more of the kind, may be summed up in the question: What in general terms is the inference to be drawn by the world-historian from the Assyrian records in their bearings upon the Hebrew writings? At first sight this might seem an extremely difficult question to answer. Indeed, to answer it to the satisfaction of all concerned might well be pronounced impossible. Yet it would seem as if a candid and impartial historian could not well be greatly in doubt in the matter. On the one hand, the general agreement everywhere between the Hebrew accounts and contemporaneous records from Mesopotamia proves beyond cavil that, broadly speaking, the Bible accounts are historically true, and were written by persons who in the main had access to contemporaneous documents. On the other hand, the discrepancies as to details, the confusion as to exact chronology, the manifest prejudice and partizanship, and the obvious limitations of knowledge make it clear that the writers partook in full measure of the shortcomings of other historians, and that their work must be adjudged by ordinary historical standards. As much as this is perhaps conceded by most, if not all, schools of Bible criticism of to-day. Professor Sayce, one of the most distinguished of modern Assyriologists, writing as an opponent of the purely destructive "Higher Criticism,"

demands no more than that the Book of Genesis “shall take rank by the side of the other monuments of the past as the record of events which have actually happened and been handed on by credible men”; that it shall, in short, be admitted to be “a collection of ancient documents which have all the value of contemporaneous testimony,” but which being in themselves “wrecks of vast literatures which extended over the Oriental world from a remote epoch,” cannot be understood aright “except in the light of the contemporaneous literature of which they form a portion.” From the point of view implied by such words as these, it is only necessary to recall the mental attitude of our grandfathers to appreciate in some measure the revolution in thought that has been wrought in this field within the last half-century, largely through the instrumentality of Oriental archaeology.

We have seen that the general trend of Oriental archaeology has been reconstructive rather than iconoclastic. Equally true is this of recent classical archaeology. Here no such revolution has been effected as that which virtually created anew the history of Oriental antiquity; yet the bearings of the new knowledge are similar in kind if different in degree. The world had never quite forgotten the history of the primitive Greeks as it had forgotten the Mesopotamians, the Himyaritic nations and the Hittites; but it remembered their deeds only in the form of poetical myths and traditions. These traditions, finding their clearest delineation in the lines of Homer, had been subjected to the analysis of the critical historians of the early decades of the 19th century, and their authenticity had come to be more than doubted. The philological analysis of Wolf and his successors had raised doubts as to the very existence of Homer, and at one time the main current of scholarly opinion had set strongly in the direction of the belief that the *Iliad* and the *Odyssey* were in reality but latter-day collections of divers recitals that had been handed down by word of mouth from one generation to another of bards through ages of illiteracy. It was strenuously contended that the case could not well be otherwise, inasmuch as the art of writing must have been quite unknown in Greece until after the alleged age of the traditional Homer, whose date had been variously estimated at from 1000 to 800 B.C. by less sceptical generations. It had come to be a current belief that the *Iliad* was first committed to writing in the age of Peisistratus. A prominent controversialist, F.A. Paley, even went so far as to doubt whether a single written copy of the *Iliad* existed in Greece at the time of the Peloponnesian War. The doubts thus cast upon the age when the Homeric poems first assumed the fixed form of writing were closely associated with the universal scepticism as to the historical accuracy of any traditions whatever regarding the early history of Greece. Cautious historians had come to regard the so-called “Heroic Age” as a prehistoric period regarding which nothing definite was known, or in all probability could be known. It was ably argued by Sir George Cornewall Lewis, in connexion with his inquiries into early Roman history, that a verbal tradition is not transmitted from one generation to another in anything like an authentic form for a longer period than about a century. If, then, the art of writing was unknown in Greece before, let us say, the 6th century B.C., it would be useless to expect that any events of Grecian history prior to about the 7th century B.C. could have been transmitted to posterity with any degree of historical accuracy.

Archaeology and classical history.

Notwithstanding the allurements of the subject, such conservative historians as Grote were disposed to regard the problems of early Grecian history as inscrutable, and to content themselves with the recital of traditions without attempting to establish their relationship with actual facts. It remained for the more robust faith of a Schliemann to show that such scepticism was all too faint-hearted, by proving that at such sites as Tiryns, Mycenae and Hissarlik evidences of a very early period of Greek civilization awaited the spade of the excavator. Thanks to the enthusiasm of Schliemann and his successors, we can now substitute for the mythical “Age of Heroes” a historical “Mycenaean Age” of Greece, and give tangible proof of its relatively high state of civilization. Schliemann may or may not have been correct in identifying one of the seven cities that he unearthed at Hissarlik as the fabled Troy itself, but at least his efforts sufficed to give verisimilitude to the Homeric story. With the lessons of recent Oriental archaeology in mind, few will be sceptical enough to doubt that some such contest as that described in the *Iliad* actually occurred. And now, thanks to the efforts of a large company of workers, notably Dr Arthur Evans and his associates in Cretan exploration, we are coming to speak with some confidence not merely of a Mycenaean but of a pre-Mycenaean Age.

As yet we see these periods somewhat darkly. The illuminative witness of written records is in the main denied us here. Some most archaic inscriptions have been indeed found by the explorers in Crete, but these for the present serve scarcely any other purpose than to prove the antiquity of the art of writing among a people who were closely in touch with the inhabitants of Hellas proper. Most unfortunately for posterity, the Greeks wrote mainly on

perishable materials, and hence the chief records even of their later civilization have vanished. The only fragments of Greek manuscripts antedating the Christian era that have been preserved to us have been found in Egypt, where a hospitable climate granted them a term of existence not to be hoped for elsewhere. No fragment of these papyri, indeed, carries us further back than the age of the Ptolemies; but the Greek inscriptions on the statues of Rameses II at Abu-Simbel, in Nubia, give conclusive proof that the art of writing was widely disseminated among the Greeks at least three centuries before the age of Alexander. This carries us back towards the traditional age of Homer.

The Cretan inscriptions belong to a far older epoch, and are written in two non-Grecian scripts of undetermined affinities. Here, then, is direct evidence that the Aegean peoples of the Mycenaean Age knew how to write, and it is no longer necessary to assume that the verses of the *Iliad* were dependent on mere verbal transmission for any such period as has been supposed.

But even were direct evidence of the knowledge of the art of writing in Greece of the early day altogether lacking, none but the hardiest sceptic could doubt, in the light of recent archaeological discoveries elsewhere, that the inhabitants of ancient Hellas of the “Homeric Age” must have shared with their contemporaries the capacity to record their thought in written words. We have seen that Oriental archaeology has in recent generations revolutionized our conceptions of the antiquity of civilization. We have seen that written documents have been preserved in Mesopotamia to which such a date as 4500 B.C. may be ascribed with a good deal of confidence; and that from the third millennium B.C. a flood of contemporary literary records comes to us both from Egypt and Mesopotamia. But until recently it had been supposed that Hellas was shut out entirely from this Oriental culture. Historians have found it hard to dispel the idea that civilization in Greece was a very late development, and that the culture of the age of Solon sprang, in fact, suddenly into existence, as it seems to do in the records of the historian. But the excavations that have 312
given us a knowledge of the Mycenaean Age have proved conclusively, not alone that civilization existed in Greece in an early day, but that this civilization was closely linked with the civilization of Egypt. Not only have antiquities been found in Crete that point to Egyptian inspiration, but quite recently Professor Petrie has found at Tel el-Amarna Mycenaean pottery. The latter find has a peculiar significance, since the date of the Tel el-Amarna collection is definitely fixed between the years 1400 and 1370 B.C.

It is demonstrated, then, that as early as the beginning of the 14th century B.C. the Mycenaean civilization was in touch with the ancient civilization of Egypt. One must not infer from this, however, that the two civilizations met on anything like an equality. Indeed, in the wonderful Tel-el-Amarna collection there is a suggestive absence of literary documents from the Aegean that demands a word of notice. The Tel el-Amarna collection, it will be recalled, consists of the royal archives of King Amenophis IV. of the XVIIIth Egyptian dynasty, who in the latter years of his reign chose to be known as Akhenaton, “the glory of the solar disk.” This monarch had retired from Thebes and established his court on the site now known as Tel el-Amarna, where he founded the city which existed only during the brief period of thirty years ending with the death of the monarch about 1370 B.C. The date of the documents found in the royal library is, therefore, fixed within very narrow limits. The documents in question consist chiefly of letters, and constitute one of the most important of archaeological finds. These letters came to the king from almost every part of western Asia, including Palestine and Phoenicia, Babylonia and Asia Minor. Strangely enough, all the letters are written in the Babylonian character, and most of them are in the Babylonian language. They afford, therefore, most striking evidence of a widespread diffusion of Babylonian culture. Incidentally they prove, to the utter confusion of a certain school of Bible critics, that the art of writing was familiarly known in Canaan, and that Egypt and western Asia were in full literary connexion with one another, long before the time of the Exodus. Hence all the elaborate arguments based on the supposition that Moses probably could not write fall to the ground. On the other hand, the absence of letters from Mycenae among the tablets of Tel el-Amarna must be regarded as at least suggestive. Seemingly the widespread Babylonian culture had not reached the Aegean peoples; yet these peoples cannot have been wholly ignorant of things with which commercial intercourse brought them in contact. The point is of no very great significance, however, since no one has pretended that the Western civilization compared with the Eastern in point of antiquity; and in any event, no amount of negative evidence weighs a grain in the balance against the positive evidence of the Cretan inscriptions.

The researches of the archaeologist are, in short, tending to reconstruct the primitive classical history; and here, as in the Orient, it is evident that historians of the earlier day

were constantly blinded by a misconception as to the antiquity of civilization. Such a fruitage as that of Greek culture of the age of Pericles does not come to maturity without a long period of preparation. Here, as elsewhere, the laws of evolution hold, permitting no sudden stupendous leaps. But it required the arduous labours of the archaeologist to prove a proposition that, once proven, seems self-evident.

(H. S. WI.)

Eras and Periods.

In the article Calendar (*q.v.*), that part of chronology is treated which relates to the measurement of time, and the principal methods are explained that have been employed, or are still in use, for adjusting the lunar months of the solar year, as well as the intercalations necessary for regulating the civil year according to the celestial motions. But it is necessary to notice here the different *Eras* and *Periods* that have been employed by historians, and by the different nations of the world, in recording the succession of time and events, to fix the epochs at which the eras respectively commenced, to ascertain the form and the initial day of the year made use of, and to establish their correspondence with the years of the Christian era. These elements will enable us to convert, by a simple arithmetical operation, any historical date, of which the chronological characters are given according to any era whatever, into the corresponding date in the Christian era.

Julian Period.—Although the Julian period (the invention of Joseph Scaliger, in 1582) is not, properly speaking, a chronological era, yet, on account of its affording considerable facilities in the comparison of different eras with one another, and in marking without ambiguity the years before Christ, it is very generally employed by chronologers. It consists of 7980 Julian years; and the first year of the Christian era corresponded with the year 4714 of the Julian period.

Olympiads.—The Olympic games, so famous in Greek history, were celebrated once every four years, between the new and full moon first following the summer solstice, on the small plain named Olympia in Elis, which was bounded on one side by the river Alpheus, on another by the small tributary stream the Cladeus, and on the other two sides by mountains. The games lasted five days. Their origin, lost in the dimness of remote antiquity, was invested by priestly legends with a sacred character. They were said to have been instituted by the Idaean Heracles, to commemorate his victory over his four brothers in a foot-race. According to a tradition, possibly more authentic, they were re-established by Iphitus, king of Elis, in concert with the Spartan Lycurgus and Cleosthenes of Pisa. The practice was long afterwards adopted of designating the Olympiad, or period of four years, by the name of the victor in the contests of the stadium, and of inscribing his name in the gymnasium of Olympia. The first who received this honour was Coroebus. The games in which Coroebus was victor, and which form the principal epoch of Greek history, were celebrated about the time of the summer solstice 776 years before the common era of the Incarnation, in the 3938th year of the Julian period, and twenty-three years, according to the account of Varro, before the foundation of Rome.

Before the introduction of the Metonic cycle, the Olympic year began sometimes with the full moon which followed, at other times with that which preceded the summer solstice, because the year sometimes contained 384 days instead of 354. But subsequently to its adoption, the year always commenced with the eleventh day of the moon which followed the solstice. In order to avoid troublesome computations, which it would be necessary to recommence for every year, and of which the results differ only by a few days, chronologers generally regard the 1st of July as the commencement of the Olympic year. Some authors, however, among whom are Eusebius, Jerome and the historian Socrates, place its commencement at the 1st of September; these, however, appear to have confounded the Olympic year with the civil year of the Greeks, or the era of the Seleucidae.

> It is material to observe, that as the Olympic years and periods begin with the 1st of July, the first six months of a year of our era correspond to one Olympic year, and the last six months to another. Thus, when it is said that the first year of the Incarnation corresponds to the first of the 195th Olympiad, we are to understand that it is only with respect to the last six months of that year that the correspondence takes place. The first six months belonged to the fourth year of the 194th Olympiad. In referring dates expressed by Olympiads to our era, or the contrary, we must therefore distinguish two cases.
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> *1st.* When the event in question happened between the 1st of January and the 1st of the following July, the sum of the Olympic year and of the year before Christ is always equal to 776. The year of the era, therefore, will be found by subtracting the number of the Olympic year from 776. For example, Varro refers the foundation of Rome to the 21st of April of the

third year of the sixth Olympiad, and it is required to find the year before our era. Since five Olympic periods have elapsed, the third year of the sixth Olympiad is 5 × 4 + 3 = 23; therefore, subtracting 23 from 776, we have 753, which is the year before Christ to which the foundation of Rome is referred by Varro.

2nd. When the event took place between the summer solstice and the 1st of January following, the sum of the Olympic year and of the year before Christ is equal to 777. The difference, therefore, between 777 and the year in one of the dates will give the year in the other date. Thus, the moon was eclipsed on the 27th of August, a little before midnight, in the year 413 before our era; and it is required to find the corresponding year in the Olympic era. Subtract 413 from 777, the remainder is 364; and 364 divided by four gives 91 without a remainder; consequently the eclipse happened in the fourth year of the ninety-first Olympiad, which is the date to which it is referred by Thucydides.

If the year is after Christ, and the event took place in one of the first six months of the Olympic year, that is to say, between July and January, we must subtract 776 from the number of the Olympic year to find the corresponding year of our era; but if it took place in one of the last six months of the Olympic year, or between January and July, we must deduct 777. The computation by Olympiads seldom occurs in historical records after the middle of the 5th century of our era.

The names of the months were different in the different Grecian states. The Attic months, of which we possess the most certain knowledge, were named as follows:—

Hecatombaeon.	Gamelion.
Metageitnion.	Anthesterion.
Boëdromion.	Elaphebolion.
Pyanepsion.	Munychion.
Maemacterion.	Thargelion.
Poseideon.	Scirophorion.

Era of the Foundation of Rome.—After the Olympiads, the era most frequently met with in ancient history is that of the foundation of Rome, which is the chronological epoch adopted by all the Roman historians. There are various opinions respecting the year of the foundation of Rome. (1) Fabius Pictor places it in the latter half of the first year of the eighth Olympiad, which corresponds with the 3967th of the Julian period, and with the year 747 B.C. (2) Polybius places it in the second year of the seventh Olympiad, corresponding with 3964 of the Julian period, and 750 B.C. (3) M. Porcius Cato places it in the first year of the seventh Olympiad, that is, in 3963 of the Julian period, and 751 B.C. (4) Verrius Flaccus places it in the fourth year of the sixth Olympiad, that is, in the year 3962 of the Julian period, and 752 B.C. (5) Terentius Varro places it in the third year of the sixth Olympiad, that is, in the year 3961 of the Julian period, and 753 B.C. A knowledge of these different computations is necessary, in order to reconcile the Roman historians with one another, and even any one writer with himself. Livy in general adheres to the epoch of Cato, though he sometimes follows that of Fabius Pictor. Cicero follows the account of Varro, which is also in general adopted by Pliny. Dionysius of Halicarnassus follows Cato. Modern chronologers for the most part adopt the account of Varro, which is supported by a passage in Censorinus, where it is stated that the 991st year of Rome commenced with the festival of the Palilia, in the consulship of Ulpius and Pontianus. Now this consulship corresponded with the 238th year of our era; therefore, deducting 238 from 991, we have 753 to denote the year before Christ. The Palilia commenced on the 21st of April; and all the accounts agree in regarding that day as the epoch of the foundation of Rome.

The Romans employed two sorts of years, the civil year, which was used in the transaction of public and private affairs, and the consular year, according to which the annals of their history have been composed. The civil year commenced with the calends of January, but this did not hold a fixed place in the solar year till the time of Julius Caesar (see Calendar). The installation of the consuls regulated the commencement of the consular year. The initial day of the consulate was never fixed, at least before the 7th century of Rome, but varied with the different accidents which in times of political commotion so frequently occurred to accelerate or retard the elections. Hence it happens that a consular year, generally speaking, comprehends a part not only of two Julian years, but also of two civil years. The consulate is the date employed by the Latin historians generally, and by many of the Greeks, down to the 6th century of our era.

In the era of Rome the commencement of the year is placed at the 21st of April; an event therefore which happened in the months of January, February, March, or during the first twenty days of April, in the year (for example) 500 of Rome, belongs to the civil year 501. Before the time of the Decemvirs, however, February was the last month of the year. Many

authors confound the year of Rome with the civil year, supposing them both to begin on the 1st of January. Others again confound both the year of Rome and the civil year with the Julian year, which in fact became the civil year after the regulation of the calendar by Julius Caesar. Through a like want of attention, many writers also, particularly among the moderns, have confounded the Julian and Olympic years, by making an entire Julian year correspond to an entire Olympic year, as if both had commenced at the same epoch. Much attention to these particulars is required in the comparison of ancient dates.

The Christian Era.—The Christian or vulgar era, called also the era of the Incarnation, is now almost universally employed in Christian countries, and is even used by some Eastern nations. Its epoch or beginning is the 1st of January in the fourth year of the 194th Olympiad, the 753rd from the foundation of Rome, and the 4714th of the Julian period. This epoch was introduced in Italy in the 6th century, by Dionysius the Little, a Roman abbot, and began to be used in Gaul in the 8th, though it was not generally followed in that country till a century later. From extant charters it is known to have been in use in England before the close of the 8th century. Before its adoption the usual practice in Latin countries was to distinguish the years by their number in the cycle of Indiction.

In the Christian era the years are simply distinguished by the cardinal numbers; those before Christ being marked B.C. (Before Christ), or A.C. (Ante Christum), and those after Christ A.D. (Anno Domini). This method of reckoning time is more convenient than those which employ cycles or periods of any length whatever; but it still fails to satisfy in the simplest manner possible all the conditions that are necessary for registering the succession of events. For, since the commencement of the era is placed at an intermediate period of history, we are compelled to resort to a double manner of reckoning, backward as well as forward. Some ambiguity is also occasioned by the want of uniformity in the method of numbering the preceding years. Astronomers denote the year which preceded the first of our era by 0, and the year previous to that by 1 B.C.; but chronologers, in conformity with common notions, call the year preceding the era 1 B.C., the previous year 2 B.C., and so on. By reckoning in this manner, there is an interruption in the regular succession of the numbers; and in the years preceding the era, the leap years, instead of falling on the fourth, eighth, twelfth, &c., fall, or ought to fall, on the first, fifth, ninth, &c.

In the chronicles of the middle ages much uncertainty frequently arises respecting dates on account of the different epochs assumed for the beginning of the Christian year. Dionysius, the author of the era, adopted the day of the Annunciation, or the 25th of March, which preceded the birth of Christ by nine months, as the commencement of the first year of the era. This epoch therefore precedes that of the vulgar era by nine months and seven days. This manner of dating was followed in some of the Italian states, and continued to be used at Pisa even down to the year 1745. It was also adopted in some of the Papal bulls; and there are proofs of its having been employed in France about the middle of the 11th century. Some chroniclers, who adhere to the day of the Annunciation as the commencement of the year, reckon from the 25th of March following our epoch, as the Florentines in the 10th century. Gregory of Tours, and some writers of the 6th and 7th centuries, make the year begin sometimes with the 1st of March, and sometimes with the 1st of January. In France, under the third race of kings, it was usual to begin the year with Easter; and this practice continued at least till the middle of the 16th century, for an edict was issued by Charles IX. in the month of January 1663, ordaining that the beginning of the year should thenceforth be considered as taking place on the 1st of January. An instance is given, in *L'Art de vérifier les dates*, of a date in which the year is reckoned from the 18th of March; but it is probable that this refers to the astronomical year, and that the 18th of March was taken for the day of the vernal equinox. In Germany, about the 11th century, it was usual to begin the year at Christmas; and this practice also prevailed at Milan, Rome and other Italian cities, in the 13th, 14th and 15th centuries.

In England, the practice of placing the beginning of the year at Christmas was introduced in the 7th century, and traces of it are found even in the 13th. Gervase of Canterbury, who lived in the 13th century, mentions that almost all writers of his country agreed in regarding Christmas day as the first of the year, because it forms, as it were, the term at which the sun finishes and recommences his annual course. In the 12th century, however, the custom of beginning the civil year with the day of the Annunciation, or the 25th of March, began to prevail, and continued to be generally followed from that time till the reformation of the calendar in 1752. The historical year has always been reckoned by English authors to begin with the 1st of January. The liturgic year of the Church of England commences with the first Sunday of Advent.

A knowledge of the different epochs which have been chosen for the commencement of

the year in different countries is indispensably necessary to the right interpretation of ancient chronicles, charters and other documents in which the dates often appear contradictory. We may cite an example or two. It is well known that Charles the Great was crowned emperor at Rome on Christmas day in the year 800, and that he died in the year 814, according to our present manner of reckoning. But in the annals of Metz and Moissac, the coronation is stated to have taken place in the year 801, and his death in 813. In the first case the annalist supposes the year to begin with Christmas, and accordingly reckons the 25th of December and all the following days of that month to belong to 801, whereas in the common reckoning they would be referred to the year 800. In the second case the year has been supposed to begin with the 25th of March, or perhaps with Easter; consequently the first three months of the year 814, reckoning from the 1st of January, would be referred to the end of the year 813. The English Revolution is popularly called the Revolution of 1688. Had the year then begun, as it now does, with the 1st of January, it would have been the revolution of 1689, William and Mary being received as king and queen in February in the year 1689; but at that time the year was considered in England as beginning on the 25th of March. Another circumstance to which it is often necessary to pay attention in the comparison of dates, is the alteration of style which took place on the adoption of the Gregorian Calendar (see CALENDAR).

Era of the Creation of the World.—As the Greek and Roman methods of computing time were connected with certain pagan rites and observances which the Christians held in abhorrence, the latter began at an early period to imitate the Jews in reckoning their years from the supposed period of the creation of the world. Various computations were made at different times, from Biblical sources, as to the age of the world; and Des Vignoles, in the preface to his *Chronology of Sacred History*, asserts that he collected upwards of two hundred different calculations, the shortest of which reckons only 3483 years between the creation of the world and the commencement of the vulgar era and the longest 6984. The so-called era of the creation of the world is therefore a purely conventional and arbitrary epoch; practically, it means the year 4004 B.C.,—this being the date which, under the sanction of Archbishop Usher's opinion, won its way, among its hundreds of competitors, into general acceptance.

Jewish Year and Eras.—Before the departure of the Israelites from Egypt their year commenced at the autumnal equinox; but in order to solemnize the memory of their deliverance, the month of *Nisan* or *Abib*, in which that event took place, and which falls about the time of the vernal equinox, was afterwards regarded as the beginning of the ecclesiastical or legal year. In civil affairs, and in the regulation of the jubilees and sabbatical years, the Jews still adhere to the ancient year, which begins with the month Tisri, about the time of the autumnal equinox.

After their dispersion the Jews were constrained to have recourse to the astronomical rules and cycles of the more enlightened heathen, in order that their religious festivals might be observed on the same days in all the countries through which they were scattered. For this purpose they adopted a cycle of eighty-four years, which is mentioned by several of the ancient fathers of the church, and which the early Christians borrowed from them for the regulation of Easter. This cycle seems to be neither more nor less than the Calippic period of seventy-six years, with the addition of a Greek octaëteris, or period of eight years, in order to disguise its true source, and give it an appearance of originality. In fact, the period of Calippus containing 27,759 days, and the octaëteris 2922 days, the sum, which is 30,681, is exactly the number of days in eighty-four Julian years. But the addition was very far from being an improvement on the work of Calippus; for instead of a difference of only five hours and fifty-three minutes between the places of the sun and moon, which was the whole error of the Calippic period, this difference, in the period of eighty-four years, amounted to one day, six hours and forty-one minutes. Buccherius places the beginning of this cycle in the year 162 B.C.; Prideaux in the year 291 B.C. According to the account of Prideaux, the fifth cycle must have begun in the year 46 of our era; and it was in this year, according to St Prosperus, that the Christians began to employ the Jewish cycle of eighty-four years, which they followed, though not uniformly, for the regulation of Easter, till the time of the Council of Nice.

Soon after the Nicene council, the Jews, in imitation of the Christians, abandoned the cycle of eighty-four years, and adopted that of Meton, by which their lunisolar year is regulated at the present day. This improvement was first proposed by Rabbi Samuel, rector of the Jewish school of Sora in Mesopotamia, and was finally accomplished in the year 360 of our era by Rabbi Hillel, who introduced that form of the year which the Jews at present follow, and which, they say, is to endure till the coming of the Messiah.

Till the 15th century the Jews usually followed the era of the Seleucidae or of Contracts. Since that time they have generally employed a mundane era, and dated from the creation of the world, which, according to their computation, took place 3760 years and about three months before the beginning of our era. No rule can be given for determining with certainty the day on which any given Jewish year begins without entering into the minutiae of their irregular and complicated calendar.

Era of Constantinople.—This era, which is still used in the Greek Church, and was followed by the Russians till the time of Peter the Great, dates from the creation of the world. The Incarnation falls in the year 5509, and corresponds, as in our era, with the fourth year of the 194th Olympiad. The civil year commences with the 1st of September; the ecclesiastical year sometimes with the 21st of March, sometimes with the 1st of April. It is not certain whether the year was considered at Constantinople as beginning with September before the separation of the Eastern and Western empires.

At the commencement of our era there had elapsed 5508 years and four months of the era of Constantinople. Hence the first eight months of the Christian year 1 coincide with the Constantinopolitan year 5509, while the last four months belong to the year 5510. In order, therefore, to find the year of Christ corresponding to any given year in the era of Constantinople, we have the following rule: If the event took place between the 1st of January and the end of August subtract 5508 from the given year; but if it happened between the 1st of September and the end of the year, subtract 5509.

Era of Alexandria.—The chronological computation of Julius Africanus was adopted by the Christians of Alexandria, who accordingly reckoned 5500 years from the creation of Adam to the birth of Christ. But in reducing Alexandrian dates to the common era it must be observed that Julius Africanus placed the epoch of the Incarnation three years earlier than it is placed in the usual reckoning, so that the initial day of the Christian era fell in the year 5503 of the Alexandrian era. This correspondence, however, continued only from the introduction of the era till the accession of Diocletian, when an alteration was made by dropping ten years in the Alexandrian account. Diocletian ascended the imperial throne in the year of Christ 284. According to the Alexandrian computation, this was the year 5787 of the world, and 287 of the Incarnation; but on this occasion ten years were omitted, and that year was thenceforth called the year 5777 of the world, and 277 of the Incarnation. There are, consequently, two distinct eras of Alexandria, the one being used before and the other after the accession of Diocletian. It is not known for what reason the alteration was made; but it is conjectured that it was for the purpose of causing a new revolution of the cycle of nineteen years (which was introduced into the ecclesiastical computation about this time by Anatolius, bishop of Hierapolis) to begin with the first year of the reign of Diocletian. In fact, 5777 being divided by 19 leaves 1 for the year of the cycle. The Alexandrian era continued to be followed by the Copts in the 15th century, and is said to be still used in Abyssinia.

Dates expressed according to this era are reduced to the common era by subtracting 5502, up to the Alexandrian year 5786 inclusive, and after that year by subtracting 5492; but if the date belongs to one of the four last months of the Christian year, we must subtract 5503 till the year 5786, and 5493 after that year.

Mundane Era of Antioch.—The chronological reckoning of Julius Africanus formed also the basis of the era of Antioch, which was adopted by the Christians of Syria, at the instance of Panodorus, an Egyptian monk, who flourished about the beginning of the 4th century. Panodorus struck off ten years from the account of Julius Africanus with regard to the years of the world, and he placed the Incarnation three years later, referring it to the fourth year of the 194th Olympiad, as in the common era. Hence the era of Antioch differed from the original era of Alexandria by ten years; but after the alteration of the latter at the accession of Diocletian, the two eras coincided. In reckoning from the Incarnation, however, there is a difference of seven years, that epoch being placed, in the reformed era of Alexandria, seven years later than in the mundane era of Antioch or in the Christian era.

As the Syrian year began in autumn, the year of Christ corresponding to any year in the mundane era of Antioch is found by subtracting 5492 or 5493 according as the event falls between January and September or from September to January.

Era of Nabonassar.—This era is famous in astronomy, having been generally followed by Hipparchus and Ptolemy. It is believed to have been in use from the very time of its origin; for the observations of eclipses which were collected in Chaldaea by Callisthenes, the general of Alexander, and transmitted by him to Aristotle, were for the greater part referred to the beginning of the reign of Nabonassar, founder of the kingdom of the Babylonians. It is the basis of the famous Canon of kings, also called Mathematical Canon, preserved to us in

the works of Ptolemy, which, before the astonishing discoveries at Nineveh, was the sole authentic monument of Assyrian and Babylonian history known to us. The epoch from which it is reckoned is precisely determined by numerous celestial phenomena recorded by Ptolemy, and corresponds to Wednesday at mid-day, the 26th of February of the year 747 before Christ. The year was in all respects the same as the ancient Egyptian year. On account of the difference in the length of the Julian and Babylonian years, the conversion of dates according to the era of Nabonassar into years before Christ is attended with considerable trouble. The surest way is to follow a comparative table. Frequently the year cannot be fixed with certainty, unless we know also the month and the day.

The Greeks of Alexandria formerly employed the era of Nabonassar, with a year of 365 days; but soon after the reformation of the calendar of Julius Caesar, they adopted, like other Roman provincials, the Julian intercalation. At this time the first of Thoth had receded to the 29th of August. In the year 136 of our era, the first of Thoth in the ancient Egyptian year corresponded with the 20th of July, between which and the 29th of August there are forty days. The adoption of the Julian year must therefore have taken place about 160 years before the year 136 of our era (the difference between the Egyptian and Julian years being one day in four years), that is to say, about the year 25 B.C. In fact, the first of Thoth corresponded with the 29th of August in the Julian calendar, in the years 25, 24, 23 and 22 B.C.

Era of the Seleucidae, or Macedonian Era.—The era of the Seleucidae dates from the time of the occupation of Babylon by Seleucus Nicator, 311 years before Christ, in the year of Rome 442, and twelve years after the death of Alexander the Great. It was adopted not only in the monarchy of the Seleucidae but in general in all the Greek countries bordering on the Levant, was followed by the Jews till the 15th century, and is said to be used by some Arabians even at the present day. By the Jews it was called the *Era of Contracts*, because the Syrian governors compelled them to make use of it in civil contracts; the writers of the books of Maccabees call it the *Era of Kings*. But notwithstanding its general prevalence in the East for many centuries, authors using it differ much with regard to their manner of expressing dates, in consequence of the different epochs adopted for the beginning of the year. Among the Syrian Greeks the year began with the month Elul, which corresponds to our September. The Nestorians and Jacobites at the present day suppose it to begin with the following month, or October. The author of the first book of Maccabees makes the era commence with the month Nisan, or April; and the author of the second book with the first Tishrin, or October. Albategni, a celebrated Arabian astronomer, dates from the 1st of October. Some of the Arabian writers, as Alfergani, date from the 1st of September. At Tyre the year was counted from the 19th of our October, at Gaza from the 28th of the same month, and at Damascus from the vernal equinox. These discrepancies render it extremely difficult to determine the exact correspondence of Macedonian dates with those of other eras; and the difficulty is rendered still greater by the want of uniformity in respect of the length of the year. Some authors who follow the Macedonian era, use the Egyptian or vague year of 365 days; Albategni adopts the Julian year of 365¼ days.

According to the computation most generally followed, the year 312 of the era of the Seleucidae began on the 1st of September in the Julian year preceding the first of our era. Hence, to reduce a Macedonian date to the common era, subtract 311 years and four months.

The names of the Syrian and Macedonian months, and their correspondence with the Roman months, are as follows:—

Syrian.	Macedonian.	English.
Elul.	Gorpiaeus.	September.
Tishrin I.	Hyperberetaeus.	October.
Tishrin II.	Dius.	November.
Canun I.	Apellaeus.	December.
Canun II.	Audynaeus.	January.
Sabat.	Peritius.	February.
Adar.	Dystrus.	March.
Nisan.	Xanthicus.	April.
Ayar.	Artemisius.	May.
Haziran.	Daesius.	June.
Tamus.	Panemus.	July.
Ab.	Loüs.	August.

Era of Alexander.—Some of the Greek historians have assumed as a chronological epoch the death of Alexander the Great, in the year 325 B.C. The form of the year is the same as in

the preceding era. This era has not been much followed; but it requires to be noticed in order that it may not be confounded with the era of the Seleucidae.

Era of Tyre.—The era of Tyre is reckoned from the 19th of October, or the beginning of the Macedonian month Hyperberetaeus, in the year 126 B.C. In order, therefore, to reduce it to the common era, subtract 125; and when the date is B.C., subtract it from 126. Dates expressed according to this era occur only on a few medals, and in the acts of certain councils.

Caesarean Era of Antioch.—This era was established to commemorate the victory obtained by Julius Caesar on the plains of Pharsalia, on the 9th of August in the year 48 B.C., and the 706th of Rome. The Syrians computed it from their month Tishrin I.; but the Greeks threw it back to the month Gorpiaeus of the preceding year. Hence there is a difference of eleven months between the epochs assumed by the Syrians and the Greeks. According to the computation of the Greeks, the 49th year of the Caesarean era began in the autumn of the year preceding the commencement of the Christian era; and, according to the Syrians, the 49th year began in the autumn of the first year of the Incarnation. It is followed by Evagrius in his *Ecclesiastical History*.

Julian Era.—The Julian era begins with the 1st of January, forty-five years B.C. It was designed to commemorate the reformation of the Roman calendar by Julius Caesar.

Era of Spain, or of the Caesars.—The conquest of Spain by Augustus, which was completed in the thirty-ninth year B.C., gave rise to this era, which began with the first day of the following year, and was long used in Spain and Portugal, and generally in all the Roman provinces subdued by the Visigoths, both in Africa and the South of France. Several of the councils of Carthage, and also that of Arles, are dated according to this era. After the 9th century it became usual to join with it in public acts the year of the Incarnation. It was followed in Catalonia till the year 1180, in the kingdom of Aragon till 1350, in Valencia till 1358, and in Castile till 1382. In Portugal it is said to have been in use so late as the year 1415, or 1422, though it would seem that after the establishment of the Portuguese monarchy, no other era was used in the public acts of that country than that of the Incarnation. As the era of Spain began with the 1st of January, and the months and days of the year are those of the Julian calendar, any date is reduced to the common era by subtracting thirty-eight from the number of the year.

Era of Actium, and Era of Augustus.—This era was established to commemorate the battle of Actium, which was fought on the 3rd of September, in the year 31 B.C., and in the 15th of the Julian era. By the Romans the era of Actium was considered as beginning on the 1st of January of the 16th of the Julian era, which is the 30th B.C. The Egyptians, who used this era till the time of Diocletian, dated its commencement from the beginning of their month Thoth, or the 29th of August; and the Eastern Greeks from the 2nd of September. By the latter it was also called the era of Antioch, and it continued to be used till the 9th century. It must not be confounded with the Caesarean era of Antioch, which began seventeen years earlier. Many of the medals struck by the city of Antioch in honour of Augustus are dated according to this era.

Besides the era of Actium, there was also an Augustan era, which began four years later, or 27 B.C., the year in which Augustus prevailed on the senate and people of Rome to decree him the title of Augustus, and to confirm him in the supreme power of the empire.

Era of Diocletian, or Era of Martyrs.—It has been already stated that the Alexandrians, at the accession of the emperor Diocletian, made an alteration in their mundane era, by striking off ten years from their reckoning. At the same time they established a new era, which is still followed by the Abyssinians and Copts. It begins with the 29th of August (the first day of the Egyptian year) of the year 284 of our era, which was the first of the reign of Diocletian. The denomination of *Era of Martyrs*, subsequently given to it in commemoration of the persecution of the Christians, would seem to imply that its commencement ought to be referred to the year 303 of our era, for it was in that year that Diocletian issued his famous edict; but the practice of dating from the accession of Diocletian has prevailed. The ancient Egyptian year consisted of 365 days; but after the introduction of the Julian calendar, the astronomers of Alexandria adopted an intercalary year, and added six additional days instead of five to the end of the last month of every fourth year. The year thus became exactly similar to the Julian year. The Egyptian intercalary year, however, does not correspond to the Julian leap year, but is the year immediately preceding; and the intercalation takes place at the end of the year, or on the 29th of August. Hence the first three years of the Egyptian intercalary period begin on the 29th of our August, and the

fourth begins on the 30th of that month. Before the end of that year the Julian intercalation takes place, and the beginning of the following Egyptian year is restored to the 29th of August. Hence to reduce a date according to this era to our own reckoning, it is necessary, for common years, to add 283 years and 240 days; but if the date belongs to the first three months of the year following the intercalation, or, which is the same thing, if in the third year of the Julian cycle it falls between the 30th of August and the end of the year, we must add 283 years and 241 days. The Ethiopians do not reckon the years from the beginning of the era in a consecutive series, but employ a period of 532 years, after the expiration of which they again begin with 1. This is the Dionysian or Great Paschal Period, and is formed by the multiplication of the numbers 28 and 19, that is, of the solar and lunar cycles, into each other.

The following are the names of the Ethiopian or Abyssinian months, with the days on which they begin in the Julian calendar, or old style:—

Mascaram	29th August.	Magabit	25th February.
Tikmith	28th September.	Miazia	27th March.
Hadar	28th October.	Gimbot	26th April.
Tacsam	27th November.	Sene	26th May.
Tir	27th December.	Hamle	25th June.
Yacatit	26th January.	Nahasse	25th July.

The additional or epagomenal days begin on the 24th of August. In intercalary years the first seven months commence one day later. The Egyptian months, followed by the modern Copts, agree with the above in every respect excepting the names.

Indiction.—The cycle of Indiction was very generally followed in the Roman empire for some centuries before the adoption of the Christian era. Three Indictions may be distinguished; but they differ only in regard to the commencement of the year.

1. The *Constantinopolitan Indiction*, like the Greek year, commenced with the month of September. This was followed in the Eastern empire, and in some instances also in France.

2. The *Imperial* or *Constantinian Indiction* is so called because its establishment is attributed to Constantine. This was also called the *Caesarean Indiction*. It begins on the 24th of September. It is not infrequently met with in the ancient chronicles of France and England.

3. The *Roman* or *Pontifical Indiction* began on the 25th of December or 1st of January, according as the Christian year was held to begin on the one or other of these days. It is often employed in papal bulls, especially after the time of Gregory VII., and traces of its use are found in early French authors.

Era of the Armenians.—The epoch of the Armenian era is that of the council of Tiben, in which the Armenians consummated their schism from the Greek Church by condemning the acts of the council of Chalcedon; and it corresponds to Tuesday, the 9th of July of the year 552 of the Incarnation. In their civil affairs the Armenians follow the ancient vague year of the Egyptians; but their ecclesiastical year, which begins on the 11th of August, is regulated in the same manner as the Julian year, every fourth year consisting of 366 days, so that Easter and the other festivals are retained at the same place in the seasons as well as in the civil year. The Armenians also make use of the mundane era of Constantinople, and sometimes conjoin both methods of computation in the same documents. In their correspondence and transactions with Europeans, they generally follow the era of the Incarnation, and adopt the Julian year.

To reduce the civil dates of the Armenians to the Christian era, proceed as follows. Since the epoch is the 9th of July, there were 176 days from the beginning of the Armenian era to the end of the year 552 of our era; and since 552 was a leap year, the year 553 began a Julian intercalary period. Multiply, therefore, the number of Armenian years elapsed by 365; add the number of days from the commencement of the current year to the given date; subtract 176 from the sum, and the remainder will be the number of days from the 1st of January 553 to the given date. This number of days being reduced to Julian years, add the result to 552, and the sum gives the day in the Julian year, or old style.

In the ecclesiastical reckoning the year begins on the 11th of August. To reduce a date expressed in this reckoning to the Julian date, add 551 years, and the days elapsed from the 1st of January to the 10th of August, both inclusive, of the year 552—that is to say (since 552 is a leap year), 223 days. In leap years one day must be subtracted if the date falls between the 1st of March and 10th of August.

The following are the Armenian ecclesiastical months with their correspondence with those of the Julian calendar:—

1. Navazardi begins	11th August.
2. Hori	10th September.
3. Sahmi	10th October.
4. Dre Thari	9th November.
5. Kagoths	9th December.
6. Aracz	8th January.
7. Maleg	7th February.
8. Arcki	9th March.
9. Angi	8th April.
10. Mariri	8th May.
11. Marcacz	7th June.
12. Herodiez	7th July.

To complete the year five complementary days are added in common years, and six in leap years.

The Mahommedan Era, or Era of the Hegira.—The era in use among the Turks, Arabs and other Mahommedan nations is that of the *Hegira* or *Hejra*, the flight of the prophet from Mecca to Medina, 622 A.D. Its commencement, however, does not, as is sometimes stated, coincide with the very day of the flight, but precedes it by sixty-eight days. The prophet, after leaving Mecca, to escape the pursuit of his enemies, the Koreishites, hid himself with his friend Abubekr in a cave near Mecca, and there lay for three days. The departure from the cave and setting out on the way to Medina is assigned to the ninth day of the third month, Rabia I.—corresponding to the 22nd of September of the year 622 A.D. The era begins from the first day of the month of Muharram preceding the flight, or first day of that Arabian year which coincides with Friday, July 16, 622 A.D. It is necessary to remember that by astronomers and by some historians the era is assigned to the preceding day, July 15. It is stated by D'Herbelot that the era of the Hegira was instituted by Omar, the second caliph, in imitation of the Christian era of the martyrs.

Era of Yazdegerd, or Persian or Jelalaean Era.—This era begins with the elevation of Yazdegerd III. to the throne of Persia, on the 16th of June in the year of our era 632. Till the year 1079 the Persian year resembled that of the ancient Egyptians, consisting of 365 days without intercalation; but at that time the Persian calendar was reformed by Jelāl ud-Dīn Malik Shah, sultan of Khorasan, and a method of intercalation adopted which, though less convenient, is considerably more accurate than the Julian. The intercalary period is 33 years,—one day being added to the common year seven times successively at the end of four years, and the eighth intercalation being deferred till the end of the fifth year. This era was at one period universally adopted in Persia, and it still continues to be followed by the Parsees of India. The months consist of thirty days each, and each day is distinguished by a different name. According to Alfergani, the names of the Persian months are as follows:—

Afrudin-meh.	Merded-meh.	Adar-meh.
Ardisascht-meh.	Schaharir-meh.	Di-meh.
Cardi-meh.	Mahar-meh.	Behen-meh.
Tir-meh.	Aben-meh.	Affirer-meh.

The five additional days (in intercalary years six) are named *Musteraca*.

As it does not appear that the above-mentioned rule of intercalation was ever regularly followed, it is impossible to assign exactly the days on which the different years begin. In some provinces of India the Parsees begin the year with September, in others they begin it with October. We have stated that the era began with the 16th June 632. But the vague year, which was followed till 1079, anticipated the Julian year by one day every four years. In 447 years the anticipation would amount to about 112 days, and the beginning of the year would in consequence be thrown back to near the beginning of the Julian year 632. To the year of the Persian era, therefore, add 631, and the sum will be the year of our era in which the Persian year begins.

Chinese Chronology.—From the time of the emperor Yao, upwards of 2000 years B.C., the Chinese had two different years,—a civil year, which was regulated by the moon, and an astronomical year, which was solar. The civil year consisted in general of twelve months or lunations, but occasionally a thirteenth was added in order to preserve its correspondence with the solar year. Even at that early period the solar or astronomical year consisted of 365¼ days, like our Julian year; and it was arranged in the same manner, a day being intercalated every fourth year.

According to the missionary Gaubil, the Chinese divided the day into 100 *ke*, each *ke* into 100 minutes, and each minute into 100 seconds. This practice continued to prevail till the 17th century, when, at the instance of the Jesuit Schall, president of the tribunal of mathematics, they adopted the European method of dividing the day into twenty-four hours, each hour into sixty minutes, and each minute into sixty seconds. The civil day begins at midnight and ends at the midnight following.

Since the accession of the emperors of the Han dynasty, 206 B.C., the civil year of the Chinese has begun with the first day of that moon in the course of which the sun enters into the sign of the zodiac which corresponds with our sign Pisces. From the same period also they have employed, in the adjustment of their solar and lunar years, a period of nineteen years, twelve of which are common, containing twelve lunations each, and the remaining seven intercalary, containing thirteen lunations. It is not, however, precisely known how they distributed their months of thirty and twenty-nine days, or, as they termed them, great and small moons. This, with other matters appertaining to the calendar, was probably left to be regulated from time to time by the mathematical tribunal.

The Chinese divide the time of a complete revolution of the sun with regard to the solstitial points into twelve equal portions, each corresponding to thirty days, ten hours, thirty minutes. Each of these periods, which is denominated a *tsëĕ*, is subdivided into two equal portions called *chung-ki* and *tsie-ki*, the *chung-ki* denoting the first half of the *tsëĕ*, and the *tsie-ki* the latter half. Though the *tsëĕ*, are thus strictly portions of solar time, yet what is remarkable, though not peculiar to China, they give their name to the lunar months, each month or lunation having the name of the *chung-ki* or sign at which the sun arrives during that month. As the *tsëĕ* is longer than a synodic revolution of the moon, the sun cannot arrive twice at a *chung-ki* during the same lunation; and as there are only twelve *tsëĕ*, the year can contain only twelve months having different names. It must happen sometimes that in the course of a lunation the sun enters into no new sign; in this case the month is intercalary, and is called by the same name as the preceding month.

For chronological purposes, the Chinese, in common with some other nations of the east of Asia, employ cycles of sixty, by means of which they reckon their days, moons and years. The days are distributed in the calendar into cycles of sixty, in the same manner as ours are distributed into weeks, or cycles of seven. Each day of the cycle has a particular name, and as it is a usual practice, in mentioning dates, to give the name of the day along with that of the moon and the year, this arrangement affords great facilities in verifying the epochs of Chinese chronology. The order of the days in the cycle is never interrupted by any intercalation that may be necessary for adjusting the months or years. The moons of the civil year are also distinguished by their place in the cycle of sixty; and as the intercalary moons are not reckoned, for the reason before stated, namely, that during one of these lunations the sun enters into no new sign, there are only twelve regular moons in a year, so that the cycle is renewed every five years. Thus the first moon of the year 1873 being the first of a new cycle, the first moon of every sixth year, reckoned backwards or forwards from that date, as 1868, 1863, &c., or 1877, 1882, &c., also begins a new lunar cycle of sixty moons. In regard to the years, the arrangement is exactly the same. Each has a distinct number or name which marks its place in the cycle, and as this is generally given in referring to dates, along with the other chronological characters of the year, the ambiguity which arises from following a fluctuating or uncertain epoch is entirely obviated.

The cycle of sixty is formed of two subordinate cycles or series of characters, one of ten and the other of twelve, which are joined together so as to afford sixty different combinations. The names of the characters in the cycle of ten, which are called *celestial* signs, are—

1. Keă; 2. Yĭh; 3. Ping; 4. Ting; 5. Woo;
6. Ke; 7. Kăng; 8. Sin; 9. Jin; 10. Kwei;

and in the series of 12, denominated *terrestrial* signs,

1. Tsze; 2. Chow; 3. Yin; 4. Maou; 5. Shin; 6. Sze;
7. Woo; 8. We; 9. Shin; 10. Yew; 11. Seŭh; 12. Hae.

The name of the first year, or of the first day, in the sexagenary cycle is formed by combining the first words in each of the above series; the second is formed by combining the second of each series, and so on to the tenth. For the next year the first word of the first series is combined with the eleventh of the second, then the second of the first series with the twelfth of the second, after this the third of the first series with the first of the second,

and so on till the sixtieth combination, when the last of the first series concurs with the last of the second. Thus Keă-tsze is the name of the first year, Yĭh-Chow that of the second, Keă-seŭh that of the eleventh, Yĭh-hae that of the twelfth, Ping-tsze that of the thirteenth, and so on. The order of proceeding is obvious.

In the Chinese history translated into the Tatar dialect by order of the emperor K'ang-hi, who died in 1721, the characters of the cycle begin to appear at the year 2357 B.C. From this it has been inferred that the Chinese empire was established previous to that epoch; but it is obviously so easy to extend the cycles backwards indefinitely, that the inference can have very little weight. The characters given to that year 2357 B.C. are Keă-shin, which denote the 41st of the cycle. We must, therefore, suppose the cycle to have begun 2397 B.C., or forty years before the reign of Yao. This is the epoch assumed by the authors of *L'Art de vérifier les dates*. The mathematical tribunal has, however, from time immemorial counted the first year of the first cycle from the eighty-first of Yao, that is to say, from the year 2277 B.C.

Since the year 163 B.C. the Chinese writers have adopted the practice of dating the year from the accession of the reigning emperor. An emperor, on succeeding to the throne, gives a name to the years of his reign. He ordains, for example, that they shall be called Ta-te. In consequence of this edict, the following year is called the first of Ta-te, and the succeeding years the second, third, fourth, &c, of Ta-te, and so on, till it pleases the same emperor or his successor to ordain that the years shall be called by some other appellation. The periods thus formed are called by the Chinese Nien-hao. According to this method of dating the years a new era commences with every reign; and the year corresponding to a Chinese date can only be found when we have before us a catalogue of the Nien-hao, with their relation to the years of our era.

For *Hindu Chronology*, see the article under that heading.

Bibliography.—In addition to the early Greek writings already named, there are the forty books (some fifteen only extant in their entirety) of universal history compiled (about 8 B.C.) by Diodorus Siculus, and arranged in the form of annals; the *Pentabiblos* of Julius Africanus (about 220-230 A.D.); the treatise of Censorinus entitled *De die natali*, written 238 A.D.; the *Chronicon*, in two books, of Eusebius Pamphili, bishop of Caesarea (about 325 A.D.), distinguished as the first book of a purely chronological character which has come down to us; and three important works forming parts of the *Corpus Scriptorum Historiae Byzantinae*, namely, the *Chronographia* of Georgius Syncellus (800 A.D.), the *Chronographia* of Johannes Malalas (9th century), and the *Chronicon Paschale*.

Among works on Chronology, the following, which are arranged in the order of their publication, have an historical interest, as leading up to the epoch of modern research:—

1583. *De Emendatione Temporum*, by Joseph Scaliger, in which were laid the foundations of chronological science.

1603. *Opus Chronologicum*, by Sethus Calvisius.

1627. *De Doctrina Temporum*, by Petavius (Denis Petau), with its continuation published in 1630, and an abridgment entitled *Rationarium Temporum*, in 1633-1634.

1650. *Annales Veteris et Novi Testamenti*, by Archbishop Ussher, whose dates have by some means gained a place in the authorized version of the Bible.

1651. *Regia Epitome Historiae Sacrae et Profanae*, by Philippe Labbe, of which a French version was also published.

1669. *Institutionum Chronologicarum libri duo*, by Bishop Beveridge.

1672. *Chronicus Canon Aegyptiacus, Ebraicus, et Graecus*, by Sir John Marsham.

1687. *L'Antiquité des temps rétablie et défendue*, by Paul Pezron, with its *Defense*, 1691.

1701. *De Veteribus Graecorum Romanorumque Cyclis*, by Henry Dodwell.

1728. *The Chronology of Ancient Kingdoms amended*, by Sir Isaac Newton, remarkable as an attempt to construct a system on new bases, independent of the Greek chronologers.

1738. *Chronologie de l'histoire sainte*, by Alphonse des Vignolles.

1744. *Tablettes chronologiques de l'histoire universelle*, by N. Lenglet-Dufresnoy.

1750. The first edition in one vol. 4to of *L'Art de vérifier les dates*, which in its third edition (1818-1831) appeared in 38 vols. 8vo, a colossal monument of the learning and labours of various members of the Benedictine Congregation of Saint-Maur.

1752. *Chronological Antiquities*, by John Jackson.

1754. *Chronology and History of the World*, by John Blair; new edition, much enlarged (1857).

1784. *A System of Chronology*, by Playfair.

1799. *Handbuch der Geschichte der Staaten des Alterthums*, by A.H.L. Heeren.

1803. *Handbuch der alten Geschichte, Geographie, und Chronologie*, by G.G. Bredow, with his *Historische Tabellen*.

1809-1814. *New Analysis of Chronology*, by William Hales.

1819. *Annales Veterum Regnorum*, by C.G. Zumpt.

1821. *Tableaux historiques, chronologiques, et géographiques*, by Buret de Longchamps.

1824-1834. *Fasti Hellenici*, and 1845-1850, *Fasti Romani*, by H. Fynes Clinton. Epitomes of these elaborate works were published, 1851-1853.

1825-1826. *Handbuch der mathematischen und technischen Chronologie*, by Christian Ludwig Ideler; and his *Lehrbuch der Chronologie*, (1831).

1833. *The Chronology of History*, by Sir Harris Nicolas.

1852. *Fasti Temporis Catholici*, by Edward Greswell; and by the same author (1854), *Origines Kalendariae Italicae*; and 1862, *Origines Kalendariae Hellenicae*.

More modern works are the *Encyclopaedia of Chronology*, by B.B. Woodward and W.L.R. Cates (1872); and J.C. Macdonald's *Chronologies and Calendars* (1897). But see the separate historical articles in this work.

(W. L. R. C.)

CHRUDIM, a town of Bohemia, Austria, 74 m. E.S.E. of Prague by rail. Pop. (1900) 13,017, mostly Czech. It has an important horse market, besides manufactures of sugar, spirits, beer, soda-water and agricultural machinery. There are also steam corn-mills and saw-mills. Chrudim is mentioned as the castle of a *gaugraf* as early as 993. The new town was founded by Ottokar II., who settled many Germans in it and gave it many privileges. After 1421 Chrudim was held by the Hussites, and though Ferdinand I. confiscated most of the town property, it prospered greatly till the outbreak of the Thirty Years' War. In 1625 the greater part of its Hussite inhabitants left the town, which suffered much later on from the Swedes. Chrudim was the birthplace of Joseph Ressel (1793-1857), honoured in Austria as the inventor of the screw propeller.

CHRYSANTHEMUM[1] (*Chrysanthemum sinense*; nat. ord. Compositae), one of the most popular of autumn flowers. It is a native of China, whence it was introduced to Europe. The first chrysanthemum in England was grown at Kew in 1790, whither it had been sent by Mr Cels, a French gardener. It was not, however, till 1825 that the first chrysanthemum exhibition took place in England. The small-flowered pompons, and the grotesque-flowered Japanese sorts, are of comparatively recent date, the former having originated from the Chusan daisy, a variety introduced by Mr Fortune in 1846, and the latter having also been introduced by the same traveller about 1862. The Japanese kinds are unquestionably the most popular for decorative purposes as well as for exhibition. They afford a wide choice in colour, form, habit and times of flowering. The incurved Chinese kinds are severely neat-looking flowers in many shades of colour. The anemone-flowered kinds have long outer or ray petals, the interior or disk petals being short and tubular. These are to be had in many pleasing colours. The pompon kinds are small flowered, the petals being short. The plants are mostly dwarf in habit. In the single varieties the outer or ray florets alone are large and attractively coloured.

Plants for the Border.—As a border plant out of doors the chrysanthemum is of the easiest culture. It is an exceptionally good town plant. By a judicious selection of varieties, flowers

may be produced in abundance and in considerable variety from August to the end of November, and in favourable seasons well on towards Christmas. Since 1890 when the English market was flooded with French raised varieties of exceptional merit, the border chrysanthemum has taken first place among hardy autumn flowering plants. Most of the varieties then introduced have been superseded by many excellent kinds raised in Britain.

Propagation.—The old English method of dividing the plants in March or early April may be followed where better means of propagation are not practicable. Many of the best border varieties are shy in producing new growths (suckers) from the rootstock, and are in consequence not amenable to this method. It is better to raise the plants from cuttings. This may be begun in January for the early flowering sorts, the late kinds being propagated during February and March. They will root quite well in a cold frame, if protected during frosty weather by litter or other similar material. If the frame can be heated at will so as to maintain a fairly even temperature of from 4O° to 50° Fah., roots will be made more quickly and with more certainty. A still better method is to improvise a frame near the glass in a greenhouse, where the temperature is not raised above 50° by artificial heat. This has the advantage of being accessible in all weathers. The bottom of the frame is covered with sifted coal ashes or coco-nut fibre, on which the shallow boxes or pots used in propagating are placed. These are well drained with broken crocks, the bottoms of the boxes being drilled to allow water to pass out quickly. The soil should consist of about equal parts of fibrous loam and leaf-mould, half a part of coarse silver-sand, and about a quart of vegetable ash from the garden refuse heap to each bushel of the compost. The whole should be passed through a quarter inch sieve and thoroughly mixed. The coarse leaf-mould, &c., from the sieve should be spread thinly over the drainage, and the boxes or pots filled almost to the rims with the compost, and covered, if possible, with a thin layer of silver-sand. It should be pressed firmly, watered with a fine rose, and allowed to drain for an hour. The cuttings should then be dibbled into the boxes in rows, just clear, the soil being gently pressed around each. Short stout shoots which arise directly from the rootstock make the best cuttings. In their absence cuttings from the stems are used. The ideal length for a cutting is about 2½ in. Cut the stem squarely with a sharp knife just below a joint, and remove the lower leaves. Insert as soon as possible and water with a fine rose to settle the soil around them. The soil is not allowed to become dry. The cuttings should be looked over daily, decayed leaves removed, and surplus moisture, condensed on the glass, wiped away. Ventilate gradually as rooting takes place, and, when well rooted, transfer singly into pots about 3 in. in diameter, using as compost a mixture of two parts loam, one part leaf-mould, half a part coarse silver-sand, and a gallon of vegetable ash to every bushel of the compost. Return to the frames and keep close for a few days to allow the little plants to recover from the check occasioned by the potting. Ventilation should be gradually increased until the plants are able to bear full exposure during favourable weather, without showing signs of distress by flagging. They should be carefully protected at all times from cold cutting winds. In April, should the weather be favourable, the plants may be transferred to the borders, especially should the positions happen to be sheltered. If this is not practicable, another shift will be necessary, this time into pots about 5 in. in diameter. The soil should be similar to that advised for the previous potting, enriched with half a part of horse manure that has been thoroughly sweetened by exposure. Plant out during May. All borders intended for chrysanthemums should be well dug and manured. The strong growing kinds should be planted about 3 ft. apart, the smaller kinds being allowed a little less room.

In the summer, water in dry weather, syringe in the evenings whenever practicable, and keep the borders free from weeds by surface hoeings; stake and tie the plants as required, and pinch out the tips of the shoots until they have become sufficiently bushy by frequent branching. Pinching should not be practised later than the end of June.

Pot Plants for Decoration.—A list of a few of the thousands of varieties suitable for this purpose would be out of place here; new varieties are being constantly introduced, for these the reader is referred to trade catalogues.

The most important considerations for the beginner are (a) the choice of colours; (b) the types of flowers; (c) the height and habits of the varieties. Generally speaking, very tall varieties and those of weak growth and delicate constitutions should be avoided. The majority of the varieties listed for exhibition purposes are also suitable for decoration, especially the Japanese kinds. Propagation and early culture are substantially as for border plants.

As soon as the 5-in. pots are filled with roots, no time should be lost in giving them the final shift. Eight-in. pots are large enough for the general stock, but very strong growers may be given a larger size. The soil, prepared a fortnight in advance, should consist of four parts fibrous loam, one part leaf-mould, one part horse manure prepared as advised above, half a part coarse silver-sand, half a part of vegetable ash, and a quart of bone-meal or a sprinkling of basic slag to every bushel of the mixture. Mix thoroughly and turn over at

intervals of three or four days. Pot firmly, working the soil well around the roots with a lath. The main stake for the support of the plant should now be given; other and smaller stakes may later be necessary when the plants are grown in a bushy form, but their number should not be overdone. The stakes should be as few as possible consistent with the safety of the shoots, which should be looped up loosely and neatly. The plants should be placed in their summer quarters directly after potting. Stand them in rows in a sunny situation, the pots clear of one another, sufficient room being allowed between the rows for the cultivator to move freely among them. The main stakes are tied to rough trellis made by straining wire in two rows about 2 ft. apart between upright poles driven into the ground. Coarse coal ashes or coke breeze are the best materials to stand the pots on, there being little risk of worms working through into the pots. The plants, which are required to produce as many flowers as possible, should have their tips pinched out at frequent intervals, from the end of March or beginning of April to the last week in June, for the main season kinds; and about the middle of July for the later kinds.

Towards the end of July the plants will need feeding at the roots with weak liquid manure, varied occasionally by a very slight dusting of soluble chemical manure such as guano. The soil should be moderately moist when manure is given. In order that the flowers may be of good form, all lateral flower buds should be removed as soon as they are large enough to handle, leaving only the bud terminating each shoot. Towards the end of September—earlier should the weather prove wet and cold—remove the plants to well-ventilated greenhouses where they are intended to flower. Feeding should be continued until the flowers are nearly half open, when it may be gradually reduced. The large mop-headed blooms seen at exhibitions in November are grown in the way described, but only one or two shoots are allowed to develop on a plant, each shoot eventually having only one bloom.

The chrysanthemum is subject to the attack of black aphis and green-fly. These pests may be destroyed, out of doors, by syringing with quassia and soft soap solutions, by dusting the affected parts with tobacco-powder, and indoors also by fumigating. Mildew generally appears after the plants are housed. It may be destroyed by dusting the leaves attacked with sublimed sulphur. Rust is a fungoid disease of recent years. It is best checked by syringing the plants with liver of sulphur (1 oz. to 3 gallons of water) occasionally, a few weeks before taking the plants into the greenhouse. Earwigs and slugs must be trapped and destroyed.

Flowers for Exhibition.—Flowers of exhibition standard must be as broad and as deep as the various varieties are capable of producing; they must be irreproachable in colour. They must also exhibit the form peculiar to the variety when at its best, very few kinds being precisely alike in this respect. New varieties are introduced in large numbers annually, some of which supplant the older kinds. The cultivator must therefore study the peculiarities of several new kinds each year if he would be a successful exhibitor.

For lists of varieties, &c. see the catalogues of chrysanthemum growers, the gardening Press, and the excellent cultural pamphlets which are published from time to time.

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1 The Gr. χρυσάνθεμον (χρυσός, gold, and ἄνθεμον, flower) was the herbalists' name for *C. segetum*, the "corn marigold," with its yellow bloom, and was transferred by Linnaeus to the genus, being commonly restricted now to the species *C. sinense*.

CHRYSANTHIUS, a Greek philosopher of the 4th century A.D., of the school of Iamblichus. He was one of the favourite pupils of Aedesius, and devoted himself mainly to the mystical side of Neoplatonism (*q.v.*). The emperor Julian (*q.v.*) went to him by the advice of Aedesius, and subsequently invited him to come to court, and assist in the projected resuscitation of Hellenism. But Chrysanthius declined on the strength of unfavourable omens, as he said, but probably because he realized that the scheme was unlikely to bear fruit. For the same reason he abstained from drastic religious reforms in his capacity as high-priest of Lydia. As a result of his moderation, he remained high-priest till his death, venerated alike by Christians and pagans. His wife Melite, who was associated with him in the priestly office, was a kinswoman of Eunapius the biographer.

CHRYSELEPHANTINE (Gr. χρυσός, gold, and ἐλέφας, ivory), the architectural term given to statues which were built up on a wooden core, with ivory representing the flesh and gold the drapery. The two most celebrated examples are those by Pheidias of the statue of Athena in the Parthenon and of Zeus in the temple at Olympia.

CHRYSENE $C_{18}H_{12}$, a hydrocarbon occurring in the high boiling fraction of the coal tar distillate. It is produced in small quantity in the distillation of amber, on passing the vapour of phenyl-naphthyl-methane through a red-hot tube, on heating indene, or by passing the mixed vapours of coumarone and naphthalene through a red-hot tube. It crystallizes in plates or octahedra (from benzene), which exhibit a violet fluorescence, and melt at 250°C. Chromic acid in glacial acetic acid solution oxidizes it to chrysoquinone $C_{18}H_{10}O_2$, which when distilled with lead oxide gives chrysoketone $C_{17}H_{10}O$. When chrysene is fused with alkalis, chrysenic acid, $C_{17}H_{12}O_3$, is produced, which on heating gives β-phenyl-naphthalene. On heating chrysene with hydriodic acid and red phosphorus to 260°C, the hydro-derivatives $C_{18}H_{28}$ and $C_{18}H_{30}$ are produced. It gives characteristic addition products with picric acid and dinitroanthraquinone. Impure chrysene is of a yellow colour; hence its name (χρύσεος, golden yellow).

CHRYSIPPUS (c. 280-206 B.C.), Greek philosopher, the third great leader of the Stoics. A native of Soli in Cilicia (Diog. Laert. vii. 179), he was robbed of his property and came to Athens, where he studied possibly under Zeno, certainly under Cleanthes. It is said also that he became a pupil of Arcesilaus and Lacydes, heads of the Middle Academy. This impartiality in his early studies is the key of his philosophic work, the dominant characteristic of which is comprehensiveness rather than originality. He took the doctrines of Zeno and Cleanthes and crystallized them into a definite system; he further defended them against the attacks of the Academy. His polemic skill earned for him the title of the "Column of the Portico." Diogenes Laertius says, "If the gods use dialectic, they can use none other than that of Chrysippus"; εἰ μὴ γὰρ ἦν Χρύσιππός, οὐκ ἂν ἦν Στοά ("Without Chrysippus, there had been no Porch"). He excelled in logic, the theory of knowledge, ethics and physics. His relations with Cleanthes, contemporaneously criticized by Antipater, are considered under STOICS. He is said to have composed seven hundred and fifty treatises, fragments alone of which survive. Their style, we are told, was unpolished and arid in the extreme, while the argument was lucid and impartial.

See G.H. Hagedorn, *Moralia Chrysippea* (1685), *Ethica Chrysippi* (1715); J.F. Richter, *De Chrysippo Stoico fastuoso* (1738); F. Baguet, *De Chrysippi vita doctrina et reliquiis* (1822); C. Petersen, *Philosophiae Chrysippeae fundamenta* (1827); A. Gercke, "Chrysippea" in *Jahrbücher für Philologie*, suppl. vol. xiv. (1885); R. Nicolai, *De logicis Chrysippi libris* (1859); Christos Aronis, Χρύσιππος γραμματικος (1885); R. Hirzel, *Untersuchungen zu Ciceros philosophischen Schriften*, ii. (1882); L. Stein, *Die Psychologie der Stoa* (1886); A.B. Krische, *Forschungen auf dem Gebiete der alten Philosophie* (1840); J.E. Sandys, *Hist. Class. Schol.* i. 149.

CHRYSOBERYL, a yellow or green gem-stone, remarkable for its hardness, being exceeded in this respect only by the diamond and corundum. The name suggests that it was formerly regarded as a golden variety of beryl; and it is notable that though differing widely from beryl it yet bears some relationship to it inasmuch as it contains the element beryllium. In chrysoberyl, however, the beryllium exists as an aluminate, having the formula $BeAl_2O_4$, or $BeO{\cdot}Al_2O_3$. The analysis of a specimen of Brazilian chrysoberyl gave alumina 78.10,

beryllia 17.94, and ferric oxide 4.88%. The typical yellow colour of the stone inclines in many cases to pale green, occasionally passing into shades of dark green and brown. The iron usually present in the mineral seems responsible for the green colour. Chrysoberyl is often mistaken by its colour for chrysolite (*q.v.*), and has indeed been termed Oriental chrysolite. In its crystalline forms it bears some relationship to chrysolite, both crystallizing in the orthorhombic system, but it is a much harder and a denser mineral. As the two stones are apt to be confounded, it may be convenient to contrast their chief characters:—

	Chrysoberyl.	Chrysolite.
Hardness	8.5	6.5 to 7
Specific Gravity	3.65 to 3.75	3.34 to 3.37
Chemical Composition	$BeAl_2O_4$.	Mg_2SiO_4.

Chrysoberyl is not infrequently cloudy, opalescent and chatoyant, and is then known as “cymophane” (Gr. κῦμα, a “cloud”). The cloudiness is referable to the presence of multitudes of microscopic cavities. Some of the cymophane, when cut with a convex surface, forms the most valuable kind of cat’s-eye (see CAT’S-EYE). A remarkable dichroic variety of chrysoberyl is known as alexandrite (*q.v.*).

Most chrysoberyl comes from Brazil, chiefly from the district of Minas Novas in the state of Minas Geraes, where it occurs as small water-worn pebbles. The cymophane is mostly from the gem-gravels of Ceylon. Chrysoberyl is known as a constituent of certain kinds of granite, pegmatite and gneiss. In the United States it occurs at Haddam, Conn.; Greenfield Centre, near Saratoga Springs, N.Y.; and in Manhattan island. It is known also in the province of Quebec, Canada, and has been found near Gwelo in Rhodesia.

(F. W. R.*)

CHRYSOCOLLA, a hydrous copper silicate occurring as a decomposition product of copper ores. It is never found as crystals, but always as encrusting and botryoidal masses with a microcrystalline structure. It is green or bluish-green in colour, and often has the appearance of opal or enamel, being translucent and having a conchoidal fracture with vitreous lustre; sometimes it is earthy in texture. Not being a definite crystallized substance, it varies widely in chemical composition, the copper oxide (CuO), for example, varying in different analyses from 17 to 67%; the formula is usually given as $CuSiO_3 + 2H_2O$. The hardness (2-4) and specific gravity (2.0-2.8) are also variable. It has recently been suggested that the material may really be a mixture of more than one hydrous copper silicate, since differences in the microcrystalline structure of the different concentric layers of which the masses are built up may be detected. Various impurities (silica, &c.) are also commonly present, and several varieties have been distinguished by special names: thus dillenburgite, from Dillenburg in Nassau, contains copper carbonate; demidoffite and cyanochalcite contain copper phosphate; and pilarite contains alumina (perhaps as allophane). The mineral occurs in the upper parts of veins of copper ores, and has resulted from their alteration by the action of waters containing silica in solution. Pseudomorphs of chrysocolla after various copper minerals (*e.g.* cuprite) are not uncommon. It is found in most copper mines.

The name chrysocolla (from χρυσός, gold, and κολλα, glue) was applied by Theophrastus and other ancient writers to materials used in soldering gold, one of which, from the island of Cyprus, may have been identical with the mineral now known by this name. Borax, which is used for this purpose, has also been called chrysocolla.

A mineral known as pitchy copper-ore (Ger. *Kupferpecherz*), and of some importance as an ore of copper, is usually classed as a variety of chrysocolla containing much admixed limonite. It is dark brown to black in colour, with a dull to glassy or resinous lustre, and resembles pitch in appearance. In thin sections it is translucent and optically isotropic, and recent examinations seem to prove that it is a homogeneous mineral and not a mechanical mixture of chrysocolla and limonite.

(L. J. S.)

CHRYSOLITE, a transparent variety of olivine, used as a gem-stone and often called peridot. The name chrysolite, meaning “golden stone” (χρυσός and λίθος), has been applied to various yellowish gems, notably to topaz, to some kinds of beryl and to chrysoberyl. The true chrysolite of the modern mineralogist is a magnesium silicate, referable to the species olivine. It is appropriate to call the lighter coloured stones inclining to yellow chrysolite, and the darker green stones peridot. Certain kinds of topaz, from the Schneckenstein in Saxony, are known as Saxon chrysolite; while moldavite, a substance much like a green obsidian, is sometimes called water chrysolite or pseudo-chrysolite.

See Chrysoberyl; Olivine; Peridot.

CHRYSOLORAS, MANUEL [or Emmanuel] (c. 1355-1415), one of the pioneers in spreading Greek literature in the West, was born at Constantinople of a distinguished family, which had removed with Constantine the Great to Byzantium. He was a pupil of Gemistus (*q.v.*). In 1393 he was sent to Italy by the emperor Manuel Palaeologus to implore the aid of the Christian princes against the Turks. He returned to Constantinople, but at the invitation of the magistrates of Florence he became about 1395 professor of the Greek language in that city, where he taught three years. He became famous as a translator of Homer and Plato. Having visited Milan and Pavia, and resided for several years at Venice, he went to Rome upon the invitation of Bruni Leonardo, who had been his pupil, and was then secretary to Gregory XII. In 1408 he was sent to Paris on an important mission from the emperor Manuel Palaeologus. In 1413 he went to Germany on an embassy to the emperor Sigismund, the object of which was to fix a place for the assembling of a general council. It was decided that the meeting should take place at Constance; and Chrysoloras was on his way thither, having been chosen to represent the Greek Church, when he died suddenly on the 15th of April 1415. Only two of his works have been printed, his *Erotemata* (published at Venice in 1484), which was the first Greek grammar in use in the West, and *Epistolae III. de comparatione veteris et novae Romae*.

John Chrysoloras, a relative of the above (variously described as his nephew, brother or son), who, like him, had studied and taught at Constantinople, and had then gone to Italy, shared Manuel’s reputation as one of those who spread the influence of Greek letters in the West. His daughter married Filelfo (*q.v.*).

CHRYSOPRASE (Gr. χρυσός, gold, and πράσον, leek), a name applied by modern mineralogists to an apple-green variety of chalcedony or hornstone, used as an ornamental stone. The colour is due to the presence of nickel, probably in the form of a hydrous silicate. By exposure to a moderate heat, or to strong light, the chrysoprase becomes paler, or even colourless, but it may regain its colour by absorption of moisture. Chrysoprase is a mineral of rather limited distribution. Most of it comes from the neighbourhood of Frankenstein in Silesia, where it occurs in association with altered serpentine. It is found to a limited extent at Revdinsk, near Ekaterinburg, in the Urals; and it occurs also in India. It is known, too, at several localities in North America, notably at Nickel Mount, Douglas county, Oregon, where it occurs in nickeliferous serpentine.

The chrysoprase of the moderns is certainly not the *chrysoprasius* of Pliny, or the χρυσόπρασος of Greek writers. The ancient stone was not improbably our chrysoberyl, and it is doubtful whether the modern chrysoprase was known until a comparatively late period. The chrysoprase of Kosemütz, near Frankenstein in Silesia, was discovered in 1740, and used by Frederick the Great in the decoration of the palace of Sans Souci at Potsdam. But at a much earlier date the Silesian chrysoprase was used for mural decoration at the Wenzel chapel at Prague. Chrysoprase was a favourite stone in England at the beginning of the 19th century, being set round with small brilliants and used for brooches and rings. At the present time it is said to be regarded by some as a “lucky stone.” Much commercial chrysoprase is chalcedony artificially stained by impregnation with a green salt of nickel.

(F. W. R.*)

CHRYSOSTOM. St John Chrysostom (Χρυσόστομος, golden-mouthed), the most famous of the Greek Fathers, was born of a noble family at Antioch, the capital of Syria, about A.D. 345 or 347. At the school of Libanius the sophist he gave early indications of his mental powers, and would have been the successor of his heathen master, had he not been stolen away, to use the expression of his teacher, to a life of piety (like Augustine, Gregory of Nazianzus, and Theodoret) by the influence of his pious mother Anthusa. After his baptism (about 370) by Meletius, the bishop of Antioch, he gave up all his forensic prospects, and buried himself in an adjacent desert, where for nearly ten years he spent a life of ascetic self-denial and theological study, to which he was introduced by Diodorus, bishop of Tarsus, a famous scholar of the Antiochene type. Illness, however, compelled him to return to the world; and the authority of Meletius gained his services to the church. He was ordained deacon in his thirty-fifth year (381), and afterwards presbyter (386) at Antioch. On the death of Nectarius he was appointed archbishop of Constantinople by Eutropius, the favourite minister of the emperor Arcadius. He had, ten years before this, only escaped promotion to the episcopate by a very questionable stratagem—which, however, he defends in his instructive and eloquent treatise *De Sacerdotio*. As a presbyter, he won high reputation by his preaching at Antioch, more especially by his homilies on *The Statues*, a course of sermons delivered when the citizens were justly alarmed at the prospect of severe measures being taken against them by the emperor Theodosius, whose statues had been demolished in a riot.

On the archiepiscopal throne Chrysostom still persevered in the practice of monastic simplicity. The ample revenues which his predecessors had consumed in pomp and luxury he diligently applied to the establishment of hospitals; and the multitudes who were supported by his charity preferred the eloquent discourses of their benefactor to the amusements of the theatre or of the circus. His homilies, which are still preserved, furnish ample apology for the partiality of the people, exhibiting the free command of a pure and copious vocabulary, an inexhaustible fund of metaphors and similitudes, giving variety and grace to the most familiar topics, with an almost dramatic exposure of the folly and turpitude of vice, and a deep moral earnestness. His zeal as a bishop and eloquence as a preacher, however, gained him enemies both in the church and at the court. The ecclesiastics who were parted at his command from the lay-sisters (whom they kept ostensibly as servants), the thirteen bishops whom he deposed for simony and licentiousness at a single visitation, the idle monks who thronged the avenues to the court and found themselves the public object of his scorn—all conspired against the powerful author of their wrongs. Their resentment was inflamed by a powerful party, embracing the magistrates, the ministers, the favourite eunuchs, the ladies of the court, and Eudoxia the empress herself, against whom the preacher thundered daily from the pulpit of St Sophia. A favourable pretext for gratifying their revenge was discovered in the shelter which Chrysostom had given to four Nitrian monks, known as the tall brothers, who had come to Constantinople on being excommunicated by their bishop, Theophilus of Alexandria, a man who had long circulated in the East the charge of Origenism against Chrysostom. By Theophilus's instrumentality a synod was called to try or rather to condemn the archbishop; but fearing the violence of the mob in the metropolis, who idolized him for the fearlessness with which he exposed the vices of their superiors, it held its sessions at the imperial estate named "The Oak" (*Synodus ad quercum*), near Chalcedon, where Rufinus had erected a stately church and monastery. A bishop and a deacon were sent to accuse the archbishop, and presented to him a list of charges, in which pride, inhospitality and Origenism were brought forward to procure the votes of those who hated him for his austerity, or were prejudiced against him as a suspected heretic. Four successive summonses were signified to Chrysostom, but he indignantly refused to appear until four of his notorious enemies were removed from the council. Without entering into any examination of the charges brought before them, the synod condemned him on the ground of contumacy, and, hinting that his audacity merited the punishment of treason, called on the emperor to ratify and enforce their decision. He was immediately arrested and hurried to Nicaea in Bithynia.

As soon as the news of his banishment spread through the city, the astonishment of the people was quickly exchanged for a spirit of irresistible fury, which was increased by the occurrence of an earthquake. In crowds they besieged the palace, and had already begun to take vengeance on the foreign monks and sailors who had come from Chalcedon to the metropolis, when, at the entreaty of Eudoxia, the emperor consented to his recall. His return was graced with all the pomp of a triumphal entry, but in two months after he was again in

exile. His fiery zeal could not blind him to the vices of the court, and heedless of personal danger he thundered against the profane honours that were addressed almost within the precincts of St Sophia to the statue of the empress. The haughty spirit of Eudoxia was inflamed by the report of a discourse commencing with the words—"Herodias is again furious; Herodias again dances; she once more demands the head of John"; and though the report was false, it sealed the doom of the archbishop. A new council was summoned, more numerous and more subservient to the wishes of Theophilus; and troops of barbarians were quartered in the city to overawe the people. Without examining it, the council confirmed the former sentence, and, in accordance with canon 12 of the Synod of Antioch (341), pronounced his deposition for having resumed his functions without their permission.

He was hurried away to the desolate town of Cucusus (Cocysus), among the ridges of Mount Taurus, with a secret hope, perhaps, that he might be a victim to the Isaurians on the march, or to the more implacable fury of the monks. He arrived at his destination in safety; and the sympathies of the people, which had roused them to fire the cathedral and senate-house on the day of his exile, followed him to his obscure retreat. His influence also became more powerfully felt in the metropolis than before. In his solitude he had ample leisure for forming schemes of missionary enterprise among Persians and Goths, and by his correspondence with the different churches he at once baffled his enemies and gave greater energy to his friends. This roused the emperor to visit him with a severer punishment, though Innocent I. of Rome and the emperor Honorius recognized his orthodoxy and besought his return. An order was despatched for his removal to the extreme desert of Pityus; and his guards so faithfully obeyed their instructions that, before he reached the sea-coast of the Euxine, he expired at Comana in Pontus, in the year 407. His exile gave rise to a schism in the church, and the Johannists (as they were called) did not return to communion with the archbishop of Constantinople till the relics of the saint were, 30 years after, brought back to the Eastern metropolis with great pomp and the emperor publicly implored forgiveness from Heaven for the guilt of his ancestors. The festival of St Chrysostom is kept in the Greek Church on the 13th of November, and in the Latin Church on the 27th of January.

In his general teaching Chrysostom elevates the ascetic element in religion, and in his homilies he inculcates the need of personal acquaintance with the Scriptures, and denounces ignorance of them as the source of all heresy. If on one or two points, as, for instance, the invocation of saints, some germs of subsequent Roman teaching may be discovered, there is a want of anything like the doctrine of indulgences or of compulsory private confession. Moreover, in writing to Innocent, bishop of Rome, he addresses him as a brother metropolitan, and sends the same letter to Venerius, bishop of Milan, and Chromatius, bishop of Aquileia. His correspondence breathes a most Christian spirit, especially in its tone of charity towards his persecutors. In exegesis he is a pure Antiochene, basing his expositions upon thorough grammatical study, and proceeding from a knowledge of the original circumstances of composition to a forceful and practical application to the needs of his day and of all time. With his exegetical skill (he was inferior in pure dogma to Theodore of Mopsuestia) he united a wide sympathy and a marvellous power of oratory.

The voluminous works of Chrysostom fall into three groups. To the days of his early desert life is probably to be assigned the treatise *On Priesthood*, a book full of wise counsel. To the years of his presbyterate and episcopate belong the great mass of homilies and commentaries, among which those *On the Statues*, and on *Matthew*, *Romans* and *Corinthians*, stand out pre-eminently. His letters belong to the last years, the time of exile, and with his other works are valuable sources for the history of his time.

The manuscripts are very numerous, and many of them are of great antiquity, as are the Syriac and other translations. The best edition is that of Bernard de Montfaucon in 13 vols. fol. (1718-1738), reproduced with some improvements by Migne (*Patrol. Graec.* xlvii.-lxiv.); but this edition is greatly indebted to the one issued more than a century earlier (1612) by Sir Henry Savile, provost of Eton College, from a press established at Eton by himself, which Hallam (*Lit. of Europe*, iii. 10, 11) calls "the first work of learning, on a great scale, published in England." F. Field admirably edited *S. Matthew* (Cambridge, 1839) and *Epistles of S. Paul* (Oxford, 1849-1855). J.A. Bengel's edition of *De Sacerdotio* (1725) has been often reprinted (*e.g.* Leipzig, 1887).

As authorities for the life, the most valuable are the ecclesiastical histories of Socrates, Sozomen and Theodoret; and amongst the moderns, Erasmus, Cave, Lardner and Tillemont, with the church history of Neander, and his monograph on the *Life and Times of Chrysostom*, translated by J.C. Stapleton. More recent are the lives by W.R.W. Stephens (London, 1871), R.W. Bush (London, 1885) and A. Peuch (Paris, 1891). F.W. Farrar's

romance *Gathering Clouds* gives a good picture of the man and his times. For monographs on special points such as Chrysostom's theological position and his preaching, see the very full bibliography in E. Preuschen's article in Herzog-Hauck's *Realencyk.* iv.; also A. Harnack, *Hist. of Dogma*, iii. and iv. Some of the commentaries and homilies are translated in the Oxford Library of the Fathers.

CHUB (*Leuciscus cephalus*), a fish of the Cyprinid family, belonging to the same genus as the roach and dace. It is one of the largest of its family, attaining a length of 2 ft. and a weight of 5 to 7 lb. It does not avoid running waters, and is fond of insects, taking the fly readily, but its flesh, like that of the other *Leucisci*, is tasteless and full of bones. It is common in Great Britain and the continent of Europe. In America the name of "chub" is given to some other members of the family, and commonly to the horned dace (*Semnotilus atromaculatus*); well-known varieties are the river chub (*Hybopsis kentuckiensis*) and Columbia river chub (*Mylochilus caurinus*).

CHUBB, CHARLES (d. 1845), English locksmith, started a hardware business at Winchester, subsequently removing to Portsea. Here he improved on the "detector" lock (*q.v.*), originally patented in 1818 by his brother, Jeremiah Chubb. He soon moved to London and then to Wolverhampton, where he employed two hundred hands. In 1835 he patented a process intended to render safes (*q.v.*) burglar-proof and fireproof, and subsequently established a large safe-factory in London. He died on the 16th of May 1845, and was succeeded in the business by his son, John Chubb (1816-1872), who patented various improvements in the products of the firm and largely increased its output. The factories were combined under one roof in a model plant, and the business grew to enormous proportions. After John Chubb's death the business was converted into a limited company under the management of his three sons.

CHUBB, THOMAS (1670-1746), English deist, the son of a maltster, was born at East Harnham, near Salisbury, on the 29th of September 1679. The death of his father (1688) cut short his education, and in 1694 he was apprenticed to a glove-maker in Salisbury, but subsequently entered the employment of a tallow-chandler. He picked up a fair knowledge of mathematics and geography, but theology was his favourite study. His habit of committing his thoughts to writing gave him a clear and fluent style. He made his first appearance as an author in the Arian controversy. A dispute having arisen about Whiston's argument in favour of the supremacy of the one God and Father, he wrote an essay, *The Supremacy of the Father Asserted*, which Whiston pronounced worthy of publication, and it was printed in 1715. A number of tracts followed, which were collected in 1730. For several years Chubb lived in the house of Sir Joseph Jekyll, master of the rolls, in what capacity it is not known; there are stories of his having waited at table as a servant out of livery. His love of independence drew him back to Salisbury, where by the kindness of friends he was enabled to devote the rest of his days to his studies. He died on the 8th of February 1746. Chubb is interesting mainly as showing that the rationalism of the intellectual classes had taken considerable hold upon the popular mind. Though he acquired little renown in England he was regarded by Voltaire and others as among the most logical of the deist school (see Deism). His principal works are *A Discourse Concerning Reason* (1731), *The True Gospel of Jesus Christ* (1739), and *Posthumous Works*, 2 vols. (1748), the last containing "The Author's Farewell to his Readers."

CHUBUT, a territory of the southern Argentine Republic, part of what was formerly called Patagonia, bounded N. by Rio Negro, S. by Santa Cruz, E. by the Atlantic and W. by Chile. Pop. (1895) 3748; (1904, estimate) 9060; area, 93,427 sq. m. Except for the valleys in the Andean foothills, which are fertile and well forested, and the land along the banks of the Chubut river, which flows entirely across the territory from the Andes to the Atlantic, the country is a barren waste, covered with pebbles and scanty clumps of dwarfed vegetation, with occasional shallow saline lakes. The larger rivers are the Chubut and the Senguerr, the latter flowing into Lake Colhuapi. There are a number of large lakes among the Andean foothills, the best known of which are Fontana, La Plata and General Paz, and, in the interior, Colhuapi or Colhué and Musters, the latter named after the English naval officer who traversed Patagonia in 1870. Petroleum was found at Comodoro Rivadavia, in the S. part of the territory, toward the close of 1907, at a depth of 1768 ft. Chubut is known chiefly by the Welsh colony near the mouth of the Chubut river. The chief town of the Welsh, Rawson, is the capital of the territory, and Port Madryn on Bahia Nueva is its best port. Other colonies have been founded in the fertile valleys of the Andean foothills, but their growth is greatly impeded by lack of transportation facilities. (See further PATAGONIA.)

CHUDE, a tribal name used in both a special and a general sense. (1) It was the name given by the Russians to certain Esthonian tribes with whom they came in contact as they spread gradually over their present empire. It would seem that the northern Chudes are the Vepsas, of whom about 21,000 are said to live near Lake Onega and in the northern parts of the government of Novgorod, and that the southern Chudes are the Votes who occupy about thirty parishes in north-west Ingria. (2) As the Russians advanced eastwards they extended the name to various tribes whom they considered to be like the Esthonians, and in popular use it has come to be applied to any ancient non-Russian people in Siberia, at least as far east as the Altai. In particular, ancient mines, tumuli and the metal work often found in them are commonly known as Chudish. Some investigators have used the word in a more restricted sense of Permian antiquities and their builders, but it seems to be a popular expression not corresponding to any historical or scientific division of mankind.

CHUGUYEV, a town of Russia, in the government of Kharkov, 25 m. E.S.E. of the town of Kharkov, on the right bank of the northern Donets. It is a place of some strategic importance, and had in 1897 a population of 11,877.

CHUKCHI, CHANKTUS (“Men”) or TUSKI (“Brothers” or “Confederates”), a Mongoloid people inhabiting the northeasternmost portion of Siberia on the shores of the Arctic Ocean and Bering Sea. They are settled in small groups along the Arctic coast between the Bering Straits and the Kolyma river, or wander as far inland as the Anadyr basin. Though their territory embraces some 300,000 odd sq. m., the most trustworthy estimates put their numbers at but a few thousands. They were first carefully studied by the members of the Nordenskjöld expedition (1878-79), who describe them as tall, lean, with somewhat irregular features—hence de Quatrefages classes them as “Allophylian Whites.” The accounts of their physical characteristics are somewhat confused owing to the presence of the true Eskimo in the Chukchi domain. The typical Chukchi is round-headed, and thus distinct from the long-headed Eskimo, with broad, flat features and high cheek-bones. The nose is often so buried between the puffed cheeks that a ruler might be laid across the face without touching it. The lips are thick, and the brow low. The hair is coarse, lank and black. The general muscular development is good, though usually the body is stunted. It has been suggested that they emigrated from the south, possibly from the Amur basin. In their arctic homes they long

carried on war with the Ongkilon (Ang-kali) aborigines, gradually merging with the survivors and also mixing both with the Kùsmen Koryaks (*q.v.*) and the Chuklukmuit Eskimo settled on the Asiatic side of Bering Strait. Their racial characteristics make them an ethnological link between the Mongols of central Asia and the Indians of America. Some authorities affiliate them to the Eskimo because they are believed to speak an Eskimo dialect. But this is merely a trade jargon, a hotchpotch of Eskimo, Chukchi, Koryak, English and even Hawaiian. The true Chukchi language, of which Nordenskjöld collected a thousand words, is distinct from Eskimo and akin to Koryak, and Nordenskjöld sums the problem up with the remark—"this race settled on the primeval route between the Old and New World bears an unmistakable stamp of the Mongols of Asia and the Eskimo and Indians of America."

The Chukchi are divided into the "Fishing Chukchi," who have settled homes on the coast, and the "Reindeer Chukchi," who are nomads. The latter breed reindeer (herds of more than 10,000 are not uncommon), live on the flesh and milk, and are generally fairly prosperous; while the fishing folk are very poor, begging from their richer kinsfolk hides to make tents and clothes. The Chukchi were formerly warlike and vigorously resisted the Russians, but to-day they are the most peaceable of folks, amiable in their manners, affectionate in family life and good-humoured. But this gentleness does not prevent them from killing off the old and infirm. They believe in a future life, but only for those who die a violent death. Thus it is regarded as an act of filial piety for a son to kill his parent or a nephew his uncle. This tribal custom is known as *kamitok*; and of it Mr Harry de Windt writes (*Through the Gold Fields of Alaska to Bering Strait*, 1898), "The doomed one takes a lively interest in the proceedings, and often assists in the preparation for his own death. The execution is always preceded by a feast, where seal and walrus meat are greedily devoured, and whisky consumed till all are intoxicated. A spontaneous burst of singing and the muffled roll of walrus-hide drums then herald the fatal moment. At a given signal a ring is formed by the relations and friends, the entire settlement looking on from the background. The executioner (usually the victim's son or brother) then steps forward, and placing his right foot behind the back of the condemned, slowly strangles him to death with a walrus thong. A *kamitok* took place during the latter part of our stay." The Chukchi are nominally Christians, but sacrifice animals to the spirits of the rivers and mountains, and also practise Shamanism. In personal habits the people are indescribably filthy. They are polygamous, but the women are treated kindly. The children are specially petted, and are so wrapped up to protect them from the cold that they have been described as resembling huge balls crossed by a bar, their arms having to remain outstretched owing to the bulk of their wrappings. Chukchi women are often tattooed with two black-blue convex lines running from the eye to the chin. Since their adoption of Christianity the men sometimes have a Latin cross tattooed on their chins. The Chukchi burn their dead or expose them on platforms to be devoured by ravens.

See Harry de Windt, *Through the Gold Fields of Alaska to Bering Strait* (1898); Dittmar, "Über die Koriaken u. ihnen nahe verwandten Tchouktchen," in *Bul. Acad. Sc.* (St Petersburg), xii. p. 99; Hooper, *Ten Months among the Tents of the Tuski*; W.H. Dall, *Contributions to North American Ethnology*, vol. i. (1877).

CHULALONGKORN, PHRA PARAMINDR MAHA (1853-1910), king of Siam, eldest son of King Maha Mongkut, was born on the 21st of September 1853. His full signature, used in all important state documents, consists of twenty-seven names, but it is by the first four that he is usually known. Educated in his childhood by English teachers, he acquired a good knowledge of the English language and of Western culture. But his surroundings were purely oriental, and his boyhood was spent, according to custom, in a Buddhist monastery. He succeeded to the throne on the death of his father, 1st October 1868, and was crowned on the 11th of November following, a ceremony marked by the innovation of permitting the presence of Europeans. Until his majority in 1873 the government was carried on by a regent, the young king retiring to a Buddhist monastery, and later making a tour through India and the Dutch East Indies, an undertaking until then without precedent among the potentates of eastern Asia. He had no sooner taken the reins of power than he gave evidence of his recognition of the importance of modern culture by abolishing slavery in Siam. He simplified court etiquette, no longer demanding, for example, that his subjects should approach him on hands and knees. Still more important, in view of the numerous races and creeds included among his subjects, was the proclamation of liberty of conscience. This was

followed by the erection of schools and hospitals, the construction of roads and railways, and the further development of the army and fleet which his father had initiated. To him Siam is indebted for its standard coinage, its postal and telegraph service, and for the policing, sanitation and electric-lighting of Bangkok. Several of his sons, including the crown prince, were educated in England, and in the summer of 1897 he himself visited England, arriving at Portsmouth in his yacht on the 29th of July. On the 4th of August he was received by Queen Victoria at Osborne. After a tour in Great Britain he proceeded to Berlin, Brussels, and the Hague and Paris. (See also Siam.)

CHUMBI VALLEY, a valley connecting Tibet (*q.v.*) with the frontier of British India. Lying on the southern slopes of the Himalayas at an altitude of about 9500 ft. above the sea, the valley is wedged in between Bhutan and Sikkim, and does not belong geographically but only politically to Tibet. This was the route by which the British mission of 1904 advanced. Before the date of that expedition the valley had acquired a reputation for beauty and fertility, which was subsequently found to be only comparative in relation to the barrenness of the rest of the Tibetan frontier. The summer months, though not hot, are relaxing and enervating.

CHUNAR, or Chunarghur, a town and ancient fortress of India, in the district of Mirzapur, in the United Provinces, situated on the south bank of the Ganges. Pop. (1901) 9926. The fort occupies a conspicuous site on the summit of an abrupt rock which commands the river. It was at one time a place of great strength, and still contains a magazine, and is fortified with batteries. In the old citadel on the height, the remains of a Hindu palace with some interesting carvings indicate the former importance of the place. The town, which consists of one or two straggling streets, contains a handsome English church. Chunar is first mentioned in the 16th century, when in possession of Sing Joanpore. In 1530 it became the residence of Shere Shah the Afghan, and forty-five years later was recovered by the emperor Akbar after sustaining a siege of six months. It fell into the hands of the English under General Carnac in 1763 after a prolonged resistance which caused considerable loss to the assailants. A treaty with the nawab of Oudh was signed here by Warren Hastings on behalf of the East India Company in September 1781.

CHUNCHO, a tribe of South American Indians, living in the forests east of Cuzco, central Peru. They are a fierce and savage people who have preserved their independence. They are said to be akin to their neighbours the Antis. They dwell in communal houses, and live chiefly by hunting. Chuncho has also been used to describe one of three aboriginal stocks of Peru, the others being Quichua and Aymara.

CH'UNGK'ING, a city in the province of Szech'uen, China, on the left bank of the Yangtsze, at its point of junction with the Kialing, in 29° 33′ N., and 107° 2′ E. It is surrounded by a crenelated stone wall, which is 5 m. in circumference and is pierced by nine gates. It is the commercial centre for the trade, not only of Szech'uen, but of all south-western China. The one highway between Szech'uen and the eastern provinces is the Yangtsze river route, as owing to the mountainous nature of the intervening country land

transit is almost impracticable. The import trade brought up by large junks from Ich‘ang, and consisting of cotton cloth, yarn, metals and foreign manufactures, centres here, and is distributed by a class of smaller vessels up the various rivers of the provinces. Native produce, such as yellow silk, white wax, hides, rhubarb, musk and opium, is here collected and repacked for conveyance to Hankow, Shanghai or other parts of the empire. The city was opened to foreign trade by convention with the British government in 1891, with the proviso, however, that foreign steamers should not be at liberty to trade there until Chinese-owned steamers had succeeded in ascending the river. This restriction was abolished by the Japanese treaty of 1895, which declared Ch‘ungk‘ing open on the same terms as other ports. After that date the problem of steam navigation on the section of the river between Ich‘ang and Ch’ungk’ing occupied attention. By 1907 a small steamer had been navigated up the rapids, but it remained a question how far steam navigation could be made a practical success. The trade was carried on by native craft, hauled up against the strength of the current in the worst places by a line of trackers on the bank. The great rise in the river during the summer months, at Ch’ungk’ing ordinarily 70 ft. and occasionally as much as 96 ft., added to the difficulties. The population of Ch’ungk’ing, including the city of Kiangpei on the opposite bank of the Kialing river, is about 300,000. The foreign residents are very few. In 1898 the value of the trade passing through the maritime customs was £2,614,000, and in 1904 £4,214,568, of which imports counted for £2,644,777 and exports for £1,569,791.

CHUPATTY, an Anglo-Indian term for an unleavened cake of bread. The word represents the Hindustani *chapati*, and is applied to the usual form of native bread, the staple food of upper India. The chupatty is generally made of coarse wheaten flour, patted flat with the hand, and baked upon a griddle. In the troubled times that preceded the mutiny of 1857 chupatties were circulated from village to village throughout India, apparently as a token of discontent.

CHUPRIYA (sometimes written *Tiupriia*; Croatian *Cuprÿa*), the capital of the Morava department of Servia, on the railway from Belgrade to Nish, and on the right bank of the Morava, which is navigable up to this point by small sailing-vessels. Pop. (1900) about 6000. Some of the finest Servian cattle are bred in the neighbouring lowlands, and the town has a considerable trade in plums and other farm-produce. A light railway, leading to several important collieries, runs for 13 m. through the beech-forests and mountains on the east. Cloth is woven at Parachin, 5 m. S.; and Yagodina, 8 m. W. by N., is an important market town. Among the foothills of the Golubinye Range, 7 m. E.N.E., is the 14th-century Ravanitsa monastery, with a ruined fort and an old church—their walls and frescoes pitted by Turkish bullets. There is a legend that here the Servian tsar Lazar (1374-1389) was visited by an angel, who bade him choose between an earthly and a heavenly crown. In accordance with his choice, Lazar fell fighting at Kossovo, and was buried at Ravanitsa; his body being afterwards transferred, through fear of the Turks, to another Ravanitsa, in eastern Slavonia. His crucifix is treasured among the monastic archives, which also contain a charter signed by Peter the Great of Russia (1672-1725). Manasia (*Manasiya*), the still more celebrated foundation of Stephen, the son and successor of Lazar, lies 12 m. N. of Ravanitsa. Built in a cleft among the hills which line the river Resava, an affluent of the Morava, this monastery is enclosed in a fortress, whose square towers, and curtain without loopholes or battlements, remain largely intact. Within the curtain stand the monastic buildings, a large garden and a cruciform chapel, with many curious old stone carvings, half hidden beneath whitewash. Numerous gifts from the Russian court, such as gospels lettered in gold and silver relief, or jewelled crucifixes, are preserved on the spot; but the valuable library was removed, in the 15th century, to Mount Athos.

CHUQUISACA, a department of S.E. Bolivia, bounded N. by Cochabamba and Santa Cruz, E. by Santa Cruz and Brazil, S. by Tarija, and W. by Potosi. It lies partly upon the eastern plateau of Bolivia and partly upon the great plains of the upper La Plata basin; area, 26,418 sq. m. The Pilcomayo, a large tributary of the Paraguay, crosses N.W. to S.E. the western part of the department. The climate of the lowlands is hot, humid and unhealthy, but that of the plateau is salubrious, though subject to greater extremes in temperature and rainfall. The seasons are sharply divided into wet and dry, the eastern plains becoming great lagoons during the wet season, and parched deserts during the dry. The mineral resources are important, but are less developed than those of Potosi and Oruro. Grazing is the principal industry of the plains, and cattle, sheep, goats and llamas are raised and cereals grown in the fertile valleys of the plateau. Three rough highways connect the department with its neighbours on the N. and W., and pack animals are the common means of transporting merchandise. The population was estimated at 204,434 m 1900, and is largely composed of Indians and *mestizos*. The plateau Indians are generally Aymaras, but on the eastern plains there are considerable settlements of partly civilized Chiriguanos, of Guarani origin. The department is divided into four provinces, the greater part of the lowlands being unsettled and without effective political organization. Its principal towns are Sucré, Camargo, Padilla and Yotala.

CHURCH, FREDERICK EDWIN (1826-1900), American landscape painter, was born at Hartford, Connecticut, on the 4th of May 1826. He was a pupil of Thomas Cole at Catskill, New York, where his first pictures were painted. Developing unusual technical dexterity, Church from the beginning sought for his themes such marvels of nature as Niagara Falls, the Andes, and tropical forests—he visited South America in 1853 and 1857,—volcanoes in eruption, and icebergs, the beauties of which he portrayed with great skill in the management of light, colour, and the phenomena of rainbow, mist and sunset, rendering these plausible and effective. In their time these paintings awoke the wildest admiration and sold for extravagant prices, collectors in the United States and in Europe eagerly seeking them, though their vogue has now passed away. In 1849 Church was made a member of the National Academy of Design. His “Great Fall at Niagara” (1857) is in the Corcoran Art Gallery, Washington, D.C., and a large “Twilight” is in the Walters Gallery, Baltimore, Maryland. Among his other canvases are “Andes of Ecuador” (1855), “Heart of the Andes” (1859), “Cotopaxi” (1862), “Jerusalem” (1870), and “Morning in the Tropics” (1877). He died on the 7th of April 1900, at his house on the Hudson river above New York City, where he had lived and worked for many years. He was the most prominent member of the so-called “Hudson River School” of American artists.

CHURCH, GEORGE EARL (1835-1910), American geographer, was born in New Bedford, Massachusetts, on the 7th of December 1835. He was educated as a civil engineer, and was early engaged on the Hoosac Tunnel. In 1858 he joined an exploring expedition to South America. During the American Civil War he served (1862-1865) in the Army of the Potomac, rising to the command of a brigade and the rank of colonel; and in 1866-1867 he was war correspondent of the *New York Herald* in Mexico. He explored the Amazon (1868-1879), and gradually became the leading authority on that region of South America, being appointed United States commissioner to report on Ecuador in 1880, and visiting Costa Rica in 1895 to report on its debt and railways. He wrote extensively on South and Central American geography, and became a vice-president of the Royal Geographical Society (London), and in 1898 president of the geographical section of the British Association.

CHURCH, SIR RICHARD (1784-1873), British military officer and general in the Greek army, was the son of a Quaker, Matthew Church of Cork. He was born in 1784, and at the age of sixteen ran away from home and enlisted in the army. For this violation of its principles he was disowned by the Society of Friends, but his father bought him a commission, dated the 3rd of July 1800, in the 13th (Somersetshire) Light Infantry. He served in the demonstration against Ferrol, and in the expedition to Egypt under Sir Ralph Abercromby in 1801. After the expulsion of the French from Egypt he returned home, but came back to the Mediterranean in 1805 among the troops sent to defend the island of Sicily. He accompanied the expedition which landed in Calabria, and fought a successful battle against the French at Maida on the 6th of July 1806. Church was present on this occasion as captain of a recently raised company of Corsican Rangers. His zeal attracted the notice of his superiors, and he had begun to show his capacity for managing and drilling foreign levies. His Corsicans formed part of the garrison of Capri from October 1806 till the island was taken by an expedition directed against it by Murat, in September 1808, at the very beginning of his reign as king of Naples. Church, who had distinguished himself in the defence, returned to Malta after the capitulation.

In the summer of 1809 he sailed with the expedition sent to occupy the Ionian Islands. Here he increased the reputation he had already gained by forming a Greek regiment in English pay. It included many of the men who were afterwards among the leaders of the Greeks in the War of Independence. Church commanded this regiment at the taking of Santa Maura, on which occasion his left arm was shattered by a bullet. During his slow recovery he travelled in northern Greece, and Macedonia, and to Constantinople. In the years of the fall of Napoleon (1813 and 1814) he was present as English military representative with the Austrian troops until the campaign which terminated in the expulsion of Murat from Naples. He drew up a report on the Ionian Islands for the congress of Vienna, in which he argued in support, not only of the retention of the islands under the British flag, but of the permanent occupation by Great Britain of Parga and of other formerly Venetian coast towns on the mainland, then in the possession of Ali Pasha of Iannina. The peace and the disbanding of his Greek regiment left him without employment, though his reputation was high at the war office, and his services were recognized by the grant of a companionship of the Bath. In 1817 he entered the service of King Ferdinand of Naples as lieutenant-general, with a commission to suppress the brigandage then rampant in Apulia. Ample powers were given him, and he attained a full measure of success. In 1820 he was appointed governor of Palermo and commander-in-chief of the troops in Sicily. The revolution which broke out in that year led to the termination of his services in Naples. He escaped from violence in Sicily with some difficulty. At Naples he was imprisoned and put on his trial by the government, but was acquitted and released in January 1821; and King George IV. conferred on him a knight commandership of the Hanoverian order.

The rising of the Greeks against the Turks, which began at this time, had his full sympathy from the first. But for some years he had to act only as the friend of the insurgents in England. In 1827 he took the honourable but unfortunate step of accepting the commandership-in-chief of the Greek army. At the point of anarchy and indiscipline to which they had now fallen, the Greeks could no longer form an efficient army, and could look for salvation only to foreign intervention. Sir Richard Church, who landed in March, was sworn “archistrategos” on the 15th of April 1827. But he could not secure loyal co-operation or obedience. The rout of his army in an attempt to relieve the acropolis of Athens, then besieged by the Turks, proved that it was incapable of conducting regular operations. The acropolis capitulated, and Sir Richard turned to partisan warfare in western Greece. Here his activity had beneficial results, for it led to a rectification in 1832, in a sense favourable to Greece, of the frontier drawn by the powers in 1830 (see his *Observations on an Eligible Line of Frontier for Greece*, London, 1830). Church had, however, surrendered his commission, as a protest against the unfriendly government of Capo d’Istria, on the 25th of August 1829. He lived for the rest of his life in Greece, was created general of the army in 1854, and died at Athens on the 30th of March 1873. Sir Richard Church married in 1826 Elizabeth Augusta Wilmot-Horton, who survived him till 1878.

See *Sir Richard Church*, by Stanley Lane Poole (London, 1890); *Sir Richard Church in Italy and Greece*, by E.M. Church (Edinburgh, 1895), based on family papers (an Italian version, *Brigantaggio e società segrete nelle Puglie, 1817-1828*, executed under the direction of Carlo Lacaita, appeared at Florence in 1899). The MS. Correspondence and Papers of Sir Richard Church, in 29 vols., now in the British Museum (Add. MSS. 36543-36571), contain invaluable material for the history of the War of Greek Independence, including a narrative of the war during Church’s tenure of the command, which corrects many errors in the published accounts and successfully vindicates Church’s reputation against the strictures of

Finlay, Mendelssohn-Bartholdy, and other historians of the war (see *Cam. Mod. Hist.* x. p. 804).

(D. H.)

CHURCH, RICHARD WILLIAM (1815-1890), English divine, son of John Dearman Church, brother of Sir Richard Church (*q.v.*), a merchant, was born at Lisbon on the 25th of April 1815, his early years being mostly spent at Florence. After his father's death in 1828 he was sent to a school of a pronounced evangelical type at Redlands, Bristol, and went in 1833 to Wadham College, Oxford, then an evangelical college. He took first-class honours in 1836, and in 1838 was elected fellow of Oriel. One of his contemporaries, Richard Mitchell, commenting on this election, said: "There is such a moral beauty about Church that they could not help taking him." He was appointed tutor of Oriel in 1839, and was ordained the same year. He was an intimate friend of J.H. Newman at this period, and closely allied to the Tractarian party. In 1841 No. 90 of *Tracts for the Times* appeared, and Church resigned his tutorship. In 1844-1845 he was junior proctor, and in that capacity, in concert with his senior colleague, vetoed a proposal to censure Tract 90 publicly. In 1846 Church, with others, started *The Guardian* newspaper, and he was an early contributor to *The Saturday Review*. In 1850 he became engaged to Miss H.F. Bennett, of a Somersetshire family, a niece of George Moberly, bishop of Salisbury. After again holding the tutorship of Oriel, he accepted in 1852 the small living of Whatley in Somersetshire, near Frome, and was married in the following year. He was a diligent parish priest and a serious student, and contributed largely to current literature. In 1869 he refused a canonry at Worcester, but in 1871 he accepted, most reluctantly (calling it "a sacrifice *en pure perte*"), the deanery of St Paul's, to which he was nominated by W.E. Gladstone.

His task as dean was a complicated one. It was (1) the restoration of the cathedral; (2) the adjustment of the question of the cathedral revenues with the Ecclesiastical Commissioners; (3) the reorganization of a conservative cathedral staff with anomalous vested rights. He described the intention of his appointment to be "that St Paul's should waken up from its long slumber." The first year that he spent at St Paul's was, writes one of his friends, one of "misery" for a man who loved study and quiet and the country, and hated official pomp and financial business and ceremonious appearances. But he performed his difficult and uncongenial task with almost incredible success, and is said never to have made an enemy or a mistake. The dean was distinguished for uniting in a singular degree the virtues of austerity and sympathy. He was pre-eminently endowed with the faculty of judgment, characterized by Canon Scott Holland as the gift of "high and fine and sane and robust decision." Though of unimpressive stature, he had a strong magnetic influence over all brought into contact with him, and though of a naturally gentle temperament, he never hesitated to express censure if he was convinced it was deserved. In the pulpit the voice of the dean was deliberately monotonous, and he employed no adventitious gesture. He may be described as a High Churchman, but of an essentially rational type, and with an enthusiasm for religious liberty that made it impossible for him to sympathize with any unbalanced or inconsiderate demands for deference to authority. He said of the Church of England that there was "no more glorious church in Christendom than this inconsistent English Church." The dean often meditated resigning his office, though his reputation as an ecclesiastical statesman stood so high that he was regarded in 1882 as a possible successor to Archbishop Tait. But his health and mode of life made it out of the question. In 1888 his only son died; his own health declined, and he appeared for the last time in public at the funeral of Canon Liddon in 1890, dying on 9th December 1890, at Dover. He was buried at Whatley.

The dean's chief published works are a *Life of St Anselm* (1870), the lives of *Spenser* (1879) and *Bacon* (1884) in Macmillan's "Men of Letters" series, an *Essay on Dante* (1878), *The Oxford Movement* (1891), together with many other volumes of essays and sermons. A collection of his journalistic articles was published in 1897 as *Occasional Papers*. In these writings he exhibits a great grasp of principles, an accurate mastery of detail, and the same fusion of intelligent sympathy and dispassionate judgment that appeared in his handling of business. His style is lucid, and has the charm of austerity. He stated that he had never studied style *per se*, but that he had acquired it by the exercise of translation from classical languages; that he watched against the temptation of using unreal and fine words; that he employed care in his choice of verbs rather than in his use of adjectives; and that he fought against self-indulgence in writing just as he did in daily life. His sermons have the same

quality of self-restraint. His private letters are fresh and simple, and contain many unaffected epigrams; in writing of religious subjects he resolutely avoided dogmatism without ever sacrificing precision. The dean was a man of genius, whose moral stainlessness and instinctive fire were indicated rather than revealed by his writings.

See *Life and Letters of Dean Church*, by his daughter, M.C. Church (1895); memoir by H.C. Beeching in *Dict. Nat. Biog.*; and D.C. Lathbury, *Dean Church* (1907).

(A. C. BE.)

CHURCH (according to most authorities derived from the Gr. κυριακὸν [δῶμα], "the Lord's [house]," and common to many Teutonic, Slavonic and other languages under various forms—Scottish *kirk*, Ger. *Kirche*, Swed. *kirka*, Dan. *kirke*, Russ. *tserkov*, Bulg. *cerkova*, Czech *cirkev*, Finn, *kirkko*, &c), a word originally applied to the building used for Christian worship, and subsequently extended to the Christian community (*ecclesia*) itself. Similarly the Greek word *ecclesia* (ἐκκλησία), "assembly," was very early transferred from the community to the building, and is used in both senses, especially in the modern Romance and Celtic languages (*e.g.* Fr. *église*, Welsh *eglwys*, &c).

(1) *Church Architecture.*—From the strictly architectural point of view the subject of church building, including the development of the various styles and the essential features of the construction and arrangement of churches, is dealt with elsewhere (see ARCHITECTURE; ABBEY; BASILICA). It is, however, impossible to understand the development of church architecture without realizing its intimate connexion with that of the doctrine, organization and ritual of the Christian Church as a religious community, and a brief sketch of this connexion may be given here by way of introduction to the more technical treatment of the subject. In general it may be said of church architecture, more truly than of any other, that artistically it is "frozen music." It is true that at all times churches have been put to secular uses; in periods of unrest, as among the Nestorian Christians now, they were sometimes built to serve at need as fortresses; their towers were used for beacons, their naves for meetings on secular affairs. But as a rule, and especially in the great periods of church architecture, their builders were untrammelled by any utilitarian considerations; they built for the glory of God, for their own glory perhaps, in honour of the saints; and their work, where it survives, is (as it were) a petrification of their beliefs and ideals. This is, of course, more true of the middle ages than of the times that preceded and followed them; the Church under the Roman empire hardly as yet realized the possibilities of "sermons in stones," and took over, with little change, the model of the secular and religious buildings of pagan Rome; the Renaissance, essentially a neo-pagan movement, introduced disturbing factors from outside, and, though developing a style very characteristic of the age that produced it, started that archaeological movement which has tended in modern times to substitute mere imitations of old models for any attempt to express in church architecture the religious spirit of the age.

The earliest type of Christian Church, out of which the others developed, was the basilica. The Church, emerging in the 4th century into imperial favour, and established as part of the organization of the Roman empire, simply adopted that type of secular official building which she found convenient for her purposes. The clergy, now Roman officials, vested in the robes of the civil dignitaries (see VESTMENTS), took their seats in the apse of the basilica where the magistrates were wont to sit, in front of them the holy table, facing the congregation. The *cancelli*, the lattice or bar, which in the civil tribunal had divided the court from the litigants and the public, now served to separate clergy and laity. This arrangement still survives in some of the ancient churches of Rome; it has been revived in many Protestant places of worship. It symbolized principally an official distinction; but with the theocratizing of the empire in the East and its decay in the West the accentuation of the mystic powers of the clergy led to a more complete separation from the laity, a tendency which left its mark on the arrangements of the churches. In the East the *cancelli*, under the influence possibly of the ritual of the Jewish temple, developed into the *iconostasis*, the screen of holy pictures, behind the closed doors of which the supreme act of the eucharistic mystery is hidden from the lay people. In the West the high altar was moved to the east end (the *presbyterium*) with a space before it for the assisting deacons andsubdeacons (the chancel proper) railed off as a spot peculiarly holy (now usually called the sanctuary); between this and the nave, where the laity were, was the choir, with seats for the clergy on

either side. The whole of this space (sanctuary and choir) came to be known as the "chancel." This was divided from the nave, sometimes by an arch forming part of the structure of the building, sometimes by a screen, or by steps, sometimes by all three (see CHANCEL). The division of churches into chancel and nave, the outcome of the sacramental and sacerdotal spirit of the Catholic Church, may be taken as generally typical of church construction in the medieval West, though there were exceptions, *e.g.* the round churches of the Templars. There were, however, further changes, the result partly of doctrinal developments, partly of that passion for symbolism which by the 13th century had completed the evolution of the Catholic ritual. Transepts were added, to give to the ground-plan of the building the figure of the cross. The insistence on the unique efficacy of the sacrifice of the altar led to the multiplication of masses, and so of altars, which were placed in the transepts or aisles or in chapels, dedicated to the saints whose relics they enshrined. The chief of these subsidiary chapels, that of the Blessed Virgin (or Lady chapel), behind the high altar, was often of large size. Finally, for the convenience of processions, the nave and chancel aisles were carried round behind the high altar as ambulatories.

The Romanesque churches, still reminiscent of antique models, had preserved all the simplicity of the ancient basilicas with much more than their grandeur; but the taste for religious symbolism which culminated in the 13th century, and the imaginative genius of the northern peoples, transformed them into the marvellous dreams in stone of the "Gothic" period. Churches now became, in form and decoration, epitomes of the Christian scheme of salvation as the middle ages understood it. In the plan of the buildings and their decoration 327
everything still remained subordinate to the high altar; but though on this and its surroundings ornament was most lavishly expended, the churches—wherever wealth permitted—were covered within and without with sculpture or painting: scenes from the Old and New Testaments, from the lives of saints, even from every-day life; figures of the Almighty, of Christ, of the Virgin Mother, of apostles, saints, confessors; pictures of the joys of heaven and the torments of hell; and outside, grimacing from every angle, demons and goblins, amusing enough to us but terrible to the age that set them there, visible embodiments of the evil spirits driven from within the sacred building by the efficacy of the holy rites. In considering the origins of medieval churches, moreover, it must be borne in mind that as a general rule their builders were not actuated by the motives usual in modern times, at least among Protestants. The size of churches was not determined by the needs of population but by the piety and wealth of the founders; and the same applies to their number. Often they were founded as acts of propitiation of the Almighty or of the saints, and the greater their size and splendour the more effective they were held to be for their purpose. Local rivalry, too, played a large part, one wealthy abbey building "against" another, much in the same way as modern business houses endeavour to outshine each other in the magnificence of their buildings. Of all the mixed motives that went to the evolution of church architecture in the middle ages, this rivalry in ostentation was probably the most fertile in the creation of new forms. A volume might be written on the economic effects of this locking up of vast capital in unproductive buildings. In Catholic countries (notably in Ireland) great churches are still built out of the savings of a poverty-stricken peasantry; and from this point of view the destruction of churches in the 16th century was probably a benefit to the world. This, however, is a consideration altogether alien to the Christian spirit, the aspiration of which is to lay up treasures not on earth but in heaven.

The Reformation was a fateful epoch in the history of church architecture. The substitution of the Bible for the Mass destroyed the *raison d'être* of churches as the middle ages had made them. Pictures and stories, carved or painted, seemed no longer necessary now that the open Bible was in the hands of the common people; they had been too often prostituted, moreover, to idolatrous uses,—and "idolatry" was the worst of blasphemies to the re-discoverers of the Old Testament. Save in some parts of Germany, where the influence of Luther saved the churches from wreck, an iconoclastic wave spread over the greater part of Western Europe, wherever the "new religion" prevailed; everywhere churches were cleared of images and reduced to the state of those described by William Harrison in his *Description of England* (1570), only the "pictures in glass" being suffered in some cases to survive for a while "by reason of the extreme cost of replacing them." The structures of the churches, however, remained; and these, even in countries which departed furthest from the Catholic system, served in some measure to keep its tradition alive. Protestantism has, indeed, produced a distinctive church architecture, *i.e.* the conventicle type, favoured more especially by the so-called "Free Churches." Its distinctive features are pulpit and auditorium, and it is symbolical of the complete equality of ministers and congregation. In general, however, Protestant builders have been content to preserve or to adapt the traditional models. It would be interesting in this connexion to trace the reverse

effect of church architecture upon church doctrine. In England, for instance, the chancels were for the most part disused after the Reformation (see Harrison, op. cit.), but presently they came into use again, and on the Catholic revival in the Church of England in the 19th century it is certain that the medieval churches exercised an influence by giving a sense of fitness, which might otherwise have been lacking, to the restoration of medieval ritual. A similar tendency has of late years been displayed in the Established Church of Scotland.

Churches, as the outcome of the organization of the Catholic Church, are divided into classes as “cathedral,” “conventual” and “collegiate,” “parochial” and “district” churches. It must be noted, however, that the term cathedral (*q.v.*), ecclesiastically applicable to any church which happens to be a bishop’s see, architecturally connotes a certain size and dignity, and is sometimes applied to churches which have never been, or have long ceased to be, bishop’s seats.

(W. A. P.)

(2) *The Religious Community.*—In the sense of Christian community (*ecclesia*) the word “Church” is applied in a narrow sense to any one of the numerous separate organizations into which Christendom is divided (*e.g.* Roman Catholic Church, Orthodox Eastern Church, Church of England, Evangelical [Lutheran] Church)—these are dealt with under their several headings—and in a comprehensive sense (with which we are now concerned) to the general body of all those “who profess and call themselves Christians.” Religion, according to the old definition, is the bond which binds the soul of man to God.[1] It begins as the relation of a tribe to its God. Personal religious conviction grows out of the tribal (corporate) religious bond. But the social instinct is strong. Men owning the same religious convictions will naturally draw together into some sort of association. Using the word religion to cover all the imperfect ways in which men have felt after God, we note that in every case men have found the need alike of a teacher and of fellowship. Thus the idea of a church as “the pillar and ground of the truth” (1 Tim. iii. 15) corresponds to some of the primary needs of man. Even at Stonehenge, the oldest relic of prehistoric religion in England, where we picture in imagination the worship of the rising sun, nature worship degraded to a horrible depth by human sacrifice, we find struggling for expression the idea of a corporate religious life. From all the lower levels where superstition and cruelty reign, from the depths of fear inspired by fetichism, we look on to the higher level of Judaism as the progressive religion of the old world. This does not mean that we shut our eyes to the ideals of Greek philosophers, with whom morality was constantly outgrowing religion. “The vision of an ideal state which the master-mind of Plato contemplated, but thought too good ever to become true in actual realization, is full of aspirations which the Christian Church claims to satisfy. The problems of the relations of the life of the State and the life of the individual, which Aristotle ever suggests and never solves, are problems with which the Christian Church has at least attempted to deal.”[2]

From the beginning of the history of the Jewish race the idea that the world is a kingdom under the rule of God began to find expression. The conception of Israel as “a kingdom of priests and an holy nation” (Exod. xix. 6) bore witness to it. The idea of kingship from the first was that of a ruler representing God. As time went on and even the dynasty of David failed in the persons of unworthy representatives to maintain this ideal, both psalmists and prophets taught the people to look beyond the earthly kingdom to the spiritual kingdom of which it was a type. But even Isaiah tended to think of the spiritual life and worship of the nation as a department of political organization only, controlled by the king and his princes. It was reserved for Jeremiah, in the darkest days of his life, to build up the ideal of a spiritual society which should weld Israel together, to proclaim a new covenant (xxxi. 31-34) which Jehovah would make with Israel when representatives of the previously exiled ten tribes should return with the exiles of Judah. This prophecy is instinct with the growing sense of the personal responsibility of individual men brought into communion with God. The religion of Israel from this time of the captivity ceased to be a merely national religion connected with particular forms of sacrifice in a particular land. The synagogues which traced their origin to the time of Ezekiel, when the sacrificial cultus was impossible, extended this ideal yet further. During the centuries preceding the birth of Christ there grew up an apocalyptic literature which regarded as a primary truth the conception of a kingdom of righteousness ruled over by a present God. The preaching of John the Baptist was thus in sympathy with the ideals of his generation, though the sternness of the repentance which he set forth as the necessary preparation for entrance into the new kingdom of heaven, which was to be made visible on earth, was not less repugnant to the men of his day than of later times. Christ’s own teaching and that of his disciples began with the proclamation of the kingdom of God (or of heaven) (Luke iv. 43, viii. 1, ix. 2; Matt. x. 7). That he intended it to find outward expression in a visible society appears from the careful

way in which he trained the apostles to become leaders hereafter, crowning that work by the institution of the sacraments of baptism and the Eucharist. “It was not from accident or for convenience that Christ formed a society.”[3] His parables even more than his sermons reveal the principles of his endeavour. But he seldom used the word *ecclesia*, church, which became the universal designation of his society.

All the more emphatic is Christ’s use of the term *ecclesia* upon the distinct advance in faith made by the apostles when St Peter as their spokesman confessed him to be “the Christ, the Son of the living God” (Matt. xvi. 16). Instantly came the reply, “I say unto thee, that thou art *Petros* (rockman), and on this *Petra* (rock) I will build my *ecclesia* (church); and the gates of Hades shall not prevail against it.” On the rock of a human character, ennobled by faith in his divine Sonship, he could raise the church of the future, which should be at the same time continuous with the old, new in spiritual power, one in worship and in work.

To the Jew the word *ecclesia* as used in the Septuagint suggested the assembly of the congregation of Israel. To a Greek it suggested the assembly of freeborn citizens in a city state. Without ceasing to be the congregation of Jehovah, it would claim for itself all the hopes of an ideal state over which Greek philosophers had sighed in vain.

Opinions differ upon the question whether the apostles were chosen as representatives of the *ecclesia* to be founded (Hort) or as men fitted to become its duly authorized teachers and leaders from the beginning (Stone). But as Mr Stone well puts it, “It would not be a necessary inference [from Dr Hort’s opinion] that there ought to be no ministry in the Christian Church.”[4]

At first the church was limited to the Christian believers in the city of Jerusalem, then by persecution their company was broken up, and, since those who were scattered went everywhere preaching the word, the conception was enlarged to include all “of the way” (Acts ix. 2) in the Holy Land. A new epoch began from the return of St Paul and St Barnabas to Antioch after their first missionary journey, when they called together the church and narrated their experiences, and told how “God had opened to the Gentiles the door of faith” (Acts xiv. 27). Hitherto the term Church had been “ideally conterminous” with the Jewish Church. Now it was to contain members who had never in any sense belonged to the Jewish Church. Thus the way was opened for new developments and for illimitable extension. St Paul, in his address to the elders at Ephesus (Acts xx. 28), adapted the words of Ps. lxxiv. 2, “Remember thy congregation, which thou hast purchased of old,” claiming for the Christian *ecclesia* the title of God’s ancient *ecclesia*. But he never, however fiercely opposed by Judaizers, set a new *ecclesia* of Christ in opposition to the old. We wait, however, for the Epistles of his captivity at Rome to find the full meaning of the idea of the church dawning upon his imagination. “Here at least, for the first time in the Acts and Epistles, we have the *ecclesia* spoken of in the sense of the one universal *ecclesia*, and it comes more from the theological than from the historical side; *i.e.* less from the actual circumstances of the actual Christian communities than from a development of thoughts respecting the place and office of the Son of God: his headship was felt to involve the unity of all those who were united to him.”[5] Similar development of the idea of the one *ecclesia* as including all members of all local *ecclesiae* does not lead St Paul to regard membership of the universal church as invisible.

But the mere history of the word *ecclesia* does not exhaust the subject. We must take into account not only the idea of the visible *actual* church, but also the ideal pictured by St Paul in the metaphors of the Body (Rom. xii. 5), the Temple (1 Cor. iii. 10-15) and the Bride of Christ (2 Cor. xi. 2). The actual church is always falling short of its profession; but its successive reformations witness to the strength of its longing after the beauty of holiness.

Membership in the actual church is acquired through baptism “in the name of the Father and of the Son and of the Holy Ghost” (Matt, xxviii. 19). The references in the New Testament to baptism “in the name of Jesus” (or the Lord Jesus) (Acts ii. 38, viii. 16. x. 48, xix. 5; Rom. vi. 3; Gal. iii. 27), which are by some critics taken to refer to a primitive Christological baptismal formula, seem to refer to the confession made by the baptized, or to the new relationship into which they are brought as “members of Christ.”[6] Candidates for baptism were exhorted to prepare for it by repentance and faith (Acts ii. 38). The laying on of hands (Heb. vi. 2), in the rite called in later times confirmation, followed baptism (Acts viii. 17). In the modern Greek Church it is administered by priests with oil which has been consecrated by the bishop, in the Roman Church by the bishop himself. Such use of the chrism can be traced from the 2nd century. The Anglican Church retains only the Biblical symbolism of “the blessing of the hand.” Presbyterians and other Protestant churches have abandoned the use, except the Lutherans. We need not here trace the history of Christian

worship, in daily services (Acts ii. 46), or on the Lord's Day (Acts xx. 7), meeting for the Lord's Supper (1 Cor. xi. 17-34), or for mutual edification in prayer, praise and prophecy (1 Cor. xiv.). These things represent the ideal of Christendom. In the words of an eminent Roman Catholic scholar, Monsignor Duchesne, "Faith unites, theology often separates." It must be our task to summarize the leading ideas of the church in which all Christians are agreed.

(a) The first is certainly fellowship with Christ and with the brethren. The early Christians earnestly believed that their life was "hidden with Christ in God" (Col. iii. 3), and found in their union with Christ the lasting and strongest motive of love to the brethren. Such fellowship is attributed by St Paul pre-eminently to the work of the Holy Spirit (2 Cor. xiii. 14). Its strength is shown in England in the growing readiness of the different religious bodies to co-operate in movements for the purifying of public morality and for the better observance of Sunday.

(b) The second is unity. We have seen how St. Paul was led on to grasp the conception of one church universal manifested in all the local churches. Its unity is not purely accidental in that individuals have been forced to act together under pressure of chance circumstances. Nor is the ideal of unity adopted simply because experience teaches that "union is strength." Nor is it even based on the philosophical conception of the incompleteness of the individual life. As Dr Sanday finely says, "If the church is in something more than mere metaphor the Body of Christ, if there is circulating through it a continual flow and return of spiritual forces, derived directly from him, if the Spirit which animates the Body is one, then the Body itself also must be in essence one. It has its centre not on earth but in heavenly places, where Christ sitteth at the right hand of God."[7]

(c) Thirdly, there is no question that the Lord intended the one fellowship of his saints to be *a visible fellowship*. The idea of an invisible church has only commended itself in dark hours when men despaired of unity even as an ideal. The view of Zwingli and Calvin in the 16th century was not by any means acceptable to other reformers. Luther distinguished between the Spiritual Church, which he identified with the Communion of Saints, and the Corporeal Church, the outward marks of which are Baptism, Sacrament and Gospel. But he regarded them as different aspects of the same church, and Melanchthon was even more explicit.[8] As the saint purified in heaven is he who struggled with his sins on earth, so is the church triumphant one with the church militant. In Dr Lindsay's words, "it is one of the privileges of faith, when strengthened by hope and by love, to see the glorious ideal in the somewhat poor material reality. It was thus that St Paul saw the universal Church of Christ made visible in the Christian community of Corinth."[9]

But it is at this point that we come to the dividing line which has been drawn by different conceptions of catholicity. Dr Lindsay goes on to argue that all insistence on the principle of historical continuity, whether urged by members of the Anglican or the Roman Catholic Church, as upholders of episcopacy, is a deliberate return to the principle of Judaism, which declared that no one who was outside the circle of the "circumcised," no matter how strong his faith nor how the fruits of the Spirit were manifest in his life and deeds, could plead "the security of the Divine Covenant." Without entering into controversy it must suffice to point out that, from the point of view of all episcopal churches, the ministry of the bishops succeeding the ministry of the apostles, however it came to pass, was for fifteen centuries accepted as the pledge of unity. This principle, however, of continuity in ministry, belongs to a different department of Christian thought from the sacrament of baptism, which really corresponds to the Jewish rites of admission to the covenant. And it has been an established principle of the undivided church since the 3rd century, the bishop of Rome in this case upholding against St Cyprian the view which subsequent generations have ratified as Catholic truth, that baptism by whomsoever administered is valid if water is used with the right words. From this point, alas, divergence begins.

(d) The fourth element is authority. Probably all Christians can agree in the statement that the Christian democracy is also a theocracy, that Christ is the source of all authority. There are three passages in the Gospel which claim notice: (i.) the promise to St Peter (Matt. xvi. 18f), as spokesman for the apostles, of the key of the household of God, of power to admit and exclude; (ii.) the promise (Matt. xviii. 15-20) probably given to the Twelve, regarding offences against the peace of the society, advocating exclusion only when brotherly appeals had failed; (iii.) the commission of the whole *ecclesia* or of the Christian ministry (John xx. 22, 23). Again the root difference between the Presbyterian and Episcopalian conceptions of the church comes to light. Is the authority of the church manifested in the decisions which a local church arrives at by a majority of votes, or in the decisions of apostles and prophets

after taking counsel, of the episcopate in later times, ratified by common consent of Christendom? As has been well said, "the church is primarily a witness—the strength of its authority lies in the many sides from which the witness comes." It witnesses to the Divine Life of Christ as a power of the present and of the future as of the past, ministered in the Word and sacraments.

(e) The church is a sacerdotal society. St Paul delighted to represent it as the "ideal Israel," and St John echoes the thought in the words of praise (Rev. i. 5, 6), "Unto him that hath loved us ... and made us to be a kingdom, and priests unto his God and Father." This idea of the priesthood of the whole church has three elements—the divine element, the human element and self-sacrifice. The promise that Christians should be temples of the living God has been fulfilled. As Dr Milligan has said very well, "It is not only in things to which we commonly confine the word miracle that the Divine appears. It may appear not less in the whole tone and spirit of the Church's life, in the varied Christian virtues of her members, in the general character of their Christian work, and in the grace received by them in the Christian sacraments. When that life is exhibited, as it ought to be, in its distinctively heavenly character, it bears witness to the presence of a power in Christian men which no mere recollection of a past example, however heroic or beautiful, can supply. The difficulties of exhibiting and maintaining it are probably far greater now than they were in the apostolic age; and as nothing but a present divine support can enable us to overcome these, so, when they are overcome, a testimony is given to the fact that God is with us."[10]

But this life is to be a human life still, to be in touch with all that is noble and of good report in art and literature, keenly interested in all the discoveries of science, active in all movements of social progress. It cannot, however, be denied that to live such a life, divine in its powers and human in its sympathies, demands daily and hourly self-sacrifice. As the author of the *Imitation of Christ* put it long ago, "There is no living in love without pain." The thought of self-sacrifice has been emphasized from the earliest times in the liturgies. By a true instinct the early Christian writers called widows and orphans the altar of God on which the sacrifices of almsgiving are offered up.[11] Such works of charity, however, represent only one of the channels by which self-sacrifice is ministered, to which all prayers and thanksgiving and instruction of psalms, prophecy and preaching contribute. Thus in the Eucharist the offering of the church is made one with the offering of the Great High Priest.[12]

All this represents an ideal. It suggests in a modern form the perpetual paradox of the Christian life: we are what we are to be. The church is the divine society in which all other religious associations are eventually to find their home. The prayer, "Thy kingdom come," embraces all spiritual forces which make for righteousness. They were acknowledged in Christ's words, "He that is not against you is for you" (Luke ix. 50). But the divisions of Christendom testify to the harm done by undue insistence on the claims of the individual to gain scope to extend the kingdom in his own way. As in a choir all the resources of an individual voice are used to strengthen the general effect, so must the individual lose his life that he may find it, witnessing by his share in the common service of the church to the ultimate unity of knowledge and harmony of truth.

For the various conceptions of the church as an organized body see CHURCH HISTORY, sec. 3, and the articles on the various churches.

(A. E. B.)

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1 Lactantius, *Inst. Div.* iv. 28 "Vinculo pietatis obstricti, Deo religati sumus unde ipsa religio nomen accepit." The etymology may be wrong, but this is the popular sense of the word.

2 Darwell Stone, *The Christian Church*, p. 18.

3 *Ecce Homo*, ed. 5, p. 87. Cf. the interesting comparison between Socrates and Christ.

4 Op. cit. p. 262.

5 Hort, *The Christian Ecclesia*, p. 148.

6 For a full defence of the authenticity of Matt. xxviii. 19 see Riggenbach, *Der trinitarische Taufbefehl* (Gütersloh, 1903).

7 *The Conception of Priesthood*, p. 13.

8 *The Conception of Priesthood*, p. 29.

9 Lindsay, *The Church and the Ministry in the Early Centuries*, p. 17.

10 *The Ascension*, p. 254.

11 Polycarp, *Phil.* 4; cf. Tertullian, *Ad Uxor*, i. 7.

12 This teaching is not confined to Episcopalian writers. It has been finely expressed from the Presbyterian standpoint by Dr Milligan, op. cit. p. 265 ff.; cf. Lindsay, p. 37.

CHURCH ARMY, an English religious organization, founded in 1882 by the Rev. Wilson Carlile (afterwards prebendary of St Paul's), who banded together in an orderly army of "soldiers" and "officers" a few working men and women, whom he and others trained to act as "Church of England evangelists" among the outcasts and criminals of the Westminster slums. Previous experience had convinced him that the moral condition of the lowest classes of the people called for new and aggressive action on the part of the Church, and that this work was most effectively done by laymen and women of the same class as those whom it was desired to touch. "Evangelistic zeal with Church order" is the principle of the Church Army, and it is essentially a working men's and women's mission to working people. As the work grew, a training institution for evangelists was started in Oxford, but soon moved (1886) to London, where, in Bryanston Street near the Marble Arch, the headquarters of the army are now established. Working men are trained as evangelists, and working women as mission sisters, and are supplied to the clergy. The men evangelists have to pass an examination by the arch-deacon of Middlesex, and are then (since 1896) admitted by the bishop of London as "lay evangelists in the Church"; the mission sisters must likewise pass an examination by the diocesan inspector of schools. All Church Army workers (of whom there are over 1800 of one kind and another) are entirely under the control of the incumbent of the parish to which they are sent. They never go to a parish unless invited, nor stay when asked to go by the parish priest. Officers and sisters are paid a limited sum for their services either by the vicar or by voluntary local contributions. Church Army mission and colportage vans circulate throughout the country parishes, if desired, with itinerant evangelists, who 330
hold simple missions, without charge, and distribute literature. Each van missioner has a clerical "adviser." Missions are also held in prisons and workhouses, at the invitation of the authorities. In 1888 (before the similar work of the Salvation Army was inaugurated) the Church Army established labour homes in London and elsewhere, with the object of giving a "fresh start in life" to the outcast and destitute. These homes deal with the outcast and destitute in a plain, straightforward way. They demand that the persons should show a desire for amendment; they subject them to firm discipline, and give them hard work; they give them decent clothes, and strive to win them to a Christian life. The inmates earn their board and lodging by piece-work, for which they are paid at the current trade rates, while by a gradually lessening scale of work and pay they are stimulated to obtain situations for themselves and given time to seek for them. There are about 120 homes in London and the provinces, and 56% of the inmates are found to make these the successful beginning of an honest self-supporting life. The Church Army has lodging homes, employment bureaus, cheap food depots, old clothes department, dispensary and a number of other social works. Every winter employment is found for a great number of the unemployed in special depots, among them being the King's Labour Tents and the Queen's Labour Relief Depots. There is also an extensive emigration system, under which many hundreds (3000 in 1906) of carefully tested men and families, of good character, chiefly of the unemployed class, are placed in permanent employment in Canada through the agency of the local clergy. The whole of the work is done in loyal subordination to the diocesan and parochial organization of the Church of England.

See Edgar Rowans, *Wilson Carlile and the Church Army*.

CHURCH CONGRESS, an annual meeting of members of the Church of England, lay and clerical, to discuss matters religious, moral or social, in which the church is interested. It has no legislative authority, and there is no voting on the questions discussed. The first congress was held in 1861 in the hall of King's College, Cambridge, and was the outcome of the revival of convocation in 1852. The congress is under the presidency of the bishop in whose diocese it happens to be held. Recent places of meeting are Brighton (1901), Northampton (1902), Bristol (1903), Liverpool (1904), Weymouth (1905), Barrow-in-Furness

(1906), Great Yarmouth (1907), Manchester (1908), Swansea (1909). The meetings of the congress have been mainly remarkable as illustrating the wide divergences of opinion and practice in the Church of England, no less than the broad spirit of tolerance which has made this possible and honourably differentiates these meetings from so many ecclesiastical assemblies of the past. The congress of 1908 was especially distinguished, not only for the expression of diametrically opposed views on such questions as the sacrifice of the mass or the "higher criticism," but for the very large proportion of time given to the discussion of the attitude of the Church towards Socialism and kindred subjects.

CHURCH HISTORY.The sketch given below of the evolution of the Christian Church (see CHURCH) may well be prefaced by a summary of the history of the great Church historians, concerning whom fuller details are given in separate articles. Hegesippus wrote in the 2nd century a collection of memoirs containing accounts of the early days of the church, only fragments of which are extant. The first real church history was written by Eusebius of Caesarea in the early part of the 4th century. His work was continued in the 5th century by Philostorgius, Socrates, Sozomen and Theodoret, and in later centuries by Theodorus Lector, Evagrius, Theophanes and others. In the 14th century Nicephorus Callisti undertook a complete church history which covers in its extant form the first six centuries. In the West Eusebius' *History* was translated into Latin by Rufinus, and continued down to the end of the 4th century. Augustine's *City of God*, published in 426, was an apologetic, not an historical work, but it had great influence in our field, for in it he undertook to answer the common heathen accusation that the growing misfortunes of the empire were due to the prevalence of Christianity and the forsaking of the gods of Rome. It was to sustain Augustine's thesis that Orosius produced in 417 his *Historiarum libri septem*, which remained the standard text-book on world history during the middle ages. About the same time Sulpicius Severus wrote his *Historia Sacra*, covering both biblical and Christian history. In the 6th century Cassiodorus had a translation made of the histories of Socrates, Sozomen and Theodoret, which were woven into one continuous narrative and brought down to 518. The work was known as the *Historia Ecclesiastica Tripartita*, and constituted during the middle ages the principal text-book of church history in the West. Before writing his history Eusebius produced a world chronicle which was based upon a similar work by Julius Africanus and is now extant only in part. It was continued by Jerome, and became the basis of the model for many similar works of the 5th and following centuries by Prosper, Idatius, Marcellinus Comes, Victor Tununensis and others. Local histories containing more or less ecclesiastical material were written in the 6th and following centuries by Jordanes (*History of the Goths*), Gregory of Tours (*History of the Franks*), Isidore of Seville (*History of the Goths, Vandals and Suevi*), Bede (*Ecclesiastical History of England*), Paulus Diaconus (*History of the Lombards*), and others. Of the many historians of the middle ages, besides the authors of biographies, chronicles, cloister annals, &c, may be mentioned Haymo, Anastasius, Adam of Bremen, Ordericus Vitalis, Honorius of Autun, Otto of Freising, Vincent of Beauvais and Antoninus of Florence.

Church historians.

The Protestant reformation resulted in a new development of historical writing. Polemic interest led a number of Lutheran scholars of the 16th century to publish the *Magdeburg Centuries* (1559 ff.), in which they undertook to show the primitive character of the Protestant faith in contrast with the alleged corruptions of Roman Catholicism. In this design they were followed by many other writers. The opposite thesis was maintained by Baronius (*Annales Ecclesiastici*, 1588 ff.), whose work was continued by a number of Roman Catholic scholars. Other notable Roman Catholic historians of the 17th and 18th centuries were Natalis Alexander, Bossuet, Tillemont, Fleury, Dupin and Ceillier.

Church history began to be written in a genuinely scientific spirit only in the 18th century under the leadership of Mosheim, who is commonly called the father of modern church history. With wide learning and keen critical insight he wrote a number of historical works of which the most important is his *Institutiones Hist. Eccles.* (1755; best English trans. by Murdock). He was followed by many disciples, among them Schroeckh (*Christliche Kirchengeschichte*, 1772 ff. in 45 vols.). Other notable names of the 18th century are Semler, Spittler, Henke and Planck.

The new historical spirit of the 19th century did much for church history. Among the greatest works produced were those of J.C.L. Gieseler (*Lehrbuch der Kirchengeschichte*,

1824 ff., best Eng. tr. revised and edited by H.B. Smith), exceedingly objective in character and still valuable, particularly on account of its copious citations from the sources; Neander (*Allgemeine Geschichte der christlichen Religion und Kirche*, 1825 ff., Eng. tr. by Torrey), who wrote in a sympathetic spirit and with special stress upon the religious side of the subject, and has been followed by many disciples, for instance, Hagenbach, Schaff and Herzog; and Baur (*Das Christenthum und die christliche Kirche*, 1853 ff.), the most brilliant of all, whose many historical works were dominated by the principles of the Hegelian philosophy and evinced both the merits and defects of that school. Baur has had tremendous influence, even though many of his positions have been generally discredited. The problems particularly of the primitive history were first brought into clear light by him, and all subsequent work upon the subject must acknowledge its indebtedness to him.

A new era was opened by the publication in 1857 of the second edition of Ritschl's *Entstehung der altkatholischen Kirche*, in which he broke away from the Tubingen school and introduced new points of view that have revolutionized the interpretation of the early church. Of recent works the most important are the *Kirchengeschichte* of Carl Müller (1892 ff.) and that of W. Möller (1889 ff., second edition by von Schuberth, 1898 ff., greatly 331
enlarged and improved), the translation of the latter (1892 ff.) being the most useful text-book in English. Of modern Roman Catholic works may be mentioned those by J.A. Möhler, T.B. Alzog, F.X. Kraus, Cardinal Joseph von Hergenröther and C.J. von Hefele (edited by Knöpfler.)

In addition to these general works on church history should be named the histories of doctrine by Harnack, Loofs, Seeberg and Fisher; and on the early Church the works on the apostolic age by Weizsäcker (1886, English translation 1894), McGiffert (1897), and Bartlet (1899); Renan's *Histoire des origines du christianisme* (1867 ff., in 7 vols., translated in part); Pfleiderer's *Urchristenthum* (1887); S. Cheetham's *History of the Christian Church during the first Six Centuries* (1894); Wernle's *Anfänge unserer Religion* (1901; Eng. tr. 1902 ff.); Rainy's *Ancient Catholic Church* (1902); Knopf's *Nachapostolisches Zeitalter* (1905); Duchesne's *Histoire ancienne de l'Église* (vol. i., 1906).

(A. C. McG.)

History of the Christian Church.

In the following account of the historical evolution of the Church, the subject will be treated in three sections:—(A) The ancient Church to the beginning of the pontificate of Gregory the Great (A.D. 590); (B) The Church in the middle ages; (C) The modern Church.

A. The Ancient Church

1. *Origin and Growth.*—The crucifixion of Jesus Christ resulted in the scattering of his followers, but within a short time they became convinced that he had risen from the dead, and would soon return to set up the expected Messianic kingdom, and so to accomplish the true work of the Messiah (cf. Acts i. 6 ff.). They were thus enabled to retain the belief in his Messiahship which his death had threatened to destroy permanently. This belief laid upon them the responsibility of bringing as many of their countrymen as possible to recognize him as Messiah, and to prepare themselves by repentance and righteousness for the coming kingdom (cf. Acts ii. 21, 38, iii. 19 sq.). It was with the sense of this responsibility that they gathered again in Jerusalem, the political and religious metropolis of Judaism. In Jerusalem the new movement had its centre, and the church established there is rightly known as the mother church of Christendom. The life of the early Jewish disciples, so far as we are able to judge from our meagre sources, was very much the same as that of their fellows. They continued faithful to the established synagogue and temple worship (cf. Acts iii. 1), and did not think of founding a new sect, or of separating from the household of Israel (cf. Acts x. 14, xv. 5, xxi. 21 sq.). There is no evidence that their religious or ethical ideals differed in any marked degree from those of the more serious-minded among their countrymen, for the emphasis which they laid upon the need of righteousness was not at all uncommon. In their belief, however, in the Messiahship of Jesus, and their consequent assurance of the speedy establishment by him of the Messianic kingdom, they stood alone. The first need of the hour, therefore, was to show that Jesus was the promised Messiah in spite of his crucifixion, a need that was met chiefly by testimony to the resurrection, which became the burden of the message of the early disciples to their fellow-countrymen (cf. Acts ii. 24 ff., iii. 15 ff., v. 31). It was this need which led also to the development of Messianic prophecy and the ultimate interpretation of the Jewish Bible as a Christian book (see Bible). The second need of the hour was to bring the nation to repentance and righteousness in order that the kingdom might come (cf. Acts iii. 19). The specific gospel of Jesus, the gospel of divine fatherhood and human brotherhood, received no attention in the earliest days, so far as our sources enable

us to judge.

Meanwhile the new movement spread quite naturally beyond the confines of Palestine and found adherents among the Jews of the dispersion, and at an early day among the Gentiles as well. Many of the latter had already come under the influence of Judaism, and were more or less completely in sympathy with Jewish religious principles. Among the Christians who did most to spread the gospel in the Gentile world was the apostle Paul, whose conversion was the greatest event in the history of the early Church. In his hands Christianity became a new religion, fitted to meet the needs of all the world, and freed entirely of the local and national meaning which had hitherto attached to it. According to the early disciples Jesus was the Jewish Messiah, and had significance only in relation to the expected Messianic kingdom. To establish that kingdom was his one great aim. For the Gentiles he had no message except as they might become members of the family of Israel, assuming the responsibilities and enjoying the privileges of proselytes. But Paul saw in Jesus much more than the Jewish Messiah. He saw in Christ the divine Spirit, who had come down from heaven to transform the lives of men, all of whom are sinners. Thus Jesus had the same significance for one man as for another, and Christianity was meant as much for Gentiles as for Jews. The kingdom of which the early disciples were talking was interpreted by Paul as righteousness and peace and joy in the Holy Ghost (Rom. xiv. 17), a new principle of living, not a Jewish state. But Paul taught also, on the basis of a religious experience and of a distinct theory of redemption (see McGiffert's *Apostolic Age*, ch. iii.), that the Christian is freed from the obligation to observe the Jewish law. He thus did away with the fundamental distinction between Jews and Gentiles. The transformed spiritual life of the believer expresses itself not in the observance of the Jewish law, but in love, purity and peace. This precipitated a very serious conflict, of which we learn something from the Epistle to the Galatians and the Book of Acts (xv. and xxii.). Other fundamental principles of Paul's failed of comprehension and acceptance, but the belief finally prevailed that the observance of Jewish law and custom was unnecessary, and that in the Christian Church there is no distinction between the circumcised and the uncircumcised. Those Jewish Christians who refused to go with the rest of the Church in this matter lived their separate life, and were regarded as an heretical sect known as the Ebionites.

It was Christianity in its universal form which won its great victories, and finally became permanently established in the Roman world. The appeal which it made to that world was many-sided. It was a time of moral reformation, when men were awaking to the need of better and purer living. To all who felt this need Christianity offered high moral ideals, and a tremendous moral enthusiasm, in its devotion to a beloved leader, in its emphasis upon the ethical possibilities of the meanest, and in its faith in a future life of blessedness for the righteous. It was a time of great religious interest, when old cults were being revived and new ones were finding acceptance on all sides. Christianity, with its one God, and its promise of redemption and a blessed immortality based upon divine revelation, met as no other contemporary faith did the awakening religious needs. It was a time also of great social unrest. With its principle of Christian brotherhood, its emphasis upon the equality of all believers in the sight of God, and its preaching of a new social order to be set up at the return of Christ, it appealed strongly to multitudes, particularly of the poorer classes. That it won a permanent success, and finally took possession of the Roman world, was due to its combination of appeals. No one thing about it commended it to all, and to no one thing alone did it owe its victory, but to the fact that it met a greater variety of needs and met them more satisfactorily than any other movement of the age. Contributing also to the growth of the Church was the zeal of its converts, the great majority of whom regarded themselves as missionaries and did what they could to extend the new faith. Christianity was essentially a proselytizing religion, not content to appeal simply to one class or race of people, and to be one among many faiths, but believing in the falsity or insufficiency of all others and eager to convert the whole world. Moreover, the feeling of unity which bound Christians everywhere together and made of them one compact whole, and which found expression before many generations had passed in a strong organization, did much for the spread of the Church. Identifying himself with the Christian circle from the 2nd century on, a man became a member of a society existing in all quarters of the empire, every part conscious of its oneness with the larger whole and all compactly organized to do the common work. The growth of the Church during the earlier centuries was chiefly in the middle and lower classes, but it was not solely there. No large number of the aristocracy were reached, but in learned and philosophical circles many were won, attracted both by Christianity's evident ethical power and by its philosophical character (cf. the Apologists of the 2nd century). That it could seem at once a simple way of living for the common man and a profound philosophy of the universe for the speculative thinker meant much for its success.[1]

But it did not win its victory without a struggle. Superstition, misunderstanding and hatred caused the Christians trouble for many generations, and governmental repression they had to suffer occasionally, as a result of popular disturbances. No systematic effort was made by the imperial authorities to put an end to the movement until the reign of Decius (250-251), whose policy of suppression was followed by Diocletian (303 ff.) and continued for some years after his abdication. In spite of all opposition the Church steadily grew, until in 311 the emperor Galerius upon his death-bed granted toleration (see Eusebius *H.E.* x.4, and Lactantius, *De mortibus persecutorum*, 34), and in 313 the emperors Constantine and Licinius published the edict of Milan, proclaiming the principle of complete religious liberty, and making Christianity a legal religion in the full sense (see Eusebius x. 5, and Lactantius 48. Seeck, *Zeitschrift für Kirchengeschichte*, xii. 381 sq., has attempted to show that the edict of Milan had no significance, but without success).

Constantine, recognizing the growing strength of the Church and wishing to enlist the loyal support of the Christians, treated them with increasing favour, and finally was baptized upon his death-bed (337). Under his successors, except during the brief reign of Julian (361-363), when the effort was made to reinstate paganism in its former place of supremacy, the Church received growing support, until, under Theodosius the Great (379-395), orthodox Christianity, which stood upon the platform adopted at Nicaea in 325, was finally established as the sole official religion of the state, and heathen worship was put under the ban. The union between Church and State thus constituted continued unbroken in the East throughout the middle ages. The division of the Empire resulted finally in the division of the Church, which was practically complete by the end of the 6th century, but was made official and final only in 1054, and the Eastern and Western halves, the Greek Catholic and the Roman Catholic Churches, went each its separate way. (See Theodosian Code, book 16, for the various imperial edicts relating to the Church, and for fuller particulars touching the relation between Church and Empire see the articles Constantine; Gratian; Theodosius; Justinian.)

For a long time after the establishment of Christianity as the state religion, paganism continued strong, especially in the country districts, and in some parts of the world had more adherents than Christianity, but at length the latter became, at any rate nominally, the faith of the whole Roman world. Meanwhile already before the beginning of the 3rd century it went beyond the confines of the Empire in Asia, and by the end of our period was strong in Armenia, Persia, Arabia and even farther east. It reached the barbarians on the northern and western borders at an early day, and the Goths were already Christians of the Arian type before the great migrations of the 4th century began. Other barbarians became Christian, some in their own homes beyond the confines of the Empire, some within the Empire itself, so that when the hegemony of the West passed from the Romans to the barbarians the Church lived on. Thenceforth for centuries it was not only the chief religious, but also the chief civilizing, force at work in the Occident. Losing with the dissolution of the Western Empire its position as the state church, it became itself a new empire, the heir of the glory and dignity of Rome, and the greatest influence making for the peace and unity of the western world.

2. *The Christian Life.*—The most notable thing about the life of the early Christians was their vivid sense of being a people of God, called and set apart. The Christian Church in their thought was a divine, not a human, institution. It was founded and controlled by God, and even the world was created for its sake (cf. the *Shepherd of Hermas*, Vis. ii. 4, and 2 Clement 14). This conception, which came over from Judaism, controlled all the life of the early Christians both individual and social. They regarded themselves as separate from the rest of the world and bound together by peculiar ties. Their citizenship was in heaven, not on earth (cf. Phil. iii. 20, and the epistle to Diognetus, c. 5), and the principles and laws by which they strove to govern themselves were from above. The present world was but temporary, and their true life was in the future. Christ was soon to return, and the employments and labours and pleasures of this age were of small concern. Some went so far as to give up their accustomed vocations, and with such Paul had to expostulate in his epistles to the Thessalonians. A more or less ascetic mode of life was also natural under the circumstances. Not necessarily that the present world was evil, but that it was temporary and of small worth, and that a Christian’s heart should be set on higher things. The belief that the Church was a supernatural institution found expression in the Jewish notion of the presence and power of the Holy Spirit. It was believed among the Jews that the Messianic age would be the age of the Spirit in a marked degree, and this belief passed over into the Christian Church and controlled its thought and life for some generations. The Holy Spirit was supposed to be manifest in various striking ways, in prophecy, speaking with tongues and miracle working. In this idea Paul also shared, but he carried the matter farther than

most of his contemporaries and saw in the Spirit the abiding power and ground of the Christian life. Not simply in extraordinary phenomena, but also in the everyday life of Christians, the Holy Spirit was present, and all the Christian graces were the fruits (cf. Gal. v. 22). A result of this belief was to give their lives a peculiarly enthusiastic or inspirational character. Theirs were not the everyday experiences of ordinary men, but of men lifted out of themselves and transported into a higher sphere. With the passing of time the early enthusiasm waned, the expectation of the immediate return of Christ was widely given up, the conviction of the Spirit's presence became less vivid, and the conflict with heresy in the 2nd century led to the substitution of official control for the original freedom (see below). The late 2nd century movement known as Montanism was in essence a revolt against this growing secularization of the Church, but the movement failed, and the development against which it protested was only hastened. The Church as an institution now looked forward to a long life upon earth and adjusted itself to the new situation, taking on largely the forms and customs of the world in which it lived. This did not mean that the Church ceased to regard itself as a supernatural institution, but only that its supernatural character was shown in a different way. A Christian was still dependent upon divine aid for salvation, and his life was still supernatural at least in theory. Indeed, the early conviction of the essential difference between the life of this world and that of the next lived on, and, as the Church became increasingly a world-institution, found vent in monasticism, which was simply the effort to put into more consistent practice the other-worldly life, and to make more thoroughgoing work of the saving of one's soul. Contributing to the same result was the emphasis upon the necessity of personal purity or holiness, which Paul's contrast between flesh and spirit had promoted, and which early took the supreme place given by Christ to love and service. The growing difficulty of realizing the ascetic ideal in the midst of the world, and within the world-church, inevitably drove multitudes of those who took their religion seriously to retire from society and to seek salvation and the higher life, either in solitude, or in company with kindred spirits.

There were Christian monks as early as the 3rd century, and before the end of the 4th monasticism (*q.v.*) was an established institution both in East and West. The monks and nuns were looked upon as the most consistent Christians, and were honoured accordingly. Those who did not adopt the monastic life endeavoured on a lower plane and in a less perfect way to realize the common ideal, and by means of penance to atone for the deficiencies in their performance. The existence of monasticism made it possible at once to hold up a high moral standard before the world and to permit the ordinary Christian to be content with something lower. With the growth of clerical sacerdotalism the higher standard was demanded also of the clergy, and the principle came to be generally recognized that they should live the monastic life so far as was consistent with their active duties in the world. The chief manifestation of this was clerical celibacy, which had become widespread already in the 4th century. Among the laity, on the other hand, the ideal of holiness found realization in the observance of the ordinary principles of morality recognized by the world at large, in attendance upon the means of grace provided by the Church, in fasting at stated intervals, in eschewing various popular employments and amusements, and in almsgiving and prayer. Christ's principle of love was widely interpreted to mean chiefly love for the Christian brotherhood, and within that circle the virtues of hospitality, charity and helpfulness were widely exercised; and if the salvation of his own soul was regarded as the most important affair of every man, the service of the brethren was recognized as an imperative Christian duty. The fulfilling of that duty was one of the most beautiful features of the life of the early Church, and it did perhaps more than anything else to make the Christian circle attractive.

3. *Worship.*—The primitive belief in the immediate presence of the Spirit affected the religious services of the Church. They were regarded in early days as occasions for the free exercise of spiritual gifts. As a consequence the completest liberty was accorded to all Christians to take such part as they chose, it being assumed that they did so only under the Spirit's prompting. But the result of this freedom was confusion and discord, as is indicated by Paul's First Epistle to the Corinthians (see chapters xi., xiv.). This led to the erection of safeguards, which should prevent the continuance of the unseemly conditions (on Paul's action in the matter, see McGiffert's *Apostolic Age*, p. 523). Particular Christians were designated to take charge of the services, and orders of worship were framed out of which grew ultimately elaborate liturgies (see Liturgy). The Lord's Supper first took on a more stereotyped character, and prayers to be used in connexion with it are found already in the *Didachē* (chapters ix. and x.). The development cannot here be traced in detail. It may simply be said that the general tendency was on the one hand toward the elaboration and growing magnificence of the services, especially after the Church had become a state institution and had taken the place of the older pagan cults, and on the other hand toward

the increasing solemnity and mystery of certain parts, particularly the eucharist, the sacred character of which was such as to make it sacrilegious to admit to it the unholy, that is, outsiders or Christians under discipline (cf. *Didachē*, ix.). It was, in fact, from the Lord's table that offending disciples were first excluded. Out of this grew up in the 3rd or 4th century what is known as the *arcani disciplina*, or secret discipline of the Church, involving the concealment from the uninitiated and unholy of the more sacred parts of the Christian cult, such as baptism and the eucharist, with their various accompaniments, including the Creed and the Lord's Prayer. The same interest led to the division of the services into two general parts, which became known ultimately as the *missa catechumenorum* and the *missa fidelium*,—that is, the more public service of prayer, praise and preaching open to all, including the catechumens or candidates for Church membership, and the private service for the administration of the eucharist, open only to full members of the Church in good and regular standing. Meanwhile, as the general service tended to grow more elaborate, the *missa fidelium* tended to take on the character of the current Greek mysteries (see Eucharist; Hatch, *Influence of Greek Ideas and Usages upon the Christian Church*, 1890; Anrich, *Das antike Mysterienwesen in seinem Einfluss auf das Christentum*, 1894; Wobbermin, *Religionsgeschichtliche Studien zur Frage der Beeinflussung des Urchristentums durch das antike Mysterienwesen*, 1896). Many of the terms in common use in them were employed in connexion with the Christian rites, and many of the conceptions, particularly that of sharing in immortality by communion with deity, became an essential part of Christian doctrine. Thus the early idea of the services, as occasions for mutual edification through the interchange of spiritual gifts, gave way in course of time to the theory that they consisted of sacred and mysterious rites by means of which communion with God is promoted. The emphasis accordingly came to be laid increasingly upon the formal side of worship, and a value was given to the ceremonies as such, and their proper and correct performance by duly qualified persons, *i.e.* ordained priests, was made the all-important thing.

4. *The Church and the Sacraments.*—According to Paul, man is flesh and so subject to death. Only as he becomes a spiritual being through mystical union with Christ can he escape death and enjoy eternal life in the spiritual realm. In the Epistle to the Ephesians the Christian Church is spoken of as the body of Christ (iv. 12 ff., v. 30); and Ignatius, bishop of Antioch, early in the 2nd century, combined the two ideas of union with Christ, as the necessary condition of salvation, and of the Church as the body of Christ, teaching that no one could be saved unless he were a member of the Church (cf. his Epistle to the Ephesians 4, 5, 15; Trall. 7; Phil. 3, 8; Smyr. 8; Magn. 2, 7). Traces of the same idea are found in Irenaeus (cf. *Adv. Haer.* iii. 24, 1, iv. 26, 2), but it is first clearly set forth by Cyprian, and receives from him its classical expression in the famous sentence "Salus extra ecclesiam non est" (Ep. 73, 21; cf. also Ep. 4, 4; 74, 7; and *De unitate ecclesiae*, 6: "habere non potest Deum patrem qui ecclesiam non habet matrem"). The Church thus became the sole ark of salvation, outside of which no one could be saved.

Intimately connected with the idea of the Church as an ark of salvation are the sacraments or means of grace. Already as early as the 2nd century the rite of baptism had come to be thought of as the sacrament of regeneration, by means of which a new divine nature is born within a man (cf. Irenaeus, *Adv. Haer.* i. 21, 1, iii. 17, 1; and his newly discovered *Demonstration of the Apostolic Teaching*, chap. 3), and the eucharist as the sacrament of the body and blood of Christ, feeding upon which one is endowed with immortality (cf. Irenaeus, *Adv. Haer.* iv. 18, 5, v. 2, 2). In the early days the Church was thought of as a community of saints, all of whose members were holy, and as a consequence discipline was strict, and offenders excluded from the Church were commonly not readmitted to membership but left to the mercy of God. The idea thus became general that baptism, which had been almost from the beginning the rite of entrance into the Church, and which was regarded as securing the forgiveness of all pre-baptismal sins, should be given but once to any individual. Meanwhile, however, discipline grew less strict (cf. the *Shepherd of Hermas*, Vis. v. 3; M. iv. 7; Sim. viii. 6, ix. 19, 26, &c.); until finally, under the influence of the idea of the Church as the sole ark of salvation, it became the custom to readmit all penitent offenders on condition that they did adequate penance. Thus there grew up the sacrament of penance, which secured for those already baptized the forgiveness of post-baptismal sins. This sacrament, unlike baptism, might be continually repeated (see Penance). In connexion with the sacraments grew up also the theory of clerical sacerdotalism. Ignatius had denied the validity of a eucharist administered independently of the bishop, and the principle finally established itself that the sacraments, with an exception in cases of emergency in favour of baptism, could be performed only by men regularly ordained and so endowed with the requisite divine grace for their due administration (cf. Tertullian, *De Exhort. cast. 7; De*

Bapt. 7, 17; De Praescriptione Haer. 41; and Cyprian, *Ep. 67.* For the later influence of the Donatist controversy upon the sacramental development see Donatists). Thus the clergy as distinguished from the laity became true priests, and the latter were made wholly dependent upon the former for sacramental grace, without which there is ordinarily no salvation (see Order, Holy).

5. *Christian Doctrine.*—Two tendencies appeared in the thought of the primitive Church, the one to regard Christianity as a law given by God for the government of men's lives, with the promise of a blessed immortality as a reward for its observance; the other to view it as a means by which the corrupt and mortal nature of man is transformed, so that he becomes a spiritual and holy being. The latter tendency appeared first in Paul, afterwards in the Gospel and First Epistle of John, in Ignatius of Antioch and in the Gnostics. The former found expression in most of our New Testament writings, in all of the apostolic fathers except Ignatius, and in the Apologists of the 2nd century. The two tendencies were not always mutually exclusive, but the one or the other was predominant in every case. Towards the end of the 2nd century they were combined by Irenaeus, bishop of Lyons. To him salvation bears a double aspect, involving both release from the control of the devil and the transformation of man's nature by the indwelling of the Divine. Only he is saved who on the one hand is forgiven at baptism and so released from the power of Satan, and then goes on to live in obedience to the divine law; and on the other hand receives in baptism the germ of a new spiritual nature and is progressively transformed by feeding upon the body and blood of the divine Christ in the eucharist. This double conception of salvation and of the means thereto was handed down to the Church of subsequent generations and became fundamental in its thought. Christianity is at once a revealed law which a man must keep, and by keeping which he earns salvation, and a supernatural power whereby his nature is transformed and the divine quality of immortality imparted to it. From both points of view Christianity is a supernatural system without which salvation is impossible, and in the Christian Church it is preserved and mediated to the world. 334

The twofold conception referred to had its influence also upon thought about Christ. The effect of the legal view of Christianity was to make Christ an agent of God in the revelation of the divine will and truth, and so a subordinate being between God and the world, the Logos of current Greek thought. The effect of the mystical conception was to identify Christ with God in order that by his incarnation the divine nature might be brought into union with humanity and the latter be transformed. In this case too a combination was effected, the idea of Christ as the incarnation of the Logos or Son of God being retained and yet his deity being preserved by the assertion of the deity of the Logos. The recognition of Christ as the incarnation of the Logos was practically universal before the close of the 3rd century, but his deity was still widely denied, and the Arian controversy which distracted the Church of the 4th century concerned the latter question. At the council of Nicaea in 325 the deity of Christ received official sanction and was given formulation in the original Nicene Creed. Controversy continued for some time, but finally the Nicene decision was recognized both in East and West as the only orthodox faith. The deity of the Son was believed to carry with it that of the Spirit, who was associated with Father and Son in the baptismal formula and in the current symbols, and so the victory of the Nicene Christology meant the recognition of the doctrine of the Trinity as a part of the orthodox faith (see especially the writings of the Cappadocian fathers of the late 4th century, Gregory of Nyssa, Basil and Gregory Nazianzen).

The assertion of the deity of the Son incarnate in Christ raised another problem which constituted the subject of dispute in the Christological controversies of the 4th and following centuries. What is the relation of the divine and human natures in Christ? At the council of Chalcedon in 451 it was declared that in the person of Christ are united two complete natures, divine and human, which retain after the union all their properties unchanged. This was supplemented at the third council of Constantinople in 680 by the statement that each of the natures contains a will, so that Christ possesses two wills. The Western Church accepted the decisions of Nicaea, Chalcedon and Constantinople, and so the doctrines of the Trinity and of the two natures in Christ were handed down as orthodox dogma in West as well as East.

Meanwhile in the Western Church the subject of sin and grace, and the relation of divine and human activity in salvation, received especial attention; and finally, at the second council of Orange in 529, after both Pelagianism and semi-Pelagianism had been repudiated, a moderate form of Augustinianism was adopted, involving the theory that every man as a result of the fall is in such a condition that he can take no steps in the direction of salvation until he has been renewed by the divine grace given in baptism, and that he cannot continue

in the good thus begun except by the constant assistance of that grace, which is mediated only by the Catholic Church. This decision was confirmed by Pope Boniface II., and became the accepted doctrine in the Western Church of the middle ages. In the East, Augustine's predestinationism had little influence, but East and West were one in their belief that human nature had been corrupted by the fall, and that salvation therefore is possible only to one who has received divine grace through the sacraments. Agreeing as they did in this fundamental theory, all differences were of minor concern.

In general it may be said that the traditional theology of the Church took its material from various sources—Hebrew, Christian, Oriental, Greek and Roman. The forms in which it found expression were principally those of Greek philosophy on the one hand and of Roman law on the other (see CHRISTIANITY).

6. *Organization.*—The origin and early development of ecclesiastical organization are involved in obscurity. Owing to the once prevalent desire of the adherents of one or another polity to find support in primitive precept or practice, the question has assumed a prominence out of proportion to its real importance, and the few and scattered references in early Christian writings have been made the basis for various elaborate theories.

In the earliest days the Church was regarded as a divine institution, ruled not by men but by the Holy Spirit. At the same time it was believed that the Spirit imparted different gifts to different believers, and each gift fitted its recipient for the performance of some service, being intended not for his own good but for the good of his brethren (cf. 1 Cor. xii.; Eph. iv. 11). The chief of these was the gift of teaching, that is, of understanding and interpreting to others the will and truth of God. Those who were endowed more largely than their fellows with this gift were commonly known as apostles, prophets and teachers (cf. Acts xiii. 1; 1 Cor. xii. 28; Eph. ii. 20, iii. 5, iv. 11; *Didachē*, xi.). The apostles were travelling missionaries or evangelists. There were many of them in the primitive Church, and only gradually did the term come to be applied exclusively to the twelve and Paul. There is no sign that the apostles, whether the twelve or others, held any official position in the Church. That they had a large measure of authority of course goes without saying, but it depended always upon their brethren's recognition of their possession of the divine gift of apostleship, and the right of Churches or individuals to test their claims and to refuse to listen to them if they did not vindicate their divine call was everywhere recognized. Witness, for instance, Paul's reference to false apostles in 2 Cor. xi. 13, and his efforts to establish his own apostolic character to the satisfaction of the Corinthians and Galatians (1 Cor. ix. 1 ff.; 2 Cor. x. 13; Gal. i. 8 ff.); witness the reference in Rev. ii. 2 to the fact that the Church at Ephesus had tried certain men who claimed to be apostles and had found them false, and also the directions given in the *Didachē* for testing the character of those who travelled about as apostles. The passage in the *Didachē* is especially significant: "Concerning the apostles and prophets, so do ye according to the ordinance of the gospel. Let every apostle when he cometh to you be received as the Lord. But he shall not abide more than a single day, or if there be need a second likewise. But if he abide three days he is a false prophet. And when the apostle departeth let him receive nothing save bread until he findeth shelter. But if he ask money he is a false prophet" (ch. xi.). It is clear that a man who is to be treated in this way by the congregation is not an official ruler over it.

Between the apostles, prophets and teachers no hard-and-fast lines can be drawn. The apostles were commonly missionary prophets, called permanently or temporarily to the special work of evangelization (cf. Acts xiii. 1; *Did*. xi.), while the teachers seem to have been distinguished both from apostles and prophets by the fact that their spiritual endowment was less strikingly supernatural. The indefiniteness of the boundaries between the three classes, and the free interchange of names, show how far they were from being definite offices or orders within the Church. Apostleship, prophecy and teaching were only functions, whose frequent or regular exercise by one or another, under the inspiration of the Spirit, led his brethern to call him an apostle, prophet or teacher.

But at an early day we find regular officers in this and that local Church, and early in the 2nd century the three permanent offices of bishop, presbyter and deacon existed at any rate in Asia Minor (cf. the Epistles of Ignatius of Antioch). Their rise was due principally to the necessity of administering the charities of the Church, putting an end to disorder and confusion in the religious services, and disciplining offenders. It was naturally to the apostles, prophets and teachers, its most spiritual men, that the Church looked first for direction and control in all these matters. But such men were not always at hand, or sometimes they were absorbed in other duties. Thus the need of substitutes began to be felt here and there, and as a consequence regular offices within the local Churches gradually made their appearance, sometimes simply recognized as charged with responsibilities which

they had already voluntarily assumed (cf. 1. Cor. xvi. 15), sometimes appointed by an apostle or prophet or other specially inspired man (cf. Acts xiv. 23; Titus i. 5; 1 Clement 44), sometimes formally chosen by the congregation itself (cf. Acts vi., *Did.* xi.). These men naturally acquired more and more as time passed the control and leadership of the Church in all its activities, and out of what was in the beginning more or less informal and temporary grew fixed and permanent offices, the incumbents of which were recognized as having a right to rule over the Church, a right which once given could not lawfully be taken away unless they were unfaithful to their trust. Not continued endowment by the Spirit, but the possession of an ecclesiastical office now became the basis of authority. The earliest expression of this genuinely official principle is found in Clement's Epistle to the Corinthians, ch. xliv. Upon these officers devolved ultimately not only the disciplinary, financial and liturgical duties referred to, but also the still higher function of instructing their fellow-Christians in God's will and truth, and so they became the substitutes of the apostles, prophets and teachers in all respects (cf. 1 Tim. iii. 2, v. 17; Titus i. 9; *Did.* 15; 1 Clement 44; Justin's first *Apology*, 67).

Whether in the earliest days there was a single officer at the head of a congregation, or a plurality of officers of equal authority, it is impossible to say with assurance. The few references which we have look in the latter direction (cf., for instance, Acts vi.; Phil. i. 1; 1 Clement 42, 44; *Did.* 14), but we are not justified in asserting that they represent the universal custom. The earliest distinct evidence of the organization of Churches under a single head is found in the Epistles of Ignatius of Antioch, which date from the latter part of the reign of Trajan (c. 116). Ignatius bears witness to the presence in various Churches of Asia Minor of a single bishop in control, with whom are associated as his subordinates a number of elders and deacons. This form of organization ultimately became universal, and already before the end of the 2nd century it was established in all the parts of Christendom with which we are acquainted, though in Egypt it seems to have been the exception rather than the rule, and even as late as the middle of the 3rd century many churches there were governed by a plurality of officers instead of by a single head (see Harnack, *Mission und Ausbreitung des Christenthums*, pp. 337 seq.). Where there were one bishop and a number of presbyters and deacons in a church, the presbyters constituted the bishop's council, and the deacons his assistants in the management of the finances and charities and in the conduct of the services. (Upon the minor orders which arose in the 3rd and following centuries, and became ultimately a training school for the higher clergy, see Harnack, *Texte und Untersuchungen*, ii. 5; English translation under the title of *Sources of the Apostolic Canons*, 1895.)

Meanwhile the rise and rapid spread of Gnosticism produced a great crisis in the Church of the 2nd century, and profoundly affected the ecclesiastical organization. The views of the Gnostics, and of Marcion as well, seemed to the majority of Christians destructive of the gospel, and it was widely felt that they were too dangerous to be tolerated. The original dependence upon the Spirit for light and guidance was inadequate. The men in question claimed to be Christians and to enjoy divine illumination as truly as anybody, and so other safeguards appeared necessary. It was in the effort to find such safeguards that steps were taken which finally resulted in the institution known as the Catholic Church. The first of these steps was the recognition of the teaching of the apostles (that is, of the twelve and Paul) as the exclusive standard of Christian truth. This found expression in the formulation of an apostolic scripture canon, our New Testament, and of an apostolic rule of faith, of which the old Roman symbol, the original of our present Apostles' Creed, is one of the earliest examples. Over against the claims of the Gnostics that they had apostolic authority, either oral or written, for their preaching, were set these two standards, by which alone the apostolic character of any doctrine was to be tested (cf. Irenaeus, *Adv. Haer.* i. 10, iii. 3, 4; and Tertullian, *De Prescriptione Haer. passim*). But these standards proved inadequate to the emergency, for it was possible, especially by the use of the allegorical method, to interpret them in more than one way, and their apostolic origin and authority were not everywhere admitted. In view of this difficulty, it was claimed that the apostles had appointed the bishops as their successors, and that the latter were in possession of special divine grace enabling them to transmit and to interpret without error the teaching of the apostles committed to them. This is the famous theory known as "apostolic succession." The idea of the apostolic appointment of church officers is as old as Clement of Rome (see 1 Clement 44), but the use of the theory to guarantee the apostolic character of episcopal teaching was due to the exigencies of the Gnostic conflict. Irenaeus (*Adv. Haer.* iii. 3 ff., iv. 26, iv. 33, v. 20), Tertullian (*De prescriptione*, 32), and Hippolytus (*Philosophumena*, bk. i., preface) are our earliest witnesses to it, and Cyprian sets it forth clearly in his epistles (*e.g.* Ep. 33, 43, 59, 66, 69). The Church was thus in possession not only of authoritative apostolic

doctrine, but also of a permanent apostolic office, to which alone belonged the right to determine what that doctrine is. The combination of this idea with that of clerical sacerdotalism completed the Catholic theory of the Church and the clergy. Saving grace is recognized as apostolic grace, and the bishops as successors of the apostles become its sole transmitters. Bishops are therefore necessary to the very being of the Church, which without them is without the saving grace for the giving of which the Church exists (cf. Cyprian, *Ep.* 33, “ecclesia super episcopos constituitur”; 66, “ecclesia in episcopo”; also *Ep.* 59, and *De unitate eccles.* 17).

These bishops were originally not diocesan but congregational, that is, each church, however small, had its own bishop. This is the organization testified to by Ignatius, and Cyprian’s insistence upon the bishop as necessary to the very existence of the Church seems to imply the same thing. Congregational episcopacy was the rule for a number of generations. But after the middle of the 3rd century diocesan episcopacy began to make its appearance here and there, and became common in the 4th century under the influence of the general tendency toward centralization, the increasing power of city bishops, and the growing dignity of the episcopate (cf. canon 6 of the council of Sardica, and canon 57 of the council of Laodicea; and see Harnack, *Mission und Ausbreitung*, pp. 319 seq.). This enlargement of the bishop’s parish and multiplication of the churches under his care led to a change in the functions of the presbyterate. So long as each church had its own bishop the presbyters constituted simply his council, but with the growth of diocesan episcopacy it became the custom to put each congregation under the care of a particular presbyter, who performed within it most of the pastoral duties formerly discharged by the bishop himself. 336
The presbyters, however, were not independent officers. They were only representatives of the bishop, and the churches over which they were set were all a part of his parish, so that the Cyprianic principle, that the bishop is necessary to the very being of the Church, held good of diocesan as well as of congregational episcopacy. The bishop alone possessed the right to ordain; through him alone could be derived the requisite clerical grace; and so the clergy like the laity were completely dependent upon him.

The growth of the diocesan principle promoted the unity of the churches gathered under a common head. But unity was carried much further than this, and finally resulted in at least a nominal consolidation of all the churches of Christendom into one whole. The belief in the unity of the entire Church had existed from the beginning. Though made up of widely scattered congregations, it was thought of as one body of Christ, one people of God. This ideal unity found expression in many ways. Intercommunication between the various Christian communities was very active. Christians upon a journey were always sure of a warm welcome and hospitable entertainment from their fellow-disciples. Messengers and letters were sent freely from one church to another. Missionaries and evangelists went continually from place to place. Documents of various kinds, including gospels and apostolic epistles, circulated widely. Thus in various ways the feeling of unity found expression, and the development of widely separated parts of Christendom conformed more or less closely to a common type. It was due to agencies such as these that the scattered churches did not go each its own way and become ultimately separate and diverse institutions. But this general unity became official, and expressed itself in organization, only with the rise of the conciliar and metropolitan systems. Already before the end of the 2nd century local synods were held in Asia Minor to deal with Montanism, and in the 3rd century provincial synods became common, and by the council of Nicaea (canon 5) it was decreed that they should be held twice every year in every province. Larger synods representing the churches of a number of contiguous provinces also met frequently; for instance, in the early 4th century at Elvira, Ancyra, Neo-Caesarea and Arles, the last representing the entire Western world. Such gatherings were especially common during the great doctrinal controversies of the 4th century. In 325 the first general or ecumenical council, representing theoretically the entire Christian Church, was held at Nicaea. Other councils of the first period now recognized as ecumenical by the Church both East and West are Constantinople I. (381), Ephesus (431), Chalcedon (451), Constantinople II. (553). All these were called by the emperor, and to their decisions he gave the force of law. Thus the character of the Church as a state institution voiced itself in them. (See Council.)

The theory referred to above, that the bishops are successors of the apostles, and as such the authoritative conservators and interpreters of apostolic truth, involves of course the solidarity of the episcopate, and the assumption that all bishops are in complete harmony and bear witness to the same body of doctrine. This assumption, however, was not always sustained by the facts. Serious disagreements even on important matters developed frequently. As a result the ecumenical council came into existence especially for the purpose of settling disputed questions of doctrine, and giving to the collective episcopate the

opportunity to express its voice in a final and official way. At the council of Nicaea, and at the ecumenical councils which followed, the idea of an infallible episcopate giving authoritative and permanent utterance to apostolic and therefore divine truth, found clear expression, and has been handed down as a part of the faith of the Catholic Church both East and West. The infallibility of the episcopate guarantees the infallibility of a general council in which not the laity and not the clergy in general, but the bishops as successors of the apostles, speak officially and collectively.

Another organized expression of the unity of the Church was found in the metropolitan system, or the grouping of the churches of a province under a single head, who was usually the bishop of the capital city, and was known as the metropolitan bishop. The Church thus followed in its organization the political divisions of the Empire (cf. for instance canon 12of the council of Chalcedon, which forbids more than one metropolitan see in a province; also canon 17 of the same council: "And if any city has been or shall hereafter be newly erected by imperial authority, let the arrangement of ecclesiastical parishes follow the political and municipal forms"). These metropolitan bishops were common in the East before the end of the 3rd century, and the general existence of the organization was taken for granted by the council of Nicaea (see canons 4,6,7). In the West, on the other hand, the development was much slower.

Meanwhile the tendency which gave rise to the metropolitan system resulted in the grouping together of the churches of a number of contiguous provinces under the headship of the bishop of the most important city of the district, as, for instance, Antioch, Ephesus, Alexandria, Rome, Milan, Carthage, Arles. In canon 6 of the council of Nicaea the jurisdiction of the bishops of Alexandria, Rome and Antioch over a number of provinces is recognized. At the council of Constantinople (381) the bishop of Constantinople or New Rome was ranked next after the bishop of Rome (canon 3), and at the council of Chalcedon (451) he was given authority over the churches of the political dioceses of Pontus, Asia and Thrace (canon 28). To the bishops of Rome, Constantinople, Antioch and Alexandria was added at the council of Chalcedon (session 7) the bishop of Jerusalem, the mother church of Christendom, and the bishops thus recognized as possessing supreme jurisdiction were finally known as patriarchs.

Meanwhile the Roman episcopate developed into the papacy, which claimed supremacy over the entire Christian Church, and actually exercised it increasingly in the West from the 5th century on. This development was forwarded by Augustine, who in his famous work *De civitate Dei* identified the Church with the kingdom of God, and claimed that it was supreme over all the nations of the earth, which make up the *civitas terrena* or earthly state. Augustine's theory was ultimately accepted everywhere in the West, and thus the Church of the middle ages was regarded not only as the sole ark of salvation, but also as the ultimate authority, moral, intellectual and political. Upon this doctrine was built, not by Augustine himself but by others who came after him, the structure of the papacy, the bishop of Rome being finally recognized as the head under Christ of the *civitas Dei*, and so the supreme organ of divine authority on earth (see Papacy and Pope).

Historical Sources of the First Period.—These are of the same general character for Church history as for general history—on the one hand monumental, on the other hand documentary. Among the monuments are churches, catacombs, tombs and inscriptions of various kinds, few antedating the 3rd century, and none adding greatly to the knowledge gained from documentary sources (see De Rossi, *Roma sotteranea*, 1864 ff., and its English abridgment by Northcote and Brownlow, 1870; André Pératé, *L'Archéologie chrétienne*, 1892; W. Lowrie, *Monuments of the Early Church*, 1901, with good bibliography). The documents comprise imperial edicts, rescripts, &c, liturgies, acts of councils, decretals and letters of bishops, references in contemporary heathen writings, and above all the works of the Church Fathers. Written sources from the 1st and 2nd centuries are relatively few, comprising, in addition to some scattered allusions by outsiders, the New Testament, the Apostolic Fathers, the Greek Apologists, Clement of Alexandria, the old Catholic Fathers (Irenaeus, Tertullian and Hippolytus) and a few Gnostic fragments. For the 3rd, and especially the 4th and following centuries, the writers are much more numerous; for instance, in the East, Origen and his disciples, and later Eusebius of Caesarea, Athanasius, Apollinaris, Basil and the two Gregories, Cyril of Jerusalem, Epiphanius, Chrysostom, Ephraim the Syrian, Cyril of Alexandria, Pseudo-Dionysius; in the West, Novatian, Cyprian, Commodian, Arnobius, Lactantius, Hilary, Ambrose, Rufinus, Jerome, Augustine, Prosper, Leo the Great, Cassian, Vincent of Lerins, Faustus, Gennadius, Ennodius, Avitus, Caesarius, Fulgentius and many others.

There are many editions of the works of the Fathers in the original, the most convenient, in spite of its defects, being that of J.P. Migne (*Patrologia Graeca*, 166 vols., Paris, 1857 ff.;

Patrologia Latina, 221 vols., 1844 ff.). Of modern critical editions, besides those containing the works of one or another individual, the best are the Berlin edition of the early Greek Fathers (*Die griechischen christlichen Schriftsteller der ersten drei Jahrhunderie*, 1897 ff.), and the Vienna edition of the Latin Fathers (*Corpus scriptorum ecclesiasticorum Latinorum*, 1867 ff.), both of first-rate importance. There is a convenient English translation of most of the writings of the ante-Nicene Fathers by Roberts and Donaldson (*Ante-Nicene Christian Library*, 25 vols., Edinburgh, 1868 ff., American reprint in nine vols., 1886 ff.). A continuation of it, containing selected works of the Nicene and post-Nicene period, was edited by Schaff and others under the title *A Select Library of Nicene and post-Nicene Fathers* (series 1 and 2; 28 vols., Buffalo and New York, 1886 ff.).

On early Christian literature, in addition to the works on Church history, see especially the monumental *Geschichte der altchristlichen Litteratur bis Eusebius*, by Harnack (1893 ff.). The brief *Geschichte der altchristlichen Litteratur in den ersten drei Jahrhunderten*, by G. Krüger (1895, English translation 1897) is a very convenient summary. Bardenhewer's *Patrologie* (1894) and his *Geschichte der altkirchlichen Litteratur* (1902 ff.) should also be mentioned. See also Smith and Wace's invaluable *Dictionary of Christian Biography* (1877 ff.).

(A. C. Mcg.)

B. The Christian Church in the Middle Ages

The ancient Church was the church of the Roman empire. It is true that from the 4th century onwards it expanded beyond the borders of that empire to east and west, north and south; but the infant churches which gradually arose in Persia and Abyssinia, among some of the scattered Teutonic races, and among the Celts of Ireland, were at first not co-operating factors in the development of Christendom: they received without giving in return. True historic life is only to be found within the church of the Empire.

The middle ages came into being at the time when the political structure of the world, based upon the conquests of Alexander the Great and the achievements of Julius Caesar, began to disintegrate. They were present when the believers in Mahomet held sway in the Asiatic and African provinces which Alexander had once brought under the intellectual influence of Hellenism; while the Lombards, the West Goths, the Franks and the Anglo-Saxons had established kingdoms in Italy, Spain, Gaul and Britain. The question is: what was the position of the Church in this great change of circumstances, and what form did the Church's development take from this time onwards? In answering this question we must consider East and West separately; for their histories are no longer coincident, as they had been in the time of the Roman dominion.

I. The East. (a) *The Orthodox Church.*—Ancient and medieval times were not separated by so deep a gulf in the East as in the West; for in the East the Empire continued to exist, although within narrow limits, until towards the end of the middle ages. Constantinople only fell in 1453. Ecclesiastical Byzantinism is therefore not a product of the middle ages: it is the outcome of the development of the eastern half of the empire from the time of Constantine the Great. Under Justinian I. all its essential features were already formed: imperial power extended equally over State and Church; indeed, care for the preservation of dogma and for the purity of the priesthood was the chief duty of the ruler. To fulfil this duty was to serve the interests of both State and people; for thus "a fine harmony is established, and whatever good exists becomes the portion of the whole human race." Since the emperor ruled the Church there was no longer any question of independence for the bishops, least of all for the patriarch in Constantinople; they were in every respect subordinate to the emperor.

The *orthodoxy* of the Eastern Church was also a result of the Church's development after the time of Constantine. In the long strife over dogma the old belief of the Greeks in the value of knowledge had made itself felt, and this faith was not extinct in the Eastern Church. There is no doubt that in the beginning of the middle ages both general and theological education stood higher among the Greeks than in more western countries. In the West there were no learned men who could vie with Photius (ca. 820-891) in range of knowledge and variety of scientific attainment. But the strife over dogma came to an end with the 7th century. After the termination of the monothelite controversy (638-680), creed and doctrines were complete; it was only necessary to preserve them intact. Theology, therefore, now resolved itself into the collection and reproduction of the teaching of ancient authorities. The great dogmatist of the Eastern Church, John of Damascus (ca. 699-753), who stood on the threshold of the middle ages, formulated clearly and precisely his working principle: to put forward nothing of his own, but to present the truth according to the authority of the Bible and of the Fathers of the Church. Later teachers, Euthymius Zigadenus (d. circa 1120), Nicetas Choniates (d. circa 1200), and others, proceeded further on the same lines;

Euthymius, in particular, often uses an excerpt instead of giving his own exposition.

This attitude towards dogma did not mean that it was less prized than during the period of strife. On the contrary, the sacred formulae were revered because they were believed to contain the determination of the highest truths: the knowledge of God and of the mystery of salvation. Yet it is intelligible that religious interest should have concerned itself more keenly with the mystic rites of divine worship than with dogma. Here was more than knowledge; here were representations of a mystic sensuousness, solemn rites, which brought the faithful into immediate contact with the Divine, and guaranteed to them the reception of heavenly powers. What could be of more importance than to be absorbed in this transcendental world? We may gauge the energy with which the Greek intellect turned in this direction if we call to mind that the controversy about dogma was replaced by the controversy about images. This raged in the Eastern Church for more than a century (726-843), and only sank to rest when the worship of images was unconditionally conceded. In this connexion the image was not looked upon merely as a symbol, but as the vehicle of the presence and power of that which it represented: in the image the invisible becomes operative in the visible world. Christ did not seem to be Christ unless he were visibly represented. What an ancient teacher had said with regard to the worship of Christ as the revelation of the Eternal Father—"Honours paid to the earthly representative are shared by the heavenly Archetype"—was now transferred to the painted image: it appeared as an analogy to the Incarnation. It was for this reason that the victory of image worship was celebrated by the introduction of the festival of the Orthodox Faith.

It is consistent with this circle of ideas that initiation into the profound mysteries of the liturgy was regarded, together with the preservation of dogma, as the most exalted function of theology. A beginning had been made, in the 5th century, by the neo-platonic Christian who addressed his contemporaries under the mask of Dionysius the Areopagite. He is the first of a series of theological mystics which continued through every century of the middle ages. Maximus Confessor, the heroic defender of Dyotheletism (d. 662), Symeon, the New Theologian (d. circa 1040), Nicolaus Cabasilas (d. 1371), and Symeon, like Nicholas, archbishop of Thessalonica (d. 1429), were the most conspicuous representatives of this Oriental mysticism. They left all the dogmas and institutions of the Church untouched; aspiring above and beyond these, their aim was religious experience.

It is this striving after religious experience that gives to the Oriental monachism of the middle ages its peculiar character. In the 5th and 6th centuries Egypt and Palestine had been the classic lands of monks and monasteries. But when, in consequence of the Arab invasion, the monasticism of those countries was cut off from intercourse with the rest of Christendom, it decayed. Constantinople and Mount Athos gained proportionately in importance during the middle ages. At Constantinople the monastery of Studium, founded about 460, attained to supreme influence during the controversy about images. On Mount Athos the first monastery was founded in the year 963, and in 1045 the number of monastic foundations had reached 180. In Greek monachism the old Hellenic ideal of the wise man who has no wants (αὐτάρκεια) was from the first fused with the Christian conception of unreserved self-surrender to God as the highest aim and the highest good. These ideas governed it in medieval times also, and in this way monastic life received a decided bent towards mysticism: the monks strove to realize the heavenly life even upon earth, their highest aim being the contemplation of God and of His ways. The teachings of Symeon "the New Theologian" on these matters lived on in the cloisters; it was taken up by the Hesychasts of the 14th century, and developed into a peculiar theory as to the perception of the Divine Light. In spite of all opposition their teaching was finally justified by the Eastern Church (sixth synod of Constantinople, 1351). And rightly so, for it was the old Greek piety minted afresh.

The Eastern Church, then, throughout the middle ages, remained true in every particular to her ancient character. It cannot be said that she developed as did the Western Church during this period, for she remained what she had been; but she freely developed her original characteristics, consistently, in every direction. This too is life, though of a different type from that of the West.

That there was life in the Eastern Church is also proved by the fact that the power of *expansion* was not denied her. Through her agency an important bulwark for the Christian faith was created in the new nations which had sprung into existence since the beginning of the middle ages: the Bulgarians, the Servians, and the multifarious peoples grouped under the name of Russians. There is a vast difference in national character between these young peoples and the successors of the Hellenes; and it is therefore all the more significant to find that both the Church and religious sentiment should in their case have fully preserved the

Byzantine character. This proves once more the ancient capacity of the Greeks for the assimilation of foreign elements.

There was yet another outcome of this stubborn persistency of a peculiar type—the impossibility of continuing to share the life of the Western Church. Neither in the East nor in the West was a *separation* desired; but it was inevitable, since the lives of East and West were moving in different directions. It was the fall of Constantinople that first weakened the vital force of the Eastern Church. May we hope that the events of modern times are leading her towards a renaissance?

(b) *The Nestorian and the Monophysite Churches.*—Since the time when the church of eastern Syria had decided, in opposition to the church of the Empire, to cling to the ancient views of Syrian theologians—therefore also to the teaching and person of Nestorius—her relations were broken off with the church in western Syria and in Greek and Latin countries; but the power of Nestorian, or, as it was termed, *Chaldaic* Christianity, was not thereby diminished. Separated from the West, it directed its energies towards the East, and here its nearest neighbour was the Persian church. The latter followed, almost without opposition, the impulse received from Syria; from the rule of the patriarch Babacus (Syr. Bāb-hāi, 498-503) she may be considered definitely Nestorian. A certain number, too, of Arabic Christians, believers living on the west coast of India, the so-called Christians of St Thomas, and finally those belonging to places nearer the middle of Asia (Merv, Herat, Samarkand), remained in communion with the Nestorian church. Thus there survived in mid-Asia a widely-scattered remnant, which, although out of touch with the ancient usages of Christian civilization, yet in no way lacked higher culture. Nestorian philosophers and medical practitioners became the teachers of the great Arabian natural philosophers of the middle ages, and the latter obtained their knowledge of Greek learning from Syriac translations of the works of Greek thinkers.

Political conditions at the beginning of the middle ages favoured the Nestorian church, and the fact that the Arabs had conquered Syria, Palestine and Egypt, made it possible for her to exert an influence on the Christians in these countries. Of still more importance was the brisk commercial intercourse between central Asia and the countries of the Far East; for this led the Nestorians into China. The inscription of Si-ngan-fu (before 781) proves a surprisingly widespread extension of the Christian faith in that country. That it also possessed adherents in southern Siberia we gather from the inscriptions of Semiryetchensk, and in the beginning of the 11th century it found its way even into Mongolia. Nowhere were the nations Christian, but the Christian faith was everywhere accepted by a not insignificant minority. The foundation of the Mongolian empire in the beginning of the 13th century did not disturb the position of the Nestorian church; but the revival of the Mahommedan power, which was coincident with the downfall of the Mongolian empire, was pregnant with disaster for her. The greater part of Nestorian Christendom was now swallowed up by Islam, so that only remnants of this once extensive church have survived until modern times.

The middle ages were far more disastrous for the Monophysites than for the Nestorians; in their case there was no alternation of rise and decline, and we have only a long period of gradual exhaustion to chronicle. Egypt was the home of Monophysitism, whence it extended also into Syria. It was due to the great Jacob of Edessa (Jacob Baradaeus, d. 578) that it did not succumb to the persecution by the power of the Orthodox Empire, and out of gratitude to him the Monophysite Christians of Syria called themselves *Jacobites*. The Arab conquest (after 635) freed the Jacobite church entirely from the oppression of the Orthodox, and thereby assured its continuance. The church, however, never attained any greater development, but on the contrary continued to lose adherents from century to century. While Jacob of Edessa is said to have ordained some 100,000 priests and deacons for his fellow-believers, in the 16th century the Jacobites of Syria were estimated at only 50,000 families.

The Monophysite church of Egypt had a like fate. At the time of the separation of the churches the Greeks here had remained faithful to Orthodoxy, the Copts to Monophysitism. Here too the Arab conquest (641) put an end to the oppression of the native Christians by the Greek minority; but this did not afford the Coptic church any possibility of vigorous development. It succumbed to the ceaseless alternation of tolerance and persecution which characterized the Arab rule in Egypt, and the mass of the Coptic people became unfaithful to the Church. At the time of the conquest of the country by the Turks (1517) the Coptic church seems already to have fallen to the low condition in which the 19th century found it. Though at the time of the Arab conquest the Copts were reckoned at six millions, in 1820 the Coptic Christians numbered only about one hundred thousand, and it is improbable that their number can have been much greater at the close of the middle ages. Only in Abyssinia the

daughter church of the Coptic church succeeded in keeping the whole people in the Christian faith. This fact, however, is the sole outcome of the history of a thousand years; a poor result, if measured by the standard of the rich history of the Western world, yet large enough not to exclude the hope of a new development.

II. The West. (a) *The Early Middle Ages. The Catholic Church as influenced by the Foundation of the Teutonic States.*—While the Eastern Church was stereotyping those peculiar characteristics which made her a thing apart, the Church of the West was brought face to face with the greatest revolution that Europe has ever experienced. At the end of the 6th century all the provinces of the Empire had become independent kingdoms, in which conquerors of Germanic race formed the dominant nationality. The remnants of the Empire showed an uncommonly tough vitality. It is true that the Teutonic states succeeded everywhere in establishing themselves; but only in England and in the erstwhile Roman Germany did the Roman nationality succumb to the Teutonic. In the other countries it not only maintained itself, but was able to assimilate the ruling German race; the Lombards, West Goths, Swabians, and even the Franks in the greater part of Gaul became Romanized. Consequently the position of the Christian Church was never seriously affected. This is the great fact which stands out at the beginning of the history of the Church in the middle ages. The continuity of the political history of Europe was violently interrupted by the Germanic invasion, but not that of the history of the Church. For, in view of the facts above stated, it was of small significance that in Britain Christianity was driven back into the western portion of the island still held by the Britons, and that in the countries of the Rhine and Danube a few bishoprics disappeared.

This was of the less importance, as the Church immediately made preparations to win back the lost territory. On the frontier line of ancient and medieval times stands the figure of 339
Gregory I., the incarnation as it were of the change that was taking place: half Father of the Church, half medieval pope. He it was who sent the monk Augustine to England, in order to win over the Anglo-Saxons to the Christian faith. Augustine was not the first preacher of the Gospel at Canterbury. A Frankish bishop, Liudhard, had laboured there before his time; but the mission of Augustine and his ordination as a bishop were decisive in the conversion of the country and the establishment of the Anglo-Saxon church. On the continent an extension of the Frankish supremacy towards the east had already led to the advance of Christendom. Not only were the bishoprics in the towns of the Rhine country re-established, but as the Franks colonized the country on both sides of the Main, they carried the Christian faith into the very heart of Germany. Finally, the dependence of the Swabian and Bavarian peoples on the Frankish empire paved the way for Christianity in those provinces also. Celtic monks worked as missionaries in this part of the country side by side with Franks. In England it had not been possible to bring the old British and the young Anglo-Saxon churches into friendly union; but in spite of this the Celts did not abstain from working at the common tasks of Christendom, and the continent has much to thank them for. When the first century of the middle ages came to an end the Church had not only reoccupied the former territory of the Empire, she had already begun to overstep its limits.

In so doing she had remained as of old and had yet become new. Creed and dogma, above all, remained unchanged. The doctrinal decisions of the ancient Church remained the indestructible canon of belief, and what the theologians of the ancient Church had taught was reverenced as beyond improvement. The entire form of divine worship remained therefore unaltered. Even where the Latin tongue was not understood by the people, the Church preserved it in the Mass and in the administration of the sacraments, in her exorcisms and in her benedictions. Furthermore, the organization of ecclesiastical offices remained unchanged: the division of the Church into bishoprics and the grouping together of bishoprics into metropolitan dioceses. Finally, the property and the whole social status of the Church and of the hierarchy remained unchanged, as did also the conviction that the perfection of the Christian life was to be sought and found in the monastic profession.

Nevertheless, the new conditions did exercise the strongest influence upon the character of the Church. The churches of the Lombards, West Goths, Franks and Anglo-Saxons, all counted themselves parts of the Catholic Church; but the Catholic Church had altered its condition; it lacked the power of organization, and split up into territorial churches. Under the Empire the ecumenical council had been looked upon as the highest representative organ of the Catholic Church; but the earlier centuries of the middle ages witnessed the convocation of no ecumenical councils. Under the Empire the bishop of Rome had possessed in the Church an authority recognized and protected by the State; respect for Rome and for the successor of Saint Peter was not forgotten by the new territorial churches, but it had altered in character; legal authority had become merely moral authority; its wielder could

exhort, warn, advise but could not command.

On the other hand, the kings did command in the Church. They certainly claimed no authority over faith or doctrine, and they too respected doctrinal law; but they succeeded in asserting their rights to a practical share in the government of the Church. The clergy and laity of a diocese together elected their bishop, as they had done before; but no one could become a bishop against the will of the king, and the confirmation of their choice rested with him. The bishops continued to meet in synods as before, but the councils became territorial synods; they were called together at irregular intervals by the king, and their decisions obtained legal effect only by royal sanction.

In these circumstances the intrusion of Germanic elements into ecclesiastical law is easy to understand. This is most clearly recognizable in the case of churches which arose alongside the episcopal cathedrals. In the Empire all churches, and all the property of the Church, were at the disposal of the bishops; in Germanic countries, on the contrary, the territorial nobles were looked upon as the owners of churches built upon their lands, and these became “proprietary churches.” The logical consequence of this was that the territorial nobles claimed the right of appointing clergy, and the enjoyment of the revenues of these churches derived from the land (tithes). Even a certain number of the monastic establishments came in this way into the possession of the feudal landowners, who nominated abbots and abbesses as they appointed the incumbents of their churches.

With these conditions, and with the diminution of the ascendancy of town over country that resulted from the Teutonic conquests, is connected the rise of the parochial system in the country. The parishes were further grouped together into rural deaneries and archdeaconries. Thus the diocese, hitherto a simple unit, became an elaborately articulated whole. The bishopric of the middle ages bears the same name as that of the ancient Church; but in many respects it has greatness that is new.

This transformation of old institutions is the first great result of Germanic influence in the Christian Church. It continues to the present day in the universal survival of the parochial system.

In the middle ages the civilizing task of the Church was first approached in England. This was the home of the Latin Christian literature and theology of medieval times. Aldhelm (d. 709) and the Venerable Bede (d. 735) were the first scholars of the period. England was also the home of Winfrid Bonifatius (d. 757). We are accustomed to look upon him chiefly as a missionary; but his completion of the conversion of the peoples of central Germany (Thuringians and Hessians) and his share in that of the Frisians, are the least part of his life-work. Of more importance is the fact that, in co-operation with the bishops of Rome, he carried out the organization of the church in Bavaria, and began the reorganization of the Frankish church, which had fallen into confusion and decay during the political disorders of the last years of the Merovingians. It was Boniface, too, who, with the aid of numerous English priests, monks and nuns, introduced the literary culture of England into Germany.

Pippin (d. 768) and Charlemagne (d. 814) built on the foundations laid by Winfrid. For the importance of Charlemagne’s work, from the point of view of the Church, consists also, not so much in the fact that, by his conversion of the Saxons, the Avars and the Wends in the eastern Alps, he substantially extended the Church’s dominions, as in his having led back the Frankish Church to the fulfilment of her functions as a religious and civilizing agent. This was the purpose of his ecclesiastical legislation. The principal means to this end taken by him was the raising of the status of the clergy. From the priests he demanded faithfulness in preaching and teaching, from the bishops the conscientious government of their dioceses. The monasteries, too, learned to serve the Church by becoming nurseries of literary and theological culture. For the purpose of carrying out his ideas Charlemagne gathered round him the best intellects of Europe. None was more intimately associated with him than the Anglo-Saxon Alcuin (d. 804); but he was only one among many. Beside him are the Celts Josephus Scottus and Dungal, the Lombards Paulinus and Paulus Diaconus, the West Goth Theodulf and many Franks. Under their guidance theology flourished in the Frankish empire. It was as little original as that of Bede; for on the continent, too, scholars were content to think what those of old had thought before them. But in so doing they did not only repeat the old formulae; the ideas of the men of old sprang into new life. This is shown by the searching discussions to which the Adoptionist controversy gave rise. At the same time, the controversy with the Eastern Church over the adoration of images shows that the younger Western theology felt itself equal, if not superior to the Greek. This was in fact the case; for it knew how to treat the question, which divided the Greeks, in a more dispassionate and practical manner than they.

The second generation of Frankish theologians did not lag behind the first. Hrabanus of Fulda (who died archbishop of Mainz in 856) was in the range of his knowledge undoubtedly Alcuin's superior. He was the first learned theologian produced by Germany. His disciple, Abbot Walafrid Strabo of Reichenau (d. 849), was the author of the *Glossa Ordinaria*, a work which formed the foundation of biblical exposition throughout the middle ages. France was still more richly provided with theologians in the 9th century: her most prominent names are Hincmar, archbishop of Reims (d. 882), Bishop Prudentius of Troyes (d. 861), the monks Servatus Lupus (d. 862), Radbert Paschasius (d. circa 860), and Ratramnus (d. after 868); and the last theologian who came into France from abroad, Johannes Scotus Erigena (d. circa 880). The theological method of all these was merely that of restatement. But the controversy about predestination, which, in the 9th century, Hincmar and Hrabanus fought out with the monk Gottschalk of Fulda, as well as the discussions that arose from the definition of the doctrine of transubstantiation of Radbert, enable us to gauge the intellectual energy with which theological problems were once more being handled.

Charlemagne followed his father's policy in carrying out his ecclesiastical measures in close association with the bishops of Rome. He renewed the donation of Pippin, and as *Patrician* he took Rome under his protection. From Pope Adrian I. he received the *Dionyso-Hadriana*, the Roman collection of material bearing on the ancient ecclesiastical law. But the Teutonic elements maintained their place in the law of the Frankish Church; and this was not altered by the fact that, since Christmas 800, the king of the Franks and Lombards had borne the title of Roman emperor. On the contrary, Rome itself was now for the first time affected by the predominance of the new empire; for Charlemagne converted the patriciate into effective sovereignty, and the successor of St Peter became the chief metropolitan of the Frankish empire.

There were, indeed, forces tending in the contrary direction; and these were present in the Frankish empire. Evidence of this is given by the canon law forgeries of the 9th century: the *capitula* of Angelram, the Capitularies of Benedictus Levita (see CAPITULARY), and the great collection of the Pseudo-Isidorian Decretals. For the moment, however, this party met with no success. Of more importance was the fact that at Rome the old conditions, the old claims, and the old law were unforgotten. Developing the ideas of Leo I., Gelasius I. and Gregory the Great, Nicholas I. (858-867) drew a picture of the divine right and unlimited power of the bishop of Rome, which anticipated all that the greatest of his successors were, centuries later, actually to effect. The time had not, however, yet come for the establishment of the papal world-dominion. For, while the power of Charlemagne's successors was decaying, the papacy itself became involved in the confusion of the party strife of Italy and of the city of Rome, and was plunged in consequence into such an abyss of degradation (the so-called Pornocracy), that it was in danger of forfeiting every shred of its moral authority over Christendom.

(b) *Central Period of the Middle Ages. Dominance of the Roman Spirit in the Church.*—After the accession of the House of Saxony (919), the national ecclesiastical system, founded upon the principles of Carolingian law, developed in Germany with fresh energy. The union in 962 by Otto I. of the revived Empire with the German kingship brought the latter into uninterrupted contact with the papacy. The revelation of the antagonism between the German conception of ecclesiastical affairs and Roman views of ecclesiastical law was sooner or later inevitable. This was most obvious in the matter of appointment to bishoprics. At Rome canonical election was alone regarded as lawful; in Germany, on the other hand, developments since the time of Charlemagne had led to the actual appointment of bishops being in the hands of the king, although the form of ecclesiastical election was preserved. For the transference of a bishopric a special legal form was evolved—that of investiture, the king investing the bishop elect with the see by delivering to him the ring and pastoral staff. No one found anything objectionable in this; investiture with a bishopric was parallel with the appointment by a territorial proprietor to a patronal church.

The practice customary in Germany was finally transferred to Rome itself. The desperate position of the papacy in the 11th century obliged Henry III. to intervene. When, on the 24th of December 1046, after three rival popes had been set aside, he nominated Suidgar, bishop of Bamberg, as bishop of Rome before all the people in St Peter's, the papacy was bestowed in the same way as a German bishopric; and what had occurred in this case was to become the rule. By procuring the transference of the patriciate from the Roman people to himself Henry assured his influence over the appointment of the popes, and accordingly also nominated the successors of Clement II.

His intervention saved the papacy. For the popes nominated by him, Leo IX. in particular, were men of high character, who exercised their office in a loftier spirit than their corrupt

predecessors. They placed themselves at the head of the movement for ecclesiastical reform. But was it possible for the relation between Empire and Papacy to remain what Henry III. had made it?

The original sources of this reform movement lay far back, in the time of the Carolingians. It has been pointed out how Charlemagne pressed the monks into the service of his civilizing aims. We admire this; but it is certain that he thereby alienated monasticism from its original ideals. These, however, had far too strong a hold upon the Roman world for a reaction against the new tendency to be long avoided. This reaction began with the reform of Benedict of Aniane (d. 821), the aim of which was to bring the Benedictine order back to the principles of its original rules. In the next century the reform movement acquired a fresh centre in the Burgundian monastery of Cluny. The energy of a succession of distinguished abbots and the disciples whom they inspired succeeded in bringing about the victory of the reforming ideas in the French monasteries; once more the rule of St Benedict controlled the life of the monks. A large number of the reformed monasteries attached themselves to the congregation of Cluny, thus assuring the influence of reformed monasticism upon the Church, and securing likewise its independence of the diocesan bishops, since the abbot of Cluny was subordinate of the pope alone. (See Cluny; Benedictines and Monasticism.) At the same time that Cluny began to grow into importance, other centres of the monastic reform movement were established in Upper and Lower Lorraine; and before long the activity of the Cluniac monks made itself felt in Italy. In Germany Poppo of Stavelot (d. 1048) was a successful champion of their ideas; in England Dunstan (d. 988 as archbishop of Canterbury) worked independently, but on similar lines. Everywhere the object was the same: the supreme obligation of the Rule, the renewal of discipline, and also the economic improvement of the monasteries. The reform movement had originally no connexion with ecclesiastical politics; but that came later when the leaders turned their attention to the abuses prevalent among the clergy, to the conditions obtaining in the Church in defiance of the ecclesiastical law. “Return to the canon law!” was now the battle-cry. In the Cluniac circle was coined the principle: *Canonica auctoritas Dei lex est*, canon law being taken in the Pseudo-Isidorian sense. The programme of reform thus included not only the extirpation of simony and Nicolaitism, but also the freeing of the Church from the influence of the State, the recovery of her absolute control over all her possessions, the liberty of the Church and of the hierarchy.

As a result, the party of reform placed itself in opposition to those ecclesiastical conditions which had arisen since the conversion of the Teutonic peoples. It was, then, a fact pregnant with the most momentous consequences that Leo IX. attached himself to the party of reform. For, thanks to him and to the men he gathered round him (Hildebrand, Humbert and others), their principles were established in Rome, and the pope himself became the leader of ecclesiastical reform. But the carrying out of reforms led at once to dissensions with the civil power, the starting-point being the attack upon simony.

Originally, in accordance with Acts viii. 18 et seq., simony was held to be the purchase of ordination. In the 9th century the interpretation was extended to include all acquisition of 341
ecclesiastical offices or benefices for money or money’s worth. Since the landed proprietors disposed of churches and convents, and the kings of bishoprics and abbeys, it became possible for them too to commit the sin of simony; hence a final expansion, in the 11th century, of the meaning of the term. The Pseudo-Isidorian idea being that all lay control over things ecclesiastical is wrong, all transferences by laymen of ecclesiastical offices or benefices, even though no money changed hands in the process, were now classed as simony (Humbert, *Adversus Simoniacos*, 1057-1058). Thus the lord who handed over a living was a simonist, and so too was the king who invested a bishop. On this question the battle began. The Church at first refrained from contesting the rights of the landowners over their own churches, and concentrated her attack upon investiture. In 1059 the new system of papal election introduced by Nicholas II. ensured the occupation of the Holy See by a pope favourable to the party of reform; and in 1078 Gregory VII. issued his prohibition of lay investiture. In the years of conflict that followed Gregory looked far beyond this point; he set his aim ever higher; until, in the end, his idea was to concentrate all ecclesiastical power in the hands of the pope, and to raise the papacy to the dominion of the world. Thus was to be realized the old dream of Augustine: that of a Kingdom of God on earth under the rule of the Church. But it was not given to Gregory to reach this goal, and his successors had to return again to the strife over investiture. The settlement of 1111 may be said to have embodied the only solution of the great question that was right in principle, since it pronounced in favour of a clear distinction between the spiritual and temporal spheres. However, a solution that was right in principle proved impossible in practice, and the long struggle ended in a compromise by the Concordat of Worms (1122). The essential part of this was that the

Empire accepted the canonical election of bishops, and allowed the metropolitan to confer the sacred office by gift of ring and pastoral staff; while the Church acknowledged that the bishop held his temporal rights from the Empire, and was therefore to be invested with them by a touch from the royal sceptre. A similar solution was arrived at in England. Henry I. also renounced his claim to bestow ring and pastoral staff, but kept the right of induction into the temporalities (1106-1107). In France the demands of the Church were successful to the same degree as in England and Germany, but without any conflict. Thus the Germanic element in the law regarding appointment to bishoprics was eliminated. Somewhat later it disappeared also in the case of the churches of less importance, patronal rights over these being substituted for the former absolute ownership. The pontificate of Alexander III. (1159-1181) decided this.

Since the time of Charlemagne Germanic influence had preponderated in the West, as is shown in the expansion of the Church no less than in matters of ecclesiastical law. The whole progress of Christianity in Europe from the 9th to the 12th century was due—if we exclude Eastern Christendom—to the Teutonic nations; neither the papacy nor the peoples of Latin race were concerned in it. German priests and bishops carried the Christian faith to the Czechs and the Moravians, laboured among the Hungarians and the Poles, and won the wide district between the Elbe and the Oder at once for Christianity and for the German nation. Germany, too, was the starting-point for the conversion of the Scandinavian countries, which was completed by English priests with the assistance of native princes.

But, even while the Teutonic peoples were thus taking the lead, we can see the Latin races beginning to assert themselves. The monastic reform movement was essentially Latin in origin; and even more significant was the fact that scholasticism, the new theology, had its home in the Latin countries. Aristotelian dialectics had always been taught in the schools; and reason as well as authority had been appealed to as the foundation of theology; but for the theologians of the 9th and 10th centuries, whose method had been merely that of restatement, *ratio* and *auctoritas* were in perfect accord. Then Berengar of Tours (d. 1088) ventured to set up reason against authority: by reason the truth must be decided. This involved the question of the relation in theology of authority and reason, and of whether the theological method is authoritative or rational. To these questions Berengar gave no answer; he was ruined by his opposition to Radbert's doctrine of transubstantiation. The Lombard Anselm (d. 1109), archbishop of Canterbury, was the first to deal with the subject. He took as his starting-point the traditional faith; but he was convinced that whoever has experience of the truths of the faith would be able to understand them. In accordance with this principle he pointed out the goal of theology and the way to its attainment: the function of theology is to demonstrate dogmas *sola ratione*.

It was a bold conception—too bold for the medieval world, for which faith was primarily the obligation to believe. It was easy, therefore, to understand why Anselm's method did not become the dominant one in theology. Not he, but the Frenchman Abelard (d. 1142), was the creator of the scholastic method. Abelard, too, started from tradition; but he discovered that the statements of the various authorities are very often in the relation of *sic et non*, yes and no. Upon this fact he based his pronouncement as to the function of theology: it must employ the dialectic method to reconcile the contradictions of tradition, and thus to shape the doctrines of the faith in accordance with reason. By teaching this method Abelard created the implements for the erection of the great theological systems of the schoolmen of the 12th and 13th centuries: Peter Lombard (d. 1160), Alexander of Hales (d. 1245), Albertus Magnus (d. 1280), and Thomas Aquinas (d. 1275). They adventured a complete exposition of Christian doctrine that should be altogether ecclesiastical and at the same time altogether rational. In so doing they set to work at the same time to complete the development of ecclesiastical dogma; the formulation of the Catholic doctrine of the Sacraments was the work of scholasticism.

Canon law is the twin-sister of scholasticism. At the very time when Peter Lombard was shaping his Sentences, the monk Gratian of Bologna was making a new collection of laws. It was not only significant that in the *Concordia discordantium canonum* ecclesiastical laws, whether from authentic or forged sources, were gathered together without regard to the existing civil law; of even greater eventual importance was the fact that Gratian taught that the contradictions of the canon law were to be reconciled by the same method as that used by theology to reconcile the discrepancies of doctrinal tradition. Thus Gratian became the founder of the science of canon law, a science which, like the scholastic theology, was entirely ecclesiastical and entirely rational (See Canon Law).

Like the new theology and the new science of law, the new monasticism was also rooted in Latin soil. In the first of the new orders, that of the Cistercians (1098), the old monastic

ideal set forth in the Rule of Benedict of Nursia still prevailed; but in the constitution and government of the order new ideas were at work. In the Premonstratensian order, however, founded in 1120 by Norbert of Xanten, a new conception of the whole function of monachism was introduced: the duty of the priest-monk is not only to work out his own salvation, but, by preaching and cure of souls, to labour for others. This was the dominant idea of the order of friars preachers founded in 1216, on the basis of the Premonstratensian rule, by Dominic of Osma (see Dominic, Saint, and Dominicans). It was also the basis of the order of friars minor (Franciscans, *q.v.*), founded in 1210. For the foundation of Francis of Assisi came into existence as a society of itinerant preachers: no one was more deeply convinced than Francis of the duty of working for others, and his own mission was, as he said, to win souls. But with this idea he fused another, namely, that it is the task of the monk to imitate the humility and poverty of Jesus; and his order thus became a mendicant order. From the earliest times the monks had renounced all private property, and no individual monk, but only the order to which he belonged, could acquire possessions. For Francis this was not enough: he put “holy poverty” in place of renunciation of private property, and allowed neither monk nor monastery to have any possessions whatever; for only thus is the following of Jesus complete. So mighty was the impression made by the poverty of the Minorites, that the Dominicans promptly followed their example and likewise became mendicant. 342

This alone would serve to indicate the remarkable deepening of the religious life that had taken place in the Latin countries. Its beginning may be traced as early as the 11th century (Pietro Damiani, *q.v.*), and in the 12th century the most influential exponent of this new piety was Bernard (*q.v.*) of Clairvaux, who taught men to find God by leading them to Christ. Contemporary with him were Hugh (*q.v.*) of St Victor and his pupil Richard (*q.v.*) of St Victor, both monks of the abbey of St Victor at Paris, the aim of whose teaching, based on that of the Pseudo-Dionysius, was a mystical absorption of thought in the Godhead and the surrender of self to the Eternal Love. Under the influence of these ideas, in part purely Christian and in part neo-platonic, piety gained in warmth and depth and became more personal; and though at first it flourished in the monasteries, and in those of the mendicant orders especially, it penetrated far beyond them and influenced the laity everywhere.

The new piety did not set itself in opposition either to the hierarchy or to the institutions of the Church, such as the sacraments and the discipline of penance, nor did it reject those foreign elements (asceticism, worship of saints and the like) which had passed of old time into Christianity from the ancient world. Its temper was not critical, but aggressively practical. It led the Romance nations to battle for Christendom. In the 11th and 12th centuries the chivalry of Spain and southern France took up the struggle with the Moors as a holy war. In the autumn of 1096 the nobles of France and Italy, joined by the Norman barons of England and Sicily, set out to wrest the Holy Land from the unbelievers; and for more than a century the cry, “Christ’s land must be won for Christ,” exercised an unparalleled power in Western Christendom.

All this meant a mighty exaltation of the Church, which ruled the minds of men as she had hardly ever done before. Nor was it possible that the position of the bishop of Rome, the supreme head of the Western Church, should remain unaffected by it. Two of the most powerful of the German emperors, Frederick I. and his son Henry VI., struggled to renew and to maintain the imperial supremacy over the papacy. The close relations between northern Italy and the Empire, and the union of the sovereignty of southern Italy with the German crown, seemed to afford the means for keeping Rome in subjection. But Frederick I. fought a losing battle, and when at the peace of Venice (1177) he recognized Alexander III. as pope, he relinquished the hope of carrying out his Italian policy; while Henry VI. died at the early age of thirty-two (1197), before his far-reaching schemes had been realized.

The field was thus cleared for the full development of papal power. This had greatly increased since the Concordat of Worms, and reached its height under Innocent III. (1198-1216). Innocent believed himself to be the representative of God, and as such the supreme possessor of both spiritual and temporal power. He therefore claimed in both spheres the supreme administrative, legislative and judicial authority. Just as he considered himself entitled to appoint to all ecclesiastical offices, so also he invested the emperor with his empire and kings with their kingdoms. Not only did he despatch his decretals to the universities to form the basis of the teaching of the canon law and of the decisions founded upon it, but he considered himself empowered to annul civil laws. Thus he annulled the Great Charter in 1215. Just as the Curia was the supreme court of appeal in ecclesiastical causes, so also the pope threatened disobedient princes with deposition, *e.g.* the emperor Otto IV. in 1210, and John of England in 1212.

The old institutions of the Catholic Church were transformed to suit the new position of

the pope. From 1123 onward there had again been talk of general councils; but, unlike those of earlier times, these were assemblies summoned by the pope, who confirmed their resolutions. The canonical election of bishops also continued to be discussed; but the old electors, *i.e.* the clergy and laity of the dioceses, were deprived of the right of election, this being now transferred exclusively to the cathedral chapters. The bishops kept their old title, but they described themselves accurately as "bishops by grace of the apostolic see," for they administered their dioceses as plenipotentiaries of the pope; and as time went on even the Church's criminal jurisdiction became more and more concentrated in the hands of the pope (see INQUISITION).

The rule of the Church by the Roman bishop had thus become a reality; but the papal claim to supreme temporal authority proved impossible to maintain, although Innocent III. had apparently enforced it. The long struggle against Frederick II., carried on by Gregory IX. (1227-1241) and Innocent IV. (1243-1254), did not result in victory; no papal sentence, but only death itself, deprived the emperor of his dominions; and when Boniface VIII. (1294-1303), who in the bull *Unam Sanctam* (1302) gave the papal claims to universal dominion their classical form, quarrelled with Philip IV. of France about the extension of the royal power, he could not but perceive that the national monarchy had become a force which it was impossible for the papacy to overcome.

(c) *Close of the Middle Ages. Disintegration.*—While the Church was yet at the height of her power the great revolution began, which was to end in the disruption of that union between the Temporal and the Spiritual which, under her dominion, had characterized the life of the West. The Temporal now claimed its proper rights. The political power of the Empire, indeed, had been shattered; but this left all the more room for the vigorous development of national states, notably of France and England. At the same time intellectual life was enriched by a wealth of fresh views and new ideas, partly the result of the busy intercourse with the East to which the Crusades had given the first impetus, and which had been strengthened and extended by lively trade relations, partly of the revived study, eagerly pursued, of ancient philosophy and literature (see RENAISSANCE). Old forms became too narrow, and vigorously growing national literatures appeared side by side with the universal Latin literature. The life of the Church, moreover, was affected by the economic changes due to the rise of the power of money as opposed to the old economic system based upon land.

The effects of these changes made themselves felt on all sides, in no case more strongly than in that of the papal claims to the supreme government of the world. Theoretically they were still unwaveringly asserted; indeed it was not till this time that they received their most uncompromising expression (Augustinus Triumphus, d. 1328; Alvarus Pelagius, d. 1352). After Boniface VIII., however, no pope seriously attempted to realize them; to do so had in fact become impossible, for from the time of their residence at Avignon (1305-1377) the popes were in a state of complete dependence upon the French crown. But even the curialistic theory met everywhere with opposition. In France Philip IV.'s jurists maintained that the temporal power was independent of the spiritual. In Italy, a little later, Dante championed the divine right of the emperor (*De Monarchia*, 1311). In Germany, Marsiglio of Padua and Jean of Jandun, the literary allies of the emperor Louis IV., ventured to define anew the nature of the civil power from the standpoint of natural law, and to assert its absolute sovereignty (*Defensor pacis*, c. 1352); while the Franciscan William of Occam (d. 1349) examined, also in Louis' interests, into the nature of the relation between the two powers. He too concluded that the temporal power is independent of the spiritual, and is even justified in invading the sphere of the latter in cases of necessity.

While these thoughts were filling men's minds, opposition to the papal rule over the Church was also gaining continually in strength. The reasons for this were numerous, first among them being the abuses of the papal system of finance, which had to provide funds for the vast administrative machinery of the Curia. There was also the boundless abuse and arbitrary exercise of the right of ecclesiastical patronage (provisions, reservations); and further the ever-increasing traffic in dispensations, the abuse of spiritual punishments for worldly ends, and so forth. No means, however, existed of enforcing any remedy until the papal schism occurred in 1378. Such a schism as this, so intolerable to the ecclesiastical sense of the middle ages, necessitated the discovery of some authority superior to the rival popes, and therefore able to put an end to their quarrelling. General councils were now once more called to mind; but these were no longer conceived as mere advisory councils to the pope, but as the highest representative organ of the universal Church, and as such ranking above the pope, and competent to demand obedience even from him. This was the view of the Germans Conrad of Gelnhausen (d. 1390) and Heinrich of Langenstein (d. 1397), as also

of the Frenchmen Pierre d'Ailli (d. 1420) and Jean Charlier Gerson (d. 1429). These all recognized in the convocation of a general council the means of setting bounds to the abuses in the government of the Church by an extensive reform. The council of Pisa (1409) separated without effecting anything; but the council of Constance (1414-1418) did actually put an end to the schism. The reforms begun at Constance and continued at Basel (1431-1449) proved, however, insufficient. Above all, the attempt to set up the general council as an ordinary institution of the Catholic Church failed; and the Roman papacy, restored at Constance, preserved its irresponsible and unlimited power over the government of the Church. (See Papacy; Constance, Council of, and Basel, Council of.)

Thus the attempt to reform the Church by means of councils failed; but this very failure led to the survival of the desire for reform. It was kept alive by the most various circumstances; in the first instance by the attitude of the European states. Thanks to his recognition by the powers, Pope Eugenius IV. (1431-1447) had been victorious over the council of Basel; but neither France nor Germany was prepared to forgo the reforms passed by the council. France secured their validity, as far as she herself was concerned, by the Pragmatic Sanction of Bourges (July 7, 1438); Germany followed with the Acceptation of Mainz (March 26, 1439). The theory of the papal supremacy held by the Curia was thus at least called in question.

The antagonism of the opposition parties was even more pronounced. The tendencies which they represented had been present when the middle ages were yet at their height; but the papacy, while at the zenith of its power, had succeeded in crushing the attacks made upon the creed of the Church by its most dangerous foes, the dualistic Cathari. On the other hand it had not been able to overcome the less radical opposition of the "Poor Man of Lyons" (Waldo, d. *c.* 1217), and even in the 15th century stray supporters of the Waldensian teaching were to be found in Italy, France and Germany, everywhere keeping alive mistrust of the temporal power of the Church, of her priesthood and her hierarchy. In England the hierarchy was attacked by John Wycliffe (d. 1384), its greatest opponent before Luther. Starting from Augustine's conception of the Church as the community of the elect, he protested against a church of wealth and power, a church that had become a political institution instead of a school of salvation, and against its head, the bishop of Rome. Wycliffe's ideas, conveyed to the continent, precipitated the outbreak of the Hussite storm in Bohemia. The council of Constance thought to quell it by condemnation of Wycliffe's teaching and by the execution of John Huss (1415). But in vain. The flame burst forth, not in Bohemia alone, where Huss's death gave the signal for a general rising, but also in England among the Lollards, and in Germany among those of Huss's persuasion, who had many points of agreement with the remnant of the Waldenses.

(See Huss; Wycliffe; Lollards; Waldenses.)

This was open opposition; but there was besides another opposing force which, though it raised no noise of controversy, yet was far more widely severed from the views of the Church than either Wycliffe or Huss: this was the Renaissance, which began its reign in Italy during the 14th century. The Renaissance meant the emancipation of the secular world from the domination of the Church, and it contributed in no small measure to the rupture of the educated class with ecclesiastical tradition. Beauty of form alone was at first sought, and found in the antique; but, with the form, the spirit of the classical attitude towards life was revived. While the Church, like a careful mother, sought to lead her children, never allowed to grow up, safely from time into eternity, the men of the Renaissance felt that they had come of age, and that they were entitled to make themselves at home in this world. They wished to possess the earth and enjoy it by means of secular education and culture, and an impassable gulf yawned between their views of religion and morality and those of the Church.

This return to the ideals of antiquity did not remain confined to Italy, but the humanism of the northern countries presents no close parallel to the Italian renaissance. However much it agreed in admiration of the ancients, it differed absolutely in its preservation of the fundamental ideas of Christianity. But neither Reuchlin (d. 1522), Erasmus (d. 1536), Faber d'Étaples (d. 1536), Thomas More (d. 1535), nor the numerous others who were their disciples, or who shared their views, were in the least degree satisfied with the conditions prevailing in the Church. Their ideal was a return to that simplicity of primitive Christendom which they believed they found revealed in the New Testament and in the writings of the early Fathers.

To this theology could not point the way. Since the time of Duns Scotus (d. 1308) theologians had been conscious of the discrepancy between Aristotelianism and

ecclesiastical dogma. Faith in the infallibility of the scholastic system was thus shaken, and the system itself was destroyed by the revival of philosophic nominalism, which had been discredited in the 11th century by the realism of the great schoolmen. It now found a bold supporter in William of Occam (*q.v.*), and through him became widely accepted. But nominalism was powerless to inspire theology with new life; on the contrary, its intervention only increased the inextricable tangle of the hairsplitting questions with which theology busied itself, and made their solution more and more impossible.

Mysticism, moreover, which had no lack of noteworthy supporters in the 14th and 15th centuries, and the various new departures in thought initiated by individual theologians such as Nicolaus Cusanus (d. 1464) and Wessel Gansfort (d. 1489), were not competent to restore to the Church what she had once possessed in scholasticism—that is to say, a conception of Christianity in which all Christendom recognized the convictions in which it lived and had its being.

This was all the more significant because Western Christendom in the 15th century was by no means irreligious. Men's minds were agitated by spiritual questions, and they sought salvation and the assurance of salvation, using every means prescribed by the Church: confession and the communion, indulgences and relics, pilgrimages and oblations, prayers and attendance at church; none of all these were contemned or held cheap. Yet the age had no inward peace.

After the failure of the attempts at reform by the councils, the guidance of the Church was left undisturbed in the hands of the popes, and they were determined that it should remain so. In 1450 Eugenius IV. set up in opposition to the council of Basel a general council summoned by himself, which met first at Ferrara and afterwards at Florence. Here he appeared to score a great success. The split between East and West had led in the 11th century to the rupture of ecclesiastical relations between Rome and Constantinople. This schism had lasted since the 16th of July 1054; but now a union with the Eastern Church was successfully accomplished at Florence. Eugenius certainly owed his success merely to the political necessities of the emperor of the East, and his union was forthwith destroyed owing to its repudiation by oriental Christendom; yet at the same time his decretals of union were not devoid of importance, for in them the pope reaffirmed the scholastic doctrine regarding the sacraments as a dogma of the Church, and he spoke as the supreme head of all Christendom.

This claim to the supreme government of the Church was to be steadily maintained. In the year 1512 Julius II. called together the fifth Lateran general council, which expressly recognized the subjection of the councils to the pope (Leo X.'s bull *Pastor Aeternum*, of the 19th of December 1516), and also declared the constitution *Unam Sanctam* (see above) valid in law.

But the papacy that sought to win back its old position was itself no longer the same as of 344
old. Eugenius IV.'s successor, Nicholas V. (1447-1455), was the first of the Renaissance popes. Under his successors the views which prevailed at the secular courts of the Italian princes came likewise into play at the Curia: the papacy became an Italian princedom. Innocent VIII., Alexander VI., Julius II. were in many respects remarkable men, but they were scarcely affected by the convictions of the Christian faith. The terrible tragedy which was consummated on the 23rd of May 1498 before the Palazzo Vecchio, in Florence, casts a lurid light upon the irreconcilable opposition in which the wearers of the papal dignity stood to medieval piety; for Girolamo Savonarola was in every fibre a loyal son of the medieval Church.

Twenty years after Savonarola's death Martin Luther made public his theses against indulgences. The Reformation which thus began brought the disintegrating process of the middle ages to an end, and at the same time divided Western Catholicism in two. Yet we may say that this was its salvation; for the struggle against Luther drove the papacy back to its ecclesiastical duties, and the council of Trent established medieval dogma as the doctrine of modern Catholicism in contradistinction to Protestantism. (See also Papacy; Renaissance; Reformation, and biographies of popes, &c.)

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(A. H.*)

C. The Modern Church

The issue in 1564 of the canons of the council of Trent marks a very definite epoch in the history of the Christian Church. Up till that time, in spite of the schism of East and West and of innumerable heresies, the idea of the Church as Catholic, not only in its faith but in its organization, had been generally accepted. From this conception the Reformers had, at the outset, no intention of departing. Their object had been to purify the Church of medieval accretions, and to restore the primitive model in the light of the new learning; the idea of rival "churches," differing in their fundamental doctrines and in their principles of organization, existing side by side, was as abhorrent to them as to the most rigid partisan of Roman centralization. The actual divisions of Western Christendom are the outcome, less of the purely religious influences of the Reformation period than of the political forces with which they were associated and confused. When it became clear that the idea of doctrinal change would find no acceptance at Rome, the Reformers appealed to the divine authority of the civil power against that of the popes; and princes within their several states succeeded, as the result of purely political struggles and combinations, in establishing the form of religion best suited to their convictions or their policy. Thus over a great part of Europe the Catholic Church was split up into territorial or national churches, which, whatever the theoretical ties which bound them together, were in fact separate organizations, tending ever more and more to become isolated and self-contained units with no formal intercommunion, and, as the rivalry of nationalities grew, with increasingly little even of intercommunication.

It was not, indeed, till the settlement of Westphalia in 1648, after the Thirty Years' War, that this territorial division of Christendom became stereotyped, but the process had been going on for a hundred years previously; in some states, as in England and Scotland, it had long been completed; in others, as in South Germany, Bohemia and Poland, it was defeated by the political and missionary efforts of the Jesuits and other agents of the counter-Reformation. In any case, it received a vast impetus from the action of the council of Trent. With the issue of the Tridentine canons, all hope even of compromise between the "new" and the "old" religions was definitely closed. The anathema of the Roman Church had fallen upon all the fundamental doctrines for which the Reformers had contended and died; the right of free discussion within the limits of the creeds, which had given room for the speculations of the medieval philosophers, was henceforth curtailed and confined; and the definitions of the schoolmen were for ever exalted by the authority of Rome into dogmas of the Church. The Latin Church, which, by combining the tradition of the Roman centralized organization with a great elasticity in practice and in the interpretation of doctrine, had hitherto been the moulding force of civilization in the West, is henceforth more or less in antagonism to that civilization, which advances in all its branches—in science, in literature,

in art—to a greater or less degree outside of and in spite of her, until in its ultimate and most characteristic developments it falls under the formal condemnation of the pope, formulated in the famous Syllabus of 1864. Considered from the standpoint of the world outside, the Roman Church is, no less than the Protestant communities, merely one of the sects into which Western Christendom has been divided—the most important and widespread, it is true, but playing in the general life and thought of the world a part immeasurably less important than that filled by the Church before the Reformation, and one in no sense justifying her claim to be considered as the sole inheritor of the tradition of the pre-Reformation Church.

If this be true of the Roman Catholic Church, it is still more so of the other great communities and confessions which emerged from the controversies of the Reformation. Of these the Anglican Church held most closely to the tradition of Catholic organization; but she has never made any higher claim than to be one of "the three branches of the Catholic Church," a claim repudiated by Rome and never formally admitted by the Church of the East. The Protestant churches established on the continent, even where—as in the case of the Lutherans—they approximate more closely than the official Anglican Church to Roman doctrine and practice, make no such claim. The Bible is for them the real source of authority in doctrine; their organization is part and parcel of that of the state. They are, in fact, the state in its religious aspect, and as such are territorial or national, not Catholic. This tendency has been common in the East also, where with the growth of racial rivalries the Orthodox Church has split into a series of national churches, holding the same faith but independent as to organization.

A yet further development, of comparatively recent growth, has been the formation of what are now commonly called in England the "free churches." These represent a theory of 345
the Church practically unknown to the Reformers, and only reached through the necessity for discovering a logical basis for the communities of conscientious dissidents from the established churches. According to this the Catholic Church is not a visibly organized body, but the sum of all "faithful people" throughout the world, who group themselves in churches modelled according to their convictions or needs. For the organization of these churches no divine sanction is claimed, though all are theoretically modelled on the lines laid down in the Christian Scriptures. It follows that, while in the traditional Church, with its claim to an unbroken descent from a divine original, the individual is subordinate to the Church, in the "free churches" the Church is in a certain sense secondary to the individual. The believer may pass from one community to another without imperilling his spiritual life, or even establish a new church without necessarily incurring the reproach of schism. From this theory, powerful in Great Britain and her colonies, supreme in the United States of America, has resulted an enormous multiplication of sects.

It follows from the above argument that, from the period of the Reformation onward, no historical account of the Christian Church as a whole, and considered as a definite institution, is possible. The stream of continuity has been broken, and divides into innumerable channels. The only possible synthesis is that of the Christianity common to all; as institutions, though they possess many features in common, their history is separate and must be separately dealt with. The history of the various branches of the Christian Church since the Reformation will therefore be found under their several titles (see Roman Catholic Church; England, Church of; Presbyterianism; Baptists, &c, &c.).

(W. A. P.)

1 Upon the spread of the Church during the early centuries see especially Harnack's *Mission und Ausbreitung des Christenthums in den ersten drei Jahrhunderten*. An interesting parallel to the spread of Christianity in the Roman empire is afforded by the contemporary Mithraism. See Cumont's *Les Mystères de Mithra* (1900), Eng. tr. *The Mysteries of Mithra* (1903).

CHURCHILL, CHARLES (1731-1764), English poet and satirist, was born in Vine Street, Westminster, in February 1731. His father, rector of Rainham, Essex, held the curacy and lectureship of St John's, Westminster, from 1733, and the son was educated at Westminster school, where he became a good classical scholar, and formed a close and lasting intimacy with Robert Lloyd. Churchill was entered at Trinity College, Cambridge, in 1749, but never resided. He had been refused at Oxford, ostensibly on the unlikely ground of lack of classical

knowledge, but more probably because of a hasty marriage which he had contracted within the rules of the Fleet in his eighteenth year. He and his wife lived in his father's house, and Churchill was afterwards sent to the north of England to prepare for holy orders. He became curate of South Cadbury, Somersetshire, and, on receiving priest's orders (1756), began to act as his father's curate at Rainham. Two years later the elder Churchill died, and the son was elected to succeed him in his curacy and lectureship. His emoluments amounted to less than £100 a year, and he increased his income by teaching in a girls' school. He fulfilled his various duties with decorum for a while, but his marriage proved unfortunate, and he spent much of his time in dissipation in the society of Robert Lloyd. He was separated from his wife in 1761, and would have been imprisoned for debt but for the timely help of Lloyd's father, who had been an usher and was now a master of Westminster school.

Churchill had already done some work for the booksellers, and his friend Lloyd had had some success with a didactic poem, "The Actor." His intimate knowledge of the theatre was now turned to account in the *Rosciad*, which appeared in March 1761. This reckless and amusing satire described with the most disconcerting accuracy the faults of the various actors and actresses on the London stage. Its immediate popularity was no doubt largely due to its personal character, but its real vigour and raciness make it worth reading even now when the objects of Churchill's wit are many of them forgotten. The first impression was published anonymously, and in the *Critical Review*, conducted by Tobias Smollett, it was confidently asserted that the poem was the joint production of George Colman, Bonnell Thornton and Robert Lloyd. Churchill owned the authorship and immediately published an *Apology addressed to the Critical Reviewers*, which, after developing the subject that it is only the caste of authors that prey on their own kind, repeats the fierce attack on the stage. Incidentally it contains an enthusiastic tribute to Dryden, of whom Churchill was a not unworthy scholar. In the *Rosciad* he had given warm praise to Mrs Pritchard, Mrs Cibber and Mrs Clive, but no leading London actor, with the exception of David Garrick, had escaped censure, and in the *Apology* Garrick was clearly threatened. He deprecated criticism by showing every possible civility to Churchill, who became a terror to the actors. Thomas Davies wrote to Garrick attributing his blundering in the part of Cymbeline "to my accidentally seeing Mr Churchill in the pit, it rendering me confused and unmindful of my business." Churchill's satire made him many enemies, and inquiries into his way of life provided abundant matter for retort. In *Night, an Epistle to Robert Lloyd* (1761), he answered the attacks made on him, offering by way of defence the argument that any faults were better than hypocrisy. His scandalous conduct brought down the censure of the dean of Westminster, and in 1763 the protests of his parishioners led him to resign his offices, and he was free to wear his "blue coat with metal buttons" and much gold lace without remonstrance from the dean. The *Rosciad* had been refused by several publishers, and was finally published at Churchill's own expense. He received a considerable sum from the sale, and paid his old creditors in full, besides making an allowance to his wife.

He now became a close ally of John Wilkes, whom he regularly assisted with the *North Briton*. *The Prophecy of Famine: A Scots Pastoral* (1763), his next poem, was founded on a paper written originally for that journal. This violent satire on Scottish influence fell in with the current hatred of Lord Bute, and the Scottish place-hunters were as much alarmed as the actors had been. When Wilkes was arrested he gave Churchill a timely hint to retire to the country for a time, the publisher, Kearsley, having stated that he received part of the profits from the paper. His *Epistle to William Hogarth* (1763) was in answer to the caricature of Wilkes made during the trial. In it Hogarth's vanity and envy were attacked in an invective which Garrick quoted as "shocking and barbarous." Hogarth retaliated by a caricature of Churchill as a bear in torn clerical bands hugging a pot of porter and a club made of lies and *North Britons*. *The Duellist* (1763) is a virulent satire on the most active opponents of Wilkes in the House of Lords, especially on Bishop Warburton. He attacked Dr Johnson among others in *The Ghost* as "Pomposo, insolent and loud, Vain idol of a scribbling crowd." Other poems are "The Conference" (1763); "The Author" (1763), highly praised by Churchill's contemporaries; "Gotham" (1764), a poem on the duties of a king, didactic rather than satiric in tone; "The Candidate" (1764), a satire on John Montagu, fourth earl of Sandwich, one of Wilkes's bitterest enemies, whom he had already denounced for his treachery in the *Duellist* (Bk. iii.) as "too infamous to have a friend"; "The Farewell" (1764); "The Times" (1764); "Independence," and an unfinished "Journey."

In October 1764 he went to Boulogne to join Wilkes. There he was attacked by a fever of which he died on the 4th of November. He left his property to his two sons, and made Wilkes his literary executor with full powers. Wilkes did little. He wrote an epitaph for his friend and about half a dozen notes on his poems, and Andrew Kippis acknowledges some slight assistance from him in preparing his life of Churchill for the *Biographia Britannica* (1780).

There is more than one instance of Churchill's generosity to his friends. In 1763 he found his friend Robert Lloyd in prison for debt. He paid a guinea a week for his better maintenance in the Fleet, and raised a subscription to set him free. Lloyd fell ill on receipt of the news of Churchill's death, and died shortly afterwards. Churchill's sister Patty, who was engaged to Lloyd, did not long survive them. William Cowper was his schoolfellow, and left many kindly references to him.

A partial collection of Churchill's poems appeared in 1763. They are included in Chalmers's edition of the English poets, and were edited (1804) by W. Tooke. This was reprinted in the Aldine edition (1844). There is a revised edition (1892) in the same series, *The Poetical Works of Charles Churchill, with a Memoir by J.L. Hannay and copious notes by W. Tooke*. For Churchill's biography, see *Genuine Memoirs of Charles Churchill, with an account of and observations on his writings; together with some Original letters ... between him and the author* (1765); A. Kippis, in *Biographia Britannica* (1780); also John Forster in the *Edinburgh Review* (January 1845).

CHURCHILL, LORD RANDOLPH HENRY SPENCER (1840-1895), English statesman, third son of John, seventh duke of Marlborough, by Frances, daughter of the third marquess of Londonderry, was born at Blenheim Palace, on the 13th of February 1849. His early education was conducted at home, and at Mr Tabor's preparatory school at Cheam. In January 1863 he went to Eton, where he remained till July 1865. He was not specially distinguished either in school work or games while at Eton; his contemporaries describe him as a vivacious and rather unruly lad. In October 1867 he matriculated at Merton College, Oxford. He was fond of amusement, and had carried to Oxford an early taste for sport which he retained throughout life. But he read with some industry, and obtained a second class in jurisprudence and modern history in 1870. In 1874 he was elected to parliament in the Conservative interest for Woodstock, defeating Mr George Brodrick, a fellow, and afterwards warden, of Merton College. His maiden speech, delivered in his first session, made no impression on the House.

It was not till 1878 that he forced himself into public notice as the exponent of a species of independent Conservatism. He directed a series of furious attacks against some of the occupants of the front ministerial bench, and especially that "old gang" who were distinguished rather for the respectability of their private characters, and the unblemished purity of their Toryism, than for striking talent. Mr Sclater-Booth (afterwards 1st Lord Basing), president of the Local Government Board, was the especial object of his ire, and that minister's County Government Bill was fiercely denounced as the "crowning dishonour to Tory principles," and the "supreme violation of political honesty." The audacity of Lord Randolph's attitude, and the vituperative fluency of his invective, made him a parliamentary figure of some importance before the dissolution of the 1874 parliament, though he was not as yet taken quite seriously. In the new parliament of 1880 he speedily began to play a more notable rôle. With the assistance of his devoted adherents, Sir Henry Drummond Wolff, Sir John Gorst and occasionally of Mr Arthur Balfour, and one or two others, he constituted himself at once the audacious opponent of the Liberal administration and the unsparing critic of the Conservative front bench. The "fourth party," as it was nicknamed, was effective at first not so much in damaging the government as in awakening the opposition from the apathy which had fallen upon it after its defeat at the polls. Churchill roused the Conservatives and gave them a fighting issue, by putting himself at the head of the resistance to Mr Bradlaugh, the member for Northampton, who, though an avowed atheist or agnostic, was prepared to take the parliamentary oath. Sir Stafford Northcote, the Conservative leader in the Lower House, was forced to take a strong line on this difficult question by the energy of the fourth party, who in this case clearly expressed the views of the bulk of the opposition. The long and acrimonious controversy over Mr Bradlaugh's seat, if it added little to the reputation of the English legislature, at least showed that Lord Randolph Churchill was a parliamentary champion who added to his audacity much tactical skill and shrewdness. He continued to play a conspicuous part throughout the parliament of 1880-1885, dealing his blows with almost equal vigour at Mr Gladstone and at the Conservative front bench, some of whose members, and particularly Sir Richard Cross and Mr W.H. Smith, he assailed with extreme virulence. From the beginning of the Egyptian imbroglio Lord Randolph was emphatically opposed to almost every step taken by the government. He declared that the suppression of Arabi Pasha's rebellion was an error, and

the restoration of the khedive's authority a crime. He called Mr Gladstone the "Moloch of Midlothian," for whom torrents of blood had been shed in Africa. He was equally severe on the domestic policy of the administration, and was particularly bitter in his criticism of the Kilmainham treaty and the *rapprochement* between the Gladstonians and the Parnellites. It is true that for some time before the fall of the Liberals in 1885 he had considerably modified his attitude towards the Irish question, and was himself cultivating friendly relations with the Home Rule members, and even obtained from them the assistance of the Irish vote in the English constituencies in the general election. By this time he had definitely formulated the policy of progressive Conservatism which was known as "Tory democracy." He declared that the Conservatives ought to adopt, rather than oppose, reforms of a popular character, and to challenge the claims of the Liberals to pose as the champions of the masses. His views were to a large extent accepted by the official Conservative leaders in the treatment of the Gladstonian Franchise Bill of 1884. Lord Randolph insisted that the principle of the bill should be accepted by the opposition, and that resistance should be focused upon the refusal of the government to combine with it a scheme of redistribution. The prominent, and on the whole judicious and successful, part he played in the debates on these questions, still further increased his influence with the rank and file of the Conservatives in the constituencies. At the same time he was actively spreading the gospel of democratic Toryism in a series of platform campaigns. In 1883 and 1884 he invaded the Radical stronghold of Birmingham itself, and in the latter year took part in a Conservative garden party at Aston Manor, at which his opponents paid him the compliment of raising a serious riot. He gave constant attention to the party organization, which had fallen into considerable disorder after 1880, and was an active promoter of the Primrose League, which owed its origin to the happy inspiration of one of his own "fourth party" colleagues.

In 1884 the struggle between stationary and progressive Toryism came to a head, and terminated in favour of the latter. At the conference of the Central Union of Conservative Associations, Lord Randolph was nominated chairman, notwithstanding the strenuous opposition of the parliamentary leaders of the party. The split was averted by Lord Randolph's voluntary resignation; but the episode had confirmed his title to a leading place in the Tory ranks. It was further strengthened by the prominent part he played in the events immediately preceding the fall of the Liberal government in 1885; and when Mr Childers's budget resolutions were defeated by the Conservatives, aided by about half the Parnellites, Lord Randolph Churchill's admirers were justified in proclaiming him to have been the "organizer of victory." His services were, at any rate, far too important to be refused recognition; and in Lord Salisbury's cabinet of 1885 he was appointed to no less an office than that of secretary of state for India. During the few months of his tenure of this great post the young free-lance of Tory democracy surprised the permanent officials and his own friends by the assiduity with which he attended to his departmental duties and the rapidity with which he mastered the complicated questions of Indian administration. In the autumn election of 1885 he contested Central Birmingham against Mr Bright, and though defeated here, was at the same time returned by a very large majority for South Paddington. In the contest which arose over Mr Gladstone's Home Rule scheme, both in and out of parliament, Lord Randolph again bore a conspicuous part, and in the electioneering campaign his activity was only second to that of some of the Liberal Unionists, the marquess of Hartington, Mr Goschen and Mr Chamberlain. He was now the recognized Conservative champion in the Lower Chamber, and when the second Salisbury administration was formed after the general election of 1886 he became chancellor of the exchequer and leader of the House of Commons. His management of the House was on the whole successful, and was marked by tact, discretion and temper. But he had never really reconciled himself with some of his colleagues, and there was a good deal of friction in his relations with them, which ended with his sudden resignation on the 20th of December 1886. Various motives influenced him in taking this surprising step; but the only ostensible cause was that put forward in his letter to Lord Salisbury, which was read in the House of Commons on 27th January. In this document he stated that his resignation was due to his inability, as chancellor of the exchequer, to concur in the demands made on the treasury by the ministers at the head of the naval and military establishments. It was commonly supposed that he expected his resignation to be followed by the unconditional surrender of the cabinet, and his restoration to office on his own terms. The sequel, however, was entirely different. The cabinet was reconstructed with Mr Goschen as chancellor of the exchequer (Lord Randolph had "forgotten Goschen," as he is said to have remarked), and Churchill's own career as a Conservative chief was practically closed.

He continued, for some years longer, to take a considerable share in the proceedings of parliament, giving a general, though decidedly independent, support to the Unionist

administration. On the Irish question he was a very candid critic of Mr Balfour's measures, and one of his later speeches, which recalled the acrimonious violence of his earlier period, was that which he delivered in 1890 on the report of the Parnell commission. He also fulfilled the promise made on his resignation by occasionally advocating the principles of economy and retrenchment in the debates on the naval and military estimates. In April 1889, on the death of Mr Bright, he was asked to come forward as a candidate for the vacant seat in Birmingham, and the result was a rather angry controversy with Mr Chamberlain, terminating in the so-called "Birmingham compact" for the division of representation of the Midland capital between Liberal Unionists and Conservatives. But his health was already precarious, and this, combined with the anomaly of his position, induced him to relax his devotion to parliament during the later years of the Salisbury administration. He bestowed much attention on society, travel and sport. He was an ardent supporter of the turf, and in 1889 he won the Oaks with a mare named the Abbesse de Jouarre. In 1891 he went to South Africa, in search both of health and relaxation. He travelled for some months through Cape Colony, the Transvaal and Rhodesia, making notes on the politics and economics of the countries, shooting lions, and recording his impressions in letters to a London newspaper, which were afterwards republished under the title of *Men, Mines and Animals in South Africa*. He returned with renewed energy, and in the general election of 1892 once more flung himself, with his old vigour, into the strife of parties. His seat at South Paddington was uncontested; but he was active on the platform, and when parliament met he returned to the opposition front bench, and again took a leading part in debate, attacking Mr Gladstone's second Home Rule Bill with especial energy. But it was soon apparent that his powers were undermined by the inroads of disease. As the session of 1893 wore on his speeches lost their old effectiveness, and in 1894 he was listened to not so much with interest as with pity. His last speech in the House was delivered in the debate on Uganda in June 1894, and was a painful failure. He was, in fact, dying of general paralysis. A journey round the world was undertaken as a forlorn hope. Lord Randolph started in the autumn of 1894, accompanied by his wife, but the malady made so much progress that he was brought back in haste from Cairo. He reached England shortly before Christmas and died in London on the 24th of January 1895.

Lord Randolph Churchill married, in January 1874, Jennie, daughter of Mr Leonard Jerome of New York, U.S.A., by whom he had two sons. In 1900 Lady Randolph Churchill married Mr G. Cornwallis-West.

His elder son, WINSTON CHURCHILL (1874-), was educated at Harrow, and after serving for a few years in the army and acting as a special correspondent in the South African War (being taken prisoner by the Boers, Nov. 15, 1899, but escaping on Dec. 12), was elected Unionist member of parliament for Oldham in October 1900. As the son of his father, his political future excited much interest. His views, however, as to the policy of the Conservative party gradually changed, and having during 1904-1905 taken an active part in assisting the Liberal party in parliament, he stood for N.W. Manchester at the general election (1906) and was triumphantly returned as a Liberal and free-trader. He was made under-secretary for the colonies in the new Liberal government. In this position he became as conspicuous in parliament as he had already become on the platform as a brilliant and aggressive orator, and no politician of the day attracted more interest or excited more controversy. He was promoted to cabinet rank as president of the Board of Trade in Mr Asquith's government in April (1908), but was defeated at the consequent by-election in Manchester after a contest which aroused the keenest excitement. He was then returned for Dundee, and later in the year married Miss Clementine Hozier.

An interesting and authoritative biography of Lord Randolph, by his son Winston (who had already won his spurs as a writer in his *River War*, 1899, and other books on his military experiences), appeared in 1906; and a brief and intimate appreciation by Lord Rosebery, inspired by this biography, was published a few months later. Lord Randolph's earlier speeches were edited, with an introduction and notes, by Louis Jennings (2 vols., London, 1889). See also T.H.S. Escott, *Randolph Spencer Churchill* (1895); H.W. Lucy, *Diary of Two Parliaments* (1892); and Mrs Cornwallis-West, *The Reminiscences of Lady Randolph Churchill* (*i.e.* of the author) (1908).

(S. J. L.)

CHURCHILL (MISSINNIPPI or ENGLISH), the name of a river of the province of Saskatchewan and district of Keewatin, Canada. It rises in La Loche (or Methy) lake, a small lake in 56° 30′ N. and 109° 30′ W., at an altitude of 1577 ft. above the sea, and flows E.N.E. to Hudson's Bay, passing through a number of lake expansions. Its principal tributaries are the Beaver (350 m. long), Sandy and Reindeer rivers. Between Frog and Methy portages (480 m.) it formed part of the old *voyageur* route to the Peace, Athabasca, and Mackenzie. It is still navigated by canoes, but has many rapids. Its principal affluent, the Reindeer, discharges the waters of Reindeer Lake (1150 ft. above the sea, with an area of 2490 sq. m.) and Wollaston Lake (altitude, 1300 ft). The Churchill is 925 m. long. Fort Churchill, at its mouth, is the best harbour in the southern portion of Hudson's Bay. The portage of La Loche (or Methy), 12½ m. in length, connects its head waters with the Clearwater river, a tributary of the Athabasca, draining into the Arctic Ocean.

CHURCHING OF WOMEN, the Christian ceremony of thanksgiving on the part of mothers shortly after the birth of their children. It no doubt originated in the Mosaic regulation as to purification (Lev. xii. 6). In ancient times the ceremony was usual but not obligatory in England. In the Greek and Roman Catholic Churches to-day it is imperative. The custom is first mentioned in the pseudo-Nicene Arabic canons. No ancient form of service exists, and that which figures in the English prayer-book of to-day dates only from the middle ages. Custom differs, but the usual date of churching was the fortieth day after confinement, in accordance with the Biblical date of the presentment of the Virgin Mary and the Child Jesus at the Temple. It was formerly regarded as unlucky for a woman to leave her house to go out at all after confinement till she went to be churched. It was not unusual for the churching service to be said in private houses. In Herefordshire it was not considered proper for the husband to appear in church at the service, or at all events in the same pew. In some parishes there was a special pew known as "the churching seat." The words in the rubric requiring the woman to come "decently apparelled" refer to the times when it was thought unbecoming for a woman to come to the service with the elaborate head-dress then the fashion. A veil was usually worn, and in some parishes this was provided by the church, for an inventory of goods belonging to St Benet's, Gracechurch Street, in 1560, includes "A churching cloth, fringed, white damask."

The "convenient place," which, according to the rubric, the woman must occupy, was in pre-Reformation times the church-door. In the first prayer-book of Edward VI., she was to be "nigh unto the quire door." In the second of his books, she was to be "nigh unto the place where the Table standeth." Bishop Wren's orders for the diocese of Norwich in 1636 are "That women to be churched come and kneel at a side near the Communion Table without the rail, being veiled according to custom, and not covered with a hat." In Devonshire churching was sometimes called "being uprose." Churchings were formerly registered in some parishes. In pre-Reformation days it was the custom in England for women to carry lighted tapers when being churched, in allusion to the Feast of the Purification of the Virgin (February 2nd), the day chosen by the Roman Catholic church for the blessing of the candles for the whole year (see CANDLEMAS). At her churching a woman was expected to make some offering to the church, such as the chrisom or alb thrown over the child at christening.

CHURCH RATE, the name of a tax formerly levied in each parish in England and Ireland for the benefit of the parish church. Out of these rates were defrayed the expenses of carrying on divine service, repairing the fabric of the church, and paying the salaries of the officials connected with it. The church rates were made by the churchwardens, together with the parishioners duly assembled after proper notice in the vestry or the church. The rates thus made were recoverable in the ecclesiastical court, or, if the arrears did not exceed £10 and no questions were raised as to the legal liability, before two justices of the peace. Any payment not strictly recognized by law made out of the rate destroyed its validity. The church rate was a personal charge imposed on the occupier of land or of a house in the parish, and, though it was compulsory, much difficulty was found in effectually

applying the compulsion. This was especially so in the case of Nonconformists, who had conscientious objections to supporting the Established Church; and in Ireland, where the population was preponderatingly Roman Catholic, the grievance was specially felt and resented. The agitation against church rates led in 1868 to the passing of the Compulsory Church Rates Abolition Act. By this act church rates are no longer compulsory on the person rated, but are merely voluntary, and those who are not willing to pay them are excluded from inquiring into, objecting to, or voting in respect of their expenditure (s. 8).

CHURCHWARDEN, in England, the guardian or keeper of a church, and representative of the body of the parish. The name is derived from the original duty attached to the office,—that of the custody or guardianship of the fabric and furniture of the church,—which dates from the 14th century, when the responsibility of providing for the repairs of the nave, and of furnishing the utensils for divine service, was settled on the parishioners. Churchwardens are always lay persons, and as they may, like “artificial persons,” hold goods and chattels and bring actions for them, they are recognized in law as quasi-corporations. Resident householders of a parish are those primarily eligible as churchwardens, but non-resident householders who are habitually occupiers are also eligible, while there are a few classes of persons who are either ineligible or exempted. The appointment of churchwardens is regulated by the 89th canon, which requires that the churchwardens shall be chosen by the joint consent of the ministers and parishioners, if it may be; but if they cannot agree upon such a choice, then the minister is to choose one, and the parishioners another. If, however, there is any special custom of the place, the custom prevails, and the most common custom is for the minister to appoint one, and the parishioners another, and this has been established by English statute, in the case of new parishes, by the Church Building and New Parishes Acts 1818-1884. There are other special customs recognized in various localities, *e.g.* in some of the larger parishes in the north of England a churchwarden is chosen for each township of the parish; in the old ecclesiastical parishes of London both churchwardens are chosen by the parishioners; in some cases they are appointed by the select vestry, or by the lord of the manor, and in a few exceptional cases are chosen by the outgoing churchwardens.

In general, churchwardens are appointed in Easter week, usually Easter Monday or Easter Tuesday, but in new parishes the first appointment must be within twenty-one days after the consecration of the church, or two calendar months after the formation of the parish, subsequent appointments taking place at the usual time for the appointment of parish officers. Each churchwarden after election subscribes before the ordinary a declaration that he will execute his office faithfully.

The duties of churchwardens comprise the provision of necessaries for divine service, so far as the church funds or voluntary subscriptions permit, the collecting the offertory of the congregation, the keeping of order during the divine service, and the giving of offenders into custody; the assignment of seats to parishioners; the guardianship of the movable goods of the church; the preservation and repair of the church and churchyard, the fabric and the fixtures; and the presentment of offences against ecclesiastical law.

In the episcopal church of the United States churchwardens discharge much the same duties as those performed by the English officials; their duties, however, are regulated by canons of the diocese, not by canons general. In the United States, too, the usual practice is for the parishes to elect both the churchwardens.

See Prideaux’s *Churchwarden’s Guide* (16th ed., London, 1895); Steer’s *Parish Law* (6th ed., London, 1899); Blunt’s *Book of Church Law* (7th ed., London, 1894).

CHURCHYARD, THOMAS (c. 1520-1604), English author, was born at Shrewsbury about 1520, the son of a farmer. He received a good education, and, having speedily dissipated at court the money with which his father provided him, he entered the household of Henry

Howard, earl of Surrey. There he remained for four years, learning something of the art of poetry from his patron; some of the poems he contributed later (1557) to *Songes and Sonettes* may well date from this early period. In 1541 he began his career as a soldier of fortune, being, he said, “pressed into the service.” He fought his way through nearly every campaign in Scotland and the Low Countries for thirty years. He served under the emperor Charles V. in Flanders in 1542, returning to England after the peace of Crépy (1544). In the Scottish campaign of 1547 he was present at the barren victory of Pinkie, and in the next year was taken prisoner at Saint Monance, but aided by his persuasive tongue he escaped to the English garrison at Lauder, where he was once more besieged, only returning to England on the conclusion of peace in 1550. A broadside entitled *Davy Dycars Dreame*, a short and seemingly alliterative poem in the manner of Piers Plowman, brought him into trouble with the privy council, but he was dismissed with a reprimand. This tract was the starting-point of a controversy between Churchyard and a certain Thomas Camel. The whole of the “flyting” was reprinted in 1560 as *The Contention betwixte Churchyard and Camell*.

In 1550 he went to Ireland to serve the lord deputy, Sir Anthony St Leger, who had been sent to pacify the country. Here Churchyard enriched himself at the expense, it is to be feared, of the unhappy Irish; but in 1552 he was in England again, trying vainly to secure a fortune by marriage with a rich widow. After this failure he departed once more to the wars to the siege of Metz (1552), and “trailed a pike” in the emperor’s army, until he joined the forces under William, Lord Grey of Wilton, with whom he says he served eight years. Grey was in charge of the fortress of Gaines, which was besieged by the duke of Guise in 1558. Churchyard arranged the terms of surrender, and was sent with his chief to Paris as a prisoner. He was not released at the peace of Cateau Cambrésis for lack of money to pay his ransom, but he was finally set free on giving his bond for the amount, an engagement which he repudiated as soon as he was safely in England. He is not to be identified with the T.C. who wrote for the *Mirror for Magistrates* (ed. 1559), “How the Lord Mowbray ... was banished ... and after died miserablie in exile,” which is the work of Thomas Chaloner, but “Shore’s Wife,” his most popular poem, appeared in the 1563 edition of the same work, and to that of 1587 he contributed the “Tragedie of Thomas Wolsey.” These are plain manly compositions in the seven-lined Chaucerian stanza. Repeated petitions to the queen for assistance produced at first fair words, and then no answer at all. He therefore returned to active service under Lord Grey, who was in command of an English army sent (1560) to help the Scottish rebels, and in 1564 he served in Ireland under Sir Henry Sidney. The religious disturbances in the Netherlands attracted him to Antwerp, where as the agent of William of Orange he allowed the insurgents to place him at their head, and was able to save much property from destruction. This action made him so hated by the mob that he had to fly for his life in the disguise of a priest. In the next year he was sent by the earl of Oxford to serve definitely under the prince of Orange. After a year’s service he obtained leave to return to England, and after many adventures and narrow escapes in a journey through hostile territory he embarked for Guernsey, and thence for England. His patron, Lord Oxford, disowned him, and the poet, whose health was failing, retired to Bath. He appears to have made a very unhappy marriage at this time, and returned to the Low Countries. Falling into the hands of the Spaniards he was recognized as having had a hand in the Antwerp disturbance, and was under sentence to be executed as a spy when he was saved by the intervention of a noble lady. This experience did not deter him from joining in the defence of Zutphen in 1572, but this was his last campaign, and the troubles of the remaining years of his life were chiefly domestic.

Churchyard was employed to devise a pageant for the queen’s reception at Bristol in 1574, and again at Norwich in 1578. He had published in 1575 *The firste parte of Churchyarde’s Chippes*, the modest title which he gives to his works. No second part appeared, but there was a much enlarged edition in 1578. A passage in *Churchyarde’s Choise* (1579) gave offence to Elizabeth, and the author fled to Scotland, where he remained for three years. He was only restored to favour about 1584, and in 1593 he received a small pension from the queen. The affectionate esteem with which he was regarded by the younger Elizabethan writers is expressed by Thomas Nashe, who says (*Foure Letters Confuted*) that Churchyard’s aged muse might well be “grandmother to our grandiloquentest poets at this present.” Francis Meres (*Palladis Tamia*, 1598) mentions him in conjunction with many great names among “the most passionate, among us, to bewail and bemoan the perplexities of love.” Spenser, in “Colin Clout’s come home again,” calls him with a spice of raillery “old Palaemon” who “sung so long until quite hoarse he grew.” His writings, with the exception of his contributions to the *Mirror for Magistrates*, are chiefly autobiographical in character or deal with the wars in which he had a share. They are very rare, and have never been completely reprinted. Churchyard lived right through Elizabeth’s reign, and was buried in St

Margaret's church, Westminster, on the 4th of April 1604.

The extant works of Churchyard, exclusive of commendatory and occasional verses, include:—*A lamentable and pitifull Description of the wofull warres in Flanders* (1578); *A general rehearsall of warres, called Churchyard's Choise* (1579), really a completion of the *Chippes*, and containing, like it, a number of detached pieces; *A light Bondel of livelie Discourses, called Churchyardes Charge* (1580); *The Worthines of Wales* (1587), a valuable antiquarian work in prose and verse, anticipating Michael Drayton; *Churchyard's Challenge* (1593); *A Musicall Consort of Heavenly harmonie ... called Churchyards Charitie* (1595); *A True Discourse Historicall, of the succeeding Governors in the Netherlands* (1602).

The chief authority for Churchyard's biography is his own "Tragicall Discourse of the unhappy man's life" (*Churchyardes Chippes*). George Chalmers published (1817) a selection from his works relating to Scotland, for which he wrote a useful life. See also an edition of the *Chippes* (ed. J.P. Collier, 1870), of the *Worthines of Wales* (Spenser Soc. 1876), and a notice of Churchyard by H.W. Adnitt (*Transactions* of the Shropshire Archaeological and Nat. Hist. Soc., reprinted separately 1884).

CHURCHYARD, a piece of consecrated ground attached to a parochial church, and used as a burial place. It is distinguished from a cemetery (*q.v.*), which is also a place of burial, but is separate and apart from any parochial church. A cemetery in England is either the property of a private company, incorporated by special act of parliament, or of a local authority, and is subject to the Cemeteries Clauses Act 1847, incorporated in the Public Health Acts. The practice of burying in churches or churchyards is said to have been connected with the custom of praying for the dead, and it would appear that the earlier practice was burying in the church itself. In England, about the year 750, spaces of ground adjoining the churches were enclosed and appropriated to the burial of those who had been entitled to attend divine service in those churches.

The right to burial in the parish churchyard is a common law right, controlled in many points by the provisions of the law ecclesiastical. This double character is sufficient to explain the controversy which has so long raged round the subject of burials in England. Every man, according to the common law, has a right to be buried in his own churchyard, or, as it is sometimes put, in the churchyard of the parish where he dies. But the churchyard, as well as the church itself, is the freehold of the parson, who can in many respects deal with it as if it were a private estate. A statute of Edward I. (35, st. 2) speaks of the churchyard as the soil of the church, and the trees growing in the churchyard "as amongst the goods of the church, the which laymen have no authority to dispose," and prohibits "the parsons from cutting down such trees unless required for repairs." Notwithstanding the consecration of the church and churchyard and the fact that they are the parson's freehold, a right of way may be claimed through them by prescription. The right to burial may be subject to the payment of a fee to the incumbent, if such has been the immemorial custom of the parish, but not otherwise. The spirit of the ancient canons regarded such burial fees as of a simoniacal complexion, inasmuch as the consecrated grounds were among the *res sacrae*—a feeling which Lord Stowell says disappeared after the Reformation. No person can be buried in a church without the consent of the incumbent, except when the owner of a manor-house prescribes for a burying-place within the church as belonging to the manor-house. In the case of *Rex* v. *Taylor* it was held that an information was grantable against a person for opposing the burial of a parishioner; but the court would not interpose as to the person's refusal to read the burial service because he never was baptized—that being matter for the ecclesiastical court. Strangers (or persons not dying in the parish) should not be buried, it appears, without the consent of the parishioners or churchwardens, "whose parochial right of burial is invaded thereby."

In Scotland the obligation of providing and maintaining the churchyard rests on the heritors of the parish. The guardianship of the churchyard belongs to the heritors and also to the kirk-session, either by delegation from the heritors, or in right of its ecclesiastical character. The right of burial appears to be strictly limited to parishioners, although an opinion has been expressed that any person dying in the parish has a right to be buried in the churchyard. The parishioners have no power of management. The presbytery may interfere to compel the heritors to provide due accommodation, but has no further jurisdiction. It is the duty of the heritors to allocate the churchyard. The Scottish law

hesitates to attach the ordinary incidents of real property to the churchyard, while English law treats the ground as the parson's freehold. It would be difficult to say who in Scotland is the legal owner of the soil. Various opinions appear to prevail, *e.g.* as to grass growing on the surface and minerals found beneath. The difficulty as to religious services does not exist. On the other hand, the religious character of the ground is hostile to many of the legal rights recognized by the English law.

See also Burial and Burial Acts; Cemetery.

CHURL (A.S. *ceorl*, cognate with the Ger. *Kerl* and with similar words in other Teutonic languages), one of the two main classes, *eorl* and *ceorl*, into which in early Anglo-Saxon society the freemen appear to have been divided. In the course of time the status of the ceorl was probably reduced; but although his political power was never large, and in some directions his freedom was restricted, it hardly seems possible previous to the Norman Conquest to class him among the unfree. Some authorities, however, accept this view. At all events it is certain that the ceorl was frequently a holder of land, and a person of some position, and that he could attain the rank of a thegn. Except in Kent his wergild was fixed at two hundred shillings, or one-sixth of that of a thegn, and he is undoubtedly the *twyhynde* man of Anglo-Saxon law. In Kent his wergild was considerably higher, and his status probably also, but his position in this kingdom is a matter of controversy. After the Norman Conquest the ceorls were reduced to a condition of servitude, and the word translates the *villanus* of Domesday Book, although it also covers classes other than the *villani*. The form *ceorl* soon became *cherl*, as in *Havelok the Dane* (ante 1300) and several times in Chaucer. and subsequently *churl*. Taking a less technical sense than the ceorl of Anglo-Saxon law, churl, or cherl was used in general to mean a "man," and more particularly a "husband." In this sense it was employed about 1000 in a translation of the New Testament to render the word ἀνήρ (John iv. 16, 18). It was then employed to describe a "peasant," and gradually began to denote undesirable qualities. Hence comes the modern use of the word for a low-born or vulgar person, particularly one with an unpleasant, surly or miserly character.

See H.M. Chadwick, *Studies on Anglo-Saxon Institutions* (Cambridge, 1905); F. Seebohm, *Tribal Custom in Anglo-Saxon Law* (London, 1902).

CHURN (O. Eng. *cyrin*; found in various forms in most Teutonic languages, cf. Dutch *karn*; according to the *New English Dictionary* not connected with "quern," a mill), a vessel in which butter is made, by shaking or beating the cream so as to separate the fatty particles which form the butter from the serous parts or buttermilk. Early churns were upright, and in shape resembled the cans now used in the transport of milk, to which the name "churn" is also given. The upright churn was worked by hand by a wooden "plunger"; later came a box-shaped churn with a "splasher" revolving inside and turned by a handle. The modern type of churn, in large dairies worked by mechanical means, either revolves or swings itself, thus reverting to the most primitive method of butter-making, the shaking or swinging of the cream in a skin-bag or a gourd. (See Dairy.)

CHUSAN, the principal island of a group situated off the eastern coast of China, in 30° N. 122° E., belonging to the province of Cheh-kiang. It lies N.W. and S.E., and has a circumference of 51 m., the extreme length being 20, the extreme breadth 10, and the minimum breadth 6 m. The island is beautifully diversified with hill and dale, and well watered with numerous small streams, of which the most considerable is the Tungkiang, falling into the harbour of Tinghai. Most of the surface is capable of cultivation, and

nineteen-twentieths of the inhabitants are engaged in agriculture. Wherever it is possible to rear rice every other product is neglected; yet the quantity produced is not sufficient for the wants of the inhabitants. Millet, wheat, sweet potatoes, yams and tares are also grown. The tea plant is found almost everywhere, and the cotton plant is largely cultivated near the sea. The capital, Tinghai, stands about half a mile from the southern shore, and is surrounded by a wall nearly 3 m. in circuit. The ditch outside the wall is interrupted on the N.W. side by a spur from a neighbouring hill, which projects into the town, and forms an easy access to an attacking force. The town is traversed by canals, and the harbour, which has from 4 to 8 fathoms water, is landlocked by several islands. Temple (or Joss-house) Hill, which commands the town and harbour close to the beach, is 122 ft. high. The population of the entire island is estimated at 250,000, of which the capital contains about 40,000. Chusan has but few manufactures; the chief are coarse cotton stuffs and agricultural implements. There are salt works on the coast; and the fisheries employ a number of the inhabitants. In Tinghai a considerable business is carried on in carving and varnishing, and its silver wares are in high repute. The principal exports are fish, coarse black tea, cotton, vegetable tallow, sweet potatoes, and some wheat. Chusan was occupied by the Japanese during the Ming dynasty, and served as an important commercial entrepot. It was taken by the British forces in 1840 and 1841, and retained till 1846 as a guarantee for the fulfilment of the stipulations of the treaty. It was also occupied by the British in 1860.

CHUTE (Fr. for “fall,” of water or the like; pronounced as “shoot,” with which in meaning it is identical), a channel or trough, artificial or natural, down which objects such as timber, coal or grain may slide from a higher to a lower level. The word is also used of a channel cut in a dam or a river for the passage of floating timber, and in Louisiana and on the Mississippi of a channel at the side of a river, or narrow way between an island and the shore. The “Water-Chute” or water tobogganing, is a Canadian pastime, which has been popular in London and elsewhere. A steep wooden slope terminates in a shallow lake; down this run flat-bottomed boats which rapidly increase their velocity until at the end of the “chute” they dash into the water.

CHUTNEY, or Chutnee (Hindustani *chatni*), a relish or seasoning of Indian origin, used as a condiment. It is prepared from sweet fruits such as mangoes, raisins, &c., with acid flavouring from tamarinds, lemons, limes and sour herbs, and with a hot seasoning of chillies, cayenne pepper and spices.

CHUVASHES, or Tchuvashes, a tribe found in eastern Russia. They form about one-fourth of the population of the government of Kazan, and live in scattered communities throughout the governments of Simbirsk, Samara, Saratov, Orenburg and Perm. They have been identified with the Burtasses of the Arab geographers, and many authorities think they are the descendants of the ancient Bolgars. In general they physically resemble the Finns, being round-headed, flat-featured and light-eyed, but they have been affected by long association with the Tatar element. In dress they are thoroughly Russianized, and they are nominally Christians, though they cling to many of the Old Shamanistic practices. They number some half a million. Their language belongs to the Tatar or Turkish group, but has been strongly influenced by the Finno-Ugrian idioms spoken round it.

See Schott, *De Lingua Tschuwaschorum* (Berlin, 1841).

CIALDINI, ENRICO (1811-1892), Italian soldier, politician and diplomatist, was born at Castelvetro, in Modena, on the 10th of August 1811. In 1831 he took part in the insurrection at Modena, fleeing afterwards to Paris, whence he proceeded to Spain to fight against the Carlists. Returning to Italy in 1848, he commanded a regiment at the battle of Novara. In 1859 he organized the Alpine Brigade, fought at Palestro at the head of the 4th Division, and in the following year invaded the Marches, won the battle of Castelfidardo, took Ancona, and subsequently directed the siege of Gaeta. For these services he was created duke of Gaeta by the king, and was assigned a pension of 10,000 lire by parliament. In 1861 his intervention envenomed the Cavour-Garibaldi dispute, royal mediation alone preventing a duel between him and Garibaldi. Placed in command of the troops sent to oppose the Garibaldian expedition of 1862, he defeated Garibaldi at Aspromonte. Between 1862 and 1866 he held the position of lieutenant-royal at Naples, and in 1864 was created senator. On the outbreak of the war of 1866 he resumed command of an army corps, but dissensions between him and La Marmora prejudiced the issue of the campaign and contributed to the defeat of Custozza. After the war he refused the command of the General Staff, which he wished to render independent of the war office. In 1867 he attempted unsuccessfully to form a cabinet sufficiently strong to prevent the threatened Garibaldian incursion into the papal states, and two years later failed in a similar attempt, through disagreement with Lanza concerning the army estimates. On the 3rd of August 1870 he pleaded in favour of Italian intervention in aid of France, a circumstance which enhanced his influence when in July 1876 he replaced Nigra as ambassador to the French Republic. This position he held until 1882, when he resigned on account of the publication by Mancini of a despatch in which he had complained of arrogant treatment by M. Waddington. He died at Leghorn, on the 8th of September 1892.

(H. W. S.)

CIBBER (or CIBERT), **CAIUS GABRIEL** (1630-1700), Danish sculptor, was born at Flensburg. He was the son of the king's cabinetmaker, and was sent to Rome at the royal charge while yet a youth. He came to England during the Protectorate, or during the first years of the Restoration. Besides the famous statues of Melancholy and Raving Madness ("great Cibber's brazen brainless brothers"), now at South Kensington, Cibber produced the bas-reliefs round the monument on Fish Street Hill. The several kings of England and the Sir Thomas Gresham executed by him for the Royal Exchange were destroyed with the building itself in 1838. Cibber was long employed by the fourth earl of Devonshire, and many fine specimens of his work are to be seen at Chatsworth. Under that nobleman he took up arms in 1688 for William of Orange, and was appointed in return carver to the king's closet. He died rich, and, according to Horace Walpole, built the Danish church in London, where he lies buried beside his second wife, to whom he erected a monument. She was a Miss Colley of Glaiston, grand-daughter of Sir Anthony Colley, and the mother of his son Colley Cibber.

CIBBER, COLLEY (1671-1757), English actor and dramatist, was born in London on the 6th of November 1671, the eldest son of Caius Gabriel Cibber, the sculptor. Sent in 1682 to the free school at Grantham, Lincolnshire, the boy distinguished himself by an aptitude for writing verse. He produced an "Oration" on the death of Charles II.—whom he had seen feeding his ducks in St James's Park,—and an "Ode" on the accession of James II. He was removed from school in 1687 on the chance of election to Winchester College. His father, however, had not then presented that institution with his statue of William of Wykeham, and the son was rejected, although through his mother he claimed to be of "founder's kin." The boy went to London, and indulged his passion for the theatre. He was invited to Chatsworth, the seat of William Cavendish, earl (afterwards duke) of Devonshire, for whom his father was then executing commissions, and he was on his way when the news of the landing of William of Orange was received; father and son met at Nottingham, and Colley Cibber was taken into Devonshire's company of volunteers. He served in the bloodless campaign that resulted in the coronation of the Prince of Orange, and on its conclusion presented a Latin

petition to the earl imploring his interest. The earl did nothing for him, however, and he enrolled himself (1690) as an actor in Betterton's company at Drury Lane.

After playing "full three-quarters of a year" without salary, as was then the custom of all apprentice actors, he was paid ten shillings a week. His rendering of the little part of the chaplain in Otway's *Orphan* procured him a rise of five shillings; and a subsequent impersonation (1694) on an emergency, and at the author's request, of Lord Touchwood in *The Double Dealer*, advanced him, on Congreve's recommendation, to a pound a week. On this, supplemented by an allowance of £20 a year from his father, he contrived to live with his wife and family—he had married in 1693—and to produce a play, *Love's Last Shift, or the Fool in Fashion* (1696). Of this comedy Congreve said that it had "a great many things that were like wit in it"; and Vanbrugh honoured it by writing his *Relapse* as a sequel. Cibber played the part of Sir Novelty Fashion, and his performance as Lord Foppington, the same character renamed, in Vanbrugh's piece, established his reputation as an actor. In 1698 he was assailed, with other dramatists, by Jeremy Collier in the *Short View*. In November 1702 he produced, at Drury Lane, *She Wou'd and She Wou'd Not; or the Kind Impostor*, one of his best comedies; and in 1704, for himself and Mrs Oldfield, *The Careless Husband*, which Horace Walpole classed, with Cibber's *Apology*, as "worthy of immortality." In 1706 Cibber left Drury Lane for the Haymarket, but when the two companies united two years later he rejoined his old theatre through the influence of his friend Colonel Brett, a shareholder. Brett made over his share to Wilks, Estcourt and Cibber. Complaints against the management of Christopher Rich led, in 1709, to the closing of the theatre by order of the crown, and William Collier obtained the patent. After a series of intrigues Collier was bought out by Wilks, Doggett and Cibber, under whose management Drury Lane became more prosperous than it ever had been. In 1715 a new patent was granted to Sir Richard Steele, and Barton Booth was also added to the management. In 1717 Cibber produced the *Nonjuror*, an adaptation from Molière's *Tartuffe*; the play, for which Nicholas Rowe wrote an abusive prologue, ran eighteen nights, and the author received from George I., to whom it was dedicated, a present of two hundred guineas. Tartuffe became an English Catholic priest who incited rebellion, and there is little doubt that the Whig principles expressed in the *Nonjuror* led to Cibber's appointment as poet laureate (1730). It also provoked the animosity of the Jacobite and Catholic factions, and was possibly one of the causes of Pope's hostility to Cibber. Numerous "keys" to the *Nonjuror* appeared in 1718. In 1720 Drury Lane was closed for three days by order of the duke of Newcastle, ostensibly on account of the refusal of the patentees to submit to the authority of the lord chamberlain, but really (it is asserted) because of a quarrel between Newcastle and Steele, in which the former demanded Cibber's resignation. In 1726 Cibber pleaded the cause of the patentees against the estate of Sir Richard Steele before Sir Joseph Jekyll, master of the rolls, and won his case. In 1730 Mrs Oldfield died, and her loss was followed in 1732 by that of Wilks; Cibber now sold his share in the theatre, appearing rarely on the stage thereafter. In 1740 he published *An Apology for the Life of Colley Cibber, Comedian ... with an Historical View of the Stage during his Own Time*. "There are few," wrote Goldsmith, "who do not prefer a page of Montaigne or Colley Cibber, who candidly tell us what they thought of the world, and the world thought of them, to the more stately memoirs and transactions of Europe." But beside the personal interest, this book contains criticisms on acting of enduring value, and gives the best account there is of Cibber's contemporaries on the London stage. Samuel Johnson, who was no friend of Cibber, gave it grudging praise (see Boswell's *Life of Johnson*, ed. Birkbeck Hill, vol. iii. p. 72).

In 1742 Cibber was substituted for Theobald as the hero of Pope's *Dunciad*. Cibber had introduced some gag into the *Rehearsal*, in which he played the part of Bayes, referring to the ill-starred farce of *Three Hours after Marriage* (1717). This play was nominally by Gay, but Pope and Arbuthnot were known to have had a hand in it. Cibber refused to discontinue the offensive passage, and Pope revenged himself in sarcastic allusions in his printed correspondence, in the *Epistle to Dr Arbuthnot* and in the *Dunciad*. To these, Cibber replied with *A Letter from Mr Cibber to Mr Pope, inquiring into the motives that might induce him in his satirical works to be so frequently fond of Mr Cibber's name* (1742). Cibber scored with an "idle story of Pope's behaviour in a tavern" inserted in this letter, and gives an account of the original dispute over the *Rehearsal*. By the substitution of Cibber for Theobald as hero of the *Dunciad*, much of the satire lost its point. Cibber's faults certainly did not include dullness. A new edition contained a prefatory discourse, probably the work of Warburton, entitled "Ricardus Aristarchus, or the Hero of the Poem," in which Cibber is made to look ridiculous from his own *Apology*. Cibber replied in 1744 with *Another Occasional Letter ...*, and altogether he had the best of the argument. When he was seventy-four years old he made his last appearance on the stage as Pandulph in his own *Papal*

Tyranny in the Reign of King John (Covent Garden, 15th of February 1745), a miserable paraphrase of Shakespeare's play. He died on the 11th of December 1757.

Cibber's reputation has suffered unduly from the depreciation of Pope and Johnson. "I could not bear such nonsense," said Johnson of one of Cibber's odes, "and I would not let him read it to the end." Fielding attacked Cibber's style and language more than once in *Joseph Andrews* and elsewhere. Nevertheless, Cibber possessed wit, unusual good sense and tact; and in the *Apology* he showed himself the most delicate and subtle critic of acting of his time. He was frequently accused of plagiarism, and did not scruple to make use of old plays, but he is said to have been ashamed of his Shakespearian adaptations, one of which, however, *Richard III.* (Drury Lane, 1700), kept its place as the acting version until 1821. Cibber is rebuked for his mutilation of Shakespeare by Fielding in the *Historical Register for 1736*, where he figures as Ground Ivy.

If Cibber had not as much wit as his predecessors, he displayed in his best plays abundant animation and spirit, free from the extreme coarseness of many of his contemporaries, and a thorough knowledge of the requirements of the stage. His most successful comedies kept their place in the acting repertory for a long time. He was an excellent actor, especially in the rôle of the fashionable coxcomb. Horace Walpole said that as Bayes in *The Rehearsal* he made the part what it was intended to be, the burlesque of a great poet, whereas David Garrick degraded him to a "garretteer."

The *Apology* was edited in 1822 by E. Bellchambers and in 1889 by R.W. Lowe, who printed with it other valuable theatrical books and pamphlets. It is also included in Hunt and Clarke's *Autobiographies* (1826, &c). Cibber's *Dramatic Works* were published in 1760, with an account of the life and writings of the author, and again in 1777. Besides the plays already mentioned, he wrote *Woman's Wit, or the Lady in Fashion* (1697), which was altered later (1707) into *The Schoolboy, or the Comical Rivals*; *Xerxes* (1699), a tragedy acted only once; *The Provoked Husband* (acted 1728), completed from Vanbrugh's unfinished *Journey to London*; *The Rival Queens, with the Humours of Alexander the Great* (acted 1710), a comical tragedy; *Damon and Phyllida* (acted 1729), a ballad opera; and adaptations from Beaumont and Fletcher, Dryden, Molière and Corneille. A bibliography of the numerous skits on Cibber is to be found in Lowe's *Bibliographical Account of English Theatrical Literature*.

Colley Cibber's son, Theophilus Cibber (1703-1758), also an actor and playwright, was born on the 26th of November 1703. In 1734 he was acting-manager at the Haymarket, and he subsequently played at Drury Lane, Lincoln's Inn Fields and Covent Garden. His best impersonation was as Pistol, but he also distinguished himself in some of the fine-gentleman parts affected by his father. He was one of the ringleaders in the intrigues against John Highmore, who had bought a share in the patent of Drury Lane from Colley Cibber. Theophilus Cibber, with a number of other actors, seceded from Drury Lane, and in thus depreciating the value of the patent, for which his father had received a considerable sum, acted with doubtful honesty. He contemplated the publication of an autobiography, but was effectually dissuaded by the appearance (1740) of a scathing account of his career by an unknown author, entitled *An Apology for the Life of Mr T.... C.... supposed to be written by himself*. In 1753 he began *The Lives and Characters of the most Eminent Actors and Actresses of Great Britain and Ireland*, but he went no further than the life of Barton Booth. He wrote some plays of no great merit. In 1753 appeared *An Account of the Lives of the Poets of Great Britain and Ireland*, with the name of "Mr Cibber" on the title page. The five volumes of *Lives* are chiefly based on the earlier works of Gerard Langbaine and Giles Jacob, and the MS. collections of Thomas Coxeter (1689-1747). The book is said to have been largely written by Robert Shiels, Dr Johnson's amanuensis. Theophilus Cibber perished by shipwreck on his way to Dublin to play at the Theatre Royal.

Susannah Maria Cibber (1714-1766), wife of Theophilus, was an actress of distinction. She was the daughter of a Covent Garden upholsterer, and sister of Dr Arne (1710-1778) the composer. Mrs Cibber had a beautiful voice and began her career in opera. She was the original Galatea in Handel's *Acis and Galatea*, and the contralto arias in the *Messiah* are said to have been written for her. She played Zarah in Aaron Hill's version of Voltaire's *Zaïre* in 1736, and it was as a tragic actress, not as a singer, that her greatest triumphs were won. From Colley Cibber she learned a sing-song method of declamation. Her mannerisms, however, did not obscure her real genius, and she freed herself from them entirely when she began to act with Garrick, with whom she was associated at Drury Lane from 1753. She died on the 30th of January 1766. She married Theopihilus Cibber in 1734, but lived with him but a short time. Appreciations of Mrs Cibber's fine acting are to be found in many contemporary writers, one of the most discriminating being in the *Rosciad* of Charles

Churchill.

Colley Cibber's youngest daughter, CHARLOTTE, married Richard Charke, a violinist, from whom she was soon separated. She began as an understudy to actresses in leading parts, but quarrelled with her manager, Charles Fleetwood, on whom she wrote a one-act skit, *The Art of Management* (1735). She also wrote two comedies and two novels of small merit, and an untrustworthy, but amusing *Narrative of Life of ... Charlotte Charke, ... by herself* (1755), reprinted in Hunt and Clarke's *Autobiographies* (1822).

CIBORIUM, a name in classical Latin for a drinking-vessel. It is the latinized form of the Gr. κιβώριον, the cup-shaped seed-vessel of the Egyptian water-lily, the seeds or nuts of which were known as "Egyptian beans." In the early Christian Church the *ciborium* was a canopy over the altar (*q.v.*), supported on columns, and from it hung the receptacle in which was reserved the consecrated wafer of the Eucharist. The use of the word has probably been much influenced by the early false connexion with *cibus*, food, cf. Agatio, bishop of Pisa (quoted in Du Cange, *Gloss.* s.v.), "Ciborium vas esse ad ferendos cibos." In the Eastern Church the columns rested on the altar itself, in the Western they reached the ground. The name was early transferred from the canopy to the vessel containing the reserved sacrament, and in the Western Church the canopy was known as a "baldaquin," Ital. *baldacchino*, from *Baldacco*, the Italian name of Bagdad, and hence applied to a rich kind of embroidered tapestry made there and much used for canopies, &c. At the present day it is usual in the Roman Church to use the term "pyx" (πύξις, properly a vessel made of boxwood) for the receptacle for the reserved sacrament used in administering the *viaticum* to the sick or dying. Medieval pyxes and ciboria are often beautiful examples of the goldsmith's, enameller's and metal-worker's craft. They take most usually the shape of a covered chalice or of a cylindrical box with conical or cylindrical cover surmounted by a cross. An exquisite ciborium fetched £6000 at the sale of the Jerdone Braikenridge collection at Christie's in 1908. It is supposed to have come from Malmesbury Abbey, and is probably of 13th-century English make. It is of copper-gilt and ornamented with champlevé enamels, apple and chrysoprase green, scarlet, mauve and white, turquoise and lapis lazuli, the flesh tints being of a pale jasper. Various subjects from the Old and New Testament, such as the sacrifice of Abel, the brazen serpent, the nativity, crucifixion and resurrection are represented on circular medallions on the outside. It is illustrated in colours in the catalogue of the exhibition of the Burlington Fine Arts Club, 1897.

CIBRARIO, LUIGI, COUNT (1802-1870), Italian statesman and historian, descended from a noble but impoverished Piedmontese family, was born in Usseglia on the 23rd of February 1802. He won a scholarship at the age of sixteen, and was teaching literature at eighteen. His verses to King Charles Albert, then prince of Carignano, on the birth of his son Victor Emmanuel, attracted the prince's attention and proved the beginning of a long intimacy. He entered the Sardinian civil service, and in 1824 was appointed lecturer on canon and civil law. His chief interest was the study of ancient documents, and he was sent to search the archives of Switzerland, France and Germany for charters relating to the history of Savoy. During the war of 1848, after the expulsion of the Austrians from Venice, Cibrario was sent to that city with Colli to negotiate its union with Piedmont. But the proposal fell through when the news of the armistice between King Charles Albert and Austria arrived, and the two delegates were made the objects of a hostile demonstration. In October 1848 Cibrario was made senator, and after the battle of Novara (March 1849), when Charles Albert abdicated and retired to a monastery near Oporto, Cibrario and Count Giacinto di Collegno were sent as representatives of the senate to express the sympathy of that body with the fallen king. He reached Oporto on the 28th of May, and after staying there for a month returned to Turin, which he reached just before the news of Charles Albert's death. In May 1852 he became minister of finance in the reconstructed d'Azeglio cabinet, and later minister of education in that of Cavour. In the same year he was appointed secretary to the order of SS. Maurizio and Lazzaro. It was he who in 1853 dictated the vigorous

memorandum of protest against the confiscation by Austria of the property of Lombard exiles who had been naturalized in Piedmont. He strongly supported Cavour's Crimean policy (1855), and when General La Marmora departed in command of the expeditionary force and Cavour took the war office, Cibrario was made minister for foreign affairs. He conducted the business of the department with great skill, and ably seconded Cavour in bringing about the admission of Piedmont to the congress of Paris on an equal footing with the great powers. On retiring from the foreign office Cibrario was created count. In 1860 he acted as mediator between Victor Emmanuel's government and the republic of San Marino, and arranged a treaty by which the latter's liberties were guaranteed. After the war of 1866 by which Austria lost Venetia, Cibrario negotiated with that government for the restitution of state papers and art treasures removed by it from Lombardy and Venetia to Vienna. He died in October 1870, near Salò, on the lake of Garda.

His most important work was his *Economia politica del medio evo* (Turin, 1839), which enjoyed great popularity at the time, but is now of little value. His *Schiavitù e servaggio* (Milan, 1868-1869) gave an account of the development and abolition of slavery and serfdom. Among his historical writings the following deserve mention:—*Delle artiglierie dal 1300 al 1700* (Turin, 1847); *Origini ... della monarchia di Savoia* (Turin, 1854); *Degli ordini cavallereschi* (Turin, 1846); *Degli ordini religiosi* (Turin, 1845); and the *Memorie Segrete* of Charles Albert, written by order of Victor Emmanuel but afterwards withdrawn. Cibrario was a good example of the loyal, industrious, honest Piedmontese aristocrat of the old school.

His biography has been written by F. Odorici, *Il Conte L. Cibrario* (Florence, 1872).

(L. V.*)

CICADA (*Cicadidae*), insects of the homopterous division of the Hemiptera, generally of large size, with the femora of the anterior legs toothed below, two pairs of large clear wings, and prominent compound eyes. Cicadas are chiefly remarkable for the shrill song of the males, which in some cases may be heard in concert at a distance of a quarter of a mile or more. The vocal organs, of which there is a pair in the thorax, protected by an opercular plate, are quite unlike the sounding organs of other insects. Each consists in essence of a tightly stretched membrane or drum which is thrown into a state of rapid vibration by a powerful muscle attached to its inner surface and passing thence downwards to the floor of the thoracic cavity. Although no auditory organs have been found in the females, the song of the males is believed to serve as a sexual call. Cicadas are also noteworthy for their longevity, which so far as is known surpasses that of all other insects. By means of a saw-like ovipositor the female lays her eggs in the branches of trees. Upon hatching, the young, which differ from the adult in possessing long antennae and a pair of powerful fossorial anterior legs, fall to the ground, burrow below the surface, and spend a prolonged subterranean larval existence feeding upon the roots of vegetation. After many years the larva is transformed into the pupa or nymph, which is distinguishable principally by the shortness of its antennae and the presence of wing pads. After a brief existence the pupa emerges from the ground, and, holding on to a plant stem by means of its powerful front legs, sets free the perfect insect through a slit along the median dorsal line of the thorax. In some cases the pupa upon emerging constructs a chimney of soil, the use of which is not known. In one of the best-known species, *Cicada septemdecim*, from North America, the lifecycle is said to extend over seventeen years. Cicadas are particularly abundant in the tropics, where the largest forms are found. They also occur in temperate countries, and were well known to the ancient Greeks and Romans. One species only is found in England, where it is restricted to the southern counties but is an insect not commonly met with.

CICELY, *Myrrhis odorata* (natural order Umbelliferae), a perennial herb with a leafy hollow stem, 2 to 3 ft. high, much divided leaves, whitish beneath, a large sheathing base, and terminal umbels of small white flowers, the outer ones only of which are fertile. The

fruit is dark brown, long (¾ to 1 in.), narrow and beaked. The plant is a native of central and southern Europe, and is found in parts of England and Scotland in pastures, usually near houses. It has aromatic and stimulant properties and was formerly used as a pot-herb.

CICERO, the name of two families of ancient Rome. It may perhaps be derived from *cicer* (pulse), in which case it would be analogous to such names as *Lentulus, Tubero, Piso*. Of one family, of the plebeian Claudian *gens*, only a single member, Gaius Claudius Cicero, tribune in 454 B.C., is known. The other family was a branch of the Tullii, settled from an ancient period at Arpinum. This family, four of whose members are noticed specially below, did not achieve more than municipal eminence until the time of M. Tullius Cicero, the great orator.

I. Marcus Tullius Cicero (106-43 B.C.), Roman orator and politician, was born at Arpinum on the 3rd of January 106 B.C. His mother, Helvia, is said to have been of good family. His father was by some said to have been descended from Attius Tullius, the Volscian host of Coriolanus, while spiteful persons declared him to have been a fuller; in any case he was a Roman knight with property at Arpinum and a house in Rome. His health was weak, and he generally lived at Arpinum, where he devoted himself to literary pursuits. Cicero spent his boyhood partly in his native town and partly at Rome. The poet Archias, he says, first inspired him with the love of literature. He was much impressed by the teaching of Phaedrus, the Epicurean, at a period before he assumed the *toga virilis*; he studied dialectic under Diodotus the Stoic, and in 88 B.C. attended the lectures of Philo, the head of the Academic school, whose devoted pupil he became. He studied rhetoric under Molo (Molon) of Rhodes, and law under the guidance of Q. Mucius Scaevola, the augur and jurisconsult. After the death of the augur, he transferred himself to the care of Q. Mucius Scaevola, the *pontifex maximus*, a still more famous jurisconsult, nephew of the augur. His literary education at this period consisted largely of verse-writing and making translations from Greek authors. We hear of an early poem named *Pontius Glaucus* the subject of which is uncertain, and of translations of Xenophon's *Oeconomica* and the *Phenomena* of Aratus. Considerable fragments of the latter work are still extant. To this period also belongs his *de Inventione rhetorica*, of which he afterwards spoke lightly (*de Orat.* i. 5), but which enjoyed a great vogue in the middle ages. Cicero also, according to Roman practice, received military training. At the age of seventeen he served in the social war successively under Pompeius Strabo and Sulla (89 B.C.). In the war between Marius and Sulla his sympathies were with Sulla, but he did not take up arms (*Sext. Rosc.* 136, 142).

His forensic life begins in 81 B.C., at the age of twenty-five. A speech delivered in this year, *pro Quinctio*, is still extant; it is concerned with a technical point of law and has little literary merit. In the following year he made his celebrated defence of Sextus Roscius on a charge of parricide. He subsequently defended a woman of Arretium, whose freedom was impugned on the ground that Sulla had confiscated the territory of that town. Cicero then left Rome on account of his health, and travelled for two years in the East. He studied philosophy at Athens under various teachers, notably Antiochus of Ascalon, founder of the Old Academy, a combination of Stoicism, Platonism and Peripateticism. In Asia he attended the courses of Xenocles, Dionysius and Menippus, and in Rhodes those of Posidonius, the famous Stoic. In Rhodes also he studied rhetoric once more under Molo, to whom he ascribes a decisive influence upon the development of his literary style. He had previously affected the florid, or Asiatic, style of oratory then current in Rome. The chief faults of this were excess of ornament, antithesis, alliteration and assonance, monotony of rhythm, and the insertion of words purely for rhythmical effect. Molo, he says, rebuked his youthful extravagance and he came back "a changed man."[1]

He returned to Rome in 77 B.C., and appears to have married at this time Terentia, a rich woman with a domineering temper, to whom many of his subsequent embarrassments were due.[2] He engaged at once in forensic and political life. He was quaestor in 75, and was sent to Lilybaeum to supervise the corn supply. His connexion with Sicily led him to come forward in 70 B.C., when curule-aedile elect, to prosecute Gaius Verres, who had oppressed the island for three years. Cicero seldom prosecuted, but it was the custom at Rome for a rising politician to win his spurs by attacking a notable offender (*pro Caelio*, 73). In the following year he defended Marcus (or Manius) Fonteius on a charge of extortion in Gaul, using various arguments which might equally well have been advanced on behalf of Verres

himself.

In 68 B.C. his letters begin, from which (and especially those to T. Pomponius Atticus, his "second self") we obtain wholly unique knowledge of Roman life and history. In 66 B.C. he was praetor, and was called upon to hear cases of extortion. In the same year he spoke on behalf of the proposal of Gaius Manilius to transfer the command against Mithradates from Lucullus to Pompey (*de Lege Manilia*), and delivered his clever but disingenuous defence of Aulus Cluentius (*pro Cluentio*). At this time he was a prospective candidate for the consulship, and was obliged by the hostility of the nobles towards "new men" to look for help wherever it was to be found. In 65 B.C. he even thought of defending Catiline on a charge of extortion, and delivered two brilliant speeches on behalf of Gaius Cornelius, tribune in 67 B.C., a leader of the democratic party. In 64 B.C. he lost his father and his son Marcus was born. The optimates finally decided to support him for the consulship in order to keep out Catiline, and he eagerly embraced the "good cause," his affection for which from this time onward never varied, though his actions were not always consistent.

The public career of Cicero henceforth is largely covered by the general article on Rome: *History*, II. "The Republic," ad fin. The year of his consulship (63) was one of amazing activity, both administrative and oratorical. Besides the three speeches against Publius Rullus and the four against Catiline, he delivered a number of others, among which that on behalf of Gaius Rabirius is especially notable. The charge was that Rabirius (*q.v.*) had killed Saturninus in 100 B.C., and by bringing it the democrats challenged the right of the senate to declare a man a public enemy. Cicero, therefore, was fully aware of the danger which would threaten himself from his execution of the Catilinarian conspirators. He trusted, however, to receive the support of the nobles. In this he was disappointed. They never forgot that he was a "new man," and were jealous of the great house upon the Palatine which he acquired at this time. Caesar had made every possible effort to conciliate Cicero,[3] but, when all overtures failed, allowed Publius Clodius to attack him. Cicero found himself deserted, and on the advice of Cato went into exile to avoid bloodshed. He left Rome at the end of March 58, and arrived on the 23rd of May at Thessalonica, where he remained in the deepest dejection until the end of November, when he went to Dyrrhachium (Durazzo) awaiting his recall. He left for Italy on the 4th of August 57, and on arriving at Brundisium (Brindisi) found that he had been recalled by a law passed by the *comitia* on the very day of his departure. On his arrival at Rome he was received with enthusiasm by all classes, but did not find the nobles at all eager to give him compensation for the loss of his house and villas, which had been destroyed by Clodius. He was soon encouraged by the growing coolness between Pompey and Caesar to attack the acts of Caesar during his consulship, and after his successful defence of Publius Sestius on the 10th of March he proposed on the 5th of April that the senate should on the 15th of May discuss Caesar's distribution of the Campanian land. This brought about the conference of Luca (Lucca). Cicero was again deserted by his supporters and threatened with fresh exile. He was forced to publish a "recantation," probably the speech *de Provinciis Consularibus*, and in a private letter says frankly, "I know that I have been a regular ass." His conduct for the next three years teems with inconsistencies which we may deplore but cannot pass over. He was obliged to defend in 54 Publius Vatinius, whom he had fiercely attacked during the trial of Sestius; also Aulus Gabinius, one of the consuls to whom his exile was due; and Rabirius Postumus, an agent of Gabinius. On the other hand, he made a violent speech in the senate in 55 against Lucius Piso, the colleague of Gabinius in 58. We know from his letters that he accepted financial aid from Caesar, but that he repaid the loan before the outbreak of the civil war.[4] There is no doubt that he was easily deceived. He was always an optimist, and thought that he was bringing good influence to bear upon Caesar as afterwards upon Octavian. His actions, however, when Caesar's projects became manifest, sufficiently vindicated his honesty. During these unhappy years he took refuge in literature. The *de Oratore* was written in 55 B.C., the *de Republica* in 54, and the *de Legibus* at any rate begun in 52. The latter year is famous for the murder of Clodius by T. Annius Milo on the Appian Way (on the 18th of January), which brought about the appointment of Pompey as sole consul and the passing of the special laws dealing with rioting and bribery. Cicero took an active part in the trials which followed, both as a defender of Milo and his adherents and as a prosecutor of the opposite faction. At the close of the year, greatly to his annoyance, he was sent to govern Cilicia under the provisions of Pompey's law (see Pompey and Rome: *History*). His reluctance to leave Rome, already shown by his refusal to take a province, after his praetorship and consulship, was increased by the inclination of his daughter Tullia, then a widow, to marry again.[5] During his absence she married the profligate spendthrift, P. Cornelius Dolabella.

The province of Cilicia was a large one. It included, in addition to Cilicia proper, Isauria,

Lycaonia, Pisidia, Pamphylia and Cyprus, as well as a protectorate over the client kingdoms of Cappadocia and Galatia. There was also danger of a Parthian inroad. Cicero's legate was his brother Quintius Cicero (below), an experienced soldier who had gained great distinction under Caesar in Gaul. The fears of Parthian invasion were not realized, but Cicero, after suppressing a revolt in Cappadocia, undertook military operations against the hill-tribes of the Amanus and captured the town of Pindenissus after a siege of forty-six days. A *supplicatio* in his honour was voted by the senate. The early months of 50 were occupied by the administration of justice, chiefly at Laodicea, and by various attempts to alleviate the distress in the province caused by the exactions of his predecessor, Appius Claudius. He had to withstand pressure from influential persons (*e.g.* M. Brutus, who had business interests in his province), and refused to provide his friends with wild beasts for their games in Rome. Leaving his province on the earliest opportunity, he reached Brundisium on the 24th of November, and found civil war inevitable. He went to Rome on the 4th of January, but did not enter the city, since he aspired to a triumph for his successes.[6] After the outbreak of war he was placed by Pompey in charge of the Campanian coast. After much irresolution he refused Caesar's invitations and resolved to join Pompey's forces in Greece. He was shocked by the ferocious language of his party, and himself gave offence by his bitter jests (Plut. *Cic.* 38). Through illness he was not present at the battle of Pharsalus, but afterwards was offered the command by Cato the Younger at Corcyra, and was threatened with death by the young Cn. Pompeius when he refused to accept it. Thinking it useless to continue the struggle, he sailed to Brundisium, where he remained until the 12th of August 47, when, after receiving a kind letter from Caesar, he went to Rome. Under Caesar's dictatorship Cicero abstained from politics. His voice was raised on three occasions only: once in the senate in 46 to praise Caesar's clemency to M. Claudius Marcellus (*pro Marcello*), to plead in the same year before Caesar for Quintus Ligarius, and in 45 on behalf of Deiotarus, tetrarch of Galatia, also before Caesar. He suffered greatly from family troubles at this period. In 46, his patience giving way, he divorced Terentia, and married his young and wealthy ward Publilia. Then came the greatest grief of his life, the death of Tullia, his beloved daughter. He shortly afterwards divorced Publilia, who had been jealous of Tullia's influence and proved unsympathetic. To solace his troubles he devoted himself wholly to literature. To this period belong several famous rhetorical and philosophical works, the *Brutus*, *Orator*, *Partitiones Oratoriae*, *Paradoxa*, *Academica*, *de Finibus*, *Tusculan Disputations*, together with other works now lost, such as his *Laus Catonis*, *Consolatio* and *Hortensius*.

His repose was broken by Caesar's murder on the 15th of March 44, to which he was not a party. On the 17th of March he delivered a speech in the senate urging a general amnesty like that declared in Athens after the expulsion of the Thirty Tyrants. When it became apparent that the conspirators had only removed the despot and left the despotism, he again devoted himself to philosophy, and in an incredibly short space of time produced the *de Nature Deorum*, *de Divinatione*, *de Fato*, *Cato maior* (or *de Senectute*), *Laelius* (or *de Amicitia*), and began his treatise *de Officiis*. To this period also belongs his lost work *de Gloria*. He then projected a journey to Greece in order to see his son Marcus, then studying at Athens, of whose behaviour he heard unfavourable reports. He reached Syracuse on the 1st of August, having during the voyage written from memory a translation of Aristotle's *Topica*. He was driven back by unfavourable winds to Leucopetra, and then, hearing better news, returned to Rome on the 21st of August. He was bitterly attacked by Marcus Antonius (Mark Antony) in the senate on the 1st of September for not being present there, and on the next day replied in his First *Philippic*. He then left Rome and devoted himself to the completion of the *de Officiis*, and to the composition of his famous Second *Philippic*, which was never delivered, but was circulated, at first privately, after Antony's departure from Rome to Cisalpine Gaul on the 28th of November.

Cicero returned to Rome on the 9th of December, and from that time forward led the republican party in the senate. His policy, stated briefly, was to make use of Octavian, whose name was all-powerful with the veterans, until new legions had been raised which would follow the republican commanders (*Phil.* xi. 39). Cicero pledged his credit for the loyalty of Octavian, who styled him "father" and affected to take his advice on all occasions (*Epp. ad Brut.* i. 17. 5). Cicero, an incurable optimist in politics, may have convinced himself of Octavian's sincerity. The breach, however, was bound to come, and the saying, maliciously attributed to Cicero, that Octavian was an "excellent youth who must be praised and—sent to another place," neatly expresses the popular view of the situation.[7] Cicero was sharply criticized by M. Junius Brutus for truckling to Octavian while showing irreconcilable enmity to Antony and Lepidus (*ad Brut.* i. 16. 4, i. 15. 9); but Brutus was safe in his province, and it is difficult to see what other course was open to a politician in Rome. Whether Cicero was

right or wrong, none can question his amazing energy. He delivered his long series of *Philippics* at Rome, and kept up a correspondence with the various provincial governors and commanders, all short-sighted and selfish, and several of them half-hearted, endeavouring to keep each man in his place and to elaborate a common plan of operations. He was naturally included in the list of the proscribed, though it is said that Octavian fought long on his behalf, and was slain near Formiae on the 7th of December 43. He had a ship near in which he had previously attempted to fly, but being cast back by unfavourable winds he returned to his villa, saying, “Let me die in the country which I have often saved.” His head and hands were sent to Rome and nailed to the rostra, after Fulvia, wife of Antony and widow of Clodius, had thrust a hairpin through the tongue.

Works.—The literary works of Cicero may be classed as (1) rhetorical; (2) oratorical; (3) philosophical and political; (4) epistolary.

(i.) *Rhetorical.*[8]—His chief works of this kind are: (*a*) *de Oratore*, a treatise in three books dedicated to his brother Quintus. The discussion is conducted in the form of a dialogue which is supposed to have occurred in 91 B.C. chiefly between the two orators L. Crassus and M. Antonius. The first book deals with the studies necessary for an orator; the second with the treatment of the subject matter; the third with the form and delivery of a speech. Cicero says of this work in a letter (*Fam.* i. 9. 23) that it “does not deal in hackneyed rules and embraces the whole theory of oratory as laid down by Isocrates and Aristotle.” (*b*) *Brutus*, or *de claris oratoribus*, a history of Roman eloquence containing much valuable information about his predecessors, drawn largely from the *Chronicle* (*liber annalis*) of Atticus (§§ 14, 15). (*c*) *Orator*, dedicated to M. Brutus, sketching a portrait of the perfect and ideal orator, Cicero’s last word on oratory. The sum of his conclusion is that the perfect orator must also be a perfect man. Cicero says of this work that he has “concentrated in it all his taste” (*Fam.* vi. 18. 4). The three treatises are intended to form a continuous series containing a complete system of rhetorical training.

It will be convenient to mention here a feature of Ciceronian prose on which singular light has been thrown by recent inquiry. In the *de Oratore*, iii. 173 sqq., he considers the element of rhythm or metre in prose, and in the *Orator* (174-226) he returns to the subject and discusses it at length. His main point is that prose should be metrical in character, though it should not be entirely metrical, since this would be poetry (*Orator*, 220). Greek writers relied for metrical effect in prose on those feet which were not much used in poetry. Aristotle recommended the paean ∪∪∪ –. Cicero preferred the cretic – ∪ – which he says is the metrical equivalent of the paean. Demosthenes was especially fond of the cretic. Rhythm pervades the whole sentence but is most important at the end or *clausula*, where the swell of the period sinks to rest. The ears of the Romans were incredibly sensitive to such points. We are told that an assembly was stirred to wild applause by a double trochee – ∪ – ∪.[9] If the order were changed, Cicero says, the effect would be lost. The same rhythm should be found in the *membra* which compose the sentence. He quotes a passage from one of his own speeches in which any change in the order would destroy the rhythm. Cicero gives various *clausulae* which his ears told him to be good or bad, but his remarks are desultory, as also are those of Quintilian, whose examples were largely drawn from Cicero’s writings. It was left for modern research to discover rules of harmony which the Romans obeyed unconsciously. Other investigators had shown that Cicero’s *clausulae* are generally variations of some three or four forms in which the rhythm is trochaic. Dr Thaddaeus Zielinski of St Petersburg, after examining all the *clausulae* in Cicero’s speeches, finds that they are governed by a law. In every *clausula* there is a basis followed by a cadence. The basis consists of a cretic or its metrical equivalent.[10] This is followed by a cadence trochaic in character, but varying in length. The three favourite forms are (i.) – ∪ – – $\overline{\cup}$, (ii.) – ∪ – – ∪$\overline{\cup}$, (iii.) – ∪ – – ∪ – $\overline{\cup}$. These he styles *verae (V)*. Other frequent *clausulae*, which he terms *licitae (L)*, are those in which a long syllable is resolved, as in verse, into two shorts, *e.g.* *ēssĕ vĭdĕātŭr*. These two classes, *V* and *L*, include 86% of the *clausulae* in the orations. Some rarer *clausulae* which he terms *M (= malae)* introduce no new principle. There remain two interesting forms, viz. *S (= selectae)*, in which a spondee is substituted for a trochee in the cadence, *e.g.* – ∪ – – – –, this being done for special emphasis, and *P (= pessimae)*, where a dactyl is so used, *e.g.* – ∪ – – ∪∪ – $\overline{\cup}$, this being the *heroica clausula* condemned by Quintilian. Similar rules apply to the *membra* of the sentence, though in these the *S* and *P* forms are more frequent, harmony being restored in the *clausula*.

These results apply not only to the speeches but also to the philosophical writings and the more elaborate letters, and with modifications to other rhythmical prose, *e.g.* that of Pliny and Seneca. Rhythm was avoided by Caesar who was an Atticist, and by Sallust who was an archaist. Livy’s practice is exactly opposite to that of Cicero, since he has a marked preference for the *S* forms, thereby exemplifying Cicero’s saying that long syllables are more appropriate to history than to oratory.[11]

(ii.) *Speeches*.—These were generally delivered before the senate or people, if political in character, and before jurors sitting in a *quaestio*, if judicial. The speech against Vatinius was an attack upon a witness under examination; that *de Domo* was made before the Pontifices; that *pro C. Rabirio perduellionis reo* in the course of a *provocatio* to the people; and those *pro Ligario* and *pro rege Deiotaro* before Caesar. The five orations composing the *Actio Secunda in Verrem* were never spoken, but written after Verres had gone into exile. The Second *Philippic* also was not delivered but issued as a pamphlet. Cicero's speech for Milo at his trial was not a success, though, as Quintilian (ix. 2. 54) quotes from it, as taken down by shorthand reporters, an example of a rhetorical figure well used, it cannot have been such a failure as is alleged by later writers. The extant speech was written by Cicero at his leisure. None of the other speeches are in the exact form in which they were delivered. Cicero's method was to construct a *commentarius* or skeleton of his speech, which he used when speaking. If he was pleased with a speech he then wrote it out for publication. Sometimes he omitted in the written speech a subject on which he had spoken. A record of this is sometimes preserved: *e.g.* "de Postumi criminibus" (*Mur.* 51), "de teste Fufio" (*Cael.* 19). These *commentarii* were published by his freedman Tiro and are quoted by Asconius (*ad Orat. in Toga Candida*, p. 87).

Cicero in his speeches must be given all the privileges of an advocate. Sometimes he had a bad client; he naïvely confesses the straits to which he was put when defending Scamander (*Clu.* 51; cf. *Phil.* xiii. 26). He thought of defending Catiline, though he says that his guilt is clear as noon-day (*Att.* i. 1-2 and 2. 1). Sometimes the brief which he held at the moment compelled him to take a view of facts contrary to that which he had previously advocated. Thus in the *pro Caecina* he alleges judicial corruption against a witness, Falcula, while in the *pro Cluentio* he contends that the offence was not proved (*Caec.* 28, *Clu.* 103). He says quite openly that "it is a great mistake to suppose that statements in his speeches express his real opinions" (*Clu.* 139). It is therefore idle to reproach him with inconsistencies, though these are sometimes very singular. Thus in the *pro Cornelio* he speaks with praise of Aulus Gabinius, who, when a colleague vetoed his proposal, proceeded to depose him after the precedent set by Tiberius Gracchus (Asconius *in Cornel.* p. 71). In the *pro Cluentio*, 111, he contends that nothing is easier than for a new man to rise at Rome. In the *pro Caelio* he says that Catiline had in him undeveloped germs of the greatest virtues, and that it was the good in him that made him so dangerous (*Cael.* 12-14). He sometimes deliberately puts the case upon a wrong issue. In the *pro Milone* he says that either Milo must have lain in wait for Clodius or Clodius for Milo, leaving out of sight the truth, that the encounter was due to chance. He used to boast that he had cast dust into the eyes of the jury in the case of Cluentius (Quintil. ii. 17-21).

Cicero had a perfect mastery of all weapons wielded by a pleader in Rome. He was specially famous for his pathos, and for this reason, when several counsel were employed, always spoke last (*Orat.* 130). A splendid specimen of pathos is to be found in his account of the condemnation and execution of the Sicilian captains (*Verr.* (*Act*. ii.) v. 106-122). Much exaggeration was permitted to a Roman orator. Thus Cicero frequently speaks as if his client were to be put to death, though a criminal could always evade capital consequences by going into exile. His enemies scoffed at his "tear-drops." He indulged in the more violent invective, which, though shocking to a modern reader, *e.g.* in his speeches against Vatinius and Piso, was not offensive to Roman taste (*de Orat.* ii. 216-290). He was much criticized for his jokes, and even Quintilian (ii. 17-21) regrets that he made so many in his speeches. He could never resist the temptation to make a pun. It must be remembered, however, that he was the great wit of the period. Caesar used to have a collection of Cicero's *bon-mots* brought to him. Cicero complains that all the jokes of the day were attributed to himself, including those made by very sorry jesters (*Fam.* vii. 32. 1). A fine specimen of sustained humour is to be found in his speech *pro Murena*, where he rallies the jurisconsults and the Stoics. He was also criticized for his vanity and perpetual references to his own achievements. His vanity, however, as has been admirably remarked, is essentially that of "the peacock, not of the gander," and is redeemed by his willingness to raise a laugh at his own expense (Strachan-Davidson, p. 192). Some critics have impugned his legal knowledge, but probably without justice. It is true that he does not claim to be a great expert, though a pupil of the Scaevolas, and when in doubt would consult a jurisconsult; also, that he frequently passes lightly over important points of law, but this was probably because he was conscious of a flaw in his case.

(iii.) *Political and Philosophical Treatises*.—These are generally written in the form of dialogues, in which the speakers sometimes belong to bygone times and sometimes to the present. The first method was known as that of Heraclides, the second as that of Aristotle (*Att.* xiii. 19. 4). There is no reason to suppose that the speakers held the views with which

Cicero credits them, or had such literary powers as would make them able to express such views (*ib.* xiii. 12. 3). The political works are *de Republica* and *de Legibus*. The first was a dialogue in six books concerning the best form of constitution, in which the speakers are Scipio Africanus Minor and members of his circle. He tells us that he drew largely from Plato, Aristotle, Theophrastus and writings of the Peripatetics. The famous “Dream of Scipio” recalls the “Vision of Er” in Plato’s *Republic* (Book x. *ad fin.*). The *de Legibus*, a sequel to this work in imitation of Plato’s *Laws*, is drawn largely from Chrysippus.

Cicero as a philosopher belonged to the New Academy. The followers of this school were free to hear all arguments for and against, and to accept the conclusion which for the moment appeared most probable (*Acad.* ii. 131). Thus in the *Tusculan Disputations* v. he expresses views which conflict with *de Finibus* iv., and defends himself on the ground that as an Academic he is free to change his mind. He was much fascinated by the Stoic morality, and it has been noticed that the *Tusculan Disputations* and *de Officiis* are largely Stoic in tone. He has nothing but contempt for the Epicureans, and cannot forgive their neglect of literary style. As Cicero’s philosophical writings have been severely attacked for want of originality, it is only fair to recollect that he resorted to philosophy as an anodyne when suffering from mental anguish, and that he wrote incredibly fast. He issued two editions of his *Academics*. The first consisted of two books, in which Catulus and Lucullus were the chief speakers. He then rewrote his treatise in four books, making himself, Varro and Atticus the speakers. The Romans at this time had no manuals of philosophy or any philosophical writings in Latin apart from the poem of Lucretius and some unskilful productions by obscure Epicureans. Cicero set himself to supply this want. His works are confessedly in the main translations and compilations (*Att.* xii. 52. 3); all that he does is to turn the discussion into the form of a dialogue, to adapt it to Roman readers by illustrations from Roman history, and to invent equivalents for Greek technical terms. This is equally true of the political treatises. Thus, when Atticus criticized a strange statement in *de Republ.* ii. 8, that all the cities of the Peloponnese had access to the sea, he excuses himself by saying that he found it in Dicaearchus and copied it word for word (*Att.* vi. 2. 3). In the same passage he used an incorrect adjective, *Phliuntii* for *Phliasii*; he says that he had already corrected his own copy, but the mistake survives in the single palimpsest in which this work has been preserved. The only merits, therefore, which can be claimed for Cicero are that he invented a philosophical terminology for the Romans, and that he produced a series of manuals which from their beauty of style have had enduring influence upon mankind.

The most famous of these treatises are the following:—

De Finibus, on the Supreme Good. In Book i. L. Manlius Torquatus explains the Epicurean doctrine, which is refuted in ii. by Cicero. In iii. and iv. M. Porcius Cato sets forth the doctrine of the Stoics which is shown by Cicero to agree with that of Antiochus of Ascalon; in v. M. Pupius Piso explains the views of the Academics and Peripatetics.

Tusculanae Disputationes, so called from Cicero’s villa at Tusculum in which the discussion is supposed to have taken place. The subjects treated are:—in Book i., the nature of death and the reasons for despising it; Book ii., the endurance of pain: Pain is not an evil; Book iii., wisdom makes a man insensible to sorrow; Book iv., wisdom banishes all mental disquietude; Book v., virtue is sufficient to secure happiness. The materials are drawn largely from works of Dicaearchus.

De Deorum Natura.—The dialogue is placed in 77 B.C. In Book i. Velleius attacks other philosophies and explains the system of Epicurus. He is then refuted by Cotta. In Book ii. Balbus, speaking as a Stoic, discusses the existence of the gods, nature, the government of the world and providence. In Book iii. Cotta criticizes the views of Balbus. The statement of the Epicurean doctrine is drawn from the work of Phaedrus Περὶ θεῶν, the criticism of this from Posidonius. The Stoic teaching is derived from Cleanthes, Chrysippus and Zeno, and is criticized from the writings of Carneades and Clitomachus.

De Officiis, addressed to his son Marcus. In this the form of dialogue was not employed. The material is chiefly drawn from Stoic sources, *e.g.* works of Panaetius in Books i. and ii., of Posidonius and Hecato in Book iii.

The *Academica*, as they have come down to us, are a conflation from the two editions of this work. They consist of the second book from the first edition, and a portion of the first book from the second edition.

Cato maior, or *de Senectute*, a dialogue placed in 150 B.C. in which Cato, addressing Scipio and Laelius, set forth the praises of old age. The idea is drawn from Aristo of Chios, and the materials largely derived from Xenophon and Plato.

Laelius, or *de Amicitia*, a dialogue between Laelius and his sons-in-law, in which he sets

forth the theory of friendship, speaking with special reference to the recent death of Scipio. Cicero here draws from a work of Theophrastus on the same subject and from Aristotle.

(iv.) *Letters.*—Those preserved are (1) *ad Familiares*, i.-xvi.; (2) *ad Atticum*, i.-xvi.; (3) *ad Quintum*, i.-iii., *ad Brutum*, i.-ii. Some thirty-five other books of letters were known to antiquity, *e.g.* to Caesar, to Pompey, to Octavian and to his son Marcus.

The collection includes nearly one hundred letters written by other persons. Thus, the eighth Book *ad Fam.* consists entirely of letters from Caelius to Cicero when in Cilicia. When writing to Atticus Cicero frequently sent copies of letters which he had received. There is a great variety in the style not only of Cicero's correspondents, but also of Cicero himself. Caelius writes in a breezy, school-boy style; the Latinity of Plancus is Ciceronian in character; the letter of Sulpicius to Cicero on the death of Tullia is a masterpiece of style; Matius writes a most dignified letter justifying his affectionate regard for Caesar's memory. There is an amazingly indiscreet letter of Quintus to his brother's freedman, Tiro, in which he says of the consuls-elect, Hirtius and Pansa, that he would hesitate to put one of them in charge of a village on the frontier, and the other in that of the basement of a tavern (*Fam.* xvi. 27. 2). Several of his correspondents are indifferent stylists. Cato labours to express himself in an awkward and laconic epistle, apologizing for its length. Metellus Celer is very rude, but gives himself away in every word. Antony writes bad Latin, while Cicero himself writes in various styles. We have such a *cri de cœur* as his few words to one of the conspirators after Caesar's murder, "I congratulate you. I rejoice for myself. I love you. I watch your interests; I wish for your love and to be informed what you are doing and what is being done" (*Fam.* vi. 15). When writing to Atticus he eschews all ornamentation, uses short sentences, colloquial idioms, rare diminutives and continually quotes Greek. This use of Greek tags and quotations is also found in letters to other intimate friends, *e.g.* Paetus and Caelius; also in letters written by other persons, *e.g.* Cassius to Cicero; Quintus to Tiro, and subsequently in those of Augustus to Tiberius. It is a feature of the colloquial style and often corresponds to the modern use of "slang." Other letters of Cicero, especially those written to persons with whom he was not quite at his ease or those meant for circulation, are composed in his elaborate style with long periods, parentheses and other devices for obscuring thought. These are throughout rhythmical in character, like his speeches and philosophical works.

We know from Cicero's own statement (*Att.* xvi. 5. 5) that he thought of publishing some of his letters during his lifetime. On another occasion he jestingly charges Tiro with wishing to have his own letters included in the "volumes" (*Fam.* xvi. 17. 1). It is obvious that Cicero could not have meant to publish his private letters to Atticus in which he makes confessions about himself, or those to Quintus in which he sometimes outsteps the limits of brotherly criticism, but was thinking of polished productions such as the letters to Lentulus Spinther or that to Lucceius which he describes as "very pretty" (*Att.* iv. 6. 4).

It is universally agreed that the letters *ad Familiares* were published by Tiro, whose hand is revealed by the fact that he suppresses all letters written by himself, and modestly puts at the end those written to him. That Cicero kept copies of his letters, or of many of them, we know from a passage in which, when addressing a friend who had inadvertently torn up a letter from him, he says that there is nothing to grieve about; he has himself a copy at home and can replace the loss (*Fam.* vii. 25. 1). Tiro may have obtained from Terentia copies of letters written to her. It has been suggested that he may also have edited the letters to Quintus, as he could obtain them from members of the family. The letters *ad Familiares* were generally quoted in antiquity by books, the title being taken from the first letter, *e.g. Cicero ad Varronem epistula Paeti*.

While the letters *ad Familiares* were circulated at once, those to Atticus appear to have been suppressed for a considerable time. Cornelius Nepos (*Att.* 16) knew of their existence but distinguishes them from the published letters. Asconius (p. 87), writing under Claudius, never quotes them, though, when discussing Cicero's projected defence of Catiline, he could hardly have failed to do so, if he had known them. The first author who quotes them is Seneca. It is, therefore, probable that they were not published by Atticus himself, who died 32 B.C., though his hand may be seen in the suppression of all letters written by himself, but that they remained in the possession of his family and were not published until about A.D. 60. At that date they could be published without expurgation of any kind, whereas in the letters *ad Familiares* the editor's hand is on one occasion (iii. 10. 11) manifest. Cicero is telling Appius, his predecessor in Cilicia, of the measures which he is taking on his behalf. There then follows a lacuna. It is obvious that Tiro thought the passage compromising and struck it out. In the letters to Atticus, on the other hand, we have Cicero's private journal, his confessions to the director of his conscience, the record of his moods from day to day,

without alterations of any kind.

Cicero's letters are the chief and most reliable source of information for the period. It is due to them that the Romans of the day are living figures to us, and that Cicero, in spite of, or rather in virtue of his frailties, is intensely human and sympathetic. The letters to Atticus abound in the frankest self-revelation, though even in the presence of his confessor his instinct as a pleader makes him try to justify himself. The historical value of the letters, therefore, completely transcends that of Cicero's other works. It is true that these are full of information. Thus we learn much from the *de Legibus* regarding the constitutional history of Rome, and much from the *Brutus* concerning the earlier orators. The speeches abound in details which may be accepted as authentic, either because there is no reason for misrepresentation or on account of their circumstantiality. Thus the *Verrines* are our chief source of information for the government of the provinces, the system of taxation, the powers of the governor. We hear from them of such interesting details as that the senate annul a judicial decision improperly arrived at by the governor, or that the college of tribunes could consider the status at Rome of a man affected by this decision (*Verr.* II. ii. 95-100). We have unfolded to us the monstrous system by which the governor could fix upon a remote place for the delivery of corn, and so compel the farmer to compound by a payment in money which the orator does not blame, on the ground that it is only proper to allow magistrates to receive corn wherever they wish (*ib.* iii. 190). From the speech *pro Cluentio* (145-154) we gain unique information concerning the condition of society in a country town, the extraordinary exemption of equites from prosecution for judicial corruption, the administration of domestic justice in the case of slaves examined by their owner (*ib.* 176-187). But we have always to be on our guard against misrepresentation, exaggeration and falsehood. The value of the letters lies in the fact that in them we get behind Cicero and are face to face with the other *dramatis personae*; also that we are admitted behind the scenes and read the secret history of the times. One of the most interesting documents in the correspondence is a despatch of Caesar to his agent Oppius, written in great haste and in disjointed sentences. It runs as follows: "On the 9th I came to Brundisium. Pompey is at Brundisium. He sent Magius to me to treat of peace. I gave him a suitable answer" (*Att.* ix. 13, Ai.). In the *de Bello civili*, on the other hand, Caesar, who wishes to show that he did his best to make peace, after stating that he sent his captive Magius to negotiate, expresses mild surprise at the fact that Pompey did not send him back (*Bell. Civ.* i. 26). We hear of the extraordinary agreement made by two candidates for the consulship in Caesar's interest with the sitting consuls of 54 B.C., which Cicero says he hardly ventures to put on paper. Under the terms of this the consuls, who were *optimates*, bound themselves to betray their party by securing, apparently fraudulently, the election of the candidates while they in turn bound themselves to procure two ex-consuls who would swear that they were present in the senate when supplies were voted for the consular provinces, though no meeting of the senate had been held, and three augurs who would swear that a *lex curiata* had been passed, though the *comitia curiata* had not been convened (*Att.* iv. 18. 2). But perhaps the most singular scene is the council of three great ladies presided over by Servilia at Antium, which decides the movements of Brutus and Cassius in June 44 B.C., when Cassius "looking very fierce—you would say that he was breathing fire and sword"—blustered concerning what he considered an insult, viz. a commission to supply corn which had been laid upon him. Servilia calmly remarks she will have the commission removed from the decree of the senate (*Att.* xv. 11. 2).

(v.) *Miscellaneous.*—It is not necessary to dwell upon the other forms of literary composition attempted by Cicero. He was a fluent versifier, and would write 500 verses in one night. Considerable fragments from a juvenile translation of Aratus have been preserved. His later poems upon his own consulship and his exile were soon forgotten except for certain lines which provoked criticism, such as the unfortunate verse:

"O fortunatam natam me consule Romam."

He wrote a memoir of his consulship in Greek and at one time thought of writing a history of Rome. Nepos thought that he would have been an ideal historian, but as Cicero ranks history with declamation and on one occasion with great *naïveté* asks Lucius Lucceius (*q.v.*), who was embarking on this task, to embroider the facts to his own credit, we cannot accept this criticism (*Fam.* vi. 2. 3).

(vi.) *Authenticity.*—The genuineness of certain works of Cicero has been attacked. It was for a long time usual to doubt the authenticity of the speeches *post reditum* and *pro Marcello*.[12] Recent scholars consider them genuine. As their rhythmical structure corresponds more or less exactly with the canon of authenticity formed by Zielinski from the

other speeches, the question may now be considered closed.[13] Absurd suspicion has been cast upon the later speeches *in Catilinam* and that *pro Archia*. An oration *pridie quam in exsilium iret* is certainly a forgery, as also a letter to Octavian. There is a "controversy" between Cicero and Sallust which is palpably a forgery, though a quotation from it occurs in Quintilian.[14] Suspicion has been attached to the letters to Brutus, which in the case of two letters (i. 16 and 17) is not unreasonable since they somewhat resemble the style of *suasoriae*, or rhetorical exercises, but the latest editors, Tyrrell and Purser, regard these also as genuine.

Criticism. (i.) *Ancient.*—After Cicero's death his character was attacked by various detractors, such as the author of the spurious *Controversia* put into the mouth of Sallust, and the calumniator from Whom Dio Cassius (xlvi. 1—28) draws the libellous statements which he inserts into the speech of Q. Fufius Calenus in the senate. Of such critics, Asconius (in *Tog. Cand.* p. 95) well says that it is best to ignore them. His prose style was attacked by Pollio as Asiatic, also by his son, Asinius Gallus, who was answered by the emperor Claudius (Suet. 41). The writers of the silver age found fault with his prolixity, want of sparkle and epigram, and monotony of his clausulae.[15] A certain Largius Licinius gained notoriety by attacking his Latinity in a work styled *Ciceromastix*. His most devoted admirers were the younger Pliny, who reproduced his oratorical style with considerable success, and Quintilian (x. 1. 112), who regarded him as the perfect orator, and draws most of his illustrations from his works. At a later period his style fascinated Christian writers, notably Lactantius, the "Christian Cicero," Jerome and S. Augustine, who drew freely from his rhetorical writings.

The first commentator upon Cicero was Asconius, a Roman senator living in the reign of Claudius; who wrote a commentary upon the speeches, in which he explains obscure historical points for the instruction of his sons (see Asconius). Passing over a number of grammatical and rhetorical writers who drew illustrations from Cicero, we may mention the *Commentary* of Victorinus, written in the 4th century, upon the treatise *de Inventione*, and that of Boethius (A.D. 480-524) upon the *Topica*. Among scholiasts may be mentioned the *Scholiasta Bobiensis* who is assigned to the 5th century, and a pseudo-Asconius, who wrote notes upon the *Verrines* dealing with points of grammar and rhetoric.

(ii.) *Medieval Scholars.*—In the middle ages Cicero was chiefly known as a writer on rhetoric and morals. The works which were most read were the *de Inventione* and *Topica*—though neither of these was quite so popular as the treatise *ad Herennium*, then supposed to be by Cicero—and among the moral works, the *de Officiis*, and the *Cato Maior*. John of Salisbury (1110-1180) continually quotes from rhetorical and philosophical writings, but only once from the speeches. The value set upon the work *de Inventione* is shown by a passage in which Notker (d. 1022) writing to his bishop says that he has lent a MS. containing, the *Philippics* and a commentary upon the *Topics*, but has received as a pledge something far more valuable, viz. the *de Inventione*, and the "famous commentary of Victorinus."[16] We have an interesting series of excerpts made by a priest named Hadoard, in the 9th century, taken from all the philosophical writings, now preserved, also from the *de Oratore*.[17]

The other works of Cicero are seldom mentioned. The most popular speeches were those against Catiline, the *Verrines*, *Caesarianae* and *Philippics*, to which may be added the spurious *Controversia*. A larger knowledge of the speeches is shown by Wibald, abbot of Corvey, who in 1146 procured from Hildesheim a MS. containing with the *Philippics* the speeches against Rullus, wishing to form a *corpus* of Ciceronian works.[18] Gerbert (afterwards Pope Silvester II., 940-1003) was especially interested in the speeches, and in a letter to a friend (*Epist.* 86) advises him to take them with him when journeying. The letters are rarely mentioned. The abbey of Lorsch possessed in the 9th century five MSS. containing "Letters of Cicero," but those to Atticus are only mentioned once, in the catalogue of Cluny written in the 12th century.[19] Letters of Cicero were known to Wibald of Corvey, also to Servatus Lupus, abbot of Ferrières (805-832), who prosecuted in the 9th century a search for MSS. which reminds us of the Italian humanists in the 15th century. A good deal of textual criticism must have been devoted to Cicero's works during this period. The earliest critic was Tiro, who, as we know from Aulus Gellius (i. 7. 1), corrected MSS. which were greatly valued as containing his recension. We have a very interesting colophon to the speeches against Rullus, in which Statilius Maximus states that he had corrected the text by the help of a MS. giving the recension of Tiro, which he had collated with five other ancient copies.[20]

It is interesting to notice that Servatus Lupus did similar work in the 9th century. Thus, writing to Ansbald of Prüm, he says, "I will collate the letters of Cicero which you sent with the copy which I have so as to elicit the true reading, if possible, by comparing the two."[21] He asks another correspondent to supply him with a copy of the *Verrines* or any other works for a similar purpose.

Brunetto Latini (d. ca. 1294), the master of Dante, translated the *Caesarianae* into Italian. Dante himself appears to be acquainted only with the *Laelius*, *Cato Maior*, *de Officiis*, *de Finibus*, *de Inventione* and *Paradoxa*. Petrarch says that among his countrymen Cicero was a great name, but was studied by few. Petrarch himself sought for MSS. of Cicero with peculiar ardour. He found the speech *pro Archia* at Liége in 1333, and in 1345 at Verona made his famous discovery of the letters to Atticus, which revealed to the world Cicero as a man in place of the "god of eloquence" whom they had worshipped. Petrarch was under the impression in his old age that he had once possessed Cicero's lost work *de Gloria*, but it is probable that he was misled by one of the numerous passages in the extant writings dealing with this subject.[22] The letters *ad Familiares* were discovered towards the close of the 14th century at Vercelli. The largest addition to the sum of Ciceronian writings was made by Poggio (Gian Francesco Poggio Bracciolini) in the course of his celebrated mission to the Council of Constance (1414-1417). He brought back no less than ten speeches of Cicero previously unknown to the Italians, viz. *pro Sexto Roscio*, *pro Murena*, *pro Cacina*, *de lege agraria* i.-iii., *pro Rabirio perduellionis reo*, *pro Rabirio Postumo*, *pro Roscio Comoedo*, and *in Pisonem*. An important discovery was made at Lodi in 1422 of a MS. which, in addition to complete copies of the *de Oratore* and *Orator*, hitherto known from mutilated MSS., contained an entirely new work, the *Brutus*. The second book of Cicero's letters to Brutus was first printed by Cratander of Basel in 1528 from a MS. obtained for him by Sichardus from the abbey of Lorsch.[23]

All these MSS. are now lost, except that containing the *Epistolae ad Familiares*, a MS. written in the 9th century and now at Florence (Laur. xlix. 9). A similar fate overtook three other MSS. containing the letters to Atticus, independent of the *Veronensis*, viz. a mutilated MS. of Books i.-vii. discovered by Cardinal Capra in 1409, a Lorsch MS. used by Cratander (C), and a French MS. (Z), generally termed *Tornaesianus* from its owner, Jean de Tournes, a printer of Lyons, probably identical with No. 492 in the old Cluny catalogue, used by Turnebus, Lambinus and Bosius. A strange mystification was practised by the last named, a scholar of singular brilliancy, who claimed to have a mutilated MS. which he called his *Decurtatus*, bought from a common soldier who had obtained it from a sacked monastery; also to have been furnished by a friend, Pierre de Crouzeil, a doctor of Limoges, with variants taken from an old MS. found at Noyon, and entered in the margin of a copy of the Lyons edition. The rough draft of his notes, however, upon Books x.-xvi., which afterwards came into the hands of Baluze, is preserved in the Paris library (Lat. 8538 A), in which he continually ascribes different readings to these MSS., the alteration corresponding with a change in his own conjecture. It is, therefore, obvious that he invented the readings in order to strengthen his own corrections. The book, which he termed his *Crusellinus*, may well be his copy of the Lyons edition of 1545 (number 8665 in the sale-catalogue of Baluze), which is described as *cum notis et emendationibus MSS. manu ejusdem Bosii*.[24]

The oldest evidence now existing for any works of Cicero is to be found in palimpsests written in the 4th or 5th century. The most interesting of these, now in the Vatican (Lat. 5757), discovered by Angelo Mai in 1822, contains the treatise *de Republica*, only known from this source. Fragments of the lost speeches *pro Tullio* and *pro Scauro* were discovered in two Milan and Turin palimpsests. The Vatican also possesses an important palimpsest of the *Verrines* (Reg. 2077). A palimpsest containing fragments of various orations was recently destroyed by the fire at the Turin library. The works *de Oratore* and *Orator* are well represented by ancient MSS., the two best known being one at Avranches (*Abrincensis* 238) and a Harleian MS. (2736), both written in the 9th century. The *Brutus* is only known from 15th-century transcripts of the lost *cod. Lodensis*.

The oldest MS. of any speeches, or indeed of any work of Cicero's, apart from the palimpsests, belongs to the Chapter-house of St Peter's in Rome (H. 25). It contains the speeches *in Pisonem*, *pro Fonteio*, *pro Flacco* and the *Philippics*. The earlier part of the MS. was written in the 8th century. The Paris library has two 9th-century MSS., viz. 7774 A. containing *in Verrem* (*Act.* ii.), iv. and v., and 7794, containing the *post reditum* speeches, together with those *pro Sestio*, *in Vatinium*, *de provinciis consularibus*, *pro Balbo*, *pro Caelio*. The only other 9th-century MS. of the speeches is now in Lord Leicester's library at Holkham, No. 387.[25] It originally belonged to Cluny, being No. 498 in the old catalogue. It contains in a mutilated form the speeches *in Catilinam*, *pro Ligario*, *pro rege Deiotaro* and *in Verrem* (*Act.* ii.) ii.

The speeches *pro Sex. Roscio* and *pro Murena* are only known from an ancient and illegible MS. discovered by Poggio at Cluny, No. 496 in the old catalogue, and now lost. The most faithful transcript was made in France (Paris, Lat. 14,749) before the MS. passed into Poggio's hand by a writer who carefully reproduced the corruptions, sometimes in facsimile.[26] The speeches *pro Roscio Comoedo*, *pro Rabirio perduellionis reo* and *pro Rabirio Postumo* are only known from Italian copies of the transcript (now lost) made by Poggio from lost MSS. The *de Officiis*, *Tusculan Disputations* and *Cato Maior* are found in a number of

9th-century MSS. A collection, consisting of *de Natura deorum*, *de Divinatione*, *Timaeus*, *de Fato*, *Paradoxa*, *Lucullus* (= *Acad. Prior*.) and *de Legibus*, is found in several MSS. of the same date. Only one MS. of the *Laelius* is as old as the 10th century.

The *Academica Posteriora* are said by editors to be found only in 15th-century MSS. A MS. in the Paris library (Lat. 6331) is, however, assigned by Chatelain to the 12th century.

For the letters *ad Familiares* our chief source of information is Laur. xlix. 9 (9th century), which contains all the sixteen books. There are independent MSS. written in France and Germany in the 11th and 12th centuries, containing i.-viii. and ix.-xvi. respectively. There is no extant MS. of the letters to Atticus older than the 14th century, apart from a few leaves from a 12th-century MS. discovered at or near Würzburg in the last century. Very great importance has been attached to a Florentine MS. (Laur. xlix. 18) M., which until recently was supposed to have been copied by Petrarch himself from the lost *Veronensis*. It is now known not to be in the hand of Petrarch, but it was still supposed to be the archetype of all Italian MSS., and possibly of all MSS., including the lost C and Z. It has, however, been shown by Lehmann that there is an independent group of Italian MSS., termed by him Σ, containing Books i.-vii. in a mutilated form, and probably connected with the MS. of Capra. These often agree with CZ against M, and the readings of CZΣ are generally superior.

Bibliography.—It is impossible to mention more than a few works as the literature is so vast. (1) *Historical.*—J.L. Strachan-Davidson, *Life of Cicero* (Heroes of the Nations); G. Boissier, *Cicéron et ses amis*; Suringar, *Cicero de vita sua* (Leiden, 1854); W. Warde Fowler, *Social Life at Rome* (1908); introductions to Tyrrell and Purser's edition of the letters. (2) *Palaeographical.*—Facsimiles of the best-known MSS. are given by E. Chatelain in *Paléographie des classiques latins*, parts 2, 3 and 7. Information regarding various MSS. will be found in Halm, *Zur Handschriftenkunde der ciceronischen Schriften* (Munich, 1850); Deschamps, *Essai bibliographique sur Cicéron* (Paris, 1863) (an unscientific work); Lehmann, *De Ciceronis ad Atticum epistulis recensendis* (Berlin, 1892); *Anecdota Oxoniensia*, classical series, parts vii., ix., x. (3) *Literary.*—M. Schanz, *Geschichte der römischen Litteratur*, i, 194-274 (München, 1890). (4) *Linguistic.*—Merguet, *Lexicon to Oratorical and Philosophical Works*; Le Breton, *Études sur la langue et la grammaire de Cicéron* (Paris, 1901); Norden, *Die antike Kunstprosa* (Leipzig, 1898); Th. Zielinski, *Das Clauselgesetz in Ciceros Reden* (Leipzig, 1904). Much information on points of Ciceronian idiom and language will be found in J.S. Reid's *Academica* (London, 1885) and Landgraf's *Pro Sext. Roscio* (Erlangen, 1884). (5) *Legal.*—A.H.J. Greenidge, *The Legal Procedure of Cicero's Time* (Oxford, 1901). (6) *Philosophical.*—An excellent account of Cicero as a philosopher is given in the preface to Reid's edition of the *Academica*. (7) *Editions* (critical) of the complete texts.—Baiter-Halm (1845-1861); C.F.W. Müller (1880-1896); Oxford Classical Texts.

(A. C. C.)

2. Quintus Tullius Cicero, brother of the orator and brother-in-law of T. Pomponius Atticus, was born about 102 B.C. He was aedile in 67, praetor in 62, and for the three following years propraetor in Asia, where, though he seems to have abstained from personal aggrandizement, his profligacy and ill-temper gained him an evil notoriety. After his return to Rome, he heartily supported the attempt to secure his brother's recall from exile, and was nearly murdered by gladiators in the pay of P. Clodius Pulcher. He distinguished himself as one of Julius Caesar's legates in the Gallic campaigns, served in Britain, and afterwards under his brother in Cilicia. On the outbreak of the civil war between Pompey and Caesar, Quintus, like Marcus, supported Pompey, but after Pharsalus he deserted and made peace with Caesar, largely owing to the intercession of Marcus. Both the brothers fell victims to the proscription which followed Caesar's death, Quintus being put to death in 43, some time before Marcus. His marriage with Pomponia was very unhappy, and he was much under the influence of his slave Statius. Though trained on the same lines as Marcus he never spoke in public, and even said, "One orator in a family is enough, nay even in a city." Though essentially a soldier, he took considerable interest in literature, wrote epic poems, tragedies and annals, and translated plays of Sophocles. There are extant four letters written by him (one to his brother Marcus, and three to his freedman Tiro) and a short paper, *De Petitione Consulatus* (on canvassing for the consulship), addressed to his brother in 64. Some consider this the work of a rhetorician of later date. A few hexameters by him on the twelve signs of the Zodiac are quoted by Ausonius.

Cicero in several of his *Letters* (ed. Tyrrell and Purser); *pro Sestio*, 31; Caesar, *Bell. Gal.*; Appian, *Bell. Civ.* iv. 20; Dio Cassius, xl. 7, xlvii. 10; text of the *De Petit, Cons.* in A. Eussner, *Commentariolum Petitionis* (1872), see also R.Y. Tyrrell in *Hermathena*, v. (1877), and A. Beltrami, *De Commentariolo Petitionis Q. Ciceroni vindicando* (1892); G. Boissier, *Cicero and*

His Friends (Eng. trans., 1897), especially pp. 235-241.

3. Marcus Tullius Cicero, only son of the orator and his wife Terentia, was born in 65 B.C. At the age of seventeen he served with Pompey in Greece, and commanded a squadron of cavalry at the battle of Pharsalus. In 45 he was sent to Athens to study rhetoric and philosophy, but abandoned himself to a life of dissipation. It was during his stay at Athens that his father dedicated the *de Officiis* to him. After the murder of Caesar (44) he attracted the notice of Brutus, by whom he was offered the post of military tribune, in which capacity he rendered good service to the republican cause. After the battle of Philippi (42), he took refuge with Sextus Pompeius in Sicily, where the remnants of the republican forces were collected. He took advantage of the amnesty granted by the treaty of Misenum (39) to return to Rome, where he took no part in public affairs, but resumed his former dissipated habits. In spite of this, he received signal marks of distinction from Octavian, who not only nominated him augur, but accepted him as his colleague in the consulship (30). He had the satisfaction of carrying out the decree which ordered that all the statues of Antony should be demolished, and thus "the divine justice reserved the completion of Antony's punishment for the house of Cicero" (Plutarch). He was subsequently appointed proconsul of Asia or Syria, but nothing further is known of his life. In spite of his debauchery, there is no doubt that he was a man of considerable education and no mean soldier, while Brutus, in a letter to his father (*Epp. ad Brutum*, ii. 3), even goes so far as to say that the son would be capable of attaining the highest honours without borrowing from the father's reputation.

See Plutarch, *Cicero, Brutus*; Appian, *Bell. Civ.* ii. 20. 51, iv. 20; Dio Cassius xlv. 15, xlvi. 18, li. 19; Cicero's *Letters* (ed. Tyrrell and Purser); G. Boissier, *Cicero and His Friends* (Eng. trans., 1897), pp. 104-107.

4. Quintus Tullius Cicero (*c.* 67-43 B.C.), son of Quintus Tullius Cicero (brother of the orator). He accompanied his uncle Marcus to Cilicia, and, in the hope of obtaining a reward, repaid his kindness by informing Caesar of his intention of leaving Italy. After the battle of Pharsalus he joined his father in abusing his uncle as responsible for the condition of affairs, hoping thereby to obtain pardon from Caesar. After the death of Caesar he attached himself to Mark Antony, but, owing to some fancied slight, he deserted to Brutus and Cassius. He was included in the proscription lists, and was put to death with his father in 43. In his last moments he refused under torture to disclose his father's hiding-place. His father, who in his concealment was a witness of what was taking place, thereupon gave himself up, stipulating that he and his son should be executed at the same time.

See Cicero, *ad Att.* x. 4. 6, 7. 3; xiv. 20. 5; Dio Cassius xlvii. 10.

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1 *Brutus*, § 316 "(Molon) dedit operam ... ut nimis redundantis nos et supra fluentis iuvenili quadam dicendi impunitate et licentia reprimeret et quasi extra ripas diffluentis coërceret."

2 According to Plutarch she urged her husband to take vigorous action against Catiline, who had compromised her half-sister Fabia, a vestal virgin; also to give evidence against Clodius, being jealous of his sister Clodia.

3 Caesar, at one time, offered him a place on the coalition, which on his refusal became a triumvirate (*Att.* ii. 3. 3; *Prov. Cons.* 41), and afterwards a post on his commission for the division of the Campanian land, or a *legatio libera*.

4 *Att.* vii. 8. 5 "est enim ἄμορφον ἀντιπολιτευομένου χρεωφειλέτην esse."

5 She was married in 63 B.C. to C. Calpurnius Piso Frugi, whom Cicero found a model son-in-law. He appears to have died before 56, since in that year Tullia was betrothed to Furius Crassipes (quaestor in Bithynia in 51). It is not known if this marriage actually took place.

6 That the loss of his triumph rankled in his mind may be seen from *Brutus*, § 255: "hanc gloriam ... tuae quidem supplicationi non, sed triumphis multorum antepono."

7 *Fam.* xi. 20 "laudandum adolescentem, ornandum, tollendum."

8 With these it is usual to include a treatise to Herennius by an anonymous author, a contemporary of Sulla, in modern times generally identified with a person named Cornificius, quoted by Quintilian (iii. 1. 21). This is a manual of rhetoric derived from Greek sources with illustrations of figures drawn from Roman orators. Cicero's juvenile work *de Inventione* appears to be drawn partly from this and partly from a treatise by Hermagoras. This is a slight production and does not require detailed notice. Other minor works written in later life, such as the *Partitiones Oratoriae*, a catechism of rhetoric, in which instruction is given by Cicero to his son Marcus; the *Topica*, and an introduction to a translation of the speeches delivered by

Demosthenes and Aeschines for and against Ctesiphon, styled *de optimo genere oratorum*, also need only be mentioned.

9 *Orator*, § 214 “patris dictum sapiens temeritas fili cōmprŏbāvĭt—hoc dichoreo tantus clamor contionis excitatus est ut admirabile esset. Quaero, nonne id numerus efficerit? Verborum ordinem immuta, fac sic: ‘Comprobavit fili temeritas’ jam nihil erit.”

10 This theory is partly anticipated by Terentianus Maurus (c. A.D. 290), who says of the cretic (v. 1440 sqq.):—

> “Plurimum orantes decebit quando paene in ultimo
> Obtinet sedem beatam, terminet si clausulam
> Dactylus spondeus imam, nec trochaeum respuo;
> Plenius tractatur istud arte prosa rhetorum.”

11 *Orator*, § 212 “cursum contentiones magis requirunt, expositiones rerum tarditatem.”

12 Markland and F.A. Wolf first rejected them.

13 In the speeches generally *L*+*V*=86%. In the *de Domo* the proportion is 88 and in the *pro Marcello* 87%.

14 Quintil. iv. 1. 68. It is possible that the writer may have used a quotation preserved from a real speech by Quintilian.

15 Tacitus, *Dial.* 22 “omnis clausulas uno et eodem modo determinet.”

16 Ed. P. Piper, p. 861.

17 *Philologus* (1886), Suppl. Bd. v.

18 Jaffé, *Bibl. Rer. German.*, i. 326.

19 Delisle, *Cabinet des MSS.*, ii 459.

20 “Statilius Maximus rursus emendavi ad Tironem et Laeccanianum et dom. et alios veteres III.” He was a grammarian who lived at the end of the 2nd century.

21 *Epist.* 69 “Tullianas epistulas quas misisti cum nostris conferri faciam ut ex utrisque, si possit fieri, veritas exsculpatur.”

22 Nolhac, *Pétrarque et l’humanisme*, pp. 216-223.

23 Lehmann, *De Ciceronis ad Atticum epp. recensendis*, p. 128.

24 *Philologus*, 1901, p. 216.

25 *Anecdota Oxoniensia*, Classical Series, part ix. (W. Petersen).

26 *Anecdota Oxoniensia*, Classical Series, part x. (A.C. Clark).

CICERONE, a guide, one who conducts visitors to museums, galleries, &c, and explains matters of archaeological, antiquarian, historic or artistic interest. The word is presumably taken from Marcus Tullius Cicero, as a type of learning and eloquence. The *New English Dictionary* finds examples of the use earlier in English than Italian, the earliest quotation being from Addison’s *Dialogues on Medals* (published posthumously 1726). It appears that the word was first applied to “learned antiquarians who show and explain to foreigners the antiquities and curiosities of the country” (quotation of 1762 in the *New English Dictionary*).

CICHLID (*Cichlidae*), a family of Acanthopterygian fishes, related to the perches and wrasses, and confined to the fresh and brackish waters of Central and South America, Africa, Syria, and India and Ceylon. It has recently assumed special importance through the large number of genera and species, many of them showing extraordinary modifications of the dentition, which have been discovered in tropical Africa, especially in the great lakes Victoria, Tanganyika and Nyasa. About 180 species are known from Africa (with Syria and

Madagascar), 150 from America, and 3 from India and Ceylon. They were formerly known under the inappropriate name of *Chromides*.

These fish are further remarkable for their nursing habits. It was formerly believed that the male takes charge of the eggs, and later the young, by sheltering them in the mouth and pharynx. This may still be true of some of the American species, but a long series of recent observations have shown that this most efficacious parental care devolves invariably on the female in the African and Syrian species. We are now acquainted with a large number of species in which this extraordinary habit has been observed, the number having lately been greatly increased by the collections made in Lakes Tanganyika and Victoria.

L. Lortet had described a fish from Lake Tiberias in which he believed he had observed the male take up the eggs after their deposition and retain them in his mouth and pharynx long after eclosion, in fact until the young are able to shift for themselves, and this fish he named *Chromis paterfamilias*. A. Günther had also ascribed the same sex to a fish from Natal, *Chromis philander*, observed by N. Abraham to have similar habits. G.A. Boulenger has since had an opportunity to examine the latter specimen and found it to be a female, as in all other nursing individuals from various parts of Africa, previously observed by himself; whilst J. Pellegrin has acertained the female sex of a specimen with eggs in the mouth presented to the Paris museum by Lortet as his *Chromis paterfamilias* (= *Tilapia simonis*). Further observations by Pellegrin on *Tilapia galilaea* and *Pelmatochromis lateralis*, by E. Schoeller on *Paralilapia multicolor*, have led to the same result.

It therefore remains unproven whether in any of the African *Cichlidae* the buccal “incubation,” as it has been called by Pellegrin, devolves on the male; the instances previously adduced being unsupported by the only trustworthy evidence—an examination of the genital glands.

The relative size and number of the eggs thus taken charge of vary very much according to the species. Thus they may be moderately large and numerous (100 to 200) in *Tilapia nilotica* and *galilaea*, larger and only about 30 in number in *Paratilapia multicolor*, while in *Tropheus moorii*, a fish measuring only 110 mm., the eggs filling the mouth and pharynx measure 4 mm. in diameter and are only four in number, they being proportionally the largest Teleostome eggs known. In *Paratilapia pfefferi*, a fish measuring 75 mm., the eggs found in the pharynx were only about a dozen in number, and they measure 2½ mm. in diameter. In *Tilapia dardennii*, which grows to a length of 240 mm., a score of eggs fills the mouth and pharynx, and each measures 5 to 6 mm. in diameter, an enormous size for so small a fish.

Pellegrin has made the interesting observation on *Tilapia galilaea* that while the eggs are developing in the bucco-pharyngeal cavity the ovarian eggs are rapidly growing towards maturity, so that a fresh deposition of ova may almost immediately follow the release of the young fishes from maternal care.

(G. A. B.)

CICISBEO (Ital.; of uncertain origin; perhaps an inversion of *bel cece*, “beautiful chick (pea),” or from Fr. *chiche beau*, with same meaning), the term in Italy from the 17th century onwards for a dangler about women. The cicisbeo was the professed gallant of a married woman, who attended her at all public entertainments, it being considered unfashionable for the husband to be escort.

CICOGNARA, LEOPOLDO, Count (1767-1834), Italian archaeologist and writer on art, was born at Ferrara on the 17th of November 1767. Mathematical and physical science diverted him a while; but his bent was decided, and not even the notice of such men as Spallanzani and Scarpa could make a savant of him. A residence of some years at Rome, devoted to painting and the study of the antiquities and galleries of the Eternal City, was followed by a visit to Naples and Sicily, and by the publication, at Palermo, of his first work,

a poem of no merit. The island explored, he betook himself to Florence, Milan, Bologna and Venice, acquiring a complete archaeological knowledge of these and other cities. In 1795 he took up his abode at Modena, and was for twelve years engaged in politics, becoming a member of the legislative body, a councillor of state, and minister plenipotentiary of the Cisalpine Republic at Turin. Napoleon decorated him with the Iron Crown; and in 1808 he was made president of the Academy of the Fine Arts at Venice, a post in which he did good work for a number of years. In 1808 appeared his treatise *Del bello ragionamenti*, dedicated in glowing terms to Napoleon. This was followed (1813-1818) by his *magnum opus*, the *Storia delta scultura dal suo risorgimento in Italia al secolo di Napoleone*, in the composition of which he had been encouraged and advised by Giordano and Wilhelm Schlegel (1767-1845). The book was designed to complete the works of Winckelmann and D'Agincourt, and is illustrated with 180 plates in outline. In 1814, on the fall of Napoleon, Cicognara was patronized by Francis I. of Austria, and published (1815-1820), under the auspices of that sovereign, his *Fabbriche più cospicue di Venezia*, two superb folios, containing some 150 plates. Charged by the Venetians with the presentation of their gifts to the empress Caroline at Vienna, Cicognara added to the offering an illustrated catalogue of the objects it comprised; this book, *Omaggio delle Provincie Venete alla maestà di Carolina Augusta*, has since become of great value to the bibliophilist. Reduced to poverty by these splendid editorial speculations, Cicognara contrived to alienate the imperial favour by his political opinions. He left Venice for Rome; his library was offered for sale; and in 1821 he published at Pisa a *catalogue raisonné*, rich in bibliographical lore, of this fine collection, the result of thirty years of loving labour, which in 1824 was purchased *en bloc* by Pope Leo XII., and added to the Vatican library. The other works of Cicognara are—the *Memorie storiche de' litterati ed artisti Ferraresi* (1811); the *Vite de' più insigni pittori e sculiori Ferraresi*, MS.; the *Memorie spettanti alla storia della calcografia* (1831); and a large number of dissertations on painting, sculpture, engraving and other kindred subjects. (See Papoli, in No. II of the *Exile*, a print written and published by Italian refugees.) Cicognara's work in the academy at Venice, of which he became president in 1808, had important results in the increase in number of the professors, the improvement in the courses of study, the institution of prizes, and the foundation of a gallery for the reception of Venetian pictures. He died on the 5th of March 1834.

See Zanetti, *Cenni biografici di Leopoldo Cicognara* (Venice, 1834); Malmani, *Memorie del conte Leopoldo Cicognara* (Venice, 1888).

CID, THE, the favourite hero of Spain, and the most prominent figure in her literature. The name, however, is so obscured by myth and fable as scarcely to belong to history. So extravagant are the deeds ascribed to him, and so marvellous the attributes with which he has been clothed by the fond idolatry of his countrymen, that by some he has been classed with the Amadises and the Orlandos whose exploits he emulated. The Jesuit Masdeu stoutly denies that he had any real existence, and this heresy has not wanted followers even in Spain. The truth of the matter, however, has been expressed by Cervantes, through the mouth of the Canon in *Don Quixote* : "There is no doubt there was such a man as the Cid, but much doubt whether he achieved what is attributed to him." The researches of Professor Dozy, of Leiden, have amply confirmed this opinion. There is a Cid of history and a Cid of romance, differing very materially in character, but each filling a large space in the annals of his country, and exerting a singular influence in the development of the national genius.

The Cid of history, though falling short of the poetical ideal which the patriotism of his countrymen has so long cherished, is still the foremost man of the heroical period of Spain—the greatest warrior produced out of the long struggle between Christian and Moslem, and the perfect type of the Castilian of the 12th century. Rodrigo Diaz, called de Bivar, from the place of his birth, better known by the title given him by the Arabs as the *Cid* (*El Seid*, the lord), and *El Campeador*, the champion *par excellence*, was of a noble family, one of whose members in a former generation had been elected judge of Castile. The date of his birth cannot be fixed with any certainty, but it was probably between 1030 and 1040. As Rodrigo Diaz de Vivar he is first mentioned in a charter of Ferdinand I. of the year 1064. The legends which speak of the Cid as accompanying this monarch in his expeditions to France and Italy must be rejected as purely apocryphal. Ferdinand, a great and wise prince, under whom the tide of Moslem conquest was first effectually stemmed, on his deathbed, in 1065, divided his

territories among his five children. Castile was left to his eldest son Sancho, Leon to Alphonso, Galicia to Garcia, Zamora and Toro to his two daughters Urraca and Elvira. The extinction of the western caliphate and the dispersion of the once noble heritage of the Ommayads into numerous petty independent states, had taken place some thirty years previously, so that Castilian and Moslem were once again upon equal terms, the country being almost equally divided between them. On both sides was civil war, urged as fiercely as that against the common enemy, in which the parties sought allies indiscriminately among Christians and Mahommedans.

No condition of affairs could be more favourable to the genius of the Cid. He rose to great distinction in the war between Sancho of Castile and Sancho of Navarre, in which he won his name of *Campeador*, by slaying the enemy's champion in single combat. In the quarrel between Sancho and his brother Alphonso, Rodrigo Diaz espoused the cause of the former, and it was he who suggested the perfidious stratagem by which Sancho eventually obtained the victory and possession of Leon. Sancho having been slain in 1072, while engaged in the siege of Zamora, Alphonso returned from exile and occupied the vacant throne. One of the most striking of the passages in the Cid's legendary history is that wherein he is represented as forcing the new king to swear that he had no part in his brother's death; but there was cause enough without this for Alphonso's animosity against the man who had helped to despoil him of his patrimony. For a time the Cid, already renowned throughout Spain for his prowess in war, was even advanced by the king's favour and entrusted with high commissions of state. In 1074 the Cid was wedded to Ximena, daughter of the count of Oviedo, and granddaughter, by the mother's side, of Alphonso V. The original deed of the marriage-contract is extant. Some time afterwards the Cid was sent on an embassy to collect tribute from Motamid, the king of Seville, whom he found engaged in a war with Abdallah, the king of Granada. On Abdallah's side were many Castilian knights, among them Count Garcia Ordoñez, a prince of the blood, whom the Cid endeavoured vainly to persuade of the disloyalty of opposing their master's ally. In the battle which ensued under the walls of Seville, Abdallah and his auxiliaries were routed with great slaughter, the Cid returning to Burgos with many prisoners and a rich booty. There fresh proofs of his prowess only served to kindle against him the rancour of his enemies and the jealousy of the king. Garcia Ordoñez accused him to Alphonso of keeping back part of the tribute received from Seville, and the king took advantage of the Cid's absence on a raid against the Moors to banish him from Castile.

Henceforth Rodrigo Diaz began to live that life of a soldier of fortune which has made him famous, sometimes fighting under the Christian banner, sometimes under Moorish, but always for his own hand. At the head of a band of 300 free lances he offered his services first to the count of Barcelona; then, failing him, to Moktadir, the Arab king of Saragossa, of the race of the Beni Houd. Under Moktadir, and his successors Moutamin and Mostain, the Cid remained for nearly eight years, fighting their battles against Mahommedan and Christian, when not engaged upon his own, and being admitted almost to a share of their royal authority. He made more than one attempt to be reconciled with Alphonso, but, his overtures being rejected, he turned his arms against the enemies of the Beni Houd, extending their dominions at the expense of the Christian states of Aragon and Barcelona, and harrying even the border lands of Castile. Among the enterprises of the Cid the most famous was that against Valencia, then the richest and most flourishing city of the peninsula, and an object of cupidity to both Christian and Moslem. The Cid appeared before the place at the head of an army of 7000 men, for the greater part Mahommedans. In vain did the Valencians implore succour from the emir of Cordova, and from their co-religionists in other parts of the peninsula. In defiance of an army which marched to the relief of the beleaguered city under Yusef the Almoravide, the Cid took Valencia after a siege of nine months, on the 15th of June 1094—the richest prize which up to that time had been recovered from the Moors. The conditions of the surrender were all violated—the cadi Ibn Djahhaff burnt alive, a vast number of the citizens who had escaped death by famine slaughtered, and the possessions divided among the Campeador's companions. In other respects the Cid appears to have used his victory mildly, ruling his kingdom, which now embraced nearly the whole of Valencia and Murcia, for four years with vigour and justice. At length the Almoravides, whom he had several times beaten, marched against him in great force, inflicting a crushing defeat at Cuenca upon the Cid's army, under his favourite lieutenant, Alvar Fanez. The blow was a fatal one to the aged and war-worn Campeador, who died of anger and grief in July 1099. His widow maintained Valencia for three years longer against the Moors, but was at last compelled to evacuate the city, taking with her the body of the Cid to be buried in the monastery of San Pedro at Cardeña, in the neighbourhood of Burgos. Here, in the centre of a small chapel, surrounded by his chief

companions-in-arms, by Alvar Fanez Minaya, Pero Bermudez, Martin Antolinez and Pelaez the Asturian, were placed the remains of the mighty warrior, the truest of Spanish heroes, the embodiment of all the national virtues and most of the national vices. The bones have since been removed to the town hall of Burgos. Philip II. tried to get him canonized, but Rome objected, and not without reason.

Whatever were his qualities as a fighter, the Cid was but indifferent material out of which to make a saint,—a man who battled against Christian and against Moslem with equal zeal, who burnt churches and mosques with equal zest, who ravaged, plundered and slew as much for a livelihood as for any patriotic or religious purpose, and was in truth almost as much of a Mussulman as a Christian in his habits and his character. His true place in history is that of the greatest of the *guerrilleros*—the perfect type of that sort of warrior in which, from the days of Viriathus to those of Juan Diaz, El Empecinado, the soil of Spain has been most productive.

The Cid of romance, the Cid of a thousand battles, legends and dramas, the Cid as apotheosized in literature, the Cid invoked by good Spaniards in every national crisis, whose name is a perpetual and ever-present inspiration to Spanish patriotism, is a very different character from the historical Rodrigo Diaz—the freebooter, the rebel, the consorter with the infidels and the enemies of Spain. He is the Perfect One, the Born in a Happy Hour, “My Cid,” the invincible, the magnanimous, the all-powerful. He is the type of knightly virtue, the mirror of patriotic duty, the flower of all Christian grace. He is Roland and Bayard in one. In the popular literature of Spain he holds a place such as has no parallel in other countries. From an almost contemporary period he has been the subject of song; and he who was chanted by wandering minstrels in the 12th century has survived to be hymned in revolutionary odes of the 19th. In a barbarous Latin poem, written in celebration of the conquest of Almeria by Alphonso VII. in the year 1147, we have the bard testifying to the supereminence of the Cid among his country’s heroes:—

> “Ipse Rodericus *Mio* Cid semper vocatus,
> De quo cantatur quod ab hostibus haud superatus,
> Qui domuit Mauros, comites domuit quoque nostros.”

Within a hundred years of his death the Cid had become the centre of a whole system of myths. The *Poema del Cid*, written in the latter half of the 12th century, has scarcely any trace of a historical character. Already the Cid had reached his apotheosis, and Castilian loyalty could not consent to degrade him when banished by his sovereign:—

> “Dios, que buen vassalo si oviese buen señor!”

cry the weeping citizens of Burgos, as they speed the exile on his way.

The Poem of the Cid is but a fragment of 3744 lines; written in a barbarous style, in rugged assonant rhymes, and a rude Alexandrine measure, but it glows with the pure fire of poetry, and is full of a noble simplicity and a true epical grandeur, invaluable as a living picture of the age. The ballads relating to the Cid, of which nearly two hundred are extant, are greatly inferior in merit, though some of them are not unworthy to be ranked with the best in this kind. Duran believes the greater part of them to have been written in the 16th century. A few betray, not more by the antiquity of their language than by their natural and simple tone, traces of an earlier age and a freer national life. They all take great liberties with history, thus belying the opinion of Sancho Panza that “the ballads are too old to tell lies.” Such of them as are not genuine relics of the 12th century are either poetical versions of the leading episodes in the hero’s life as contained in the *Chronicle*, that *Chronicle* itself having been doubtless composed out of still earlier legends as sung by the wandering *juglares*, or pure inventions of a later time, owing their inspiration to the romances of chivalry. In these last the ballad-mongers, not to let their native hero be outdone by the Amadises, the Esplandians, and the Felixmartes, engage him in the most extravagant adventures—making war upon the king of France and upon the emperor, receiving embassies from the soldan of Persia, bearding the pope at Rome, and performing other feats not mentioned even in the Poem or the Chronicle. The last and the worst of the Cid ballads are those which betray by their frigid conceits and feeble mimicry of the antique the false taste and essentially unheroic spirit of the age of Philip II. As for the innumerable other poems, dramas and tales which have been founded on the legend of the Cid, from the days of Guillen de Castro and Diamante to those of Quintana and Trueba, they serve merely to prove the abiding popularity of the national hero in his native land.

The chief sources from which the story of the Cid is to be gathered are, first, the Latin

chronicle discovered by Risco in the convent of San Isidro at Leon, proved by internal evidence to have been written before 1258; the *Cronica General*, composed by Alphonso X. in the second half of the 13th century, partly (so far as relates to the Cid) from the above, partly from contemporary Arabic histories, and partly from tradition; the *Cronica del Cid*, first published in 1512, by Juan de Velorado, abbot of the monastery of San Pedro at Cardeña, which is a compilation from the last, interlarded with new fictions due to the piety of the compiler; lastly, various Arabic manuscripts, some of contemporary date, which are examined and their claims weighed in the second volume of Professor Dozy's *Recherches sur l'histoire politique et littéraire de l'Espagne pendant le moyen âge* (Leiden, 1849). Huber, Müller, and Ferdinand Wolf are among the leading authorities in the history and literature of the Cid. M. Damas Hinard has published the poem, with a literal French translation and notes, and John Hookham Frere has rendered it into English with extraordinary spirit and fidelity. The largest collection of the Cid ballads is that of Durant, in the *Romancero general*, in two volumes, forming part of Rivadeneyra's *Biblioteca de autores españoles*.

(H. E. W.)

CIDER, or CYDER (from the Fr. *cidre*, derived from the Lat. *sicera* or *cisera*, Gr. σίκερα, Heb. *shēkār*, strong drink), an alcoholic beverage made from apples.

Cider and perry (the corresponding beverage made from pears) are liquors containing from as little as 2% of alcohol to 7 or 8%, seldom more, and rarely as much, produced by the vinous fermentation of the expressed juice of apples and pears; but cider and perry of prime quality can only be obtained from vintage fruit, that is, apples and pears grown for the purpose and unsuited for the most part for table use. A few table apples make good cider, but the best perry is only to be procured from pears too harsh and astringent for consumption in any other form. The making of perry is in England confined, in the main, to the counties of Hereford, Worcester and Gloucester. These three counties, together with Somerset and Devon, constitute, too, the principal cider-making district of the country; but the industry, which was once more widely spread, still survives an Norfolk, and has lately been revived in Kent, though, in both these counties, much of the fruit used in cider-making is imported from the west country and some from the continent. Speaking generally, the cider of Herefordshire is distinguished for its lightness and briskness, that of Somerset for its strength, and that of Devonshire for its lusciousness.

Cider used to be made in the south of Ireland, but the industry had almost become extinct until revived by the Department of Agriculture, which in 1904 erected a cider-making plant at Drogheda, Co. Louth, gave assistance to private firms at Dungarvan, Co. Waterford, and Fermoy, Co. Cork, and provided a travelling mill and press to work in the South Riding of Co. Tipperary. The results have been highly satisfactory, a large quantity of good cider having been produced.

Inasmuch as English orchards are crowded with innumerable varieties of cider apples, many of them worthless, a committee composed of members of the Herefordshire Fruit-Growers' Association and of the Fruit and Chrysanthemum Society was appointed in 1899 to make a selection of vintage apples and pears best suited to Herefordshire and the districts adjoining. The following is the list drawn up by the committee:—

Apples.—Old Foxwhelp, Cherry Pearmain, Cowarne Red, Dymock Red, Eggleton Styre, Kingston Black or Black Taunton, Skyrme's Kernel, Spreading Redstreak, Carrion apple, Cherry Norman, Cummy Norman, Royal Wilding, Handsome Norman, Strawberry Norman, White Bache or Norman, Broad-leaved Norman, Argile Grise, Bramtôt, De Boutville, Fréquin Audièvre, Medaille d'Or, the last five being French sorts introduced from Normandy about 1880, and now established in the orchards of Herefordshire.

Pears.—Taynton Squash, Barland, Oldfield, Moorcroft or Malvern Hill, Red-pear, Thurston's Red, Longland, Pine pear.

No equally authoritative selection has been made for the Somerset and Devon districts, but the following varieties of cider apples are held in good repute in those parts:—Kingston Black, Jersey Chisel, Hangdowns, Fair Maid of Devon, Woodbine, Duck's Bill, Slack-my-Girdle, Bottle Stopper, Golden Ball, Sugar-loaf, Red Cluster, Royal Somerset and Cadbury (believed to be identical with the Royal Wilding of Herefordshire). As a rule the best cider apples are of small size. "Petites pommes, gros cidre," say the French.

Cider and perry not being taxable liquors in England, it is impossible to estimate with even an approach to accuracy the amount of the annual production of them. In 1896 Mr Sampson, the then secretary of the National Association of English Cider-makers, in his evidence before the royal commission on agriculture, put it at 55½ million gallons. Since that date the increased demand for these native wines has given such an impetus to the industry that this figure might with safety be doubled. In France official statistics are available, and these show not only that that country is the largest producer of cider (including perry) in the world, but that the output is yearly increasing. A great proportion, however, of what passes as cider in France is *boisson*, *i.e.* cider to which water has been added in the process of making or at a subsequent stage; while much of the perry is disposed of to the makers of champagne. Although some cider is made in sixty-five departments, by far the largest amount comes from the provinces of Normandy and Brittany. In Germany cider-making is a considerable and growing industry. Manufactories on a small scale exist in north Germany, as at Guben and Grünberg, but the centre of the industry is at Frankfort-on-Main, Sachsenhausen and the neighbourhood, where there are five large and twenty-five small factories employing upwards of 1000 hands. Large quantities of cider fruit are imported from foreign countries, as, speaking generally, the native-grown fruit used in Germany for cider-making consists of inferior and undersized table apples not worth marketing. The bottled cider for export is treated much like champagne, and is usually fortified and flavoured until, in the words of an acknowledged French authority, M. Truelle, it becomes a hybrid between cider and white wine rather than pure cider.

The practice which formerly prevailed in England of making cider on the farm from the produce of the home orchards has within the last few years been to a large extent given up, and, as in Germany and many parts of France, farmers now sell their fruit to owners of factories where the making of cider and perry is carried on as a business of itself. In these hand or horse power is superseded by steam and sometimes by electricity, as in the factory of E. Seigel in Grünberg, and the old-fashioned appliances of the farm by modern mills and presses capable of turning out large quantities of liquor. The clearing of the juice, too, which used to be effected by running it through bags, is in the factories accomplished more quickly by forcing it through layers of compressed cotton in a machine of German origin known as Lumley’s filter. The actual process of cider and perry making is simple, and resembles that of making grape wine. The fruit is ground or crushed in machines of various construction, the latest and most powerful being of American origin. The resulting pomace is pressed for the extraction of the juice, which is then run into vats, where it undergoes fermentation, which, converting the saccharine ingredients into alcohol and carbonic acid gas, turns it into cider. Cider made from a judicious mixture of several varieties of apples is to be preferred to cider made from one variety only, inasmuch as it is less difficult to find the requisite degrees of richness, astringency and flavour in several varieties than in one; but the contrary is the case with pears, of which the most noted sorts, such as the Barland, the Taynton Squash and the Oldfield, produce the best perry when unmixed with other varieties. Some fining of an albuminous nature is generally requisite in order to clear the juice and facilitate its passage through the filter, but the less used the better. The simplest and cleanest is skim milk whipped to a froth and blended gradually with the cider as it is pumped into the mixing vat. Many nostrums are sold for the clearing of cider, but none is necessary and most are harmful.

Of late years the practice has largely obtained of using preservatives for the purpose of checking fermentation. The principal preservatives employed are salicylic and boracic acids and formalin. The two former are ineffective except in quantities likely to prove hurtful to health, while formalin, in itself a powerful and deleterious drug, though it stops fermentation, renders the liquor cloudy and undrinkable. Other foreign ingredients, such as saccharin and porcherine, both coal-tar derivatives—the latter a recent discovery of a French chemist, after whom it is named—are used by many makers, chiefly for the purpose of rendering bad and therefore unwholesome cider palatable and saleable. Provided that cider and perry be properly filtered, and attention paid to perfect cleanliness of vessels and appliances, there is no need of preservatives or sweeteners, and their use ought to be forbidden by law in England, as it is in most continental states in the case of liquors to be consumed within their borders, though not, it is significant to note, in the case of liquors intended for exportation.

The wholesome properties of cider and perry when pure and unadulterated have been recognized by medical men, who recommend them as pleasant and efficacious remedies in affections of a gouty or rheumatic nature, maladies which, strange to say, these very liquors were once supposed to foster, if not actually to originate. Under a similar false impression the notion is general that hard rough cider is apt to cause diarrhoea, colic and kindred

complaints, whereas, as a fact, disorders of this kind are conspicuous by their absence in those parts of the country where rough cider and perry constitute the staple drinks of the working-classes. This is especially the case in Herefordshire, which is said also to be the only county in England whence no instance of the occurrence of Asiatic cholera has ever been reported.

The importance which the cider industry has of late attained in England has been marked by the establishment of the National Fruit and Cider Institute at Long Ashton near Bristol. This institute, founded in 1903 at the instance of the Board of Agriculture, is supported by grants from the board, the Bath and West of England Society, the councils of the cider-producing counties of Hereford, Gloucester, Worcester, Monmouth, Devon and Somerset, and by subscription of members. The objects of the institute are the promotion of research into the causes of the changes which occur in cider and perry during fermentation, with the view of imparting to these liquors a degree of exactitude hitherto unattainable; the adoption from time to time of improved machinery and methods in cider-making; the detection of adulteration; the giving of instruction in the principles and practice of cider-making; the publication of reports detailing the results of the researches undertaken at the institute; the testing and selection of the sorts of fruit best suited for vintage purposes; the propagation of useful varieties likely from neglect to go out of cultivation; and the conducting of experiments in regard to the best systems of planting and protecting young fruit trees.

Fruit-growers who look to cider-making “as a means of utilizing windfalls and small and inferior apples of cooking and dessert varieties not worth sending to market” should be warned that it is as important to the cider industry that good cider only should be on sale as it is to the fruit-growing industry that good fruit only should be sent to market. The juice of the apple is naturally affected by the condition of the fruit itself, and if this be unripe, unsound or worm-eaten the cider made from it will be inferior to that made from full-grown, ripe and sound fruit. If such fruit be not good enough to send to market, neither will the cider made from it be good enough to place before the public. Nevertheless, it may furnish a sufficiently palatable drink for home consumption, and may therefore be so utilized. But when, as happens from time to time in fruit-growing districts, there is a glut, and even the best table fruit is not saleable at a profit, then, indeed, cider-making is a means of storing in a liquid form what would otherwise be left to rot on the ground; whilst if a proportion of vintage fruit were mixed therewith, a drink would be produced which would not discredit the cider trade, and would bring a fair return to the maker.

(C. W. R. C.)

CIENFUEGOS, NICASIO ÁLVAREZ DE (1764-1809), Spanish poet and publicist, was born at Madrid on the 14th of December 1764. He studied with distinction at Salamanca, where he met the poet Melendez Valdés. His poems, published in 1778, immediately attracted attention. He was successively editor of the *Gaceta* and *Mercurio*, and was condemned to death for having published an article against Napoleon; on the petition of his friends, he was respited and deported to France; he died at Orthez early in the following year. His verses are modelled on those of Melendez Valdés; though not deficient in technique or passion, they are often disfigured by spurious sentimentality and by the flimsy philosophy of the age. Cienfuegos was blamed for an unsparing use of both archaisms and gallicisms. His plays, *Pitaco, Zoraida, La Condesa de Castilla* and *Idomeneo*, four tragedies on the pseudo-classic French model, and *Las Hermanas generosas*, a comedy, are deservedly forgotten.

CIENFUEGOS (originally Fernandina De Jagua), one of the principal cities of Cuba, in Santa Clara province, near the central portion of the S. coast, 195 m. E.S.E. of Havana. Pop. (1907) 30,100. Cienfuegos is served by the United railways and by steamers connecting with Santiago, Batabanó, Trinidad and the Isle of Pines. It lies about 6 m. from the sea on a peninsula in the magnificent landlocked bay of Jagua. Vessels drawing 16 ft. have direct

access to the wharves. A circular railway about the water-front, wharves and warehouses facilitates the loading and unloading of vessels. The city streets are broad and regularly laid out. There is a handsome cathedral; and the Tomas Terry theatre (given to the city by the heirs of one of the millionaire sugar planters of the jurisdiction), the governor's house (1841-1844), the military and government hospitals, market place and railway station are worthy of note. In the Cathedral Square (Plaza de Armas), embracing two city-squares, and shaded —like all the plazas of the island—with laurels and royal palms, are a statue of Isabel the Catholic, and two marble lions given by Queen Isabel II.; elsewhere there are statues of General Clouet and Marshal Serrano, once captain-general. The city is lighted by gas and electricity, has an abundant water-supply, and cable connexion with Europe, the United States, other Antilles and South America. The surrounding country is one of the prettiest and most fertile regions in Cuba, varied with woods, rivers, rocky gulches, beautiful cascades and charming tropic vegetation. Several of the largest and finest sugar estates in the world are situated in the vicinity, including the Soledad (with a botanical experiment station maintained by Harvard University), the Terry and others—most of them connected with the city by good driveways. Cienfuegos is a centre of the sugar trade on the south coast; tobacco too is exported.

The bay of Jagua was visited by Columbus. The city was founded in 1819, with the aid of the Spanish government, by a Louisianian, General Luis de Clouet; it was destroyed by a hurricane and was rebuilt in 1825. Many naturalized foreign Catholics, including Americans, were among the original settlers. The settlement was first named in honour of Ferdinand VII., and later in honour of Captain-General José Cienfuegos Jovellanos. The harbour was known from the earliest times, and has been declared by Mahan to be the most important of the Caribbean Sea for strategic purposes. In 1740-1745 a fortification called Nuestra Señora de los Angeles was erected at the entrance; it is still standing, on a steep bluff overlooking the sea, and is one of the most picturesque of the old fortifications of the island. On the 11th of May 1898 a force from two vessels of the United States fleet under Admiral Schley, searching for Cervera and blockading the port, cut two of the three cables here (at Point Colorado, at the entrance of the harbour), and for the first time in the Spanish-American War the American troops were under fire.

CIEZA, a town of south-eastern Spain, in the province of Murcia, on the right bank of the river Segura, and on the Madrid-Cartagena railway. Pop. (1900) 13,626. Cieza is built in a narrow bend of the Segura valley, which is enclosed on the north by mountains, and on the south broadens into a fertile plain, producing grain, wine, olives, raisins, oranges and esparto grass. In the town itself there are flour and paper mills, sawmills and brandy distilleries. Between 1870 and 1900 local trade and population increased rapidly, owing partly to improved means of communication; and the appearance of Cieza is thoroughly modern.

CIGAR, the common term for tobacco-leaf prepared for smoking by being rolled into a short cylinder tapering to a point at the end which is placed in the mouth, the other end, which is lighted, being usually cut square (see Tobacco). The Spanish *cigarro* is of doubtful origin, possibly connected with *cigarra*, a cicada, from its resemblance to the body of that insect, or with *cigarral*, a word of Arabic origin meaning a pleasure garden. The explanation that it comes from a Cuban word for a certain species of tobacco is probably erroneous, since no native word of the kind is known. The diminutive, *cigarette*, denotes a roll of cut tobacco enclosed usually in thin paper, but sometimes also in tobacco-leaf or the husk of Indian corn.

CIGNANI, CARLO (1628-1719), Italian painter, was born of a noble family at Bologna, where he studied under Battista Cairo, and afterwards under Francesco Albani. Though an intimate friend of the latter, and his most famous disciple, Cignani was yet strongly and deeply influenced by the genius of Correggio. His greatest work, moreover, the “Assumption of the Virgin,” round the cupola of the church of the Madonna della Fuoca at Forli, which occupied him some twenty years, and is in some respects one of the most remarkable works of art of the 17th century, is obviously inspired from the more renowned fresco of Correggio in the cupola of the cathedral of Parma. Cignani had some of the defects of his masters; his elaborate finish, his audacious artificiality in the use of colour and in composition, mark the disciple of Albani; but he imparted to his work a more intellectual character than either of his models, and is not without other remarkable merits of his own. As a man Cignani was eminently amiable, unassuming and generous. His success, however, made him many enemies; and the envy of some of these is said to have impelled them to deface certain of his works. He accepted none of the honours offered him by the duke of Parma and other princes, but lived and died an artist. On his removal to Forli, where he died, the school he had founded at Bologna was fain in some sort to follow its master. His most famous pictures, in addition to the Assumption already cited, are—the “Entry of Paul III. into Bologna”; the “François I. Touching for King’s Evil”; a “Power of Love,” painted under a fine ceiling by Agostino Carracci, on the walls of a room in the ducal palace at Parma; an “Adam and Eve” (at the Hague); and two of “Joseph and Potiphar’s Wife” (at Dresden and Copenhagen). His son Felice (1660-1724) and nephew Paolo (1709-1764) were also painters.

CIGOLI (or Civoli), **LODOVICO CARDI DA** (1559-1613), Italian painter, architect and poet, was born at Cigoli in Tuscany. Educated under Alessandro Allori and Santi di Tito, he formed a peculiar style by the study at Florence of Michelangelo, Correggio, Andrea del Sarto and Pontormo. Assimilating more of the second of these masters than of all the others, he laboured for some years with success; but the attacks of his enemies, and intense application to the production of a wax model of certain anatomical preparations, induced an alienation of mind which affected him for three years. At the end of this period he visited Lombardy, whence he returned to Florence. There he painted an “Ecce Homo,” in competition with Passignani and Caravaggio, which gained the prize. This work was afterwards taken by Bonaparte to the Louvre, and was restored to Florence in 1815. Other important pictures are—a “St Peter Healing the Lame Man,” in St Peter’s at Rome; a “Conversion of St Paul,” in the church of San Paolo fuori le Mura, and a “Story of Psyche,” in fresco, at the Villa Borghese; a “Martyrdom of Stephen,” which earned him the name of the Florentine Correggio, a “Venus and Satyr,” a “Sacrifice of Isaac,” a “Stigmata of St Francis,” at Florence. Cigoli, who was made a knight of Malta at the request of Pope Paul III., was a good and solid draughtsman and the possessor of a rich and harmonious palette. He died, it is said, of grief at the failure of his last fresco (in the Roman church of Santa Maria Maggiore), which is rendered ridiculous by an abuse of perspective.

CILIA (plural of Lat. *cilium*, eyelash), in biology, the thread-like processes by the vibration of which many lowly organisms, or the male reproductive cells of higher organisms, move through water.

CILIATA (M. Pertz), one of the two divisions of Infusoria, characterized by the permanent possession of cilia or organs derived from these (cirrhi, membranelles, &c.), and possessing a single mouth (except in the *Opalinopsidae*, all parasitic). They are the most highly differentiated among the Protozoa.

CILICIA, in ancient geography, a district of Asia Minor, extending along the south coast from the Alara Su, which separated it from Pamphylia, to the Giaour Dagh (Mt. Amanus), which parted it from Syria. Its northern limit was the crest of Mt. Taurus. It was naturally divided into Cilicia Trachea, W. of the Lamas Su, and Cilicia Pedias, E. of that river.

Cilicia Trachea is a rugged mountain district formed by the spurs of Taurus, which often terminate in rocky headlands with small sheltered harbours,—a feature which, in classical times, made the coast a resort of pirates, and, in the middle ages, led to its occupation by Genoese and Venetian traders. The district is watered by the Geuk Su (Calycadnus and its tributaries), and is covered to a large extent by forests, which still, as of old, supply timber to Egypt and Syria. There were several towns but no large trade centres. In the interior were Coropissus (Da Bazar), Olba (Uzunjaburj), and, in the valley of the Calycadnus, Claudiopolis (Mut) and Germanicopolis (Ermenek). On or near the coast were Coracesium (Alaya), Selinus-Trajanopolis (Selinti), Anemourium (Anamur), Kelenderis (Kilindria), Seleucia ad Calycadnum (Selefkeh), Corycus (Korghoz) and Elaeusa-Sebaste (Ayash). Roads connected Laranda, north of the Taurus, with Kelenderis and Seleucia.

Cilicia Pedias included the rugged spurs of Taurus and a large plain, which consists, in great part, of a rich stoneless loam. Its eastern half is studded with isolated rocky crags, which are crowned with the ruins of ancient strongholds, and broken by the low hills that border the plain of Issus. The plain is watered by the Cydnus (Tarsus Chai), the Sarus (Sihun) and the Pyramus (Jihun), each of which brings down much silt. The Sarus now enters the sea almost due south of Tarsus, but there are clear indications that at one period it joined the Pyramus, and that the united rivers ran to the sea west of Kara-tash. Such appears to have been the case when Alexander's army crossed Cilicia. The plain is extremely productive, though now little cultivated. Through it ran the great highway, between the east and the west, on which stood Tarsus on the Cydnus, Adana on the Sarus, and Mopsuestia (Missis) on the Pyramus. North of the road between the two last places were Sision-Flaviopolis (Sis), Anazarbus (Anazarba) and Hierapolis-Kastabala (Budrum); and on the coast were Soli-Pompeiopolis, Mallus (Kara-tash), Aegae (Ayash), Issus, Baiae (Piyas) and Alexandria ad Issum (Alexandretta). The great highway from the west, on its long rough descent from the Anatolian plateau to Tarsus, ran through a narrow pass between walls of rock called the Cilician Gate, Ghulek Boghaz. After crossing the low hills east of the Pyramus it passed through a masonry (Cilician) gate, Demir Kapu, and entered the plain of Issus. From that plain one road ran southward through a masonry (Syrian) gate to Alexandretta, and thence crossed Mt. Amanus by the Syrian Gate, Beilan Pass, to Antioch and Syria; and another ran northwards through a masonry (Amanian) gate, south of Toprak Kaleh, and crossed Mt. Amanus by the Amanian Gate, Baghche Pass, to North Syria and the Euphrates. By the last pass, which was apparently unknown to Alexander, Darius crossed the mountains prior to the battle of Issus. Both passes are short and easy, and connect Cilicia Pedias geographically and politically with Syria rather than with Asia Minor. Another important road connected Sision with Cocysus and Melitene. In Roman times Cilicia exported the goats'-hair cloth, Cilicium, of which tents were made.

The Cilicians appear as Khilikku in Assyrian inscriptions, and in the early part of the first millennium B.C. were one of the four chief powers of western Asia. It is generally assumed that they had previously been subject to the Syro-Cappadocian empire; but, up to 1909 at all events, "Hittite" monuments had not been found in Cilicia; and we must infer that the "Hittite" civilizations which flourished in Cappadocia and N. Syria, communicated with each other by passes E. of Amanus and not by the Cilician Gates. Under the Persian empire Cilicia was apparently governed by tributary native kings, who bore a name or title graecized as Syennesis; but it was officially included in the fourth satrapy by Darius. Xenophon found a queen in power, and no opposition was offered to the march of Cyrus. Similarly Alexander found the Gates open, when he came down from the plateau in 333 B.C.; and from these facts it may be inferred that the great pass was not under direct Persian control, but under that of a vassal power always ready to turn against its suzerain. After Alexander's death it was long a battle ground of rival marshals and kings, and for a time fell under Ptolemaic dominion, but finally under that of the Seleucids, who, however, never held effectually more than the eastern half. Cilicia Trachea became the haunt of pirates, who were subdued by Pompey. Cilicia Pedias became Roman territory in 103 B.C., and the whole was organized by Pompey, 64 B.C., into a province which, for a short time, extended to and included part of Phrygia. It

was reorganized by Caesar, 47 B.C., and about 27 B.C. became part of the province Syria-Cilicia-Phoenice. At first the western district was left independent under native kings or priest-dynasts, and a small kingdom, under Tarkondimotus, was left in the east; but these were finally united to the province by Vespasian, A.D. 74. Under Diocletian (circa 297), Cilicia, with the Syrian and Egyptian provinces, formed the Diocesis Orientis. In the 7th century it was invaded by the Arabs, who held the country until it was reoccupied by Nicephorus II. in 965.

The Seljuk invasion of Armenia was followed by an exodus of Armenians southwards, and in 1080 Rhupen, a relative of the last king of Ani, founded in the heart of the Cilician Taurus a small principality, which gradually expanded into the kingdom of Lesser Armenia. This Christian kingdom—situated in the midst of Moslem states, hostile to the Byzantines, giving valuable support to the crusaders, and trading with the great commercial cities of Italy—had a stormy existence of about 300 years. Gosdantin I. (1095-1100) assisted the crusaders on their march to Antioch, and was created knight and marquis. Thoros I. (1100-1123), in alliance with the Christian princes of Syria, waged successful war against Byzantines and Seljuks. Levond (Leo) II., "the Great" (1185-1219), extended the kingdom beyond Mount Taurus and established the capital at Sis. He assisted the crusaders, was crowned king by the archbishop of Mainz, and married one of the Lusignans of Cyprus. Haithon I. (1224-1269) made an alliance with the Mongols, who, before their adoption of Islam, protected his kingdom from the Mamelukes of Egypt. When Levond V. died (1342), John of Lusignan was crowned king as Gosdantin IV.; but he and his successors alienated the Armenians by attempting to make them conform to the Roman Church, and by giving all posts of honour to Latins, and at last the kingdom, a prey to internal dissensions, succumbed (1375) to the attacks of the Egyptians. Cilicia Trachea was occupied by the Osmanlis in the 15th century, but Cilicia Pedias was only added to the empire in 1515.

From 1833 to 1840 Cilicia formed part of the territories administered by Mehemet Ali of Cairo, who was compelled to evacuate it by the allied powers. Since that date it has formed the vilayet of Adana (*q.v.*).

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(C. W. W.; D. G. H.)

CILLI, ULRICH, COUNT OF (1406-1456), son of Frederick II., count of Cilli, and Elizabeth Frangepan. Of his youth we know nothing certain. About 1432 he married Catherine, daughter of George Brankovich, despot of Servia.

His influence in the troubled affairs of Hungary and the Empire early overshadowed that of his father, together with whom he was made a prince of the Empire by the emperor Sigismund (1436). Hence feuds with the Habsburgs, wounded in their rights as overlords of Cilli, ending, however, in an alliance with the Habsburg king Albert II., who made Ulrich for a short while his lieutenant in Bohemia. After Albert's death (1439) Ulrich took up the cause of his widow Elizabeth, and presided at the coronation of her infant son Ladislaus V. Posthumus (1440). A feud with the Hunyadis followed, embittered by John Hunyadi's attack on George Brankovich of Servia (1444) and his refusal to recognize Ulrich's claim to Bosnia on the death of Stephen Tvrtko (1443). In 1446 Hunyadi, now governor of Hungary, harried the Cilli territories in Croatia-Slavonia; but his power was broken at Kossovo (1448), and Count Ulrich was able to lead a successful crusade, nominally in the Habsburg interest, into Hungary (1450). In 1452 he forced the emperor Frederick III. to hand over the boy king Ladislaus V. to his keeping, and became thus practically ruler of Hungary. In 1454 his power was increased by his succession to his father's vast wealth; and in 1456 he was named by Ladislaus his lieutenant in Hungary. The Hunyadis now conspired to destroy him. On the 8th

of November, in spite of warnings, he entered Belgrade with the king; the next day he was attacked by Laszlo Hunyadi and his friends, and done to death. With him died the male line of the counts of Cilli.

Count Ulrich's ambition was boundless, his passions unbridled; but the hostile judgments passed by Aeneas Sylvius and other contemporaries upon him must be read with caution.

CILLI (Slovene, *Celje*), a town in Styria, Austria, 82 m. S. by W. of Graz by rail. Pop. (1900) 6743. It is picturesquely situated on the left bank of the river Sann, and still has remains of the old walls and towers, with which it was once surrounded. Memorials of a still earlier period in its history—Roman antiquities—are to be seen in the municipal museum, while its canals and sewers are also of Roman origin. These were discovered during the second half of the 19th century, and were in such a good state of preservation that after a few small repairs they are now utilized. The parish church, dating from the 14th century, with its beautiful Gothic chapel, is one of the most interesting specimens of medieval architecture. The so-called German church, in Romanesque style, belonged to the Minorite monastery, founded in 1241 and closed in 1808. The throne of the counts of Cilli is preserved here, and also the tombs of several members of the family. On the Schlossberg (1320 ft.), situated to the S.E. of the town, are the ruins of the castle of Ober-Cilli, the former residence of the counts of Cilli. Ten miles to the N.W. of Cilli are situated the baths of Neuhaus, with indifferent thermal waters (117° F.), frequented by ladies. Not far from it is the ruined castle of Neuhaus, called since 1643 Schlangenburg, from which an extensive view of the neighbouring Alps is obtained.

Cilli is one of the oldest places in Styria, and was probably a Celtic settlement. It was taken possession of by the Romans in 15 B.C., and in A.D. 50 the emperor Claudius raised it to a Roman municipium and named it *Claudia Celeja*. It soon became one of the most flourishing Roman colonies, and possessed numerous great buildings, of which the temple of Mars was famous throughout the whole empire. It was incorporated with Aquileia, under Constantine; and towards the end of the 6th century was destroyed by the invading Slavs. It had a period of exceptional prosperity from the middle of the 14th to the latter half of the 15th century, under the counts of Cilli, on the extinction of which family it fell to Austria. In the 16th century it suffered greatly both from revolts of the peasantry and from the Counter-Reformation, Protestantism having made many converts in the district, particularly among the nobles.

See Glantschnigg, *Celeja* (Cilli, 1892).

CIMABUE, GIOVANNI (1240 to about 1302), Italian painter, was born in Florence of a respectable family, which seems to have borne the name of Gualtieri, as well as that of Cimabue (Bullhead). He took to the arts of design by natural inclination, and sought the society of men of learning and accomplishment. Vasari, the historian of Italian painting, zealous for his own native state of Florence, has left us the generally current account of Cimabue, which later researches have to a great extent invalidated. We cannot now accept his assertion that art, extinct in Italy, was revived solely by Cimabue, after he had received some training from Greek artists invited by the Florentine government to paint the chapel of the Gondi in the church of S. Maria Novella; for native Italian art was not then a nullity, and this church was only begun when Cimabue was already forty years old; Even Lanzi's qualifying statement that Greek artists, although they did not paint the chapel of the Gondi, did execute rude decorations in a chapel below the existing church, and may thus have inspired Cimabue, makes little difference in the main facts. What we find as the general upshot is that some Italian painters preceded Cimabue—particularly Guido of Siena and Giunta of Pisa; that he worked on much the same principle as they, and to a like result; but that he was nevertheless the most advanced master of his time, and, by his own works, and the training which he imparted to his mighty pupil Giotto, he left the art far more formed and more capable of growth than he found it (see PAINTING).

The undoubted admiration of his contemporaries would alone demonstrate the conspicuous position which Cimabue held, and deserved to hold. For the chapel of the Rucellai in S. Maria Novella he painted in tempera a colossal “Madonna and Child with Angels,” the largest altarpiece produced up to that date; before its removal from the studio it was visited with admiration by Charles of Anjou, with a host of eminent men and gentle ladies, and it was carried to the church in a festive procession of the people and trumpeters. Cimabue was at this time living in the Borgo Allegri, then outside the walls of Florence; the legend that the name Allegri (Joyous) was bestowed on the locality in consequence of this striking popular display is more attractive than accurate, for the name existed already. Of this celebrated picture, one of the great landmarks of modern and sacred art, some details may be here given, which we condense from the *History of Painting in Italy* by Crowe and Cavalcaselle.

> “The Virgin in a red tunic and blue mantle, with her feet resting on an open-worked stool, is sitting on a chair hung with a white drapery flowered in gold and blue, and carried by six angels kneeling in threes above each other. A delicately engraved nimbus surrounds her head, and that of the infant Saviour on her lap, who is dressed in a white tunic, and purple mantle shot with gold. A dark-coloured frame surrounds the gabled square of the picture, delicately traced with an ornament interrupted at intervals by thirty medallions on gold ground, each of which contains the half-figure of a saint. In the face of the Madonna is a soft and melancholy expression; in the form of the infant, a certain freshness, animation and natural proportion; in the group, affection—but too rare at this period. There is sentiment in the attitudes of the angels, energetic mien in some prophets, comparative clearness and soft harmony in the colours. A certain loss of balance is caused by the overweight of the head in the Virgin as compared with the slightness of her frame. The features are the old ones of the 13th century; only softened, as regards the expression of the eye, by an exaggeration of elliptical form in the iris, and closeness of the curves of the lids. In the angels the absence of all true notions of composition may be considered striking; yet their movements are more natural and pleasing than hitherto. One indeed, to the spectator’s right of the Virgin, combines more tender reverence in its glance than any that had yet been produced. Cimabue gave to the flesh-tints a clear and carefully fused colour, and imparted to the forms some of the rotundity which they had lost. With him vanished the sharp contrasts of hard lights, half-tones and shadows.”

In a general way, it may be said that Cimabue showed himself forcible in his paintings, as especially in heads of aged or strongly characterized men; and, if the then existing development of art had allowed of this, he might have had it in him to express the beautiful as well. He, according to Vasari, was the first painter who wrote words upon his paintings,—as, for instance, round the head, of Christ in a picture of the Crucifixion, the words addressed to Mary, *Mulier ecce filius tuus*.

Other paintings still extant by Cimabue are the following:—In the academy of Arts in Florence, a “Madonna and Child,” with eight angels, and some prophets in niches,—better than the Rucellai picture in composition and study of nature, but more archaic in type, and the colour now spoiled (this work was painted for the Badia of S. Trinita, Florence); in the National Gallery, London, a “Madonna and Child with Angels,” which came from the Ugo Baldi collection, and had probably once been in the church of S. Croce, Florence; in the Louvre, a “Madonna and Child,” with twenty-six medallions in the frame, originally in the church of S. Francesco, Pisa. In the lower church of the Basilica of S. Francesco at Assisi, Cimabue, succeeding Giunta da Pisa, probably adorned the south transept,—painting a colossal “Virgin and Child between four Angels,” above the altar of the Conception, and a large figure of St Francis. In the upper church, north transept, he has the “Saviour Enthroned and some Angels,” and, on the central ceiling of the transept, the “Four Evangelists with Angels.” Many other works in both the lower and the upper church have been ascribed to Cimabue, but with very scanty evidence; even the above-named can be assigned to him only as matter of probability. Numerous others which he indisputably did paint have perished,—for instance, a series (earlier in date than the Rucellai picture) in the Carmine church at Padua, which were destroyed by a fire.

From Assisi Cimabue returned to Florence. In the closing years of his life he was appointed capomaestro of the mosaics of the cathedral of Pisa, and was afterwards, hardly a year before his death, joined with Arnolfo di Cambio as architect for the cathedral of Florence. In Pisa he executed a Majesty in the apse,—“Christ in glory between the Virgin and John the Evangelist,” a mosaic, now much damaged, which stamps him as the leading artist of his time in that material. This was probably the last work that he produced.

The debt which art owes to Cimabue is not limited to his own performances. He was the

master of Giotto, whom (such at least is the tradition) he found a shepherd boy of ten, in the pastures of Vespignano, drawing with a coal on a slate the figure of a lamb. Cimabue took him to Florence, and instructed him in the art; and after his death Giotto occupied a house which had belonged to his master in the Via del Cocomero. Another painter with whom Cimabue is said to have been intimate was Gaddo Gaddi.

It had always been supposed that the bodily semblance of Cimabue is preserved to us in a portrait-figure by Simon Memmi painted in the Cappella degli Spagnuoli, in S. Maria Novella,—a thin hooded face in profile, with small beard, reddish and pointed. This is, however, extremely dubious. Simone Martini of Siena (commonly called Memmi) was born in 1283, and would therefore have been about nineteen years of age when Cimabue died; it is not certain that he painted the work in question, or that the figure represents Cimabue. The Florentine master is spoken of by a nearly contemporary commentator on Dante (the so-called Anonimo, who wrote about 1334) as *arrogante e disdegnoso*; so "arrogant and scornful" that, if any one, or if he himself, found a fault in any work of his, however cherished till then, he would abandon it in disgust. This, however, to a modern mind, looks more like an aspiring and fastidious desire for perfection than any such form of "arrogance and scorn" as blemishes a man's character. Giovanni Cimabue was buried in the cathedral of Florence, S. Maria del Fiore, with an epitaph written by one of the Nini:—

"Credidit ut Cimabos picturae castra tenere,
Sic tenuit vivens; nunc tenet astra poli."

Here we recognize distinctly a parallel to the first clause in the famous triplet of Dante:

"Credette Cimabue nella pintura
Tener lo campo; ed ora ha Giotto il grido,
Sì che la fama di colui s' oscura."

Besides Vasari, and Crowe and Cavalcaselle (re-edited by Langton), the following works may be consulted:—P. Angeli, *Storia della basilica d' Assisi*; Cole and Stillman, *Old Italian Masters* (1892); Mrs Ady, *Painters of Florence* (1900).

(W. M. R.)

CIMAROSA, DOMENICO (1749-1801), Italian musical composer, was born at Aversa, in the kingdom of Naples, on the 17th of December 1749. His parents were poor, but anxious to give their son a good education; and after removing to Naples they sent him to a free school connected with one of the monasteries of that city. The organist of the monastery, Padre Polcano, was struck with the boy's intellect, and voluntarily instructed him in the elements of music, as also in the ancient and modern literature of his country. To his influence Cimarosa owed a free scholarship at the musical institute of Santa Maria di Loreto, where he remained for eleven years, studying chiefly the great masters of the old Italian school. Piccini, Sacchini and other musicians of repute are mentioned amongst his teachers. At the age of twenty-three Cimarosa began his career as a composer with a comic opera called *Le Stravaganze del Conte*, first performed at the Teatro dei Fiorentini at Naples in 1772. The work met with approval, and was followed in the same year by *Le Pazzie di Stellidanza e di Zoroastro*, a farce full of humour and eccentricity. This work also was successful, and the fame of the young composer began to spread all over Italy. In 1774 he was invited to Rome to write an opera for the *stagione* of that year; and he there produced another comic opera called *L'Italiana in Londra*.

The next thirteen years of Cimarosa's life are not marked by any event worth mentioning. He wrote a number of operas for the various theatres of Italy, living temporarily in Rome, in Naples, or wherever else his vocation as a conductor of his works happened to call him. From 1784-1787 he lived at Florence, writing exclusively for the theatre of that city. The productions of this period of his life are very numerous, consisting of operas, both comic and serious, cantatas, and various sacred compositions. The following works may be mentioned amongst many others:—*Caio Mario*; the three biblical operas, *Assalone*, *La Giuditta* and *Il Sacrificio d' Abramo*; also *Il Convito di Pietra*; and *La Ballerina amante*, a pretty comic opera first performed at Venice with enormous success.

About the year 1788 Cimarosa went to St Petersburg by invitation of the empress Catherine II. At her court he remained four years and wrote an enormous number of compositions, mostly of the nature of *piecès d'occasion*. Of most of these not even the names are on record. In 1792 Cimarosa left St Petersburg, and went to Vienna at the invitation of the emperor Leopold II. Here he produced his masterpiece, *Il Matrimonio segreto*, which ranks amongst the highest achievements of light operatic music. In 1793 Cimarosa returned to Naples, where *Il Matrimonio segreto* and other works were received with great applause. Amongst the works belonging to his last stay in Naples may be mentioned the charming opera *Le Astuzie feminili*. This period of his life is said to have been embittered by the intrigues of envious and hostile persons, amongst whom figured his old rival Paisiello. During the occupation of Naples by the troops of the French Republic, Cimarosa joined the liberal party, and on the return of the Bourbons, was, like many of his political friends, condemned to death. By the intercession of influential admirers his sentence was commuted into banishment, and he left Naples with the intention of returning to St Petersburg. But his health was broken, and after much suffering he died at Venice on the 11th of January 1801, of inflammation of the intestines. The nature of his disease led to the rumour of his having been poisoned by his enemies, which, however, a formal inquest proved to be unfounded. He worked till the last moment of his life, and one of his operas, *Artemizia*, remained unfinished at his death.

CIMBRI, a Teutonic tribe who made their first appearance in Roman history in the year 113 B.C., when they defeated the consul Gnaeus Papirius Carbo near Noreia in the modern Carinthia. It was the common belief that they had been driven from their homes on the North Sea by inundations, but, whatever the cause of their migration, they had been wandering along the Danube for some years warring with the Celtic tribes on either bank. After the victory of 113 they passed westwards over the Rhine, threatening the territory of the Allobroges. Their request for land was not granted, and in 109 B.C. they defeated the consul Marcus Junius Silanus in southern Gaul, but did not at once follow up the victory. In 105 they returned to the attack under their king Boiorix, and favoured by the dissensions of the Roman commanders Gnaeus Mallius Maximus and Caepio, defeated them in detail and annihilated their armies at Arausio (Orange). Again the victorious Cimbri turned away from Italy, and, after attempting to reduce the Arverni, moved into Spain, where they failed to overcome the desperate resistance of the Celtiberian tribes. In 103 they marched back through Gaul, which they overran as far as the Seine, where the Belgae made a stout resistance. Near Rouen the Cimbri were reinforced by the Teutoni and two cantons of the Helvetii. Thereupon the host marched southwards by two routes, the Cimbri moving on the left towards the passes of the Eastern Alps, while the newly arrived Teutoni and their allies made for the western gates of Italy. In 102 B.C. the Teutoni and Ambrones were totally defeated at Aquae Sextiae by Marius, while the Cimbri succeeded in passing the Alps and driving Q. Lutatius Catulus across the Adige and Po. In 101 Marius overthrew them on the Raudine Plain near Vercellae. Their king Boiorix was killed and the whole army destroyed. The Cimbri were the first in the long line of the Teutonic invaders of Italy.

The original home of the Cimbri has been much disputed. It is recorded in the *Monumentum Ancyranum* that a Roman fleet sailing eastwards from the mouth of the Rhine (*c.* A.D. 5) received at the farthest point reached the submission of a people called Cimbri, who sent an embassy to Augustus. Several early writers agree in saying that the Cimbri occupied a peninsula, and in the map of Ptolemy Jutland appears as the Cimbric Chersonese. As Ptolemy seems to have regarded the district north of the Liimfjord (Limfjord) as a group of islands, the territory of the Cimbri, the northernmost tribe of the peninsula, would be included in the modern county (*Amt*) of Aalborg. This was formerly called Himbersyssel or Himmerland, forms which may very well preserve their name, especially as the name Charydes, mentioned next to them in the *Monumenlum Ancyranum*, appears to survive in the modern Hardeland. Possibly also the district across the Liimfjord formerly called Thythsyssel or Thyland may in the same way preserve the name of the Teutoni (*q.v.*). Strabo and other early writers relate a number of curious facts concerning the customs of the Cimbri, which are of great interest as the earliest records of the manner of life of the Teutonic nations.

SOURCES.—Livy, *Epitome*, lxvii., lxviii.; *Monumenlum Ancyranum*; Pomponius Mela iii. 3; C.

Plinius Secundus, *Nat. Hist.* iv. cap. 13 and 14, §§ 95 ff.; Strabo p. 292 ff.; Plutarch, *Marius. passim*; Florus iii. 3; Ptolemy ii. 11. 11 f.

(F. G. M. B.)

CIMICIFUGA, in botany, a small genus of herbaceous plants, of the natural order Ranunculaceae, which is widely distributed in the north temperate zone. *C. foetida*, bugbane, is used as a preventive against vermin; and the root of a North American species, *C. racemosa*, known as black snake-root, as an emetic.

CIMMERII, an ancient people of the far north or west of Europe, first spoken of by Homer (*Odyssey*, xi. 12-19), who describes them as living in perpetual darkness. Herodotus (iv. 11-13), in his account of Scythia, regards them as the early inhabitants of South Russia (after whom the Bosporus Cimmerius [*q.v.*] and other places were named), driven by the Scyths along by the Caucasus into Asia Minor, where they maintained themselves for a century. But the Cimmerii are often mentioned in connexion with the Thracian Treres who made their raids across the Hellespont, and it is quite possible that some Cimmerii took this route, having been cut off by the Scyths as the Alani (*q.v.*) were by the Huns. Certain it is that in the middle of the 7th century B.C., Asia Minor was ravaged by northern nomads (Herod, iv. 12), one body of whom is called in Assyrian sources *Gimirrai* and is represented as coming through the Caucasus. They were probably Iranian speakers, to judge by the few proper names preserved. The name has also been identified with the biblical Gomer, son of Japheth (Gen. x. 2, 3). To the north of the Euxine their main body was merged in the invading Scyths. Later writers identified them with the Cimbri of Jutland, who were probably Teutonized Celts, but this is a mere guess due to the similarity of name. The Homeric Cimmerii belong to an early part of the *Odyssey* in which the hero was conceived as wandering in the Euxine; these adventures were afterwards translated to the western Mediterranean in accordance with a wider geographical outlook.

For the Cimmerian invasions described by Herodotus, see SCYTHIA; LYDIA; GYGES.

(E. H. M.)

CIMON [Κίμων] (*c.* 507-449), Athenian statesman and general, was the son of Miltiades (*q.v.*) and Hegesipyle, daughter of the Thracian prince Olorus. Miltiades died in disgrace, leaving unpaid the fine imposed upon him for his conduct at Paros. Cimon's first task in life, therefore, was to remove the stain on the family name by paying this fine (about £12,000). In the second Persian invasion, especially at Salamis, and in the consolidation of the Delian League, he won a high reputation for courage and integrity. At first with Aristides, and afterwards as sole commander, he directed the Athenian contingent of the fleet; on the disgrace of Pausanias he practically commanded the entire Greek fleet and drove Pausanias from his retreat in Byzantium. Having captured Eion (at the mouth of the Strymon), he expelled the Persian garrisons from the entire seaboard of Thrace with the exception of Doriscus, and, having defeated the piratical Dolopians of Scyros (470), confirmed his popularity by transferring thence to Athens the supposed bones of the Attic hero Theseus. The bones were buried in Athens, and over the tomb the Theseum (temple) was erected. In 466 Cimon proceeded to liberate the Greek cities of Lyda and Pamphylia, and at the mouth of the Eurymedon he defeated the Persians decisively by land and sea.

The Persian danger was now over, and the immediate purpose of the Delian League was achieved. Already, however, Athens had introduced the policy of coercion which was to transform the league into an empire, a policy which, after the ostracism of Themistocles and the death of Aristides, must be attributed to Cimon, whose fundamental idea was the union

of the Greeks against all outsiders (see Delian League). Carystus was compelled to join the league; Naxos (c. 469) and Thasos (465-463), which had revolted, were compelled to accept the position of tributary allies. In 464 Sparta was involved in war with her Helots (principally of Messenian origin) and was in great difficulties. Cimon, then the most prominent man in Athens, persuaded the Athenians to send assistance, on the ground that Athens could not "stand without her yoke-fellow" and leave "Hellas lame." The expedition was a failure, and Cimon was exposed to the attacks of the democrats led by Ephialtes. The history of this party struggle is not clear. The ordinary account is that Ephialtes during Cimon's absence in Messenia destroyed the powers of the Areopagus (*q.v.*) and then obtained the ostracism of Cimon, who attempted to reverse his policy. Without going fully into the question, which is full of difficulty, it may be pointed out (1) that when the Messenian expedition started Cimon had twice within the preceding year triumphed over the opposition of Ephialtes, and (2) that presumably the Cimonian party was predominant until after the expedition proved a failure. It is therefore unlikely that, immediately after Cimon's triumph in obtaining permission to go to Messenia, Ephialtes was able to attack the Areopagus with success. The probability is that when the expedition failed, Cimon was ostracized, and that then Ephialtes defeated the Areopagus, and also made a change in foreign policy by making alliances with Sparta's enemies, Argos and Thessaly. This hypothesis alone explains the absence of any account of a third struggle between Cimon and Ephialtes over the Areopagus. The chronology would thus be: ostracism of Cimon, spring, 461; fall of the Areopagus and reversal of Philo-Laconian policy, summer, 461.

A more difficult question is involved in the date of Cimon's return from ostracism. The ordinary account says that he was recalled after the battle of Tanagra (457) to negotiate the Five Years' Truce (451 or 450). To ignore the unexplained interval of six or seven years is an uncritical expedient, which, however, has been adopted by many writers. Some maintaining that Cimon did return soon after 457, say that the truce which he arranged was really the four months' truce recorded by Diodorus (only). To this there are two main objections: (1) if Cimon returned in 457, why does the evidence of antiquity connect his return specifically with the truce of 451? and (2) why does he after 457 disappear for six years and return again to negotiate the Five Years'Truce and to command the expedition to Cyprus? It seems much more likely that he returned in 451, at the very time when Athens returned to his old policy of friendship with Sparta and war in the East against Persia (*i.e.* the Cyprus expedition). Thus it would appear that from 453 onwards there was a recrudescence of conservative influence, and that for four years (453-449) Pericles was not master in Athens (see Pericles); this theory is corroborated by the fact that Pericles, in the alarm caused by the Egyptian failure of 454, was induced to remove the Delian treasury to Athens and to abandon his anti-Spartan policy of land empire.

Cimon died in Cyprus before the walls of Citium (449), and was buried in Athens. Later Attic orators speak in glowing terms of a "Peace" between Athens and Persia, which is sometimes connected with the name of Cimon and sometimes with that of one Callias. If any such peace was concluded, it cannot have been soon after the battle of the Eurymedon as Plutarch assumes. It can have been only after Cimon's death and the evacuation of Cyprus (*i.e. c.* 448). It is only in this form that the view has been maintained logically in modern times. Apart from the fact that the peace is ignored by Thucydides and that the earliest reference to it is the passage in Isocrates (*Paneg.* 118 and 120), there are weighty reasons which render it improbable that any formal peace can have been concluded at that period between Athens and Persia (see further Ed. Meyer's *Forschungen*, ii.).

Cimon's services in connexion with the consolidation of the Empire rank with those of Themistocles and Aristides. He is described as genial, brave and generous. He threw open his house and gardens to his fellow-demesmen, and beautified the city with trees and buildings. But as a statesman he failed to cope with the new conditions created by the democracy of Cleisthenes. The one great principle for which he is memorable is that of the balance of power between Athens and Sparta, as respectively the naval and military leaders of a united Hellas. It has been the custom to regard Cimon as a man of little culture and refinement. It is clear, however, from his desire to adorn the city, that he was by no means without culture and imagination. The truth is that, as in politics, so in education and attitude of mind, he represented the ideals of an age which, in the new atmosphere of democratic Athens, seemed to savour of rusticity and lack of education.

The lives of Cimon by Plutarch and Cornelius Nepos are uncritical; the conclusions above expressed are derived from a comparison of Plutarch, *Cimon*, 17, *Pericles*, 10; Theopompus, fragm. 92; Andocides, *de Pace*, §§ 3, 4; Diodorus xi. 86 (the four months' truce). See histories of Greece (*e.g.* Grote, ed. 1907, I vol.); also Pericles; Delian League, with works quoted.

(J. M. M.)

CIMON OF CLEONAE, an early Greek painter, who is said to have introduced great improvements in drawing. He represented “figures out of the straight, and ways of representing faces looking back, up or down; he also made the joints of the body clear, emphasized veins, worked out folds and doublings in garments” (Pliny). All these improvements are such as may be traced in the drawing of early Greek red-figured vases (see Greek Art).

CINCHONA, the generic name of a number of trees which belong to the natural order Rubiaceae. Botanically the genus includes trees of varying size, some reaching an altitude of 80 ft. and upwards, with evergreen leaves and deciduous stipules. The flowers are arranged in panicles, white or pinkish in colour, with a pleasant odour, the calyx being 5-toothed superior, and the corolla tubular, 5-lobed and fringed at the margin. The stamens are 5, almost concealed by the tubular corolla, and the ovary terminates in a fleshy disk. The fruit is an ovoid or subcylindrical capsule, splitting from the base, and held together at the apex. The numerous seeds are flat and winged all round. About 40 species have been distinguished, but of these not more than about a dozen have been economically utilized. The plants are natives of the western mountainous regions of South America, their geographical range extending from 10° N. to 22° S. lat.; and they flourish generally at an elevation of from 5000 to 8000 ft. above sea-level, although some have been noted growing as high up as 11,000 ft., and others have been found down to 2600 ft.

The trees are valued solely on account of their bark, which long has been the source of the most valuable febrifuge or antipyretic medicine, quinine (*q.v.*), that has ever been discovered. The earliest well-authenticated instance of the medicinal use of cinchona bark is found in the year 1638, when the countess of Chinchon (hence the name), the wife of the governor of Peru, was cured of an attack of fever by its administration. The medicine was recommended in her case by the corregidor of Loxa, who was said himself to have practically experienced its supreme virtues eight years earlier. A knowledge of the bark was disseminated throughout Europe by members of the Jesuit brotherhood, whence it also became generally known as Jesuits’ bark. According to another account, this name arose from its value having been first discovered to a Jesuit missionary who, when prostrate with fever, was cured by the administration of the bark by a South American Indian. In each of the above instances the fever was no doubt malaria.

The procuring of the bark in the dense forests of New Granada, Ecuador, Peru and Bolivia is a work of great toil and hardship to the Indian *cascarilleros* or *cascadores* engaged in the pursuit. The trees grow isolated or in small clumps, which have to be searched out by the experienced *cascarillero*, who laboriously cuts his way through the dense forest ta the spot where he discovers a tree. Having freed the stem from adhering parasites and twining plants, he proceeds, by beating and cutting oblong pieces, to detach the stem bark as far as is within his reach. The tree is then felled, and the entire bark of stem and branches secured. The bark of the smaller branches, as it dries, curls up, forming “quills,” the thicker masses from the stems constituting the “flat” bark of commerce. The drying, packing and transport of the bark are all operations of a laborious description conducted under most disadvantageous conditions.

The enormous medicinal consumption of these barks, and the wasteful and reckless manner of procuring them in America long ago, caused serious and well-grounded apprehension that the native forests would quickly become exhausted. The attention of European communities was early directed to the necessity of securing steady and permanent supplies by introducing the more valuable species into localities likely to be favourable to their cultivation. The first actual attempt to rear plants was made in Algeria in 1849; but the effort was not successful. In 1854 the Dutch government seriously undertook the task of introducing the trees into the island of Java, and an expedition for that purpose was fitted out on an adequate scale. Several hundreds of young trees were obtained, of which a small proportion was successfully landed and planted in Java; and as the result of

great attention the cultivation of cinchona plantations in that island became highly prosperous and promising. The desirability of introducing cinchonas into the East Indies was urged in a memorial addressed to the East India Company between 1838 and 1842 by Sir Robert Christison and backed by Dr Forbes Royle; but no active step was taken till 1852, when, again on the motion of Dr Royle, some efforts to obtain plants were made through consular agents. In the end the question was seriously taken up, and Sir Clements R. Markham was appointed to head an expedition to obtain young trees from South America and convey them to India. The transference of the plants was attended with considerable difficulty, but in 1861 under his superintendence a consignment of plants was planted in a favourable situation in the Nilgiri Hills. For several years subsequently additional supplies of plants of various species were obtained from different regions of South America, and some were also procured from the Dutch plantations in Java. Now the culture has spread over a wide area in southern India, in Ceylon, on the slopes of the Himalayas, and in British Burma, and has become widely spread through the tropics generally. The species grown are principally *Cinchona officinalis, C. Calisaya, C. succirubra, C. pitayensis*, and *C. Pahudiana*, some agreeing with certain soils and climates better than others, while the yield of alkaloids and the relative proportions of the different alkaloids differ in each species.

The official “bark” of the British Pharmacopoeia is that of *Cinchona succirubra* or red bark. It is imported in the form of quills or recurved pieces, with a rough brown outer surface and a deep red inner surface, forming a reddish brown odourless powder, which has a bitter, astringent taste. The British Pharmacopoeia directs that the bark, when used to make the various medicinal preparations, shall contain not less than 5 nor more than 6% of total alkaloids, of which at least one-half is to be constituted by quinine and cinchonidine. The preparations of this bark are four: a liquid extract, standardized to contain 5% of total alkaloids; an acid infusion; a tincture standardized to contain 1% of total alkaloids; and a compound tincture which must possess one-half the alkaloidal strength of the last. The only purpose for which these preparations of cinchona bark should be used is as tonics; and even when this is the desired action there are many reasons why the alkaloid should be preferred, even though the recent introduction of standardization removes one of the chief objections to their use.

The pharmacology of red bark, dependent as it is almost entirely upon the contained quinine, will not here be discussed (see QUININE). But the composition of cinchona bark is a matter of importance and interest. The bark contains, in the first place, five alkaloids, of which all but quinine may here be dealt with. Quinidine, $C_{20}H_{24}N_2O_2$, is isomeric with quinine, from which it differs in crystallizing in prisms instead of needles, in being dextro- and not laevo-rotatory, and in being insoluble in ammonia except in much excess. Cinchonine has the formula $C_{19}H_{22}N_2O$, quinine being methoxy cinchonine, *i.e.* $C_{19}H_{21}(OCH_3)N_2O$. It occurs in inodorous, bitter, colourless prisms; unlike the two alkaloids already named, does not yield a green colour with chlorine water and ammonia; is dextro-rotatory; not fluorescent, and practically insoluble in ammonia and in ether. A fourth alkaloid, cinchonidine, is isomeric with cinchonine, which yields it when boiled with amyl alcoholic potash, but is laevo-rotatory, slightly soluble in ether, and faintly fluorescent. When red bark is extracted with dilute hydrochloric acid, the product filtered, and excess of sodium hydrate added thereto, quinine and quinidine are precipitated: on concentrating the mother liquor, cinchonine falls down, and on further concentration with addition of still more alkali, cinchonidine is thrown out. Yellow bark, which is not official, yields 3% of quinine, and pale bark about 10% of total alkaloids, of which hardly any is quinine, cinchonine and quinidine being its chief constituents. The various forms of bark also yield a very small quantity of an unimportant alkaloid, *conquinamine*. In addition to the above, red bark contains *quinic acid*, $C_7H_{12}O_6$, which is closely allied to benzoic acid and is excreted in the urine as hippuric acid. There also occurs *chinovic acid*, derived from a glucoside *chinovin*, which occurs as such in the bark. Besides a trace of volatile oil which gives the bark its characteristic odour, and cinchona red (the bark pigment), there occurs about 2% of *cincho-tannic acid*, closely allied to tannic acid and giving the bark its astringent property. Cinchona is never used, however, in order to obtain an astringent action.

The importance of recognizing the complex and inconstant composition of cinchona bark lies, as in so many other instances, in this—that the physician who employs it can have only a very imperfect knowledge of the drug he is using. The latest work on the action of these alkaloids has shown that cinchonine has a tendency to produce convulsions in certain patients, and that this action is a still more marked feature of cinchonidine and cinchonamine. Even small doses administered to epileptics increase the number of their attacks. They will probably be classified later among the convulsive poisons. The use of cinchona bark and its preparations, now that definite active principles can be readily obtained and precisely studied, is almost entirely to be deprecated. Quinidine is almost as

powerful an antidote to malaria as quinine; cinchonidine has about two-thirds the power of quinine, and cinchonine less than one-half.

CINCINNATI, a city and the county-seat of Hamilton county, Ohio, U.S.A., on the Ohio river, opposite the mouth of the Licking, about 100 m. S.W. of Columbus, about 305 m. by rail S.E. of Chicago, and about 760 m. (by rail) W.S.W. of New York. Through the city flows Mill Creek, which empties into the Ohio. Pop. (1890[1]) 296,908; (1900) 325,902, of whom 197,896 were of foreign parentage (*i.e.* either their fathers or mothers or both were foreign-born), 57,961 were foreign-born, and 14,482 were negroes; (1910) 363,591. The German is by far the most important of the foreign elements. In addition to the large number of inhabitants of German descent, there were, in 1900, 107,152 of German parentage, and of the foreign-born 38,219 came from Germany.

Cincinnati is situated on the N. side of the river upon two terraces or plateaus—the first about 60 ft., the second from 100 to 150 ft., above low water—and upon hills which enclose these terraces on three sides in the form of an amphitheatre, rising to a height of about 400 ft. on the E. and of about 460 ft. on the W., and commanding magnificent views of the river, the valley, the numerous suburbs, and the more distant wooded hills. About half of the hill-enclosed plain lies S. of the river, and it is upon this southern half that Covington, Newport, Dayton, Ludlow and other Kentucky suburbs of Cincinnati are situated. Cincinnati has a river-frontage of about 14 m., extends back about 6 m. on the W. side in the valley of Mill Creek, and occupies a total area of about 44 sq. m. Since 1867 it has been connected with Covington by a wire suspension bridge designed by John A. Roebling, and rebuilt and enlarged in 1897. This bridge is 1057 ft. long between towers (or, including the approaches, 2252 ft. long), with a height of 101 ft. above low water, and has a double wagon road and two ways for pedestrians. By two bridges there is direct communication with Newport; by one, that of the Cincinnati Southern railway, with Ludlow; and by one (Chesapeake & Ohio; see vol. v., p. 109) with West Covington. On the terraces the streets generally intersect at 371
right angles, but on the hills their directions are irregular. To the “bottoms” (which have suffered much from floods[2]) between Third Street and the river the manufacturing and wholesale districts are for the most part confined, although many of these interests are now on the higher levels or in the suburbs; the principal retail houses are on the higher levels N. of Third Street, and the handsomest residences are on the picturesque hills before mentioned, in those parts of the city, formerly separate villages, known as Avondale, Mt. Auburn, Clifton, Price Hill, Walnut Hills and Mt. Lookout. The main part of the city is connected with these residential districts by electric street railways, whose routes include four inclined-plane railways, namely, Mt. Adams (268 ft. elevation), Bellevue (300 ft.), Fairview (210 ft.) and Price Hill (350 ft.), from each of which an excellent panoramic view of the city and suburbs may be obtained. There are various suburbs, chiefly residential, in the Mill Creek valley, among them being Carthage, Hartwell, Wyoming, Lockland and Glendale. Other populous and attractive suburbs N. of the Ohio river are Norwood and College Hill.

Buildings, &c.—Brick, blue limestone, and a greyish buff freestone are the most common building materials, and the city has various buildings of much architectural merit. The chamber of commerce (completed 1889), designed by H.H. Richardson, is one of the finest public buildings in the United States. Its walls are of undressed granite, and it occupies a ground area of 100 by 150 ft. The United States government building (designed by A.B. Mullet, and built of Maine and Missouri granite) is a fine structure in classic style, 360 ft. long and 160 ft. wide, and 4½ storeys high; its outer walls are faced with sawn freestone. It was erected in 1874-1885 and cost (including the land) $5,250,000. The city hall (332 ft. by 203 ft.), with walls of red granite and brown sandstone, is a massive and handsome building erected at a cost of $1,600,000. The county court house (rebuilt in 1887) is in the Romanesque style, and with the gaol attached occupies an entire square. The Cincinnati hospital (completed 1869), comprising eight buildings grouped about a central court and connected by corridors, occupies a square of four acres. A new public hospital for the suburbs was projected in 1907. St Peter’s (Roman Catholic) cathedral (begun 1839, consecrated 1844), Grecian in style, is a fine structure, with a graceful stone spire 224 ft. in height and a chime of 13 bells; it has as an altar-piece Murillo’s “St Peter Liberated by an Angel.” The church of St Francis de Sales (in Walnut Hills), built in 1888, has a bell, cast in Cincinnati, weighing fifteen tons, and said to be the largest swinging bell in the world.

Several of the Protestant churches, such as the First Presbyterian (built 1835; steeple, including spire, 285 ft. high), Second Presbyterian (1872), Central Christian (1869), St Paul's Methodist Episcopal (1870), and St Paul's Protestant Episcopal pro-cathedral (1851), are also worthy of mention, and in the residential suburbs there are many fine churches. Cincinnati is the seat of a Roman Catholic archbishopric and a Protestant Episcopal and Methodist Episcopal bishopric. The Masonic temple (195 ft. long and 100 ft. wide), in the Byzantine style, is four storeys high, and has two towers of 140 ft.; the building was completed in 1860 and has subsequently been remodelled. Among other prominent buildings are the Oddfellows' temple (completed 1894), the public library, the art museum (1886), a Jewish synagogue (in Avondale), and the (Jewish) Plum Street temple (1866), Moorish in architecture. The Soldiers', Sailors' and Pioneers' building (1907) is a beautiful structure, classic in design. The business houses are of stone or brick, and many of them are attractive architecturally; there are a number of modern office buildings from 15 to 20 storeys in height. There are also several large hotels and ten theatres (besides halls and auditoriums for concerts and public gatherings), the most notable being Springer music hall.

One of the most noted pieces of monumental art in the United States is the beautiful Tyler Davidson bronze fountain in Fountain Square (Fifth Street, between Walnut and Vine streets), the business centre of the city, by which (or within one block of which) all car lines run. The fountain was unveiled in 1871 and was presented to the city by Henry Probasco (1820-1902), a wealthy citizen, who named it in honour of his deceased brother-in-law and business partner, Mr Tyler Davidson. The design, by August von Kreling (1819-1876), embraces fifteen bronze figures, all cast at the royal bronze foundry in Munich, the chief being a female figure with outstretched arms, from whose fingers the water falls in a fine spray. This figure reaches a height of 45 ft. above the ground. The city has, besides, monuments to the memory of Presidents Harrison and Garfield (both in Garfield Place, the former an equestrian statue by Louis T. Rebisso, and the latter by Charles H. Niehaus); also, in Spring Grove cemetery, a monument to the memory of the Ohio volunteers who lost their lives in the Civil War. The art museum, in Eden Park, contains paintings by celebrated European and American artists, statuary, engravings, etchings, metal work, wood carving, textile fabrics, pottery, and an excellent collection in American ethnology and archaeology. The Cincinnati Society of Natural History (incorporated 1870) has a large library and a museum containing a valuable palaeontological collection, and bones and implements from the prehistoric cemetery of the mound-builders, at Madisonville, Ohio.

Parks.—In 1908 Cincinnati had parks covering about 540 acres; there are numerous pleasant driveways both within the city limits and in the suburban districts, and several attractive resorts are within easy reach. Eden Park, of 214 acres, on Mount Adams, about 1 m. E. of the business centre and near the river, is noted for its natural beauty, greatly supplemented by the landscape-gardener's skill, and for its commanding views. The ground was originally the property of Nicholas Longworth (1782-1863), a wealthy citizen and well-known horticulturist, who here grew the grapes from which the Catawba wine, introduced by him in 1828, was made. The park contains the art museum and the art academy. Its gateway, Elsinore, is a medieval reproduction; other prominent features are the reservoirs, which resemble natural lakes, and a high water tower, from which there is a delightful view. In Burnet Woods Park, lying to the N.E. of Eden and containing about 163 acres, are the buildings and grounds of the University of Cincinnati, and a lake for boating and skating. The zoological gardens occupy 60 acres and contain a notable collection of animals and birds. Other pleasure resorts are the Lagoon on the Kentucky side (in Ludlow, Ky.), Chester Park, about 6 m. N. of the business centre, and Coney Island, about 10 m. up the river on the Ohio side. Washington (5.6 acres), Lincoln (10 acres), Garfield and Hopkins are small parks in the city. In 1907 an extensive system of new parks, parkways and boulevards was projected. Spring Grove cemetery, about 6 m. N.W. of Fountain Square, contains 600 acres picturesquely laid out on the park plan. It contains many handsome monuments and private mausoleums, and a beautiful mortuary chapel in the Norman style.

Water-Supply.—A new and greatly improved water-supply system for the city was virtually completed in 1907. This provides for taking water from the Ohio river at a point on the Kentucky side opposite the village of California, Ohio, and several miles above the discharge of the city sewers; for the carrying of the water by a gravity tunnel under the river to the Ohio side, the water being thence elevated by four great pumping engines, each having a daily capacity of 30,000,000 gallons, to settling basins, being then passed through filters of the American or mechanical type, and flowing thence by a gravity tunnel more than 4 m. long to the main pumping station, on the bank of the river, within the city; and for the pumping of the water thence, a part directly into the distributing pipes and a part to the principal storage reservoir in Eden Park.

Education.—Cincinnati is an important educational centre. The University of Cincinnati, originally endowed by Charles M'Micken (d. 1858) and opened in 1873, occupies a number of handsome buildings erected since 1895 on a campus of 43 acres in Burnet Woods Park, has an astronomical observatory on the highest point of Mt. Lookout, and is the only strictly municipal university in the United States. The institution embraces a college of liberal arts, a college of engineering, a college of law (united in 1897 with the law school of Cincinnati College, then the only surviving department of that college, which was founded as Lancaster Seminary in 1815 and was chartered as Cincinnati College in 1819), a college of medicine (from 1819 to 1896 the Medical College of Ohio; the college occupies the site of the old M'Micken homestead), a college for teachers, a graduate school, and a technical school (founded in 1886 and transferred to the university in 1901); while closely affiliated with it are the Clinical and Pathological School of Cincinnati and the Ohio College of Dentistry. With the exception of small fees charged for incidental expenses, the university is free to all students who are residents of the city; others pay $75 a year for tuition. It is maintained in part by the city, through public taxation, and in part by the income from endowment funds given by Charles M'Micken, Matthew Thoms, David Sinton and others. The government of the university is entrusted mainly to a board of nine directors appointed by the mayor. In 1909 it had a faculty of 144 and 1364 students. Lane Theological Seminary is situated in Walnut Hills, in the north-eastern part of the city; it was endowed by Ebenezer Lane and the Kemper family; was founded in 1829 for the training of Presbyterian ministers; had for its first president (1832-1852) Lyman Beecher; and in 1834 was the scene of a bitter contest between abolitionists in the faculty and among the students, led by Theodore Dwight Weld, and the board of trustees, who forbade the discussion of slavery in the seminary and so caused about four-fifths of the students to leave, most of them going to Oberlin College. The city has also Saint Francis Navier College (Roman Catholic, established in 1831 and until 1840 known as the Athenaeum); Saint Joseph College (Roman Catholic, 1873); Mount St Mary's of the West Seminary (Roman Catholic, theological, 1848, at Cedar Point, Ohio); Hebrew Union College (1875), the leading institution in the United States for educating rabbis; the largely attended Ohio Mechanics' Institute (founded 1828), a private corporation not conducted for profit, its object being the education of skilled workmen, the training of industrial leaders, and the advancement of the mechanic arts (in 1907 there were in all departments 1421 students, a large majority of whom were in the evening classes); an excellent art academy, modelled after that of South Kensington; the College of Music and the Conservatory of Music (mentioned below); the Miami Medical College (opened in 1852); the Pulte Medical College (homeopathic; coeducational; opened 1872); the Eclectic Medical Institute (chartered 1845); two women's medical colleges, two colleges of dental surgery, a college of pharmacy, and several business colleges. The public, district, and high schools of the city are excellent. The City (or public) library contained in 1906 301,380 vols. and 57,562 pamphlets; the University library (including medical, law and astronomical branches), 80,000 vols. (including the Robert Clarke collection, rich in Americana, and the library—about 5000 vols.—of the American Association for the Advancement of Science); the Young Men's Mercantile library, 70,000 vols.; and the Law library, 35,000 vols.; in addition, the Lloyd library and museum of botany and pharmacy, and the library of the Historical and Philosophical Society of Ohio (1831), which contains a valuable collection of rare books, pamphlets and manuscripts, are worthy of mention.

Art, &c.—The large German population makes the city noteworthy for its music. The first Sängerfest was held in Cincinnati in 1849, and it met here again in 1870, when a new hall was built for its accommodation. Under the leadership of Theodore Thomas (1835-1905), the Cincinnati Musical Festival Association was incorporated, and the first of its biennial May festivals was held in 1873. In 1875-1878 was built the large Springer music hall, named in honour of Reuben R. Springer (1800-1884), its greatest benefactor, who endowed the Cincinnati College of Music (incorporated in 1878), of which Thomas was director in 1878-1881. Until his death Thomas was director of the May festivals also. The grounds for the music hall were given by the city and are perpetually exempt from taxation. The great organ in the music hall was dedicated at the third of the May festivals in 1878. The Sängerfest met in Cincinnati for the third time in 1879, and its jubilee was held here in 1899. By 1880 the May festival chorus had become a permanent organization. The city has several other musical societies—the Apollo and Orpheus clubs (1881 and 1893), a Liederkranz (1886), and a United Singing Society (1896) being among the more prominent; and there are two schools of music—the Conservatory of Music and the College of Music.

The city has large publishing interests, and various religious (Methodist Episcopal and Roman Catholic) and fraternal periodicals, and several technical journals and trade papers are published here. The principal daily newspapers are the *Enquirer*, a Democratic journal,

established in 1842 and conducted for many years after 1852 by Washington McLean (1816-1890), and then by his son, John Roll McLean (b. 1848); the *Commercial Tribune* (Republican; previously the *Commercial-Gazette* and still earlier the *Commercial*, founded in 1793, *The Tribune* being merged with it in 1896), the *Times-Star* (the *Times* established in 1836), and the *Post*, established in 1881 (both evening papers); and several influential German journals, including the *Volksblatt* (Republican; established 1836), and the *Volksfreund* (Democratic; established 1850).

Among the social clubs of the city are the Queen City Club, organized in 1874; the Phoenix Club, organized in 1856 and the leading Jewish club in the city; the Cuvier Club, organized in 1871 and originally an association of hunters and anglers for the preservation of game and fish; the Cincinnati Club, the Business Men's Club, the University Club, the Art Club, and the Literary Club, of the last of which many prominent men, including President Hayes, have been members. This club dates from 1849, and is said to be the oldest literary club in the country. There are various commercial and trade organizations, the oldest and most influential being the Cincinnati Chamber of Commerce and Merchants' Exchange, which dates from 1839.

Administration.—The city is governed under the municipal code enacted by the state legislature in 1902, for the provisions of which see Ohio.

Among the institutions are the City infirmary (at Hartwell, a suburb), which, besides supporting pauper inmates, affords relief to outdoor poor; the Cincinnati hospital, which is supported by taxation and treats without charge all who are unable to pay; twenty other hospitals, some of which are charitable institutions; a United States marine hospital; the Longview hospital for the insane, at Carthage, 10 m. from the city, and belonging to Hamilton county, whose population consists largely of the inhabitants of Cincinnati; an insane asylum for negroes; six orphan asylums—the Cincinnati, two Protestant, two Roman Catholic, and one for negroes; a home for incurables; a day nursery; a fresh-air home and farm for poor children; the Franciscan Brothers' Protectory for boys; a children's home; two widows' homes; two old men's homes; several homes for indigent and friendless women; a foundling asylum; the rescue mission and home for erring women; a social settlement conducted by the University of Cincinnati; the house of refuge (1850) for "the reformation and education of homeless and incorrigible children under 16 years of age"; and a workhouse for adults convicted of minor offences.

Communications.—Cincinnati is a railway centre of great importance and has an extensive commerce both by rail and by river. It is served by the following railways: the Pittsburg, Cincinnati, Chicago & St Louis (Pennsylvania system), the Cleveland, Cincinnati, Chicago & St Louis (New York Central system), the Chicago, Cincinnati & Louisville, the Cincinnati, New Orleans & Texas Pacific (the lessee of the Cincinnati Southern railway,[3] connecting Cincinnati and Chattanooga, Tenn., its line forming part of the so-called Queen & Crescent Route to New Orleans), the Erie, the Baltimore & Ohio South-Western (Baltimore & Ohio system), the Chesapeake & Ohio, the Norfolk & Western, the Louisville & Nashville, the Cincinnati, Hamilton & Dayton, the Cincinnati Northern (New York Central system), the Cincinnati & Muskingum Valley (Pennsylvania system), and the Cincinnati, Lebanon & Northern (Pennsylvania system). Most of these railways use the Union Station; the Pennsylvania and the Cincinnati, Hamilton & Dayton, have separate stations. The city's river commerce, though of less relative importance since the advent of railways, is large and brings to its wharves much bulky freight, such as coal, iron and lumber; it also helps to distribute the products of the city's factories; and the National government has done much to sustain this commerce by deepening and lighting the channel. Formerly there was considerable commerce with Lake Erie by way of the Miami & Erie Canal to Toledo; the canal was completed in 1830 and has never been entirely abandoned.

Industries.—Although the second city in population in the state, Cincinnati ranked first in 1900 as a manufacturing centre, but lost this pre-eminence to Cleveland in 1905, when the value of Cincinnati's factory product was $166,059,050, an increase of 17.2% over the figures for 1900. In the manufacture of vehicles, harness, leather, hardwood lumber, wood-working machinery, machine tools, printing ink, soap, pig-iron, malt liquors, whisky, shoes, clothing, cigars and tobacco, furniture, cooperage goods, iron and steel safes and vaults, and pianos, also in the packing of meat, especially pork,[4] it ranks very high among the cities of the Union. The well-known and beautiful Rookwood ware has been made in Cincinnati since 1880, at the Rookwood Pottery (on Mt. Adams), founded by Mrs Bellamy (Maria Longworth) Storer, named from her father's home near the city, the first American pottery to devote exclusive attention to art ware. The earlier wares were yellow, brown and red; then came deep greens and blues, followed by mat glazes and by "vellum" ware (first

exhibited in 1904), a lustreless pottery, resembling old parchment, with its decoration painted or modelled or both. The clays used are exclusively American, much being obtained in Missouri. Among the more important manufactures of the city in 1905 were the following, with the value of the product for that year: clothing ($16,972,484), slaughtering and meat-packing products ($13,446,202), foundry and machine-shop products ($11,528,768), boots and shoes ($10,596,928), distilled liquors ($9,609,826), malt liquors ($7,702,693), and carriages and wagons ($6,323,803).[5]

History.—Cincinnati was founded by some of the first settlers in that part of the North-West Territory which afterwards became the state of Ohio. It lies on part of the land purchased for himself and others by John Cleves Symmes (1742-1814) from the United States government in 1788, and the settlement was established near the close of the same year by immigrants chiefly from New Jersey and Kentucky. When the town was laid out early in 1789, John Filson, one of the founders, named it Losantiville (L for Licking; *os*, Latin for mouth; *anti*, Greek for opposite; and *ville*, French for town), but early in the next year Symmes caused the present name to be substituted in honour of the Order of the Cincinnati, General Arthur St Clair, the governor of the North-West Territory, being then president of the Pennsylvania State Society of the Cincinnati. St Clair arrived about the time the change in name was made, immediately erected Hamilton County, and made Cincinnati its seat of government; the territorial legislature also held its sessions here from the time of its first organization in 1799 until 1801, when it removed to Chillicothe. During the early years the Indians threatened the life of the settlement, and in 1789 Fort Washington, a log building for protection against the Indians, was built in the city; General Josiah Harmar, in 1790, and General St Clair, in 1791, made unsuccessful expeditions against them, and the alarm increased until 1794, when General Wayne won a decisive victory over the savages at Maumee Rapids in the battle of Fallen Timbers, after which he secured their consent to the terms of the treaty of Greenville (1795). Cincinnati was incorporated as a village in 1802, received a second charter in 1815, was chartered as a city in 1819, and received its second city charter in 1827 and its third in 1832; since 1851 it has been governed nominally by general laws of the state, although by the state's method of classifying cities many acts for its government have been in reality special. When first incorporated its limits were confined to an area of 3 sq. m., but by annexations in 1849 and 1850 this area was doubled; in 1854 another square mile was added; in 1869 and 1870 large additions were made, which included the villages of Sedamsville, Price Hill, Walnut Hills, Mount Auburn, Clintonville, Corryville, Vernon, Mount Harrison, Barrsville, Fairmount, West Fairmount, St Peters, Lick Run and Clifton Heights; in 1872 Columbia, which was settled a short time before Cincinnati, was added; in 1873 Cumminsville and Woodburn; in 1895 Avondale, Riverside, Clifton, Linwood and Westwood; in 1903 Bond Hill, Winton Place, Hyde Park and Evanston; in 1904 portions of Mill Creek township, and in 1905 a small tract in Mill Creek Valley.

In 1829 Mrs Frances Trollope established in Cincinnati, where she lived for a part of two years, a "Bazar," which as the principal means of carrying out her plan to benefit the town was entirely unsuccessful; a vivid but scarcely unbiassed picture of Cincinnati in the early thirties is to be found in her *Domestic Manners of the Americans* (1831). In 1845 began the marked influx of Germans, which lasted in large degree up to 1860; they first limited themselves to the district "Over the Rhine" (the Rhine being the Miami & Erie Canal), in the angle north-east of the junction of Canal and Sycamore streets, but gradually spread throughout the city, although this "Over the Rhine" is still most typically German.

For more than ten years preceding the Civil War the city was much disturbed by slavery dissension—the industrial interests were largely with the South, but abolitionists were numerous and active, and the city was an important station on the "Underground Railroad," of which Dr Norton S. Townshend (1815-95) was conductor, and one of the stations was the home of Mrs. Harriet Beecher Stowe, who lived in Cincinnati from 1832 to 1850, and gathered there much material embodied in *Uncle Tom's Cabin*. In 1834 came the Lane Seminary controversies over slavery previously referred to. In 1835 James G. Birney established here his anti-slavery journal, *The Philanthropist*, but his printing shops were repeatedly mobbed and his presses destroyed, and in January of 1836 his bold speech before a mob gathered at the court-house was the only thing that saved him from personal violence, as the city authorities had warned him that they had not sufficient force to protect him.

At the time of the Civil War the city was strongly in sympathy with the North. In September 1862 the city was threatened by a Confederate force under General Kirby Smith, who led the advance of General Bragg's army (see American Civil War). On the 28th of March 1884 many of the citizens met at Music Hall to protest against the lax way in which the law was enforced, notably in the case of a recent murder, when the confessed criminal had been

found guilty of manslaughter only. An attack was made on the gaol by the lawless element outside the hall, but was futile,—the murderer having been removed by the authorities to Columbus. In its efforts to break into the gaol and court-house the mob was confronted by the militia, and bloodshed and loss of life resulted; during the rioting the courthouse was fired by the mob and practically destroyed, and many valuable records were burned. Various important political conventions have met in Cincinnati, including the national Democratic convention of 1856, the national Liberal-Republican convention of 1872, the national Republican convention of 1876, and the national Democratic convention of 1880,—by which, respectively, James Buchanan, Horace Greeley, R.B. Hayes and Winfield Scott Hancock were nominated for the presidency.

See C.T. Greve, *Centennial History of Cincinnati and Representative Citizens* (Chicago, 1904), the official municipal documents, the Annual Reports of the Cincinnati Chamber of Commerce, &c.

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1 Previous census reports of the total population were as follows: (1810) 2540; (1820) 9642; (1830) 24,831; (1840) 46,338; (1850) 115,435; (1860) 161,044; (1870) 216,239; (1880) 225,139. In the territory within a radius of 10 m. of the United States government building there was in 1900 a population of about 480,000.

2 The most destructive floods have been those of 1832, 1847, 1883, 1884 and 1907; the highest stage of the water before 1904 was 71 ft. ¾ in. in 1884, the lowest 1 ft. 11 in. in 1881.

3 The Cincinnati Southern railway is of especial interest in that it was built by the city of Cincinnati in its corporate capacity. Much of the city's trade had always been with the Southern states, and the urgent need of better facilities for this trade than the river and existing railway lines afforded led to the building of this road by the city. The work was carried on under the direction of a board of five trustees appointed by the superior court of Cincinnati in accordance with the so-called Ferguson Act passed by the Ohio legislature in 1869, and the railway was completed to Chattanooga in February 1880. For accounts of the building and the management of the railway, see J.H. Hollander, *The Cincinnati Southern Railway; A Study in Municipal Activity* (Baltimore, 1894), one of the Johns Hopkins University Studies in Historical and Political Science; and *The Founding of the Cincinnati Southern Railway, with an Autobiographical Sketch by E.A. Ferguson* (Cincinnati, 1905).

4 Before 1863 Cincinnati was the principal centre in the United States for the slaughtering of hogs and the packing of pork. The industry began as early as 1820 and rapidly increased in importance, but after 1863 Chicago took the lead.

5 These figures are from the U.S. census, and are of course for Cincinnati proper: some of the largest industrial establishments, however, are just outside the city limits—among these are manufactories of soap (the Ivory Soap Works), machine tools, electrical machinery and appliances, structural and architectural iron work, and office furnishings.

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