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Ethiopia to Evangelical Association

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ETHIOPIA, or Aethiopia (Gr. Αἰθιοπία), the ancient classical name of a district of north-eastern Africa, bounded on 845
the N. by Egypt and on the E. by the Red Sea.[1] The application of the name has varied considerably at different times. In the Homeric poems the *Aethiopes* are the furthest of mankind both eastward and westward; the gods go to their banquets and probably the Sun sets in their country. With the growth of scientific geography they came to be located somewhat less vaguely, and indeed their name was employed as the equivalent of the Assyrian and Hebrew Cush (*q.v.*), the Kesh or Ekōsh of the Hieroglyphics (first found in Stele of Senwosri I.), *i.e.* a country extending from about the 24th to the 10th degree of N. lat., while its limits to the E. and W. were doubtful. The etymology of the name, which to a Greek ear meant "swarthy-faced," is unknown, nor can we say why in official inscriptions of the Axumite dynasty the word is used as the equivalent of Habashat (whence the modern Abyssinia), which, from the context 846
would appear to denote a tribe located in S. Arabia, whose name was rendered by the Greek geographers as *Abaseni* and *Abissa*.

The inhabitants of Ethiopia, partly perhaps owing to their honourable mention in the Homeric poems, attracted the attention of many Greek researchers, from Democritus onwards. Herodotus divides them into two main groups, a straight-haired race and a woolly-haired race, dwelling respectively to the East and West, and this distinction is confirmed by the Egyptian monuments. From his time onwards various names of tribes are enumerated, and to some extent geographically located, most of these appellations being Greek words, applied to the tribes by strangers in virtue of what seemed to be their leading characteristics, *e.g.* "Long-lived," "Fish-eaters," "Troglodytes," &c. The bulk of our information is derived from Egyptian monuments, whence it appears that, originally occupied by independent tribes, who were raided (first by Seneferu or Snefru, first king of the IVth or last of the IIIrd Dynasty) and gradually subjected by Egyptian kings (the steps in this process are traced by E.W. Budge, *The Egyptian Sudan*, 1907, i. 505 sqq.), under the XVIIIth Dynasty it became an Egyptian province, administered by a viceroy (at first the Egyptian king's son), called prince of Kesh, and paying tributes in negroes, oxen, gold, ivory, rare beads, hides and household utensils. The inhabitants frequently rebelled and were as often subdued; records of these repeated conquests were set up by the Egyptian kings in the shape of steles and temples; of the latter the temple of Amenhotep (Amenophis) III. at Soleb or Sulb seems to have been the most magnificent. Ethiopia became independent towards the 11th century B.C., when the XXIst Dynasty was reigning in Egypt. A state was founded, having for its capital Napata (mod. *Merawi*) at the foot of Jebel Barkal, "the sacred mountain," which in time became formidable, and in the middle of the 8th century conquered Egypt; an Egyptian campaign is recorded in the famous stele of King

Pankhi. The fortunes of the Ethiopian (XXVth) Dynasty belong to the history of Egypt (*q.v.*). After the Ethiopian yoke had been shaken off by Egypt, about 660 B.C., Ethiopia continued independent, under kings of whom not a few are known from inscriptions. Besides a number whose names have been discovered in cartouches at Jebel Barkal, the following, of whom all but the third have left important steles, can be roughly dated: Tandamane, son of Tirhaka (667-650), Asperta (630-600), Pankharer (600-560), Harsiōtf (560-525), Nastasen (525-500). From the evidence of the stele of the second (the Coronation Stele) and that of the fifth it has been inferred that the sovereignty early in this period became elective, a deputation of the various orders in the realm being (as Diodorus states), when a vacancy occurred, sent to Napata, where the chief god Amen selected out of the members of the royal family the person who was to succeed, and who became officially the god's son; and it seems certain that the priestly caste was more influential in Ethiopia than in Egypt both before and after this period. Another stele (called the Stele of Excommunication) records the expulsion of a priestly family guilty of murder (H. Schäfer, *Klio*, vi. 287): the name of the sovereign who expelled them has been obliterated. The stele of Harsiōtf contains the record of nine expeditions, in the course of which the king subdued various tribes south of Meroë and built a number of temples. The stele of the last of these sovereigns, now in the Berlin Museum, and edited by H. Schäfer (Leipzig, 1901), contains valuable information concerning the state of the Ethiopian kingdom in its author's time. Shortly after his accession he was threatened with invasion by Cambyses, the Persian conqueror of Egypt, but (according to his own account) destroyed the fleet sent by the invader up the Nile, while (as we learn from Herodotus) the land-force succumbed to famine (see Cambyses). It further appears that in his time and that of his immediate predecessors the capital of the kingdom had been removed from Napata, where in the time of Harsiōtf the temples and palaces were already in ruins, to Mercë at a distance of 60 camel-hours to the south-east. But Napata retained its importance as the religious metropolis; it was thither that the king went to be crowned, and there too the chief god delivered his oracles, which were (it is said) implicitly obeyed. The local names in Nastasen's inscription, describing his royal circuit, are in many cases obscure. A city named Pnups (Hierogl. Pa-Nebes) appears to have constituted the most northerly point in the empire. These Ethiopian kings seem to have made no attempt to reconquer Egypt, though they were often engaged in wars with the wild tribes of the Sudan. For the 5th and 4th centuries B.C. the history of the country is a blank. A fresh epoch was, however, inaugurated by Ergamenes, a contemporary of Ptolemy Philadelphus, who is said to have massacred the priests at Napata, and destroyed sacerdotal influence, till then so great that the king might at the priests' order be compelled to destroy himself; Diodorus attributes this measure to Ergamenes' acquaintance with Greek culture, which he introduced into his country. A temple was built by this king at Pselcis (Dakka) to Thoth. Probably the sovereignty again became hereditary. Occasional notices of Ethiopia occur from this time onwards in Greek and Latin authors, though the special treatises by Agatharchides and others are lost. According to these the country came to be ruled by queens named Candace. One of them was involved in war with the Romans in 24 and 23 B.C.; the land was invaded by C. Petronius, who took the fortress Premis or Ibrim, and sacked the capital (then Napata); the emperor Augustus, however, ordered the evacuation of the country without even demanding tribute. The stretch of land between Assuan (Syene) and Maharraka (Hiera Sycaminus) was, however, regarded as belonging to the Roman empire, and Roman cohorts were stationed at the latter place. To judge by the monuments it is possible that there were queens who reigned alone. Pyramids were erected for queens as well as for kings, and the position of the queens was little inferior to that of their consorts, though, so far as monumental representations go, they always yielded precedence to the latter. Candace appears to be found as the name of a queen for whom a pyramid was built at Meroë. A great builder was Netekamane, who is represented with his queen Amanetari on temples of Egyptian style at many points up the Nile—at Amara just above the second cataract, and at Napata, as well as at Meroë, Benaga and Naga in the distant Isle of Meroë. He belongs, probably, to the Ptolemaic age. Later, in the Roman period, the type in sculpture changed from the Egyptian. The figures are obese, especially the women, and have pronounced negro features, and the royal person is loaded with bulging gold ornaments. Of this period also there is a royal pair, Netekamane and Amanetari, imitating the names of their conspicuous predecessors. In the 4th century A.D. the state of Meroë was ravaged by the Nubas(?) and the Abyssinians, and in the 6th century its place was taken by the Christian state of Nubia (see Dongola).

Contrary to the opinion of the Greeks, the Ethiopians appear to have derived their religion and civilization from the Egyptians. The royal inscriptions are written in the hieroglyphic character and the Egyptian language, which, however, in the opinion of experts, steadily deteriorate after the separation of Ethiopia from Egypt. About the time of Ergamenes, or (according to some authorities) before, a vernacular came to be employed in inscriptions, written in a special alphabet of 23 signs in parallel hieroglyphic and cursive forms. The cursive is to be read from right to left, the hieroglyphic, contrary to the Egyptian method, in the direction in which the figures face. The Egyptian equivalents of six characters have been made out by the aid of bilingual cartouches. Words are divided from each other by pairs of dots, and it is clear that the forms and values of the signs are largely based on Egyptian writing; but as yet decipherment has not been attained, nor can it yet be stated to what group the language should be assigned (F. Ll. Griffith in D.R. MacIver's *Areika*, Oxford, 1909, and later researches).

Notices in Greek authors are collected by P. Paulitschke, *Die geographische Erforschung des afrikanischen Continents* (Vienna, 1880); the inscriptions were edited and interpreted by G. Maspero, *Revue archéol.* xxii., xxv.; *Mélanges d'Assyriologie et d'Égyptologie*, ii., iii.; *Records of the Past*, vi.; T.S.B.A. iv.; Schäfer, l.c., and *Zeitschrift für ägyptische Sprache*, xxxiii. See also J.H. Breasted, "The Monuments of Sudanese Nubia," in *American Journal of Semitic Languages* (October 1908), and the work of E.W. Budge cited above. A description of the chief ruins and the results of Dr D.R. MacIver's researches in northern Nubia, begun in 1907, will be found under Sudan: *Anglo-Egyptian*.

The Axumite Kingdom.—About the 1st century of the Christian era a new kingdom grew up at Axum (*q.v.*), of which a king Zoscales is mentioned in the *Periplus Maris Erythraei*. Fragments of the history of this kingdom, of which there is no authentic chronicle, have been made out chiefly by the aid of inscriptions, of which the following is a list: —(1) Greek inscription of Adulis, copied by Cosmas Indicopleustes in 545, the beginning, with the king's name, lost. (2) Sabaean inscription of Ela Amida in two halves, discovered by J. Theodore Bent at Axum in 1893, and completed by E. Littmann in 1906. (3) Ethiopic inscription probably of the same king, imperfect (Littmann). (4) Trilingual inscription of Aeizanes, the Greek version discovered by Henry Salt in 1805, the Sabaean by Bent, and the Ethiopic (Geez) by Littmann. (5) Ethiopic inscription of Aeizanes (so Littmann), son of Ela Amida, discovered by Eduard Rüppell in 1833. (6) Ethiopic inscriptions of Hetana-Dan'el, son of Dabra Efrem. These are all long inscriptions giving details of wars, &c. The sixth is later than the rest, which are to be attributed to the most flourishing period of the kingdom, the 4th and 5th centuries A.D. The fourth is pagan, the fifth Christian, Aeizanes having in the interval embraced Christianity. It was to this king that the emperor Constantius addressed a letter in 356 A.D.

Aeizanes and his successors style themselves kings of the Axumites, Homerites (Himyar), Raidan, the Ethiopians (Habašat), the Sabaeans, Silee, Tiamo, the Bugaites (Beǵa) and Kasu. This style implies considerable conquests in South Arabia, which, however, must have been lost to the Axumites by A.D. 378. They claim to rule the Kasu or Meroitic Ethiopians; and the fifth inscription records an expedition along the Atbara and the Nile to punish the Nuba and Kasu, and a fragment of a Greek inscription from Meroë was recognized by Sayce as commemorating a king of

Axum. Except for these inscriptions Axumite history is a blank until in the 6th century we find the Axumite king sending an expedition to wreck the Jewish state then existing in S. Arabia, and reducing that country to a state of vassalage: the king is styled in Ethiopian chronicles Caleb (Kaleb), in Greek and Arabic documents El-Esbaha. In the 7th century a successor to this king, named Abraha or Abraham, gave refuge to the persecuted followers of Mahomet at the beginning of his career (see Arabia: *History, ad init.*). A few more names of kings occur on coins, which were struck in Greek characters till about A.D. 700, after which time that language seems definitely to have been displaced in favour of Ethiopic or Geez: the condition of the script and the coins renders them all difficult to identify with the names preserved in the native lists, which are too fanciful and mutually contradictory to furnish of themselves even a vestige of history. For the period between the rise of Islam and the beginning of the modern history of Abyssinia there are a few notices in Arabic writers; so we have a notice of a war between Ethiopia and Nubia about 687 (C.C. Rossini in *Giorn. Soc. Asiat. Ital.* x. 141), and of a letter to George king of Nubia from the king of Abyssinia some time between 978 and 1003, when a Jewish queen Judith was oppressing the Christian population (I. Guidi, *ibid.* iii. 176, 7).

The Abyssinian chronicles, it may be noted, attribute the foundation of the kingdom to Menelek (or Ibn el-Hakim), son of Solomon and the queen of Sheba. The Axumite or Menelek dynasty was driven from northern Abyssinia by Judith, but soon after another Christian dynasty, that of the Zagués, obtained power. In 1268 the reigning prince abdicated in favour of Yekūnō Amlāk. king of Shoa, a descendant of the monarch overthrown by Judith (see Abyssinia).

See A. Dillman, *Die Anfänge des axumitischen Reiches* (Berlin, 1879); E. Drouin, *Revue archéol.* xliv. (1882); T. Mommsen, *Geschichte der römischen Provinzen*, chap. xiii.; W. Dittenberger, *Orientis Graeci Inscriptiones selectae*, Nos. 199, 200; Littmann u. Kroncker, *Vorbericht der deutschen Aksum-Expedition* (Berlin, 1906), and Littman's subsequent researches.

Ethiopic Literature

The employment of the Geez or Ethiopic language for literary purposes appears to have begun no long time before the introduction of Christianity into Abyssinia, and its pagan period is represented by two Axumite inscriptions (published by D.H. Müller in J.T. Bent's *Sacred City of the Ethiopians*, 1893), and an inscription at Matara (published by C.C. Rossini, *Rendiconti Accad. Lincei*, 1896). As a literary language it survived its use as a vernacular, but it is unknown at what time it ceased to be the latter. In Sir W. Cornwallis Harris's *Highlands of Aethiopia* (1844) there is a list of rather more than 100 works extant in Ethiopic; subsequent research has chiefly brought to light fresh copies of the same works, but it has contributed some fresh titles. A conspectus of all the MSS. known to exist in Europe (over 1200 in number) was published by C.C. Rossini in 1899 (*Rendiconti Accad. Lincei*, ser. v. vol. viii.); of these the largest collection is that in the British Museum, but others of various sizes are to be found in the chief libraries of Europe. R.E. Littmann (in the *Zeitschrift für Assyriologie*, xv. and xvi.) describes two collections at Jerusalem, one of which contains 283 MSS.; and Rossini (Rendiconti, 1904) a collection of 35 MSS. belonging to the Catholic mission at Cheren. Other collections exist in Abyssinia, and many MSS. are in private hands. In 1893 besides portions of the Bible some 40 Ethiopic books had been printed in Europe (enumerated in L. Goldschmidt's *Bibliotheca Aethiopica*), but many more have since been published.

Geez literature is ordinarily divided into two periods, of which the first dates from the establishment of Christianity in the 5th century, and ends somewhere in the 7th; the second from the re-establishment of the Salomonic dynasty in 1268, continuing to the present time. It consists chiefly of translations, made in the first period from Greek, in the second from Arabic. It has no authors of the first or even of the second rank. Its character as a sacred and literary language is due to its translation of the Bible, which in the ordinary enumeration is made to contain 81 books, 46 of the Old Testament, and 35 of the New. These figures are most probably obtained by adding to the ordinary canonical books *Maccabees, Tobit, Judith, Wisdom, Ecclesiasticus, Baruch, Jubilees, Enoch*, the *Ascension of Isaiah, Ezra IV., Shepherd of Hermas, the Synodos* (Canons of the Apostles), the *Book of Adam*, and *Joseph Ben Gorion*. For the distinction between canonical and apocryphal appears to be unknown to the Ethiopic Church, whose chief service to Biblical literature consists in its preservation of various apocryphal works which other parts of Christendom have lost or possess only in an imperfect form (see Enoch; Jubilees, Book of, &c.). It should be observed that the *Maccabees* of the Ethiopic Bible is an entirely different work from the books of that name included in the Septuagint, of which, however, the Abyssinians have a recent version made from the Vulgate; specimens of their own *Maccabees* have been published by J. Horovitz in the *Zeitschrift für Assyriologie*, vol. xx. The MSS. of the Biblical books vary very much, and none of them can claim any great antiquity; the oldest extant MS. of the four Books of Kings appears to be one in the Museo Borgiano, presented by King Amda Sion (1314) to the Virgin Mary in Jerusalem (described by N. Roupp, *ibid.* xvi. 296-342). Hence P. de Lagarde supposed the Ethiopic version to have been made from the Arabic, which indeed is in accordance with a native tradition. This opinion is held by few; C.F.A. Dillman distinguished in the case of the Old Testament three classes of MSS., a *versio antiqua*, made from the Septuagint (probably in the Hesychian text), a class revised from Greek MSS., and a class revised from the Hebrew (probably through the medium of an Arabic version). An examination of ten chapters of St Matthew by L. Hackspill (*ibid.* vol. xi.) led to the result that the Ethiopic version of the Gospels was made about A.D. 500, from a Syro-occidental text, and that this original translation is represented by Cod. Paris. Aeth. 32; whereas most MSS. and all printed editions contain a text influenced by the Alexandrian Vulgate, and show traces of Arabic. Rossini (*ibid.* x. 232) has made it probable that the Abba Salāmā, whom the native tradition identifies with Frumentius, evangelist of Abyssinia, to whom the translation of the Bible was ascribed, was in reality a Metropolitan of the early 14th century, who revised the corrupt text then current. Of the ancient translation the latest book is said to be Ecclesiasticus, translated in the year 678. The New Testament has been published repeatedly (first in Rome, 1548-1549; some letters about its publication were edited by I. Guidi in the *Archivio della Soc. Rom. di Storia Patria*, 1886), and C.F.A. Dillmann edited a critical text of most of the Old Testament and Apocrypha, but did not live to complete it; portions have been edited by J. Bachmann and others.

Other translations thought to belong to the first period are the *Sher'ata Makhbār*, ascribed to S. Pachomius; the *Kerilos*, a collection of homilies and tracts, beginning with Cyril of Alexandria *De recta fide*; and the *Physiologus*, a fanciful work on Natural History (edited by F. Hommel, Leipzig, 1877).

Of the works belonging to the second period much the most important are those which deal with Abyssinian history. A court official, called *sahāfē te'ezāzenet* (secretary), having under him a staff of scribes, was employed to draw up the public annals year by year; and on these official compositions the Abyssinian histories are based. The earliest part of the Axum chronicle preserved is that recording the wars of Amda Sion (1314-1344) against the Moslems; it is doubtful, however, whether even this exists in its original form, as some scholars think; according to its editor (J. Perruchon in the *Journ. Asiat.* for 1889) it is preserved in a recension of the time of King Zar'a Ya'kūb. Under King Lebna Dengel (1508-1540) the annals of his four predecessors, Zar'a Ya'kūb, Baeda Maryam, Eskender and Na'od (1434-1508) were drawn up; those of the first two were published by J. Perruchon (Paris, 1893); in the *Journ. Asiat.*

for 1894 the same scholar published a further fragment of the history of Baeda Maryam, written by the tutor to the king's children, and the history of Eskender, Amda Sion II. and Na'od as compiled in Lebna Dengel's time. The history of Lebna Dengel was published by the same scholar (*Journ. Semit.* i. 274) and Rossini (*Rendiconti*, 1894, v. p. 617); that of his successor Claudius (1540-1559) by Conzelmann (Paris, 1895); that of his successor Minas (1559-1563) by F.M.E. Pereira (Lisbon, 1888); those of the three following kings, Sharsa Dengel, Zā Dengel, and Ya'kūb, by Rossini (*Rendiconti*, 1893). The history of the next king Sysenius (1606-1632) by Abba Meherka Dengel and Tekla Shelase was edited by Pereira (Lisbon, 1892); the chronicles of Joannes I., Iyasu I. and Bakaffa (1682-1730) by I. Guidi, with a French translation (Paris, 1903-1905); all are contemporary, and the names of the chroniclers of the last two kings are recorded. Besides these we have the partly fabulous chronicle of Lalibela (of uncertain date, but before the Salomonian dynasty was restored), edited by Perruchon (Paris, 1892); and a brief chronicle of Abyssinia, drawn up in the reign of Iyasu II. (1729-1753), embodying materials abridged, but often unaltered, was published by R. Basset, in the *Journ. Asiat.* for 1882 (cf. Rossini in the *Rendiconti*, 1893-1894, p. 668), and has since formed the basis for Abyssinian history. Many compilations of the sort exist in MS. in libraries, and great praise is bestowed on the one which E. Rüppell, when travelling in Abyssinia, ordered to be drawn up for his use. It is now in the collection of his MSS. at Frankfurt. Ethiopic scholars speak of a special "historical style" which comes from the mixture of the styles of different periods, and the admixture of Amharic phrases and idioms. The historian of the wars of Amda Sion is credited with some literary merit; most of the chroniclers have little.

The remaining literature of the second period is thought to begin somewhat earlier than these chronicles. To the time of King Yekūnō Amlāk (1268-1283) the historical romance called *Kebra Nagaset* (Glory of Kings) is assigned by its editor, C. Bezold (Bavarian Academy, 1904); other scholars gave it a somewhat later date. Its purpose is to glorify the Salomonian dynasty, whence, in spite of a colophon which declares it to be a translation, it was regarded as an original work; since, however, it shows evident signs of having been translated from Arabic, Bezold supposes that its author, Ishāk, was an immigrant whose native language was Arabic, in which therefore he would naturally write the first draft of his book. To the time of Yagbea Sion (*ob.* 1294) belongs the *Vision of the Prophet Habakkuk in Kartasā*, as also the works of Abba Salāmā, regarded as the founder of the Ethiopic renaissance, one of whose sermons is preserved in a Cheren MS. With his name are connected the *Acts of the Passion*, the *Service for the Dead* and the translation of Philexius, *i.e.* Philoxenus. King Zar'a Ya'kūb composed or had composed for him as many as seven books; the most important of these is the *Book of Light* (Mashafa Berhān), paraphrased as *Kirchenordnung*, by Dillmann, who gave an analysis of its contents (*Über die Regierung des Königs Zar'a Ya'kob*, Berl. Acad., 1884). He also organized the compilation of the Miracles of the Virgin Mary, one of the most popular of Ethiopic books; a magnificent edition was printed by E.W. Budge in the Meux collection (London, 1900). In the same reign the Arabic chronicle of al-Makīn was translated into Geez. Under Lebna Dengel (ob. 1540), besides the above-mentioned collection of chronicles, we hear of the translation from the Arabic of the history and martyrdom of St George, the Commentary of J. Chrysostom on the Epistle to the Hebrews, and the ascetic works of J. Saba called *Aragāwī manfasāwī*. Under Claudius (1540-1559) Maba Sion is said to have translated from the Arabic *The Faith of the Fathers*, a vast compilation, including the *Didascalia Apostalorum* (edited by Platt, London, 1834), and the *Creed of Jacob Baradaeus* (published by Cornill, *ZDMG*. xxx. 417-466), and to the same reign belong the *Book of Extreme Unction* (*Mashafa Kandīl*), and the religious romance *Barlaam et Joasaph* also paraphrased from the Arabic (partly edited by A. Zotenberg in *Notices et Extraits*, vol. xxviii.). *The Confession of Faith* of King Claudius has been repeatedly printed. The reign of Sharsa Dengel (*ob.* 1595) was marked by many literary monuments, such as the religious and controversial compilation called *Mazmura Chrestos*, and the translation, by a certain Salik, of the religious encyclopaedia (Mashafa Hāiā) of the monk Nikon; an Arab merchant from Yemen, who took on conversion the name Anbākōm (Habakkuk), translated a number of books from the Arabic. Under Ya'kūb (*ob.* 1605) the valuable chronicle of John of Nikiou was translated from Arabic (edited by A. Zotenberg with French translation in *Notices et extraits*, vol. xxiv.). Under John, about 1687, the *Spiritual Medicine* of Michael, bishop of Adtrib and Malig, was translated. The literature that is not accurately dated consists largely of liturgies, prayers and hymns; Ethiopic poetry is chiefly, if not entirely, represented by the last of these, the most popular work of the kind being an ode in praise of the Virgin, called *Weddase Maryam* (edited by K. Fries, Leipzig, 1892). Various hymn-books bear the names *Degua, Zemmare* and *Mawas'et* (Antiphones); there is also a biblical history in verse called *Mashafa Madbal* or *Mestīra Zamān*. Homilies also exist in large numbers, both original and translated, sometimes after the Arabic fashion in rhymed prose. Hagiology is naturally an important department in Ethiopic literature. In the great collection called *Synaxar* (translated originally from Arabic, but with large additions) for each day of the year there is the history of one or more saints; an attempt has been made by H. Dünsing (1900) to derive some actual history from it. Many texts containing lives of individual saints have been issued. Such are those of Maba Sion and Gabra Chrestos, edited by Budge in the Meux collection (London, 1899); the Acts of S. Mercurius, of which a fragment was edited by Rossini (Rome, 1904); the unique MS. of the original, one of the most extensive works in the Geez language, was burned by thieves who set fire to the editor's house. The same scholar began a series of *Vitae Sanctorum antiquiorum*, while *Monumenta Aethiopiae hagiologica* and *Vitae Sanctorum indigenarum* have been edited by B. Turaiev (Leipzig and St Petersburg, 1902, and Rome, 1905). Other lives have been edited by Pereira, Guidi, &c. Similar in historical value to these works is the *History of the Exploits of Alexander*, of which various recensions have been edited by Budge (London, 1895). See further Alexander the Great, section on the legends, *ad fin*.

Of Law the most important monument is the *Fatha Nagaset* (Judgment of Kings), of which an official edition was issued by I. Guidi (Rome, 1899), with an Italian translation; it is a version probably made in the early 16th century of the Arabic code of Ibn 'Assal, of the 12th century, whose work, being meant for Christians living under Moslem rule, was not altogether suitable for an independent Christian kingdom; yet the need for such a code made it popular and authoritative in Abyssinia. The translator was not quite equal to his task, and the Brit. Mus. MS. 800 exhibits an attempt to correct it from the original. 849

Science can scarcely be said to exist in Geez literature, unless a medical treatise, of which the British Museum possesses a copy, comes under this head. Philosophy is mainly represented by mystical commentaries on Scripture, such as the *Book of the Mystery of Heaven and Earth*, by Ba-Hailu Michael, probably of the 15th century, edited by Perruchon and Guidi (Paris, 1903). There is, however, a translation of the Book of the Wise Philosophers, made by Michael, son of Abba Michael, consisting of various aphorisms; specimens have been edited by Dillmann in his Chrestomathy, and J. Cornill (Leipzig, 1876). There is also a translation of *Secundus the Silent*, edited by Bachmann (Berlin, 1888). Far more interesting than these is the treatise of Zar'a Ya'kūb of Axum, composed in the year 1660 (edited by Littman, 1904), which contains an endeavour to evolve rules of life according to nature. The author reviews the codes of Moses, the Gospel and the Koran, and decides that all contravene the obvious intentions of the Creator. He also gives some details of his own life and his occupation of scribe. A less original treatise by Walda Haywat accompanies it. Epistolography is represented by the diplomatic correspondence of some of the kings with the Portuguese and Spanish courts; some documents of this sort have been edited by C. Beccari, *Documenti inediti per la storia d' Etiopia* (Rome, 1903); lexicography, by the vocabulary called *Sawāsew*. The first Ethiopic book printed

was the Psalter (Rome, 1513), by John Potken of Cologne, the first European who studied the language.

See C.C. Rossini, “Note per la storia letteraria Abissina,” in *Rendiconti della R. Accad. dei Lincei* (1899); Fumagalli, *Bibliografia Etiopica* (1893); Basset, *Études sur l’histoire de l’Éthiopie* (1882); Catalogues of various libraries, especially British Museum (Wright), Paris (Zotenberg), Oxford and Berlin (Dillmann), Frankfurt (Goldschmidt). Plates illustrating Ethiopic palaeography are to be found in Wright’s Catalogue; an account of the illustrations in Ethiopic MSS. is given by Budge in his *Life of Maba Sion*; and a collection of inscriptions in the church of St Stefano dei Mori, in Rome, by Gallina in the *Archivio della Soc. Rom. di Storia Patria* (1888).

(D. S. M.*)

1 For the topography and later history see Sudan and Abyssinia.

ETHNOLOGY and **ETHNOGRAPHY** (from the Gr. ἔθνος, race, and λόγος, science, or γράφειν, to write), sciences which in their narrowest sense deal respectively with man as a racial unit (*mankind*), *i.e.* his development through the family and tribal stages into national life, and with the distribution over the earth of the races and nations thus formed. Though the etymology of the words permits in theory of this line of division between ethnology and ethnography, in practice they form an indivisible study of man’s progress from the point at which anthropology (*q.v.*) leaves him.

Ethnology is thus the general name for investigations of the widest character, including subjects which in this encyclopaedia are dealt with in detail under separate headings, such as Archaeology, Art (and allied articles), Commerce, Geography (and the headings for countries and tribes), Family, Name, Ethics, Law, Mythology, Folk-Lore (and allied articles), Philology (and allied articles), Agriculture, Architecture, Religion, Sociology, &c., &c. It covers generally the whole history of the material and intellectual development of man, as it has passed through the stages of (*a*) hunting and fishing, (*b*) sheep and cattle tending, (*c*) agriculture, (*d*) industry. It investigates his food, his weapons, tools and implements, his housing, his social, economic and commercial organization, forms of government, language, art, literature, morals, superstitions and religious systems. In this sense ethnology is the older term for what now is called sociology. At the present day the progress of research has in practice, however, restricted the “ethnologist” as a rule to the study of one or more branches only of so wide a subject, and the word “ethnology” is used with a somewhat vague meaning for any ethnological study; each country or nation has thus its own separate ethnology. It becomes more convenient, therefore, to deal with the ethnology as a special subject in each case. “Ethnography,” in so far as it has a distinctive province, is then conveniently restricted to the scientific mapping out of different racial regions, nations and tribes; and it is only necessary here to refer the reader to the separate articles on continents, &c., where this is done. The only fundamental problem which need here be referred to is that of the whole question of the division of mankind into separate races at all, which is consequential on the earlier problem (dealt with in the article Anthropology) as to man’s origin and antiquity.

If we assume that man existed on the earth in remote geological time, the question arises, was this pleistocene man specifically one? What evidence is there that he represented in his different habitats a series of varieties of one species rather than a series of species? The evidence is of three kinds, (1) anatomical, (2) physiological, (3) cultural and psychical.

1. Dr Robert Munro, in his address to the Anthropological section of the British Association in 1893, said: “All the osseous remains of man which have hitherto been collected and examined point to the fact that, during the larger portion of the quarternary period, if not, indeed, from its very commencement, he had already acquired his human characteristics.” By “characteristics” is here meant those anatomical ones which distinguish man from other animals, not the physical criteria of the various races. Do, then, these anatomical characteristics of pleistocene man show such differences among themselves and between them and the types of man existing to-day as to justify the assumption that there has ever been more than one species of man?

The undoubted “osseous remains” of pleistocene man are few. Burial was not practised, and the few bones found are for the most part those which have by mere chance been preserved in caves or rock-shelters. Of these the three chief “finds,” in order of probable age, are the Trinil (Java) brain-cap, the lowest human skull yet described, characterized by depressed cranial arch, with a cephalic index of 70; the Neanderthal (Germany) skull, remarkable for its flat retreating curve with an index of 73-76; and the two nearly perfect skeletons found at Spy (Belgium), the skulls of which exhibit enormous brow ridges with cranial indices of 70 and 75. All these skulls, taken in conjunction with other well-authenticated human remains such as those found at La Naulette (Belgium), Shipka (Balkan Peninsula), Olmo (Italy), Predmert (Bohemia) and in Argentina and Brazil, make it possible to reconstruct anatomically the varying types of pleistocene man, and to establish the fact that in essential features the same primitive type has persisted through all time. The skeleton bones show differences so slight as to admit of pathological or other explanation. What Professor Kollmann says of man to-day was true in the remotest ages. Referring to Cuvier’s statement that from a single bone it is possible to determine the very species to which an animal belongs, he says, “Precisely on this ground I have mainly concluded that the existence of several human species cannot be recognized, for we are unacquainted with a single tribe from a single bone of which we might with certainty determine to what species it belonged.” Such differences as the bones exhibit are progressive modifications towards the higher neolithic and modern types, and are in themselves entirely incapable of supporting the theory that the owner of the Trinil skull, say, and the “man of Spy” belonged to separate species. All these “osseous remains” belong to the palaeolithic period, and from the cranial indices it is thus clear that palaeolithic man was long-headed. Neolithic man is, speaking generally, round-headed, and it has been urged that round-headedness is entirely synchronous with the neolithic age, and that the long-headed palaeolithic species of mankind gave place all at once to the round-headed neolithic species. The point thus raised involves the physiological as well as, indeed more than, the anatomical proofs of man’s specific unity.

2. All physiologists agree that species cannot breed with species. Darwin himself laid it down as a fundamental principle. If then the palaeolithic and neolithic types represented separate species, they would be found to remain distinct through all time. This is not the case. There is evidence that extreme dolichocephaly continued into neolithic times, and was only slowly modified into brachycephaly. In the neolithic caves of Italy, Austria, Belgium, and the barrows of Great Britain, skulls of all types are found. The later cave-dwellers and early dolmen builders of Europe were at first long-headed, then of medium type, and finally in some places exclusively round-headed. In England the round-heads appear to be synchronous with the metal age, as shown by the contents of the barrows, and, as on the

continental mainland, the two types gradually blended. Permanent fertility between them in prehistoric Europe is thus proved. And this is the case throughout the habitable globe. An examination of the osseous remains of American man supports the view that the human species has not varied since quaternary times. The palaeolithic type is to be found among modern European populations. Certain skulls from South Australia seem cast in almost the same mould as the Neanderthal. After thousands of years nearly pure descendants of quaternary man are found among living races. And man's mutual fertility in prehistoric is repeated throughout historic times: strict racial purity is almost unknown. Thus the unity of the species man is proved by the test of fertility.

3. The works of early man everywhere present the most startling resemblance. The palaeolithic implements all over the globe are all of one pattern. "The implements in distant lands," writes Sir J. Evans, "are so identical in form and character with the British specimens that they might have been manufactured by the same hands.... On the banks of the Nile, many hundreds of feet above its present level, implements of the European types have been discovered; while in Somaliland, in an ancient river-valley at a great elevation above the sea, Sir H.W. Seton-Karr has collected a large number of implements formed of flint and quartzite, which, judging from their form and character, might have been dug out of the drift-deposits of the Somme and the Seine, the Thames or the ancient Solent." This identity in the earliest arts is repeated in the later stages of man's culture; his arts and crafts, his manners and customs, exhibit a similarity so close as to compel the presumption that all the races are but divisions of one family. But perhaps the greatest psychical proof of man's specific unity is his common possession of language. Theodore Waitz writes: "Inasmuch as the possession of a language of regular grammatical structure forms a fixed barrier between man and brute, it establishes at the same time a near relationship between all people in psychical respects.... In the presence of this common feature of the human mind, all other differences lose their import" (*Anthropology*, p. 273). As Dr J.C. Prichard urged, "the same inward and mental nature is to be recognized in all races of men. When we compare this fact with the observations, fully established, as to the specific instincts and separate psychical endowments of all the distinct tribes of sentient beings in the Universe we are entitled to draw confidently the conclusion that all human races are of one species and one family." It has been argued that stock languages imply stock races, but this assumption is untenable. There are some fifty irreducible stock languages in the United States and Canada, yet, taking into consideration the physical and moral homogeneity of the American Indian races, he would be a reckless theorist who held that there were therefore fifty separate human species. If it were so, how have they descended? There are no anthropoid apes in America, none of the ape family higher than the Cebidae, from which it is impossible to trace men. Again, in Australia there is certainly one stock language, yet there are not even Cebidae. In Caucasia, there are many distinct forms of speech, yet all the peoples belong to the Caucasic division of mankind.

Man, then, may be regarded as specifically one, and thus he must have had an original cradle-land, whence the peopling of the earth was brought about by migration. The evidence tends to prove that the world was peopled by a generalized proto-human form. Each division of mankind would thus have had its pleistocene ancestors, and would have become differentiated into races by the influence of climatic and other surroundings. As to the man's cradle-land there have been many theories, but the weight of evidence is in favour of Indo-Malaysia.

Of all animals man's range alone coincides with that of the habitable globe, and the real difficulty of the "cradle-land" theory lay in explaining how the human race spread to every land. This problem has been met by geology, which proves that the earth's surface has undergone great changes since man's appearance, and that continents, long since submerged, once existed, making a complete land communication from Indo-Malaysia. The evidence for the Indo-African continent has been summed up by R.D. Oldham,[1] and proofs no less cogent are available of the former existence of an Eurafrican continent, while the extension of Australia in the direction of New Guinea is more than probable. Thus the ancestor of man was free to move in all directions over the eastern hemisphere. The western hemisphere was more than probably connected with Europe and Asia, in Tertiary times, by a continent, the existence of which is evidenced by a submarine bank stretching from Scotland through the Faeroes and Iceland to Greenland, and on the other side by continuous land at what is now the Behring Straits.

Acclimatization has been urged as an argument against the cradle-land theory, but the peopling of the globe took place in inter-Glacial if not pre-Glacial ages, when the climate was much milder everywhere, and thus pleistocene man met no climatic difficulties in his migrations.

Probably before the close of Palaeolithic times all the primary divisions of man were specialized in their several habitats by the influence of their surroundings. The profound effect of climate is seen in the relative culture of races. Thus, tropical countries are inhabited by savage or semi-savage peoples, while the higher races are confined to temperate zones. The primary divisions of mankind, Ethiopic, Mongolic, Caucasic, were certainly differentiated in neolithic times, and these criteria had almost certainly occurred not consecutively in one area but simultaneously in several areas. A Negro was not metamorphosed into a Mongol, nor the latter into a White, but the several semi-simian precursors under varying environments developed into generalized Negro, generalized Mongol, generalized Caucasian.

Taking, then, these three primary divisions as those into which it is most reasonable broadly to divide mankind they may be analysed as to their racial constituents and their habitats as follows:—

1. Caucasic or White Man is best divided, following Huxley, into (*a*) Xanthochroi or "fair whites" and (*b*) Melanochroi or "dark whites." (*a*) The first—tall, with almost colourless skin, blue or grey eyes, hair from straw colour to chestnut, and skulls varying as to proportionate width—are the prevalent inhabitants of Northern Europe, and the type may be traced into North Africa and eastward as far as India. On the south and west it mixes with that of the Melanochroi and on the north and east with that of the Mongoloids. (*b*) The "dark whites" differ from the fair whites in the darkening of the complexion to brownish and olive, and of the eyes and hair to black, while the stature is somewhat lower and the frame lighter. To this division belong a large part of those classed as Celts, and of the populations of Southern Europe, such as Spaniards, Greeks and Arabs, extending as far as India, while endless intermediate grades between the two white types testify to ages of intermingling. Besides these two main types, the Caucasic division of mankind has been held with much reason to include such aberrant types as the brown Polynesian races of the Eastern Pacific, Samoans, Hawaiians, Maoris, &c., the proto-Malay peoples of the Eastern archipelago, sometimes termed Indonesians, represented by the Dyaks of Borneo and the Battaks of Sumatra, the Todas of India and the Ainus of Japan.

2. Mongolic or Yellow Man prevails over the vast area lying east of a line drawn from Lapland to Siam. His physical characteristics are a short squat body, a yellowish-brown or coppery complexion, hair lank, straight and black, flat small nose, broad skull, usually without prominent brow-ridges, and black oblique eyes. Of the typical Mongolic races the chief are the Chinese, Tibetans, Burmese, Siamese; the Finnic group of races occupying Northern Europe, such as Finns, Lapps, Samoyedes and Ostyaks, and the Arctic Asiatic group represented by the Chukchis and Kamchadales; the Tunguses, Gilyaks and Golds north of, and the Mongols proper west of, Manchuria; the pure Turkic

peoples and the Japanese and Koreans. Less typical, but with the Mongolic elements so predominant as to warrant inclusion, are the Malay peoples of the Eastern archipelago. Lastly, though differentiated in many ways from the true Mongol, the American races from the Eskimo to the Fuegians must be reckoned in the Yellow division of mankind.

3. Negroid or Black Man is primarily represented by the Negro of Africa between the Sahara and the Cape district, including Madagascar. The skin varies from dark brown to brown-black, with eyes of the same colour, and hair usually black and always crisp or woolly. The skull is narrow, with orbital ridges not prominent, the jaws protrude, the nose is flat and broad, and the lips thick and everted. Two important families are classed in this division; some authorities hold, as special modifications of the typical Negro to-day, others as actually nearer the true generalized Negroid type of neolithic times. First are the Bushman of South Africa, diminutive in stature and of a yellowish-brown colour: the neighbouring Hottentot is believed to be the result of crossing between the Bushman and the true Negro. Second are the large Negrito family, represented in Africa by the dwarf races of the equatorial forests, the Akkas, Batwas, Wochuas and others, and beyond Africa by the Andaman Islanders, the Aetas of the Philippines, and probably the Senangs and other aboriginal tribes of the Malay Peninsula. The Negroid type seems to have been the earliest predominant in the South Sea islands, but it is impossible to say certainly whether it is itself derived from the Negrito, or the latter is a modification of it, as has been suggested above. In Melanesia, the Papuans of New Guinea, of New Caledonia, and other islands, represent a more or less Negroid type, as did the now extinct Tasmanians.

Excluded from this survey of the grouping of Man are the aborigines of Australia, whose ethnical affinities are much disputed. Probably they are to be reckoned as Dravidians, a very remote blend of Caucasic and Negro man. For a detailed discussion of the branches of these three main divisions of Man the reader must refer to articles under race headings, and to Negro; Negritos; Mongols; Malays; Indians, North American; Australia; Africa; &c., &c.

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1 Writing in the *Geographical Journal*, March 1894, on "Evolution of Indian Geography," he says: "The plants of Indian and African coal measures are without exception identical, and among the few animals which have been found in India one is indistinguishable from an African species, another is closely allied, and both faunas are characterized by the very remarkable genus group of reptiles comprising the Dicynodon and other allied forms (see *Manual of Geology of India*, 2nd ed. p. 203). These, however, are not the only analogies, for near the coast of South Africa there are developed a series of beds containing the plant fossils in the lower part and marine shells in the upper, known as the Uitenhage series, which corresponds exactly to the small patches of the Rajmahál series along the east coast of India. The few plant forms found in the lower beds of Africa are mostly identical with or closely allied to the Rajmahál species, while of the very few marine shells in the Indian outcrops, which are sufficiently well preserved for identification, at least one species is identical with an African form. These very close relationships between the plants and animals of India and Africa at this remote period appear inexplicable unless there were direct land communications between them over what is now the Indian Ocean. On the east coast of India in the Khasi Hills, and on the coast of South Africa, the marine fossils of late Jurassic and early cretaceous age are largely identical with, or very closely allied to each other, showing that they must have been inhabitants of one and the same great sea. In western India the fossils of the same age belong to a fauna which is found in the north of Madagascar, in northern and eastern Africa, in western Asia, and ranges into Europe—a fauna differing so radically from that of the eastern exposures that only a few specimens of world-wide range are found in both. Seeing that the distances between the separate outcrops containing representatives of the two faunas are much less than those separating the outcrops from the nearest ones of the same fauna, the only possible explanation of the facts is that there was a continuous stretch of dry land connecting South Africa and India and separating two distinct marine zoological provinces."

ETHYL, in chemistry, the name given to the alkyl radical C_2H_5. The compounds containing this radical are treated under other headings; the hydride is better known as ethane, the alcohol, C_2H_5OH, is the ordinary alcohol of commerce, and the oxide $(C_2H_5)_2O$ is ordinary ether.

ETHYL CHLORIDE, or Hydrochloric Ether, C_2H_5Cl, a chemical compound prepared by passing dry hydrochloric acid gas into absolute alcohol. It is a colourless liquid with a sweetish burning taste and an agreeable odour. It is extremely volatile, boiling at 12.5° C. (54.5° F.), and is therefore a gas at ordinary room temperatures; it is stored in glass tubes fitted with screw-capped nozzles. The vapour burns with a smoky green-edged flame. It is largely used in dentistry and slight surgical operations to produce local anaesthesia (*q.v.*), and is known by the trade-name kelene. More volatile anaesthetics such as anestile or anaesthyl and coryl are produced by mixing with methyl chloride; a mixture of ethyl and methyl chlorides with ethyl bromide is known as somnoform.

ETHYLENE, or Ethene, C_2H_4, or $H_2C{:}CH_2$, the first representative of the series of olefine hydrocarbons, is found in coal gas. It is usually prepared by heating a mixture of ethyl alcohol and sulphuric acid. G.S. Newth (*Jour. Chem. Soc.*, 1901, 79, p. 915) obtains a purer product by dropping ethyl alcohol into syrupy phosphoric acid (sp. gr. 1.75) warmed to 200° C., subsequently raising the temperature to 220° C. It can also be obtained by the action of sodium on ethylidene chloride (B. Tollens, *Ann.*, 1866, 137, p. 311); by the reduction of copper acetylide with zinc dust and ammonia; by heating ethyl bromide with an alcoholic solution of caustic potash; by passing a mixture of carbon

bisulphide and sulphuretted hydrogen over red-hot copper; and by the electrolysis of a concentrated solution of potassium succinate,

$$(CH_2{\cdot}CO_2K)_2 + 2H_2O = C_2H_4 + 2CO_2 + 2KOH + H_2.$$

It is a colourless gas of somewhat sweetish taste; it is slightly soluble in water, but more so in alcohol and ether. It can be liquefied at −1.1° C., under a pressure of 42½ atmos. It solidifies at −181° C. and melts at −169° C. (K. Olszewski); it boils at −105° C. (L.P. Cailletet), or −102° to −103° C. (K. Olszewski). Its critical temperature is 13° C., and its specific gravity is 0.9784 (air = 1). The specific gravity of liquid ethylene is 0.386 (3° C.). Ethylene burns with a bright luminous flame, and forms a very explosive mixture with oxygen. For the combustion of ethylene see Flame. On strong heating it decomposes, giving, among other products, carbon, methane and acetylene (M. Berthelot, *Ann.*, 1866, 139, p. 277). Being an unsaturated hydrocarbon, it is capable of forming addition products, *e.g.* it combines with hydrogen in the presence of platinum black, to form ethane, C_2H_6, with sulphur trioxide to form carbyl sulphate, $C_2H_4(SO_3)_2$, with hydrobromic and hydriodic acids at 100° C. to form ethyl bromide, C_2H_5Br, and ethyl iodide, C_2H_5I, with sulphuric acid at 160-170° C. to form ethyl sulphuric acid, $C_2H_5{\cdot}HSO_4$, and with hypochlorous acid to form glycol chlorhydrin, $Cl{\cdot}CH_2{\cdot}CH_2{\cdot}OH$. Dilute potassium permanganate solution oxidizes it to ethylene glycol, $HO{\cdot}CH_2{\cdot}CH_2{\cdot}OH$, whilst fuming nitric acid converts it into oxalic acid. Several compounds of ethylene and metallic chlorides are known; *e.g.* ferric chloride in the presence of ether at 150° C. gives $C_2H_4{\cdot}FeCl_3{\cdot}2H_2O$ (J. Kachtler, *Ber.*, 1869, 2, p. 510), while platinum bichloride in concentrated hydrochloric acid solution absorbs ethylene, forming the compound $C_2H_4{\cdot}PtCl_2$ (K. Birnbaum, *Ann.*, 1868, 145, p. 69).

ÉTIENNE, CHARLES GUILLAUME (1778-1845), French dramatist and miscellaneous writer, was born near Saint Dizier, Haute Marne, on the 5th of January 1778. He held various municipal offices under the Revolution and came in 1796 to Paris, where he produced his first opera, *Le Rêve*, in 1799, in collaboration with Antoine Frédéric Gresnick. Although Étienne continued to write for the Paris theatres for twenty years from that date, he is remembered chiefly as the author of one comedy, which excited considerable controversy. *Les Deux Gendres* was represented at the Théâtre Français on the 11th of August 1810, and procured for its author a seat in the Academy. A rumour was put in circulation that Étienne had drawn largely on a manuscript play in the imperial library, entitled *Conaxa, ou les gendres dupés*. His rivals were not slow to take up the charge of plagiarism, to which Étienne replied that the story was an old one (it existed in an old French *fabliau*) and had already been treated by Alexis Piron in *Les Fils ingrats*. He was, however, driven later to make admissions which at least showed a certain lack of candour. The bitterness of the attacks made on him was no doubt in part due to his position as editor-in-chief of the official *Journal de l'Empire*. His next play, *L'Intrigante* (1812), hardly maintained the high level of Les Deux Gendres; the patriotic opera *L'Oriflamme* and his lyric masterpiece *Joconde* date from 1814. Étienne had been secretary to Hugues Bernard Maret, duc de Bassano, and in this capacity had accompanied Napoleon throughout his campaigns in Italy, Germany, Austria and Poland. During these journeys he produced one of his best pieces, *Brueys et Palaprat* (1807). During the Restoration Étienne was an active member of the opposition. He was seven times returned as deputy for the department of Meuse, and was in full sympathy with the revolution of 1830, but the reforms actually carried out did not fulfil his expectations, and he gradually retired from public life. Among his other plays may be noted: *Les Deux Mères, Le Pacha de Suresnes*, and *La Petite École des pères*, all produced in 1802, in collaboration with his friend Gaugiran de Nanteuil (1778-1830). With Alphonse Dieudonné Martainville (1779-1830) he wrote an *Histoire du Théâtre Français* (4 vols., 1802) during the revolutionary period. Étienne was a bitter opponent of the romanticists, one of whom, Alfred de Vigny, was his successor and panegyrist in the Academy. He died on the 13th of March 1845.

His *Œuvres* (6 vols., 1846-1853) contain a notice of the author by L. Thiessé.

ETIQUETTE, a term for ceremonial usage, the rules of behaviour observed in society, more particularly the formal rules of ceremony to be observed at court functions, &c., the procedure, especially with regard to precedence and promotions in an organized body or society. Professions, such as the law or medicine, observe a code of etiquette, which the members must observe as protecting the dignity of the profession and preventing injury to its members. The word is French. The O. Fr. *estiquette* or *estiquet* meant a label, or "ticket," the true English derivative. The ultimate origin is Teutonic, from *sticken*, to post up, stick, affix. Cotgrave explains the word in French as a billet for the benefit or advantage of him that receives it, a form of introduction and also a notice affixed at the gate of a court of law. The development of meaning in French from a label to ceremonial rules is not difficult in itself, but, as the *New English Dictionary* points out, the history has not been clearly established.

ETNA (Gr. Αἴτνη, from αἴθω, burn; Lat. *Aetna*), a volcano on the east coast of Sicily, the summit of which is 18 m. N. by W. of Catania. Its height was ascertained to be 10,758 ft. in 1900, having decreased from 10,870 ft. in 1861. It covers about 460 sq. m., and by rail the distance round the base of the mountain is 86 m., though, as the railway in some places travels high, the correct measurement is about 91 m. The height cannot have been very different in ancient times, for the so-called Torre del Filosofo, which is only 1188 ft. below the present summit, is a building of Roman date. The shape is that of a truncated cone, interrupted on the west by the Valle del Bove, a huge sterile abyss, 3 m. wide, bounded on three sides by perpendicular cliffs (2000 to 4000 ft.). Its south-west portion, which is the deepest, was perhaps the original crater. There are also some 200 subsidiary cones, some of them over 3000 ft. high, which have risen over lateral fissures. On the slopes of the mountain there are three distinct zones of vegetation, distinguished by Strabo (vi. p. 273 ff.). The lowest, up to about 3000 ft., is the zone of cultivation, where vegetables, and above them where water is more scanty, vines and olives flourish. Owing to its extraordinary fertility it is densely populated, having 930 inhabitants per sq. m. below 2600 ft., and 3056 inhabitants per sq. m. in the

triangle between Catania, Nicolosi and Acireale. The next zone is the wooded zone, and is hardly inhabited, only a few isolated houses occurring. The lower part of it (up to about 6000 ft.) consists chiefly of forests of evergreen pines (*Pinus nigricans*), the upper (up to about 6800 ft.) of birch woods (*Betula alba*). A few oaks and red beeches occur, while chestnut trees grow anywhere between 1000 and 5300 ft. In the third and highest zone the vegetation is stunted, and there is a narrow zone of sub-Alpine shrubs, but no Alpine flora. In the last 2000 ft. five phanerogamous species only are to be found, the first three of which are peculiar to the mountain: *Senecio Etnensis* (which is found quite close to the crater), *Anthemis Etnensis, Robertsia taraxacoides, Tanacetum vulgare* and *Astragalus siculus*. No trace of animal life is to be found in this zone; for the greater part of the year it is covered with snow, but by the end of summer this has almost all melted, except for that preserved in the covered pits in which it is stored for use for cooling liquids, &c., in Catania and elsewhere. The ascent is best undertaken in summer or autumn. From the village of Nicolosi, 9 m. to the N.W. of Catania, about 7 or 8 hours are required to reach the summit. Thucydides mentions eruptions in the 8th and 5th centuries B.C., and others are mentioned by Livy in 125, 121 and 43 B.C. Catania was overwhelmed in 1169, and many other serious eruptions are recorded, notably in 1669, 1830, 1852, 1865, 1879, 1886, 1892, 1899 and March 1910.

According to Lyell, Etna is rather older than Vesuvius—perhaps of the same geological age as the Norwich Crag. At Trezza, on the eastern base of the mountain, basaltic rocks occur associated with fossiliferous Pliocene clays. The earliest eruptions of Etna are older than the Glacial period in Central and Northern Europe. If all the minor cones and monticules could be stripped from the mountain, the diminution of bulk would be extremely slight. Lyell concluded that, although no approximation can be given of the age of Etna, “its foundations were laid in the sea in the newer Pliocene period.” From the slope of the strata from one central point in the Val del Bue he further concluded that there once existed a second great crater of permanent eruption. The rocks erupted by Etna have always been very constant in composition, viz. varieties of basaltic lava and tuff containing little or no olivine—the rock type known as labradorite. At Acireale the lava has assumed the prismatic or columnar form in a striking manner; at the rock of Aci it is in parts spheroidal. The Grotte des Chèvres has been regarded as an enormous gas-bubble in the lava. The remarkable stability of the mountain appears to be due to the innumerable dikes which penetrate the lava flows and tuff beds in all directions and thus bind the whole mass together.

From the earliest times the mountain has naturally been the subject of legends. The Greeks believed it to be either the mountain with which Zeus had crushed the giant Typhon (so Pindar, Pyth. i. 34 seq.; Aeschylus, *Prometheus Vinctus*, 351 seq.; Strabo xiii. p. 626), or Enceladus (Virgil, *Georg.* i. 471; Oppian, Cyn. i. 273), or the workshop of Hephaestus and the Cyclopes (Cic. *De divin.* ii. 19; cf. Lucil., *Aetna*, 41 seq., Solin, 11). Several Roman writers, on the other hand, attempted to explain the phenomena which it presented by natural causes (*e.g.* Lucretius vi. 639 seq.; Lucilius, *Aetna*, 511 seq.). Ascents of the mountain were not infrequent in those days—one was made by Hadrian.

See Sartorius von Waltershausen, *Atlas des Ätna* (Leipzig, 1880); E. Chaix, *Carta Volcanologica e topographica dell’ Etna* (showing lava streams up to 1892); G. de Lorenzo, *L’Etna* (Bergamo, 1907).

ETNA, a borough of Allegheny county, Pennsylvania, U.S.A., in the western part of the state, on the W. bank of the Allegheny river (about 5 m. from its junction with the Monongahela), and about 2 m. N. of the city of Pittsburg, of which it is a suburb. Pop. (1880) 2334; (1890) 3767; (1900) 5384 (1702 foreign-born); (1910) 5830. It is served by the Pennsylvania railway and by electric lines. Among its industrial establishments are rolling mills, tube and pipe works, furnaces, steel mills, a brass foundry, and manufactories of electrical railway supplies, boxes, asbestos coverings, enamel work and ice. The city’s industrial history dates from 1820, when a small factory for the manufacture of scythes and sickles was set up. Natural gas, piped from Butler county, was early used here as a fuel in the iron mills. Etna, formerly called Steuart’s Town, was incorporated as a borough in 1869.

ETON, a town of Buckinghamshire, England, on the north (left) bank of the river Thames, opposite Windsor, within which parliamentary borough it is situated. Pop. of urban district (1901) 3301. It is famous for its college, the largest of the ancient English public schools. The “King’s College of Our Lady of Eton beside Windsor” was founded by Henry VI. in 1440-1441, and endowed mainly from the revenues of the alien priories suppressed by Henry V. The founder followed the model established by William of Wykeham in his foundations of Winchester and New College, Oxford. The original foundation at Eton consisted of a provost, 10 priests, 4 clerks, 6 choristers, a schoolmaster, 25 poor and indigent scholars, and the same number of poor men or bedesmen. In 1443, however, Henry considerably altered his original plans; the number of scholars was increased to 70, and the number of bedesmen reduced to 13. A connexion was then established, and has been maintained ever since, though in a modified form, between Eton and Henry’s foundation of King’s College, Cambridge. One of the king’s chief advisers was William of Waynflete, who had been master of Winchester College, and was appointed provost of Eton in 1443. Among further alterations to the foundation in this year was the establishment of *commensales* or commoners, distinct from the scholars; and these under the name of “oppidans” now form the principal body of the boys. The college survived with difficulty the unsettled period at the close of Henry’s reign; while Edward IV. curtailed its possessions, and was at first desirous of amalgamating it with the ecclesiastical foundation of St George, Windsor Castle. In 1506 the annual revenue amounted to £652; and through benefactions and the rise in the value of property the college has grown to be very richly endowed. In 1870 commissioners under an act of 1868 appointed the governing body of the college to consist of the provost of Eton, the provost of King’s College, Cambridge, five representatives nominated respectively by the university of Oxford, the university of Cambridge, the Royal Society, the lord chief justice and the masters, and four representatives chosen by the rest of the governing body. By this body the foundation was in 1872 made to consist of a provost and ten fellows (not priests, but merely the members of the governing body other than the provost), a headmaster of the school, and a lower master, at least seventy scholars (known as “collegers”), and not more than two chaplains or conducts. Originally it was necessary that the scholars should be born in England, of lawfully married parents, and be between eight and sixteen years of age; but according to the statutes of 1872 the scholarships are open to all boys who are British subjects, and (with certain limitations as to the exact date of birth) between twelve and fifteen years of age. A number of foundation scholarships for King’s College, Cambridge, are

open for competition amongst the boys; and there are besides several other valuable scholarships and exhibitions, most of which are tenable only at Cambridge, some at Oxford, and some at either university. The teaching embraces the customary range of classical and modern subjects; but until the first half of the 19th century the normal course of instruction remained almost wholly classical; and although there were masters for other subjects, they were unconnected with the general business of the school, and were attended at extra hours.

The school buildings were founded in 1441 and occupied in part by 1443, but the whole original structure was not completed till fifty years later. The older buildings consist of two quadrangles, built partly of freestone but chiefly of brick. The outer quadrangle, or school-yard, is enclosed by the chapel, upper and lower schools, the original scholars' dormitory ("long chamber"), now transformed, and masters' chambers. It has in its centre a bronze statue of the royal founder. The buildings enclosing the inner or lesser quadrangle contain the residence of the fellows, the library, hall and various offices. The chapel, on the south side of the school-yard, represents only the choir of the church which the founder originally intended to build; but as this was not completed Waynflete added an ante-chapel. The chapel was built upon a raised platform of stone, as was the hall, in order to lift it above the flood-level of the Thames. It contains some interesting monuments of provosts of the college and others, and at the west end of the ante-chapel is a fine marble statue of the founder in his royal robes, by John Bacon. A chantry contains the tomb of Roger Lupton (provost 1503-1535), whose most notable monument is the fine tower between the school-yard and the cloisters to the east; though other parts of his building also remain. The space enclosed by two buttresses on the north side of the chapel, at the point where steps ascend to the north door, is the model of the peculiar form of court for the game of fives which takes name from Eton, with its "buttress" (represented by the projecting balustrade), the ledges round the walls, and the step dividing the floor into two levels. From the foundation of the college the chapel was used as the parish church until 1854, and not until 1875, after the alteration of the ancient constitution had secularized the foundation, was the parish of Eton created into a separate vicarage. The chapel does not accommodate the whole school; and a new chapel, from the designs of Sir Arthur Blomfield, is used by the lower school. The library contains many manuscripts (notably an Oriental and Egyptian collection) and rare books; and there is also a library for the use of the boys. The college in modern times has far outgrown its ancient buildings, and new buildings, besides the lower chapel, include the new schools, with an observatory, a chemical laboratory, science schools and boarding-houses. In 1908 King Edward VII. opened a fine range of buildings erected in honour of the Old Etonians who served in the South African War, and in memory of those who fell there. The architect was Mr L.K. Ball, an old Etonian. The buildings include a school hall, a domed octagonal library, and a classical museum.

The principal annual celebration is held on the 4th of June, the birthday of King George III., who had a great kindness for the school. This is the speech-day; and after the ceremonies in the school a procession of boats takes place on the Thames. In the sport of rowing Eton occupies a unique position among the public schools, and a large proportion of the oarsmen in the annual Oxford and Cambridge boat-race are *alumni* of the school. Another annual celebration is the occasion of the contest between collegers and oppidans at a peculiar form of football known as the wall game, from the fact that it is played against a wall bordering the college playing-field. This game takes place on St Andrew's Day, the 30th of November. The field game of football commonly played at Eton has also peculiar rules. The annual cricket match between Eton and Harrow schools, at Lord's ground, London, is always attended by a large and fashionable gathering. A singular custom termed the *Montem*, of unknown origin, but first mentioned in 1561, was observed here triennially on Whit-Tuesday. The last celebration took place in 1844, the ceremony being abolished just before it fell due in 1847. It consisted of a procession of the boys in a kind of military order, with flags and music, headed by their "captain," to a small mound called Salt Hill, near the Bath road, where they levied contributions, or "salt," from the passers-by and spectators. The sum collected sometimes exceeded £1000—the surplus, after deducting certain expenses, becoming the property of the captain of the school. The average number of pupils at Eton exceeds 1000.

See E.S. Creasy, *Memoirs of Eminent Etonians, with Notices of the Early History of the College* (1850); *Sketches of Eton* (1873); Sir H.C. Maxwell Lyte, *History of Eton College from 1440 to 1875* (1875); J. Heneage Jesse, *Memoirs of Celebrated Etonians* (1875); *The Eton Portrait Gallery*, by a Barrister of the Inner Temple (1875); A.C. Benson, *Fasti Etonienses* (1899); L. Cust, *History of Eton College* (1899).

ÉTRETAT, a watering-place of France, in the department of Seine-Inférieure, on the coast of the English Channel, 16½ m. N. by E. of Havre by road. Pop. (1906) 1982. It is situated between fine cliffs in which, here and there, the sea has worn archways, pinnacles and other curious forms. The small stream traversing the valley, at the extremity of which Étretat lies, flows underground for some distance but rises to the surface on the beach. A Roman road and aqueduct and other Roman and Gallic remains have been discovered. The church of Notre-Dame, a Romanesque building, with a nave of the 11th century and a central tower and choir of the 13th century, is a fine example of the Norman architecture of those periods. Fishing is carried on, though there is no port and the fishermen haul their boats up the beach; the old hulks (*caloges*) serve as sheds and even as dwellings. Étretat sprang into popularity during the latter half of the 19th century, largely owing to the frequent references to it in the novels of Alphonse Karr.

ETRURIA, an ancient district of Italy, the extent of which varied considerably, and, especially in the earliest periods, is very difficult to define (see section *Language*). The name is the Latin equivalent of the Greek Τυρρηνία or Τυρσηνία, which is used by Latin writers also in the forms *Tyrrhenia, Tyrrhenii*; the Romans also spoke of Tusci, whence the modern Tuscany (*q.v.*). In early times the district appears to have included the whole of N. Italy from the Tiber to the Alps, but by the end of the 5th century B.C. it was considerably diminished, and about the year 100 B.C. its boundaries were the Arnus (Arno), the Apennines and the Tiber. In the division of Italy by Augustus it formed the seventh *regio* and extended as far north as the river Macra, which separated it from Liguria.

History.—The authentic history of Etruria is very meagre, and consists mainly in the story of its relations with Carthage, Greece and Rome. At some period unknown, prior to the 6th century, the Etrurians became a conquering people and extended their power not only northwards over, probably, Mantua, Felsina, Melpum and perhaps Hadria

and Ravenna (Etruria Circumpadana), but also southwards into Latium and Campania. The chronology of this expansion is entirely unknown, nor can we recover with certainty the names of the cities which constituted the two leagues of twelve founded in the conquered districts on the analogy of the original league in Etruria proper (below). In the early history of Rome the Etruscans play a prominent part. According to the semi-historical tradition they were the third of the constituent elements which went to form the city of Rome. The tradition has been the subject of much controversy, and is still an unsolved problem. It is practically certain, however, that there is no foundation for the ancient theory (cf. Prop. iv. [v.] 1. 31) that the third Roman tribe, known as Luceres, represented an Etruscan element of the population, and it is held by many authorities that the tradition of the Tarquin kings of Rome represents, not an immigrant wave, but the temporary domination of Etruscan lords, who extended their conquests some time before 600 B.C. over Latium and Campania. This theory is corroborated by the fact that during the reigns of the Tarquin kings Rome appears as the mistress of a district including part of Etruria, several cities in Latium, and the whole of Campania, whereas our earliest picture of republican Rome is that of a small state in the midst of enemies. For this problem see further under Rome: *History*, section "The Monarchy."

After the expulsion of the Tarquins the chief events in Etruscan history are the vain attempt to re-establish themselves in Rome under Lars Porsena of Clusium, the defeat of Octavius Mamilius, son-in-law of Tarquinius Superbus, at Lake Regillus, and the treaty with Carthage. This last event shows that the Etruscan power was formidable, and that by means of their fleet the Etruscans held under their exclusive control the commerce of the Tyrrhenian Sea. By this treaty Corsica was assigned to the Etruscans while Carthage obtained Sardinia. Soon after this, decay set in. In 474 the Etruscan fleet was destroyed by Hiero I. (*q.v.*) of Syracuse; Etruria Circumpadana was occupied by the Gauls, the Campanian cities by the Samnites, who took Capua (see Campania) in 423, and in 396, after a ten years' siege, Veii fell to the Romans. The battle of the Vadimonian Lake (309) finally extinguished Etruscan independence, though for nearly two centuries still the prosperity of the Etruscan cities far exceeded that of Rome itself. Henceforward Etruria is finally merged in the Roman state.

Etruscan Antiquities

The large recent discoveries of Etruscan objects have not materially altered the conclusions arrived at a generation ago. It is not so much our appreciation of the broad lines of the manners and arts of the Etruscans that has altered as our understanding of the geographic and social causes which made them what they were. One great difficulty in the study of the remains is that a very large portion of them have been found by unofficial excavators who have been naturally unwilling to tell whence they came, and that certain other excavations, such as those carried out by Comm. Barnabei for the Villa Giulia museum, have been carried out under conditions which help but little towards increasing our knowledge.[1] The increase has, however, been steady, even if not all one could wish.

Ethnology.—The origin of the Etruscans will most likely never be absolutely fixed,[2] but their own tradition (Tacitus, *Ann.* iv. 55) that they came out of Lydia seems not impossible. Herodotus (i. 94) and Strabo (v. 220) tell of Lydians landing at the mouth of the Po and crossing the Apennines into Etruria. Thus it seems certain that though the earliest immigrants, known to the later Etruscans as the *Rasena*, may have come down from the north, still they were joined by a migration from the east before they had developed a civilization of their own, and it is this double race that became the Etruscans as we know them in tradition and by their works. To give a date to the migration of the Rasena from the north, for which the only evidence is the fact that the Etruscan language is found in various parts of north Italy,[3] is impossible, but we can perhaps give an approximate one to the coming of the Lydians or Tyrrhenians (Thuc. iv. 109; Herod. i. 57). We know that there was a great wave of migration from Greece to Italy about 1000 B.C., and as the earliest imported Greek objects found in the tombs cannot be dated many generations later than this, this year may be considered as giving us roughly the time when the real Etruscan civilization began.

It has been, and still is, a common mistake to speak of the Etruscans as though they were closely confined to that part of Italy called Etruria on the maps, but it is quite certain that in the early stages of their development they were differentiated from the Umbrians on the north-east and the Latins on the south in ways due rather to the locality than to race or essential character.[4] To primitive peoples open seas or deserts are a greater hindrance to intercourse than mountains or rivers, and even these did not cut off Etruria from the neighbouring regions of Italy. The Apennines that separated her from Umbria were not difficult to cross, and the Tiber which formed the boundary between her and Latium has been a far greater element of separation in the minds of modern authors than it ever was in reality. Narrow, not particularly swift, often shallow, such a stream can never have caused more than a moment's delay to the hardy Etruscans. When Rome was founded, the river of course could be used like a moat round a castle as a means of defence, but that is very different from its being a permanent bar to the spread of a given culture. The fact that the alphabets used in other parts of Italy besides Etruria are derived from the Etruscan or from similar Grecian sources, that Rome was ruled by Etruscan kings, that the temple of Jupiter on the Capitoline was decorated by Etruscan artists (Livy x. 23; Pliny, *H.N.* xxxv. 157), that the decorations of the temple found by Signor Mazzoleni near Conca (*Notizie degli scavi*, 1896) are of the same kind as others found in Etruria, show that the influences which grew to their clearest development in the region west of the Tiber had a marked effect over a broader region than is usually admitted. This too was the belief of the Greek historians, many of whom considered Rome as a Tyrrhenian city.[5]

Cities and Organization.—The chief cities of Etruria proper were Veii, Tarquinii, Falerii, Caere, Volci, Volsinii, Clusium, Arretium, Cortona, Perusia, Volaterrae (Volterra), Rusellae, Populonium and Faesulae. That the country was thickly settled is made plain by the ruins that have been found. It was governed by kings who were elected for life, but whose power depended largely on the leaders (*lucumones*) of the separate states or regions and on the aristocracy (Censorinus, *De die natali*, iv. 13). Later the office of king was abolished and replaced by annual magistrates (Livy v. 1). Below the aristocracy came the free people, who were divided into *curiae* (Serv. *ad Aen.* x. 202), and then the slaves. There can be little doubt that the early organization of the people at Rome was typical of Etruria (Niebuhr, *Röm.* Gesch. 2nd ed. i. 389).

A league of twelve cities is mentioned by the ancients (Livy iv. 23), whose delegates met at the temple of Voltumna, but we are not told which cities formed the league, and there can be little doubt that the list changed from time to time. A glance at the map makes clear some of the general relations of these cities to one another and to the outer world. They are well spread all over the country, and by no means only along the coast. None of the important ones is among the mountains. This means that the earliest inhabitants of the country were not roving traders like the Mycenaean Greeks, and that the cities drew their wealth and strength from agricultural pursuits, for which the country was well suited, as the three rivers, Arnus, Umbro and Tiber, with their feeders (not to mention several lesser streams), channel it in all directions. We get a hint as to the government of the cities from the fact that many of the Roman forms and apanages of office were derived from the Etruscans (Dion. Hal. iii. 61); for instance, the diadem

worn by those honoured with a triumph, the ivory sceptre and the embroidered toga (Tertull. *De Cor.* 13), and so too the golden bulla and the praetexta (Festus, s.v. "Sardi"). Such things give us an idea as to the aristocratic basis of the government. Of the actual laws we know something also. Cicero (*Div.* ii. 23) tells the story of the miraculous uncovering by a ploughboy of a child who had the wisdom of a sage, and how the child's words were written down by the amazed folk, and became their archives and the source of their law. Coming down to historic times we find that their code, known as the libri *disciplinae Etruscae*, consisted of various parts (Festus, s.v. "Ritualis"). There were the *libri haruspicini* (Cic. *Div.* i. 33, 72), which dealt with the interpretation of the will of the gods by means of sacrifice; the *libri fulgurales*, which explained the messages of the gods in the thunder and lightning; and finally the *libri rituales*, which held the rules for the conduct of daily life—how to found cities, where to place the gates, how to take the census, and the general ordering of the people both in peace and war.

Natural Resources and Commerce.—Such was the country and such the laws. The people were a warrior stock with little commercial skill. Much of their wealth was due to trade, but they were not the restless, conquering blood that goes in search of new markets. They waited for the buyers to come to them. That their wealth and consequent power were gathered contemporaneously with that of Greece is shown by various facts. One of these is that Dionysius of Phocaea settled in Sicily after the Ionian revolt (in which his native city took part) had been quelled by Darius, and thence harried the Etruscans (Herod. vi. 17). Their power is also shown by the fact that they made an alliance with the Carthaginians, with the result that they obtained control of Corsica (Herod. i. 166), and this union continued for many generations.[6] That this treaty was no exceptional one is shown by Aristotle (*Pol.* iii. 96, *Op.* ii. 261), who says that there were numerous treatises, concerning their alliances and mutual rights, between the two peoples. That the Greeks held the Etruscans in considerable dread is suggested by the fact that Hesiod (*Theog.* 1011 foll.) names one of their leaders Agrios, "the Wild Man," and by the fear they had of the straits of Messina, where they imagined Scylla and Charybdis, which, unless the whirlpools were of very different character then than now, were as likely to be the pirate bands of Carthaginians and Etruscans who guarded the channel. And this explanation is strengthened by Euripides (*Med.* 1342, 1359), whose Medea compares herself to "Scylla, who dwells on the Tyrrhenian shore." The wealth that was the source of this power of the Etruscans must in the main have been drawn from agriculture and forestry. The rich land with its many streams could scarcely be surpassed for the raising of crops and cattle, and the hills were heavily timbered. That it was such material as this, which leaves no trace with the passing of time, that they sold cannot be doubted, for there is plenty of evidence that their country was visited by foreign traders of many lands, and that they bought largely of them, especially of metals. Metals also suggest that another source of their wealth was that of the middleman. Their towns were the centres of exchange, where the north and west met the south and east. They had no mines of gold or tin, but the carriers of tin, iron or amber[7] from the north met in the markets of Etruria the Phoenician and Greek merchants bringing gold and ivory and the other luxuries of the East. The quantities of gold, silver and bronze found in Etruscan tombs prove this clearly. Of these metals the only one found in unworked form, in what are practically pigs, is bronze. This in the form of *aes rude* has frequently been found in considerable quantities, and the larger and better formed bits of metals known as *aes signatum* are not rare. Both forms are usually spoken of as the earliest forms of money, but as the *aes rude* generally bears no marks of valuation or of any mint, and as the *aes signatum* is far too large and heavy for ordinary circulation, it is probable that these shapes of metal are not to be considered strictly or alone as coins, but as forms given to the alloy of tin and copper made and sold by the Etruscans to the foreigners for purposes of manufacture. This of course does not exclude their use as money. Where the copper for this bronze came from is not certain, but probably a great part was from the mines at Volaterrae. Still another proof that what the Etruscans sold was the product of their fields or crude metals imported from the north, is the fact that though in the museum at Carthage and elsewhere there are a few vases and other objects which probably come from Etruria, still such objects are extremely uncommon. On the other hand, articles obviously imported from the East are by no means uncommon in Etruria. Such are the ostrich shells from Volci,[8] the Phoenician cups from Palestrina,[9] the Egyptian glazed vases and scarabs found on more than one site.[10] All this goes to show that the Etruscans lacked in their earlier days skilful workers in the arts and crafts.

Habits and Customs.—The lack of literary remains of the Etruscans does not cramp our knowledge of their habits as much as might be supposed, owing to the numerous paintings that are left. These paintings are on the walls of the tombs at Veii, Corneto, Chiusi (Clusium), and elsewhere,[11] and give a varied picture of the dress, utensils and habits of the people. The evidence of many ancient authors cannot be questioned that as a race the Etruscans in historic times were much given to luxurious living. So much so in fact that Virgil (*Georg.* ii. 193) speaks of the *pinguis Tyrrhenus* (a trumpeter at the altar) and Catullus (xxxix. 11) of the *obesus Etruscus*. Diodorus (v. 40) gives a succinct account in which he says that "their country was so fertile they derived therefrom not only sufficient for their needs but enough to supply them with luxuries. Twice a day they partook of elaborate repasts at which the tables were decked with embroidered cloths and vessels of gold and silver. The servants were numerous and noticeable for the richness of their attire. The houses, too, were large and commodious. In fact, giving themselves up to sensuous enjoyments they had naturally lost the glorious reputation their ancestors had won in war." This last remark shows that Diodorus recognized the important difference between the early Etruscans who built up the country and the later ones who merely enjoyed it. Naturally courtesans flourished in such a community. Timaeus and Theopompus tell how the women lived and ate and even exercised with the men (Athen. xii. 14; cf. iv. 38), habits which of course gave the Roman satirists many openings for attack (Plaut. *Cist.* ii. 3. 563; cf. Herod, i. 98; Strabo xi. 14). In dress they differed but little from the Romans, both wearing the toga and the tunic. Hats too, often of pointed form, were common (Serv. *ad Aen.* ii. 683), as the paintings show, but it was their shoes for which they were particularly famous. One author (Lydus, *de Magistr.* i. 17. 36) suggests that Romulus borrowed from Etruria the type of shoe he gave the senators, and this may well be true, though the form mentioned, the *kampagus*, is of late origin. At any rate σανδάλια Τυρρηνικά are frequently mentioned. From the pictures and remains we know that they had wooden soles strengthened with bronze, and that the uppers were of leather and bound with thongs.

Their occupations of trade and agriculture have been already mentioned. For their leisure hours they had athletic games including gladiatorial shows (Athen. iv. 153; cf. Livy ix. 40. 7; Strabo v. 250), hunting, music and dancing. All these are shown in the tomb pictures, and all, with the exception of the hunting, developed first as a part of religious service, and their importance is shown by the strictness of the rules that governed them (Cicero, *De harusp. resp.* ii. 23). Did a dancer lose step, or an attendant lift his hand from the chariot, the games lost their value as a religious service. An idea of the splendour of the triumphs that accompanied victorious generals and of the parades at the games is given by Appian (*De reb. Punic.* viii. 66) and Dionysius (vii. 92). The music that was an accompaniment of all their occupations, even of hunting (Aelian, *De natur. anim.* xii. 46), was mainly produced by the single or double flute, the mastery of which by the Etruscans was known to all the world. They also had small harps and trumpets.

For the regularization of all these duties and pleasures there was a calendar and time-division for the day. It is noteworthy that the beginning of the day was for them the moment when the sun was at the zenith (Serv. *ad Aen.* v. 738). In this they differed from the Greeks, who began their day with the sunset, and the Romans, who reckoned

theirs from midnight. The weeks were of eight days, the first being market day and the day when the people could appeal to the king, and the months were lunar. The years were kept numbered by the annual driving of a nail into the walls of the temple of Nortia at Volsinii (Livy vii. 3. 7), a custom later adopted by the Romans, who used the Capitoline temple for the same purpose. In Rome this rite was performed on the Ides of September, and it is likely that it took place in Etruria on the same date, the natural end of the year among an agricultural folk. A still longer measure of time was the saeculum, which was supposed to be the length of the longest life of all those born in the year in which the preceding oldest inhabitant died (Censorinus, *De die natali*, 17. 5; cf. Zosimus ii. 1). According to later writers[12] the Etruscan race was to last ten *saecula*, and the emperor Augustus in his memoirs (Serv. *ad. Bucol.* ix. 47) says that the comet of the year 44 B.C. was said by the priests to betoken the beginning of the tenth *saeculum*. The earliest *saecula* had been, according to Varro, 100 years long. The later ones varied in length from 105 to 123 years. The round number 100 is obviously an *ex post facto* approximation, and the accuracy of the others is probably more apparent than real, but if we reckon back some 900 years from the date given by Augustus we arrive at just about the time when the archaeological evidence leads us to believe that the Etruscans in Italy were beginning to recognize their individuality.

Religion.—To retrace the religious development of the Etruscans from its mystic beginnings is beyond our power, and it is unlikely that any future discoveries will help us much. We are, however, able to draw a clear, if not a detailed, picture of the worship paid to the various divinities, partly from the direct information we have concerning them and partly from the analogies which may safely be drawn between them and the Romans.

The frequency of sacrifice among them and their belief in the short duration of the race[13] show clearly their belief in a good and a bad principle, and the latter seems to have been predominant in their minds. Storms, earthquakes, the birth of deformities, all gave evidence of evil powers, which could be appeased sometimes only by human sacrifice. We miss here the Greek joy in human life and the beauties of earth. The gods (*aesar*) were divided into two main groups, the *Dii Consentes* and a vaguer set of powers, the *Dii Involuti* (Seneca, *Quaest. Nat.* ii. 41), to whom even Jupiter bowed. They all dwelt in various parts of the heavens (Martianus Capella, *De nupt. Phil.* i. 41 ff.). Of the *Dii Consentes* the most important group consisted of Jupiter (*Tinia*), Juno (*Uni*) and Minerva (*Menrva*). In some towns, such as Veii and Falerii, Juno was the chief deity, and at Perusia she was worshipped like the Greek Aphrodite in conjunction with Vulcan (the Greek *Hephaestus*). This shows that though in exterior form the Etruscan gods were influenced by the Greeks, still their character and powers betoken different beliefs. An interesting point to note about Minerva (*Menrva*) is that she was the goddess of the music of flutes and horns. The myth of Athena and Marsyas probably originated in Asia Minor, and a Pelasgian Tyrrhenian founded in Argos the temple of Athena Salpinx (Paus. ii. 21. 3). The evident connexion between Asia Minor and Etruria in these facts cannot be overlooked. Besides these deities there were Venus (*Turan*), Bacchus (*Fufluns*), Mercury (*Turms*), Vulcan (*Sethlans*). Of these, Sethlans is in a way the most important, for he shows a connexion in prehistoric times between Etruria and the East.[14] Other deities of Greek origin there were—Ares, Apollo, Heracles, the Dioscuri; in fact, as the centuries passed, the Greek divinities were adopted almost without exception. Besides these there were also many gods of Latin or Sabine origin, of whom little is known but their names; these may often be local appellations for the same god. Among these were Voltumna at Volsinii and Vertumnus at Rome, Janus, Nortia, goddess of Fortuna, Fēronia, whose temple was at a town of the same name at the foot of Soracte,[15] Mantus, Pales, Vejovis, Eileithyia and Ceres. Such were the leading gods; in addition there was the world of spirits whom we know in Rome as the Manes, Lares and Penates. The latter were of four classes, pertaining to Jove, Neptune, the gods of the lower world, and to men.[16] The Lares too were of various sorts (*familiares, compitales, viales*), and with them the souls of the dead, after the performance of due expiatory rites, took their place as *dii animales* (Serv. *ad Aen.* iii. 168 and 302). The Manes are the vaguest group of all and were confined almost wholly to the lower world (Festus, s.v. “Mundus”; Apuleius, *De deo Socratis*). Over all these ruled Mantus and Mania, the counterparts of Pluto and Persephone in Greece. As a result of this complete hierarchy of divine powers the priesthood of Etruria was large, powerful, and of such fame that Etruscan *haruspices* were sent for from distant places to interpret the sacrifices and the oracles (Livy v. i. 6, xxvii. 37. 6).

Art.—The evidence drawn from tradition and custom which we have so far considered in relation to the origin and beliefs of the Etruscans has taken us into the prehistoric times much earlier than those when the handicrafts developed into true fine arts. The contents of the earliest graves[17] show but few traces of any feeling for art either in architecture or in the lesser forms of household and personal decoration. Gradually, however, as one comes down towards the more fixed historic periods, certain objects, obviously imported from the eastern Mediterranean, occur, and these are the first signs of an interest in the beauty or curiosity of things, an interest that local workmen could not yet satisfy, but which stirred them to endeavour. It was probably during the 9th century that this began, not long after the period when foreign trade began to flourish.

The history of Etruscan art has usually been wrongly estimated owing to the widespread delusion that objects found in Etruria were in the true sense products of native artists and indicative of native-grown culture. It is only recently, and not even yet completely, that the term “Etruscan” has been given up as the name for the terra-cotta vases (which were found in the 19th century by the earlier archaeologists of the modern scientific school in great quantities in the Etruscan tombs); these are now known to have been made by Greek potters. There are few books on the subject of Etruscan art. The best known is Jules Martha’s *L’Art étrusque* (2nd ed., 1889), a book which, though full of accurate data, shows absolute lack of discrimination between those works that are of Etruscan fabric and those that were brought from other lands, particularly Greece and the Greek colonies of Magna Graecia and Sicily. These latter are too generally forgotten in the study both of Greek and of Etruscan art, and all works which show the Greek spirit are vaguely supposed to have been produced on the Greek mainland. As much of the following must be to some extent controversial in character, a concrete illustration may serve to prevent misconception as to this important distinction. The beautiful throne in the Ludovisi collection representing the birth of Aphrodite is commonly spoken of as though made by some sculptor in Greece. It seems at least as likely that it comes from Sicily. Not only is the character of the modelling similar to what we find on Sicilian sculptures and coins, and not quite so sharp as on most works from Greece, but there is a lyrical feeling for nature in the pose of the figures and in the pebbled soil on which the main group stands, which seems to answer to the Sicilian feeling as we know it in poetry rather than to the Greek.

Architecture.

The houses of the earliest times were, to judge by the burial urns known from their shape as *hut-urns*, small single-room constructions of rectangular plan similar to certain types of the *capanne* used by the shepherds to-day. Probably the walls were wattled and the roofs were certainly thatched, for the urns show plainly the long beams fastened together at the top and hanging from the ridge down each side. Tombs cut in the rock offer other and later models of house construction, but give no suggestion that the Etruscans had any artistic sense in architecture. Such tombs are mostly later than the 5th century B.C., and show the most simple form of wood construction. Posts or columns hold up the walls and the sloping roofs, the latter made of beams with boards laid lengthwise, covered by others from ridge to eave, the intervening space forming a coffer,

sometimes decorated. Though the walls of such tombs are often covered with paintings, the relation of the various parts (and, let it be remembered, these tombs represent the houses of the living) shows but the coarsest sense of proportion. The elements of the decoration, such as capitals, mouldings, rosettes, patterns, are borrowed from Greece, Egypt or elsewhere, and are used redundantly and with no refinement.[18]

The temples did not differ from those in Greece in any essential principal of construction except that they were generally square, from the desire to make them answer to the *templum* or quadripartite division of the heavens elaborated by the priests. In Roman times, "Etruscan style" was the term used for colonnades with wide intercolumniations, and this shows how the early builders used wood with its possibility of long architrave beams rather than stone as in Greece. The interior arrangements of the temple also varied from the Grecian models, for owing to the fact that the gods of Etruria were often worshipped in groups of three the cella was divided into three chambers. The decoration—metopes, friezes, acroteria, &c.—was of terra-cotta fastened by nails to the wooden walls.

Though we know that the Etruscans were famous for their games,[19] still there are no remains of *circi*, and so too, though the *satyristae* were well known,[20] no theatres are left. They were obviously a race of no literary taste or culture. The theatre at Fiesole which is often referred to as Etruscan unquestionably dates from Roman times.

Underground tombs have already been mentioned in their relation to house-architecture, but there are the *tumuli* such as that called *la Cucumella* at Volci, that of the Curiatii at Albano, or that of Porsena at Clusium, which Pliny describes as one of the wonders of Italy (*H.N.* xxxvi. 19). These great walled-in mounds with their complex of interior chambers are interesting as reminiscent of tombs in Lydia, but architecturally they are barbaric and show no developed skill.

There remains one monument which has always been supposed to show a real advance made by the Etruscans in the art of architecture—the *cloaca maxima* in Rome. This round-arched drain was supposed to have been built by Etruscans, and it was only in 1903 that Commendatore Boni in excavating the Forum proved that the drain was originally uncovered, and that the arch was built at the end of the Republic. Thus the honour, not of discovering the arch, for it was known to the East, but of popularizing its use, does not belong to the Etruscans, though they did use it at a comparatively late time for city gates, as at Volterra.[21] The false arch and dome of the Mycenaeans seems to have been familiar to them, though there are but few cases of its use on a large scale. The best-known instances are the Tullianum or Mamertine prison in Rome, the Regulini-Galassi tomb at Cervetri,[22] one at Sesto Fiorentino near Florence,[23] at Cortona,[24] at Chiusi, and also those in Latium.[25]

Although there was, therefore, but little development in the greater arts of literature and architecture among the Etruscans, it is evident enough that there was much desire to possess the products of the lesser arts, such as sculpture, jewelry and household ornaments. But here too the study has been made difficult by the failure to distinguish between native and imported products. Before studying the objects themselves it is well to recall the legendary character of Etruscan chronology as reckoned in *saecula*. Helbig[26] showed that we cannot consider any of 858
the traditional dates as being accurate until about 644 B.C., the beginning, that is, of the fifth *saeculum*. This is probably about one hundred years after the introduction of the Chalcidian (Ionic) alphabet into the country. One of the earliest examples of the use of it is on a vase found in the Regulini-Galassi tomb. In considering the trade of the country it has been pointed out that its chief political connexions were with Carthage, but the artistic sense of Carthaginians or other Phoenicians was not more developed than that of the Etruscans. They were traders, and doubtless brought the Etruscans some of the Egyptian and Eastern objects which have been found in their tombs, articles that date from the 7th and 6th centuries B.C. But beside the Phoenicians the Ionian Greeks from the 9th century had been trading and colonizing in Sicily and Italy. Herodotus (i. 163) tells how the Phocaeans were the first of the Greeks to take long voyages, and that they discovered the Adriatic and Tyrrhenian seas and Iberia. Thucydides (vi. 3. 1) says that it was Chalcidians from Euboea who first settled in Sicily. Pliny (*Hist. Nat.* xxxv. 12. 43) writes in the same sense, for he tells of Demaratus who came from Corinth with the artists Eucheir, Diopus, Eugrammus, about 650 B.C., and first started sculpture in Italy. These traditions of the coming of Ionian Greeks to Italy are completely borne out by the archaeological remains found in Ionian lands and in Etruria, and it is agreed that a great part of what has hitherto been considered Etruscan is no more Etruscan than the Moorish plates of the 15th century found in Italy are Florentine. The best works in most of the smaller arts are almost without exception Greek, the earlier Ionian, the later Attic; the remainder are made with the distinct intention of imitating Greek models, and so should be considered as Greek, inasmuch as they do not show a natural, original expression of feeling on the part of the Etruscan workman. The Etruscans were dull artists in all lines. They were skilful copyists, nothing more, as is absolutely proved by the simple fact that we know of no Etruscan artist by name. If one takes the articles which are of obviously local manufacture, such as the burial urns[27] or the ordinary bronze mirrors, or the pottery, it would be hard to find a similar quantity of work by any other race so lacking in originality of conception or high excellence of technique.

In the study of the monuments a division must be made distinguishing between the obviously Greek works, the works done with a desire to copy Greek models and the work of native artists. To separate the objects in the way suggested required a very considerable familiarity with Greek art, and though in many cases the result may be doubtful, still so much must be taken from the Etruscans that they are shown to have little more artistic feeling than the Romans. In the earlier centuries a strong eastern influence appears in the copying of sphinxes and similar eastern motives, but this soon gave way to the stronger Greek influence, as was natural, for the intercourse with the Phoenicians was spasmodic whereas that with the Greeks was constant. But even with the Greeks to kindle their imaginations, the Etruscans produced no school of art; no steady progression is traceable. In various towns there were various fashions of pottery or jewelry, but good, bad and indifferent constantly occur together in a way possible only among a people who possessed no natural artistic capacities and had no widespread standards of cultivated taste. The Ionians have been mentioned as having strongly affected the arts in Etruria, and, though in the later centuries Athens undoubtedly exported heavy consignments to Italy, the taste of the Etruscans seems generally to have preferred the rather heavy loose style of the Ionians, even when direct contact with them was lost and its place taken by direct relations with Athens and her colonies.

Pottery.

Pottery[28] practised enormously by the Etruscans shows as clearly as possible their essential strength and weakness as artists. Even the black ware called *bucchero* is now known to have been manufactured in other lands and not to be an exclusively Etruscan style. In the earlier tombs this ware is present in greater numbers than any other, and the vases exhibit considerable dexterity of manufacture so far as form goes. But it is evident from comparisons with early Ionian vases that the better proportioned of the shapes are direct copies of the Ionian. The decoration of the *bucchero* is either engraved, in which case it is almost always extremely rude, or formed by figures modelled or pressed by a mould on to the body of the vase. In these two last cases the figures are often suggestive of the farther East (Egyptian and Mesopotamia), but still more frequently they are taken from Greek originals, and the natural tendency of the Etruscan artist to be a copyist is very marked.

Whence the moulds for these vases came is not known, but analogy with other classes of work makes it practically certain that some were imported and some made by the imitating workmen. There are other classes of vases which at first sight look as though they were imported from Greece, but by the nature of their clay are recognized to be Etruscan imitations of Greek originals. The imitation is often very skilful, for the Etruscan artist rivalled his Grecian master in deftness of hand, if not in imagination. Such, for instance, are the large amphoras decorated with bands of animals in the Corinthian style. Besides these native Vases the tombs have yielded great quantities of others which used to be called Etruscan, but are now known to have been imported from Greece. Until the 6th century B.C. these vases are mostly Ionian, but at that time the trade of the Phocaeans was waning before that of Athens, and henceforward the Athenian ware is the commonest. Intercourse with Athens, however, came to an end about 480, when the Sicilian Greeks mastered the trade of the western Mediterranean, so that in the Etruscan tombs later than this date we find fewer and fewer imported vases, and more and more native imitations. It is generally taken for granted that these Attic vases were brought to Etruria by Greek traders, but considering how little the Greek historians, even Herodotus, knew of that country, this is unlikely. Then, too, the chief products Etruria had to give Greece were metals, so it is more likely that it was the Etruscan traders who, having carried metal to Greece (where Etruscan bronze was famous[29]), brought back the vases.

Though most collections make no distinction between Greek and Etruscan scarabs the differences, though slight, are quite certain, and consist in the greater elaboration of the borders, edges and backs of the Etruscan examples. The commonest material for these gems is red carnelian, and agate frequently occurs. The beetle shape is undoubtedly due to the Phoenicians, who familiarized the Etruscans with the Egyptian scarab and with its signification as an amulet; while in technique they are more Greek, in use they are more Egyptian, for they were used not only as seals but as ornaments—as in the decoration of necklaces.[30] What we learn from them merely serves to strengthen what we learn from the pottery—that the Etruscans depended on the Greek world for their artistic conceptions. Though many Phoenician gems (in fact, scarcely any other kind) have been found in Sardinia, these are comparatively rare in Etruria, where the earliest gems occur about 650 B.C. Some of these earliest show the Ionian influence, which is also shown in certain gold rings, but most of them represent the Attic style as seen on the black-figured vases of Athens. To understand them one has but to know Attic sculpture, the complete history of which is repeated in these small and beautifully worked stones. At first one finds the single figures, awkward in form and modelling, but full of life in composition—one finds the same mistakes in anatomy (*i.e.* the muscles of the stomach); and then come the figures beautifully worked and accurately observed, but with the slight hardness and rigidity that belongs to all pre-Raphaelite work; and finally one sees the figures carved with the easy assurance of the master, sometimes single, sometimes in groups, but always Attic in their unrivalled representation of the beauties of the human figure, and in the innumerable lovely scenes taken from everyday life. Not infrequently inscriptions are cut in the gem, but these are not as on Greek gems the name of the carver or the owner, but the name of the Greek hero represented. In regard to technique one point is specially noteworthy. Many of the gems are carved with the round drill, and the disks made by this are not modelled into any real semblance of a figure. This is not a sign of the antiquity of the gem, for there are examples in which together with this method will be seen a figure finished with the greatest care; it is thus evident that the gem-cutter left the marks of his round drill because of their decorative value. This they undoubtedly possess, and it is one of the few cases in which the Etruscans showed any art sense.

Scarabs.

Bronze was used extensively. Weapons of course were fashioned of it, but these are simple in shape and decoration; no such examples as those from Mycenae occur. Objects of large size, as the bronze doors of Veii,[31] the chariots of Perugia in the New York museum, or large tripods or shields, show that the artisans had large quantities of the material at their disposal. As with the vases or gems, so in these metal objects the distinction must be drawn between pure Etruscan work and the work that was done by Greek workmen or by artisans copying the Greek style. As Etruscan art has been wrongly estimated through forgetfulness of the Greek influence, so Greek bronzes have possibly received credit that does not belong to them. Etruscan candelabra and vases were famous among the Greeks (Ath. i. 28. 6; xv. 700 c). The chariots above mentioned and the tripods in the Harvard museum are plainly Greek; the round shields with ornament in bands are native. Antefixes of tombs were of bronze, and in some cases the eyes of the figures were inlaid with glass paste. The best-known articles of bronze are the mirrors,[32] which are very dependent on Greece for their models, though the poor style in which the scenes that decorate them are in most cases carved shows that these articles of common use were produced, as was natural, mainly by ordinary workmen. In rare cases the figures are not engraved but are given in low relief. These mirrors seem to have been mainly intended for women, and the scenes on them in large numbers of cases are of such a character as to bear out this idea; for instead of scenes of battle such as occur on the gems, scenes with satyrs and maenads are commoner, or the story of Helen or the labours of Hercules. So far as development goes they pass through the same stages as the gems, though owing to their larger surface they are more generally decorated with groups of figures.[33] Another well-known class of work is the *cistae* or cylindrical bronze boxes found mostly at Praeneste, where they seem to have been especially popular. The engraved figures on them are of the same character as those on the mirrors, and it is noteworthy that these figures are often better in style than the figures modelled in the round that serve as handles, or than the legs which also are modelled. This, taken together with the fact that the same figures are repeated in several cases on more than one gem or mirror, makes it probable that the workmen, like the later potters of Arezzo, had a stock of models brought from Greece, which they repeated and combined to suit their fancy.

Bronze.

The paintings and contents of the tombs have made it plain that the wealth of the Etruscans was very considerable, and that they spent much on jewelry, gold and silver.[34] Their extravagance in this regard was well known,[35] and the rings, the necklaces, the diadems, the bracelets and the earrings show that there was a large class of well-to-do people. The eastern and Greek influences are clearly marked in the figures used in decoration, and in certain shapes of rings, but in one technical matter the Etruscans seem to have made a discovery: it was in the use of granulated ornament, that is, ornament made by soldering on to the gold object infinitely small globules of the same metal laid in various designs and patterns, each globule soldered by itself. Though this style of ornament occurs in Egypt, Cyprus, Rhodes and Magna Graecia, nowhere is it accomplished with such extraordinary minuteness as in Etruria. That they should do this was natural. The difficulty of it seems to have pleased them, for it is commoner than the earlier filigree work made of wire soldered on to the gold base. Reference has been made to the scarabs set as ornament in the gold necklaces, and similarly we find amber used and, in the later work, precious stones and pearls.

Gold and silver.

As in Greece the Etruscans first carved their figures out of wood,[36] but what these figures were like we can only imagine. The earliest known figures in the round are even less successful than the contemporary Greek work. An early attempt at a female bust[37] is made not by casting but by riveting plates of bronze together. A half life size bust in the Tyszkiewicz collection[38] made probably about 600 B.C. is cast solid. Later

Sculpture.

they learned the art of hollow-casting, but their attempts to reproduce figures in the round are generally lacking in skill. One reason for this was the lack of good marble, the quarries at Carrara not having been used till Roman times. Terra-cotta was the material most commonly used, and their skill in modelling and colouring this was great. The earlier statues of large size have perished; but there are three famous sarcophagi which show the work of Ionian Etruscan artists;[39] one is in the British Museum, one in the Louvre and one in the Villa di Papa Giulio at Rome. The elaborate detail and careful work, the types of the figures and the style of their dress all point to the same Ionic origin as that of the bronze chariots already mentioned. The type of sarcophagus illustrated by these examples became very common, and in the figures that decorate the covers can be traced the various influences that affected the whole of Etruscan art. In an example from Volci[40] the later Attic influence is strongly marked. Such work shows little power of origination, but much of the interest taken by careful workmen by copying carefully, and the tendency that such workmen almost invariably display of overloading the subject with too much ornament and detail. The small ash-urns, either of stone or terra-cotta, are in certain ways more interesting than the more elaborate sarcophagi, for on these urns the heads of the figures reclining on one elbow which form the usual decoration of the covers are often obvious attempts at portraiture. Single busts[41] show this same desire for accurate likeness of the person represented, and in this one line of art the Etruscans showed a new feeling, one that found its finest expression in the hands of the later Roman portraitists. The main difference between such portraits and the Greek ones is that the Greek artist thought of his subject as illustrating character that showed itself in ways of repose and thought—the essential, lasting individuality. The Etruscan and Roman portraitist thought, on the other hand, of his subject as illustrating character in ways of action; hence pure Etruscan and Roman portraits are much more tense in line, and the expression of the eye is not dreamy but distinctly focussed. They are different, but, as art, one is as fine as the other. The scenes on the sides of these urns are, as in the case of the gems and mirrors, very frequently taken from Greek story, and often are scenes of battle.[42] Work in relief for the friezes and the other decorations of temples was very common, and shows remarkable skill in the mere processes of modelling and baking the slabs of terra-cotta that were fastened by nails to the beams. So far as the figures themselves are concerned, they seem to have but little meaning in connexion with the building they decorate. Satyrs and maenads, chariot-races and such scenes taken over from Greek models are perhaps the commonest. In none of the obviously native work is there any more instinctive feeling for the greater qualities of sculpture than in the gems. Little is original, almost everything dependent on earlier masters. There is no absorption of the artist by his work which produces great work, great because the beholder thinks rather of the work produced than of the artist who produces it. For this reason such figures as the bronze chimaera or the bronze Athena in the Florence museum are presumably not Etruscan but Greek.

Painting.

There is no evidence that the Etruscans had easel-paintings like the Greeks, but their skill in painting is well illustrated by the pictures with which they frequently covered the inner walls of their tombs. The wall was prepared with a coating of fine white stucco on which the figures were painted with a large variety of tints. The best of them have been found at Tarquinii, Chiusi, Volci, Caere, Veii.[43] The paintings exhibit the usual Greek influences. They show a certain ponderous realism, but as works of art they are of little value. As pictures of the life and customs of the people they are of great importance.

Coins.

As works of art their coins[44] are the worst efforts of the Etruscans. Gold, silver and bronze were used, but no examples can be dated earlier than the beginning of the 5th century B.C. The coins are struck according to four different standards of weight, due perhaps to different trade-connexions. The bronze coinage shows a distinct scale of reduction in weight due to the increasing use of the precious metals. Many examples show a design only on one side. The designs of the majority of the types are taken from Greek models, but strangely enough the die-cutters show no such skill as that of the makers of gems.

Arms and Armour.—In the early periods the chief weapons (besides bows and arrows which bore flint or bronze heads) were few and simple, and were of bronze. Iron ones have been found, and their rarity is doubtless partly due to their having rusted away. Spears of very various weights were common and also swords and daggers. These latter had straight two-edged blades with the handle either of the same piece or of some other material fastened on with rivets. The blades of the daggers are generally engraved with lines and zigzags. Shields were of circular and oval shape. These two were of bronze, the round ones decorated in Homeric fashion with concentric circles of ornament, the motives being geometric patterns or an animal repeated endlessly. Breastplates with overlapping shoulder-straps and belts, broader in front than behind, with decoration of the same kind as the bucchero vases, are not uncommon. Greaves and helmets completed their equipment. The former seem to have been less ornate than those the Greeks wore; the latter were of various shapes, the commonest being round caps with a knob on the top, or a deeper shape with a crest from front to back. Some are shown with side-pieces raised like wings, but these are perhaps merely cheek-pieces raised on hinges. In later times they had trumpets and axes, and their arms became practically the same as the Roman, as one sees from the representations in the tombs.

(R. N.)

Language

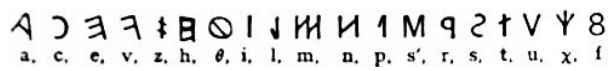
1. By “Etruscan” is meant the language spoken by the people called Etrusci (more commonly Tusci) by the Romans, Turskum numen (*i.e. Tuscum nomen*) by their neighbours the Umbrians of Iguvium (*q.v.*), and Τυρσηνοί (later, *e.g.* in Strabo’s time, Τυρρηνοί) by the Greeks. Their own name for themselves was *Rasénna* (or *Raséna*), according to Dionysius Halic. (i. 30), but it seems now to be fairly probable that this was no more than the name of a leading house (represented later on in Pisa and elsewhere) dominant at some fairly early date in some one locality (see below). Niebuhr attempted on slender grounds (*Rom. Hist.*, ed. 3 [Eng. trans.], i. p. 41) to distinguish between the Τυρρηνοί and the Tusci in order to accept the strongly supported tradition of a Lydian origin for the “Tyrrhenes” (see below), while rejecting it for the “Tuscans,” but no one has since attempted to maintain the distinction (Dittenberger, *Hermes*, 1906, p. 85, footnote, regards the form -ηνοί as a “Graecized form of a local name” equivalent to *Tusci*), and we now know enough of the morphology of Etruscan names to recognize *Tur-s-co-* and *Tur-s-ēno-* as closely parallel Etrusco-Latin stems, cf. *Venu-c-ius: Venu-senus* both from Etr. *venu* (Schulze, *Lat. Eigennamen*, p. 405) and *Ras-ena: Ras-c-anius* (*ibid.* p. 92); or *Voluscus, Volscus*: *Volusēnus* (where the formative suffixes in each word are Etrusco-Latin whether the root be the same or not). But the analysis of the names cannot be entirely satisfactory until the first syllable of Etrusci—in Greek writers sometimes Ἔτρουσκοι, *e.g.* in *Strabo*—ed. Meineke—has been explained.

2. The extent of territory over which this language was spoken varied considerably at different epochs, but we have only a few fixed points of chronology. From two separate sources, both traditional and probably sound (Dion. Hal. i. 26, and Plutarch, *Sulla*, 7; cf. Varro, quoted by Censorinus c. 17. 6), we should ascribe the first appearance of the Etruscans in Italy to the 12th century B.C. The intimate connexion in form between the names *Roma, Romulus* and the Etruscan gentes rumate, rumulna (*Romatia, Romilia*, &c.), and the fact that many of the early names in Rome (*e.g. Ratumenna, Capena, Tities, Luceres, Ramnes*) are characteristically Etruscan, justifies the conclusion that the

foundation of the city, in the sense at least of its earliest fortification, was due to Etruscans (Schulze, p. 580). The most likely interpretation of Cato's date for the Etruscan "foundation" of Capua is 598 B.C. (Conway, Italic Dialects, pp. 99 and 83). In 524 B.C. (Dion. Hal. vii. 2) the Etruscans were defeated by Aristodemus of Cumae, and in 474 by Hiero of Syracuse in a great naval battle off Cumae. Between 445 and 425 (*It. Dial.* l.c.) they were driven out of Capua by the Samnites, but they lingered in parts of Campania (as far south as Salernum) till at least the next century, as inscriptions show (*ib.* pp. 94 ff., 53), as at Praeneste and Tusculum (*ib.* p. 310 ff.) till the 3rd century or later. In Etruria itself the oldest inscriptions (on the stelae of Faesulae and Volaterrae) can hardly be later than the 6th century B.C. (C. Pauli, *Altital. Forsch.* ii. part 2, 24 ff.); the Romans had become dominant early in the 3rd century (C.I.L. xi. 1 *passim*), but the bulk of the Etruscan inscriptions show later forms than those found in the old town of Volsinii destroyed by the Romans in 280 B.C. (C. Pauli, *ib.* i. 127). In the north of Italy we find Etruscan written in two alphabets (of Sondrio and Bozen) between 300 and 150 B.C. (id. *ib.* pp. 63 and 126). The evidence of an Etruscan linen book wrapped round a mummy (see below) seems to suggest that there was some Etruscan colony at Alexandria in the period of the Ptolemies. At least one Etruscan suffix has passed into the Romance languages, *-iθa* or *-ita* in Etr. *lautniθa* (from *lautni* "familiaris," or "libertus"), and Etr.-Lat. *Iulitta*, which became Ital. *-etta*, Fr.-Eng. *-ette*.

3. Finally must be mentioned the remarkable pre-Hellenic epitaph discovered on the island of Lemnos in 1885 (Pauli, *Altital. Forsch.* ii. 1 and 2), the language of which offers remarkable resemblances to Etruscan, especially in the phrase *śialχveiz aviz* (? = "fifty years old"); cf. Etr. *cealχus avils* (? "twenty years old"); and the pair of endings *-ezi, -ale* in consecutive words; cf. Etr. *larθiale hulχniesi*; the style of the sculptural figure has also parallels in the oldest type of Etruscan monuments. The alphabet of this inscription is identical (Kirchhoff, *Stud. Griech. Alphab.*, 4th ed., p. 54) with that of the older group of Phrygian inscriptions, which mention King Midas and are therefore older than 620 B.C. With this should be combined the fact that a marked peculiarity of the South-Etruscan alphabet (↑ = f, but earlier = the Greek *digamma*) has demonstrably arisen out of ϕ = q on Phrygian soil, see *Class. Rev.* xii., 1898, p. 462. Despite the reasonable but not unanswerable difficulty of Kretschmer (*Einleitung in d. Geschichte d. griech. Sprache*, 1896, p. 240), the weight of the evidence appears to be distinctly in favour of the Etruscan character of the language, and Pauli's view is now generally accepted by students of Etruscan; hence the inclusion of the inscription in the *Corpus Inscc. Etruscarum*.

4. The first attempt to interpret Etruscan inscriptions was made by Phil. Buonarroti (*Explic. et conject. ad monum.* &c., Florence, 1726), who, as was almost inevitable at that epoch, tried to explain the language as a dialect of Latin. But no real study was possible before the determination of the alphabet by Lepsius (*Inscc. Umbr. et Oscae,* Leipzig, 1841), and his discovery that five of the Tables of Iguvium (*q.v.*), though written in Etruscan alphabet, contained a language akin to Latin but totally different from Etruscan, though some of the non-Italic peculiarities of Etruscan had been already pointed out by Ottfried Müller (*Die Etrusker*, Breslau, 1828). The earliest inscriptions, *e.g.* the terra-cotta stele of Capua of the 5th century B.C., are written in "serpentine boustrophedon," but in its common form of the 3rd century B.C. the alphabet is retrograde, and has the following nineteen letters:—



On older monuments 𐌊 = *k* occurs as an archaic form of *c*; Ϙ = *q*; ⋈, a sibilant of some kind; and ϵ = ϕ, this last mostly in foreign words. In the earlier monuments the cross-bars of *e* and *v* and *h* have a more decidedly oblique inclination, and s is often angular (ϟ). The mediae *b, g, d*, though they often occur in words handed down by writers as Etruscan, are never found in the Etruscan inscriptions, though the presence of the mediae in the Umbrian and Oscan alphabets and in the abecedaria shows that they existed in the earliest form of the Etruscan alphabet, O is very rare. The form ↑ (earlier 𐌅↑) = *f* in south Etruscan and Faliscan inscriptions should also be mentioned. Its combination with 𐌇 *h* shows that it had once served to denote the sound of digamma just as Latin F. The varieties of the alphabet in use between the Apennines and the Alps were first examined by Mommsen (*Inschriften nord-etruskischen Alphabets*, 1853), and have since been discussed by Pauli (*Altitalische Forschungen*, 1885-1894, esp. vol. iii., *Die Veneter*, p. 218, where other references will be found, see also Veneti).

5. The determination of the alphabet was followed by a large number of different attempts to explain the Etruscan forms from words in some other language to which it was supposed that Etruscan might be akin; Scandinavian and Basque and Semitic have been tried among the rest. These attempts, however ingenious, have all proved fruitless; even the latest and least fanciful (*Remarques sur le parenté de la langue étrusque*, Copenhagen, 1899; *Bulletin de l'Académie Royale des Sciences et des Lettres de Danemark*, 1899, p. 373), in which features of some living dialects of the Caucasus are cautiously compared by Prof. V. Thomsen (as independently by Pauli, see § 12), is at the best premature, and as to the numerals probably misleading. Worst of all was the effort of W. Corssen (*Die Sprache der Etrusker*, 1875), in whom learning and enthusiasm were combined with loose methods of both epigraphy and grammar, to revive the view of Buonarroti. The only solid achievement in the period of Corssen's influence (1860-1880) was the description of the works of art (tombs, vases, mirrors and the like) from the different centres of Etruscan population; Dennis's *Cities and Cemeteries of Etruria* (1st ed., 1848; 2nd, 1878) contributes something even to the study of the language, because many of the figures in the scenes sculptured or engraved bear names in Etruscan form (*e.g. usils*, "sun"; or "of the sun," on the *templum* of Placentia; *fuflunś*, "Bacchus"; *tuχulχa*, a demon or fury; see Dennis, *Cities*, 2nd ed., frontispiece, and p. 354).

6. The reaction against Corssen's method was led first by W. Deecke, *Corssen und die Sprache der Etrusker* (1876), *Etruskische Forschungen* (1875-1880), and continued by Carl Pauli at first jointly with Deecke and afterwards singly with greater power (*Etruskische Studien*, 1873), *Etr. Forschungen u. Studien* (Göttingen-Stuttgart, 1881-1884), *Altitalische Studien* (Hanover, 1883-1887); *Altitalische Forschungen* (Leipzig, 1885-1894). Of the work achieved during the last generation by him and the few but distinguished scholars associated with him (Danielsson, Schaefer, Skutsch and Torp) it may perhaps be said that, though the positive knowledge yet reaped is scanty, so much has been done in other ways that the prospect is full of promise. In the first place, the only sound method of dealing with an unknown language, that of interpreting the records of the language by their own internal evidence in the first instance (not by the use of imaginary parallels in better known languages whose kinship with the problematic language is merely assumed), has been finally established and is now followed even by scholars like Elia Lattes, who still retain some affection for the older point of view. By this means enough certainty has been obtained on many characteristic features of the language to bring about a general recognition of the fact that Etruscan, if we put aside its borrowings from the neighbouring dialects of Italy, is in no sense an Indo-European language. In the second place, the great undertaking of the *Corpus Inscriptionum Etruscarum*, founded by Carl Pauli, with the support of the Berlin Academy, conducted by him from 1893 till his death in 1901, and continued by Danielsson, Herbig and Torp, for the first time provided a sound basis for the study in a text of the inscriptions, edited with care and arranged according to their provenance. The first volume contains over four thousand inscriptions from the northern half of Etruria.

Thirdly, the discoveries of recent years have richly increased the available material, especially by two documents each of some length. (1) The 5th-century stele of terra-cotta from S. Maria di Capua already cited, published by Buecheler in *Rhein. Museum*, (lv., 1900, p. 1) and now in the Royal Museum at Berlin, is the longest Etruscan inscription yet found. Its best preserved part contains some two hundred words of continuous text, and is divided into paragraphs, of which the third may be cited in the reading approved by Danielsson and Torp, and with the division of words adopted by Torp (in his *Bemerkungen zur etrusk. Inschr. von S. Maria di Capua*, Christiania, 1905), to which the student may be referred. "iśvei tule ilucve, an priś laruns ilucuθuχ, nun: tiθuaial χues χaθc(e) anulis mulu rizile, ziz riin puiian acasri, ti-m an tule, leθam sul; ilucu-per priś an ti, ar vus; ta aius, nunθeri." (2) The linen wrappings of an Egyptian mummy (of the Ptolemaic period) preserved in the Agram museum were observed to show on their inner surface some writing, which proved to be Etruscan and to contain more than a thousand words of largely continuous text (Krall, "Die etruskischen Mumienbinden des Agramer. Museums," *Denkschr. d. k. Akad. d. Wissenschaften*, 41, Vienna, 1892). The writing has probably nothing to do with the mummy as it is on the inner surface of the bands, and these are torn fragments of the original book. The alphabet is of about the 3rd century B.C.

7. From the recurrence of a number of particular formulae with frequent numerals at intervals, the book seems to be a liturgical document. Torp has pointed out that the two documents have some forty words in common, and, with Lattes ("Primi Apprenti sulla grande iscriz. Etrusca," &c., in *Rendic. d. Reale Inst. Lomb.*, serie ii. vol. xxxviii., 1900, p. 345 ff.), has shown that both contain lists of offerings made to certain gods (among them Suri, Leθam, and Calu); and Skutsch (*Rhein. Mus.* 56, 1901, p. 639) has added a plausible conjecture as to the occasions of the offerings, based on the phrase "flerχva neθunsl" "Neptuni statua" (or "statuae pars"); Torp has made it very probable that the words *vacl* (or *vacil*) and *nun*, which recur at regular intervals in both, mean "address," "recite," "pray," or the like, preceding or following spoken parts of the ritual.

8. Along with the growth of the material, some positive increase in knowledge of the language has been attained. Independently of the work done upon particular inscriptions, such as that which has just been described, a considerable addition has come from the elaborate study of Latin proper names already mentioned by Prof. W. Schulze of Berlin (*Zur Geschichte lateinischer Eigennamen*, Berlin, 1904), which has incidentally embodied and somewhat extended the points of Etruscan nomenclature previously observed. The chief results for our purpose may be briefly stated. It will be convenient to use the following terms:—

(1) *praenomen* = personal name of the individual.

e.g. Vel or *Lar* of a man, *Larθi* or *θana* of a woman.

(2) *nomen* = family name.

e.g. Tite or *Vipi* or *Tetna*, of men.
Titi or *Vipinei* or *Tetinei*, of women.

(3) *cognomen* = additional family name.

e.g. Faru or *Petru* of men, *Farui, Vetui* of women.

(4) *agnomen* = special cognomen derived from the cognomen of the father.

e.g. Hanusa (in Latin spelling *Hannossa*) or *Pultusa* (also *Pultus*) of a man; *Hanunia* of a woman.

All these are commonly in the "nominative" (as the examples just quoted from Schulze, pp. 316-327) in sepulchral inscriptions.

Besides these, we have certain other descriptions used in forms which may be called a "genitive-dative" case, or a "derivative possessive" Adjective. These may be entitled:—

(5) *paternum* (*a*) = praenomen of father, used generally after the *nomen* of son or daughter.

e.g. arnθal "of *Arnθ.*" more commonly simply *ar*, so *ls* for *Laris-al*, to which *clan* "son," often abbreviated *c*, and *seχ* or *sec* (abbrev. *s*) "daughter," are sometimes added.

paternum (*b*) = *nomen* of father, used only after the *praenomen* of a daughter (*e.g. θana velθurnas*, "Thana daughter of Velthurna"), to which *seχ* "daughter," often abbreviated *s*, is sometimes added.

(6) *maternum* (*a*) = nomen of mother.

e.g. pumpunial, "of Pumpuni" (in Lat. form *Pomponia*); *alfnal* "of Alfnei" (Lat. *Alfia*); *hetarias*, "of Hetaria."

maternum (*b*) = cognomen of mother.

e.g. vetnal, "of Vetui," or "of Vetonia," *hesual*, "of Hesui."

maternum (*c*) = agnomen of mother.

e.g. cumeruniaś, "of Cumerunia," *i.e.* "of a daughter of the *cumeru*-family."

(7) *maritale*—(i.) *nomen*, or (ii.) *cognomen*, or (iii.) *agnomen* of husband, used directly after the *nomen* of the wife, the word *puia*, "wife," being often added.

e.g. (i.) *larθi cencui larcnasa*, "Larthia Cenconia, wife of a Largena"; (ii.) *larθia pulfnei spaspusa*, "Larthia Pulfennia, wife of a Spaspo"; this form being the same as that used for the *agnomen* of a man (see above)—(iii.) *hastia cainei leusla*, "Hastia Caia, wife of a son of a Leo"; and with a longer and possibly not synonymous form of suffix, *θania titi latinial śec hanuslisa*, "Thania Titia, daughter of Latinia, wife of a Hanusa"—these secondary derivatives in *-sla*, &c., being an example of what is called *genetivus genetivi*, a characteristic Etruscan formation, not confined to this feminine use.

These examples will probably enable the reader to interpret the great mass of the names on Etruscan tombs. It should be added (1) that no clear distinction can be drawn between the use of the *cognomina* and the *nomina*, though it is probable that in origin the *cognomen* came from some family connected with the gens by marriage; and (2) that the *praenomen* generally comes first, but sometimes second (especially when both *nomen* and *praenomen* are added in the genitive to the name of a son or daughter).

9. The examples given illustrate also the few principles of inflexion and word-formation that are reasonably certain, for example, the various "genitival" endings. Those in *-ś* and *-l* are also found in dedications where in Latin a dative would be used:—*e.g.* (*mi*) *θuplθaś alpan turce* "(hoc) deae Thupelthae donum dedit," where *turce* shows the only verbal inflection yet certainly known; cf. *amce*, "was," *arce*, "made," *zilacnuce*, "held the office of a *Zilaχ*," *lupuce*, "passed away." More important are the formative principles which the proper names display. Endings *-a, -u, -e* and *-na* are common in the "Nominative"—and in Etruscan there appears to be no distinction between this case and the Accusative—of men's names; the endings *-i, -ei, -nei, -nia* and *-unia* are among the commonest for women's names. But no trace of gender has yet been observed in common nouns or adjectives. Nor is it always easy to distinguish a

"Case" from a noun-stem. The women's names corresponding to the men's names in *-u* are sometimes *-ui*, sometimes *-nei*, sometimes longer forms (*ves-acnei*, beside *ves-u*, *hanunia* from *hanu*). And the so-called Genitives can themselves be inflected, as we have seen. The form *neθunsl* "of Neptune," may even have swallowed up the nominatival *-s* of the Italic *Neptunus*.

10. In view of the protracted discussion as to the numerals and the dice on which the first six are written, it should be added that only the following points are certain: (1) that *maχ* = one; (2) that the next five numbers are somehow represented by *ci, θu, huθ, sa* and *zal*; (3) and the next three somehow by *cezp-, semφ-* and *muv*; (4) that the suffix *-alχ-* denotes the tens, or some of them, *e.g. cealχ-* beside *ci* (? 50 and 5); (5) that the suffix *-z* or *-s* is multiplicative (*es*(*a*)*ls* from *zal*). It is almost certain that *zal* must mean either 2 or 6, and of these a stronger case can, perhaps, be made for the latter meaning. *Zathrum* appears to be the corresponding ten (? 60). Skutsch's article in *Indogerm. Forschungen*, v. p. 256, remains the best account.

In close connexion with the numerals on sepulchral inscriptions appear the words *ril*, "old, aged," *avils*, "annorum," or "aetatis," and *tivr*, "month" (from *tiv*, "moon").

11. Schulze has shown (*e.g.*, p. 410) that a large number of familiar endings (*e.g.* those which when Latinized become *-acius, -alius, -annius, -arius, -asius, -atius, -avus, -avius, -ax*, and a similar series with *-o-, -ocius*, &c.), and further those with the elements, *-lno-, -lino-, -enna, -eno-, -tern-, -turn-, -tric-*, &c., exhibit different methods by which *nomina* were built up from *praenomina* in Etruscan. Finally it is of considerable historical importance to observe that a great mass of the *praenomina* used for this purpose are clearly of Italic origin, *e.g. Helva, Barba, Vespa, Nero, Pedo*, from all of which (and many more) there are derivatives which at one stage or other were certainly or probably Etruscan. It is this incorporation of Italic elements into the Etruscan nomenclature—itself a familiar and inevitable feature of the pirate-type of conquest and settlement, under which many women who bear and nurse and first name the children belong to the conquered race—that has entrapped so many scholars into the delusion that the language itself was Indo-European.

12. So far the language has been discussed without any reference to ethnology. But the facts stated above in regard to the extension of the language in space and time are clearly adverse to the hypothesis that it came into Italy from the north, and fully bear out Livy's account (v. 33. 11) that the Etruscans of the Alpine valleys had been driven into that isolation by the invasion of the Gauls (beginning about 400 B.C.). And the accumulating evidence of a connexion with Asia Minor (see *e.g.* above § 3) justifies confidence in the unbroken testimony of every Roman writer, which cannot but represent the traditions of the Etruscans themselves, and the evidence of similar traditions from the Asiatic side given by Herodotus (i. 97) to the effect that they came to Italy by sea from Lydia. Against this there has never been anything to set but the silence of "the Lydian historian Xanthus" (Dion. Hal. i. 28; cf. 30) who may have had many excellent reasons for it other than a disbelief of the tradition, and of whom in any case we know nothing save the vague commendation of Dionysius. And it is not merely the miscellanies of Athenaeus (*e.g.* xii. 519) but the unimpeachable testimony of the Umbrian Plautus (*Cistellaria*, 2. 3. 19), singularly neglected since Dennis's day, that convicts the Etruscans of an institution practised by the Lydians and other non-Indo-European peoples of Asia Minor, but totally repugnant to all the peoples among whom the Etruscans moved in their western settlement. The reader may be referred to Dennis's introductory chapter for a very serviceable collection of the other ancient testimony as to their origin. In the present state of our knowledge of the language it is best to disregard its apparent or alleged resemblances to various features of various Caucasian dialects pointed out by Thomsen (see above) and Pauli (*Altit. Forsch.* ii. 2, p. 147 ff.), and to acquiesce in Kretschmer's (*op. cit.* p. 408) *non liquet* as to the particular people of Asia Minor from whom the Etruscans sprang. But meanwhile it is clear that such evidence as has been obtained by epigraphic and linguistic research is not in any sense hostile but distinctly favourable to the tradition of their origin which they themselves must have maintained.

AUTHORITIES.—Beside those mentioned in the text, see Professor F. Skutsch's article "Etruskisch," in the new current (1908) edition of Pauly-Wissowa's *Encyclopaedia*; A. Torp's *Etruskische Beiträge*, and other shorter writings; E. Lattes's *Correzioni, giunte, postille al C. I. Etrusc.* (Florence, 1904), and his most valuable *Iscriz. paleolatine di provenienza Etrusca* (1895); Schaefer's articles in Pauli's *Altitalische Studien* (see above), and, with caution, Deecke's revision of Müller's *Etrusker* (Stuttgart, 1877). Some account of the relations of Etruscans with different Italic communities will be found in the relevant chapters of R.S. Conway's edition of the remains of *The Italic Dialects* (1897). Newly discovered Etruscan inscriptions are regularly published in the *Notizie degli scavi di antichità*, the official Italian journal of excavations (published by the *Reale Accad. dei Lincei*, but procurable separately). Fabretti's *Corpus Inscc. Italicarum* with its supplements was formerly useful, but in any doubtful reading its authority is worth little, and its commentary and glossary represent the epoch of Corssen. The regular contributions of Prof. Skutsch (under the general heading "Lateinische Sprache") to Vollmer's *Jahresbericht f. d. Fortschritte der romanischen Sprachwissenschaft*; and of Prof. Herbig to Bursian's *Jahresbericht über die Fortschritte der classischen Altertumswissenschaft* will both be of service. The present writer is indebted to both Professor Skutsch and Professor Torp for valuable guidance and instruction.

(R. S. C.)

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1 For Barnabei's excavations see Fausto Benedetti, *Gli Scavi di Narce ed il Museo di Villa Giulia* (1900).

2 For a further discussion see *ad fin.*, section *Language*.

3 See Pauli, *Altitalische Forschungen*, vol. i.; also sect. *Language* (below).

4 Cf. the contents of the graves found by Boni in the Roman Forum (*Notizie degli Scavi*, 1902, 1903, 1905) with the objects represented in the plates of Montelius, *La Civilisation primitive en Italie*, pt. i. For the cemeteries at Novilara cf. Brizio, *Monumenti antichi*, vol. v.

5 τήν τε Ῥωμην αὐτὴν τῶν συγγραφέων Τυρρηνίδα πόλιν εἶναι ὑπέλαβον, Dion. Hal. i. 29; but see sect. *Language* for meaning of Τυρρηνία.

6 For the wars of the Greeks against the Carthaginians and the Etruscans see Busolt, *Griechische Geschichte*, ii. 218 ff.

7 Pliny (*H.N.* xxxvii. 11). He says that amber was brought by the Germans down the valley of the Po. Thence the trade-route crossed the Apennines to Pisa (Scylax in *Geographi minores*, ed. Didot, i. p. 25). In the consideration of problems suggested by amber it is too often forgotten that a very beautiful dark amber is found in Sicily.

8 Montelius, *Civilization primitive en Italie*, ii. pl. 265; cf. Petrie. *Naukratis*, i. pl. 20, fig. 15, and Perrot-Chipiez, *Histoire de l'art*, iii.

9 *Monumenti dell' Inst. Arch. Rom.* x. pl. 31; *Museo Etrusco Vaticano*, i. pl. 63-69; cf. *Annali dell' Inst. Arch.*, 1896, p. 199 ff.

10 Vase with hieroglyphs found at Santa Marinella, *Bollettino dell' Inst. Arch.*, 1841, p. 111; *Mon. antichi*, viii. p. 88.

11 G. Dennis, *Cities and Cemeteries of Etruria*.

12 Varro *ap.* Serv. *ad Aen.* viii. 526; see Helbig, *Bull. dell' Inst. Arch.* (1876), 227.

13 Censorinus, *De Die Nat.* 17.

14 See Preller, *Röm. Myth.* s.v. "Volcanus." Opposed to this see Wissowa, *Religion u. Kultus der Römer*, who seems to misinterpret the evidence.

15 Strabo v. 2. 39; cf. Livy i. 30; Dion. Hal. iii. 32.

16 Nigidius Figulus *ap.* Arnob. *adv.* Nat. iii. 40; cf. *Nig. Fig. reliquiae*, ed. Ant. Swoboda (1888), p. 83.

17 Montelius, *Civ. Prim. en Italie*.

18 For an illustration of the Corneto tomb see Architecture, vol. ii. p. 559.

19 Appian viii. 66; Tertullian, *De spect.* 5; Plutarch, *Qu. Rom.* 107.

20 Dion. Hal. vii. 72.

21 Montelius, *Civ. Prim.* ii. pl. 172.

22 *Ib.* pl. 333; cf. 343.

23 *Ib.* pl. 166.

24 *Ib.* pl. 173.

25 *Monum. Ant.* xv. p. 151; *Bull. d. Com. Arch. di Roma*, 1898, p. 111.

26 *Annali dell' Inst. Arch.*, 1876, 230.

27 Gerhard, *Etruskische Spiegel*; Körte, *Rilievi delle urne Etrusche*.

28 See Pottier, *Catalogue des vases antiques, II. L'École Ionienne*, Boehlau, *Aus ionischen und italischen Nekropolen*; Karo, *De arte vascularia antiquissima*; Endt, *Ionische Vasenmalerei*. See further Ceramics, § Etruscan.

29 Athen. i. 28.

30 Martha, *L'Art étrusque*, pl. I, 4; *Bull. dell' Inst.* (1837) p. 46.

31 Plutarch, *Camillus*, 12.

32 Gerhard, *Etr. Spiegel* (continued by Klugmann and Körte).

33 Mirrors of Greek style, Gerhard, 111, 112, 116, 240, 305, 352; Klugmann-Körte, 107, 131, 160.

34 See plates in Martha and in *Monumenti dell' Inst.*, also *Mon. Ant.* iv. and Milani's *Studie materiali*.

35 Juvenal v. 164; Ovid, *Am.* iii. 13. 25 ff.

36 Pliny, *H.N.* xiv. 9; xvi. 216.

37 From the Polledrara tomb at Vulci, Martha fig. 335.

38 *Coll. Tyszkiewicz*, pl. 13.

39 *Mon. dell' Inst.* vi. pl. 59, cf. *Annali* (1861), p. 402; *Mon. Ant.* viii. pl. xiii.-xiv.

40 *Mon. dell' Inst.* viii. pl. 20; Martha p. 347.

41 Martha pp. 333, 348.

42 See Körte, *Rilievi delle urne Etrusche*.

43 See *Mon. dell' Inst.* i. pl. 32-33, v. 16, 17, 33, 34, vi. 30-32, 79, viii. 36, ix. 13-15; Micali, *Mon. Ined.* pl. 58. Cf. Helbig, *Annali* (1863) p. 336, (1870) pp. 5-74; Brunn, *ib.* (1866), p. 442.

44 Mommsen, *Röm. Münzwesen*; G.F. Hill, *Handbook of Greek and Roman Coins*; Deecke, *Etruskische Forschungen*; also article Numismatics.

ETTENHEIM, a town of Germany, in the grand-duchy of Baden, pleasantly situated on the Ettenbach, under the western slope of the Black Forest, 7 m. E. from the Rhine by rail. Pop. (1900) 3106. It has a handsome Roman Catholic church, with ceiling frescoes, and containing the tomb of Cardinal Rohan, the last prince bishop of Strassburg, who resided here from 1790 till 1803; a Protestant church and a medieval town-hall. Its industries include the manufacture of tobacco, soap and leather, and there is a considerable trade in wine and agricultural produce. Founded in the 8th century by Eddo, bishop of Strassburg, Ettenheim remained attached to that see until 1802, when it passed to Baden. Louis Antoine Henri de Bourbon-Condé, duke of Enghien (1772-1804), who had taken refuge here in 1801, was arrested in Ettenheim on the 15th of March 1804 and conveyed to Paris, where he was shot on the 20th of March following. The Benedictine abbey of Ettenheimmünster, which was founded in the 8th century and which was dissolved in 1803, occupied a site south of the town.

ETTINGSHAUSEN, CONSTANTIN, Baron von (1826-1897), Austrian geologist and botanist, was born in Vienna on the 16th of June 1826. He graduated as a doctor of medicine in Vienna, and became in 1854 professor of botany and natural history at the medical and surgical military academy in that city. In 1871 he was chosen professor of botany at Graz, a position which he occupied until the close of his life. He was distinguished for his researches on the Tertiary floras of various parts of Europe, and on the fossil floras of Australia and New Zealand. He died at Graz on the 1st of February 1897.

Publications.—*Die Farnkräuter der Jetztwelt zur Untersuchung und Bestimmung der in den Formationen der Erdrinde eingeschlossenen Überreste von vorweltlichen Arten dieser Ordnung nach dem Flächen-Skelet bearbeitet* (1865); *Physiographie der Medicinal-Pflanzen* (1862); *A Monograph of the British Eocene Flora* (with J. Starkie Gardner), Palaeontograph. Soc. vol. i. (Filices, 1879-1882).

ETTLINGEN, a town of Germany, in the grand-duchy of Baden, on the Alb, and the railway Mannheim-Basel, 4½ m. S. of Karlsruhe. Pop. (1905) 8040. It is still surrounded by old walls and ditches, and presents a medieval and picturesque appearance. Among its more striking edifices are an old princely residence, with extensive grounds, an Evangelical and two Roman Catholic churches, and the buildings of a former monastery. There are also many Roman remains, notable among them the "Neptune" sculpture, now embedded in the wall of the town-hall. Its chief manufactures are paper-making, spinning, weaving and machine building. The cultivation of wine and fruit is also largely carried on, and in these products considerable trade is done.

The first notice of Ettlingen dates from the 8th century. It became a town in 1227 and was presented by the emperor Frederick II. to the margrave of Baden. In 1689 it was pillaged by the French, and near the town Moreau defeated the archduke Charles on the 9th and 10th of July 1796.

See Schwarz, *Geschichte der Stadt Ettlingen* (Carlsruhe, 1900).

ETTMÜLLER, ERNST MORITZ LUDWIG (1802-1877), German philologist, was born at Gersdorf near Löbau, in Saxony, on the 5th of October 1802. He was privately educated by his father, the Protestant pastor of the village, entered the gymnasium at Zittau in 1816 and studied from 1823 to 1826 at the university of Leipzig. After a period of about two years during which he was partly abroad and partly at Gersdorf, he proceeded to Jena, where in 1830 he delivered, under the auspices of the university, a course of lectures on the old Norse poets. Three years later he was called to occupy the mastership of German language and literature at the Zürich gymnasium; and in 1863 he left the gymnasium for the university, with which he had been partially connected twenty years before. He died at Zürich in April 1877. To the study of English Ettmüller contributed by an alliterative translation of Beowulf (1840), an Anglo-Saxon chrestomathy entitled *Engla and Seaxna scopas and boceras* (1850), and a well-known *Lexicon Anglo-Saxonicum* (1851), in which the explanations and comments are given in Latin, but the words unfortunately are arranged according to their etymological affinity, and the letters according to phonetic relations. He edited a large number of High and Low German texts, and to the study of the Scandinavian literatures he contributed an edition of the *Völuspa* (1831), a translation of the *Lieder der Edda von den Nibelungen* (1837) and an old Norse reading book and vocabulary. He was also the author of a *Handbuch der deutschen Literaturgeschichte* (1847), which includes the treatment of the Anglo-Saxon, the Old Scandinavian, and the Low German branches; and he popularized a great deal of literary information in his *Herbstabende und Winternächte: Gespräche über Dichtungen und Dichter* (1865-1867). The alliterative versification which he admired in the old German poems he himself employed in his *Deutsche Stammkönige* (1844) and *Das verhängnissvolle Zahnweh, oder Karl der Grosse und der Heilige Goar* (1852).

ETTMÜLLER, MICHAEL (1644-1683), German physician, was born at Leipzig on the 26th of May 1644, studied at his native place and at Wittenberg, and after travelling in Italy, France and England was recalled in 1668 to Leipzig, where he was admitted a member of the faculty of medicine in 1676. About the same time the university confided to him the chair of botany, and appointed him extraordinary professor of surgery and anatomy. He died on the 9th of March 1683, at Leipzig. He enjoyed a great reputation as a lecturer, and wrote many tracts on medical and chemical subjects. His collected works were published in 1708 by his son, Michael Ernst Ettmüller (1673-1732), who was successively professor of medicine (1702), anatomy and surgery (1706), physiology (1719) and pathology (1724) at Leipzig.

ETTRICK, a river and parish of Selkirkshire, Scotland. The river rises in Capel Fell (2223 ft.), a hill in the extreme S.W. of the shire, and flows in a north-easterly direction for 32 m. to its junction with the Tweed, its principal affluent being the Yarrow. In the parish of Ettrick were born James Hogg, the "Ettrick shepherd" (the site of the cottage being marked by a monument erected in 1898), Tibbie (Elizabeth) Shiel (1782-1878), keeper of the famous inn at the head of St Mary's Loch, both of whom are buried in the churchyard, and Thomas Boston (1713-1767), one of the founders of the Relief church. About 2 m. below Ettrick church is Thirlestane Castle, the seat of Lord Napier and Ettrick, a descendant of the Napiers of Merchiston, and beside it is the ruin of the stronghold that belonged to John Scott of Thirlestane, to whom, in reward for his loyalty, James V. granted a sheaf of spears as a crest, and the motto, "Ready, aye ready." Two miles up Rankle Burn, a right-hand tributary, lies the site of Buccleuch, another stronghold of the Scotts, which gave them the titles of earl (1619) and duke (1663). Only the merest fragment remains of Tushielaw tower, occupying high ground opposite the confluence of the Rankle and the Ettrick, the home of Adam Scott, "King of the Border," who was executed for his misdeeds in 1530. Lower down the dale is Deloraine, recalling one of the leading characters in *The Lay of the Last Minstrel*. If the name come from the Gaelic *dail Orain*, "Oran's field," the district was probably a scene of the labours of St Oran (d. 548), an Irish saint and friend of Columba. It seems that Sir Walter Scott's rhythm has caused the accent wrongly to be laid on the last, instead of the penultimate syllable. Carterhaugh, a corruption of Carelhaugh, occupying the land where Ettrick and Yarrow meet, was the scene of the ballad of "Young Tamlane," and of the historic football match in 1815, under the auspices of the duke of Buccleuch, between the burghers of Selkirk, championed by Walter Scott, sheriff of the Forest (not yet a baronet), and the men of Yarrow vale, championed by the Ettrick shepherd.

ETTY, WILLIAM (1787-1849), British painter, was born at York, on the 10th of March 1787. His father had been in early life a miller, but had finally established himself in the city of York as a baker of spice-bread. After some scanty instruction of the most elementary kind, the future painter, at the age of eleven and a half, left the paternal roof, and was bound apprentice in the printing-office of the *Hull Packet*. Amid many trials and discouragements he completed his term of seven years' servitude, and having in that period come by practice, at first surreptitious, though afterwards allowed by his master "in lawful hours," to know his own powers, he removed to London.

The kindness of an elder brother and a wealthy uncle, William Etty, himself an artist, stood him in good stead. He commenced his training by copying without instruction from nature, models, prints, &c.—his first academy, as he himself says, being a plaster-cast shop in Cock Lane, Smithfield. Here he made a copy from an ancient cast of Cupid and Psyche, which was shown to Opie, and led to his being enrolled in 1807 as student of the Academy, whose schools were at that time conducted in Somerset House. Among his fellow scholars at this period of his career were some who in after years rose to eminence in their art, such as Wilkie, Haydon, Collins, Constable. His uncle generously paid the necessary fee of one hundred guineas, and in the summer of 1807 he was admitted to be a private pupil of Sir Thomas Lawrence, who was at the very acme of his fame. Etty himself always looked on this privilege as one of incalculable value, and till his latest day regarded Lawrence as one of the chief ornaments of British art. For some years after he quitted Sir Thomas's studio, even as late as 1816, the influence of his preceptor was traceable in the mannerism of his works. Though he had by this time made great progress in his art, his career was still one of almost continual failure, hardly cheered by even a passing ray of success. In 1811, after repeated rejections, he had the satisfaction of seeing his "Telemachus rescuing Antiope" on the walls of the Academy. It was badly hung, however, and attracted little notice. For the next five years he persevered with quiet and constant energy in overcoming the disadvantages of his early training with yearly growing success, and he was even beginning to establish something like a name when in 1816 he resolved to improve his knowledge of art by a journey to Italy. After an absence of three months, however, he was compelled to return home without having penetrated farther south than Florence. Struggles and vexations still continued to harass him, but he bore up against them with patient endurance and force of will. In 1820 his "Coral-finders," exhibited at the Royal Academy, attracted much attention, and its success was more than equalled by that of "Cleopatra's arrival in Cilicia," shown in the following year. In 1822 he again set out on a tour to Italy, taking Paris on his way, and astonishing his fellow-students at the Louvre by the rapidity and fidelity with which he copied from the old masters in that gallery. On arriving at Rome he immediately resumed his studies of the old masters, and elicited many expressions of wonder from his Italian fellow-artists for the same qualities which had gained the admiration of the French. Though Etty was duly impressed by the grand *chefs-d'œuvre* of Raphael and Michelangelo at Rome, he was not sorry to exchange that city for Venice, which he always regarded as the true home of art in Italy. His own style as a colourist held much more of the Venetian than of any other Italian school, and he admired his prototypes with a zeal and exclusiveness that sometimes bordered on extravagance.

Early in 1824 he returned home to find that honours long unjustly withheld were awaiting him. In that year he was made an associate of the Royal Academy, and in 1828 he was promoted to the full dignity of an Academician. In the interval between these dates he had produced the "Combat (Woman interceding for the Vanquished)," and the first of the series of three pictures on the subject of Judith, both of which ultimately came into the possession of the Scottish Academy. Etty's career was from this time one of slow but uninterrupted success. In 1830 he again crossed the channel with the view to another art tour through the continent; but he was overtaken in Paris by the insurrection of the Three Days, and was so much shocked by the sights he was compelled to witness in that time that he returned home with all convenient speed. During the next ten years of his life the zeal and unabated assiduity of his studies were not at all diminished. He was a constant attendant at the Academy Life School, where he used to work regularly along with the students, notwithstanding the remonstrances of some of his fellow-Academicians, who thought the practice undignified. The course of his studies was only interrupted by occasional visits to his native city, and to Scotland, where he was welcomed with the utmost enthusiasm, and *fêted* with the most gratifying heartiness by his brother-artists at Edinburgh. On the occasion of one of these visits he gave the finishing touches to his trio of Judiths. In 1840, and again in 1841, Etty undertook a pilgrimage to the Netherlands, to seek and examine for himself the masterpieces of Rubens in the churches and public galleries there. Two years later he once more visited France with a view to collecting materials for what he called "his last epic," his famous picture of "Joan of Arc." This subject, which would have tasked to the full even his great powers in the prime and vigour of manhood, proved almost too serious an undertaking for him in his old age. It exhibits, at least, amid great excellences, undeniable proofs of decay on the part of the painter; yet it brought a higher price than any of his earlier and more perfect works, £2500. In 1848, after completing this work, he retired to York, having realized a comfortable independence. One wish alone remained for him now to gratify; he desired to see a "gathering" of his pictures. With much difficulty and exertion he was enabled to assemble the great majority of them from various parts of the British Islands; and so numerous were they that the walls of the large hall he engaged in London for their exhibition were nearly covered. This took place in the summer of 1849; on the 13th of November of that same year he died. He received the honours of a public funeral in his native city.

Etty holds a secure place among English artists. His drawing was frequently incorrect, but in feeling and skill as a colourist he has few equals. His most conspicuous defects as a painter were the result of insufficient general culture and narrowness of sympathy.

See Etty's autobiography, published in the *Art Journal* for 1849, and the *Life of William Etty, R.A.*, by Gilchrist (2 vols., 1855).

ETYMOLOGY (Gr. ἔτυμος, true, and λόγος, account), that part or branch of the science of linguistics which deals with the origin or derivation of words. The Greek word ἔτυμος, in so far as it was applied to words, referred to the real underlying meaning rather than to the origin. It was the Stoics who asserted that the discovery of τὸ ἔτυμον would explain the essence of the things and ideas represented by words. Plato in the *Cratylus* makes a nearer approach to the modern view when he connects, *e.g.* γυνή, woman, with γονή, seed, while he jests at such etymological feats as the derivation of οὐρανός, heaven, ἀπὸ τοῦ ὁρᾶν τὰ ἄνω, from looking at things above, or ἄνθρωπος, man, from ὁ ἀναθρῶν ἃ ὄπωπεν, he who looks up at what he sees. Until the comparative study of philology and the development of the laws underlying phonetic changes, the derivation of words was a matter mostly of guess-work, sometimes right but more often wrong, based on superficial resemblances of form and the like. This popular etymology, to which the Germans have given the name *Volksetymologie* or folk-etymology, has had much influence in

the form which words take (*e.g.* “crawfish” or “crayfish,” from the French *crevis*, modern *écrevisse*, or “sand-blind,” from *samblind*, *i.e.* semi-, half-blind), and has frequently been the occasion of homonyms. W.W. Skeat has embodied in certain canons or rules some well-known principles which should be observed in giving the etymology of a word; these may be usefully given here: “(1) Before attempting an etymology, ascertain the earliest form and use of the word, and observe chronology. (2) Observe history and geography; borrowings are due to actual contact. (3) Observe phonetic laws, especially those which regulate the mutual relation of consonants in the various Aryan languages, at the same time comparing the vowel sounds. (4) In comparing two words, A and B, belonging to the same language, of which A contains the lesser number of syllables, A must be taken to be the more original word, unless we have evidence of contraction or other corruption. (5) In comparing two words, A and B, belonging to the same language and consisting of the same number of syllables, the older form can usually be distinguished by observing the sound of the principal vowel. (6) Strong verbs, in the Teutonic languages, and the so-called “irregular verbs” in Latin, are commonly to be considered as primary, other related forms being taken from them. (7) The whole of a word, and not a portion only, ought to be reasonably accounted for; and, in tracing changes of form, any infringement of phonetic laws is to be regarded with suspicion. (8) Mere resemblances of form and apparent connexion in sense between languages which have different phonetic laws or no necessary connexion are commonly a delusion, and are not to be regarded. (9) When words in two different languages are more nearly alike than the ordinary phonetic laws would allow, there is a strong probability that one language has borrowed the word from the other. Truly cognate words ought not to be *too much* alike. (10) It is useless to offer an explanation of an English word which will not also explain all the cognate forms” (Introduction to *Etymological Dictionary of the English Language*, 1898).

An English word is either “the extant formal representative or direct phonetic descendant of an earlier (Teutonic) word; or it has been *adopted* or *adapted* from some foreign language,” adoption being a popular, and adaptation being a literary or learned process; finally, there is *formation*, *i.e.* the “combination of existing words (foreign or native) or parts of words with each other or with living formatives, *i.e.* syllables which no longer exist as separate words, but yet have an appreciable signification which they impart to the new product” (see Introduction to the Oxford *New English Dictionary*, p. xx). A further classification of words according to their origin is that into (1) naturals, *i.e.* purely native words, like “mother,” “father,” “house”; (2) those which become perfectly naturalized, though of foreign origin, like “cat,” “mutton,” “beef”; (3) denizens, words naturalized in usage but keeping the foreign pronunciation, spelling and inflections, *e.g.* “focus,” “camera”; (4) aliens, words for foreign things, institutions, offices, &c., for which there is no English equivalent, *e.g.*, *menu*, *table d’hôte*, *impi*, *lakh*, *mollah*, *tarbush*; (5) casuals, *e.g.*, *bloc*, *Ausgleich*, *sabotage*, differing only from “aliens” in their temporary use. The full etymology of a word should include the phonetic descent, the source of the word, whether from a native or from a foreign origin, and, if the latter, whether by adoption or adaptation, or, if a *formed* word, the origin of the parts which go to make it up. In the present edition of the *Encyclopaedia Britannica* such full etymologies, which would be necessary and in place in an etymological dictionary, have not been given in every instance, but brief etymological notes are appended, showing in outline the sources and history, and in many cases the development in meaning. (See also Dictionary.)

EU, a town of north-western France, in the department of Seine-Inférieure, on the river Bresle, 64 m. N.N.E. of Rouen on the Western railway, and 2 m. E.S.E. of Le Tréport, at the mouth of the Bresle, which is canalized between the two towns. Pop. (1906) 4865. The extensive forest of Eu lies to the south-east of the town. Eu has three buildings of importance—the beautiful Gothic church of St Laurent (12th and 13th centuries) of which the exterior of the choir with its three tiers of ornamented buttressing and the double arches between the pillars of the nave are architecturally notable; the chapel of the Jesuit college (built about 1625), in which are the tombs of Henry, third duke of Guise, and his wife, Katherine of Cleves; and the château. The latter was begun by Henry of Guise in 1578, in place of an older château burnt by Louis XI. in 1475 to prevent its capture by the English. It was continued by Mademoiselle de Montpensier in the latter half of the 17th century, and restored by Louis Philippe who, in 1843 and 1845, received Queen Victoria within its walls. In 1902 the greater part of the building was destroyed by fire. The town has a tribunal of commerce and a communal college, flour-mills, manufactories of earthenware, biscuits, furniture, casks, and glass and brick works; the port has trade in grain, timber, hemp, flax, &c.

Eu (Augusta) was in existence under the Romans. The first line of its counts, supposed to be descended from the dukes of Normandy, had as heiress Alix (died 1227), who married Raoul (Ralph) de Lusignan, known as the Sire d’Issoudun from his lordship of that name. Through their grand-daughter Marie, the countship of Eu passed by marriage to the house of Brienne, two members of which, both named Raoul, were constables of France. King John confiscated the countship in 1350, and gave it to John of Artois (1352). His great-grandson, Charles, son of Philip of Artois, count of Eu, and Marie of Berry, played a conspicuous part in the Hundred Years’ War. He was taken prisoner at the battle of Agincourt (1415), and remained in England twenty-three years, in accordance with the dying injunctions of Henry V. that he was not to be let go until his son, Henry VI., was of age to govern his dominions. He accompanied Charles VII. on his campaigns in Normandy and Guyenne, and was made lieutenant-general of these two provinces. It was he who effected a reconciliation between the king and the dauphin after the revolt of the latter. He was created a peer of France in 1458, and made governor of Paris during the war of the League of the Public Weal (1465). He died on the 15th of July 1472 at the age of about seventy-eight, leaving no children. His sister’s son, John of Burgundy, count of Nevers, now received the countship, which passed through heiresses, in the 15th century, to the house of Cleves, and to that of Lorraine-Guise. In 1660 Henry II. of Lorraine, duke of Guise, sold it to “Mademoiselle,” Anne Marie Louise d’Orléans, duchesse de Montpensier (*q.v.*), who made it over (1682) to the duke of Maine, bastard son of Louis XIV., as part of the price of the release of her lover Lauzun. The second son of the duke of Maine, Louis Charles de Bourbon (1701-1775), bore the title of count of Eu. In 1755 he inherited from his elder brother, Louis Auguste de Bourbon (1700-1755), prince de Dombes, great estates, part of which he sold to the king. The remainder, which was still considerable, passed to his cousin the duke of Penthièvre. These estates were confiscated at the Revolution; but at the Restoration they were bestowed by Louis XVII. on the duchess-dowager of Orléans who, in 1821, bequeathed them to her son, afterwards King Louis Philippe. They were again confiscated in 1852, but were restored to the Orleans family by the National Assembly after the Franco-German War. The title of count of Eu was revived in the 19th century in favour of the eldest son of the duke of Nemours, second son of King Louis Philippe.

EUBOEA (pronounced *Evvia* in the modern language), Euripos, or Negropont, the largest island of the Grecian archipelago. It is separated from the mainland of Greece by the Euboic Sea. In general outline it is long and narrow; it is about 90 m. long, and varies in breadth from 30 m. to 4. Its general direction is from N.W. to S.E., and it is traversed throughout its length by a mountain range, which forms part of the chain that bounds Thessaly on the E., and is continued south of Euboea in the lofty islands of Andros, Tenos and Myconos. The principal peaks of this range are grouped in three knots which divide the island into three portions. Towards the north, opposite the Locrian territory, the highest peaks are Mts. Gaetsades (4436 ft.) and Xeron (3232 ft.). The former was famed in ancient times for its medicinal plants, and at its foot are the celebrated hot springs, near the town of Aedepsus (mod. Lipsos), called the Baths of Heracles, used, we are told, by the dictator L. Cornelius Sulla, and still frequented by the Greeks for the cure of gout, rheumatism and digestive disorders. These springs, strongly sulphurous, rise a short distance inland at several points, and at last pour steaming over the rocks, which they have yellowed with their deposit, into the Euboic Sea. Opposite the entrance of the Maliac Gulf is the promontory of Cenaeum, the highest point (2221 ft.) behind which is now called Lithada, a corruption of Lichades, the ancient name of the islands off the extremity of the headland. Here again we meet with the legends of Heracles, for this cape, together with the neighbouring coast of Trachis, was the scene of the events connected with the death of that hero, as described by Sophocles in the *Trachiniae*. Near the north-east extremity of the island, and almost facing the entrance of the Gulf of Pagasae, is the promontory of Artemisium, celebrated for the great naval victory gained by the Greeks over the Persians, 480 B.C. Towards the centre, to the N.E. of Chalcis, rises the highest of its mountains, Dirphys or Dirphe, now Mount Delphi (5725 ft.), the bare summit of which is not entirely free from snow till the end of May, while its sides are clothed with pines and firs, and lower down with chestnuts and planes. It is one of the most conspicuous summits of eastern Greece, and from its flanks the promontory of Chersonesus projects into the Aegean. At the southern extremity the highest mountain is Ocha, now called St Elias (4830 ft.). The south-western promontory was named Geraestus, the 866
south-eastern Caphareus; the latter, an exposed point, attracts the storms, which rush between it and the neighbouring cliffs of Andros as through a funnel. The whole of the eastern coast is rocky and destitute of harbours, especially the part called Coela, or "the Hollows," where part of the Persian fleet was wrecked. So greatly was this dreaded by sailors that the principal line of traffic from the north of the Aegean to Athens used to pass by Chalcis and the Euboic Sea.

Euboea was believed to have originally formed part of the mainland, and to have been separated from it by an earthquake. This is the less improbable because it lies in the neighbourhood of a line of earthquake movement, and both from Thucydides and from Strabo we hear of the northern part of the island being shaken at different periods, and the latter writer speaks of a fountain at Chalcis being dried up by a similar cause, and a mud volcano formed in the neighbouring plain. Evidences of volcanic action are also traceable in the legends connected with Heracles at Aedepsus and Cenaeum, which here, as at Lemnos and elsewhere in Greece, have that origin. Its northern extremity is separated from the Thessalian coast by a strait, which at one point is not more than a mile and a half in width. In the neighbourhood of Chalcis, both to the north and the south, the bays are so confined as readily to explain the story of Agamemnon's fleet having been detained there by contrary winds. At Chalcis itself, where the strait is narrowest, it is called the Euripus, and here it is divided in the middle by a rock, on which formerly a castle stood. The channel towards Boeotia, which is now closed, is spanned by a stone bridge. The other, which is far the deeper of the two, is crossed by an iron swing-bridge, allowing for the passage of vessels. This bridge, which dates from 1896, replaced a smaller wooden swing-bridge erected in 1856. The extraordinary changes of tide which take place in this passage have been a subject of wonder from classical times. At one moment the current runs like a river in one direction, and shortly afterwards with equal velocity in the other. Strabo speaks of it as varying seven times in the day, but it is more accurate to say, with Livy, that it is irregular. A bridge was first constructed here in the twenty-first year of the Peloponnesian War, when Euboea revolted from Athens; and thus the Boeotians, whose work it was, contrived to make that country "an island to every one but themselves." The Boeotians by this means secured a powerful weapon of offence against Athens, being able to impede their supplies of gold and corn from Thrace, of timber from Macedonia, and of horses from Thessaly. The name Euripus was corrupted during the middle ages into Evripo and Egripo, and in this latter form transferred to the whole island, whence the Venetians, when they occupied the district, altered it to Negroponte, referring to the bridge which connected it with the mainland.

The rivers of Euboea are few in number and scanty in volume. In the north-eastern portion the Budorus flows into the Aegean, being formed by two streams which unite their waters in a small plain, and were perhaps the Cereus and Neleus concerning which the story was told that sheep drinking the water of the one became white, of the other black. On the north coast, near Histiaea, is the Callas; and on the western side the Lelantus, near Chalcis, flowing through the plain of the same name. This plain, which intervenes between Chalcis and Eretria, and was a fruitful source of contention to those cities, is the most considerable of the few and small spaces of level ground in the island, and was fertile in corn. Aristotle, when speaking of the aristocratic character of the horse, as requiring fertile soil for its support, and consequently being associated with wealth, instances its use among the Chalcidians and Eretrians, and in the former of those two states we find a class of nobles called *Hippobotae*. This rich district was afterwards occupied by Athenian cleruchs. The next largest plain was that of Histiaea, and at the present day this and the neighbourhood of the Budorus (Aḥmet-Aga) are the two best cultivated parts of Euboea, owing to the exertions of foreign colonists. The mountains afford excellent pasturage for sheep and cattle, which were reared in great quantities in ancient times, and seem to have given the island its name; these pastures belonged to the state. The forests are extensive and fine, and are now superintended by government officials, called δασοφύλακες, in spite or with the connivance of whom the timber is being rapidly destroyed—partly from the merciless way in which it is cut by the proprietors, partly from its being burnt by the shepherds, for the sake of the rich grass that springs up after such conflagrations, and partly owing to the goats, whose bite kills all the young growths. In the mountains were several valuable mines of iron and copper; and from Karystos, at the south of the island, came the green and white marble, the modern Cipollino, which was in great request among the Romans of the imperial period for architectural purposes, and the quarries of which belonged to the emperor. The scenery of Euboea is perhaps the most beautiful in Greece, owing to the varied combinations of rock, wood and water; for from the uplands the sea is almost always in view, either the wide island-studded expanse of the Aegean, or the succession of lakes formed by the Euboic Sea, together with mountains of exquisite outline, while the valleys and maritime plains are clothed either with fruit trees or with plane trees of magnificent growth.

On the other hand, no part of Greece is so destitute of interesting remains of antiquity as Euboea. The only site which has attracted archaeologists is that of Eretria (*q.v.*), which was excavated by the American School of Athens in 1890-1895.

Like most of the Greek islands, Euboea was originally known under other names, such as Macris and Doliche from its shape, and Ellopia and Abantis from the tribes inhabiting it. The races by which it was occupied at an early period were different in the three districts, into which, as we have seen, it was naturally divided. In the northern portion we find the Histiaei and Ellopes, Thessalian races, which probably had passed over from the Pagasaean Gulf. In central

Euboea were the Curetes and Abantes, who seem to have come from the neighbouring continent by way of the Euripus; of these the Abantes, after being reinforced by Ionians from Attica, rose to great power, and exercised a sort of supremacy over the whole island, so that in Homer the inhabitants generally are called by that name. The southern part was occupied by the Dryopes, part of which tribe, after having been expelled from their original seats in the south of Thessaly by the Dorians, migrated to this island, and established themselves in the three cities of Karystos, Dystos and Styra. The population of Euboea at the present day is made up of elements not less various, for many of the Greek inhabitants seem to have immigrated, partly from the mainland, and partly from other islands; and besides these, the southern portion is occupied by Albanians, who probably have come from Andros; and in the mountain districts nomad Vlach shepherds are found.

History.—The history of the island is for the most part that of its two principal cities, Chalcis and Eretria, the latter of which was situated about 15 m. S.E. of the former, and was also on the shore of the Euboic Sea. The neighbourhood of the fertile Lelantian or Lelantine plain, and their proximity to the place of passage to the mainland, were evidently the causes of the choice of site, as well as of their prosperity. Both cities were Ionian settlements from Attica, and their importance in early times is shown by their numerous colonies in Magna Graecia and Sicily, such as Cumae, Rhegium and Naxos, and on the coast of Macedonia, the projecting portion of which, with its three peninsulas, hence obtained the name of Chalcidice. In this way they opened new trade routes to the Greeks, and extended the field of civilization. How great their commerce was is shown by the fact that the Euboic scale of weights and measures was in use at Athens (until Solon, *q.v.*) and among the Ionic cities generally. They were rival cities, and at first appear to have been equally powerful; one of the earliest of the sea-fights mentioned in Greek history took place between them, and in this we are told that many of the other Greek states took part. It was in consequence of the aid which the people of Miletus lent to the Eretrians on this occasion that Eretria sent five ships to aid the Ionians in their revolt against the Persians (see Ionia); and owing to this, that city was the first place in Greece proper to be attacked by Datis and Artaphernes in 490 B.C. It was utterly ruined on that occasion, and its inhabitants were transported to Persia. Though it was restored after the battle of Marathon, on a site at a little distance from its original position, it never regained its former eminence, but it was still the second city in the island. From this time its neighbour Chalcis, which, though it suffered from a lack of good water, was, as Strabo says, the natural capital from its commanding the Euripus, held an undisputed supremacy. Already, however, this city had suffered from the growing power of Athens. In the year 506, when the Chalcidians joined with the Boeotians and the Spartan king Cleomenes in a league against that state, they were totally defeated by the Athenians, who established 4000 Attic settlers (see Cleruchy) on their lands, and seem to have reduced the whole island to a condition of dependence. Again, in 446, when Euboea endeavoured to throw off the yoke, it was once more reduced by Pericles, and a new body of settlers was planted at Histiaea in the north of the island, after the inhabitants of that town had been expelled. This event is referred to by Aristophanes in the *Clouds* (212), where the old farmer, on being shown Euboea on the map "lying outstretched in all its length," remarks,—"I know; we laid it prostrate under Pericles." The Athenians fully recognized its importance to them, as supplying them with corn and cattle, as securing their commerce, and as guaranteeing them against piracy, for its proximity to the coast of Attica rendered it extremely dangerous to them when in other hands, so that Demosthenes, in the *De corona*, speaks of a time when the pirates that made it their headquarters so infested the neighbouring sea as to prevent all navigation. But in the 21st year of the Peloponnesian war the island succeeded in regaining its independence. After this we find it taking sides with one or other of the leading states, until, after the battle of Chaeronea, it passed into the hands of Philip II. of Macedon, and finally into those of the Romans. By Philip V. of Macedon Chalcis was called one of the three fetters of Greece, Demetrias on the Gulf of Pagasae and Corinth being the other two.

In modern history Euboea or Negropont comes once more prominently into notice at the time of the fourth crusade. In the partition of the Eastern empire by the Latins which followed that event the island was divided into three fiefs, the occupants of which ere long found it expedient to place themselves under the protection of the Venetian republic, which thenceforward became the sovereign power in the country. For more than two centuries and a half during which the Venetians remained in possession, it was one of the most valuable of their dependencies, and the lion of St Mark may still be seen, both over the sea gate of Chalcis and in other parts of the town. At length in 1470, after a valiant defence, this well-fortified city was wrested from them by Mahommed II., and the whole island fell into the hands of the Turks. One desperate attempt to regain it was made by Francesco Morosini (d. 1694) in 1688, when the city was besieged by land and sea for three months; but owing to the strength of the place, and the disease which thinned their ranks, the assailants were forced to withdraw. At the conclusion of the Greek War of Independence, in 1830, the island was delivered from the Turkish sway, and constituted a part of the newly established Greek state. Euboea at the present time produces a large amount of grain, and its mineral wealth is also considerable, great quantities of magnesia and lignite being exported. In 1899 it was constituted a separate nome (pop. 1907, 116,903).

Bibliography.—H.N. Ulrichs, *Reisen und Forschungen in Griechenland*, vol. ii. (Berlin, 1863); C. Bursian, *Geographie von Griechenland*, vol. ii. (Leipzig, 1872); C. Neumann and J. Partsch, *Physikalische Geographie von Griechenland* (Breslau, 1885); Baedeker's *Greece* (3rd ed., Leipzig, 1905); for statistics see Greece: *Topography*.

(H. F. T.)

EUBULIDES, a native of Miletus, Greek philosopher and successor of Eucleides as head of the Megarian school. Nothing is known of the events of his life. Indirect evidence shows that he was a contemporary of Aristotle, whom he attacked with great bitterness. There was also a tradition that Demosthenes was one of his pupils. His name has been preserved chiefly by some celebrated, though false and captious, syllogisms of which he was the reputed author. Though mainly examples of verbal quibbling, they serve to show the difficulties of language and of explaining the relations of sense-given impressions. Eubulides wrote a treatise on Diogenes the Cynic and also a number of comedies. (See Megarian School of Philosophy.)

EUBULUS, of Anaphlystus, Athenian demagogue during the time of Demosthenes. He was a persistent opponent of that statesman, and was chiefly instrumental in securing the acquittal of Aeschines (who had been his own clerk)

when accused of treachery in connexion with the embassy to Philip of Macedon. Eubulus took little interest in military affairs, and was (at any rate at first) a strong advocate of peace at any price. He devoted himself to matters of administration, especially in the department of finance, and although he is said to have increased the revenues and to have done real service to his country, there is no doubt that he took advantage of his position to make use of the material forces of the state for his own aggrandizement. His proposal that any one who should move that the Theoric Fund should be applied to military purposes should be put to death may have gained him the goodwill of the people, but it was not in the true interest of the state. Later, Eubulus himself seems to have recognized this, and to have been desirous of modifying or repealing the regulation, but it was too late; Athens had lost all feelings of patriotism; cowardly and indolent, she rivalled even Tarentum in her luxury and extravagance (Theopompus in Athenaeus iv. p. 166). As one of the chief members of an embassy to Philip, Eubulus allowed himself to be won over, and henceforth did his utmost to promote the cause of the Macedonian. The indignant remonstrances of Demosthenes failed to weaken Eubulus's hold on the popular favour, and after his death (before 330) he was distinguished with special honours, which were described by Hypereides in a speech (Περὶ τῶν Εὐβούλου δωρεῶν) now lost. Eubulus was no doubt a man of considerable talent and reputation as an orator, but none of his speeches has survived, nor is there any appreciation of them in ancient writers. Aristotle (*Rhetoric*, i. 15. 15) mentions a speech against Chares, and Theopompus (in his *Philippica*) had given an account of his life, extracts from which are preserved in Harpocration.

See Demosthenes, *De corona*, pp. 232, 235; *De falsa legatione*, pp. 434, 435, 438; *Adversus Leptinem*, p. 498; *In Midiam*, pp. 580, 581; Aeschines, *De falsa legatione, ad fin.*; Index to C.W. Müller's *Oratores Attici*; A.D. Schäfer, *Demosthenes und seine Zeit* (1885).

EUBULUS, Athenian poet of the Middle comedy, flourished about 370 B.C. Fragments from about fifty of the 104 plays attributed to him are preserved in Athenaeus. They show that he took little interest in political affairs, but confined himself chiefly to mythological subjects, ridiculing, when opportunity offered, the bombastic style of the tragedians, especially Euripides. His language is pure, and his versification correct.

Fragments in T. Kock. *Comicorum Atticorum fragmenta*, ii. (1884).

EUCALYPTUS, a large genus of trees of the natural order Myrtaceae, indigenous, with a few exceptions, to Australia and Tasmania. In Australia the Eucalypti are commonly called "gum-trees" or "stringy-bark trees," from their gummy or resinous products, or fibrous bark. The genus, from the evidence of leaf-remains, appears to have been represented by several species in Eocene times. The leaves are leathery in texture, hang obliquely or vertically, and are studded with glands which contain a fragrant volatile oil. The petals cohere to form a cap[1] which is discarded when the flower expands. The fruit is surrounded by a woody cup-shaped receptacle and contains very numerous minute seeds. The Eucalypti are rapid in growth, and many species are of great height, *E. amygdalina*, the tallest known tree, attaining to as much as 480 ft., exceeding in height the Californian big-tree (*Sequoia gigantea*), with a diameter of 81 ft. *E. globulus*, so called from the rounded form of its cap-like corolla, is the blue gum tree of Victoria and Tasmania. The leaves of trees from three to five years of age are large, sessile and of a glaucous-white colour, and grow horizontally; those of older trees are ensiform, 6-12 in. long, and bluish-green in hue, and are directed downwards. The flowers are single or in clusters, and nearly sessile. This species is one of the largest trees in the world, and attains a height of 375 ft. Since 1854 it has been successfully introduced into the south of Europe, Algeria, Egypt, Tahiti, New Caledonia, Natal and India, and has been extensively planted in California, and, with the object of lessening liability to droughts, along the line of the Central Pacific railway. It would probably thrive in any situation having a mean annual temperature not below 60° F., but it will not endure a temperature of less than 27° F. Its supposed property of reducing the amount of malaria in marshy districts is attributable to the drainage effected by its roots, rather than to the antiseptic exhalations of its leaves. To the same cause also is ascribed the gradual disappearance of mosquitoes in the neighbourhood of plantations of this tree, as at Lake Fezara, in Algeria. Since about 1870, when the tree was planted in its cloisters, the monastery of St Paolo a la trè Fontana has become habitable throughout the year, although situated in one of the most fever-stricken districts of the Roman Campagna. An essential oil is obtained by aqueous distillation of the leaves of this and other species of *Eucalyptus*, which is a colourless or straw-coloured fluid when freshly prepared, with a characteristic odour and taste, of sp. gr. 0.910 to 0.930, and soluble in its own weight of alcohol. This consists of many different bodies, the most important of which is eucalyptol, a volatile oil, which constitutes about 70%. This is the portion of eucalyptus oil which passes over between 347° and 351° F., and crystallizes at 30° F. It consists chiefly of a terpene and cymene. Eucalyptus oil also contains, after exposure to the air, a crystallizable resin derived from eucalyptol. The dose of the oil is ½ to 3 minims. Eucalyptol may be given in similar doses, and is preferable for purposes of inhalation. The oil derived from *E. amygdalina* contains a large quantity of phellandrene, which forms a crystalline nitrate, and is very irritating when inhaled. The oils from different species of *Eucalyptus* vary widely in composition.

Eucalyptus oil is probably the most powerful antiseptic of its class, especially when it is old, as ozone is formed in it on exposure to air. Internally it has the typical actions of a volatile oil in marked degree. Like quinine, it arrests the normal amoeboid movements of the polymorphonuclear leucocytes, and has a definite antiperiodic action; but it is a very poor substitute for quinine in malaria. In large doses it acts as an irritant to the kidneys, by which it is largely excreted, and as a marked nervous depressant, abolishing the reflex functions of the spinal cord and ultimately arresting respiration by its action on the medullary centre. An emulsion, made by shaking up equal parts of the oil and powdered gum-arabic with water, has been used as a urethral injection, and has also been given internally in drachm doses in pulmonary tuberculosis and other microbic diseases of the lungs and bronchi. The oil has somehow acquired an extraordinary popular reputation in influenza, but there is no evidence to show that it has any marked influence upon this disease or that its use tends to lessen the chances of infection. It has been used as an antiseptic by surgeons, and is an ingredient of "catheter oil," used for sterilizing and lubricating urethral catheters, now that carbolic oil, formerly employed, has been shown to be practically worthless as an antiseptic. *Eucalyptus rostrata* and other species yield eucalyptus or red gum, which must be distinguished from Botany Bay kino. Red gum is very powerfully astringent and is given internally, in doses of 2 to 5 grains, in cases of diarrhoea and pharyngeal

inflammation. It is prepared by the pharmacist in the form of tinctures, insufflations, syrups, lozenges, &c. Red gum is official in Great Britain. *E. globulus*, *E. resinifera*, and other species, yield what is known as Botany Bay kino, an astringent dark-reddish amorphous resin, which is obtained in a semi-fluid state by making incisions in the trunks of the trees. The kino of *E. gigantea* contains a notable proportion of gum. J.H. Maiden enumerates more than thirty species as kino-yielding. From the leaves and young bark of *E. mannifera* and *E. viminalis* is procured Australian manna, a hard, opaque, sweet substance, containing melitose. On destructive distillation the leaves yield much gas, 10,000 cub. ft. being obtained from one ton. The wood is extensively used in Australia as fuel, and the timber is of remarkable size, strength and durability. Maiden enumerates nearly 70 species as timber-yielding trees including *E. amygdalina*, the wood of which splits with remarkable facility, *E. botryoides*, hard, tough and durable and one of the finest timbers for shipbuilding, *E. diversicolor* or "karri," *E. globulus*, *E. leucoxylon* or ironbark, *E. marginata* or "jarrah" (see Jarrah Wood), *E. obliqua*, *E. resinifera*, *E. siderophloia* and others. The timber is often very hard, tough and durable, and useful for shipbuilding, building, fencing, planks, &c. The bark of different species of *Eucalyptus* has been used in paper-making and tanning, and in medicine as a febrifuge.

For further details see Baron von Müller's monograph of the genus, *Eucalyptographia* (Melbourne, 1879-1884); J.H. Maiden, *Useful Native Plants of Australia* (1889).

1 Whence the name (εὐκάλυπτος, well-covered) given by L'Héritier, 1788.

EUCHARIS, in botany, a genus of the natural order Amaryllidaceae, containing a few species, natives of Columbia. *Eucharis amazonica* or *grandiflora* is the best-known and most generally cultivated species. It is a bulbous plant with broad stalked leaves, and an erect scape 1½ to 2 ft. long, bearing an umbel of three to ten large white showy flowers. The flowers resemble the daffodil in having a prominent central cup or corona, which is sometimes tinged with green. It is propagated by removing the offsets, which may be done in spring, potting them singly in 6-in. pots. It requires good loamy soil, with sand enough to keep the compost open, and should have a good supply of water and a temperature of 65° to 70° during the night, with a rise of 8° or 10° in the day. During summer growth is to be encouraged by repotting, but the plants should afterwards be slightly rested by removal to a night temperature of about 60°, water being withheld for a time, though they must not go too long dry, the plant being an evergreen. By the turn of the year they may again have more heat and more water, and this will probably induce them to flower. After this is over they may be shifted and grown again as before; and, as they get large, either be divided to form new plants or allowed to develop into nobler specimens. With a stock of the smaller plants to start them in succession, they may be had in flower all the year round. A few years ago the bulbs of *E. amazonica* were badly inflicted with a disease known as the Eucharis mite, and all kinds of remedies were tried without avail, although steeping in Condy's fluid appeared to give the best results. The disease appears to have died out again. Other species of Eucharis now met with in gardens are *E. Bakeriana*, *E. Mastersii*, *E. Lowii* and *E. Sanderii*. A remarkable hybrid was raised a few years ago between *Eucharis* and the allied genus *Urceolina*, to which the compound name *Urceocharis* was given.

EUCHARIST (Gr. εὐχαριστία, thanksgiving), in the Christian Church, one of the ancient names of the sacrament of the Lord's Supper or Holy Communion. The term εὐχαριστία was at first applied to the act of thanksgiving associated with the sacrament; later, so early as the 2nd century, to the objects, *e.g.* the sacramental bread and wine, for which thanks were given; and so to the whole celebration. The term *Mass*, which has the same connotation, is derived from the Lat. *missa* or *missio*, because the children and catechumens, or unbaptized believers, were dismissed before the eucharistic rite began. Other names express various aspects of the rite: Communion (Gr. κοινωνία), the fellowship between believers and union with Christ; *Lord's Supper*, so called from the manner of its institution; *Sacrament* as a consecration of material elements; the *Mystery* (in Eastern churches) because only the initiated participated; the *Sacrifice* as a rehearsal of Christ's passion. In this article the history of the rite is first traced up to A.D. 200 in documents taken in their chronological order; differences of early and later usage are then discussed; lastly, the meaning of the original rite is examined.

St Paul (1 Cor. xi. 17-34) attests that the faithful met regularly in church, *i.e.* in religious meetings, to eat the dominical or Lord's Supper, but that this aim was frustrated by some who ate up their provisions before others, so that the poor were left hungry while the rich got drunk; and the meetings were animated less by a spirit of brotherhood and charity than of division and faction. He directs that, when they so meet, they shall wait for one another. Those who are too hungry to wait shall eat at home; and not put to shame those who have no houses (and presumably not enough food either), by bringing their viands to church and selfishly eating them apart.

It was therefore not the quantity or quality of the food eaten that constituted the meal a Lord's Supper; nor even the circumstances that they ate it "in church," as was assumed by those guilty of the practices here condemned; but only the pervading sense of brotherhood and love. The contrast lay between the *Dominical Supper* or food and drink shared unselfishly by all with all, and the *private supper*, the feast of Dives, shamelessly gorged under the eyes of timid and shrinking Lazarus. By way of enforcing this point Paul repeats the tradition he had received direct from the Lord, and already handed on to the Corinthians, of how "the Lord Jesus on the night in which he was betrayed" (not necessarily the night of Passover) "took bread and having given thanks brake it and said, This is my body, which is for your sake; this do in remembrance of me. In like manner also the cup, after supper, saying, This cup is the new covenant through my blood: this do, as oft as ye drink it, in remembrance of me." Paul adds that this rite commemorated the Lord's death and was to be continued until he should come again, as in that age they expected him to do after no long interval: "As often as ye eat this bread and drink the cup, ye do (or ye shall) proclaim the Lord's death till he come."

The same epistle (x. 17) attests that one loaf only was broken and distributed: "We who are many, are one loaf (or bread), one body; for we all partake of the one loaf (or bread)." As a single loaf could not satisfy the hunger of many, the rehearsal in these meals of Christ's own action must have been a crowning episode, enhancing their sanctity. The *Fractio Panis* probably began, as the drinking of the cup certainly ended, the supper; the interval being occupied with

the common consumption by the faithful of the provisions they brought. This much is implied by the words “after supper.” If, in any case, all present had eaten in their homes beforehand, the giving of the cup would immediately follow on the breaking and eating of the one loaf, but Paul’s words indicate that the common meal within the church was the norm. Those who ate at home marked themselves out as both greedy and lacking in charity. There is no demand that they should come fasting, or Paul could not recommend in (xi. 34) that those who were too hungry to wait until all the brethren were assembled in church, should eat at home and beforehand.

Mark xiv. 22-25, Matt. xxvi. 26-29, Luke xxii. 14-20, are, in order of time, our next accounts, Mark representing the oldest tradition. They all in substance repeat Paul’s account; but identify the night on which Jesus was betrayed with that of the Pascha. In Matthew and Mark, Jesus says of the bread “Take ye it, this is my body,” omitting the idea of sacrifice imported by Paul’s addition “which is for you”; but in them Jesus enunciates the same idea when he says of the cup: “This is my blood of the covenant which is poured out for many,” Matthew adding “for the remission of sins,” a phrase which savours of Heb. ix. 22: “apart from the shedding of blood there is no remission.” It is a later addition, and so may be the words “which is poured out for many.” But the words which follow have an antique ring: “Amen, I say unto you, I will no more drink of the fruit of the vine, until that day when I drink it new in the kingdom of God.” For here Jesus affirms his conviction, in view of his impending death, which unlike his disciples he foresaw, that, when the kingdom of God is instituted on earth, he will take his place in it. But this is the last time he will sit down upon earth with his disciples at the table of the millenarist hope. These sources do not hint that the Last Supper is to be repeated by Christ’s followers until the advent of the kingdom. Luke’s account is too much interpolated from Paul, and the texts of his oldest MSS. too discrepant, for us to rely on it except so far as it supports the other gospels. It emphasizes the fact that the Last Supper was the Pascha. “With desire have I desired to eat this Passover, before I suffer”; and places the bread after the wine, unless indeed the Pauline interpolation comprises the whole of verse 19.

The fourth gospel, written perhaps A.D. 90-100, sublimates the rite, in harmony with its general treatment of the life of Jesus: “I am the living bread which cometh down out of heaven, that a man may eat thereof and not die” (John vi. 51). As in 1 Cor. x. the flesh of Christ is contrasted with the manna which saved not the Jews from death, so here the latter ask: “How can this man give us his flesh to eat?” and Jesus answers: “Amen, Amen I say unto you, Except ye eat the flesh of the Son of Man and drink his blood, ye have not life in yourselves.... He that eateth my flesh and drinketh my blood abideth in me and I in him.” In an earlier passage, again in reference to the manna, Jesus is called “the bread of God, which cometh down out of heaven, and giveth life unto the world.” They ask: “Lord, ever more give us this bread,” and he answers: “I am the bread of life: he that cometh to me shall not hunger, and he that believeth on me shall never thirst.” This writer’s thought is coloured by the older speculations of Philo, who in metaphor called the Logos the heavenly bread and food, the cupbearer and cup of God; and he seems even to protest against a literal interpretation of the words of institution, since he not only pointedly omits them in his account of the Last Supper, but in v. 63 of this chapter writes: “It is the Spirit that quickeneth; the flesh profiteth nothing: the *words* that I have spoken unto you are spirit and are life.”

In Acts ii. 46 we read that, “the faithful continued steadfastly with one accord in the temple”; at the same time “breaking bread at home they partook of food with gladness and singleness of heart, praising God.” All such repasts must have been sacred, but we do not know if they included the Eucharistic rite. The care taken in the selecting and ordaining of the seven deacons argues a religious character for the common meals, which they were to serve. Their main duty was to look after the duty of the Hellenistic widows, but inasmuch as meats strangled or consecrated to idols were forbidden, it probably devolved on the deacons to take care that such were not introduced at these common meals. The Essenes, similarly, appointed houses all over Palestine where they could safely eat, and priests of their own to prepare their food. Some Christians escaped the difficulties of their position by eating no meat at all. “He that is weak,” says Paul (Rom. xiv. 1), “eateth herbs”; that is, becomes a vegetarian. Rather than scandalize weaker brethren, Paul was willing to eat herbs the rest of his life.

The travel-document in Acts often refers to the solemn breaking of bread. Thus Paul in xxvii. 35, having invited the ship’s company of 276 persons to partake of food, took bread, gave thanks to God in the presence of all, and brake it and began to eat. The rest on board then began to be of good cheer, and themselves also took food. Here it is not implied that Paul shared his food except with his co-believers, but he ate before them all. Whether he repeated the words of institution we cannot say.

In Acts xx. 7 the faithful of Troas gather together to break bread “on the first day of the week” after sunset. After a discourse Paul, who was leaving them the next morning, broke bread and ate. This was surely such a meeting as we read of in 1 Cor. x., and was held on Sunday by night; but long before dawn, since after it Paul “talked with them a long while, even till break of day.” In 1 Cor. xvi. 1 Paul bids the Corinthians, as he had bidden the churches of Galatia, lay up in store on the first of the week, each one of them, money for the poor saints of Jerusalem. This is the first notice of Sunday Eucharistic collections of alms for the poor.

Here seems to belong in the order of development the Cathar Eucharist (see CATHARS). The Cathars used only the Lord’s prayer in consecrating the bread and used water for wine.

The next document in chronological order is the so-called Teaching of the Apostles (A.D. 90-110). This assigns prayers and rubrics for the celebration of the Eucharist:—

IX.

“1. Now with regard to the Thanksgiving, thus give ye thanks.

“2. First concerning the cup:—We give thanks to thee, our Father, for the holy vine[1] of David thy servant, which thou didst make known to us through Jesus thy servant;[2] to thee be the glory for ever.

“3. And concerning the broken bread:—We give thanks to thee, our Father, for the life and knowledge which thou didst make known to us through Jesus thy servant; to thee be the glory for ever.

“4. As this broken bread was (once) scattered on the face of the mountains and, gathered together, became one,[3] even so may thy Church be gathered together from the ends of the earth into thy kingdom; for thine is the glory and the power through Jesus Christ for ever.

“5. But let no one eat or drink of your Thanksgiving (Eucharist), but they who have been baptized into the name of the Lord; for concerning this the Lord hath said. Give not that which is holy unto the dogs.[4]

X.

“1. Then, after being filled, thus give ye thanks:—

"2. We give thanks to thee, holy Father, for thy holy name, which thou hast caused to dwell in our hearts, and for the knowledge and faith and immortality which thou didst make known to us through Jesus Christ thy servant; to thee be the glory for ever.

"3. Thou Almighty Sovereign, didst create all things for thy name's sake, and food and drink thou didst give to men for enjoyment, that they should give thanks unto thee; but to us thou didst of thy grace give spiritual food and drink and life eternal through thy servant.

"4. Before all things, we give thee thanks that thou art mighty; to thee be the glory for ever.

"5. Remember, Lord, thy church to deliver it from all evil, and to perfect it in thy love, and gather it together from the four winds,[5] the sanctified, unto thy kingdom, which thou hast prepared for it; for thine is the power and the glory for ever.

"6. Come grace, and pass this world away. Hosanna to the God of David! If any one is holy, let him come. If any one is not, let him repent. Maranatha.[6] Amen.

"But allow the prophets to give thanks as much as they will."

From a subsequent section, ch. xiv. 1, we learn that the Eucharist was on Sunday:—"Now when ye are assembled together on the Lord's day of the Lord, break bread and give thanks, having first confessed your transgressions, so that your sacrifice may be pure."

The above, like the uninterpolated Lucan account, places the cup first and has no mention of the body and blood of Christ. But in this last and other respects it contrasts with the other synoptic and with the Pauline accounts. The cup is not the *blood* of Jesus, but *the holy vine of David*, revealed through Jesus; and the holy vine can but signify the spiritual Israel, the *Ecclesia* or church or Messianic Kingdom, into which the faithful are to be gathered.

The one loaf, as in Paul, symbolizes the unity of the *ecclesia*, but the cup and bread, given for enjoyment, are symbols at best of the spiritual food and drink of the life eternal given of grace by the Almighty Father through his servant (lit. boy) Jesus. The bread and wine are indeed an offering to God of what is his own, pure because offered in purity of heart; but they are not interpreted of the sacrifice of Jesus' body broken on the cross, or of his blood shed for the remission of sin. It is not, as in Paul, a meal commemorative of Christ's death, nor connected with the Passover, as in the Synoptics. Least of all is it a sacramental eating of the flesh and drinking of the blood of Jesus, a perpetual renewal of kinship, physical and spiritual, with him. The teaching rather breathes the atmosphere of the fourth gospel, which sets the Last Supper before the feast of the Passover (xiii. 1), and pointedly omits Christ's institution of the Eucharist, substituting for it the washing of his disciples' feet. The blessing of the Bread and Cup, as an incident in a feast of Christian brotherhood, is all that the *Didache* has in common with Paul and the Synoptists. The use of the words "after being filled," in x. 1, implies that the brethren ate heartily, and that the cup and bread formed no isolated episode. The Baptized alone are admitted to this Supper, and they only after confession of their sins. Every Sunday at least they are to celebrate it. A prophet can "in the Spirit appoint a table," that is, order a Lord's Supper to be eaten, whenever he is warned by the Spirit to do so. But he must not himself partake of it—a very practical rule. The prophets are to give thanks as they like at these "breakings of bread," without being restricted to the prayers here set forth. In xv. 3 the overseers or bishops and deacons, though their functions are less spiritual than administrative and economic, are allowed to take the place of the prophets and teachers. The phrase used is λειτουγεῖν τὴν λειτουργίαν, "to liturgize the liturgy." This word "liturgy" soon came to connote the Eucharist. The prophets who normally preside over the Suppers are called "your high-priests," and receive from the faithful the first-fruits of the winepress and threshing-floor, of oxen and sheep, and of each batch of new-made bread, and of oil. Out of these they provide the Suppers held every Lord's day, offering them as "a pure sacrifice." Bishops and deacons hold a subordinate place in this document; but the contemporary Epistle of Clement of Rome attests that these bishops "had offered the gifts without blame and holily." The word "liturgy" is also used by Clement.

Pliny's Letter (Epist. 96), written A.D. 112 to the emperor Trajan, about the Christians of Bithynia, attests that on a fixed day, *stato die* (no doubt Sunday), they met before dawn and recited antiphonally a hymn "to Christ as to a god." They then separated, but met again later to partake of a meal, which, however, was of an ordinary and innocent character. Pliny regarded their meal as identical in character with the common meals of *hetairiae*, *i.e.* the trade-gilds or secret societies, which were then, as now, often inimical to the government. Even benefit societies were feared and forbidden by the Roman autocrats, and the "dominical suppers" of the Christians were not likely to be spared. Pliny accordingly forbade them in Bithynia, and the renegade Christians to whom he owed his information gave them up. These suppers included an Eucharist; for it was because the faithful ate in the latter of the flesh and blood of the Son of God that the charge of devouring children was made against them. If, then, this afternoon meal did not include it, Pliny's remark that their food was ordinary and innocent is unintelligible.

Ignatius, about A.D. 120, in his letter to the Ephesians, defines the one bread broken in the Eucharist as a "drug of immortality, and antidote that we should not die, but live for ever in Jesus Christ." He also rejects as invalid any Eucharist not held "under the bishop or one to whom he shall have committed it." For the Christian prophet has disappeared, and with him the custom of holding Eucharists in private dwellings.

In the Epistle to Diognetus, formerly assigned to Justin Martyr, we read (*v.* 7) that "Christians have in vogue among themselves a table common, yet not common" (*i.e.* unclean). In Justin's first apology (*c.* 140) we have two detailed accounts of the Eucharist, of which the first, in ch. 65, describes the first communion of the newly baptized:—

"After we have thus washed the person who has believed and conformed we lead him to the brethren so called, where they are gathered together, to offer public prayer both for ourselves and for the person illuminated, and for all others everywhere, earnestly, to the end that having learned the truth we may be made worthy to be found not only in our actions good citizens, but guardians of the things enjoined.

"We salute one another with a kiss at the end of the prayers. Then there is presented to the president of the brethren bread and a cup of water (and of a mixture,)[7] and he having taken it sends up praise and glory to the father of all things by the name of the Son and Holy Spirit, and he offers at length thanksgiving (*eucharistia*) for our having been made worthy of these things by him. But when he concludes the prayer and thanksgiving all the people present answer with acclamation 'Amen.' But the word 'Amen' in Hebrew signifies 'so be it.' And when the president has given thanks, and all the people have so answered, those who are called by us deacons distribute to each of those present, for them to partake of the bread (and wine)[8] and water, for which thanks have been given, and they carry portions away to those who are not present. And this food is called by us *Eucharistia*, and of it none may partake save those who believe our teachings to be true and have been washed in the bath which is for remission of sin and rebirth, and who so live as Christ taught. For we do not receive these things as common bread or common drink. For as Jesus Christ our Saviour was made flesh by Word of God and possessed flesh and blood for our sake; so we have been taught that the food blessed (lit. thanked for) by prayer of Word spoken by him, food by which our blood and

flesh are by change of it (into them) nourished, is both flesh and blood of Jesus so made flesh. For the apostles in the memorials made by them, which are called gospels, have so related it to have been enjoined on them: to wit, that Jesus took bread, gave thanks and said: This do ye in memory of me; this is my body, and the cup likewise he took and gave thanks and said, This is my blood; and he distributed to them alone. And this rite too the evil demons by way of imitation handed down in the mysteries of Mithras. For that bread and a cup of water is presented in the rites of their initiation with certain conclusions (*or* epilogues), you either know or can learn."

The second account, in ch. 67, adds that the faithful both of town and country met for the rite on Sunday, that the prophets were read as well as the gospels, that the president after the reading delivered an exhortation to imitate in their lives the goodly narratives; and that each brought offerings to the president out of which he aided orphans and widows, the sick, the prisoners and strangers sojourning with them. These contributions of the faithful seem to be included by Justin along with the bread and cup as sacrifices acceptable to God. But he also particularly specifies (Dialog. 345) that perfect and pleasing sacrifices alone consist in prayers and thanksgivings (*thusia*). The elements are *gifts* or *offerings*. Justin was a Roman, but may not represent the official Roman church. The rite as he pictures it agrees well with the developed liturgies of a later age.

Irenaeus (Gaul and Asia Minor, before 190) in his work *against heresies*, iv. 31, 4, points to the sacrament in proof that the human body may become incorruptible:

"As bread from the earth on receiving unto itself the invocation of God is no longer common bread, but is an Eucharist, composed of two elements, an earthly and a heavenly, so our bodies by partaking of the Eucharist cease to be corruptible, and possess the hope of eternal resurrection."

There is a similar passage in the 36th fragment (ed. Harvey ii. p. 500), sketching the rite and calling the elements antitypes:

"The oblation of the Eucharist is not fleshly, but spiritual and so pure. For we offer to God the bread and the cup of blessing (εὐλογία), thanking him for that he bade the earth produce these fruits for our sustenance. And therewith having finished the offering (προσφορά) we invoke the Holy Spirit to constitute this offering, both the bread body of Christ and the cup the blood of Christ, that those who partake of these antitypes (ἀντίτυπα, *i.e.* surrogates) may win remission of sins and life eternal."

Here we note the stress laid on the Invocation of the Spirit to operate the transformation of the elements, though in what sense they are transformed is not defined. This *Epiklesis* survives in the Greek liturgies, but in the Roman a prayer takes its place that the angel of the Lord may take the oblation laid on the visible altar, and carry it up to the altar sublime into the presence of the divine majesty. We must not forget that the church of Irenaeus was Greek.

To the second century, lastly, belongs in part the evidence of the catacombs, on the walls of which are depicted persons reclining at tables supporting a fish, accompanied by one or more baskets of loaves, and more rarely by flasks of wine or water. The fish represents Christ; and in the Inscription of Abercius, bishop of Hierapolis about A.D. 160, we have this symbolism enshrined in a literary form: "In company with Paul I followed, while everywhere Faith led the way, and set before me the fish from the fountain, mighty and stainless, whom a pure virgin grasped, and gave this to friends to eat always, having good wine and giving the mixt cup with bread." This representation of baskets of loaves and several fishes, or of one fish and several loaves, seems to contradict the usage of one loaf. It may represent the *agapé* or Lord's Supper as a whole, of which the one loaf and cup formed an episode. Or the entire stock of bread may have been regarded as flesh of Jesus in virtue of the initial consecration of one single loaf.

To the second century also belong two gnostic uses. Firstly, that of Marcus, a Valentinian, of South Gaul about 150, whose influence extended to Asia Minor. Irenaeus relates (Bk. I., ch. vii. 2), that this "magician" used in the Eucharist cups apparently mixt with wine, but really containing water, and during long invocations made them appear "purple and red, as if the universal Grace χάρις dropped some of her blood into the cup through his invocation, and by way of inspiring worshippers with a passion to taste the cup and drink deep of the influence termed Charis." Such a rite presupposes a belief in a real change of the elements; and water must have been used. In the sequel Irenaeus recites the Invocation read by Marcus before the communicants:—

"Grace that is before all things, that passeth understanding and words, replenish thy inner man, and make to abound in thee the knowledge of her, sowing in the good soil the grain of mustard seed."

The *Acts of Thomas*, secondly, ch. 46, attest an Eucharistic usage, somewhat apart from the orthodox. The apostle spreads a linen cloth on a bench, lays on it bread of blessing (εὐλογία), and says:

"Jesus Christ, Son of God, who hast made us worthy to commune in the Eucharist of thy holy body and precious blood, Lo, we venture on the thanksgiving (*Eucharistia*) and invocation of thy blessed name, come now and communicate with us. And he began to speak and said: Come Pity supreme, come communion of the male, come Lady who knowest the mysteries of the Elect one, ... come secret mother ... come and communicate with us in this Eucharist which we perform in thy name and in the love (*agapé*) in which we are met at thy calling. And having said this he made a cross upon the bread, and brake it and began to distribute it. And first he gave to the woman, saying: This shall be to thee for remission of sins and release of eternal transgressions. And after her he gave also to all the rest that had received the seal."

In the 2nd century the writer who nearest approaches to the later idea of Transubstantiation is the gnostic Theodotus (*c.* 160):

"The bread no less than the oil is hallowed by the power of the name. They remain the same in outward appearance as they were received, but by that power they are transformed into a spiritual power. So the water when it is exorcised and becomes baptismal, not only drives out the evil principle, but also contracts a power of hallowing."

In the Fathers of the first three or four centuries can be traced the same tendency to spiritualize the Eucharist as we encountered in the fourth gospel, and in the *Didache*. Ignatius, though in *Smyrn*. 7 he asserts the Eucharist to be Christ's "flesh which suffered for our sins," elsewhere speaks of the blood as being "joy eternal and lasting," as "hope," as "love incorruptible," and of the flesh as "faith" or as "the gospel." Clement of Alexandria (*c.* 180) regards the rite as an initiation in divine knowledge and immortality. The only food he recognizes is spiritual; *e.g.* knowledge of the divine Essence is "eating and drinking of the divine Word." So Origen declares the bread which God the Word asserted was his body to be that which nourishes souls, the word from God the Word proceeding, the Bread from the heavenly Bread. Not the visible bread held in his hand, nor the visible cup, were Christ's body and blood, but the word in the mystery of which the bread was to be broken and the wine to be poured out. "We drink Christ's blood," he says elsewhere, "when we receive His words in which standeth Life." So the author of the *Contra Marcellum* writes in view of John vi. 63 as follows (*De eccl. Theol.* p. 180):

"In these words he instructed them to interpret in a spiritual sense his utterances about his flesh and blood. Do not,

he said, think that I mean the flesh which invests and covers me, and bid you eat that; nor suppose either that I command you to drink my sensible and somatic blood. Nay, you know well that my words which I have spoken unto you are spirit and life. It follows that the very words and discourses are his flesh and blood, of which he that constantly partakes, nourished as it were upon heavenly bread, will partake of the heavenly life. Let not then, he says, this scandalize you which I have said about eating of my flesh and about drinking of my blood. Nor let the obvious and first hand meaning of what I said about my flesh and blood disturb you when you hear it. For these words avail nothing if heard and understood literally (*or* sensibly). But it is the spirit which quickens them that can understand spiritually what they hear."

But these views were not those of the uninstructed pagans who filled the churches and needed a rite which brought them, as their old sacrifices had done, into physical contact and union with their god. Their point of view was better expressed in the scruples of priests, who, as Tertullian (*c.* 200) records (*De Corona*, iii.), were careful lest a crumb of 872
the bread or a drop of the wine should fall on the ground, and by such incidents the body of Christ be harassed and attacked!

The Eucharist as a Sacrifice.—Before the 3rd century we cannot trace the view that in the Eucharistic rite the death of Christ, regarded from the Pauline standpoint as an atoning or redemptive sacrifice for the sins of mankind, is renewed and repeated, though the germ out of which it would surely grow is already present in the words "My blood ... which is shed for many" of Matt. and Mark; yet more surely in Paul's "my body which is in your behoof" and "this do in commemoration of me," where the Greek word for do, Gr. ποιεῖτε, Lat. *facite*, could to pagan ears mean "this do ye sacrifice." In the first two centuries the rite is spoken of as an offering and as a bloodless sacrifice; but it is God's own creations, the bread and wine, alms and first-fruits, which, offered with a pure conscience, he receives as from friends, and bestows in turn on the poor; it is the praise and prayers which are the sacrifice. In these centuries baptism was the rite for the remission of sin, not the Eucharist; it is the prophet in the *Didache* who presides at the Lord's Supper, not the Levitically conceived priest; nor as yet has the Table become an Altar. Among Christians, prayers, supplications and thanksgivings have taken the place of the sacrifices of the old covenant.

In Cyprian of Carthage (*c.* 250) we first find the Eucharist regarded as a sacrifice of Christ's body and blood offered by the priest for the sins of the living and dead. We cannot drink the blood of Christ unless Christ has been first trodden under foot and pressed.... As Jesus our high priest offered himself as a sacrifice to his Father, so the human priest takes Christ's place, and imitates his action by offering in church a true and full sacrifice to God the Father (Ep. 63). He speaks of the dominical host (*hostia*), and takes the verb to *do* in Paul's letter in the sense of to *sacrifice*. As early as Tertullian prayers for the dead, who were named, were offered in the rite; but there was as yet no idea of the sacrifice of Christ being reiterated in their behalf. After Cyprian's day this view gains ground in the West, and almost obscures the older view that the rite is primarily an act of communion with Christ. In harmony with Cyprian's new conception is another innovation of his age and place, that of children communicating; both were the natural accompaniment of infant baptism, of which we first hear in his letters. In the East we do not hear of the sacrifice of the body and blood before Eusebius, about the year 300. In the Armenian church of the 12th century the idea of a reiterated sacrificial death of Christ still seemed bizarre and barbarous.[9] But as early as 558 in Gaul the bread was arranged on the altar in the form of a man, so that one believer ate his eye, another his ear, a third his hand, and so on, according to their respective merits! This was forbidden by Pope Pelagius I.; but in the Greek church the custom survives, the priest even stabbing with "the holy spear" in its right side the human figure planned out of the bread, by way of rehearsing in pantomime the narrative of John xix. 34.

The change from a commemoration of the Passion to a re-enacting of it came slowly in the Greek church. Thus Chrysostom (*Ham*. 17, *ad Heb*.), after writing "We offer (ποιοῦρεν) not another sacrifice, but the same," instantly corrects himself and adds: "or rather we perform a commemoration of the sacrifice." This was exactly the position also of the Armenian church.

Wine or Water?—Justin Martyr perhaps contemplated the use of water instead of wine, and Tatian his pupil used it. The Marcionites, the Ebionites, or Judaeo-Christians of Palestine, the Montanists of Phrygia, Africa and Galatia, the confessor Alcibiades of Lyons, c. A.D. 177 (Euseb. *Hist. Eccl*. v. 3. 2), equally used it. Cyprian (*Ep*. 63) affirms (*c.* 250) that his predecessors on the throne of Carthage had used water, and that many African bishops continued to do so, "out of ignorance," he says, "and simplemindedness, and God would forgive them." Pionius, the Catholic martyr of Smyrna, *c.* 250, also used water. In the *Acts of Thomas* it is used. Such uniformity of language has led Prof. Harnack to suppose that in the earliest age water was used equally with wine, and Eusebius the historian, who had means of judging which we have not, saw no difficulty in identifying with the first converts of St Mark the Therapeutae of Philo who took only bread and water in their holy repast.

Abercius and Irenaeus are the first to speak of wine mixt with water, of a *krāma* (κρᾶμα) or *temperamentum*. In the East, then as now, no one took wine without so mixing it. Cyprian insists on the admixture of water, which he says represented the humanity of Jesus, as wine his godhood. The users of water were named *Aquarii* or *hydroparastatae* in the 4th century, and were liable to death under the code of Theodosius. Some of the Monophysite churches, *e.g.* the Armenian, eschewed water and used pure wine, so falling under the censure of the council *in Trullo* of A.D. 692. Milk and honey was added at first communions. Oil was sometimes offered, as well as wine, but it would seem for consecration only, and not for consumption along with the sacrament. With the bread, however, was sometimes consecrated cheese, *e.g.* by the African Montanists in the 2nd century. Bitter herbs also were often added, probably because they were eaten with the Paschal lamb. Many early canons forbid the one and the other. Hot water was mixt with the wine in the Greek churches for some centuries, and this custom is seen in catacomb paintings. It increased the resemblance to real blood.

Position of the Faithful at the Eucharist.—Tertullian, Eusebius, Chrysostom and others represent the faithful as standing at the Eucharist. In the art of the catacombs they sit or recline in the ordinary attitude of banqueters. In the age of Christ standing up at the Paschal meal had been given up, and it was become the rule to recline. Kneeling with a view to adoration of the elements was unheard of in the primitive church, and the Armenian Fathers of the 12th century insist that the sacrament was intended by Christ to be eaten and not gazed at (Nerses, *op. cit*. p. 167). Eucharistic or any other liturgical vestments were unknown until late in the 5th century, when certain bishops were honoured with the same *pallium* worn by civil officials (see VESTMENTS).

In the Latin and in the Monophysite churches of Armenia and Egypt unleavened bread is used in the Eucharist on the somewhat uncertain ground that the Last Supper was the Paschal meal. The Greek church uses leavened.

Transubstantiation.—In the primitive age no one asked how Christ was present in the Eucharist, or how the elements became his body and blood. The Eucharist formed part of an *agapé* or love feast until the end of the 2nd century, and in parts of Christendom continued to be so much later. It was, save where animal sacrifices survived, *the* Christian sacrifice, *par excellence*, the counterpart for the converted of the sacrificial communions of paganism; and

though charged with higher significance than these, it yet reposed on a like background of religious usage and beliefs. But when the Agapé on one side and paganism on the other receded into a dim past, owing to the enhanced sacrosanctity of the Eucharist and because of the severe edicts of the emperor Theodosius and his successors, the psychological background fell away, and the Eucharist was left isolated and hanging in the air. Then men began to ask themselves what it meant. Rival schools of thought sprang up, and controversy raged over it, as it had aforetime about the *homoousion*, or the two natures. Thus the sacrament which was intended to be a bond of peace, became a chief cause of dissension and bloodshed, and was often discussed as if it were a vulgar talisman.

Serapion of Thmuis in Egypt, a younger contemporary of Athanasius, in his Eucharistic prayers combines the language of the *Didache* with a high sacramentalism alien to that document which now only survived in the form of a grace used at table in the nunneries of Alexandria (see Agapé). He entreats "the Lord of Powers to fill this sacrifice with his Power and Participation," and calls the elements a "living sacrifice, a bloodless offering." The bread and wine before consecration are "likenesses of his body and blood," this in virtue of the words pronounced over them by Jesus on the night of his betrayal. The prayer then continues thus: "O God of truth, let thy holy Word settle upon this bread, that the bread may become body of the word, and on this cup, that the cup may become blood of the truth. And cause all who communicate to receive a drug of life for healing of every disease and empowering of all moral advance and virtue." Here the bread and wine become by consecration tenements in which the Word is reincarnated, as he aforetime dwelled in flesh. They cease to be mere *likenesses* of the body and blood, and are changed into receptacles of divine power and intimacy, by swallowing which we are benefited in soul and body. Cyril of Jerusalem in his *catechises* 5^1 enunciates the same idea of μεταβολή or transformation.

Gregory of Nyssa also about the same date (in Migne, *Patrolog. Graeca*, vol. 46, col. 581, oration on the Baptism) asserts a "transformation" or "transelementation" (μεταστοιχείωσις) of the elements into centres of mystic force; and assimilates their consecration to that of the water of baptism, of the altar, of oil or chrism, of the priest. He compares it also to the change of Moses' rod into a snake, of the Nile into blood, to the virtue inherent in Elijah's mantle or in the wood of the cross or in the clay mixt of dust and the Lord's spittle, or in Elisha's relics which raised a corpse to life, or in the burning bush. All these, he says, "were parcels of matter destitute of life and feeling, but through miracles they became vehicles of the power of God absorbed or taken into themselves." He thus views the consecration of the elements as akin to other consecrations; and, like priestly ordination, as involving "a metamorphosis for the better," a phrase which later on became classical. John of Damascus (*c.* 750) believed the bread to be mysteriously changed into the Christ's body, just as when eaten it is changed into any human body; and he argued that it is wrong to say, as Irenaeus had said, that the elements are mere antitypes after as before consecration. In the West, Augustine, like Eusebius and Theodoret, calls the elements signs or symbols of the body and blood signified in them; yet he argues that Christ "took and lifted up his own body in his hands when he took the bread." At the same time he admits that "no one eats Christ's flesh, unless he has first adored" (*nisi prius adoraverit*). But he qualifies this "Receptionist" position by declaring that Judas received the sacrament, as if the unworthiness of the recipient made no difference.

Out of this mist of contradictions scholastic thought strove to emerge by means of clear-cut definitions. The drawback for the dogmatist of such a view as Serapion broaches in his prayers was this, that although it explained how the Logos comes to be immanent in the elements, as a soul in its body, nevertheless it did not guarantee the presence in or rather substitution for the natural elements of Christ's real body and blood. It only provided an ἀντίτυπον or surrogate body. In 830-850, Paschasius Radbert taught that after the priest has uttered the words of institution, nothing remains save the body and blood under the outward form of bread and wine; the substance is changed and the accidents alone remain. The elements are miraculously recreated as body and blood. This view harmonized with the docetic view which lurked in East and West, that the manhood of Jesus was but a likeness or semblance under which the God was concealed. So Marcion argued that Christ's body was not really flesh and blood, or he could not have called it bread and wine. Paschasius shrank from the logical outcome of his view, namely, that Christ's body or part of it is turned into human excrement, but Ratramnus, another monk of Corbey, in a book afterwards ascribed to Duns Scotus, drew this inference in order to discredit his antagonists, and not because he believed it himself. The elements, he said, remain physically what they were, but are spiritually raised as symbols to a higher power. Perhaps we may illustrate his position by saying that the elements undergo a change analogous to what takes place in iron, when by being brought into an electric field it becomes magnetic. The substance of the elements remain as well as their accidents, but like baptismal water they gain by consecration a hidden virtue benefiting soul and body. Ratramnus's view thus resembled Serapion's, after whom the elements furnish a new vehicle of the Spirit's influence, a new body through which the Word operates, a fresh sojourning among us of the Word, though consecrated bread is in itself no more Christ's natural body than are we who assimilate it. Other doctors of the 9th century, *e.g.* Hincmar of Reims and Haimo of Halberstadt, took the side of Paschasius, and affirmed that the substance of the bread and wine is changed, and that God leaves the colour, taste and other outward properties out of mercy to the worshippers, who would be overcome with dread if the underlying real flesh and blood were nakedly revealed to their gaze!

Berengar in the 11th century assailed this view, which was really that of transubstantiation, alleging that there is no substance in matter apart from the accidents, and that therefore Christ cannot be *corporally* present in the sacrament; because, if so, he must be *spatially* present, and there will be two material bodies in one space; moreover his body will be in thousands of places at once. Christ, he said, is present spiritually, so that the elements, while remaining what they were, unremoved and undestroyed, are advanced to be something better: *omne cui a Deo benedicatur, non absumi, non auferri, non destrui, sed manere et in melius quam erat necessario provehi*. This was the phrase of Gregory of Nyssa.

Berengar in a weak moment in 1059 was forced by the pope to recant and assert that "the true body and blood are not only a sacrament, but in truth touched and broken by the hands of the priests and pressed by the teeth of the faithful," and this position remains in every Roman catechism. Such dilemmas as whether a mouse can devour the true body, and whether it is not involved in all the obscenities of human digestive processes, were ill met by this ruling. Each party dubbed the other *stercoranists* (dung-feasters), and the controversy was often marred by indecencies.

As in the 3rd century the Roman church decided in respect of baptism that the sacrament carries the church and not the church the sacrament, so in the dispute over the Eucharist it ended, in spite of more spiritual views essayed by Peter Lombard, by insisting on the more materialistic view at the fourth Lateran Council in 1215, whose decree runs thus:—"The body and blood of Jesus Christ are truly contained in the sacrament of the altar under the species of bread and wine, the bread and wine respectively being transubstantiated into body and blood by divine power, so that in order to the perfecting of the mystery of unity we may ourselves receive from his (body) what he himself receives from ours." In 1264 Urban IV. instituted the Corpus Christi Feast by way of giving liturgical expression to this view.

Communion in One Kind.—Up to about 1100 laymen in the West received the communion in both kinds, and except in a few disciplinary cases the wine was not refused. In 1099, by a decree of Pope Paschal II., children might omit the wine and invalids the bread. The communion of the laity in the bread alone was enjoined by the council of Constance in 1415, and by the council of Trent in 1562. The reformed churches of the West went back to the older rule which Eastern churches had never forsaken.

Mass.—The term *mass*, which survives in Candlemas, Christmas, Michaelmas, is from the Latin *missa*, which was in the 3rd century a technical term for the dismissal of any lay meeting, *e.g.* of a law-court, and was adopted in that sense by the church as early as Ambrose (*c.* 350). The catechumens or unbaptized, together with the penitents, remained in church during the Litany, collect, three lections, two psalms and homily. The deacon then cried out: "Let the catechumens depart. Let all catechumens go out." This was the *missa* of the catechumens. The rest of the rite was called *missa fidelium*, because only the initiated remained. Similarly the collect with which often the rite began is the prayer *ad collectam*, *i.e.* for the congregation met together or collected. The corresponding Greek word was *synaxis*.

After the catechumens were gone the priest said: "The Lord be with you, let us pray," and the service of the mass followed.

In the West, says Duchesne (*Origines*, p. 179), not only catechumens, but the baptized who did not communicate left the church before the communion of the faithful began (? after the communion of the clergy). In Anglican churches non-communicants used to leave the church after the prayer for the Church Militant. Ritualists now keep unconfirmed children in church during the entire rite, through ignorance of ancient usage, in order that they may learn to adore the consecrated elements. For this moment of homage to material elements ritually filled with divine potency may be so exaggerated as to obscure the rite's ancient significance as a communion of the faithful in mystic food.

Ideas of Reformers.—The 16th-century reformers strove to avoid the literalism of the words "This is my body," accepted frankly by the Roman and Eastern churches, and urged a Receptionist view, viz. that Christ is in the sacrament only spiritually consumed by worthy recipients alone, the material body not being actually chewed. This is seen by a comparison of other confessions with the Profession of Catholic Faith in accordance with the council of Trent, in the bull of Pius IV., which runs thus:—

> "I profess that in the Mass is offered to God a true, proper and propitiatory sacrifice, for the living and the dead, and that in the most holy sacrament of the Eucharist there is truly really and in substance the body and blood, together with the soul and divinity of our Lord Jesus Christ, and that there does take place a conversion of the entire substance of the bread into the body, and of the entire substance of the wine into the blood, which conversion the Catholic Church doth call Transubstantiation. I also admit that under one of the other species alone the entire and whole Christ and the true sacrament is received."

The 28th Article of Religion of the Church of England is as follows:—

> "The Supper of the Lord ... is a Sacrament of our Redemption by Christ's death; insomuch that to such as rightly, worthily, and with faith, receive the same, the Bread which we break is a partaking of the Body of Christ, and likewise the Cup of Blessing is a partaking of the Blood of Christ.
>
> "Transubstantiation ... cannot be proved by holy writ....
>
> "The Body of Christ is given, taken and eaten, in the Supper, only after a heavenly and spiritual manner. And the mean whereby the Body of Christ is received and eaten in the Supper is Faith.
>
> "The Sacrament of the Lord's Supper was not by Christ's ordinance reserved, carried about, lifted up, or worshipped."

At the end of the communion rite the prayer-book, in view of the ordinance to receive the Sacrament kneeling, adds the following:—

> "It is hereby declared, that thereby no adoration is intended, or ought to be done, either unto the Sacramental Bread or Wine, there bodily received, or unto any Corporal Presence of Christ's natural Flesh and Blood. For the Sacramental Bread and Wine remain still in their very natural substances, and therefore may not be adored (for that were idolatry, to be abhorred of all faithful Christians); and the natural Body and Blood of our Saviour Christ are in Heaven, and not here; it being against the truth of Christ's natural Body to be at one time in more places than one."

These monitions and prescriptions are rapidly becoming a dead-letter, but they possess a certain historical interest.

The Helvetic Confession[10] of A.D. 1566 (*caput* xxi. *De sacra coena Domini*) runs as follows:—

> "That it may be more rightly and clearly understood how the flesh and blood of Christ can be food and drink of the faithful, and be received by them unto eternal life, let us add these few remarks. Chewing is not of one kind alone. For there is a corporeal chewing, by which food is taken into the mouth by man, bruised with the teeth and swallowed down into the belly.... As the flesh of Christ cannot be corporeally chewed without wickedness and truculence, so it is not food of the belly.... There is also a spiritual chewing of the body of Christ, not such that by it we understand the very food to be changed into spirit, but such that, the body and blood of the Lord abiding in their essence and peculiarity, they are spiritually communicated to us, not in any corporeal way, but in a spiritual, through the Holy Spirit which applies and bestows on us those things which were prepared through the flesh and blood of the Lord betrayed for our sake to death, to wit, remission of sins, liberation and life eternal, so that Christ lives in us and we in him....
>
> "In addition to the aforesaid spiritual chewing, there is also a sacramental chewing of the Lord's body, by which the faithful not only partakes spiritually and inwardly of the true body and blood of the Lord, but outwardly by approaching the Lord's table, receives the visible sacrament of his body and blood.... But he who without faith approaches the sacred table, albeit he communicate in the sacrament, yet he perceives not the matter of the sacrament, whence is life and salvation...."

The Augustan Confession presented by the German electors to Charles V. in the section on the Mass merely protests against the view that "the Lord's Supper is a work (*opus*) which being performed by a priest earns remission of sin for the doer and for others, and that in virtue of the work done (*ex opere operato*), without a good motive on the part of the user. Also that being applied for the dead, it is a satisfaction, that is to say, earns for them remission of the pains of purgatory."

The Saxon Confession of Wittenberg, June 1551, while protesting against the same errors, equally abstains from trying to define narrowly how Christ is present in the sacrament.

Consubstantiation.—The symbolical books of the Lutheran Church, following the teaching of Luther himself,

declare the doctrine of the real presence of Christ's body and blood in the eucharist, *together with* the bread and wine (*consubstantiation*), as well as the ubiquity of his body, as the orthodox doctrine of the church. One consequence of this view was that the unbelieving recipients are held to be as really partakers of the body of Christ in, with and under the bread as the faithful, though they receive it to their own hurt. (Hagenbach, *Hist. of Doctr*. ii. 300.)

Of all the Reformers, the teaching of Zwingli was the farthest removed from that of Luther. At an early period he asserted that the Eucharist was nothing more than food for the soul, and had been instituted by Christ only as an act of commemoration and as a visible sign of his body and blood (*Christenliche Ynleitung*, 1523, quoted by Hagenbach, *Hist. of Doctr*. ii. 296, Clark's translation). But that Zwingli did not reject the higher religious significance of the Eucharist, and was far from degrading the bread and wine into "nuda et inania symbola," as he was accused of doing, we see from his *Fidei ratio ad Carolum Imperatorem* (*ib.* p. 297).

Original Significance of the Eucharist.—It is doubtful if the attempts of reformers to spiritualize the Eucharist bring us, except so far as they pruned ritual extravagances, nearer to its original significance; perhaps the Roman, Greek and Oriental churches have better preserved it. This significance remains to be discussed; the cognate question of how far the development of the Eucharist was influenced by the pagan mysteries is discussed in the article Sacrament.

That the Lord's Supper was from the first a meal symbolic of Christian unity and commemorative of Christ's death is questioned by none. But Paul, while he saw this much in it, saw much more; or he could not in the same epistle, x. 18-22 assimilate communion in the flesh and blood of Jesus, on the one hand, to the sacrificial communion with the altar which made Israel after the flesh one; and on the other to the communion with devils attained by pagans through sacrifices offered before idols. It has been justly remarked of the Pauline view, that—

> "The union with the Lord Himself, to which those who partake of the Lord's Supper have, is compared with the union which those who partake of a sacrifice have with the deity to whom the altar is devoted—in the case of the Israelites with God, of the heathen with demons. This idea that to partake of sacrifice is to devote oneself to the deity, lies at the root of the ancient idea of worship, whether Jewish or heathen; and St Paul uses it as being readily understood. In this connexion the symbol is never a mere symbol, but a means of real union. 'The cup is the covenant'" (Prof. Sanday in Hastings' *Dictionary of the Bible*, 3, 149).

Paul caps his argument thus:—"Ye cannot drink the cup of the Lord and the cup of demons: ye cannot partake of the table of the Lord and of the table of demons. Or do we provoke the Lord to jealousy? Are we stronger than he?" And these words with their context prove that Paul, like the Fathers of the church, regarded the gods and goddesses as real living supernatural beings, but malignant. They were the powers and principalities with whom he was ever at war. The Lord also is jealous of them, if any one attempt to combine their cult with his, for to do so is to doubt the supremacy of his name above all names. Both in its inner nature then and outward effects the Eucharist was the 875
Christian counterpart of these two other forms of communion of which one, the heathen, was excluded from the first, and the other, the Jewish, soon to disappear. It is their analogue, and to understand it we must understand them, not forgetting that Paul, as a Semite, and his hearers, as converted pagans, were imbued with the sacrificial ideas of the old world.

"A kin," remarks W. Robertson Smith (*Religion of the Semites*, 1894), "was a group of persons whose lives were so bound up together, in what must be called a physical unity, that they could be treated as parts of one common life. The members of one kindred looked on themselves as one living whole, a single animated mass of blood, flesh and bones, of which no member could be touched without all the members suffering." "In later times," observes the same writer (*op. cit.* p. 313), "we find the conception current that any food which two men partake of together, so that the same substance enters into their flesh and blood, is enough to establish some sacred unity of life between them; but in ancient times this significance seems to be always attached to participation in the flesh of a sacrosanct victim, and the solemn mystery of its death is justified by the consideration that only in this way can the sacred cement be procured, which creates or keeps alive a living bond of union between the worshippers and their god. This cement is nothing else than the actual life of the sacred and kindred animal, which is conceived as residing in its flesh, but specially in its blood, and so, in the sacred meal, is actually distributed among all the participants, each of whom incorporates a particle of it with his own individual life."

The above conveys the cycle of ideas within which Paul's reflection worked. Christ who knew no sin (2 Cor. v. 21) had been made sin, and sacrificed for us, becoming as it were a new Passover (1 Cor. v. 7). By a mysterious sympathy the bread and wine over which the words, "This is my body which is for you," and "This cup is the new covenant in my blood," had been uttered, became Christ's body and blood; so that by partaking of these the faithful were united with each other and with Christ into one kinship. They became the body of Christ, and his blood or life was in them, and they were members of him. Participation in the Eucharist gave actual life, and it was due to their irregular attendance at it that many members of the Corinthian church "were weak and sickly and not a few slept" (*i.e.* had died). As the author already cited adds (p. 313): "The notion that by eating the flesh, or particularly by drinking the blood, of another living being, a man absorbs its nature or life into his own, is one which appears among primitive peoples in many forms."

But this effect of participation in the bread and cup was not in Paul's opinion automatic, was no mere *opus operatum*; it depended on the ethical co-operation of the believer, who must not eat and drink *unworthily*, that is, after refusing to share his meats with the poorer brethren, or with any other guilt in his soul. The phrases "discern the body" and "discern ourselves" in 1 Cor. xi. 29, 31 are obscure. Paul evidently plays on the verb, *krinô, diakrinô, katakrinô* (κρίνω, διακρίνω, κατακρίνω). The general sense is clear, that those who consume the holy food without a clear conscience, like those who handle sacred objects with impure hands, will suffer physical harm from its contact, as if they were undergoing the ordeal of touching a holy thing. The idea, therefore, seems to be that as we must distinguish the holy food over which the words "This is my body" have been uttered from common food, so we must separate ourselves before eating it from all that is guilty and impure. The food that is *taboo* must only be consumed by persons who are equally *taboo* or pure. If they are not pure, it condemns them.

The "one" loaf has many parallels in ancient sacrifices, *e.g.* the Latin tribes when they met annually at their common temple partook of a "single" bull. And in Greek *Panegureis* or festivals the sacrificial wine had to be dispensed from one common bowl: "Unto a common cup they come together, and from it pour libations as well as sacrifice," says Aristides Rhetor in his *Isthmica in Neptunum*, p. 45. To ensure the continued unity of the bread, the Roman church ever leaves over from a preceding consecration half a holy wafer, called *fermentum*, which is added in the next celebration.

With what awe Paul regarded the elements mystically identified with Christ's body and life is clear from his declaration in 1 Cor. xi. 27, that he who consumes them unworthily is guilty or holden of the Lord's body and blood. This is the language of the ancient ordeal which as a test of innocence required the accused to touch or still better to

eat a holy element. A wife who drank the holy water in which the dust of the Sanctuary was mingled (Num. v. 17 foll.) offended so deeply against it, if unfaithful, that she was punished with dropsy and wasting. The very point is paralleled in the *Acts of Thomas*, ch. xlviii. A youth who has murdered his mistress takes the bread of the Eucharist in his mouth, and his two hands are at once withered up. The apostle immediately invites him to confess the crime he must have committed, "for, he says, the Eucharist of the Lord hath convicted thee."

It has been necessary to consider at such length St Paul's account of the Eucharist, both because it antedates nearly by half a century that of the gospels, and because it explains the significance which the rite had no less for the Gnostics than for the great church. The synoptists' account is to be understood thus: Jesus, conscious that he now for the last time lies down to eat with his disciples a meal which, if not the Paschal, was anyhow anticipatory of the Millennial Regeneration (Matt. xix. 28), institutes, as it were, a blood-brotherhood between himself and them. It is a covenant similar to that of Exodus xxiv., when after the peace-offering of oxen, Moses took the blood in basins and sprinkled half of it on the altar and on twelve pillars erected after the twelve tribes, and the other half on the people, to whom he had first read out the writing of the covenant and said, "Behold the blood of the covenant which the Lord hath made with you concerning all these words."

But the covenant instituted by Jesus on the eve of his death was hardly intended as a new covenant with God, superseding the old. This reconstruction of its meaning seems to have been the peculiar revelation of the Lord to Paul, who viewed Christ's crucifixion and death as an atoning sacrifice, liberating by its grace mankind from bonds of sin which the law, far from snapping, only made more sensible and grievous. This must have been the gist of the special revelation which he had received from Christ as to the inner character of a supper which he already found a ritual observance among believers. The Eucharist of the synoptists is rather a covenant or tie of communion between Jesus and the twelve, such as will cause his life to survive in them after he has been parted from them in the flesh. An older prophet would have slain an animal and drunk its blood in common with his followers, or they would all alike have smeared themselves with it. In the East, even now, one who wishes to create a blood tie between himself and his followers and cement them to himself, makes under his left breast an incision from which they each in turn suck his blood. Such barbarisms was alien to the spirit of the Founder, who substitutes bread and wine for his own flesh and blood, only imparting to these his own quality by the declaration that they *are* himself. He broke the bread not in token of his approaching death, but in order to its equal distribution. Wine he rather chose than water as a surrogate for his actual blood, because it already in Hebrew sacrifices passed as such. "The Hebrews," says Robertson Smith (*op. cit*. p. 230), "treated it like the blood, pouring it out at the base of the altar." As a red liquid it was a ready symbol of the blood which is the life. It was itself the covenant, for the genitive τῆς διαθήκης in Mark xiv. 24 is epexegetic, and Luke and Paul rightly substitute the nominative. It was, as J. Wellhausen remarks,[11] a better cement than the bread, because through the drinking of it the very blood of Jesus coursed through the veins of the disciples, and that is why more stress is laid on it than on the bread. To the apostles, as Jews bred and born, the action and words of their master formed a solemn and intelligible appeal. It belongs to the same order of ideas that the headship of the Messianic *ecclesia* in Judea was assigned after the death of Jesus to his eldest brother James, and after him for several generations to the eldest living representative of his family.

To the modern mind it is absurd that an image or symbol should be taken for that which is imaged or symbolized, and that is why the early history of the Eucharist has been so little understood by ecclesiastical writers. And yet other religions, ancient and modern, supply many parallels, which are considered in the article Sacrament.

Authorities.—Robertson Smith, *Religion of the Semites*; Goetz, *Die Abendmahlsfrage*; G. Anrich, *Das antike Mysterienwesen* (Göttingen, 1894); *Sylloge confessionum* (Oxford, 1804); Duchesne, *Origins of Christian Culture*; Funk's edition of *Constitutiones Apostolicae*; Hagenbach, *History of Doctrines*, vol. ii.; Geo. Bickell, *Messe und Pascha*; idem. "Die Entstehung der Liturgie," *Ztsch. f. Kath. Theol*. iv. Jahrg. 94 (1880), p. 90 (shows how the prayers of the Christian sacramentaries derive from the Jewish Synagogue); Goar, *Rituale Graecorum*; F.E. Brightman, *Eastern Liturgies*; Cabrol and Leclercq, *Monumenta liturgica, reliquiae liturgicae vetustissimae* (Paris, 1900); Harnack, *History of Dogma*; Jas. Martineau, *Seat of Authority in Religion*, bk. iv. (London, 1890); Loofs, art. "Abendmahlsfeier" in Herzog's *Realencyklopädie* (1896.) Spitta, *Urchristentum* (Göttingen, 1893); Schultzen, *Das Abendmahl im N.T.* (Göttingen, 1895); Kraus, *Real-Encykl. d. christl. Altert*. (for the Archaeology); art. "Eucharistic"; Ch. Gore, *Dissertations* (1895); Hoffmann, *Die Abendmahlsgedanken Jesu Christi* (Königsberg, 1896); Sanday, art. "Lord's Supper" in *Hastings' Dictionary of the Bible*; Th. Harnack, *Der christl. Gemeindegottesdienst*.

(F. C. C.)

Reservation of the Eucharist

The practice of reserving the sacred elements for the purpose of subsequent reception prevailed in the church from very early times. The Eucharist being the seal of Christian fellowship, it was a natural custom to send portions of the consecrated elements by the hands of the deacons to those who were not present (Justin Martyr, *Apol*. i. 65). From this it was an easy development, which prevailed before the end of the 2nd century, for churches to send the consecrated Bread to one another as a sign of communion (the εὐχαριστία mentioned by Irenaeus, *ap*. Eus. *H.E.* v. 24), and for the faithful to take it to their own homes and reserve it in *arcae* or caskets for the purpose of communicating themselves (Tert. *ad Uxor*. ii. 5, *De orat*. 19; St Cypr. *De lapsis*, 132). Being open to objection on grounds both of superstition and of irreverence, these customs were gradually put down by the council of Laodicea in A.D. 360. But some irregular forms of reservation still continued; the prohibition as regards the lay people was not extended, at any rate with any strictness, to the clergy and monks; the Eucharist was still carried on journeys; occasionally it was buried with the dead; and in a few cases the pen was even dipped in the chalice in subscribing important writings. Meanwhile, both in East and West, the general practice has continued unbroken of reserving the Eucharist, in order that the "mass of the presanctified" might take place on certain "aliturgic" days, that the faithful might be able to communicate when there was no celebration, and above all that it might be at hand to meet the needs of the sick and dying. It was reserved in a closed vessel, which took various forms from time to time, known in the East as the ἀρτοφόριον, and in the West as the *turris*, the *capsa*, and later on as the *pyx*. In the East it was kept against the wall behind the altar; in the West, in a locked aumbry in some part of the church, or (as in England and France) in a pyx made in the form of a dove and suspended over the altar.

In the West it has been used in other ways. A portion of the consecrated Bread from one Eucharist, known as the "Fermentum," was long made use of in the next, or sent by the bishop to the various churches of his city, no doubt with the object of emphasizing, the solidarity and the continuity of "the one Eucharist"; and amongst other customs which prevailed for some centuries, from the 8th onward, were those of giving it to the newly ordained in order that they might communicate themselves, and of burying it in or under the altar-slab of a newly consecrated church. At a later date, apparently early in the 14th century, began the practice of carrying the Eucharist in procession in a monstrance; and at a still later period, apparently after the middle of the 16th century, the practice of Benediction

with the reserved sacrament, and that of the “forty hours’ exposition,” were introduced in the churches of the Roman communion. It should be said, however, that most of these practices met with very considerable opposition both from councils and from theologians and canonists, amongst others from the English canonist William Lyndwood (*Provinciale*, lib. iii. c. 26), on the following grounds amongst others: that the Body of Christ is the food of the soul, that it ought not to be reserved except for the benefit of the sick, and that it ought not to be applied to any other use than that for which it was instituted.

In England, during the religious changes of the 16th century, such of these customs as had already taken root were abolished; and with them the practice of reserving the Eucharist in the churches appears to have died out too. The general feeling on the subject is expressed by the language of the 28th Article, first drafted in 1553, to the effect that “the sacrament of the Lord’s Supper was not by Christ’s ordinance reserved, carried about, lifted up or worshipped,” and by the fact that a form was provided for the celebration of the Holy Eucharist for the sick in their own homes. This latter practice was in accordance with abundant precedent, but had become very infrequent, if not obsolete, for many years before the Reformation. The first Prayer-Book of Edward VI. provided that if there was a celebration in church on the day on which a sick person was to receive the Holy Communion, it should be reserved, and conveyed to the sick man’s house to be administered to him; if not, the curate was to visit the sick person before noon and there celebrate according to a form which is given in the book. At the revision of the Prayer-Book in 1552 all mention of reservation is omitted, and the rubric directs that the communion is to be celebrated in the sick person’s house, according to a new form; and this service has continued, with certain minor changes, down to the present day. That the tendency of opinion in the English Church during the period of the Reformation was against reservation is beyond doubt, and that the practice actually died out would seem to be equally clear. The whole argument of some of the controversial writings of the time, such as Bishop Cooper on *Private Mass*, depends upon that fact; and when Cardinal du Perron alleged against the English Church the lack of the reserved Eucharist, Bishop Andrewes replied, not that the fact was otherwise, but that reservation was unnecessary in view of the English form for the Communion of the Sick: “So that reservation needeth not; the intent is had without it” (*Answers to Cardinal Perron, &c.*, p. 19, Library of Anglo-Catholic Theology). It does not follow, however, that a custom which has ceased to exist is of necessity forbidden, nor even that what was rejected by the authorities of the English Church in the 16th century is so explicitly forbidden as to be unlawful under its existing system; and not a few facts have to be taken into account in any investigation of the question. (1) The view has been held that in the Eucharist the elements are only consecrated as regards the particular purpose of reception in the service itself, and that consequently what remains unconsumed may be put to common uses. If this view were held (and it has more than once made its appearance in church history, though it has never prevailed), reservation might be open to objection on theological grounds. But such is not the view of the Church of England in her doctrinal standards, and there is an express rubric directing that any that remains of that which was consecrated is not to be carried out of the church, but reverently consumed. There can therefore be no theological obstacle to reservation in the English Church: it is a question of practice only. (2) Nor can it be said that the rubric just referred to is in itself a condemnation of reservation: it is rather directed, as its history proves, against the irreverence which prevailed when it was made; and in fact its wording is based upon that of a pre-Reformation order which coexisted with the practice of reservation (Lyndwood, *Provinciale*, lib. iii. tit. 26, note q). (3) Nor can it be said that the words of the 28th Article (see above) constitute in themselves an express prohibition of reservation, strong as their evidence may be as to the practice and feeling of the time. The words are the common property of an earlier age which saw nothing objectionable in reservation for the sick. (4) It has indeed been contended (by Bishop Wordsworth of Salisbury) that reservation was not actually, though tacitly, continued under the second Prayer-Book of Edward VI., since that book orders that the curate shall “minister,” and not “celebrate,” the communion in the sick person’s house. But such a tacit sanction on the part of the compilers of the second Prayer-Book is in the highest degree improbable, in view of their known opinions on the subject; and an examination of contemporary writings hardly justifies the contention that the two words are so carefully used as the argument would demand. Anyhow, as the bishop notes, this could not be the case with the Prayer-Book of 1661, where the word is “celebrate.” (5) The Elizabethan Act of Uniformity contained a provision that at the universities the public services, with the exception of the Eucharist, might be in a language other than English; and in 1560 there appeared a Latin version of the Prayer-Book, issued under royal letters patent, in which there was a rubric prefixed to the Order for the Communion of the Sick, based on that in the first Prayer-Book of Edward VI. (see above), and providing that the Eucharist should be reserved for the sick person if there had been a celebration on the same day. But although the book in question was issued under letters patent, it is not really a translation of the Elizabethan book at all, but simply a reshaping of Aless’s clever and inaccurate translation of Edward VI.’s first book. In the rubric in question words are altered here and there in a way which shows that its reappearance can hardly be a mere printer’s error; but in any case its importance is very slight, for the Act of Uniformity specially provides that the English service alone is to be used for the Eucharist. (6) It has been pointed out that reservation for the sick prevails in the Scottish Episcopal Church, the doctrinal standards of which correspond with those of the Church of England. But it must be remembered that the Scottish Episcopal Church has an additional order of its own for the Holy Communion, and that consequently its clergy are not restricted to the services in the Book of Common Prayer. Moreover, the practice of reservation which has prevailed in Scotland for over 150 years would appear to have arisen out of the special circumstances of that church during the 18th century, and not to have prevailed continuously from earlier times. (7) Certain of the divines who took part in the framing of the Prayer-Book of 1661 seem to speak of the practice as though it actually prevailed in their day. But Bishop Sparrow’s words on the subject (*Rationale*, p. 349) are not free from difficulty on any hypothesis, and Thorndike (*Works*, v. 578, Library of Anglo-Catholic Theology) writes in such a style that it is often hard to tell whether he is describing the actual practice of his day or that which in his view it ought to be. (8) There appears to be more evidence than is commonly supposed to show that a practice analogous to that of Justin Martyr’s day has been adopted from time to time in England, viz. that of conveying the sacred elements to the houses of the sick during, or directly after, the celebration in church. And in 1899 this practice received the sanction of Dr Westcott, then bishop of Durham. (9) On the other hand, the words of the oath taken by the clergy under the 36th of the Canons of 1604 are to the effect that they will use the form prescribed in the Prayer-Book and none other, except so far as shall be otherwise ordered by lawful authority; and the Prayer-Book does not even mention the reservation of the Eucharist, whilst the Articles mention it only in the way of depreciation.

The matter has become one of no little practical importance owing to modern developments of English Church life. On the one hand, it is widely felt that neither the form for the Communion of the Sick, nor yet the teaching with regard to spiritual communion in the third rubric at the end of that service, is sufficient to meet all the cases that arise or may arise. On the other hand, it is probable that in many cases the desire for reservation has arisen, in part at least, from a wish for something analogous to the Roman Catholic customs of exposition and benediction; and the chief objection to any formal practice of reservation, on the part of many who otherwise would not be opposed to it, is doubtless to be found in this fact. But however that may be, the practice of reservation of the Eucharist, either in the open church or in private, has become not uncommon in recent days.

The question of the legality of reservation was brought before the two archbishops in 1899, under circumstances analogous to those in the Lambeth Hearing on Incense (*q.v.*). The parties concerned were three clergymen, who appealed from the direction of their respective diocesans, the bishops of St Albans and Peterborough and the archbishop of York: in the two former cases the archbishop (Temple) of Canterbury was the principal and the archbishop of York (Maclagan) the assessor, whilst in the latter case the functions were reversed. The hearing extended from 17th to 20th July; counsel were heard on both sides, evidence was given in support of the appeals by two of the clergy concerned and by several other witnesses, lay and clerical, and the whole matter was gone into with no little fulness. The archbishops gave their decision on the 1st of May 1900 in two separate judgments, to the effect that, in Dr Temple's words, "the Church of England does not at present allow reservation in any form, and that those who think that it ought to be allowed, though perfectly justified in endeavouring to get the proper authorities to alter the law, are not justified in practising reservation until the law has been so altered." The archbishop of York also laid stress upon the fact that the difficulties in the way of the communion of the sick, when they are really ready for communion, are not so great as has sometimes been suggested.

See W.E. Scudamore, *Notitia eucharistica* (2nd ed., London, 1876); and art. "Reservation" in *Dictionary of Christian Antiquities*, vol. ii. (London, 1893); *Guardian* newspaper, July 19 and 26, 1899, and May 2, 1900; *The Archbishops of Canterbury and York on Reservation of the Sacrament* (London, 1900); J.S. Franey, *Mr Dibdin's Speech on Reservation, and some of the Evidence* (London, 1899); F.C. Eeles, *Reservation of the Holy Eucharist in the Scottish Church* (Aberdeen, 1899); Bishop J. Wordsworth, *Further Considerations on Public Worship* (Salisbury, 1901).

(W. E. Co.)

1 Ps. lxxx. 8-19.

2 Acts iv. 25, 27.

3 1 Cor. x. 17; Soph. iii. 10.

4 Matt. vii. 6.

5 Matt. xxiv. 31.

6 1 Cor. xvi. 22.

7 We should probably omit the words bracketed.

8 The codex Othobonianus omits the words bracketed.

9 See Nerses of Lambron, *Opera Armenice* (Venice, 1847), pp. 74, 75, 101, &c.

10 This represents the views of Calvin.

11 *Das Evangelium Marci*, p. 121.

EUCHRE, a game of cards. The name is supposed by some to be a corruption of *écarté*, to which game it bears some resemblance; others connect it with the Ger. *Juchs* or *Jux*, a joke, owing to the presence in the pack, or "deck," of a special card called "the joker"; but neither derivation is quite satisfactory. The "deck" consists of 32 cards, all cards between the seven and ace being rejected from an ordinary pack. Sometimes the sevens and eights are rejected as well. The "joker" is the best card, *i.e.* the highest trump. Second in value is the "right bower" (from Dutch *boer*, farmer, the name of the knave), or knave of trumps; third is the "left bower," the knave of the other suit of the same colour as the right bower, also a trump: then follow ace, king, queen, &c., in order. Thus if spades are trumps the order is (1) the joker, (2) knave of spades, (3) knave of clubs, (4) ace of spades, &c. The joker, however, is not always used. When it is, the game is called "railroad" euchre. In suits not trumps the cards rank as at whist. Euchre can be played by two, three or four persons. In the cut for deal, the highest card deals, the knave being the highest and the ace the next best card. The dealer gives five cards to each person, two each and then three each, or vice versa: when all have received their cards the next card in the pack is turned up for trumps.

Two-handed Euchre.—If the non-dealer, who looks at his cards first, is satisfied, he says "I order it up," *i.e.* he elects to play with his hand as it stands and with the trump suit as turned up. The dealer then rejects one card, which is put face downwards at the bottom of the pack, and takes the trump card into his hand. If, however, the non-dealer is not satisfied with his original hand, he says "I pass," on which the dealer can either "adopt," or "take it up," the suit turned up, and proceed as before, or he can pass, turning down the trump card to show that he passes. If both players pass, the non-dealer can make any other suit trumps, by saying "I make it spades," for example, or he can pass again, when the dealer can either make another suit trumps or pass. If both players pass, the hand is at an end. If the trump card is black and either player makes the other black suit trumps, he "makes it next"; if he makes a red suit trumps he "crosses the suit"; the same applies to trumps in a red suit, *mutatis mutandis*. The non-dealer leads; the dealer must follow suit if he can, but he need not win the trick, nor need he trump if unable to follow suit. The left bower counts as a trump, and a trump must be played to it if led. The game is five up. If the player who orders up or adopts makes five tricks (a "march") he scores two points; if four or three tricks, one point; if he makes less than three tricks, he is "euchred" and the other player scores two. A rubber consists of three games, each game counting one, unless the loser has failed to score at all, when the winner counts two for that game. This is called a "lurch." When a player wins three tricks, he is said to win the "point." The rubber points are two, as at whist. All three games are played out, even if one player win the first two. It is sometimes agreed that if a score "laps," *i.e.* if the winner makes more than five points in a game, the surplus may be carried on to the next game. The leader should be cautious about ordering up, since the dealer will probably hold one trump in addition to the one he takes in. If the point is certain, the leader should pass, in case the dealer should take up the trump. If the dealer "turns it down," it is not wise to "make it," unless the odds on getting the point against one trump are two to one. With good cards in two suits, it is best to make it "next," as the dealer is not likely to have a bower in that suit. The dealer, if he adopts, should discard a singleton, unless it is an ace. If the dealer's score is three, only a very strong hand justifies one in "ordering up." It is generally wise in play to discard a singleton and not to unguard another suit. With one's adversary at four, the trump should be adopted even on a light hand.

Three-handed (*cut-throat*) *Euchre.*—In this form of the game the option of playing or passing goes round in rotation, beginning with the player on the dealer's left. The player who orders up, takes up, or makes, plays against the other two; if he is euchred his adversaries score two each; by other laws he is set back two points, and should his score be at love, he has then to make seven points. The procedure is the same as in two-handed euchre.

Four-handed Euchre.—The game is played with partners, cutting and sitting, and the deal passing, as at whist. If the first player passes, the second may say "I assist," which is the same as "ordering up," or he may pass. If the first player has ordered up, his partner may say "I take it from you," which means that he will play alone against the two adversaries, the first player's cards being put face downwards on the table, and not being used in that hand. Any player can similarly play "a lone hand," his partner taking no part in the play. Even if the first hand plays alone, the third may take it from him. Similarly the dealer may take it from the second hand, but the second hand cannot take it from the dealer. If all four players pass, the first player can pass, make it, or play alone, naming the suit he makes. The third hand can "take it" from the first, or play alone in the suit made by the first, the dealer having a similar right over his own partner. If all four pass again, the hand is at an end and the deal passes. The game is five up, points being reckoned as before. If a lone player makes five tricks his side scores four: if three tricks, one: if he fails to make three tricks the opponents score four. It is not wise for the first hand to order up or cross the suit unless very strong. It is good policy to lead trumps through a hand that assists, bad policy to do so when the leader adopts. Trumps should be led to a partner who has ordered up or made it. It is sometimes considered wise for the first hand to "keep the bridge," *i.e.* order up with a bad hand, to prevent the other side from playing alone, if their score is only one or two and the leader's is four. This right is lost if a player reminds his partner, after the trump card has been turned, that they are at the point of bridge. If the trump under these circumstances is not ordered up, the dealer should turn down, unless very strong. The second hand should not assist unless really strong, except when at the point of four-all or four-love. When led through, it is generally wise, *ceteris paribus*, to head the trick. The dealer should always adopt with two trumps in hand, or with one trump if a bower is turned up. At four-all and four-love he should adopt on a weaker hand. Also, being fourth player, he can make it on a weaker hand than other players. If the dealer's partner assists, the dealer should lead him a trump at the first opportunity; it is also a good opportunity for the dealer to play alone if moderately strong. If a player who generally keeps the bridge passes, his partner should rarely play alone.

Extracts from Rules.—If the dealer give too many or too few cards to any player, or exposes two cards in turning up, it is a misdeal and the deal passes. If there is a faced card in the pack, or the dealer exposes a card, he deals again. If any one play with the wrong number of cards, or the dealer plays without discarding, trumps being ordered up, his side forfeits two points (a lone hand four points) and cannot score during that hand. The revoke penalty is three points for each revoke (five in the case of a lone hand), and no score can be made that hand; a card may be taken back, before the trick is quitted, to save a revoke, but it is an exposed card. If a lone player expose a card, no penalty; if he lead out of turn, the card led may be called. If an adversary of a lone player plays out of turn to his lead, all the cards of both adversaries can be called, and are exposed on the table.

Bid Euchre.—This game resembles "Napoleon" (*q.v.*). It is played with a euchre deck, each player receiving five cards, the others being left face-downwards. Each player "bids," *i.e.* declares and makes a certain number of tricks, the highest bidder leading and his first card being a trump. When six play, the player who bids highest claims as his partner the player who has the best card of the trump suit, not in the bidder's hand: if it is among the undealt cards, which is ascertained by the fact that no one else holds it, he calls for the next best and so on. The partners then play against the other four.

EUCKEN, RUDOLF CHRISTOPH (1846-), German philosopher, was born on the 5th of January 1846 at Aurich in East Friesland. His father died when he was a child, and he was brought up by his mother, a woman of considerable activity. He was educated at Aurich, where one of his teachers was the philosopher Wilhelm Reuter, whose influence was the dominating factor in the development of his thought. Passing to the university of Göttingen he took his degree in classical philology and ancient history, but the bent of his mind was definitely towards the philosophical side of theology. Subsequently he studied in Berlin, especially under Trendelenburg, whose ethical tendencies and historical treatment of philosophy greatly attracted him. From 1871 to 1874 Eucken taught philosophy at Basel, and in 1874 became professor of philosophy at the university of Jena. In 1908 he was awarded the Nobel prize for literature. Eucken's philosophical work is partly historical and partly constructive, the former side being predominant in his earlier, the latter in his later works. Their most striking feature is the close organic relationship between the two parts. The aim of the historical works is to show the necessary connexion between philosophical concepts and the age to which they belong; the same idea is at the root of his constructive speculation. All philosophy is philosophy of life, the development of a new culture, not mere intellectualism, but the application of a vital religious inspiration to the practical problems of society. This practical idealism Eucken described by the term "Activism." In accordance with this principle, Eucken has given considerable attention to social and educational problems.

His chief works are:—*Die Methode der aristotelischen Forschung* (1872); the important historical study on the history of conceptions, *Die Grundbegriffe der Gegenwart* (1878; Eng. trans. by M. Stuart Phelps, New York, 1880; 3rd ed. under the title *Geistige Strömungen der Gegenwart*, 1904; 4th ed., 1909); *Geschichte der philos. Terminologie* (1879); *Prolegomena zu Forschungen über die Einheit des Geisteslebens* (1885); *Beiträge zur Geschichte der neueren Philosophie* (1886, 1905); *Die Einheit des Geisteslebens* (1888); *Die Lebensanschauungen der grossen Denker* (1890; 7th ed., 1907; Eng. trans., W. Hough and Boyce Gibson, *The Problem of Human Life*, 1909); *Der Wahrheitsgehalt der Religion* (1901; 2nd ed., 1905); *Thomas von Aquino und Kant* (1901); *Gesammelte Aufsätze zu Philos. und Lebensanschauung* (1903); *Philosophie der Geschichte* (1907); *Der Kampf um einen geistigen Lebensinhalt* (1896, 1907); *Grundlinien einer neuen Lebensanschauung* (1907); *Einführung in die Philosophie der Geisteslebens* (1908; Eng. trans., *The Life of the Spirit*, F.L. Pogson, 1909, Crown Theological Library); *Der Sinn und Wert des Lebens* (1908; Eng. trans., 1909); *Hauptprobleme der Religionsphilosophie der Gegenwart* (1907). The following of Eucken's works also have been translated into English:—*Liberty in Teaching in the German Universities* (1897); *Are the Germans still a Nation of Thinkers*? (1898); *Progress of Philos. in the 19th Century* (1899); *The Finnish Question* (1899); *The Present Status of Religion in Germany* (1901). See W.R. Boyce Gibson, *Rudolf Eucken's Philosophy of Life* (2nd ed., 1907), and *God with Us* (1909); for the historical work, Falckenberg's *Hist. of Philos*. (Eng. trans., 1895, index); also H. Pöhlmann, *R. Euckens Theologie mit ihren philosophischen Grundlagen dargestellt* (1903); O. Siebert, *R. Euckens Welt- und Lebensanschauung* (1904).

EUCLASE, a very rare mineral, occasionally cut as a gem-stone for the cabinet. It bears some relation to beryl in

that it is a silicate containing beryllium and aluminium, but hydrogen is also present, and the analyses of euclase lead to the formula $HBeAlSiO_5$ or $Be(AlOH)SiO_4$. It crystallizes in the monoclinic system, the crystals being generally of prismatic habit, striated vertically, and terminated by acute pyramids. Cleavage is perfect, parallel to the clinopinacoid, and this suggested to R.J. Haüy the name euclase, from the Greek εὖ, easily, and κλάσις, fracture. The ready cleavage renders the stone fragile with a tendency to chip, and thus detracts from its use for personal ornament. The colour is generally pale-blue or green, though sometimes the mineral is colourless. When cut it resembles certain kinds of beryl (aquamarine) and topaz, from which it may be distinguished by its specific gravity (3.1). Its hardness (7.5) is rather less than that of topaz. Euclase occurs with topaz at Boa Vista, near Ouro Preto (Villa Rica) in the province of Minas Geraes, Brazil. It is found also with topaz and chrysoberyl in the gold-bearing gravels of the R. Sanarka in the South Urals; and is met with as a rarity in the mica-schist of the Rauris in the Austrian Alps.

EUCLID [Eucleides], of Megara, founder of the Megarian (also called the eristic or dialectic) school of philosophy, was born c. 450 B.C., probably at Megara, though Gela in Sicily has also been named as his birthplace (Diogenes Laërtius ii. 106), and died in 374. He was one of the most devoted of the disciples of Socrates. Aulus Gellius (vi. 10) states that, when a decree was passed forbidding the Megarians to enter Athens, he regularly visited his master by night in the disguise of a woman; and he was one of the little band of intimate friends who listened to the last discourse. He withdrew subsequently with a number of fellow disciples to Megara, and it has been conjectured, though there is no direct evidence, that this was the period of Plato's residence in Megara, of which indications appear in the *Theaetetus*. He is said to have written six dialogues, of which only the titles have been preserved. For his doctrine (a combination of the principles of Parmenides and Socrates) see Megarian School.

EUCLID, Greek mathematician of the 3rd century B.C.; we are ignorant not only of the dates of his birth and death, but also of his parentage, his teachers, and the residence of his early years. In some of the editions of his works he is called *Megarensis*, as if he had been born at Megara in Greece, a mistake which arose from confounding him with another Euclid, a disciple of Socrates. Proclus (A.D. 412-485), the authority for most of our information regarding Euclid, states in his commentary on the first book of the *Elements* that Euclid lived in the time of Ptolemy I., king of Egypt, who reigned from 323 to 285 B.C., that he was younger than the associates of Plato, but older than Eratosthenes (276-196 B.C.) and Archimedes (287-212 B.C.). Euclid is said to have founded the mathematical school of Alexandria, which was at that time becoming a centre, not only of commerce, but of learning and research, and for this service to the cause of exact science he would have deserved commemoration, even if his writings had not secured him a worthier title to fame. Proclus preserves a reply made by Euclid to King Ptolemy, who asked whether he could not learn geometry more easily than by studying the *Elements*—"There is no royal road to geometry." Pappus of Alexandria, in his *Mathematical Collection*, says that Euclid was a man of mild and inoffensive temperament, unpretending, and kind to all genuine students of mathematics. This being all that is known of the life and character of Euclid, it only remains therefore to speak of his works.

Among those which have come down to us the most remarkable is the *Elements* (Στοιχεῖα) (see Geometry). They consist of thirteen books; two more are frequently added, but there is reason to believe that they are the work of a later mathematician, Hypsicles of Alexandria.

The question has often been mooted, to what extent Euclid, in his *Elements*, is a discoverer or a compiler. To this question no entirely satisfactory answer can be given, for scarcely any of the writings of earlier geometers have come down to our times. We are mainly dependent on Pappus and Proclus for the scanty notices we have of Euclid's predecessors, and of the problems which engaged their attention; for the solution of problems, and not the discovery of theorems, would seem to have been their principal object. From these authors we learn that the property of the right-angled triangle had been found out, the principles of geometrical analysis laid down, the restriction of constructions in plane geometry to the straight line and the circle agreed upon, the doctrine of proportion, for both commensurables and incommensurables, as well as loci, plane and solid, and some of the properties of the conic sections investigated, the five regular solids (often called the Platonic bodies) and the relation between the volume of a cone or pyramid and that of its circumscribed cylinder or prism discovered. Elementary works had been written, and the famous problem of the duplication of the cube reduced to the determination of two mean proportionals between two given straight lines. Notwithstanding this amount of discovery, and all that it implied, Euclid must have made a great advance beyond his predecessors (we are told that "he arranged the discoveries of Eudoxus, perfected those of Theaetetus, and reduced to invincible demonstration many things that had previously been more loosely proved"), for his *Elements* supplanted all similar treatises, and, as Apollonius received the title of "the great geometer," so Euclid has come down to later ages as "the elementator."

For the past twenty centuries parts of the *Elements*, notably the first six books, have been used as an introduction to geometry. Though they are now to some extent superseded in most countries, their long retention is a proof that they were, at any rate, not unsuitable for such a purpose. They are, speaking generally, not too difficult for novices in the science; the demonstrations are rigorous, ingenious and often elegant; the mixture of problems and theorems gives perhaps some variety, and makes their study less monotonous; and, if regard be had merely to the metrical properties of space as distinguished from the graphical, hardly any cardinal geometrical truths are omitted. With these excellences are combined a good many defects, some of them inevitable to a system based on a very few axioms and postulates. Thus the arrangement of the propositions seems arbitrary; associated theorems and problems are not grouped together; the classification, in short, is imperfect. Other objections, not to mention minor blemishes, are the prolixity of the style, arising partly from a defective nomenclature, the treatment of parallels depending on an axiom which is not axiomatic, and the sparing use of superposition as a method of proof.

Of the thirty-three ancient books subservient to geometrical analysis, Pappus enumerates first the *Data* (Δεδομένα) of Euclid. He says it contained 90 propositions, the scope of which he describes; it now consists of 95. It is not easy to explain this discrepancy, unless we suppose that some of the propositions, as they existed in the time of Pappus, have

since been split into two, or that what were once scholia have since been erected into propositions. The object of the *Data* is to show that when certain things—lines, angles, spaces, ratios, &c.—are given by hypothesis, certain other things are given, that is, are determinable. The book, as we are expressly told, and as we may gather from its contents, was intended for the investigation of problems; and it has been conjectured that Euclid must have extended the method of the *Data* to the investigation of theorems. What prompts this conjecture is the similarity between the analysis of a theorem and the method, common enough in the *Elements*, of *reductio ad absurdum*—the one setting out from the supposition that the theorem is true, the other from the supposition that it is false, thence in both cases deducing a chain of consequences which ends in a conclusion previously known to be true or false.

The *Introduction to Harmony* (Εἰσαγωγὴ ἁρμονική), and the *Section of the Scale* (Κατατομὴ κανόνος), treat of music. There is good reason for believing that one at any rate, and probably both, of these books are not by Euclid. No mention is made of them by any writer previous to Ptolemy (A.D. 140), or by Ptolemy himself, and in no ancient codex are they ascribed to Euclid.

The *Phaenomena* (Φαινόμενα) contains an exposition of the appearances produced by the motion attributed to the celestial sphere. Pappus, in the few remarks prefatory to his sixth book, complains of the faults, both of omission and commission, of writers on astronomy, and cites as an example of the former the second theorem of Euclid's *Phaenomena*, whence, and from the interpolation of other proofs, David Gregory infers that this treatise is corrupt.

The *Optics* and *Catoptrics* (Ὀπτικά, Κατοπτρικά) are ascribed to Euclid by Proclus, and by Marinus in his preface to the *Data*, but no mention is made of them by Pappus. This latter circumstance, taken in connexion with the fact that two of the propositions in the sixth book of the *Mathematical Collection* prove the same things as three in the *Optics*, is one of the reasons given by Gregory for deeming that work spurious. Several other reasons will be found in Gregory's preface to his edition of Euclid's works.

In some editions of Euclid's works there is given a book on the *Divisions of Superficies*, which consists of a few propositions, showing how a straight line may be drawn to divide in a given ratio triangles, quadrilaterals and pentagons. This was supposed by John Dee of London, who transcribed or translated it, and entrusted it for publication to his friend Federico Commandino of Urbino, to be the treatise of Euclid referred to by Proclus as τὸ περὶ διαιρέσεων βιβλίον. Dee mentions that, in the copy from which he wrote, the book was ascribed to Machomet of Bagdad, and adduces two or three reasons for thinking it to be Euclid's. This opinion, however, he does not seem to have held very strongly, nor does it appear that it was adopted by Commandino. The book does not exist in Greek.

The fragment, in Latin, *De levi et ponderoso*, which is of no value, and was printed at the end of Gregory's edition only in order that nothing might be left out, is mentioned neither by Pappus nor Proclus, and occurs first in Bartholomew Zamberti's edition of 1537. There is no reason for supposing it to be genuine.

The following works attributed to Euclid are not now extant:—

1. Three books on *Porisms* (Περὶ τῶν πορισμάτων) are mentioned both by Pappus and Proclus, and the former gives an abstract of them, with the lemmas assumed. (See Porism.)

2. Two books are mentioned, named Τόπων πρὸς ἐπιφανείᾳ, which is rendered *Locorum ad superficiem* by Commandino and subsequent geometers. These books were subservient to the analysis of loci, but the four lemmas which refer to them and which occur at the end of the seventh book of the *Mathematical Collection*, throw very little light on their contents. R. Simson's opinion was that they treated of curves of double curvature, and he intended at one time to write a treatise on the subject. (See Trail's *Life of Dr Simson*).

3. Pappus says that Euclid wrote four books on the *Conic Sections* (βιβλία τέσσαρα Κωνικῶν), which Apollonius amplified, and to which he added four more. It is known that, in the time of Euclid, the parabola was considered as the section of a right-angled cone, the ellipse that of an acute-angled cone, the hyperbola that of an obtuse-angled cone, and that Apollonius was the first who showed that the three sections could be obtained from any cone. There is good ground therefore for supposing that the first four books of Apollonius's *Conics*, which are still extant, resemble Euclid's *Conics* even less than Euclid's *Elements* do those of Eudoxus and Theaetetus.

4. A book on *Fallacies* (Περὶ ψευδαρίων) is mentioned by Proclus, who says that Euclid wrote it for the purpose of exercising beginners in the detection of errors in reasoning.

This notice of Euclid would be incomplete without some account of the earliest and the most important editions of his works. Passing over the commentators of the Alexandrian school, the first European translator of any part of Euclid is Boëtius (500), author of the *De consolatione philosophiae*. His *Euclidis Megarensis geometriae libri duo* contain nearly all the definitions of the first three books of the *Elements*, the postulates, and most of the axioms. The enunciations, with diagrams but no proofs, are given of most of the propositions in the first, second and fourth books, and a few from the third. Some centuries afterwards, Euclid was translated into Arabic, but the only printed version in that language is the one made of the thirteen books of the *Elements* by Nasir Al-Dīn Al-Tūsī (13th century), which appeared at Rome in 1594.

The first printed edition of Euclid was a translation of the fifteen books of the *Elements* from the Arabic, made, it is supposed, by Adelard of Bath (12th century), with the comments of Campanus of Novara. It appeared at Venice in 1482, printed by Erhardus Ratdolt, and dedicated to the doge Giovanni Mocenigo. This edition represents Euclid very inadequately; the comments are often foolish, propositions are sometimes omitted, sometimes joined together, useless cases are interpolated, and now and then Euclid's order changed.

The first printed translation from the Greek is that of Bartholomew Zamberti, which appeared at Venice in 1505. Its contents will be seen from the title: *Euclidis megarēsis philosophi platonici Mathematicarū disciplinarū Janitoris: Habent in hoc volumine quicūq ad mathematicā substantiā aspirāt: elemētorum libros xiii cū expositione Theonis insignis mathematici ... Quibus ... adjuncta. Deputatum scilicet Euclidi volumē xiiii cū expositiōe Hypsi. Alex. Itidēq Phaeno. Specu. Perspe. cum expositione Theonis ac mirandus ille liber Datorum cum expostiōe Pappi Mechanici una cū Marini dialectici protheoria. Bar. Zāber. Vene. Interpte.*

The first printed Greek text was published at Basel, in 1533, with the title Εὐκλείδου Στοιχεῖων βιβλ. ιέ ἐκ τῶν Θέωνος συνουσιῶν. It was edited by Simon Grynaeus from two MSS. sent to him, the one from Venice by Lazarus Bayfius, and the other from Paris by John Ruellius. The four books of Proclus's commentary are given at the end from an Oxford MS. supplied by John Claymundus.

The English edition, the only one which contains all the extant works attributed to Euclid, is that of Dr David Gregory, published at Oxford in 1703, with the title, Εὐκλείδου τὰ σωζόμενα. *Euclidis quae supersunt omnia*. The text is that of the Basel edition, corrected from the MSS. bequeathed by Sir Henry Savile, and from Savile's annotations on his own copy. The Latin translation, which accompanies the Greek on the same page, is for the most part that of Commandino. The French edition has the title, *Les Œuvres d'Euclide, traduites en Latin et en Français, d'après un*

manuscrit très-ancien qui était resté inconnu jusqu'à nos jours. Par F. Peyrard, Traducteur des œuvres d'Archimède. It was published at Paris in three volumes, the first of which appeared in 1814, the second in 1816 and the third in 1818. It contains the *Elements* and the *Data*, which are, says the editor, certainly the only works which remain to us of this ever-celebrated geometer. The texts of the Basel and Oxford editions were collated with 23 MSS., one of which belonged to the library of the Vatican, but had been sent to Paris by the comte de Peluse (Monge). The Vatican MS. was supposed to date from the 9th century; and to its readings Peyrard gave the greatest weight. What may be called the German edition has the title Εὐκλείδου Στοιχεῖα. *Euclidis Elementa ex optimis libris in usum Tironum Graece edita ab Ernesto Ferdinando August*. It was published at Berlin in two parts, the first of which appeared in 1826 and the second in 1829. The above mentioned texts were collated with three other MSS. Modern standard editions are by Dr Heiberg of Copenhagen, *Euclidis Elementa, edidit et Latine interpretatus est J.L. Heiberg*. vols. i.-v. (Lipsiae, 1883-1888), and by T.L. Heath, *The Thirteen Books of Euclid's Elements*, vols. i.-iii. (Cambridge, 1908).

Of translations of the *Elements* into modern languages the number is very large. The first English translation, published at London in 1570, has the title, *The Elements of Geometrie of the most auncient Philosopher Euclide of Megara. Faithfully* (*now first*) *translated into the Englishe toung, by H. Billingsley, Citizen of London. Whereunto are annexed certaine Scholies, Annotations and Inventions, of the best Mathematiciens, both of time past and in this our age*. The first French translation of the whole of the *Elements* has the title, *Les Quinze Livres des Elements d'Euclide. Traduicts de Latin en François. Par D. Henrion, Mathematicien*. The first edition of it was published at Paris in 1615, and a second, corrected and augmented, in 1623. Pierre Forcadel de Beziés had published at Paris in 1564 a translation of the first six books of the *Elements*, and in 1565 of the seventh, eighth and ninth books. An Italian translation, with the title, *Euclide Megarense acutissimo philosopho solo introduttore delle Scientie Mathematice. Diligentemente rassettato, et alla integrità ridotto, per il degno professore di tal Scientie Nicolò Tartalea Brisciano*, was published at Venice in 1569, and Federico Commandino's translation appeared at Urbino in 1575; a Spanish version, *Los Seis Libros primeros de la geometria de Euclides. Traduzidos en lēgua Española por Rodrigo Camorano, Astrologo y Mathematico*, at Seville in 1576; and a Turkish one, translated from the edition of J. Bonnycastle by Husaīn Rifkī, at Bulak in 1825. Dr Robert Simson's editions of the first six and the eleventh and twelfth books of the *Elements*, and of the *Data*.

Authorities.—The authors and editions above referred to; Fabricius, *Bibliotheca Graeca*, vol. iv.; Murhard's *Litteratur der mathematischen Wissenschaften*; Heilbronner's *Historia matheseos universae*; De Morgan's article "Eucleides" in Smith's *Dictionary of Biography and Mythology*; Moritz Cantor's *Geschichte der Mathematik*, vol. i.

(J. S. M.)

EUCRATIDES, king of Bactria (*c.* 175-129 B.C.), came to the throne by a rebellion against the dynasty of Euthydemus, whose son Demetrius had conquered western India. His authority was challenged by a great many other pretenders and Greek dynasts in Sogdiana, Aria (Herat), Drangiana (Sijistan), &c., whose names—Pantaleon, Agathocles, Antimachus, Antalcidas "the victorious" (νικηφόρος), Plato, whose unique coin is dated from the year 147 of the Seleucid era (= 166 B.C.), and others—are known only from coins with Greek and Indian legends. In the west the Parthian king Mithradates I. began to enlarge his kingdom and attacked Eucratides; he succeeded in conquering two provinces between Bactria and Parthia, called by Strabo "the country of Aspiones and Turiua," two Iranian names. But the principal opponent of Eucratides was Demetrius (*q.v.*) of India, who attacked him with a large army "of 300,000 men"; Eucratides fled with 300 men into a fortress and was besieged. But at last he beat Demetrius, and conquered a great part of western India. According to Apollodorus of Artemita, the historian of the Parthians, he ruled over 1000 towns (Strabo xv. 686; transferred to Diodotus of Bactria in Justin 41, 4. 6); and the extent of his kingdom over Bactria, Sogdiana (Bokhara), Drangiana (Sijistan), Kabul and the western Punjab is confirmed by numerous coins. On these coins, which bear Greek and Indian legends (in Kharoshti writing, cf. Bactria), he is called "the great King Eucratides." On one his portrait and name are associated on the reverse with those of Heliocles and Laodice; Heliocles was probably his son, and the coin may have been struck to celebrate his marriage with Laodice, who seems to have been a Seleucid princess. In Bactria Eucratides founded a Greek city, Eucratideia (Strabo xi. 516, Ptolem. vi. 11. 8). On his return from India Eucratides was (about 150 B.C.) murdered by his son, whom he had made co-regent (Justin 41, 6). This son is probably the Heliocles just mentioned, who on his coins calls himself "the Just" (βασιλέως Ἡλιοκλέους δικαίου). In his time the Graeco-Bactrian kingdom lost the countries north of the Hindu Kush. Mongolian tribes, the Yue-chi of the Chinese, called by the Greeks Scythians, by the Indians Saka, among which the Tochari are the most conspicuous, invaded Sogdiana in 159 B.C. and conquered Bactria in 139. Meanwhile the Parthian kings Mithradates I. and Phraates II. conquered the provinces in the west of the Hindu Kush (Justin 41, 6. 8); for a short time Mithradates I. extended his dominion to the borders of India (Diod. 33. 18, Orosius v. 4. 16). When Antiochus VII. Sidetes tried once more to restore the Seleucid dominion in 130, Phraates allied himself with the Scythians (Justin 42, 1. 1); but after his decisive victory in 129 he was attacked by them and fell in the battle. The changed state of affairs is shown by the numerous coins of Heliocles; while his predecessors maintained the Attic standard, which had been dominant throughout the Greek east, he on his later coins passes over to a native silver standard, and his bronze coins became quite barbarous. Besides his coins we possess coins of many other Greek kings of these times, most of whom take the epithet of "invincible" (ἀνίκητος) and "saviour" (σωτήρ). They are records of a desperate struggle of the Greeks to maintain their nationality and independence in the Far East; one usurper after the other rose to fight for the rescue of the kingdom. But these internal wars only accelerated the destruction; about 120 B.C. almost the whole of eastern Iran was in the hands either of a Parthian dynasty or of the Mongol invaders, who are now called Indo-Scythians. Only in the Kabul valley and western India the Greeks maintained themselves about two generations longer (see Menander).

(Ed. M.)

EUDAEMONISM (from Gr. εὐδαιμονία, literally the state of being under the protection of a benign spirit, a "good genius"), in ethics, the name applied to theories of morality which find the chief good of man in some form of happiness. The term Eudaemonia has been taken in a large number of senses, with consequent variations in the meaning of Eudaemonism. To Plato the "happiness" of all the members of a state, each according to his own capacity, was the final end of political development. Aristotle, as usual, adopted "eudaemonia" as the term which in popular language most nearly represented his idea and made it the keyword of his ethical doctrine. None the less he greatly

expanded the content of the word, until the popular idea was practically lost: if a man is to be called εὐδαίμων, he must have all his powers performing their functions freely in accordance with virtue, as well as a reasonable degree of material well-being; the highest conceivable good of man is the life of contemplation. Aristotle further held that the good man in achieving virtue must experience pleasure (ἡδονή), which is, therefore, not the same as, but the sequel to or concomitant of eudaemonia. Subsequent thinkers have to a greater or less degree identified the two ideas, and much confusion has resulted. Among the ancients the Epicureans expressed all eudaemonia in terms of pleasure. On the other hand attempts have been made to separate hedonism, as the search for a continuous series of physical pleasures, from eudaemonism, a condition of enduring mental satisfaction. Such a distinction involves the assumptions that bodily pleasures are generically different from mental ones, and that there is in practice a clearly marked dividing line,—both of which hypotheses are frequently denied. Among modern writers, James Seth (*Ethical Princ.*, 1894) resumes Aristotle's position, and places Eudaemonism as the mean between the Ethics of Sensibility (hedonism) and the Ethics of Rationality, each of which overlooks the complex character of human life. The fundamental difficulty which confronts those who would distinguish between pleasure and eudaemonia is that all pleasure is ultimately a mental phenomenon, whether it be roused by food, music, doing a moral action or committing a theft. There is a marked disposition on the part of critics of hedonism to confuse "pleasure" with animal pleasure or "passion,"—in other words, with a pleasure phenomenon in which the predominant feature is entire lack of self-control, whereas the word "pleasure" has strictly no such connotation. Pleasure is strictly nothing more than the state of being pleased, and hedonism the theory that man's chief good consists in acting in such a way as to bring about a continuous succession of such states. That they are in some cases produced by physical or sensory stimuli does not constitute them irrational, and it is purely arbitrary to confine the word pleasure to those cases in which such stimuli are the proximate causes. The value of the term Eudaemonism as an antithesis to Hedonism is thus very questionable.

EUDOCIA AUGUSTA (*c.* 401-*c.* 460), the wife of Theodosius II., East Roman emperor, was born in Athens, the daughter of the sophist Leontius, from whom she received a thorough training in literature and rhetoric. Deprived of her small patrimony by her brothers' rapacity, she betook herself to Constantinople to obtain redress at court. Her accomplishments attracted Theodosius' sister Pulcheria, who took her into her retinue and destined her to be the emperor's wife. After receiving baptism and discarding her former name, Athenaïs, for that of Aelia Līcinia Eudocia, she was married to Theodosius in 421; two years later, after the birth of a daughter, she received the title Augusta. The new empress repaid her brothers by making them consuls and prefects, and used her large influence at court to protect pagans and Jews. In 438-439 she made an ostentatious pilgrimage to Jerusalem, whence she brought back several precious relics; during her stay at Antioch she harangued the senate in Hellenic style and distributed funds for the repair of its buildings. On her return her position was undermined by the jealousy of Pulcheria and the groundless suspicion of an intrigue with her protégé Paulinus, the master of the offices. After the latter's execution (440) she retired to Jerusalem, where she was made responsible for the murder of an officer sent to kill two of her followers and stripped of her revenues. Nevertheless she retained great influence; although involved in the revolt of the Syrian monophysites (453), she was ultimately reconciled to Pulcheria and readmitted into the orthodox church. She died at Jerusalem about 460, after devoting her last years to literature. Among her works were a paraphrase of the Octateuch in hexameters, a paraphrase of the books of Daniel and Zechariah, a poem on St Cyprian and on her husband's Persian victories. A *Passion History* compiled out of Homeric verses, which Zonaras attributed to Eudocia, is perhaps of different authorship.

See W. Wiegand, *Eudokia* (Worms, 1871); F. Gregorovius, *Athenaïs* (Leipzig, 1892); C. Diehl, *Figures byzantines* (Paris, 1906), pp. 25-49; also Theodosius. On her works cf. A. Ludwich, *Eudociae Augustae carminum reliquiae* (Königsberg, 1893).

EUDOCIA MACREMBOLITISSA (*c.* 1021-1096), daughter of John Macrembolites, was the wife of the Byzantine emperor Constantine X., and after his death (1067) of Romanus IV. She had sworn to her first husband on his death-bed not to marry again, and had even imprisoned and exiled Romanus, who was suspected of aspiring to the throne. Perceiving, however, that she was not able unaided to avert the invasions which threatened the eastern frontier of the empire, she revoked her oath, married Romanus, and with his assistance dispelled the impending danger. She did not live very happily with her new husband, who was warlike and self-willed, and when he was taken prisoner by the Turks (1071) she was compelled to vacate the throne in favour of her son Michael and retire to a convent, where she died. The dictionary of mythology entitled Ἰωνιά ("Collection of Violets"), which formerly used to be ascribed to her, was not composed till 1543 (Constantine Palaeokappa).

See J. Flach, *Die Kaiserin Eudokia Makrembolitissa* (Tübingen, 1876); P. Pulch, *De Eudociae quod fertur Violario* (Strassburg, 1880); and in *Hermes*, xvii. (1882), p. 177 ff.

EUDOXIA LOPUKHINA (1669-1731), tsaritsa, first consort of Peter the Great, was the daughter of the boyarin Theodore Lopukhin. Peter, then a youth of seventeen, married her on the 27th of January 1689 at the command of his mother, who hoped to wean him from the wicked ways of the German suburb of Moscow by wedding him betimes to a lady who was as pious as she was beautiful. The marriage was in every way unfortunate. Accustomed from her infancy to the monastic seclusion of the *terem*, or women's quarter, Eudoxia's mental horizon did not extend much beyond her embroidery-frame or her illuminated service-book. From the first her society bored Peter unspeakably, and after the birth of their second, short-lived son Alexander, he practically deserted her. In 1698 she was unceremoniously sent off to the Pokrovsky monastery at Suzdal for refusing to consent to a divorce, though it was not till June 1699 that she disappeared from the world beneath the hood of sister Elena. In the monastery, however, she

was held in high honour by the archimandrite; the nuns persisted in regarding her as the lawful empress; and she was permitted an extraordinary degree of latitude, unknown to Peter, who dragged her from her enforced retreat in 1718 on a charge of adultery. As the evidence was collected by Peter's creatures, it is very doubtful whether Eudoxia was guilty, though she was compelled to make a public confession. She was then divorced and consigned to the remote monastery of Ladoga. Here she remained for ten years till the accession of her grandson, Peter II., when the reactionaries proposed to appoint her regent. She was escorted with great ceremony to Moscow in 1728 and exhibited to the people attired in the splendid, old-fashioned robes of a tsaritsa; but years of rigid seclusion had dulled her wits, and her best friends soon convinced themselves that a convent was a much more suitable place for her than a throne. An allowance of 60,000 roubles a year was accordingly assigned to her, and she disappeared again in a monastery at Moscow, where she died in 1731.

See Robert Nisbet Bain, *Pupils of Peter the Great* (London, 1895), chaps. ii. and iv.; and *The First Romanovs* (London, 1905), chaps. viii. and xii.

(R. N. B.)

EUDOXUS, of Cnidus, Greek savant, flourished about the middle of the 4th century B.C. It is chiefly as an astronomer that his name has come down to us (see ASTRONOMY and ZODIAC). From a life by Diogenes Laërtius, we learn that he studied at Athens under Plato, but, being dismissed, passed over into Egypt, where he remained for sixteen months with the priests of Heliopolis. He then taught physics in Cyzicus and the Propontis, and subsequently, accompanied by a number of pupils, went to Athens. Towards the end of his life he returned to his native place, where he died. Strabo states that he discovered that the solar year is longer than 365 days by 6 hours; Vitruvius that he invented a sun-dial. The *Phaenomena* of Aratus is a poetical account of the astronomical observations of Eudoxus. Several works have been attributed to him, but they are all lost; some fragments are preserved in the extant Τῶν Ἀράτου καὶ Εὐδόξου φαινομένων ἐξηγήσεωμ βιβλία τρία of the astronomer Hipparchus (ed. C. Manitius, 1894). According to Aristotle (*Ethics* x. 2), Eudoxus held that pleasure was the chief good, because (1) all beings sought it and endeavoured to escape its contrary, pain; (2) it is an end in itself, not a relative good. Aristotle, who speaks highly of the sincerity of Eudoxus's convictions, while giving a qualified approval to his arguments, considers him wrong in not distinguishing the different kinds of pleasure and in making pleasure the *summum bonum*.

See J.A. Letronne, *Sur les écrites et les travaux d'Eudoxe de Cnide, d'après L. Ideler* (1841); G.V. Schiaparelli, *Le Sfere omocentriche di Eudosso* (Milan, 1876); T.H. Martin in *Académie des inscriptions*, 3rd of October, 1879; article in Ersch and Gruber's *Allgemeine Encyklopädie*.

EUDOXUS, of Cyzicus, Greek navigator, flourished about 130 B.C. He was employed by Ptolemy Euergetes, who sent out a fleet under him to explore the Arabian Sea. After two successful voyages, Eudoxus left the Egyptian service, and proceeded to Cadiz with the object of fitting out an expedition for the purpose of African discovery; and we learn from Strabo, who utilized the results of his observations, that the veteran explorer made at least two voyages southward along the coast of Africa.

There is a good account of Eudoxus in E.H. Bunbury, *History of Ancient Geography*, ii. (1879); see also P. Gaffarel, *Eudoxe de Cyzique* (1873).

EUGENE OF SAVOY [FRANÇOIS EUGÈNE], PRINCE (1663-1736), fifth son of Prince Eugene Maurice of Savoy-Carignano, count of Soissons, and of Olympia Mancini, niece of Cardinal Mazarin, was born at Paris on the 18th of October 1663. Originally destined for the church, Eugene was known at court as the petit abbé, but his own predilection was strongly for the army. His mother, however, had fallen into disgrace at court, and his application for a commission, repeated more than once, was refused by Louis XIV. This, and the influence of his mother, produced in him a lifelong resentment against the king. Having quitted France in disgust, he proceeded to Vienna, where his relative the emperor Leopold I. received him kindly, and he served with the Austrian army during the campaign of 1683 against the Turks. He displayed his bravery in a cavalry fight at Petronell (7th July) and in the great battle for the relief of Vienna. The emperor now gave him the command of a regiment of dragoons. At the capture of Buda in 1686 he received a wound (3rd August), but he continued to serve up to the siege of Belgrade in 1688, in which he was dangerously wounded. At the instigation of Louvois, a decree of banishment from France was now issued against all Frenchmen who should continue to serve in foreign armies. "The king will see me again," was Eugene's reply when the news was communicated to him; he continued his career in foreign service.

Prince Eugene's next employment was in a service that required diplomatic as well as military skill (1689). He was sent by the emperor Leopold to Italy with the view of binding the duke of Savoy to the coalition against France and of co-operating with the Italian and Spanish troops. Later in 1689 he served on the Rhine and was again wounded. He returned to Italy in time to take part in the battle of Staffarda, which resulted in the defeat of the coalition at the hands of the French marshal Catinat; but in the spring of 1691 Prince Eugene, having secured reinforcements, caused the siege of Coni to be raised, took possession of Carmagnola, and in the end completely defeated Catinat. He followed up his success by entering Dauphiné, where he took possession of Embrun and Gap. After another campaign, which was uneventful, the further prosecution of the war was abandoned owing to the defection of the duke of Savoy from the coalition, and Prince Eugene returned to Vienna, where he soon afterwards received the command of the army in Hungary, on the recommendation of the veteran count Rüdiger von Starhemberg, the defender of Vienna in 1683. It was about this time that Louis XIV. secretly offered him the bâton of a marshal of France, with the government of Champagne which his father had held, and also a pension. But Eugene rejected these offers with indignation, and proceeded to operate against the Turks commanded by Kara Mustapha. After some

skilful manœuvres, he surprised the enemy (September 11th, 1697) at Zenta, on the Theiss. His attack was vigorous and daring, and the victory was one of the most complete and important ever won by the Austrian arms. Formerly it was often stated that the battle of Zenta was fought against express orders from the court, that Eugene was placed under arrest for violating these orders, and that a proposal to bring him before a council of war was frustrated only by the threatening attitude of the citizens of Vienna. This story, minute in details as it is, is entirely without foundation. After a further period of manœuvres, peace was at length concluded at Karlowitz on the 26th of January 1699.

Two years later he was again in active service in the War of the Spanish Succession (*q.v.*). At the beginning of the year 1701 he was sent into Italy once more to oppose his old antagonist Catinat. He achieved a rapid success, crossing the mountains from Tirol into Italy in spite of almost insurmountable difficulties (*Journal d. militärwissensch. Verein*, No. 5, 1907), forcing the French army, after sustaining several checks, to retire behind the Oglio, where a series of reverses equally unexpected and severe led to the recall of Catinat in disgrace. The incapable duke of Villeroi, who succeeded to the command of which Catinat had been deprived, ventured to attack Eugene at Chiari, and was repulsed with great loss. And this was only the forerunner of more signal reverses; for, in a short time, Villeroi was forced to abandon the whole of the Mantuan territory and to take refuge in Cremona, where he seems to have considered himself secure. By means of a stratagem, however, Eugene penetrated into the city during the night, at the head of 2000 men, and, though he found it impossible to hold the town, succeeded in carrying off Villeroi as a prisoner. But as the duke of Vendôme, a much abler general, replaced the captive, the incursion, daring though it was, proved anything but advantageous to the Austrians. The generalship of his new opponent, and the fact that the French army had been largely reinforced, while reinforcements had not been sent from Vienna, forced Prince Eugene to confine himself to a war of observation. The campaign was terminated by the sanguinary battle of Luzzara, fought on the 1st of August 1702, in which each party claimed the victory. Both armies having gone into winter quarters, Eugene returned to Vienna, where he was appointed president of the council of war. He then set out for Hungary in order to combat the insurgents in that country; but his means proving insufficient, he effected nothing of importance. The collapse of the revolt, however, soon freed the prince for the more important campaign in Bavaria, where, in 1704, he made his first campaign along with Marlborough. Similarity of tastes, views and talents soon established between these two great men a friendship which is rarely to be found amongst military chiefs, and contributed in the fullest measure to the success which the allies obtained. The first and perhaps the most important of these successes was that of Höchstädt or Blenheim (*q.v.*) on the 3rd of August 1704, where the English and imperial troops triumphed over one of the finest armies that France had ever sent into Germany.

But since Prince Eugene had quitted Italy, Vendôme, who commanded the French army in that country, had obtained various successes against the duke of Savoy, who had once more joined Austria. The emperor deemed the crisis so serious that he recalled Eugene and sent him to Italy to the assistance of his ally. Vendôme at first opposed great obstacles to the plan which the prince had formed for carrying succours into Piedmont; but after a variety of marches and counter-marches, in which both commanders displayed signal ability, the two armies met at Cassano (August 16, 1705), where a deadly engagement ensued, and Prince Eugene received two severe wounds which forced him to quit the field. This accident decided the fate of the battle and for the time suspended the prince’s march towards Piedmont. Vendôme, however, was recalled, and La Feuillade (who succeeded him) was incapable of long arresting the progress of such a commander as Eugene. After once more passing several rivers in presence of the French army, and executing one of the most skilful and daring marches he had ever performed, the latter appeared before the entrenched camp at Turin, which place the French were now besieging with an army eighty thousand strong. Prince Eugene had only thirty thousand men; but his antagonist the duke of Orleans, though full of zeal and courage, wanted experience, and Marshal Marsin, his *adlatus*, held powers from Louis XIV. which could not fail to produce dissensions in the French headquarters. With equal courage and address, Eugene profited by the misunderstandings between the French generals; and on the 7th of September 1706 he attacked the French army in its entrenchments and gained a victory which decided the fate of Italy. In the heat of the battle Eugene received a wound, and was thrown from his horse. His recompense for this important service was the government of the Milanese, of which he took possession with great pomp on the 16th of April 1707. He was also made lieutenant-general to the emperor Joseph I.

The attempt which he made against Toulon in the course of the same year failed completely, because the invasion of the kingdom of Naples retarded the march of the troops which were to have been employed in it, and this delay afforded Marshal de Tessé time to make good dispositions. Obliged to renounce his project, therefore, the prince went to Vienna, where he was received with great enthusiasm both by the people and by the court. “I am very well satisfied with you,” said the emperor, “excepting on one point only, which is, that you expose yourself too much.” This monarch immediately despatched Eugene to Holland, and to the different courts of Germany, in order to forward the necessary preparations for the campaign of the following year, 1708 (see Spanish Succession, War of the).

Early in the spring of 1708 the prince proceeded to Flanders, in order to assume the command of the German army which his diplomatic ability had been mainly instrumental in assembling, and to unite his forces with those of Marlborough. The campaign was opened by the victory of Oudenarde (*q.v.*), to which the perfect union of Marlborough and Eugene on the one hand, and the misunderstanding between Vendôme and the duke of Burgundy on the other, seem to have equally contributed. The French immediately abandoned the Low Countries, and, remaining in observation, made no attempt whatever to prevent Eugene’s army, covered by that of Marlborough, making the siege of Lille. The French governor, Boufflers, made a glorious defence, and Eugene paid a flattering tribute to his valour in inviting him to prepare the articles of capitulation himself, with the words “I subscribe to everything beforehand, well persuaded that you will not insert anything unworthy of yourself or of me.” After this important conquest, Eugene and Marlborough proceeded to the Hague, where they were received in the most flattering manner by the public, by the states-general, and above all, by their esteemed friend the pensionary Heinsius. Negotiations were then opened for peace, but proved fruitless. In 1709 France put forth a supreme effort, and placed Marshal Villars, her best living general, in command. The events of this year were very different to those of previous campaigns, and the bloody battle of Malplaquet (*q.v.*), though a victory for Marlborough and Eugene, led to little result, and this at the cost of enormous losses. The Dutch army, it is said, never recovered from the slaughter of Malplaquet; indeed, the success was so dearly bought that the allies found themselves soon afterwards out of all condition to undertake anything. Their army accordingly went into winter quarters, and Prince Eugene returned to Vienna, whence the emperor almost immediately despatched him to Berlin. From the king of Prussia the prince obtained everything which he had been instructed to require; and having thus fulfilled his mission, he returned into Flanders, where, excepting the capture of Douai, Bethune and Aire, the campaign of 1710 presented nothing remarkable. On the death of the emperor Joseph I. in April 1711, Prince Eugene, in concert with the empress, exerted his utmost endeavours to secure the crown to the archduke, who afterwards ascended the imperial throne under the name of Charles VI. In the same year the changes which had occurred in the policy, or rather the caprice, of Queen Anne, brought about an approximation between England and France, and put an end to the influence which

Marlborough had hitherto possessed. When this political revolution became known, Prince Eugene immediately repaired to London, charged with a mission from the emperor to re-establish the credit of his illustrious companion in arms, as well as to re-attach England to the coalition. The mission having proved unsuccessful, the emperor found himself under the necessity of making the campaign of 1712 with the aid of the Dutch alone. The defection of the English, however, did not induce Prince Eugene to abandon his favourite plan of invading France. He resolved, at whatever cost, to penetrate into Champagne; and in order to support his operations by the possession of some important places, he began by making himself master of Quesnoy. But the Dutch, having been surprised and beaten in the lines of Denain, where Prince Eugene had placed them at too great a distance to receive timely support in case of an attack, he was obliged to raise the siege of Landrecies, and to abandon the project which he had so long cherished. This was the last campaign in which Austria acted in conjunction with her allies. Abandoned first by England and then by Holland, the emperor, notwithstanding these desertions, still wished to maintain the war in Germany; but Eugene was unable to relieve either Landau or Freiburg, which were successively obliged to capitulate; and seeing the Empire thus laid open to the armies of France, and even the Austrian hereditary states themselves exposed to invasion, the prince counselled his master to make peace. Sensible of the prudence of this advice, the emperor immediately entrusted Eugene with full powers to negotiate a treaty of peace, which was concluded at Rastadt on the 6th of March 1714. On his return to Vienna, Prince Eugene was employed for a time in political matters, and at this time he exchanged the government of the Milanese for that of the Austrian Netherlands.

It was not long, however, before he was again called on to assume the command of the army in the field. In the spring of 1716 the emperor, having concluded an offensive alliance with Venice against Turkey, appointed Eugene to command the army of Hungary; and at Peterwardein he gained (5th of August 1716) a signal victory over a Turkish army of more than twice his own strength. In recognition of this service to Christendom the pope sent to the victorious general the consecrated hat and sword which the court of Rome was accustomed to bestow upon those who had triumphed over the infidels. Eugene won another victory in this campaign at Temesvár. But the ensuing campaign, that of 1717, was still more remarkable on account of the battle of Belgrade. After having besieged the city for a month Eugene found himself in a most critical, if not hopeless situation. He had to deal not only with the garrison of 30,000 men, but with a relieving army of 200,000, and his own force was only about 40,000 strong. In these circumstances the only possible deliverance was by a bold and decided stroke. Accordingly on the morning of the 16th of August 1717 Prince Eugene ordered a general attack, which resulted in the total defeat of the enemy with an enormous loss, and in the capitulation of the city six days afterwards. The prince was wounded in the heat of the action, this being the thirteenth time that he had been hit upon the field of battle. On his return to Vienna he received, among other testimonies of gratitude, a sword valued at 80,000 florins from the emperor. The popular song “Prinz Eugen, der edle Ritter,” commemorates the victory of Belgrade. In the following year, 1718, after some fruitless negotiations with a view to the conclusion of peace, he again took the field; but the treaty of Passarowitz (July 21, 1718) put an end to hostilities at the moment when the prince had well-founded hopes of obtaining still more important successes than those of the last campaign, and even of reaching Constantinople, and dictating a peace on the shores of the Bosporus.

As the government of the Netherlands, up to 1724 held by Eugene, had now for some reason been bestowed on a sister of the emperor, the prince was appointed vicar-general of Italy, with a pension of 300,000 florins. Though still retaining his official position and much of his influence at court, his personal relations with the emperor were not so cordial as before, and he suffered from the intrigues of the Spanish or anti-German party. The most remarkable of these political intrigues was the conspiracy of Tedeschi and Nimptsch against the prince in 1719. On discovering this the prince went to the emperor and threatened to lay down all his offices if the conspirators were not punished, and after some resistance he achieved his purpose. During the years of peace between the treaty of Passarowitz and the War of the Polish Succession, Eugene occupied himself with the arts and with literature, to which he had hitherto been able to devote little of his time. This new interest led him to correspond with many of the most eminent men in Europe. But the contest which arose out of the succession of Augustus II. to the throne of Poland having afforded Austria a pretext for attacking France, war was resolved on, contrary to the advice of Eugene (1734). In spite of this, however, he was appointed to command the army destined to act upon the Rhine, which from the commencement had very superior forces opposed to it; and if it could not prevent the capture of Philipsburg after a long siege, it at least prevented the enemy from entering Bavaria. Prince Eugene, having now attained his seventy-first year, no longer possessed the vigour and activity necessary for a general in the field, and he welcomed the peace which was concluded on the 3rd of October 1735. On his return to Vienna his health declined more and more, and he died in that capital on the 21st of April 1736, leaving an immense inheritance to his niece, the princess Victoria of Savoy.

Of a character cold and severe, Prince Eugene had almost no other passion than that of glory. He died unmarried, and seemed so little susceptible to female influence that he was styled a Mars without a Venus. That he was one of the great captains of history is universally admitted. He was strangely unlike the commanders of his time in many respects, though as a matter of course he was, when he saw fit to follow the accepted rules, equal to any in careful and methodical strategy. The special characteristics of his generalship were imagination, fiery energy, and a tactical resolution which was rare indeed in the 18th century. Despising the lives of his soldiers as much as he exposed his own, it was always by persevering efforts and great sacrifices that he obtained victory. His almost invariable success raised the reputation of the Austrian army to a point which it never reached either before or since his day. War was with him a passion. Always on the march, in camps, or on the field of battle during more than fifty years, and under the reigns of three emperors, he had scarcely passed two years together without fighting. Yet his political activity was not inconsiderable, and his advice was always sound and well-considered; while in his government of the Netherlands, which he exercised through the marquis de Prié, he set himself resolutely to oppose the many wild schemes, such as Law’s Mississippi project, in which the times were so fertile. His interest in literature and art has been alluded to above. His palace in Vienna, and the Belvedere near that city, his library, and his collection of paintings, were renowned. Prince Eugene was a man of the middle size, but, upon the whole, well made; the cast of his visage was somewhat long, his mouth moderate and almost always open; his eyes were black and animated, and his complexion such as became a warrior.

See A. v. Arneth, *Prinz Eugen* (3 vols., Vienna, 1858; 2nd ed., 1864); H. v. Sybel, *Prinz Eugen von Savoyen* (Munich, 1868); Austrian official history, *Feldzuge des Prinzen Eugen von Savoyen* (Vienna, 1876); Malleson, *Prince Eugene* (London, 1888); Heller, *Militärische Korrespondenz des Prinzen Eugens* (Vienna, 1848); Keym, *Prinz Eugen* (Freiburg, 1899); *Österr. militärische Zeitschrift* (“Streffleur”); Ridler’s *Österr. Archiv für Geschichte* (1831-1833); *Archivio storico Italico*, vol. 17; *Mitteil. des Instituts für österr. Geschichtsforschung*, vol. 13.

The political memoirs attributed to Prince Eugene (ed. Sartori, Tübingen, 1812) are spurious; see Böhm, *Die Sammlung der hinterlassenen politischen Schriften des Prinzen Eugens* (Freiburg, 1900).

EUGENE, a city and the county-seat of Lane county, Oregon, U.S.A., on the Willamette river, at the head of navigation, about 125 m. S. of Portland. Pop. (1900) 3236, of whom 237 were foreign-born; (1910 Federal census) 9009. Eugene is served by the Southern Pacific railroad and by interurban electric railway. It is situated on the edge of a broad and fertile prairie, at the foot of a ridge of low hills and within view of the peaks of the Coast Range; the streets are pleasantly shaded with Oregon maples. The city is most widely known as the seat of the University of Oregon. This institution, opened in 1876 and having 95 instructors and 734 students in 1907-1908, occupies eight buildings on a grassy slope along the river bank, and embraces a college of literature, science and the arts, a college of engineering, a graduate school, and (at Portland) a school of law and a school of medicine. In the city is the Eugene Divinity School of the Disciples of Christ, opened in 1895. Eugene is the commercial centre of an extensive agricultural district; does a large business in grain, fruit, hops, cattle, wool and lumber; and has various manufactures, including flour, lumber, woollen goods and canned fruit. Eugene was settled in 1854, and was first incorporated in 1864.

EUGENICS (from the Gr. εὐγενής, well born), the modern name given to the science which deals with the influences which improve the inborn qualities of a race, but more particularly with those which develop them to the utmost advantage, and which generally serves to disseminate knowledge and encourage action in the direction of perpetuating a higher racial standard. The founder of this science may be said to be Sir Francis Galton (*q.v.*), who has done much to further its study, not only by his writings, but by the establishment of a research fellowship and scholarship in eugenics in the university of London. The aim of the science as laid down by Galton is to bring as many influences as can reasonably be employed, to cause the useful classes in the community to contribute *more* than their proportion to the next generation. It can hardly be said that the science has advanced beyond the stage of disseminating a knowledge of the laws of heredity, so far as they are surely known, and endeavouring to promote their further study. Useful work has been done in the compilation of statistics of the various conditions affecting the science, such as the rates with which the various classes of society in ancient and modern nations have contributed in civic usefulness to the population at various times, the inheritance of ability, the influences which affect marriage, &c.

Works by Galton bearing on eugenics are: *Hereditary Genius* (2nd ed., 1892), *Human Faculty* (1883), *Natural Inheritance* (1889), *Huxley Lecture of the Anthropol. Inst. on the Possible Improvement of the Human Breed under the existing Conditions of Law and Sentiment* (1901); see also, *Biometrika* (a journal for the statistical study of biological problems, of which the first volume was published in 1902).

EUGÉNIE [Marie-Eugénie-Ignace-Augustine de Montijo] (1826-), wife of Napoleon III., emperor of the French, daughter of Don Cipriano Guzman y Porto Carrero, count of Teba, subsequently count of Montijo and grandee of Spain, was born at Grenada on the 5th of May 1826. Her mother was a daughter of William Kirkpatrick, United States consul at Malaga, a Scotsman by birth and an American by nationality. Her childhood was spent in Madrid, but after 1834 she lived with her mother and sister chiefly in Paris, where she was educated, like so many French girls of good family, in the convent of the Sacré Cœur. When Louis Napoleon became president of the Republic she appeared frequently with her mother at the balls given by the prince president at the Elysée, and it was here that she made the acquaintance of her future husband. In November 1852 mother and daughter were invited to Fontainebleau, and in the picturesque hunting parties the beautiful young Spaniard, who showed herself an expert horsewoman, was greatly admired by all present and by the host in particular. Three weeks later, on the 2nd of December, the Empire was formally proclaimed, and during a series of fêtes at Compiègne, which lasted eleven days (19th to 30th December), the emperor became more and more fascinated. On New Year's Eve, at a ball at the Tuileries, Mdlle de Montijo, who had necessarily excited much jealousy and hostility in the female world, had reason to complain that she had been insulted by the wife of an official personage. On hearing of it the emperor said to her, "Je vous vengerai"; and within three days he made a formal proposal of marriage. In a speech from the throne on the 22nd of January he formally announced his engagement, and justified what some people considered a mésalliance. "I have preferred," he said, "a woman whom I love and respect to a woman unknown to me, with whom an alliance would have had advantages mixed with sacrifices." Of her whom he had chosen he ventured to make a prediction: "Endowed with all the qualities of the soul, she will be the ornament of the throne, and in the day of danger she will become one of its courageous supports." The marriage was celebrated with great pomp at Notre Dame on the 30th of January 1853. On the 16th of March 1856 the empress gave birth to a son, who received the title of Prince Imperial. The emperor's prediction regarding her was not belied by events. By her beauty, elegance and charm of manner she contributed largely to the brilliancy of the imperial régime, and when the end came, she was, as the official *Enquête* made by her enemies proved, one of the very few who showed calmness and courage in face of the rising tide of revolution. The empress acted three times as regent during the absence of the emperor,—in 1859, 1865 and 1870,—and she was generally consulted on important questions. When the emperor vacillated between two lines of policy she generally urged on him the bolder course; she deprecated everything tending to diminish the temporal power of the papacy, and she disapproved of the emperor's liberal policy at the close of his reign. On the collapse of the Empire she fled to England, and settled with the emperor and her son at Chislehurst. After the emperor's death she removed to Farnborough, where she built a mausoleum to his memory. In 1879 her son was killed in the Zulu War, and in the following year she visited the spot and brought back the body to be interred beside that of his father. At Farnborough and in a villa she built at Cap Martin on the Riviera, she continued to live in retirement, following closely the course of events, but abstaining from all interference in French politics.

EUGENIUS, the name of four popes.

Eugenius I., pope from 654 to 657. Elected on the banishment of Martin I. by the emperor Constans II., and at the height of the Monothelite crisis, he showed greater deference than his predecessor to the emperor's wishes, and made no public stand against the patriarchs of Constantinople. He, however, held no communication with them, being closely watched in this respect by Roman opinion.

Eugenius II., pope, was a native of Rome, and was chosen to succeed Pascal I. in 824. His election did not take place without difficulty. Eugenius was the candidate of the nobles, and the clerical faction brought forward a competitor. But the monk Wala, the representative of the emperor Lothair, succeeded in arranging matters, and Eugenius was elected. Lothair, however, came to Rome in person, and took advantage of this opportunity to redress many abuses in the papal administration, to vest the election of the pope in the nobles, and to confirm the statute that no pope should be consecrated until his election had the approval of the emperor. A council which assembled at Rome during the reign of Eugenius passed several enactments for the restoration of church discipline, took measures for the foundation of schools and chapters, and decided against priests wearing a secular dress or engaging in secular occupations. Eugenius also adopted various provisions for the care of the poor and of widows and orphans. He died in 827.

(L. D.*)

Eugenius III. (Bernardo Paganelli), pope from the 15th of February 1145 to the 8th of July 1153, a native of Pisa, was abbot of the Cistercian monastery of St Anastasius at Rome when suddenly elected to succeed Lucius II. His friend and instructor, Bernard of Clairvaux, the most influential ecclesiastic of the time, remonstrated against his election on account of his "innocence and simplicity," but Bernard soon acquiesced and continued to be the mainstay of the papacy throughout Eugenius's pontificate. It was to Eugenius that Bernard addressed his famous work *De consideratione*. Immediately after his election, the Roman senators demanded the pope's renunciation of temporal power. He refused and fled to Farfa, where he was consecrated on the 17th of February. By treaty of December 1145 he recognized the republic under his suzerainty, substituted a papal prefect for the "patrician" and returned to Rome. The celebrated schismatic, Arnold of Brescia, however, put himself again at the head of the party opposed to the temporal power of the papacy, re-established the patricianate, and forced the pope to leave Rome. Eugenius had already, on hearing of the fall of Edessa, addressed a letter to Louis VII. of France (December 1145), announcing the Second Crusade and granting plenary indulgence under the usual conditions to those who would take the cross; and in January 1147 he journeyed to France to further preparations for the holy war and to seek aid in the constant feuds at Rome. After holding synods at Paris, Reims and Trier, he returned to Italy in June 1148 and took up his residence 886
at Viterbo. The following month he excommunicated Arnold of Brescia in a synod at Cremona, and thenceforth devoted most of his energies to the recovery of his see. As the result of negotiations between Frederick Barbarossa and the Romans, Eugenius was finally enabled to return to Rome in December 1152, but died in the following July. He was succeeded by Anastasius IV. Eugenius retained the stoic virtues of monasticism throughout his stormy career, and was deeply reverenced for his personal character. His tomb in St Peter's acquired fame for miraculous cures, and he was pronounced blessed by Pius IX. in 1872.

The chief sources for the career of Eugenius III. are his letters in J.P. Migne, *Patrol. Lat.*, vols. 106, 180, 182, and in *Bibliothèque de l'École des Chartes*, vol. 57 (Paris, 1896); the life by Cardinal Boso in J.M. Watterich, *Pontif. Roman. vitae*, vol. 2; and the life by John of Salisbury in *Monumenta Germaniae historica. Scriptores*, vol. 20.

See J. Langen, *Geschichte der römischen Kirche von Gregor VII. bis Innocenz III.* (Bonn, 1893); F. Gregorovius, *Rome in the Middle Ages*, vol. 4, trans. by Mrs G.W. Hamilton (London, 1900-1902); K.J. von Hefele, *Conciliengeschichte*, Bd. 5, 2nd ed.; Jaffé-Wattenbach, *Regesta pontif.* Roman. (1885-1888); M. Jocham, *Geschichte des Lebens u. der Verehrung des seligen Papstes Eugen III.* (Augsburg, 1873); G. Sainati, *Vita del beato Eugenio III* (Pisa, 1868); J. Jastrow and G. Winter, *Deutsche Geschichte im Zeitalter der Hohenstaufen*, i. (Stuttgart, 1897); C. Neumann, *Bernhard von Clairvaux u. die Anfänge der zweiten Kreuzzuges* (Heidelberg, 1882); B. Kugler, *Analekten zur Geschichte des zweiten Kreuzzugs* (Tübingen, 1878, 1883).

(C. H. Ha.)

Eugenius IV. (Gabriel Condulmieri), pope from the 3rd of March 1431 to the 23rd of February 1447, was born at Venice of a merchant family in 1383. He entered the Celestine order and came into prominence during the pontificate of his uncle, Gregory XII., by whom he was appointed bishop of Siena, papal treasurer, protonotary, cardinal-priest of St Marco e St Clemente, and later cardinal-priest of Sta Maria in Trastevere. His violent measures, as pope, against the relations of his predecessor, Martin V., at once involved him in a serious contest with the powerful house of Colonna. But by far the most important feature of Eugenius's pontificate was the great struggle between pope and council. On the 23rd of July 1431 his legate opened the council of Basel which had been convoked by Martin, but, distrustful of its purposes and moved by the small attendance, the pope issued a bull on the 18th of December 1431, dissolving the council and calling a new one to meet in eighteen months at Bologna. The council refused to dissolve, renewed the revolutionary resolutions by which the council of Constance had been declared superior to the pope, and cited Eugenius to appear at Basel. A compromise was arranged by Sigismund, who had been crowned emperor at Rome on the 31st of May 1433, by which the pope recalled the bull of dissolution, and, reserving the rights of the Holy See, acknowledged the council as ecumenical (15th of December 1433). The establishment of an insurrectionary republic at Rome drove him into exile in May 1434, and, although the city was restored to obedience in the following October, he remained at Florence and Bologna. Meanwhile the struggle with the council broke out anew. Eugenius at length convened a rival council at Ferrara on the 8th of January 1438 and excommunicated the prelates assembled at Basel. The result was that the latter formally deposed him as a heretic on the 25th of June 1439, and in the following November elected the ambitious Amadeus VIII., duke of Savoy, antipope under the title of Felix V. The conduct of France and Germany seemed to warrant this action, for Charles VII. had introduced the decrees of the council of Basel, with slight changes, into the former country through the Pragmatic Sanction of Bourges (7th of July 1438), and the diet of Mainz had deprived the pope of most of his rights in the latter country (26th of March 1439). At Florence, whither the council of Ferrara had been transferred on account of an outbreak of the plague, was effected in July 1439 a union with the Greeks, which, as the result of political necessities, proved but temporary. This union was followed by others of even less stability. Eugenius signed an agreement with the Armenians on the 22nd of November 1439, and with a part of the Jacobites in 1443; and in 1445 he received the Nestorians and Maronites. He did his best to stem the Turkish advance, pledging one-fifth of the papal income to the crusade which set out in 1443, but which met with overwhelming defeat. His rival, Felix V., meanwhile obtained small recognition, and the latter's ablest adviser, Aeneas Sylvius Piccolomini, made peace with Eugenius in 1442. The pope's recognition of the claims to Naples of King Alphonso of Aragon withdrew the last important support from the council of Basel, and enabled him to make a victorious entry into Rome on the 28th of September 1443, after an exile of nearly ten years. His protests against the Pragmatic Sanction of Bourges were ineffectual, but by means of the Concordat of the Princes, negotiated by Piccolomini with the electors in February 1447, the whole of Germany declared against the antipope. Although his pontificate had been so stormy and unhappy that he is said to have regretted on his death-bed that he ever left his monastery, nevertheless Eugenius's victory over the council of Basel and his efforts in behalf of church unity

contributed greatly to break down the conciliar movement and restore the papacy to the position it had held before the Great Schism. Eugenius was dignified in demeanour, but inexperienced and vacillating in action and excitable in temper. Bitter in his hatred of heresy, he yet displayed great kindness to the poor. He laboured to reform the monastic orders, especially the Franciscan, and was never guilty of nepotism. Although a type of the austere monk in his private life, he was a sincere friend of art and learning, and in 1431 re-established finally the university at Rome. He died on the 23rd of February 1447, and was succeeded by Nicholas V.

See L. Pastor, *History of the Popes*, vol. 1., trans, by F.I. Antrobus (London, 1899); M. Creighton, *History of the Papacy*, vol. 3 (London, 1899); F. Gregorovius, *Rome in the Middle Ages*, vol. 7, trans. by Mrs G.W. Hamilton (London, 1900-1902); K.J. von Hefele, *Conciliengeschichte*, Bd. 7, 2nd ed.; H.H. Milman, *Latin Christianity*, vol. 8 (London, 1896); G. Voigt, *Enea Silvio de Piccolomini*, Bd. 1-3 (Berlin, 1856); *Aus den Annaten-Registern der Päpste Eugen IV., Pius II., Paul II. u. Sixtus IV.*, ed. by K. Hayn (Cologne, 1896). There is an admirable article by Tschackert in Hauck's *Realencyklopädie*, 3rd ed. vol. 5.

(C. H. Ha.)

EUGENOL (*allyl guaiacol, eugenic acid*), $C_{10}H_{12}O_2$, an odoriferous principle; it is the chief constituent of oil of cloves, and occurs in many other essential oils. It can be synthetically prepared by the reduction of coniferyl alcohol, $(HO)(CH_3O)C_6H_3{\cdot}CH{:}CH{\cdot}CH_2OH$, which occurs in combination with glucose in the glucoside coniferin, $C_{16}H_{22}O_8$. It is a colourless oil boiling at 247° C., and having a spicy odour. On oxidation with potassium permanganate it gives homovanillin, vanillin, &c.; with chromic acid in acetic acid solution it is converted into carbon dioxide and acetic acid, whilst nitric acid oxidizes it to oxalic acid. By the action of alkalis it is converted into iso-eugenol, which on oxidation yields vanillin, the odorous principle of vanilla (*q.v.*). This transformation of allyl phenols into propenyl phenols is very general (see *Ber.*, 1889, 22, p. 2747; 1890, 23, p. 862). Alkali fusion of eugenol gives protocatechuic acid. The amount of eugenol in oil of cloves can be estimated by acetylation, in presence of pyridine (A. Verley and Fr. Baelsing, *Ber.*, 1901, 34, P. 3359). *Chavibetol*, an isomer of eugenol, occurs in the ethereal oil obtained from *Piper betle*.

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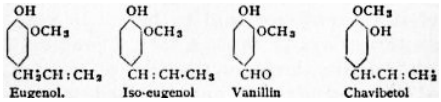

EUHEMERUS [Euemerus, Evemerus], Greek mythographer, born at Messana, in Sicily (others say at Chios, Tegea, or Messene in Peloponnese), flourished about 300 B.C., and lived at the court of Cassander. He is chiefly known by his *Sacred History* (Ἱερὰ ἀναγραφή), a philosophical romance, based upon archaic inscriptions which he claimed to have found during his travels in various parts of Greece. He particularly relies upon an account of early history which he discovered on a golden pillar in a temple on the island of Panchaea when on a voyage round the coast of Arabia, undertaken at the request of Cassander, his friend and patron. There is apparently no doubt that this island is imaginary. In this work he for the first time systematized an old Oriental (perhaps Phoenician) method of interpreting the popular myths, asserting that the gods who formed the chief objects of popular worship had been originally heroes and conquerors, who had thus earned a claim to the veneration of their subjects. This system spread widely, and the early Christians especially appealed to it as a confirmation of their belief that ancient mythology was merely an aggregate of fables of human invention. Euhemerus was a firm upholder of the Cyrenaic philosophy, and by many ancient writers he was regarded as an atheist. His work was translated by Ennius into Latin, but the work itself is lost, and of the translation only a few fragments, and these very short, have come down to us.

This rationalizing method of interpretation is known as Euhemerism. There is no doubt that it contains an element of truth; as among the Romans the gradual deification of ancestors and the apotheosis of emperors were prominent features of religious development, so among primitive peoples it is possible to trace the evolution of family and tribal gods from great chiefs and warriors. All theories of religion which give prominence to ancestor worship and the cult of the dead are to a certain extent Euhemeristic. But as the sole explanation of the origin of the idea of gods it is not accepted by students of comparative religion. It had, however, considerable vogue in France. In the 18th century the abbé Banier, in his *Mythologie et la fable expliquées par l'histoire*, was frankly Euhemeristic; other leading Euhemerists were Clavier, Sainte-Croix, Raoul Rochette, Em. Hoffmann and to a great extent Herbert Spencer.

See Raymond de Block, *Évhémère, son lime et sa doctrine* (Mons, 1876); G.N. Némethy, *Euhemeri relliquiae* (Budapest, 1889); Gauss, *Quaestiones Euhemereae* (Kempen, 1860); Otto Sieroka, *De Euhemero* (1869); Susemihl, *Geschichte der griechischen Litteratur in der Alexandrinerzeit*, vol. i. (Leipzig, 1891); and works on comparative religion and mythology.

EULENSPIEGEL [Ulenspiegel], **TILL,** the name of a German folk-hero, and the title of a popular German chapbook on the subject, of the beginning of the 16th century. The oldest existing German text of the book was printed at Strassburg in 1515 (*Ein kurtzweilig lesen von Dyl Vlenspiegel geboren vss dem land zu Brunsswick*), and again in 1519. This is not in the original dialect, which was undoubtedly Low Saxon, but in High German, the translation having been formerly ascribed—but on insufficient evidence—to the Catholic satirist Thomas Murner. Its hero, Till Eulenspiegel or Ulenspiegel, the son of a peasant, was born at Kneitlingen in Brunswick, at the end of the 13th or at the beginning of the 14th century. He died, according to tradition, at Mölln near Lübeck in 1350. The jests and

practical jokes ascribed to him were collected—if we may believe a statement in one of the old prints—in 1483; but in any case the edition of 1515 was not even the oldest High German edition. Eulenspiegel himself is locally associated with the Low German area extending from Magdeburg to Hanover, and from Lüneburg to the Harz Mountains. He is the wily peasant who loves to exercise his wit and roguery on the tradespeople of the towns, above all, on the innkeepers; but priests, noblemen, even princes, are also among his victims. His victories are often pointless, more often brutal; he stoops without hesitation to scurrility and obscenity, while of the finer, sharper wit which the humanists and the Italians introduced into the anecdote, he has little or nothing. His jests are coarsely practical, and his satire turns on class distinctions. In fact, this chapbook might be described as the retaliation of the peasant on the townsman who in the 14th and 15th centuries had begun to look down upon the country boor as a natural inferior.

In spite of its essentially Low German character, *Eulenspiegel* was extremely popular in other lands, and, at an early date, was translated into Dutch, French, English, Latin, Danish, Swedish, Bohemian and Polish. In England, "Howleglas" (Scottish, *Holliglas*) was long a familiar figure; his jests were rapidly adapted to English conditions, and appropriated in the collections associated with Robin Goodfellow, Scogan and others. Ben Johnson refers to him as "Howleglass" and "Ulenspiegel" in his *Masque of the Fortunate Isles, Poetaster, Alchemist* and *Sad Shepherd*, and a verse by Taylor the "water poet" would seem to imply that the "Owliglasse" was a familiar popular type. Till Eulenspiegel's "merry pranks" have been made the subject of a well-known orchestral symphony by Richard Strauss. In France, it may be noted, the name has given rise to the words *espiègle* and *espièglerie*.

The Strassburg edition of 1515 (British Museum) has been reprinted by H. Knust in the *Neudrucke deutscher Literaturwerke des 16. und 17. Jahrh.* No. 55-56 (1885); that of 1519 by J.M. Lappenberg, *Dr Thomas Murners Ulenspiegel* (1854). W. Scherer ("Die Anfänge des Prosaromans in Deutschland," in *Quellen und Forschungen*, vol. xxi., 1877, pp. 28 ff. and 78 ff.) has shown that there must have been a still earlier High German edition. See also C. Walter in *Niederdeutsches Jahrbuch*, xix. (1894), pp. 1 ff. Further editions appeared at Cologne, printed by Servais Kruffter, undated (reproduced in photo-lithography from the two imperfect copies in Berlin and Vienna, 1865); Erfurt, 1532, 1533-1537 and 1538; Cologne, 1539; Strassburg, 1539; Augsburg, 1540 and 1541; Strassburg, 1543; Frankfort on the Main, 1545; Strassburg, 1551; Cologne, 1554, &c. Johann Fischart published an adaptation in verse, *Der Eulenspiegel Reimensweis* (Strassburg, 1571), K. Simrock a modernization in 1864 (2nd ed., 1878); there is also one by K. Pannier in Reclam's *Universalbibliothek* (1883). The earliest translation was that into Dutch, printed by Hoochstraten at Antwerp (Royal Lib., Copenhagen); it is undated, but may have appeared as early as 1512. See facsimile reprint by M. Nijhoff (the Hague, 1898). This served as the basis for the first French version: *Ulenspiegel, de sa vie, de ses œuvres et merveilleuses aduentures par luy faictes ... nouuellement translate et corrige de Flamant en Francoys* (Paris, 1532). Reprint, edited by P. Jannet (1882). This was followed by upwards of twenty French editions down to the beginning of the 18th century. The latest translation is that by J.C. Delepierre (Bruges, 1835 and 1840). Cf. Prudentius van Duyse, *Étude littéraire sur Tiel l'Espiègle* (Ghent, 1858). The first complete English translation was also made from the Dutch, and bears the title: *Here beginneth a merye Jest of a man called Howleglas*, &c., printed by Copland in three editions, probably between 1548 and 1560. Reprint by F. Ouvry (1867). This, however, was itself merely a reprint of a still older English edition (1518?), of which the British Museum possesses fragments. Reprinted by F. Brie, *Eulenspiegel in England* (1903). In 1720 appeared *The German Rogue, or the Life and Merry Adventures of Tiel Eulenspiegel. Made English from the High-Dutch*; and an English illustrated edition, adapted by K.R.H. Mackenzie in 1880 (2nd ed., 1890). On Eulenspiegel in England, see especially C.H. Herford, *Studies in the Literary Relations of England and Germany in the Sixteenth Century* (1888), pp. 242 ff., and F. Brie's work already referred to.

(J. G. R.)

EULER, LEONHARD (1707-1783), Swiss mathematician, was born at Basel on the 15th of April 1707, his father Paul Euler, who had considerable attainments as a mathematician, being Calvinistic pastor of the neighbouring village of Riechen. After receiving preliminary instructions in mathematics from his father, he was sent to the university of Basel, where geometry soon became his favourite study. His mathematical genius gained for him a high place in the esteem of Jean Bernoulli, who was at that time one of the first mathematicians in Europe, as well as of his sons Daniel and Nicolas Bernoulli. Having taken his degree as master of arts in 1723, Euler applied himself, at his father's desire, to the study of theology and the Oriental languages with the view of entering the church, but, with his father's consent, he soon returned to geometry as his principal pursuit. At the same time, by the advice of the younger Bernoullis, who had removed to St Petersburg in 1725, he applied himself to the study of physiology, to which he made a happy application of his mathematical knowledge; and he also attended the medical lectures at Basel. While he was engaged in physiological researches, he composed a dissertation on the nature and propagation of sound, and an answer to a prize question concerning the masting of ships, to which the French Academy of Sciences adjudged the second rank in the year 1727.

In 1727, on the invitation of Catherine I., Euler took up his residence in St Petersburg, and was made an associate of the Academy of Sciences. In 1730 he became professor of physics, and in 1733 he succeeded Daniel Bernoulli in the chair of mathematics. At the commencement of his new career he enriched the academical collection with many memoirs, which excited a noble emulation between him and the Bernoullis, though this did not in any way affect their friendship. It was at this time that he carried the integral calculus to a higher degree of perfection, invented the calculation of sines, reduced analytical operations to a greater simplicity, and threw new light on nearly all parts of pure mathematics. In 1735 a problem proposed by the academy, for the solution of which several eminent mathematicians had demanded the space of some months, was solved by Euler in three days, but the effort threw him into a fever which endangered his life and deprived him of the use of his right eye. The Academy of Sciences at Paris in 1738 adjudged the prize to his memoir on the nature and properties of fire, and in 1740 his treatise on the tides shared the prize with those of Colin Maclaurin and Daniel Bernoulli—a higher honour than if he had carried it away from inferior rivals.

In 1741 Euler accepted the invitation of Frederick the Great to Berlin, where he was made a member of the Academy of Sciences and professor of mathematics. He enriched the last volume of the *Mélanges* or Miscellanies of Berlin with five memoirs, and these were followed, with an astonishing rapidity, by a great number of important researches, which are scattered throughout the annual memoirs of the Prussian Academy. At the same time he continued his philosophical contributions to the Academy of St Petersburg, which granted him a pension in 1742. The respect in which he was held by the Russians was strikingly shown in 1760, when a farm he occupied near Charlottenburg happened to be pillaged by the invading Russian army. On its being ascertained that the farm belonged to Euler, the general immediately ordered compensation to be paid, and the empress Elizabeth sent an

additional sum of four thousand crowns.

In 1766 Euler with difficulty obtained permission from the king of Prussia to return to St Petersburg, to which he had been originally invited by Catherine II. Soon after his return to St Petersburg a cataract formed in his left eye, which ultimately deprived him almost entirely of sight. It was in these circumstances that he dictated to his servant, a tailor's apprentice, who was absolutely devoid of mathematical knowledge, his *Anleitung zur Algebra* (1770), a work which, though purely elementary, displays the mathematical genius of its author, and is still reckoned one of the best works of its class. Another task to which he set himself immediately after his return to St Petersburg was the preparation of his *Lettres à une princesse d'Allemagne sur quelques sujets de physique et de philosophie* (3 vols., 1768-1772). They were written at the request of the princess of Anhalt-Dessau, and contain an admirably clear exposition of the principal facts of mechanics, optics, acoustics and physical astronomy. Theory, however, is frequently unsoundly applied in it, and it is to be observed generally that Euler's strength lay rather in pure than in applied mathematics.

In 1755 Euler had been elected a foreign member of the Academy of Sciences at Paris, and some time afterwards the academical prize was adjudged to three of his memoirs *Concerning the Inequalities in the Motions of the Planets*. The two prize-questions proposed by the same academy for 1770 and 1772 were designed to obtain a more perfect theory of the moon's motion. Euler, assisted by his eldest son Johann Albert, was a competitor for these prizes, and obtained both. In the second memoir he reserved for further consideration several inequalities of the moon's motion, which he could not determine in his first theory on account of the complicated calculations in which the method he then employed had engaged him. He afterwards reviewed his whole theory with the assistance of his son and W.L. Krafft and A.J. Lexell, and pursued his researches until he had constructed the new tables, which appeared in his *Theoria motuum lunae* (1772). Instead of confining himself, as before, to the fruitless integration of three differential equations of the second degree, which are furnished by mathematical principles, he reduced them to the three co-ordinates which determine the place of the moon; and he divided into classes all the inequalities of that planet, as far as they depend either on the elongation of the sun and moon, or upon the eccentricity, or the parallax, or the inclination of the lunar orbit. The inherent difficulties of this task were immensely enhanced by the fact that Euler was virtually blind, and had to carry all the elaborate computations it involved in his memory. A further difficulty arose from the burning of his house and the destruction of the greater part of his property in 1771. His manuscripts were fortunately preserved. His own life was only saved by the courage of a native of Basel, Peter Grimmon, who carried him out of the burning house.

Some time after this an operation restored Euler's sight; but a too harsh use of the recovered faculty, along with some carelessness on the part of the surgeons, brought about a relapse. With the assistance of his sons, and of Krafft and Lexell, however, he continued his labours, neither the loss of his sight nor the infirmities of an advanced age being sufficient to check his activity. Having engaged to furnish the Academy of St Petersburg with as many memoirs as would be sufficient to complete its *Acta* for twenty years after his death, he in seven years transmitted to the academy above seventy memoirs, and left above two hundred more, which were revised and completed by another hand.

Euler's knowledge was more general than might have been expected in one who had pursued with such unremitting ardour mathematics and astronomy as his favourite studies. He had made very considerable progress in medical, botanical and chemical science, and he was an excellent classical scholar, and extensively read in general literature. He was much indebted to an uncommon memory, which seemed to retain every idea that was conveyed to it, either from reading or meditation. He could repeat the *Aeneid* of Virgil from the beginning to the end without hesitation, and indicate the first and last line of every page of the edition which he used. Euler's constitution was uncommonly vigorous, and his general health was always good. He was enabled to continue his labours to the very close of his life. His last subject of investigation was the motion of balloons, and the last subject on which he conversed was the newly discovered planet Herschel (Uranus). He died of apoplexy on the 18th of September 1783, whilst he was amusing himself at tea with one of his grandchildren.

Euler's genius was great and his industry still greater. His works, if printed in their completeness, would occupy from 60 to 80 quarto volumes. He was simple and upright in his character, and had a strong religious faith. He was twice married, his second wife being a half-sister of his first, and he had a numerous family, several of whom attained to distinction. His *éloge* was written for the French Academy by the marquis de Condorcet, and an account of his life, with a list of his works, was written by Von Fuss, the secretary to the Imperial Academy of St Petersburg.

The works which Euler published separately are: *Dissertatio physica de sono* (Basel, 1727, in 4to); *Mechanica, sive motus scientia analytice exposita* (St Petersburg, 1736, in 2 vols. 4to); *Einleitung in die Arithmetik* (ibid., 1738, in 2 vols. 8vo), in German and Russian; *Tentamen novae theoriae musicae* (ibid. 1739, in 4to); *Methodus inveniendi lineas curvas, maximi minimive proprietate gaudentes* (Lausanne, 1744, in 4to); *Theoria motuum planetarum et cometarum* (Berlin, 1744, in 4to); *Beantwortung*, &c., or Answers to Different Questions respecting Comets (ibid., 1744, in 8vo); *Neue Grundsatze*, &c., or New Principles of Artillery, translated from the English of Benjamin Robins, with notes and illustrations (ibid., 1745, in 8vo); *Opuscula varii argumenti* (ibid., 1746-1751, in 3 vols. 4to); *Novae et correctae tabulae ad loca lunae computanda* (ibid., 1746, in 4to); *Tabulae astronomicae solis et lunae* (ibid., 4to); *Gedanken*, &c., or Thoughts on the Elements of Bodies (ibid. 4to); *Rettung der gottlichen Offenbarung*, &c., Defence of Divine Revelation against Free-thinkers (ibid., 1747, in 4to); *Introductio in analysin infinitorum* (Lausanne, 1748, in 2 vols. 4to); *Scientia navalis, seu tractatus de construendis ac dirigendis navibus* (St Petersburg, 1749, in 2 vols. 4to); Theoria motus lunae (Berlin, 1753, in 4to); *Dissertatio de principio minimae actionis, una cum examine objectionum cl. prof. Koenigii* (ibid., 1753, in 8vo); *Institutiones calculi differentialis, cum ejus usu in analysi Infinitorum ac doctrina serierum* (ibid., 1755, in 4to); *Constructio lentium objectivarum*, &c. (St Petersburg, 1762, in 4to); *Theoria motus corporum solidorum seu rigidorum* (Rostock, 1765, in 4to); *Institutiones calculi integralis* (St Petersburg, 1768-1770, in 3 vols. 4to); *Lettres à une Princesse d'Allemagne sur quelques sujets de physique et de philosophie* (St Petersburg, 1768-1772, in 3 vols. 8vo); *Anleitung zur Algebra*, or Introduction to Algebra (ibid., 1770, in 8vo); *Dioptrica* (ibid., 1767-1771, in 3 vols. 4to); *Theoria motuum lunae nova methodo pertractata* (ibid., 1772, in 4to); *Novae tabulae lunares* (ibid., in 8vo); *Théorie complète de la construction et de la manœuvre des vaisseaux* (ibid., 1773, in 8vo); *Éclaircissements sur établissements en faveur tant des veuves que des morts*, without a date; *Opuscula analytica* (St Petersburg, 1783-1785, in 2 vols. 4to).

See Rudio, *Leonhard Euler* (Basel, 1884); M. Cantor, *Geschichte der Mathematik*.

EUMENES, the name of two rulers of Pergamum.

1. Eumenes I. succeeded his uncle Philetaerus in 263 B.C. The only important event in his reign was his victory near Sardis over Antiochus Soter, which enabled him to secure possession of the districts round his capital. (See Pergamum.)

2. Eumenes II., son of Attalus I., was king of Pergamum from 197-159 B.C. During the greater part of his reign he was a loyal ally of the Romans, who bestowed upon him signal marks of favour. He materially contributed to the defeat of Antiochus of Syria at the battle of Magnesia (190), and as a reward for his services the Thracian Chersonese and all Antiochus's possessions as far as the Taurus were bestowed upon him, including a protectorate of such Greek cities as had not been declared free. In his quarrels with his neighbours the Romans intervened on his behalf, and on the occasion of his visit to Rome to complain of the conduct of Perseus, king of Macedonia, he was received with the greatest distinction. On his return journey he narrowly escaped assassination by the emissaries of Perseus. Although he supported the Romans in the war against Macedonia, he displayed so little energy and interest (even recalling his auxiliaries) that he was suspected of intriguing with the enemy. According to Polybius there was some foundation for the suspicion, but Eumenes declared that he had merely been negotiating for an exchange of prisoners. Nothing, however, came of these negotiations, whatever may have been their real object; and Eumenes, in order to avert suspicion, sent his congratulations to Rome by his brother Attalus after the defeat of Perseus (168). Attalus was received courteously but coldly; and Eumenes in alarm set out to visit Rome in person, but on his arrival at Brundusium was ordered to leave Italy at once. Eumenes never regained the good graces of the Romans, who showed especial favour to Attalus on his second visit to Rome, probably with the object of setting him against Eumenes; but the ties of kinship proved too strong. The last years of his reign were disturbed by renewed hostilities against Prusias of Bithynia and the Celts of Galatia, and probably only his death prevented a war with Rome. Eumenes, although physically weak, was a shrewd and vigorous ruler and politician, who raised his little state from insignificance to a powerful monarchy. During his reign Pergamum became a flourishing city, where men of learning were always welcome, among them Crates of Mallus, the founder of the Pergamene school of criticism. Eumenes adorned the city with splendid buildings, amongst them the great altar with the frieze representing the Battle of the Giants; but the greatest monument of his liberality was the foundation of the library, which was second only to that of Alexandria.

See Livy xxxix. 51, xlii. 11-16; Polybius xxi.-xxxii.; Appian, *Syriaca*; Livy, *Epit.* 46; Cornelius Nepos, *Hannibal*, 10; A.G. van Cappelle, *Commentatio de regibus et antiquitatibus Pergamenis* (Amsterdam, 1841). For the altar of Zeus, see Pergamum; for treaty with Cretan cities (183 B.C.) see *Monumenti antichi*, xviii. 177.

EUMENES (*c.* 360-316 B.C.), Macedonian general, was a native of Cardia in the Thracian Chersonesus. At a very early age he was employed as private secretary by Philip II. of Macedon, and on the death of that prince, by Alexander, whom he accompanied into Asia. In the division of the empire on Alexander's death, Cappadocia and Paphlagonia were assigned to Eumenes; but as they were not yet subdued, Leonnatus and Antigonus were charged by Perdiccas to put him in possession. Antigonus, however, disregarded the order, and Leonnatus in vain attempted to induce Eumenes to accompany him to Europe and share in his far-reaching designs. Eumenes joined Perdiccas, who installed him in Cappadocia. When Craterus and Antipater, having reduced Greece, determined to pass into Asia and overthrow the power of Perdiccas, their first blow was aimed at Cappadocia. Craterus and Neoptolemus, satrap of Armenia, were completely defeated by Eumenes (321); Neoptolemus was killed, and Craterus died of his wounds. After the murder of Perdiccas in Egypt by his own soldiers, the Macedonian generals condemned Eumenes to death, and charged Antipater and Antigonus with the execution of their order. Eumenes, being defeated through the treachery of one of his officers, fled to Nora, a strong fortress on the confines of Cappadocia and Lycaonia, where he defended himself for more than a year. The death of Antipater (319) produced complications. He left the regency to his friend Polyperchon over the head of his son Cassander, who entered into an alliance with Antigonus and Ptolemy against Polyperchon, supported by Eumenes, who, having escaped from Nora, was threatening Syria and Phoenicia. In 318 Antigonus marched against him, and Eumenes withdrew east to join the satraps of the provinces beyond the Tigris. After two indecisive battles in Iran, Eumenes was betrayed by his own soldiers to Antigonus and put to death. He was an able soldier, who did his utmost to maintain the unity of Alexander's empire in Asia; but his efforts were frustrated by the generals and satraps, who hated and despised the "secretary" and "foreigner."

See Plutarch, *Eumenes*; Cornelius Nepos, *Eumenes*; Diod. Sic. xviii., xix.; Arrian, *Anabasis*, vii.; Quintus Curtius x. 4. 10; Justin xiii. 8; A. Vezin, *Eumenes von Kardia. Ein Beitrag zur Geschichte der Diadochenzeit* (Münster i. W., 1907). Also Macedonian Empire.

EUMENIDES (from Gr. εὐμενής, kindly; εὖ, well, and μένος, disposition), the "kindly ones," a euphemism for the Furies or Erinyes (*q.v.*). They give their name to a famous play by Aeschylus (*q.v.*), written in glorification of the old religion and aristocratic government of Athens, in opposition to the new democracy of the Periclean period.

EUMENIUS (*c.* A.D. 260-311), one of the Roman panegyrists, was born at Augustodunum (*Autun*) in Gallia Lugdunensis. He was of Greek descent; his grandfather, who had migrated from Athens to Rome, finally settled at Autun as a teacher of rhetoric. Eumenius probably took his place, for it was from Autun that he went to be *magister memoriae* (private secretary) to Constantius Chlorus, whom he accompanied on several of his campaigns. In 296 Chlorus determined to restore the famous schools (*scholae Maenianae*) of Autun, which had been greatly damaged by the inroads of the Bagaudae (peasant banditti), and appointed Eumenius to the management of them, allowing him to retain his offices at court and doubling his salary. Eumenius generously gave up a considerable portion of his emoluments to the improvement of the schools. There is no doubt that Eumenius was a heathen, not even a nominal

follower of Christianity, like Ausonius and other writers from Gaul. Nothing is known of his later years; but he must have lived at least till 311, if the *Gratiarum Actio* to Constantine is by him. Of the twelve discourses included in the collection of *Panegyrici Latini* (ed. E. Bährens, 1874), the following are probably by Eumenius. (1) *Pro restaurandis* (or *instaurandis*) *scholis*, delivered (297) in the forum at Autun before the governor of the province. Its chief object is to set forth the steps necessary to restore the schools to their former state of efficiency, and the author lays stress upon the fact that he intends to assist the good work out of his own pocket. (2) An address (297) to the Caesar Constantius Chlorus, congratulating him on his victories over Allectus and Carausius in Britain, and containing information of some value as to the British methods of fighting. (3) A panegyric on Constantine (310). (4) An address of thanks (311) from the inhabitants of Autun (whose name had been changed from Augustodunum to Flavia) to Constantine for the remission of taxes and other benefits. (5) A festal address (307) on the marriage of Constantine and Fausta, the daughter of Maximian. All these speeches, with the exception of (1), were delivered at Augusta Trevirorum (Trèves), whose birthday is celebrated in (3). Eumenius is far the best of the orators of his time, and superior to the majority of the writers of imperial panegyrics. He shows greater self-restraint and moderation in his language, which is simple and pure, and on the whole is free from the gross flattery which characterizes such productions. This fault is most conspicuous in (3), which led Heyne (*Opuscula*, vi. 80) to deny the authorship of Eumenius on the ground that it was unworthy of him.

There are treatises on Eumenius by B. Kilian (Würzburg, 1869), S. Brandt (Freiburg im Breisgau, 1882), and H. Sachs (Halle, 1885); see also Gaston Boissier, “Les Rhéteurs gaulois du IV^{e} siècle,” in *Journal des savants* (1884).

EUMOLPUS (“sweet singer”), in Greek mythology, son of Poseidon and Chione, the daughter of Boreas, legendary priest, poet and warrior. He finally settled in Thrace, where he became king. During a war between the Eleusinians and Athenians under Erechtheus, he went to the assistance of the former, who on a previous occasion had shown him hospitality, but was slain with his two sons, Phorbas and Immaradus. According to another tradition, Erechtheus and Immaradus lost their lives; the Eleusinians then submitted to Athens on condition that they alone should celebrate the mysteries, and that Eumolpus and the daughters of Celeus should perform the sacrifices. It is asserted by others that Eumolpus with a colony of Thracians laid claim to Attica as having belonged to his father Poseidon (Isocrates, *Panath*. 193). The Eleusinian mysteries were generally considered to have been founded by Eumolpus, the first priest of Demeter, but, according to some, by Eumolpus the son of Musaeus, Eumolpus the Thracian being the father of Keryx, the ancestor of the priestly family of the Kerykes. As priest, Eumolpus purifies Heracles from the murder of the Centaurs; as musician, he instructs him (as well as Linus and Orpheus) in playing the lyre, and is the reputed inventor of vocal accompaniments to the flute. Suidas reckons him one of the early poets and a writer of hymns of consecration, and Diodorus Siculus quotes a line from a Dionysiac hymn attributed to Eumolpus. He is also said to have been the first priest of Dionysus, and to have introduced the cultivation of the vine and fruit trees (Pliny, *Nat. Hist.* vii. 199). His grave was shown at Athens and Eleusis. His descendants, called Eumolpidae, together with the Kerykes, were the hereditary guardians of the mysteries (*q.v.*).

See Apollodorus ii. 5, iii. 15; Pausanias i. 38. 2; Hyginus, *Fab.* 273; Homeric *Hymn to Demeter*, 476; Strabo vii. p. 321; Diod. Sic. i. 11; article “Eumolpidai,” by J.A. Hild in Daremberg and Saglio’s *Dictionnaire des antiquités*.

EUNAPIUS, Greek sophist and historian, was born at Sardis, A.D. 347. In his native city he studied under his relative the sophist Chrysanthius, and while still a youth went to Athens, where he became a favourite pupil of Proaeresius the rhetorician. He possessed a considerable knowledge of medicine. In his later years he seems to have resided at Athens, teaching rhetoric. Initiated into the Eleusinian mysteries, he was admitted into the college of the Eumolpidae and became hierophant. There is evidence that he was still living in the reign of the younger Theodosius (408-450). Eunapius was the author of two works, one entitled *Lives of the Sophists* (Βίοι φιλοσόφων καὶ σοφιστῶν), and the other consisting of a continuation of the history of Dexippus (*q.v.*). The former work is still extant; of the latter only excerpts remain, but the facts are largely incorporated in the work of Zosimus. It embraced the history of events from A.D. 270-404. The *Lives of the Sophists*, which deals chiefly with the contemporaries of the author, is valuable as the only source for the history of the neo-Platonism of that period. The style of both works is bad, and they are marked by a spirit of bitter hostility to Christianity. Photius (cod. 77) had before him a “new edition” of the history in which the passages most offensive to the Christians were omitted.

Edition of the *Lives* by J.F. Boissonade (1822), with notes by D. Wyttenbach; history fragments in C.W. Müller, *Fragmenta Hist. Graecorum*, iv.; V. Cousin, *Fragments philosophiques* (1865).

EUNOMIUS (d. *c.* 393), one of the leaders of the extreme or “anomoean” Arians, who are sometimes accordingly called Eunomians, was born at Dacora in Cappadocia early in the 4th century. He studied theology at Alexandria under Aetius, and afterwards came under the influence of Eudoxius of Antioch, where he was ordained deacon. On the recommendation of Eudoxius he was appointed bishop of Cyzicus in 360. Here his free utterance of extreme Arian views led to popular complaints, and Eudoxius was compelled, by command of the emperor, Constantius II., to depose him from the bishopric within a year of his elevation to it. During the reigns of Julian and Jovian, Eunomius resided in Constantinople in close intercourse with Aetius, consolidating an heretical party and consecrating schismatical bishops. He then went to live at Chalcedon, whence in 367 he was banished to Mauretania for harbouring the rebel Procopius. He was recalled, however, before he reached his destination. In 383 the emperor Theodosius, who had demanded a declaration of faith from all party leaders, punished Eunomius for continuing to teach his distinctive doctrines, by banishing him to Halmyris in Moesia. He afterwards resided at Chalcedon and at Caesarea in Cappadocia, from which he was expelled by the inhabitants for writing against their bishop Basil. His last days were

spent at Dacora his birthplace, where he died about 393. His writings were held in high reputation by his party, and their influence was so much dreaded by the orthodox, that more than one imperial edict was issued for their destruction (*Cod. Theod.* xvi. 34). Consequently his commentary on the epistle to the Romans, mentioned by the historian Socrates, and his epistles, mentioned by Philostorgius and Photius, are no longer extant. His first apologetical work (Ἀπολογητικός), written probably about 360 or 365, has been entirely recovered from the celebrated refutation of it by Basil, and may be found in J.A. Fabricius, *Bibl. Gr.* viii. pp. 262-305. A second apology, written before 379 (Ὑπὲρ ἀπολογίας ἀπολογία), exists only in the quotations given from it in a refutation by Gregory of Nyssa. The exposition of faith (Ἔκθεσις τῆς πίστεως), called forth by the demand of Theodosius, is still extant, and has been edited by Valesius in his notes to Socrates, and by Ch. H.G. Rettberg in his *Marcelliana*.

The teaching of the Anomoean school, led by Aetius and Eunomius, starting from the conception of God as ὁ ἀγέννητος, argued that between the ἀγέννητος and γέννητος there could be no *essential*, but at best only a *moral*, resemblance. "As the Unbegotten, God is an absolutely simple being; an act of generation would involve a contradiction of His essence by introducing duality into the Godhead." According to Socrates (v. 24), Eunomius carried his views to a practical issue by altering the baptismal formula. Instead of baptizing in the name of the Trinity, he baptized in the name of the Creator and into the death of Christ. This alteration was regarded by the orthodox as so serious that Eunomians on returning to the church were rebaptized, though the Arians were not. The Eunomian heresy was formally condemned by the council of Constantinople in 381. The sect maintained a separate existence for some time, but gradually fell away owing to internal divisions.

See C.R.W. Klose, *Geschichte und Lehre des Eumonius* (Kiel, 1833); F. Loofs in Hauck-Herzog, *Realencyk. für prot. Theol.*; Whiston's *Eunomianismus redivivus* contains an English translation of the first apology. See also Arius.

EUNUCH (Gr.εὐνοῦχος), an emasculated male. From remote antiquity among the Orientals, as also at a later period in Greece, eunuchs were employed to take charge of the women, or generally as chamberlains—whence the name οἱ τὴν εὐνὴν ἔχοντες, *i.e.* those who have charge of the bed-chamber. Their confidential position in the harems of princes frequently enabled them to exercise an important influence over their royal masters, and even to raise themselves to stations of great trust and power (see Harem). Hence the term eunuch came to be applied in Egypt to any court officer, whether a *castratus* or not. The common idea that eunuchs are necessarily deficient in courage and in intellectual vigour is amply refuted by history. We are told, for example, by Herodotus that in Persia they were especially prized for their fidelity; and they were frequently promoted to the highest offices. Narses, the famous general under Justinian, was a eunuch, as was also Hermias, governor of Atarnea in Mysia, to whose manes the great Aristotle offered sacrifices, besides celebrating the praises of his patron and friend in a poem (still extant) addressed to *Virtue* (see Lucian's dialogue entitled *Eunuchus*). The capacity of eunuchs for public affairs is strikingly illustrated by the histories of Persia, India and China; and considerable power was exercised by the eunuchs under the later Roman emperors. The hideous trade of castrating boys to be sold as eunuchs for Moslem harems has continued to 891
modern times, the principal district whence they are taken being north-central Africa (Bagirmi, &c.). As the larger proportion of children die after the operation (generally total removal) owing to unskilful surgery, such as recover fetch at least three or four times the ordinary price of slaves. Even more vile, as being practised by a civilized European nation, was the Italian practice of castrating boys to prevent the natural development of the voice, in order to train them as adult soprano singers, such as might formerly be heard in the Sistine chapel. Though such mutilation is a crime punishable with severity, the supply of "soprani" never failed so long as their musical powers were in demand in high quarters. Driven long ago from the Italian stage by public opinion, they remained the musical glory and moral shame of the papal choir till the accession of Pope Leo XIII., one of whose first acts was to get rid of them. Mention must here also be made of the class of voluntary eunuchs, who have emasculated themselves, or caused the operation to be performed on them, for the avoidance of sexual sin or temptation. This unnatural development of asceticism appears in early Christian ages, its votaries acting on the texts Matt. xix. 12, v. 28-30. Origen's case is the most celebrated example, and by the 3rd century there had arisen a sect of eunuchs, of whom Augustine says (*De haeres.* c. 37), "Valesii et seipsos castrant et hospites suos, hoc modo existimantes Deo se debere servire" (see Neander, *History of Chr. Church*, vol. ii. p. 462; Bingham, *Antiq. Chr. Church*, book iv. chap. 3.) Such practices have been always opposed by the general body of the Christian churches, but have not even now ceased. A secret sect of the kind exists in Russia, whose practice of castration is expressed in their name of Skopzi.

(E. B. T.)

EUNUCH FLUTE, or Onion Flute (Fr. *flûte eunuque, flûte à l'onion, mirliton*; Ger. *Zwiebelflöte*), a wind instrument in use during the 16th and 17th centuries, producing music akin to the comb-music of the nursery, and still manufactured as a toy (*mirliton*). The onion flute consists of a wooden tube widening out slightly to form a bell. The upper end of the tube is closed by means of a very fine membrane similar to an onion skin stretched across the aperture like the vellum of a drum. The mouthpiece, a simple round hole, is pierced a couple of inches below the membrane; into this hole the performer sings, his voice setting up vibrations in the membrane, which thus intensifies the sound and changes its timbre to a bleating quality. A movable cap fits over the membrane to protect it. Mersenne[1] has given a drawing of the eunuch flute together with a description; he states that the vibrations of the membrane improve the sound of the voice, and by reflecting it, give it an added charm. There were concerts of these flutes in four or five parts in France, adds Mersenne, and they had the advantage over other kinds of reproducing more nearly the sound of the voice.

1 *L'Harmonie universelle* (Paris, 1636), livre v. prop. iv. pp. 228-229.

EUONYMUS, in botany, a genus of deciduous or evergreen shrubs or small trees, widely distributed in the north temperate zone, and represented in Britain by *E. europaeus*, the spindle tree, so called from its hard tough wood being formerly used for spindles. It is a shrub or small tree growing in copses or hedges, with a grey smooth bark, four-angled green twigs, opposite leaves and loose clusters of small greenish-white flowers. The ripe fruit is a pale crimson colour and splits into four lobes exposing the bright orange-coloured seed. *E. japonicus* is a hardy evergreen shrub, often variegated and well known in gardens. The Greek name εὐώνυμος, of good name, lucky, is probably a euphemism; the flowering was said to foretell plague.

EUPALINUS, of Megara, a Greek architect, who constructed for the tyrant Polycrates of Samos a remarkable tunnel to bring water to the city, passing under a hill. This aqueduct still exists, and is one of the most remarkable constructions in Greece (see AQUEDUCT: *Greek*).

EUPATORIA (Russ. *Evpatoria*; also known as *Kozlov* and to the Turks as *Gezlev*), a seaport of Russia, in the government of Taurida, on the W. coast of the Crimea, 20 m. N.W. of Simferopol, on a sandy promontory on the north of Kalamita Bay, in 45° 12′ N. and 33° 40′ E. Pop. (1871) 8294; (1897) 17,915. This number includes many Jews, the Karaite sect having here their principal synagogue. Here too resides the spiritual head (*gakhan*) of the sect. Of its numerous ecclesiastical buildings three are of interest—the synagogue of the Karaite Jews; one of the mosques, which has fourteen cupolas and is built (1552) after the plan of St Sophia in Constantinople; and the Greek Catholic cathedral (1898). The port or rather roadstead has a sandy bottom, and is exposed to violent storms from the N.E. The trade is principally in cereals, skins, cow-hair, felt, tallow and salt. Eupatoria has some repute as a sea-bathing resort.

According to some authorities it was near this spot that a military post, *Eupatorium*, was established in the 1st century A.D. by Diophantus, the general of Mithradates the Great, king of Pontus. Towards the end of the 15th century the Turks built the fortress of Gezleveh on the present site, and it became the capital of a khanate. It was occupied by the Russians under Marshal Münnich in 1736, and in 1771 by Prince Dolgorukov. Its annexation to Russia took place in 1783. In 1854 the Anglo-French troops were landed in the neighbourhood of Eupatoria, and in February 1855 the town was occupied by the Turkish forces.

EUPATRIDAE (Gr. εὖ, well; πατήρ, father, *i.e.* "Sons of noble fathers"), the ancient nobility of Attica. Tradition ascribes to Theseus, whom it also regards as the author of the union (*synoecism*) of Attica round Athens as a political centre, the division of the Attic population into three classes, Eupatridae, Geomori and Demiurgi. The lexicographers mention as characteristics of the Eupatridae that they are the autochthonous population, the dwellers in the city, the descendants of the royal stock. It is probable that after the time of the *synoecism* the nobles who had hitherto governed the various independent communities were obliged to reside in Athens, now the seat of government; and at the beginning of Athenian history the noble clans form a class which has the monopoly of political privilege. It is possible that in very early times the Eupatridae were the only full citizens of Athens; for the evidence suggests that they alone belonged to the phratries, and the division into phratries must have covered the whole citizen body. It is indeed just possible that the term may originally have signified "true member of a clan," since membership of a phratry was a characteristic of each clan (γένος). It is not probable that the Eupatrid families were all autochthonous, even in the loose sense of that term. Some had no doubt immigrated to Attica when the rest had long been settled there. Traces of this union of immigrants with older inhabitants have been detected in the combination of Zeus Herkeios with Apollo Patroös as the ancient gods of the phratry.

The exact relation of the Eupatridae to the other two classes has been a matter of dispute. It seems probable that the Eupatridae were the governing class, the only recognized nobility, the Geomori the country inhabitants of all ranks, and the Demiurgi the commercial and artisan population. The division attributed to Theseus is always spoken of by ancient authorities as a division of the entire population; but Busolt has recently maintained the view that the three classes represent three elements in the Attic nobility, namely, the city nobility, the landed nobility and the commercial nobility, and exclude altogether the mass of the population. At any rate it seems certain from the little we know of the early constitutional history of Athens, that the Eupatridae represent the only nobility that had any political recognition in early times. The political history of the Eupatridae is that of a gradual curtailment of privilege. They were at the height of their power in the period during the limitation of the monarchy. They alone held the two offices, those of polemarch and archon, which were instituted during the 8th century B.C. to restrict the powers of the kings. In 712 B.C. the office of king (βασιλεύς) was itself thrown open to all Eupatrids (see ARCHON). They thus had the entire control of the administration, and were the sole dispensers of justice in the state. At this latter privilege, which perhaps formed the strongest bulwark of the authority of the Eupatridae, a severe blow was struck (*c.* 621 B.C.) by the publication of a criminal code by Draco (*q.v.*), which was followed by the more detailed and permanent code of Solon (*c.* 594 B.C.), who further threw open the highest offices to any citizen possessed of a certain amount of landed property (see SOLON), thus putting the claims of the Eupatridae to political influence on a level with those of the wealthier citizens of all classes. The most highly coveted office at this time was not that of Βασιλεύς, which, like that of the *rex sacrorum* in Rome, had been stripped of all save its religious authority, but that of the Archon; soon after the legislation of Solon repeated struggles for this office between the Eupatridae and leading members of the other two classes resulted in a temporary change. Ten archons[1] were appointed, five of whom were to be Eupatridae, three Agroeci (*i.e.* Geomori), and two Demiurgi (Arist. *Ath. Pol.* xiii. 2). This arrangement, though short-lived, is significant of the decay of the political influence of the Eupatridae, and it is not likely that they recovered, even in practice, any real control of the government. By the middle of the 6th century the political influence of birth was at an end.

The name Eupatridae survived in historical times, but the Eupatridae were then excluded from the cult of the "Semnae" at Athens, and also held the hereditary office of "expounder of the law" (ἐξηγητής) in connexion with purification from the guilt of murder. The combination of these two characteristics suggests some connexion with the legend of Orestes. Again, Isocrates (xvi. 25) says of Alcibiades that his grandfather was a Eupatrid and his grandmother an Alcmaeonid, which suggests that in the 5th century the Eupatrids were a single clan, like the Alcmaeonids, and that the name had acquired a new signification. A pursuit of these two suggestions has established the probability that this "Eupatrid" clan traced its origin to Orestes, and derived its name from the hero, who was above all a benefactor of his father. The word will well bear this sense in the two passages in which Sophocles (*Electra*, 162, 859) applies it to Orestes; and it is likely enough that after the disappearance of the old Eupatridae as a political corporation, the name was adopted in a different sense, but not without a claim to the distinction inherent in the older sense, by one of the oldest of the clans.

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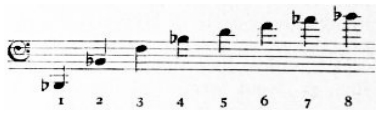
(A. M. CL.)

1 For a discussion of this see ARCHON.

EUPEN (Fr. *Néau*), a town of Germany, in the Prussian Rhine province, in a beautiful valley at the confluence of the Helle and Vesdre, 9 m. S. of Aix-la-Chapelle by rail. Pop. (1905) 14,297. It is a flourishing commercial place, and besides cloth and buckskin mills it has net and glove manufactories, soapworks, dyeworks, tanneries and breweries, and also carries on a considerable trade in cattle and dairy produce. It has a Protestant and four Roman Catholic churches, a Franciscan monastery, a progymnasium, an orphanage, a hospital, and a chamber of commerce. As part of the duchy of Limburg, Eupen was under the government of Austria until the peace of Lunéville in 1801, when it passed to France. In 1814 it came into the possession of Prussia.

EUPHEMISM (from Gr. εὔφημος, having a sound of good omen; εὖ, well, and φήμη, sound or voice), a figure of speech in which an unpleasant or coarse phrase is replaced by a softer or less offensive expression. A euphemism has sometimes a metaphorical sense, as in the substitution of the word "sleep" for "death."

EUPHONIUM (Fr. *baryton*; Ger. *Tenor Tube*), a modern brass wind instrument, known in military bands as euphonium and in the orchestra as tuba. The euphonium consists of a brass tube with a conical bore of wide calibre ending in a wide-mouthed bell; it is played by means of a cup-shaped mouthpiece. The sound is produced as in the bombardon, which is the bass of the euphonium, by the varied tension of the lips across the mouthpiece, whereby the natural open notes or harmonics, consisting of the series here shown, are obtained.



The intervening notes of the chromatic scale are obtained by means of valves or pistons usually four in number, which by opening a passage into additional lengths of tubing lower the pitch one, half, one-and-a-half, two-and-a-half tones (see BOMBARDON; TUBA; VALVES). The euphonium gives out the fundamental, or first note of the harmonic series, readily, but no harmonic above the eighth. Euphoniums are made in C and in B♭, the latter being more generally used. By means of all the valves used at once, the B♭, an octave below the fundamental, can be reached, giving a compass of four octaves, with chromatic intervals. The bass clef is used in notation. The euphonium is treated by French and German composers as a transposing instrument; in England the real notes are usually written, except when the treble clef is used. The quality of tone is rich and full, harmonizing well with that of the trombone. The euphonium speaks readily in the lower register, but slowly, of course, owing to the long dip of the pistons. Messrs Rudall Carte have removed this difficulty by their patent *short action* pistons, which have but half the dip of the old pistons. On these instruments it is easy to execute rapid passages.

The euphonium is frequently said to be a saxhorn, corresponding to the baryton member of that family, but the statement is misleading. The bombardon and euphonium, like the saxhorns, are the outcome of the application of valves to the bugle family, but there is a radical difference in construction; the tubas (bombardon and euphonium) have a conical bore of sufficiently wide calibre to allow of the production of the fundamental harmonic, which is absent in the saxhorns. The Germans classify brass wind instruments as *whole* and *half*[1] according to whether, having the wide bore of the bugle, the *whole* length of the tube is available and gives the fundamental proper to an organ pipe of the same length or whether by reason of the narrow bore in proportion to the length, only *half* the length of the instrument is of practical utility, the harmonic series beginning with the second harmonic. (See BOMBARDON.)

(K. S.)

1 See Dr Schafhäutl's article on "Musical Instruments" in sect. iv. of *Bericht der Beurtheilungs- Commission bei der Allg. deutschen Industrie Ausstellung* (Munich, 1854), pp. 169-170; also Fried. Zamminer, *Die Musik und die Musikinstrumente in ihrer Beziehung zu den Gesetzen der Akustik* (Giessen, 1855).

EUPHORBIA, in botany, a large genus of plants from which the order Euphorbiaceae takes its name. It includes more than 600 species and is of almost world-wide distribution. It is represented in Britain by the spurges—small, generally smooth, herbaceous plants with simple leaves and inconspicuous flowers arranged in small cup-like heads (*cyathia*). The cyathium is a characteristic feature of the genus, and consists of a number of male flowers, each reduced to a single stamen, surrounding a central female flower which consists only of a stalked pistil; the group of flowers is enveloped in a cup formed by the union of four or five bracts, the upper part of which bears thick, conspicuous, gland-like structures, which in exotic species are often brilliantly coloured, giving the cyathium the appearance of a single flower. Another characteristic is the presence of a milky juice, or latex, in the tissues of the plant. In one section of the genus the plants resemble cacti, having a thick succulent stem and branches with the leaves either very small or completely reduced to a small wart-like excrescence, with which is generally associated a tuft of spines (a reduced shoot). These occur in the warmer parts of the world as a type of dry country or desert vegetation. The only species of note are *E. fulgens* and *E. jacquiniaeflora*, for the warm greenhouse; *E. Cyparissias* (the Cypress spurge), *E. Wulfeni*, *E. Lathyris* and *E. Myrsinites*, for the open air.

EUPHORBIACEAE, in botany, a large natural order of flowering plants, containing more than 220 genera with about 4000 species, chiefly tropical, but spreading over the whole earth with the exception of the arctic and cold alpine zones. They are represented in Britain by the spurges (*Euphorbia*, *q.v.*) (fig. 1) and dog's mercury (*Mercurialis*) (fig. 2), which are herbaceous plants, but the greater number are woody plants and often trees. The large genus *Euphorbia* shows great variety in habit; many species, like the English spurges, are annual herbs, others form bushes, while in the desert regions of tropical Africa and the Canary Islands species occur resembling cacti, having thick fleshy stems and leaves reduced to spines. Another large genus, *Phyllanthus*, contains small annual herbs as well as trees, while in some species the leaves are reduced to scales, and the branches are flattened, forming phylloclades. The leaves also show great variety in form and arrangement, being simple and entire as in the English spurges, or deeply cut as in *Ricinus* (castor-oil) (fig. 3), and *Manihot* or sometimes palmately compound (*Hevea*). The majority contain a milky juice or latex in their tissues which exudes on cutting or bruising. In *Hevea*, *Manihot* and others the latex yields caoutchouc. The flowers are unisexual; male and female flowers are borne on the same, as in the spurges (fig. 1), or on different plants, as in dog's mercury (fig. 2). Their arrangement shows considerable variation, but the flowers are generally grouped in crowded definite partial inflorescences, which are themselves arranged in spikes or stand in the axils of the upper leaves. These partial inflorescences are generally unisexual, the male often containing numerous flowers while the female flowers are solitary. The partial inflorescence (*cyathium*) of *Euphorbia* (fig. 1) resembles superficially a hermaphrodite flower. It contains a central terminal flower, consisting of a naked pistil; below this are borne four or five bracts which unite to form a cup-shaped involucre resembling a calyx; each of these bracts subtends a small cyme of male flowers each consisting only of one stamen. Between the segments of the cup are large oval or crescent-shaped glands which are often brightly coloured, forming petal-like structures.

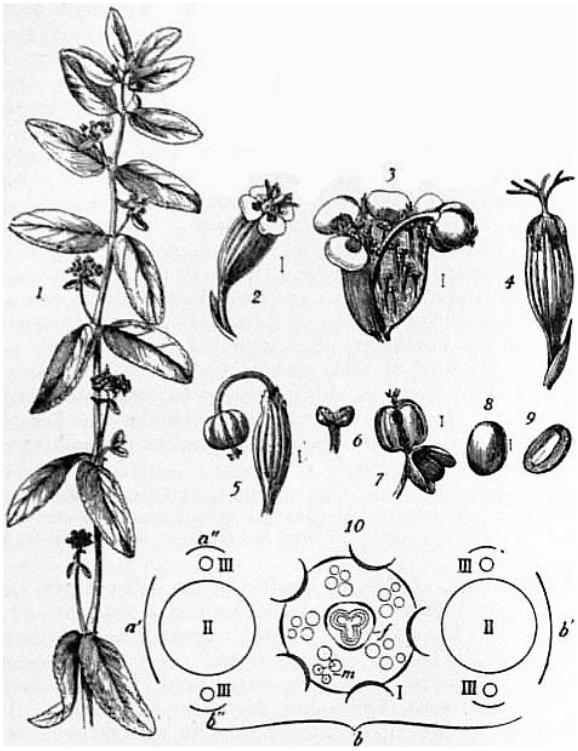


FIG. 1.

1. Shoot of *Euphorbia hypericifolia*, about ½ nat. size.
2. A partial inflorescence, *cyathium*, bearing the petaloid glands.
3. A similar one at a later stage, cut open to show the single-stamened (monandrous) male flowers and the central long-stalked female flower.
8. Seed.
9. Seed cut lengthwise exposing the embryo.
10. Diagram of the inflorescence of *Euphorbia*, illustrating the dichasial cymose arrangement of the ultimate branches.

b, Bract subtending the central terminal cyathium I.

a'b', Bracteoles of the first order subtending the

4. A cyathium without petaloid glandular appendages.
5. A similar one at a later stage with nearly ripe fruit.
6. An anther dehiscing.
7. Fruit dehiscing and exposing one of the three seeds.

secondary cyathia II.
a″*b*″, Bracteoles of the second order subtending the tertiary cyathia III.

In the central cyathium I. are shown the details of the arrangement of the male flowers in monochasial cymes, *m*, and the central female flower, *f*.

The form of the flower shows great variety. The most complete type occurs in *Wielandia*, a shrub from the Seychelles Islands, in which the flowers have their parts in fives, a calyx and corolla being succeeded in the male flower by 5 stamens, in the female by 5 carpels. Generally, however, only 3 carpels are present, as in *Euphorbia*; *Mercurialis* (fig. 2) has minute apetalous flowers with 3 sepals, followed in the male by 8 to 20 stamens, in the female by a bicarpellary pistil. In the large tropical genus *Croton* a pentamerous calyx and corolla are generally present, the stamens are often very numerous, and the female flower has three carpels. In *Manihot*, a large tropical American genus to which belongs the manioc or cassava (*M. utilissima*), the calyx is often large and petaloid. In a great many genera the corolla is absent. The most reduced type of flower is that described in Euphorbia, where the male consists of one stamen separated from its pedicel by a joint, and the female of a naked tricarpellary pistil. The stamens are sometimes more or less united (monadelphous), and in castor-oil (*Ricinus*) (fig. 3) are much branched. The ovary generally contains three chambers, and bears three simple or more often bipartite styles; each chamber contains one or two pendulous ovules, which generally bear a cap-like outgrowth or *caruncle*, which persists in the seed (well shown in castor oil, fig. 3). 894

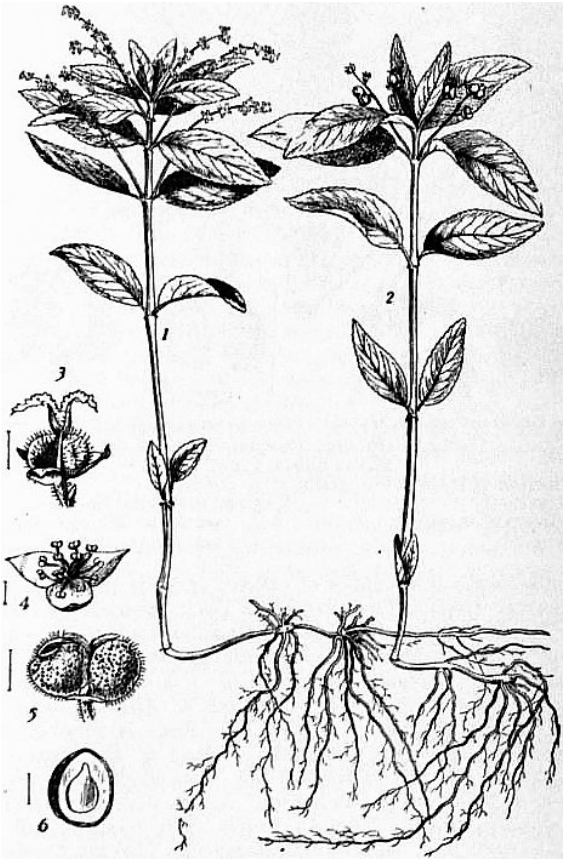
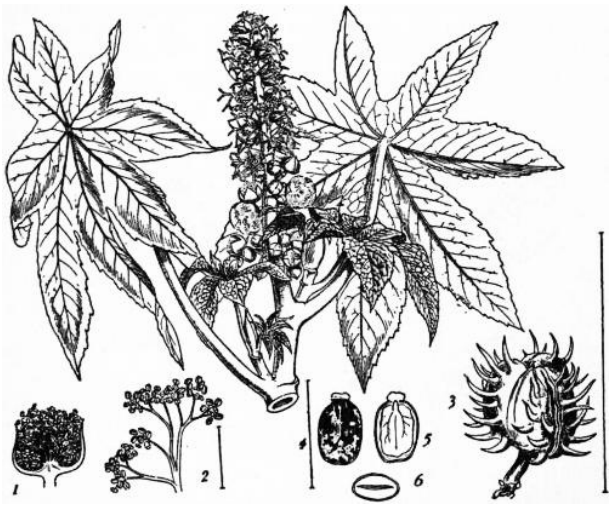


Fig. 2.—Dog's Mercury (*Mercurialis perennis*).

1. Male plant.
2. Female plant; ⅓ nat. size.
3. Female flower.
4. Male flower.
5. Fruit beginning to split open.
6. Seed cut lengthwise showing the embryo.

As the stamens and pistil are borne by different flowers, cross-fertilization is necessary. In *Mercurialis* and others with inconspicuous flowers pollination is effected by the wind, but in many cases insects are attracted to the flower by the highly-coloured bracts, as in many *Euphorbias* and *Dalechampia*, or by the coloured calyx as in *Manihot*; the presence of honey is also frequently an attraction, as in the honey-glands on the bracts of the cyathium of *Euphorbia*. The fruit is generally a capsule which splits into three divisions (*cocci*), separating from the central column, and splitting lengthwise into two valves. In the mancinil (*Hippomane mancinella*) of Central America the fruit is a drupe like a plum, and in some genera berries occur. In the sandbox tree (*Hura crepitans*) of tropical America the ovary consists of numerous carpels, and forms when mature a capsule which splits with great violence and a loud report into a number of woody cocci. The seeds contain abundant endosperm and a large straight or bent embryo.



From Bentley and Trimen's *Medicinal Plants*, by permission of J. & A. Churchill.

FIG. 3.—Castor Oil (*Ricinus communis*). End of shoot with flower-spike; about ⅓ nat. size.

1. Section of male flower, about nat. size.
2. Group of stamens.
3. Fruit.
4. Seed.
5 and 6. Vertical and transverse sections of seed showing embryo in position.

Several members of the order are of economic importance. *Manihot utilissima*, manioc or cassava (*q.v.*), is one of the most important tropical food-plants, its thick tuberous root being rich in starch; it is the source of Brazilian arrowroot. Caoutchouc or india-rubber is obtained from species of *Hevea*, *Mabea*, *Manihot* and *Sapium*. Castor oil (*q.v.*) is obtained from the seeds of *Ricinus communis*. The seeds of *Aleurites moluccana* and *Sapium sebiferum* also yield oil. Resin is obtained from species of *Croton* and *Euphorbia*. Many of the species are poisonous; *e.g.* the South African *Toxicodendron* is one of the most poisonous plants known. Many, such as *Euphorbia*, *Mercurialis*, *Croton*, *Jatropha*, *Tragia*, have been, or still are, used as medicines. Species of *Codiaeum* (*q.v.*), *Croton*, *Euphorbia*, *Phyllanthus*, *Jatropha* and others are used as ornamental plants in gardens.

The box (*Buxus*) and a few allied genera which were formerly included in Euphorbiaceae are now generally regarded as forming a distinct order—Buxaceae, differing from Euphorbiaceae in the position of the ovule in the ovary-chamber and in the manner of splitting of the fruit.

EUPHORBIUM, an acrid dull-yellow or brown resin, consisting of the concreted milky juice of several species of *Euphorbia*, cactus-like perennial plants indigenous to Morocco. It dissolves in alcohol, ether and turpentine; in water it is only slightly soluble. It consists of two or more resins and a substance euphorbone, $C_{20}H_{36}O$ or $C_{15}H_{24}O$. Pliny states that the name of the drug was given to it in honour of Euphorbus, the physician of Juba II., king of Mauretania. In former times euphorbium was valued in medicine for its drastic, purgative and emetic properties.

EUPHORBUS, son of Panthoüs, one of the bravest of the Trojan heroes, slain by Menelaus (*Iliad*, xvii. 1-60). Pythagoras, in support of his doctrine of the transmigration of souls, declared that he had once been this Euphorbus, whose shield, hung up in the temple of Argos by Menelaus, he claimed as his own (Horace, *Odes*, i. 28. 11; Diog. Laërt. viii. 1).

EUPHORION, Greek poet and grammarian, born at Chalcis in Euboea about 275 B.C. He spent much of his life in Athens, where he amassed great wealth. About 221 he was invited by Antiochus the Great to the court of Syria. He assisted in the formation of the royal library at Antioch, of which he held the post of librarian till his death. He wrote mythological epics, amatory elegies, epigrams and a satirical poem (Ἀραί, "curses") after the manner of the *Ibis* of Callimachus. Prose works on antiquities and history are also attributed to him. Like Lycophron, he was fond of using archaic and obsolete expressions, and the erudite character of his allusions rendered his language very obscure. His elegies were highly esteemed by the Romans; they were imitated or translated by Cornelius Gallus and also by the emperor Tiberius.

Fragments in Meineke, "De Euphorionis Chalcidensis vita et scriptis," in his *Analecta Alexandrina* (1843); for a recently discovered fragment of about 30 lines see *Berliner Klassikertexte*, v. 1 (1907).

EUPHRANOR, of Corinth (middle of the 4th century B.C.), the only Greek artist who excelled both as a sculptor and as a painter. In Pliny we have lists of his works; among the paintings, a cavalry battle, a Theseus, and the feigned madness of Odysseus; among the statues, Paris, Leto with her children Apollo and Artemis, Philip and Alexander in chariots. Unfortunately we are unable among existing statues to identify any which are copies from works of Euphranor (but see a series of attributions by Six in *Jahrbuch*, 1909, 7 foll.). He appears to have resembled his contemporary Lysippus, notably in the attention he paid to symmetry, in his preference for bodily forms slighter than those usual in earlier art, and in his love of heroic subjects. He wrote a treatise on proportions.

EUPHRATES (Babylon. *Purattu*, Heb. *Perath*, Arab. *Frāt* or *Furāt*, Old Pers. *Ufratu*, Gr. Εὐφράτης), the largest river of western Asia. It may be divided into three divisions, upper, lower and middle, each of which is distinguished by special physical features, and has played a conspicuous part in the world's history, retaining to the present day monumental evidence of the races who have lined its banks.

Upper Division.—The upper Euphrates consists of two arms, which, rising on the Armenian plateau, and flowing west in long shallow valleys parallel to Mount Taurus, eventually unite and force their way southward through that range to the level of Mesopotamia. The northern or western and shorter arm, called by the Turks Kara Su, "black water," or Frāt Su (Armenian, *Ephrāt* or *Yephrāt*; Arab. *Nahr el-Furāt* or *Frāt*), well known to occidentalists as the Euphrates, from its having been the boundary of the Roman empire, is regarded also by Orientals as the main stream. It rises in the Dumlu Dagh, N.N.W. of Erzerum, in a large circular pool (altitude, 8625 ft.), which is venerated by Armenians and Moslems, and flows south-east to the plain of Erzerum (5750 ft.). Thence it continues through a narrow valley W.S.W. to Erzingan (3900 ft.), receiving on its way the Ovajik Su (right), the Tuzla Su (left), and the Merjan and Chanduklu (right). Below Erzingan the Frāt flows south-west through a rocky gorge to Kemakh (*Kamacha*; Armenian, *Gamukh*), where it is crossed by a bridge and receives the Kumur Su (right). At Avshin it enters a cañon, with walls over 1000 ft. high, which extends to the bridge at Pingan, and lower down it is joined from the west by the Chalta Irmak (*Lycus*; Arab. *Lūkīya*), on which stands Divrik (Tephrike). Then, entering a deep gorge with lofty rock walls and magnificent scenery, it runs south-east to its junction with the Murad Su. The Frāt, separated by 895
the easy pass of Deve-boyūn from the valley of the Araxes (Aras), marks the natural line of communication between northern Persia and the West—a route followed by the nomad Turks, Mongols and Tatars on their way to the rich lands of Asia Minor. It is a rapid river of considerable volume, and below Erzingan is navigable, down stream, for rafts. The southern or eastern and longer arm, called by the Turks Murad Su (*Arsanias Fl.*; Armenian, *Aradzani*; Arab. *Nahr Arsanas*), rises south-west of Diadin, in the northern flank of the Ala Dagh (11,500 ft.), and flows west to the Alashgerd plain. Here it is joined by the Sharian Su from the west, and the two valleys form a great trough through which the caravan road from Erzerum to Persia runs. The united stream breaks through the mountains to the south, and, receiving on its way the Patnotz Su (left) and the Khinis Su (right), flows south-west, west and south, through the rich plain of Bulanik to the plain of Mūsh. Here it is joined by the Kara Su (*Teleboas*), which, rising near Lake Van, runs past Mūsh and waters the plain. The river now runs W.S.W. through a deep rocky gorge, in which it receives the Gunig Su (right), to Palu (where there are cuneiform inscriptions); and continues through more open country to its junction with the Frāt Su. About 10 m. E.N.E. of Kharpūt the Murad is joined by its principal tributary, the Peri Su, which drains the wild mountain district, Dersim, that lies in the loop between the two arms. The Murad Su is of greater volume than the Frāt, but its valley below Mūsh is contracted and followed by no great road. Below the junction of the two arms the Euphrates flows south-west past the lead mines of Keban Maden, where it is 120 yds. wide, and is crossed by a ferry (altitude, 2425 ft.), on the Sivas-Kharpūt road. It then runs west, south and east round the rock-mass of Musher Dagh, and receives (right) the Kuru Chai, down which the Sivas-Malatia road runs, and the Tokhma Su, from Gorun (*Gauraina*) and Darende. At the ferry on the Malatia-Kharpūt road (cuneiform inscription) it flows eastwards in a valley about a quarter of a mile wide, but soon afterwards enters a remarkable gorge, and forces its way through Mount Taurus in a succession of rapids and cataracts. After running south-east through the grandest scenery, and closely approaching the source of the western Tigris, it turns south-west and leaves the mountains a few miles above Samsāt (*Samosata*; altitude, 1500 ft.). The general direction of the great gorges of the Euphrates, Pyramus (Jihun) and Sarus (Sihun) seems to indicate that their formation was primarily due to the same terrestrial movements that produced the Jordan-'Araba depression to the south. The length of the Frāt is about 275 m.; of the Murad, 415 m.; and of the Euphrates from the junction to Samsāt, 115 m.

Middle Division.—The middle division, which extends from Samsāt to Hit, is about 720 m. long. In this part of its course the Euphrates runs through an open, treeless and sparsely peopled country, in a valley a few miles wide, which it has eroded in the rocky surface. The valley bed is more or less covered with alluvial soil, and cultivated in places by artificial irrigation. The method of this irrigation is peculiar. Three or four piers or sometimes bridges of masonry are run out into the bed of the river, frequently from both sides at once, raising the level of the stream and thus giving a water power sufficient to turn the gigantic wheel or wheels, sometimes almost 40 ft. in diameter, which lift the water to a trough at the top of the dam, whence it is distributed among the gardens and melon patches, rice, cotton, tobacco, liquorice and durra fields, between the immediate bed of the river and the rocky banks which shut it out from the desert. The wheels, called *naoura*, are of the most primitive construction, made of rough branches of trees, with palm leaf paddles, rude clay vessels being slung on the outer edge to catch the water, of which they raise a prodigious amount, only a comparatively small part of which, however, is poured into the aqueducts on top of the dams. These latter are exceedingly picturesque, often consisting of a series of well-built Gothic arches, and give a peculiar character to the scenery; but they are also great impediments to navigation. In some parts of the river 300 *naouras* have been counted within a space of 130 m., but of late years many have fallen into decay. By far the larger part of the valley is quite uncultivated, and much of it is occupied by tamarisk jungles, the home of countless wild pigs. Where the valley is still cultivated, the *jerd*, a skin raised by oxen, is gradually being substituted for the *naoura*, no more of the latter being constructed to take the place of those which fall into decay.

In this part of its course the rocky sides of the valley, which sometimes closely approach the river, are composed of marls and gypsum, with occasional selenite, overlaid with sandstone, with a topping of breccia or conglomerate, and rise at places to a height of 200 ft. or more. At one point, however, 26 m. above Deir, where lie the ruins of Halebiya, the river breaks through a basaltic dike, el-Ḥamme, some 300 to 500 ft. high. On either side of the river valley a steppe-like desert, covered in the spring with verdure, the rest of the year barren and brown, stretches away as far as the eye can see. Anciently the country on both sides of the Euphrates was habitable as far as the river Khabur; at the present time it is all desert from Birejik downward, the camping ground of Bedouin Arabs, the great tribe of Anazeh occupying *esh-Shām*, the right bank, and the Shammar the left bank, Mesopotamia of the Romans, now called el-

Jezīreh or the island. To these the semi-sedentary Arabs who sparsely cultivate the river valley, dwelling sometimes in huts, sometimes in caves, pay a tribute, called *kubbe*, or brotherhood, as do also the riverain towns and villages, except perhaps the very largest. The Turkish government also levies taxes on the inhabitants of the river valley, and for this purpose, and to maintain a caravan route from the Mediterranean coast to Bagdad, maintains stations of a few *zaptiehs* or *gens d'armes*, at intervals of about 8 hours (caravan time), occupying in general the stations of the old Persian post road. The only riverain towns of any importance on this stretch of the river to-day are Samsāt, Birejik, Deir, 'Ana and Hit.

In early times the Euphrates was important as a boundary. It was the theoretical eastern limit of the Jewish kingdom; for a long time it separated Assyria from the Khita or Hittites; it divided the eastern from the western satrapies of Persia (Ezra iv. 17; Neh. ii. 7); and it was at several periods the boundary of the Roman empire. Until the advent of the nomads from central Asia, and the devastation of Mesopotamia and the opposite Syrian shore of the river, there were many flourishing cities along its course, the ruins of which, representing all periods, still dot its banks. Samsāt itself represents the ancient Samosata, the capital of the Seleucid kings of Commagene (*Kumukh* of the Assyrian inscriptions), and here the Persian Royal Road from Sardis to Susa is supposed to have crossed the river. Below Samsāt the river runs S.W. to Rum-Kaleh, or "castle of the Romans" (Armenian, *Hrhomgla*). At this point was another passage of the river, defended by the castle which gives its name to the spot, and which stands on a high hill overhanging the right bank, its base washed by an abundant stream, the Sanjeh (Gr. Σίγγας), which enters the Euphrates on the west. From this point the river runs rather east of south for about 25 m. past Khalfat (ferry) to Birejik or Bir, the ancient Birtha, where it is only 110 m. from the Mediterranean, the bed of the river being 628½ ft. above that sea. This was the Apamea-Zeugma, where the high road from east to west crossed the river, and it is still one of the most frequented of all the passages into Mesopotamia, being the regular caravan route from Iskanderun and Aleppo to Urfa, Diarbekr and Mosul. From Birejik the river runs sluggishly, first a little to the east, then a little to the west of south, over a sandy or pebbly bed, past Jerablus (? *Europus, Carchemish*, the ancient Hittite capital), near which the Sajur (*Sagura*; *Sangar* of the Assyrian inscriptions) enters from the west, to Meskene, 2 m. southward of which are the ruins of Barbalissus (Arab. *Balis*), the former port of Aleppo, now, owing to changes in the bed, some distance from the water. Six miles below this the ruins of Kal'at Dibse mark the site of the ancient Thapsacus (*Tiphsah* of 1 Kings iv. 24), the most important passage of the middle Euphrates, where both Cyrus, on his expedition against his brother, and Alexander the Great crossed that river, and the ancient port of Syria. Here the river turns 896
quite sharply eastward. A day's journey beyond Meskene are the remains of Siffin (Roman *Sephe*), where Moawiya defeated the caliph Ali in 657 (see Caliphate), and opposite this, on the west bank, a picturesque ruin called Kal'at Ja'ber (*Dausara*). A day's journey beyond this, on the Syrian side, stand the remains of ancient Sura, a frontier fortress of the Romans against the Parthians; 20 m. S. of which, inland, lie the well-preserved ruins of Reseph (Assyrian, *Resafa* or *Rosafa*). Half a day's journey beyond Sura, on the Mesopotamian side of the river, are the extensive ruins of Haragla (*Heraclea*) and Rakka, once the capital of Harun al-Rashid (*Nicephorium* of Alexander; *Callinicus* of the Seleucids and Romans). Here the Belikh (*Bilechas*) joins the Euphrates, flowing southward through the biblical Aram Naharaim from Urfa (*Edessa*) and Harran (*Carrhae*); and from this point to el-Ḳaim four days' below Deir, the course of the river is south-easterly. Two days' journey beyond Rakka, where the Euphrates breaks through the basalt dike of el-Ḥamme, are two admirably preserved ruins, built of gypsum and basalt, that on the Mesopotamian side called Zelebiya (Chanuga), and that on the Syrian, much the finer of the two, Halebiya or Zenobiya, the ancient Zenobia. Twenty-six miles farther down lies the town of Deir (*q.v.*), where the river divides into two channels and the river valley opens out into quite extensive plains. Here the roads from Damascus, by way of Palmyra, and from Mosul, by way of the Khabur, reach the Euphrates, and here there must always have been a town of considerable commercial and strategic importance. The region is to-day covered with ruins and ruin mounds. A little below Deir the river is joined by the Khabur (*Khaboras*, Biblical *Khabor*), the frontier of the Roman empire from Diocletian's time, which rises in the Karaja Dagh, and, with its tributary, the Jaghjagh (*Mygdonius*; Arab. *Hirmas*) flows south through the land of Gozan in which Sargon settled the deported Israelites in 721 B.C. At the mouth of the Khabur stood the Roman frontier fortress of *Circesium* (Assyrian, *Sirki*; Arab. *Kirkessie*) now el-Buseira. The corresponding border town on the Syrian side is represented by the picturesque and finely preserved ruins called Salahiya, the Ad-dalie or Dalie (*Adalia*) of Arabic times, two days below Deir, whose more ancient name is as yet unknown. Between Salahiya and Deir, on an old canal, known in Arabic times as Said, leaving the Euphrates a little below Deir and rejoining it above Salahiya, stand the almost more picturesque ruins of the once important Arabic fortress of Raḥba.

As far as the Khabur Mesopotamia seems to have been a well-inhabited country from at least the 15th century B.C., when it constituted the Hittite kingdom of Mitanni, down to about the 12th century A.D., and the same is true of the country on the Syrian side of the Euphrates as far as the eastern limit of the Palmyrene. Below this point the back country on the Syrian side has always been a complete desert. On the Mesopotamian side there would seem, from the accounts of Xenophon and Ptolemy, to have been an affluent which joined the Euphrates between Deir and 'Ana, called Araxes by the former, Saocoras by the latter; but no trace of such a stream has been found by modern explorers and the country in general has always been uninhabited. Below Salahiya the river-bed narrows and becomes more rocky. A day's journey beyond Salahiya, on a bluff on the Mesopotamian side of the river, are the conspicuous ruins Of el-'Irsi (*Corsote*?). Half a day's journey beyond, at a point where two great wadis enter the Euphrates, on the Syrian side, stands Jabriya, an unidentified ruined town of Babylonian type, with walls of unbaked brick, instead of the stone heretofore encountered. At this point the river turns sharply a little north of east, continuing on that course somewhat over 40 m. to 'Ana, where it bends again to the south-east. Just above 'Ana are rapids, and from this point to Hit the river is full of islands, while the bed is for the most part narrow, leaving little cultivable land between it and the bluffs. 'Ana itself, a very ancient town, of Babylonian origin, once sacred probably to the goddess of the same name, lay originally on several islands in the stream, where ruins, principally of the Arabic and late Persian period, are visible. Here palm trees, which had begun to appear singly at Deir, grow in large groves, the olive disappears entirely, and we have definitely passed over from the Syrian to the Babylonian flora and climate. Between 'Ana and Hit there were anciently at least four island cities or fortresses, and at the present time three such towns, insignificant relics of former greatness, Haditha, Alus or el-'Uzz and Jibba still occupy the old sites. Of these Alus is evidently the ancient Auzara or Uzzanesopolis, the city of the old Arabic goddess 'Uzza; Haditha, an important town under the Abbasids, was earlier known as Baia Malcha; while Jibba has not been identified. The fourth city, Thilutha or Olabus, once occupied the present deserted island of Telbeis, half a day's journey below 'Ana. About half-way between 'Ana and Hit, in the neighbourhood of Haditha, the river has a breadth of 300 yds., with a depth of 18 ft., and a flood speed of 4 knots. At this point we begin to encounter sulphur springs and bitter streams redolent with bitumen, a formation which reaches its climax at Hit (*q.v.*), where a small stream (the "river of Ahava" of Ezra viii. 21) enters the Euphrates from the Syrian side, on which, about 8 m. from its mouth, stands the small town of Kubeitha.

The middle Euphrates, from Samsāt to Hit, is to-day an avenue of ruins, of which only the more conspicuous or important have been indicated here. It was from a remote period, antedating certainly 3000 B.C., the highway of

empire and of commerce between east and west, more specifically between Babylonia or Irak and Syria, and numerous empires, peoples and civilizations have left their records on its shores. Its time of greatest prosperity and importance was the period of the Abbasid caliphate, and Arabic geographers as late as A.D. 1200 mention an astonishingly large number of important cities situated on its shores or islands. The Mongol invasion, in the latter part of that century, wrought their ruin, however, and from that time to the present there has been a steady decline in the commercial importance of the Euphrates route, and consequently also of the towns along its course, until at the present time it is only an avenue of ruins.

Lower Division.—Hit stands almost at the head of the alluvial deposit, about 550 m. from the Persian Gulf, separated from it by a couple of small spurs of the Syrian plateau, and may be said to mark the beginning of the lower Euphrates. Thence the river flows S.E. and S.S.E. to its junction with the Tigris below Korna, through an unbroken plain, with no natural hills, except a few sand (or sandstone?) hills in the neighbourhood of Warka, and no trace of rock, except at el-Haswa, above Hillah. At Hit the river is from 30 to 35 ft. in depth, with a breadth of 250 yds., and a current of 4 m. an hour, but from this point it diminishes in volume, receiving no new affluents but dissipating itself in canals and lagoons. At Feluja, in the latitude of Bagdad, the Euphrates and Tigris closely approach each other, and then, widening out, enclose the plain of Babylonia (Arab. *Sawād*). Through this part of its course the current of the river, except where restricted by floating bridges—at Feluja, Mussaib, Hillah, Diwanieh and Samawa—does not normally exceed a mile an hour, and both on the main stream and on its canals the *jerd* or ox-bucket takes the place of the *naoura* or water-wheel for purposes of irrigation.

In early times irrigating canals distributed the waters over the plain, and made it one of the richest countries of the East, so that historians report three crops of wheat to have been raised in Babylonia annually. As main arteries for this circulation of water through its system great canals, constituting in reality so many branches of the river, connected all parts of Babylonia, and formed a natural means both of defence and also of transportation from one part of the country to another. The first of these canals, taken off on the right bank of the river a little below Hit, followed the extreme skirt of the alluvium the whole way to the Persian Gulf near Basra, and thus formed an outer barrier, strengthened at intervals with watch-towers and fortified posts, to protect the cultivated land of the *Sawād* against the incursions of the desert Arabs. This gigantic work, the line of which may still be traced throughout its course, was formerly called the *Khandak Sabūr* or “Sapor’s trench,” being ascribed to the Sassanian king, Shapur I. 897
Dholahtaf, but is now known as the Cherra-Saadeh, and is in the popular tradition said to have been excavated by a man from Basra at the behest of a woman of Hit whom he desired to make his wife. How early this work was begun is not clear, but it would appear to have been at least largely reconstructed in the time of the great Nebuchadrezzar. The next important canal, the Dujayl (Dojail), left the Euphrates on the left, about a league above Ramadiya (*Ar-Rabb*), and flowed into the Tigris between Ukbara and Bagdad. The ‘Isa, which is largely identical with the modern Sakhlawiya, left the Euphrates a little below Anbar (*Perisabora*) and joined the Tigris at Bagdad. This canal still carries water and was navigable for steamboats until about 1875. Sarsar, the modern Abu-Ghurayb, leaves the Euphrates three leagues lower down and enters the Tigris between Bagdad and Ctesiphon. The Nahr Malk or royal river, modern Radhwaniya, leaves the Euphrates five leagues below this and joins the Tigris three leagues below Ctesiphon; while the Kutha, modern Habl-Ibrahim, leaving the Euphrates three leagues below the Malk joins the Tigris ten leagues below Ctesiphon. In the time of the Arabs these were the chief canals, and the cuts from the main channels of the Nahr ‘Isa, Nahr Sarsar, Nahr Malk (or Nahr Malcha), and Nahr Kutha, reticulating the entire country between the rivers, converted it into a continuous and luxuriant garden.

Just below Mussaib there has been for all ages a great bifurcation of the river. The right arm was the original bed, and the left arm, on which Babylon was built, the artificial deviation, as is clear from the cuneiform inscriptions. In the time of Alexander the nomenclature was reversed, the right arm being known as Pallacopas. Under the Arabs the old designation again prevailed and the Euphrates is always described by the Arabian geographers as the river which flows direct to Kufa, while the present stream, passing along the ruins of Babylon to Hillah and Diwanieh, has been universally known as the Nahr Sura. Occidental geographers, however, have followed the Greek use, and so to-day we call the river of Babylon or Nahr Sura the Euphrates and the older westerly channel the Hindieh canal. At the present time the preservation of the embankments about the point of bifurcation demands the constant care of the Bagdad government. The object is to allow sufficient water to drain off to the westward for the due irrigation of the land, while the Hillah bed still retains the main volume of the stream, and is navigable to the sea. But it frequently happens that the dam at the head of the Hindieh is carried away, and, a free channel being thus opened for the waters of the river to the westward, the Hillah bed shoals to 2 or 3 ft., or even dries up altogether, while the country to the west of the river is turned into lakes and swamps. Below the bifurcation the river of Babylon was again divided into several streams, and indeed the most famous of all the ancient canals was the Arakhat (*Archous* of the Greeks and *Serrāt* and *Nil* of the Arabs), which left that river just above Babylon and ran due east to the Tigris, irrigating all the central part of the Jezīreh, and sending down a branch through Nippur and Erech to rejoin the Euphrates a little above the modern Nasrieh. The Narss, also, the modern Daghara, which is still navigable to Nippur and beyond, left the Sura a little below Hillah; and at the present day another large canal, the Kehr, branches off near Diwanieh. It is easy to distinguish the great primitive watercourses from the lateral ducts which they fed, the latter being almost without banks and merely traceable by the winding curves of the layers of alluvium in the bed, while the former are hedged in by high banks of mud, heaped up during centuries of dredging.

Not a hundredth part of the old irrigation system is now in working order. A few of the mouths of the smaller canals are kept open so as to receive a limited supply of water at the rise of the river in May, which then distributes itself over the lower lying lands in the interior, almost without labour on the part of the cultivators, giving birth in such localities to the most abundant crops, but by far the larger portion of the region between the rivers is at present an arid howling wilderness dotted with *tels* or ruin-heaps, strewn in the most part with broken pottery, the evidence of former habitation, and bearing nothing but the camel-thorn, the wild caper, the colocynth-apple, wormwood and other weeds of the desert. The swamps are full of huge reeds, bordered with tamarisk jungles, and in its lower reaches, where the water stretches out into great marshes, the river is clogged with a growth of agrostis. To obtain a correct idea of this region it must be borne in mind also that the course of the river and the features of the country on both banks are subject to constant fluctuation. The Hindieh canal and the main stream, the ancient Sura, rejoin one another at Samawa. Down to this point, the bed of the Euphrates being higher than that of the Tigris, the canals run from the former to the latter, but below this the situation is reversed. At Nasrieh the Shatt-el-Haï, at one time the bed of the Tigris, and still navigable during the greater part of the year, joins the Euphrates. From this point downward, and to some extent above this as far as Samawa, the river forms a succession of reedy lagoons of the most hopeless character, the Paludes Chaldaici of antiquity, el Batihāt of the Arabs. Along this part of its course the river is apt to be choked with reeds and, except where bordered by lines of palm trees, the channel loses itself in lakes and swamps. The inhabitants of this region are wild and inhospitable and utterly beyond the control of the Turkish authorities, and navigation of the river between Korna and Suk-esh-Sheiukh is unsafe owing to the attacks of armed pirates. From Garmat Ali, where the Tigris and Euphrates at present unite,[1] under the title of Shatt-el-Arab, the river sweeps on to

Basra, 1000 yds. in width and from 3 to 5 fathoms deep, navigable for steamers of good size. From Korna to Basra the banks of the river are well cultivated and the date groves almost continuous; indeed this is the greatest date-producing region of the world. Twenty-five miles below Basra the river Karun from Shushter and Dizful throws off an arm, which seems to be artificial, into the Euphrates. This arm is named the Haffār, and at the confluence is situated the Persian town of Muhamrah, a place most conveniently located for trade. In this vicinity was situated, at the time of the Christian era, the Parthian city of Spasini-Charax, which was succeeded by Bahman Ardashir (*Bamishir*) under the Sassanians, and by Moharzi under the Arabs. The left bank of the river from this point belongs to Persia. It consists of an island named Abbadan, about 45 m. long, formed by alluvial deposits during the last fifteen centuries. (For the character of this alluvium and its rate of deposit see Irak.)

Even more than the upper and middle Euphrates the lower Euphrates, from Hit downward, abounds in ruins of ancient towns and cities, from the earliest prehistoric period onward to the close of the Caliphate (see Irak). The fact also that many of the most ancient of these ruins, like Ur, Lagash (Sirpurla), Larsa, Erech, Nippur, Sippara and Babylon, were situated on the banks of the great canals would indicate that the control of the waters of the rivers by a system of canalization and irrigation was one of the first achievements of civilization. This ancient system of canalization was inherited from the Persians (who, in turn, inherited it from their predecessors), by the Arabs, who long maintained it in working order, and the astonishing fertility and consequent prosperity of the country watered by the Euphrates, its tributaries and its canals, is noticed by all ancient writers. The land itself, an alluvial deposit, is very fruitful. Wheat and the date palm seem to have been indigenous, and the latter is still one of the chief productions of the country, but in later years rice has taken the place of wheat as the staff of life. The decline of the country dates from the appearance of Turkish nomads in the 11th century; its ruin was completed by the Shammar Arabs in the 17th century; but, if the ancient system of irrigation were restored, sufficient grain could be grown to alter the conditions of the wheat supply of the world. At the present time, instead of the innumerable cities of former days, there is a succession of small towns along the course of the river—Ramadiya, Feluja, Mussaïb, Hillah, Diwanieh, Samawa, el-Khudr (an ancient daphne or sacred grove, 31° 11′ 58″ N., 76° 6′ 9″ E., the only one anywhere which preserves to this day its ancient charter of the inviolability of all life within its precincts), Nasrieh and Suk-esh-Sheiukh—by means of which the Turkish government controls the river and levies taxes on a small part of the adjacent territory. At such settlements the river is lined with gardens and plantations of palms. The greater part of the region, however, even along the river shores, is inhabited only by roaming Bedouin or half-savage Ma'dan Arabs (see Irak).

Navigation.—The length of the Euphrates from its source at Diadin to the sea is about 1800 m., and its fall during the last 1200 m. about 10 ins. per mile. The river begins to rise in the end of March and attains its greatest height between the 21st and the 28th of May. It is lowest in November, and rocks, shallows, and the remains of old dams then render it almost unnavigable. In antiquity, however, it was evidently in use for the transportation of merchandise and even of armies. Boats built in Syrian ports were placed on the Euphrates by Sennacherib and Alexander, and Herodotus states (i. 185) that in his day the river was a frequented route followed by merchants on their way from the Mediterranean to Babylon. As the most direct line of transit between the Mediterranean and the Persian Gulf, offering an alternative means of communication with India not greatly inferior to the Egyptian route, the Euphrates route early attracted the attention of the British government. During the Napoleonic wars, indeed, and up to the time when the introduction of steam navigation rendered the Red Sea accessible at all seasons of the year, the political correspondence of the home and Indian governments usually passed by the Euphrates route. Various plans were suggested for the development of this route as a means of goods as well as postal conveyance, and in 1835 Colonel F.R. Chesney was sent out at the head of an expedition with instructions to transport two steamers from the Mediterranean to the Euphrates, and, after putting them together at Birejik, to attempt the descent of the river to the sea. One of these steamers was lost in a squall during the passage down the river near el-'Irsi, but the other performed the voyage in safety and thus demonstrated the practicability of the downward navigation. Following on this first experiment, the East India Company, in 1841, proposed to maintain a permanent flotilla on the Tigris and Euphrates, and set two vessels, the "Nitocris" and the "Nimrod," under the command of Captain Campbell of the Indian navy, to attempt the ascent of the latter river. The experiment was so far successful that, with incredible difficulty, the two vessels did actually reach Meskene, but the result of the expedition was to show that practically the river could not be used as a high-road of commerce, the continuous rapids and falls during the low season, caused mainly by the artificial obstructions of the irrigating dams, being insurmountable by ordinary steam power, and the aid of hundreds of hands being thus required to drag the vessels up the stream at those points by main force. Under Midhat Pasha, governor-general of Bagdad from 1866 to 1871, an attempt was made by the Turkish authorities to establish regular steam navigation on the Euphrates. Midhat caused many of the dams to be destroyed and for some years occasional steamers were run between Meskene and Hillah in flood time, from April to August. But with the transfer of Midhat this feeble attempt at navigation was abandoned. At the present time the river is navigated by sailing craft of some size from Hit downward. Above that point there is no navigation except by the native rafts (*kellek*), which descend the river and are broken up on arrival at their point of destination. There is, however, little travel of this sort on the Euphrates in comparison with the amount on the Tigris.

When it became evident that, under present conditions at least, the navigation of the middle Euphrates was impracticable, attention was turned, owing to the peculiarly advantageous geographical position of its valley, to schemes for connecting the Mediterranean and Persian Gulf by railway as an alternative means of communication with India, and various surveys were made for this purpose and various routes laid out. All these schemes, however, fell through either on the financial question, or on the unwillingness of the Turkish government to sanction any line not connected directly with Constantinople. With the acquisition of the Suez Canal, moreover, the value of this route from the British standpoint was so greatly diminished that the scheme, so far as England was concerned, was quite abandoned. (For further notice of the railway question see Bagdad.)

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(H. C. R.; C. W. W.; J. P. Pe.)

1 The confluence for about 500 years was at Korna, over 30 m. higher up. Sir W. Willcocks discovered (1909) that from Suk-esh-Sheiukh the Euphrates had formed a new channel through the marshes. (See *Geog. Journal*, Jan. 1910).

EUPHRONIUS, the most noted of the group of great vase-painters, who lived in Athens in the time of the Persian wars, and worked upon red-figured vases (see Greek Art and Ceramics). There is a monograph by W. Klein dealing with the artist. As all the great paintings of Greece have disappeared, we are obliged to trust to the designs on vases for our knowledge of Greek drawing and composition. Euphronius is stiff and archaic in style, but his subjects are varied, his groupings original and striking, and his mastery of the line decided. In their way, the vases which he painted will hold their own in comparison with those of any nation; for simplicity, truthfulness and charm they can scarcely be matched.

EUPHROSYNE, the name of two Byzantine empresses.

1. Euphrosyne, a daughter of Constantine VI. Although she had taken a monastic vow she became the second wife of Michael II. (*q.v.*), a marriage which was practically forced upon her by Michael, who was anxious to strengthen his claims to the throne by an alliance with the last representative of the Isaurian dynasty, and secured the compliance of senate and patriarch with his desire. No issue was born of this union, and after the death of her husband and accession of her stepson Theophilus Euphrosyne again retired into a convent.

2. Euphrosyne, the wife of Alexius III. (*q.v.*). After securing the election of her husband to the throne by wholesale bribery she virtually took the government into her hands and restored the waning influence of the monarchy over the nobles. In spite of her talent for government she went far to hasten the empire's downfall by her unbounded extravagance, and made the dynasty unpopular by her open profligacy, which went unpunished but for one short term of banishment. She followed her husband into exile in 1203 and died seven years later in Epirus.

EUPHUISM, the peculiar mode of speaking and writing brought into fashion in England towards the end of the reign of Elizabeth by the vogue of the fashionable romance of *Euphues*, published in 1578 by John Lyly. As early as 1570 Ascham in his *Schoolmaster* had said that "Euphues" (that is, a man well-endowed by nature, from the Gr. εὖ, φυή, well, growth) is "he that is apt by goodness of wit, and appliable by readiness of will, to learning, having all other qualities of the mind and parts of the body that must another day serve learning." Lyly adopted this word as the name of the hero of his romance, and it is with him that the vogue of Euphuism began. John Lyly, "always averse to the crabbed studies of logic and philosophy, and his genie being naturally bent to the pleasant paths of poetry," devoted himself exclusively to the service of the ladies, a thing absolutely unprecedented in English literature. He addressed himself to "the gentlewomen of England," and he had the audacity, in that grave age, to say that he would rather see his books "lie shut in a lady's casket than open in a scholar's study." In order to attain this object, he set himself to create a superfine style in writing, and to illustrate this in his compositions. He undertook to produce a pleasurable literature for the boudoir and the bower. Lyly was twenty-six when he published in 1579 the first part of *Euphues: the Anatomy of Wit*; a second part, entitled *Euphues and his England*, appeared in 1580. His object was diametrically opposed to that of writers who had striven to instruct, reprove or edify their contemporaries. Lyly, assuming that women only will read his book, says:—"After dinner, you may overlook it to keep you from sleep, or if you be heavy to bring you asleep, for to work upon a full stomach is against physic, and therefore better were it to hold *Euphues* in your hands, though you let him fall when you be willing to wink, than to sew in a closet and prick your fingers when you begin to read."

For a comprehension of the nature of Euphuism it is necessary to remember that the object of its invention was to attract and to disarm the ladies by means of an ingenious and playful style, of high artificiality, which should give them the idea that they were being entertained by an enthusiastic adorer, not instructed by a solemn pedagogue, For fifty years the romance of *Euphues* retained its astonishing popularity. As late as 1632 the publisher Edward Blount (1560?-1632), recalling the earliest enthusiasm of the public, wrote of John Lyly, "Oblivion shall not so trample on a son of the Muses, and such a son as they called their darling. Our nation are in his debt for a new English which he taught them. *Euphues and his England* began first that language. All our ladies were then his scholars, and that beauty in Court, which could not parley Euphuism, was as little regarded, as she which, now there, speaks not French." Among those who applied themselves to this "new English," one of the most ardent was Queen Elizabeth herself, who has been styled by J.R. Green "the most affected and destestable of euphuists." At the height of the popularity of this strange dialect, it was said by William Webbe, in his *Discourse of English Poetry* (1586), to consist in a combination of "singular eloquence and brave composition of apt words and sentences, in fit phrases, in pithy sentences, in gallant tropes, in flowing speech," while a French poet of the same age calls Lyly a "raffineur" of the English speech; another panegyrist describes him as "*alter Tullius*," meaning that, in inventing Euphuism, he had introduced into English the refinements of a Ciceronian style.

When we put aside these excessive compliments, and no less the attacks from which the style suffered as soon as it began to go out of fashion, we are able to observe merits as well as faults in this very curious experiment. Euphuism did not attempt to render the simplicity of nature. On the contrary, in order to secure refinement, it sought to be as affected, as artificial, as high-pitched as possible. Its most prominent feature was an incessant balancing of phrases in chains of antitheses, thus:—"Though the tears of the hart be salt, yet the tears of the boar be sweet, and though the tears of some women be counterfeit to deceive, yet the tears of many be current to try their love"; or this: —"Reject it not because it proceedeth from one which hath been lewd, no more than ye would neglect the gold because it lieth in the dirty earth, or the pure wine for that it cometh out of a homely presse, or the precious stone *aetites* which is found in the filthy nests of the eagle, or the precious gem *draconites*, that is ever taken out of the poisoned dragon." This second excerpt, moreover, suggests another of the main characteristics of Euphuism, the incessant use, for purposes of ornament, of similes taken from fabulous records of zoology, or relating to mythical birds, fishes or minerals. This was a feature of the "new English" which was excessively admired, and copied with a

senseless extravagance. Instances of it are found on every page of Lyly's books, thus:—"Although the worm entereth almost into every wood, yet he eateth not the cedar-tree; though the stone *cylindrus* at every thunder-clap roll from the hill, yet the pure sleek stone mounteth at the noise; though the rust fret the hardest steel, yet doth it not eat into the emerald; though polypus change his hue, yet the salamander keepeth his colour"; and so on, *ad infinitum*. That lady was considered most proficient in euphuism who could keep up longest these chains of similes taken out of fabulous natural history. Alliteration was also a particular ornament of the euphuistic style, as: "The bavin, though it burn bright, is but a blaze," but the use of this artifice by Lyly himself was rarely exaggerated; for instances of its excess we have rather to turn to his imitators. In the following passage the typical forms of Euphuism, in its pure and original conditions, are so combined and illustrated as to require no further commentary: "Do we not commonly see that in painted pots is hidden the deadliest poison? that in the greenest grass is the greatest serpent? in the clearest water the ugliest toad? Doth not experience teach us that in the most curious sepulchre are enclosed rotten bones? that the cypress tree beareth a fair leaf, but no fruit? that the ostrich carrieth fair feathers, but rank flesh?"—and so forth. It will be noticed that these characteristics differ in many respects from the specimens of euphuism which are most familiar to a modern reader, namely the extravagant speech placed in the mouth of Sir Piercie Shafton in Sir Walter Scott's romance of *The Monastery*. Scott modelled this character on what he called that "forgotten and obsolete model of folly, once fashionable," Lyly's novel of *Euphues*, but he had not studied the original to sufficient purpose, and the bombastic ravings of Sir Piercie, who simply talks like a lunatic, have deceived many readers as to the real characteristics of Euphuism. Scott betrays his own error when he says that "the extravagance of Euphuism ... predominates in the romances of Calprenède and Scuderi," in which it is true that a tone of preposterous gallantry finds a language of its own, but that is not the language of Euphues. What Sir Piercie Shafton talks is a mixture of the style of these French romances, with the ostentation of Sir Fopling Flutter and the extravagances of the Scotch translator of Rabelais. But these various sorts of pretentious eloquence have little or nothing in common with the balanced and conceited style of Euphues.

We find that the genuine sort of this kind of superfine conversation was originally called "Euphues," simply, as Overbury speaks of a man "who speaks Euphues, not so gracefully as heartily." The earliest instance of the word "Euphuism" which has been traced occurs in a letter, written by Gabriel Harvey in 1592, when he speaks of a man, who would be smart, as talking "a little Euphuism." Dekker, in the *Gull's Hornbook* of 1609, uses the word as an adjective, and denounces "Euphuised gentlewomen." When the practice was going out of fashion we find it thus severely stigmatized by Michael Drayton, a poet who had little sympathy with the artificial refinement of Lyly. In an elegy, printed in 1627, Drayton refers to the merit of Sir Philip Sidney, who recalled English prose to sanity, and

> "did first reduce
> Our tongue from Lyly's writings then in use,
> Talking of stones, stars, plants, of fishes, flies,
> Playing with words and idle similes,
> As th' English apes and very zanies be
> Of everything that they do hear and see,
> So imitating his ridiculous tricks
> They spake and writ, all like mere lunatics."

This severe censure of Euphuism may serve to remind us that hasty critics have committed an error in supposing the *Arcadia.* of Sidney to be composed in the fashionable jargon. That was certainly not the intention of the author, and in fact the publication of the *Arcadia*, eleven years after that of *Euphues*, marks the beginning of the downfall of the popularity of the latter. Sidney's prose, it is true, was extremely ornamented, but it was instinct with romantic fancy, and it affected a chivalrous and florid fulness which was artificial enough, but wholly distinct from the more homely elegance of Euphuism as we have defined it. The publication of the *Arcadia* was a severe blow to the Euphuists. Immediately the ladies began to desert their former favourite, and the object at court became, as Ben Jonson noted, to "observe as pure a phrase and use as choice figures in ordinary conference as any be in the Arcadia." But, in the meantime, Lyly had found in Greene, Lodge, Dickenson, Nicholas Breton and others enthusiastic disciples who had learned all the formulas of Euphuism, and could bring them forth as fluently and elegantly as he could himself. 900
Nevertheless the trick wore out, with the taste that it had created, and by the close of the reign of James I. Euphuism had become a dead language.

Critics have not failed to insist, on the other hand, that a species of Euphuism existed before Euphues was thought of. It has been supposed that a translation of the familiar epistles, or, as they were called, the "Golden Letters," of a Spanish monk, Antonio de Guevara, led Lyly to conceive the extraordinary style which bears the name of his hero. Between 1574 and 1578 Edward Hellowes (fl. 1550-1600) translated into a very extravagant English prose three of the works of Guevara. Earlier than this, in 1557, Sir Thomas North had published a version of the same Spanish writer's *Reloj de Principes* (The Dial of Princes), a moral and philosophical romance which is not without a certain likeness in plan and language to *Euphues*. It is extremely difficult to know to what extent these translations, which were not strikingly unlike many other specimens of the ornamented English prose of their period, can be said to be responsible for the production of Euphuism. At all events no one can doubt that it was Lyly who concentrated the peculiarities of mannerism, and who gave to it the stamp of his own remarkable talent.

See Landmann, *Der Euphuismus* (1881); Arber's edition of *Euphues* (1869); R.W. Bond's *Complete Works of Lyly* (1902); Hallam, Jusserand, S. Lee, *passim*.

(E. G.)

EUPION (Gr. εὖ, well, πίων, fat), a hydrocarbon of the paraffin series, probably a pentane, C_5H_{12}, discovered by K. Reichenbach in wood-tar. It is also formed in the destructive distillation of many substances, as wood, coal, caoutchouc, bones, resin and the fixed oils. It is a colourless highly volatile and inflammable liquid, having at 20° C. a specific gravity of 0.65.

EUPOLIS (*c.* 446-411 B.C.), Athenian poet of the Old Comedy, flourished in the time of the Peloponnesian War. Nothing whatever is known of his personal history. With regard to his death, he is said to have been thrown into the sea by Alcibiades, whom he had attacked in one of his plays, but it is more likely that he died fighting for his country. He is ranked by Horace (*Sat.* i. 4, 1), along with Cratinus and Aristophanes, as the greatest writer of his school. With a lively and fertile fancy Eupolis combined a sound practical judgment; he was reputed to equal Aristophanes in the elegance and purity of his diction, and Cratinus in his command of irony and sarcasm. Although he was at first on good terms with Aristophanes, their relations subsequently became strained, and they accused each other, in most virulent terms, of imitation and plagiarism. Of the 17 plays attributed to Eupolis, with which he obtained the first prize seven times, only fragments remain. Of these the best known were: the *Kolakes*, in which he pilloried the spendthrift Callias, who wasted his substance on sophists and parasites; *Maricas*, an attack on Hyperbolus, the successor of Cleon, under a fictitious name; the *Baptae*, against Alcibiades and his clubs, at which profligate foreign rites were practised. Other objects of his attack were Socrates and Cimon. The *Demoi* and *Poleis* were political, dealing with the desperate condition of the state and with the allied (or tributary) cities.

Fragments in T. Kock, *Comicorum Atticorum fragmenta*, i. (1880).

EUPOMPUS, the founder of the great school of painting which flourished in the 4th century at Sicyon in Greece. He was eclipsed by his successors, and is chiefly remembered for the advice which he is said to have given to Lysippus to follow nature rather than any master.

EURASIAN, a term originally confined to India, where for upwards of half a century it was used to denote children born of Hindu mothers and European (especially Portuguese) fathers. Following the geographical employment of the word *Eurasia* to describe the whole of the great land mass which is divided into the continents of Europe and Asia, Eurasian has come to be descriptive of any half-castes born of parents representing the races of the two continents. It has further an ethnological sense, A.H. Keane (*Ethnology*, 1896) proposing to find in the Eurasian Steppe the true home of the primitive Aryan groups. Joseph Deniker (*Anthropology*, 1900) makes a Eurasian group to include such peoples (Ugrians, Turko-Tatars, &c.) as are represented in both continents. Giuseppe Sergi, in his *Mediterranean Race* (London, 1901), uses Eurasiatic to denote that variety of man which "brought with it into Europe (from Asia in the later Neolithic period) flexional languages of Aryan or Indo-European type."

EURE, a department of north-western France, formed in 1790 from a portion of the old province of Normandy, together with the countship of Évreux and part of Perche. Pop. (1906) 330,140. Area, 2330 sq. m. It is bounded N. by the department of Seine Inférieure, W. by Calvados, S.W. by Orne, S. by Eure-et-Loir, and E. by Seine-et-Oise and Oise. The territory of Eure, which nowhere exceeds 800 ft. in altitude, is broken up by its rivers into well-wooded plateaus with a general inclination from south to north. Forests cover about one-fifth of the department. The Seine flows from S.E. to N.W. through the E. of the department, and after touching the frontier at two or three points forms near its mouth part of the northern boundary. All the rivers of the department flow into the Seine,—on the right bank the Andelle and the Epte, and on the left the Eure with its tributaries the Avre and the Iton, and the Risle with its tributary the Charentonne. The Eure, from which the department takes its name, rises in Orne, and flowing through Eure-et-Loir, falls into the Seine above Pont de l'Arche, after a course of 44 m. in the department. The Risle likewise rises in Orne, and flows generally northward to its mouth in the estuary of the Seine. The climate is mild, but moist and variable. The soil is for the most part clayey, resting on a bed of chalk, and is, in general, fertile and well tilled. The chief cereal cultivated is wheat; oats, colza, flax and beetroot are also grown. There is a wide extent of pasturage, on which are reared a considerable number of cattle and sheep, and especially those horses of pure Norman breed for which the department has long been celebrated. Fruit is very abundant, especially apples and pears, from which much cider and perry are made. The mineral products of Eure include freestone, marl, lime and brick-clay. The chief industries are the spinning of cotton and wool, and the weaving, dyeing and printing of fabrics of different kinds. Brewing, flour-milling, distilling, turnery, cotton-bleaching, cider-making, metal-founding, tanning, and the manufacture of glass, paper, iron ware, nails, pins, wind-instruments, bricks and sugar are also carried on. Coal and raw materials for its industries are the chief imports of Eure; its exports include cattle, poultry, eggs, butter, grain and manufactured goods. The department is served chiefly by the Western railway; the Seine, Eure and Risle provide 87 m. of navigable waterway. Eure is divided into the following arrondissements (containing 36 cantons, 700 communes):—Évreux, Louviers, Les Andelys, Bernay, and Pont-Audemer. Its capital is Évreux, which is the seat of a bishopric of the ecclesiastical province of Rouen. The department belongs to the III. Army Corps and to the académie (educational division) of Caen. Its court of appeal is at Rouen.

Évreux, Les Andelys, Bernay, Louviers, Pont-Audemer, Verneuil, Vernon and Gisors are the principal towns of the department. At Gaillon there are remains of a celebrated château of the archbishops of Rouen (see LOUVIERS). Pont de l'Arche has a fine Gothic church, with stained-glass windows of the 16th and 17th centuries; the church of Tillières-sur-Arvre is a graceful specimen of the Renaissance style. The churches of Conches (15th or 16th century) and of Rugles (13th, 15th and 16th centuries), and the château of Beaumesnil (16th century) are also of architectural interest.

EURE-ET-LOIR, an inland department of north-western France, formed in 1790 of portions of Orléanais and Normandy. Pop. (1906) 273,823. Area, 2293 sq. m. It is bounded N. by the department of Eure, W. by Orne and Sarthe, S. by Loir-et-Cher, S.E. by Loiret, and E. by Seine-et-Oise. The Perche in the south-west and the Thimerais in the north-west are districts of hills and valleys, woods, lakes and streams. The region of the east and south is a level and uniform expanse, consisting for the most part of the riverless but fertile plain of Beauce, sometimes called the "granary of France." The northern part of Eure-et-Loir is watered by the Eure, with its tributaries the Vègre, Blaise and Avre, a small western portion by the Huisne, and the south by the Loir with its tributaries the Conie and the Ozanne. The air is pure, the climate mild, dry and not subject to sudden changes. The soil consists, for the most part, either of clay intermixed with sand or of calcareous earth, and is on the whole fruitful. Agriculture is better conducted than in most of the departments of France, and the average yield per acre is greater. Cereals occupy half the surface, wheat and oats being chiefly cultivated. Among the other agricultural products are barley, hemp, flax and various vegetables, including good asparagus. Wine is not extensively produced, nor is it of the best quality; but in some parts, especially in the Perche, there is an abundant supply of apples, from which cider is made as the common drink of the inhabitants. The extensive meadows supply pasturage for a large number of cattle and sheep, and the horses raised in the Perche have a wide reputation as draught animals. Bee-farming is commonly prosecuted. The department produces lime, grindstones and brick-clay. The manufactures are not extensive; but there are flour- and saw-mills, tanneries and leather-works, copper and iron foundries, starch-works, dyeworks, distilleries, breweries and potteries; and agricultural implements, cotton and woollen goods, and yarn, hosiery, boots and shoes, sugar, felt hats and paper are made. Eure-et-Loir exports the products of its soil and live-stock; its imports include coal, wine and wearing apparel. It is served by the railways of the Western and the Orléans Companies and by those of the state, but it has no navigable waterways. The department has Chartres for its capital, and is divided into the arrondissements of Chartres, Châteaudun, Dreux and Nogent-le-Rotrou (24 cantons and 426 communes). It forms the diocese of Chartres (province of Paris), and belongs to the académie (educational division) of Paris and the region of the IV. Army Corps. Its court of appeal is at Paris.

Chartres, Dreux, Châteaudun, Nogent-le-Rotrou and Anet are the more noteworthy places in the department (*q.v.*). At Bonneval the lunatic asylum occupies the 18th-century buildings of a former Benedictine abbey. The abbey church belonged to the 13th century, but only a gateway flanked by two massive towers is left. The chateau of Maintenon dating from the 16th and 17th centuries was presented by Louis XIV. to Madame de Maintenon, by whom additions were made; the aqueduct (17th century) in the park was designed to carry the water of the Eure to Versailles, but was not completed. There is a fine château of the late 15th century, restored in modern tunes, at Montigny-le-Gannelon, and another of the 15th, 16th and 17th centuries, at one time the property of Sully, at Villebon. St Lubin-des-Joncherets has a handsome church of the 11th century, in which there are stained-glass windows dating from the 16th century.

EUREKA, a city, port of entry, and the county seat of Humboldt county, California, U.S.A., on the E. shore of Humboldt Bay. Pop. (1880) 2639; (1890) 4858; (1900) 7327 (2035 foreign-born); (1910) 11,845. It has a good harbour, greatly improved by the National government, and is connected with San Francisco, Portland and other coast ports by steamship lines. In 1909 a railway (the Northwestern Pacific), to connect Eureka with San Francisco, was under construction. The district owes its reputation as a health resort to its equable climate and to the protection afforded by the wide coast timber belt. Eureka is the principal point for the shipment of redwood lumber, and saw-milling is carried on here on an enormous scale. Several short railways run from Eureka and Arcata (pop. in 1900, 952) across the bay, into the forests, and bring lumber to the mills, most of which are in or near Eureka. Humboldt county was organized in 1853. Eureka was then already the centre of an important lumber trade, principally in spars. It was incorporated in 1856, displacing Union (now Arcata) as the county-seat in the same year.

EUREKA SPRINGS, a city and health resort, one of the county-seats—Berryville being the other—of Carroll county, in the extreme north-western part of Arkansas, U.S.A., in the Ozark uplift, 1800 ft. above the sea-level. Pop. (1890) 3706; (1900) 3572 (142 of negro descent); (1910) 3228. There is a transient population of thousands of visitors during the year. The city is built picturesquely on the sides of a gulch, down which runs the Missouri & North Arkansas railway. A creek running through the city empties into the White river, only a few miles distant. The surrounding country varies in character from mountains to rolling prairie. The encircling hills are laden with a covering of pine. The normal mean temperature for the year is about 59° F. (42° F. in winter, 61° F. in spring, 75° F. in summer, and 58° F. in autumn); the average rainfall, about 33 in. The atmosphere is dry and clear. Apart from its share in the agricultural interests of the surrounding region,—devoted mainly to Indian corn, small grains and fruits,—the entire economy of Eureka Springs centres in its medicinal springs, more than forty of which, lying within the corporate limits, are held in trust by the city for the free use of the public. The temperature of the springs varies from about 57° F. to 64° F. Each gallon of their waters contains about 28.5 cub. in. of gaseous matter and from 6 to 9 grains of solids held in solution. The city waterworks are owned by the municipality. The springs have been exploited since 1879, when the first settlement was made. The city was chartered in 1880.

EURIPIDES (480-406 B.C.), the great Greek dramatic poet, was born in 480 B.C., on the very day, according to the legend, of the Greek victory at Salamis, where his Athenian parents had taken refuge; and a whimsical fancy has even suggested that his name—*son of Euripus*—was meant to commemorate the first check of the Persian fleet at Artemisium. His father Mnesarchus was at least able to give him a liberal education; it was a favourite taunt with the comic poets that his mother Clito had been a herb-seller—a quaint instance of the tone which public satire could then adopt with plausible effect. At first he was intended, we are told, for the profession of an athlete,—a calling of which

he has recorded his opinion with something like the courage of Xenophanes. He seems also to have essayed painting; but at five-and-twenty he brought out his first play, the *Peliades*, and thenceforth he was a tragic poet. At thirty-nine he gained the first prize, and in his career of about fifty years he gained it only five times in all. This fact is perfectly consistent with his unquestionably great and growing popularity in his own day. Throughout life he had to compete with Sophocles, and with other poets who represented tragedy of the type consecrated by tradition. The hostile criticism of Aristophanes was witty; and, moreover, it was true, granting the premise from which Aristophanes starts, that the tragedy of Aeschylus and Sophocles is the only right model. Its unfairness, often extreme, consists in ignoring the changing conditions of public feeling and taste, and the possibilities, changed accordingly, of an art which could exist only by continuing to please large audiences. It has usually been supposed that the unsparing derision of the comic poets contributed not a little to make the life of Euripides at Athens uncomfortable; and there is certainly one passage in a fragment of the *Melanippe* (Nauck, Frag., 495), which would apply well enough to his persecutors:—

> ἀνδρῶν δὲ πολλοὶ τοῦ γέλωτος οὕνεκα
> ἀσκοῦσι χάριτας κερτόμους ἐγὼ δέ πως
> μισῶ γελοίους, οἵτινες σοφῶν πέρι
> ἀχάλιν᾽ ἔχουσι στόματα.
>
> (To raise vain laughter, many exercise
> The arts of satire; but my spirit loathes
> These mockers whose unbridled mockery
> Invades grave themes.)

The infidelity of two wives in succession is alleged to explain the poet’s tone in reference to the majority of their sex, and to complete the picture of an uneasy private life. He appears to have been repelled by the Athenian democracy, as it tended to become less the rule of the people than of the mob. Thoroughly the son of his day in intellectual matters, he shrank from the coarser aspects of its political and social life. His best word is for the small farmer (αὐτουργός), who does not often come to town, or soil his rustic honesty by contact with the crowd of the market-place.

About 409 B.C. Euripides left Athens, and after a residence in the Thessalian Magnesia repaired, on the invitation of 902
King Archelaus, to the Macedonian court, where Greeks of distinction were always welcome. In his *Archelaus* Euripides celebrated that legendary son of Temenus, and head of the Temenid dynasty, who bad founded Aegae; and in one of the meagre fragments he evidently alludes to the beneficent energy of his royal host in opening up the wild land of the North. It was at Pella, too, that Euripides composed or completed, and perhaps produced, the *Bacchae*. Jealous courtiers, we are told, contrived to have him attacked and killed by savage dogs. It is odd that the fate of Actaeon should be ascribed, by legend, to two distinguished Greek writers, Euripides and Lucian; though in the former case at least the fate has not such appropriateness as the Byzantine biographer discovers in the latter, on the ground that its victim “had waxed rabid against the truth.” The death of Euripides, whatever its manner, occurred in 406 B.C., when he was seventy-four. Sophocles followed him in a few months, but not before he had been able to honour the memory of his younger rival by causing his actors to appear with less than the full costume of the Dionysiac festival. Soon afterwards, in the *Frogs*, Aristophanes pronounced the epitaph of Attic comedy on Attic tragedy.

The historical interest of such a life as that of Euripides consists in the very fact that its external record is so scanty —that, unlike Aeschylus or Sophocles, he had no place in the public action of his time, but dwelt apart as a student and a thinker. He has made his Medea speak of those who, through following quiet paths, have incurred the reproach of apathy (ῥᾳθυμίαν). Undoubtedly enough of the old feeling for civic life remained to create a prejudice against one who held aloof from the affairs of the city. Quietness (ἀπραγμοσύνη), in this sense, was still regarded as akin to indolence (ἀργία). Yet here we see how truly Euripides was the precursor of that near future which, at Athens, saw the more complete divergence of society from the state.

In an age which is not yet ripe for reflection or for the subtle analysis of character, people are content to express in general types those primary facts of human nature which strike every one. Achilles will stand well enough for the young chivalrous warrior, Odysseus for the man of resource and endurance. In the case of the Greeks, these types had not merely an artistic and a moral interest; they had, further, a religious interest, because the Greeks believed that the epic heroes, sprung from the gods, were their own ancestors. Greek tragedy arose when the choral worship of Dionysus, the god of physical rapture, had engrafted upon it a dialogue between actors who represented some persons of the legends consecrated by this faith. The dramatist was accordingly obliged to refrain from multiplying those minute touches which, by individualizing the characters too highly, would detract from their general value as types in which all Hellenic humanity could recognize its own image glorified and raised a step nearer to the immortal gods. This necessity was further enforced by the existence of the chorus, the original element of the drama, and the very essence of its nature as an act of Dionysiac worship. Those utterances of the chorus, which to the modern sense are so often platitudes, were not so to the Greeks, just because the moral issues of tragedy were felt to have the same typical generality as these comments themselves.

An unerring instinct keeps both Aeschylus and Sophocles within the limits imposed by this law. Euripides was only fifteen years younger than Sophocles. But, when Euripides began to write, it must have been clear to any man of his genius and culture that, though an established prestige might be maintained, a new poet who sought to construct tragedy on the old basis would be building on sand. For, first, the popular religion itself—the very foundation of tragedy—had been undermined. Secondly, scepticism had begun to be busy with the legends which that religion consecrated. Neither gods nor heroes commanded all the old unquestioning faith. Lastly, an increasing number of the audience in the theatre began to be destitute of the training, musical and poetical, which had prepared an earlier generation to enjoy the chaste and placid grandeur of ideal tragedy.

Euripides made a splendid effort to maintain the place of tragedy in the spiritual life of Athens by modifying its interests in the sense which his own generation required. Could not the heroic persons still excite interest if they were made more real,—if, in them, the passions and sorrows of every-day life were portrayed with greater vividness and directness? And might not the less cultivated part of the audience at least enjoy a thrilling plot, especially if taken from the home-legends of Attica? Euripides became the virtual founder of the romantic drama. In so far as his work fails, the failure is one which probably no artistic tact could then have wholly avoided. The frame within which he had to work was one which could not be stretched to his plan. The chorus, the masks, the narrow stage, the conventional costumes, the slender opportunities for change of scenery, were so many fixed obstacles to the free development of tragedy in the new direction. But no man of his time could have broken free from these traditions; in attempting to do so he must have wrecked either his fame or his art. It is not the fault of Euripides if in so much of his

work we feel the want of harmony between matter and form. Art abhors compromise; and it was the misfortune of Attic tragedy in his generation that nothing but a compromise could save it. Two devices have become common phrases of reproach against him—the prologue and the *deus ex machina*. Doubtless the prologue is a slipshod and sometimes ludicrous expedient. But the audiences of his days were far from being so well versed as their fathers in the mythic lore, and, on the other hand, a dramatist who wished to avoid trite themes had now to go into the byways of mythology. A prologue was often perhaps desirable or necessary for the instruction of the audience. As regards the *deus ex machina*, a distinction should be observed between those cases in which the solution is really mechanical, as in the *Andromache* and perhaps the *Orestes*, and those in which it is warranted or required by the plot, as in the *Hippolytus* and the *Bacchae*. The choral songs in Euripides, it may be granted, have often nothing to do with the action. But the chorus was the greatest of difficulties for a poet who was seeking to present drama of romantic tendency in the plastic form consecrated by tradition. So far from censuring Euripides on this score, we should be disposed to regard his management of the chorus as a signal proof of his genius, originality and skill.

Works.

Euripides is said to have written 92 dramas, including 8 satyr-plays. The best critics of antiquity allowed 75 as genuine. Nauck has collected 1117 Euripidean fragments. Among these, numbers 1092-1117 are doubtful or spurious; numbers 842-1091 are from plays of uncertain title; numbers 1-841 represent fifty-five lost pieces, among which some of the best known are the *Andromeda, Antiope*,[1] *Bellerophon, Cresphontes, Erechtheus, Oedipus, Phaëthon*, and *Telephus*.

1. The *Alcestis*, as the didascaliae tell us, was brought out in Ol. 85. 2, *i.e.* at the Dionysia in the spring of 438 B.C., as the fourth play of a tetralogy comprising the *Cretan Women*, the *Alcmaeon at Psophis*, and the *Telephus*. The *Alcestis* is altogether removed from the character, essentially grotesque, of a mere satyric drama. On the other hand, it has features which distinctly separate it from a Greek tragedy of the normal type. First, the subject belongs to none of the great cycles, but to a byway of mythology, and involves such strange elements as the servitude of Apollo in a mortal household, the decree of the fates that Admetus must die on a fixed day, and the restoration of the dead Alcestis to life. Secondly, the treatment of the subject is romantic and even fantastic,—strikingly so in the passage where Apollo is directly confronted with the daemonic figure of Thanatos. Lastly, the boisterous, remorseful, and generous Heracles makes, not, indeed, a satyric drama, but a distinctly satyric scene—a scene which, in the frank original, hardly bears the subtle interpretation which in *Balaustion* is hinted by the genius of Browning, that Heracles got drunk in order to keep up other people's spirits. When the happy ending is taken into account, it is not surprising that some should have called the *Alcestis* a tragi-comedy. But we cannot so regard it. The slight and purely incidental strain of comedy is but a moment of relief between the tragic sorrow and terror of the opening and the joy, no less solemn, of the conclusion. In this respect the *Alcestis* might more truly be compared to such a drama as the *Winter's Tale*; the loss and recovery of Hermione by Leontes do not form a tragi-comedy because we are amused between-whiles by Autolycus and the clown. It does not seem improbable that the *Alcestis*—the earliest of the extant plays—may represent an attempt to substitute for the old satyric drama an after-piece of a kind which, while preserving a satyric element, should stand nearer to tragedy. The taste and manners of the day were perhaps tiring of the merely grotesque entertainment that old usage appended to the tragedies; just as, in the sphere of comedy, we know from Aristophanes that they were tiring of broad buffoonery. An original dramatist may have seen an opportunity here. However that may be, the *Alcestis* has a peculiar interest for the history of the drama. It marks in the most signal manner, and perhaps at the earliest moment, that great movement which began with Euripides,—the movement of transition from the purely Hellenic drama to the romantic.

2. The *Medea* was brought out in 431 B.C. with the *Philoctetes*, the *Dictys*, and a lost satyr-play called the *Reapers* (*Theristae*). Euripides gained the third prize, the first falling to Euphorion, the son of Aeschylus, and the second to Sophocles. If it is true that Euripides modelled his *Medea* on the work of an obscure predecessor, Neophron, at least he made the subject thoroughly his own. Hardly any play was more popular in antiquity with readers and spectators, with actors, or with sculptors. Ennius is said to have translated and adopted it. We do not know how far it may have been used by Ovid in his lost tragedy of the same name; but it certainly inspired the rhetorical performance of Seneca, which may be regarded as bridging the interval between Euripides and modern adaptations. We may grant at once that the *Medea* of Euripides is not a faultless play; that the dialogue between the heroine and Aegeus is not happily conceived; that the murder of the children lacks an adequate dramatic motive; that there is something of a moral anti-climax in the arrangements of Medea, before the deed, for her personal safety. But the *Medea* remains a tragedy of first-rate power. It is admirable for the splendid force with which the character of the strange and strong-hearted woman, a barbarian friendless among Hellenes, is thrown out against the background of Hellenic life in Corinth.

3. The extant *Hippolytus* (429 B.C.)—sometimes called *Stephanephoros*, the "wreath-bearer," from the garland of flowers which, in the opening scene, the hero offers to Artemis—was not the first drama of Euripides on this theme. In an earlier play of the same name, we are told, he had shocked both the moral and the aesthetic sense of Athens. In this earlier *Hippolytus*, Phaedra herself had confessed her love to her step-son, and, when repulsed, had falsely accused him to Theseus, who doomed him to death; at the sight of the corpse, she had been moved to confess her crime, and had atoned for it by a voluntary death. This first *Hippolytus* is cited as *Hippolytus the Veiled* (καλυπτόμενος), either, as Toup and Welcker thought, from Hippolytus covering his face in horror, or, as Bentley with more likelihood suggested, because the youth's shrouded corpse was brought upon the scene. It can scarcely be doubted that the chief dramatic defect of our *Hippolytus* is connected with the unfavourable reception of its predecessor. Euripides had been warned that limits must be observed in the dramatic portrayal of a morally repulsive theme. In the later play, accordingly, the whole action is made to turn on the jealous feud between Aphrodite, the goddess of love, and Artemis, the goddess of chastity. Phaedra not only shrinks from breathing her secret to Hippolytus, but destroys herself when she learns that she is rejected. But the natural agency of human passion is now replaced by a supernatural machinery; the slain son and the bereaved father are no longer the martyrs of sin, the tragic witnesses of an inexorable law; rather they and Phaedra are alike the puppets of a divine caprice, the scapegoats of an Olympian quarrel in which they have no concern. But if the dramatic effect of the whole is thus weakened, the character of Phaedra is a fine psychological study; and, as regards form, the play is one of the most brilliant. Boeckh (*De tragoediae Graecae principiis*, p. 180 f.) is perhaps too ingenious in finding an allusion to the plague at Athens (430 B.C.) in the ὦ κακὰ θνητῶν στυγεραί τε νόσοι of v. 177, and in v. 209 f.; but it can scarcely be doubted that he is right in suggesting that the closing words of Theseus (v. 1460)

ὦ κλείν᾽ Ἀθηνῶν Παλλάδος θ᾽ ὁρίσματα, οἵου στερήσεσθ᾽ ἀνδρός,

and the reply of the chorus, κοινὸν τόδ᾽ ἄχος, &c., contain a reference to the recent death of Pericles (429 B.C.).

4. The *Hecuba* may be placed about 425 B.C. Thucydides (iii. 104) notices the purification of Delos by the Athenians, and the restoration of the Panionic festival there, in 426 B.C.—an event to which the choral passage, v. 462 f., probably refers. It appears more hazardous to take v. 650 f. as an allusion to the Spartan mishap at Pylos. The subject of the play is the revenge of Hecuba, the widowed queen of Priam, on Polymestor, king of Thrace, who had murdered her youngest son Polydorus, after her daughter Polyzena had already been sacrificed by the Greeks to the shade of Achilles. The two calamities which befall Hecuba have no direct connexion with each other. In this sense the play

lacks unity of design. On the other hand, both events serve the same end—viz. to heighten the tragic pathos with which the poet seeks to surround the central figure of Hecuba. The drama illustrates the skill with which Euripides, while failing to satisfy the requirements of artistic drama, could sustain interest by an ingeniously woven plot. It is a representative *Intriguenstück*, and well exemplifies the peculiar power which recommended Euripides to the poets of the New Comedy.

5. The *Andromache*, according to a notice in the *scholia Veneta* (446), was not acted at Athens, at least in the author's life-time; though some take the words in the Greek argument (τὸ δρᾶμα τῶν δευτέρων) to mean that it was among those which gained a second prize. The invective on the Spartan character which is put into the mouth of Andromache contains the words, ἀδίκως εὐτυχεῖτ᾽ ἀν᾽ Ἑλλάδα, and this, with other indications, points to the Peloponnesian successes of the years 424-422 B.C. Andromache, the widow of Hector, has become the captive and concubine of Neoptolemus, son of Achilles. During his absence, her son Molossus is taken from her, with the aid of Menelaus, by her jealous rival Hermione. Mother and son are rescued from death by Peleus; but meanwhile Neoptolemus is slain at Delphi through the intrigues of Orestes. The goddess Thetis now appears, ordains that Andromache shall marry Helenus, and declares that Molossus shall found a line of Epirote kings, while Peleus shall become immortal among the gods of the sea. The *Andromache* is a poor play. The contrasts, though striking, are harsh and coarse, and the compensations dealt out by the *deus ex machina* leave the moral sense wholly unsatisfied. Technically the piece is noteworthy as bringing on the scene four characters at once—Andromache, Molossus, Peleus and Menelaus (v. 545 f.).

6. The *Ion* is an admirable drama, the finest of those plays which deal with legends specially illustrating the traditional glories of Attica. It is also the most perfect example of the poet's skill in the structure of dramatic intrigue. For its place in the chronological order there are no data except those of style and metre. Judging by these, Hermann would place it "neither after Ol. 89, nor much before"—*i.e.* somewhere between 424 and 421 B.C.; and this may be taken as approximately correct. The scene is laid throughout at the temple of Delphi. The young Ion is a priest in the temple of Delphi when Xuthus and his wife Creusa, daughter of Erechtheus, come to inquire of the god concerning their childlessness; and it is discovered that Ion is the son of Creusa by the god Apollo. Athena herself appears, and commands that Ion shall be placed on the throne of Athens, foretelling that from him shall spring the four Attic tribes, the Teleontes (priests), Hopletes (fighting-men), Argadeis (husbandmen) and Aigikoreis (herdsmen). The play must have been peculiarly effective on the Athenian stage, not only by its situations, but through its appeal to Attic sympathies.

7. The *Suppliants* who give their name to the play are Argive women, the mothers of Argive warriors slain before the walls of Thebes, who, led by Adrastus, king of Argos, come as suppliants to the altar of Demeter at Eleusis. Creon, king of Thebes, has refused burial to their dead sons. The Athenian king Theseus demands of Creon that he shall grant the funeral rites; the refusal is followed by a battle in which the Thebans are vanquished, and the bodies of the Argive dead are then brought to Eleusis. At the close the goddess Athena appears, and ordains that a close alliance shall be formed between Athens and Argos. Some refer the play to 417 B.C., when the democratic party at Athens rose against the oligarchs. But a more probable date is 420 B.C., when, through the agency of Alcibiades, Athens and Argos concluded a defensive alliance. The play has a strongly marked rhetorical character, and is, in fact, a panegyric, with an immediate political aim, on Athens as the champion of humanity against Thebes.

8. The *Heracleidae*—a companion piece to the *Suppliants*, and of the same period—is decidedly inferior in merit. Here, too, there are direct references to contemporary history. The defeat of Argos by the Spartans in 418 B.C. strengthened the Argive party who were in favour of discarding the Athenian for the Spartan alliance (Thuc. v. 76). In the *Heracleidae*, the sons of the dead Heracles, persecuted by the Argive Eurystheus, are received and sheltered at Athens. Thus, while Athens is glorified, Sparta, whose kings are descendants of the Heracleidae, is reminded how unnatural would be an alliance between herself and Argos.

9. The *Heracles Mainomenos*[2] (*Hercules Furens*), which, on grounds of style, can scarcely be put later than 420-417 B.C., shares with the two last plays the purpose of exalting Athens in the person of Theseus. Heracles returns from Hades—whither, at the command of Eurystheus, he went to bring back Cerberus—just in time to save his wife Megara and his children from being put to death by Lycus of Thebes, whom he slays. As he is offering lustral sacrifice after the deed, he is suddenly stricken with madness by Lyssa (Fury), the daemonic agent of his enemy the goddess Hera, and in his frenzy he slays his wife and children. Theseus finds him, in his agony of despair, about to kill himself, and persuades him to come to Athens, there to seek grace and pardon from the gods. The unity of the plot may be partly vindicated by observing that the slaughter of Lycus entitled Heracles to the gratitude of Thebes, whereas the slaughter of his own kinsfolk made it unlawful that he should remain there; thus, having found a refuge only to lose it, Heracles has no hope left but in Athens, whose praise is the true theme of the entire drama.

10. *Iphigenia among the Tauri*, which metre and diction mark as one of the later plays, is also one of the best— 904
excellent both in the management of a romantic plot and in the delineation of character. The scene is laid at the temple of Artemis in the Tauric Chersonese (the Crimea)—on the site of the modern Balaklava. Iphigenia, who had been doomed to die at Aulis for the Greeks, had been snatched from that death by Artemis, and had become priestess of the goddess at the Tauric shrine, where human victims were immolated. Two strangers, who had landed among the Tauri, have been sentenced to die at the altar. She discovers in them her brother Orestes and his friend Pylades. They plan an escape, are recaptured, and are finally delivered by the goddess Athena, who commands Thoas, king of the land, to permit their departure. Iphigenia, Orestes and Pylades return to Greece, and establish the worship of the Tauric Artemis at Brauron and Halae in Attica. The drama of Euripides necessarily suggests a comparison with that of Goethe; and many readers will probably also feel that, while Goethe is certainly not inferior in fineness of ethical portraiture, he has the advantage in his management of the catastrophe. But it is only just to Euripides to remember that, while his competitor had free scope of treatment, he, a Greek dramatist, was bound to the motive of the Greek legend, and was obliged to conclude with the foundation of the Attic worship.

11. The *Troades* appeared in 415 B.C. along with the *Alexander*, the *Palamedes*, and a satyr-play, the *Sisyphus*. It is a picture of the miseries endured by noble Trojan dames—Hecuba, Andromache, Cassandra—immediately after the capture of Troy. There is hardly a plot in the proper sense—only an accumulation of sorrows on the heads of the passive sufferers. The piece is less a drama than a pathetic spectacle, closing with the crash of the Trojan towers in flame and ruin. The *Troades* is indeed remarkable among Greek tragedies for its near approach to the character of melodrama. It must be observed that there is no ground for the inference—sometimes made an accusation against the poet—that the choral passage, v. 794 f., was intended to encourage the Sicilian expedition, sent forth in the same year (415 B.C.). The mention of the "land of Aetna over against Carthage" (v. 220) speaks of it as "renowned for the trophies of prowess"—a topic, surely, not of encouragement but of warning.

12. The *Helena*—produced, as we learn from the Aristophanic scholia, in 412 B.C., the year of the lost *Andromeda*—is not one of its author's happier efforts. It is founded on a strange variation of the Trojan myth, first adopted by Stesichorus in his Palinode—that only a wraith of Helen passed to Troy, while the real Helen was detained in Egypt. In this play she is rescued from the Egyptian king, Theoclymenus, by a ruse of her husband Menelaus, who brings her safely back to Greece. The romantic element thus engrafted on the Greek myth is more than fantastic: it is well-nigh

grotesque. The comic poets—notably Aristophanes in the *Thesmophoriazusae*—felt this; nor can we blame them if they ridiculed a piece in which the mode of treatment was so discordant with the spirit of Greek tradition, and so irreconcilable with all that constituted the higher meaning of Greek tragedy.

13. The *Phoenissae* was brought out, with the *Oenomaus* and the *Chrysippus*, in 411 B.C., the year in which the recall of Alcibiades was decreed by the army at Samos, and, after the fall of the Four Hundred, ratified by the Assembly at Athens (Thuc. viii. 81, 97). The dialogue between Iocaste and Polynices on the griefs of banishment (τἰ τὸ στέρεσθαι πατρίδος, v. 388 f.) has a certain emphasis which certainly looks like an allusion to the pardon of the famous exile. The subject of the play is the same as that of the Aeschylean *Seven against Thebes*—the war of succession in which Argos supported Polynices against his brother Eteocles. The Phoenician maidens who form the chorus are imagined to have been on their way from Tyre to Delphi, where they were destined for service in the temple, when they were detained at Thebes by the outbreak of the war—a device which affords a contrast to the Aeschylean chorus of Theban elders, and which has also a certain fitness in view of the legends connecting Thebes with Phoenicia. But Euripides has hardly been successful in the rivalry—which he has even pointed by direct allusions—with Aeschylus. The *Phoenissae* is full of brilliant passages, but it is rather a series of effective scenes than an impressive drama.

14. Plutarch (*Lys.* 15) says that, when Athens had surrendered to Lysander (404 B.C.) and when the fate of the city was doubtful, a Phocian officer happened to sing at a banquet of the leaders the first song of the chorus in the Electra of Euripides—

Ἀγαμέμνονος ὦ κόρα,
ἦλυθου, Ἠλέκτρα, ποπὶ σὰν ἀγροτέραν αὐλάν,

and that "when they heard it, all were touched, so that it seemed a cruel deed to destroy for ever the city so famous once, the mother of such men." The character of the *Electra*, in metre and in diction, seems to show that it belongs to the poet's latest years. If Müller were right in referring to the Sicilian expedition the closing passage in which the Dioscuri declare that they haste "to the Sicilian sea, to save ships upon the deep" (v. 1347), then the play could not be later than 413 B.C. But it may with more probability be placed shortly before the *Orestes*, which in some respects it much resembles: perhaps in or about the year 410 B.C. No play of Euripides has been more severely criticized. The reason is evident. The *Choephori* of Aeschylus and the *Electra* of Sophocles appear to invite a direct comparison with this drama. But, as R.C. Jebb suggested,[3] such criticism as that of Schlegel should remember that works of art are proper subjects of direct comparison only when the theories of art which they represent have a common basis. It is surely unmeaning to contrast the elaborate homeliness of the Euripidean *Electra* with the severe grandeur of its rivals. Aeschylus and Sophocles, as different exponents of an artistic conception which is fundamentally the same, may be profitably compared; Euripides interprets another conception, and must be tried by other principles. His *Electra* is, in truth, a daring experiment—daring, because the theme is one which the elder school had made peculiarly its own.

15. The *Orestes*, acted in 408, bears the mark of the age in the prominence which Euripides gives to the assembly of Argos—which has to decide the fate of Orestes and Electra—and to rhetorical pleading. The plot proceeds with sufficient clearness to the point at which Orestes and Electra have been condemned to death. But the later portion of the play, containing the intrigues for their rescue and the final achievement of their deliverance, is both too involved and too inconsequent for a really tragic effect. Just as in the *Electra*, the heroic persons of the drama are reduced to the level of commonplace. There is not a little which borders on the ludicrous, and it can be seen how easy would have been the passage from such tragedy as this to the restrained parody in which the Middle Comedy delighted. It is, however, inconceivable that, as some have supposed, the *Orestes* can have been a deliberate compromise between tragedy and farce. It cannot have been meant to be played, as a fourth piece, instead of a regular satyric drama. Rather it indicates the level to which the heroic tragedy itself had descended under the treatment of a school which was at least logical. The celebrity of the play in the ancient world—as Paley observes, there are more ancient quotations from the *Orestes* than from all the extant plays of Aeschylus and Sophocles together—is perhaps partly explained by the unusually frequent combination in this piece of striking sentiment with effective situation.

16. The *Iphigenia at Aulis*, like the *Bacchae*, was brought out only after the death of Euripides. It is a very brilliant and beautiful play,—probably left by the author in an unfinished state,—and has suffered from interpolation more largely, perhaps, than any other of his works. As regards its subject, it forms a prelude to the *Iphigenia in Tauris*. Iphigenia has been doomed by her father Agamemnon to die at Aulis, as Calchas declares that Artemis claims such a sacrifice before the adverse winds can fall.

The genuine play, as we have it, breaks off at v. 1508, when Iphigenia has been led to the sacrificial altar. A spurious epilogue, of wretched workmanship (v. 1509-1628), relates, in the speech of a messenger, how Artemis saved the maiden.

17. The *Bacchae*, unlike the preceding play, appears to have been finished by its author, although it is said not to have been acted, on the Athenian stage at least, till after his death. It was composed, or completed, during the residence of Euripides with Archelaus, and in all probability was originally designed for representation in Macedonia—a region with whose traditions of orgiastic worship the Dionysus myth was so congenial. The play is sometimes quoted as the *Pentheus*. It has been justly observed that Euripides seldom named a piece from the chorus, unless the chorus bore an important part in the action or the leading action was divided between several persons. Possibly, however, in this instance he may designedly have chosen a title which would at once interest the Macedonian public. *Pentheus* would suggest a Greek legend about which they might know or care little. The *Bacchae* would at once announce a theme connected with rites familiar to the northern land.

It is a magnificent play, alone among extant Greek tragedies in picturesque splendour, and in that sustained glow of Dionysiac enthusiasm to which the keen irony lends the strength of contrast. If Euripides had left nothing else, the *Bacchae* would place him in the first rank of poets, and would prove his possession of a sense rarely manifested by Greek poets,—perhaps by no one of his own contemporaries in equal measure except Aristophanes,—a feeling for natural beauty lit up by the play of fancy. R.Y. Tyrrell, in his edition of the *Bacchae*, has given the true answer to the theory that the *Bacchae* is a recantation. Euripides had never rejected the facts which formed the basis of the popular religion. He had rather sought to interpret them in a manner consistent with belief in a benevolent Providence. The really striking thing in the *Bacchae* is the spirit of contentment and of composure which it breathes,—as if the poet had ceased to be vexed by the seeming contradictions which had troubled him before. Nor should it be forgotten that, for the Greek mind of his age, the victory of Dionysus in the *Bacchae* carried a moral even more direct than the victory of Aphrodite in the *Hippolytus*. The great nature-powers who give refreshment to mortals cannot be robbed of their due tribute without provoking a nemesis. The refusal of such a homage is not, so the Greeks deemed, a virtue in itself: in the sight of the gods it may be only a cold form of ὕβρις, overweening self-reliance—the quality personified in Pentheus.

The *Bacchae* was always an exceptionally popular play—partly because its opportunities as a spectacle fitted it for

gorgeous representation, and so recommended it for performance at courts and on great public occasions. "Demetrius the Cynic" (says Lucian, *Adv. Indoctum*, 19) "saw an illiterate person at Corinth reading a very beautiful poem—the *Bacchae* of Euripides, I think it was; he was at the place where the messenger narrates the doom of Pentheus and the deed of Agave. Demetrius snatched the book from him and tore it up, saying, 'It is better for Pentheus to be torn up at once by me than to be mangled over and over again by you.'"

18. The *Cyclops*, of uncertain date, is the only extant example of a satyric drama. The plot is taken mainly from the story of Odysseus and Polyphemus in the 9th book of the *Odyssey*. In order to be really successful in farce of this kind, a poet should have a fresh feeling for the nature of the art parodied. It is because Euripides was not in accord with the spirit of the heroic myths that he is not strong in mythic travesty. His own tragedies—such as the *Helen*, the *Electra*, and the *Orestes*—had, in their several ways, contributed to destroy the meaning of satyric drama. They had done gravely very much what satyric drama aimed at doing grotesquely. They had made the heroic persons act and talk like ordinary men and women. The finer side of such parody had lost its edge; only broad comedy remained.

19. The *Rhesus* is still held by some to be what the didascaliae and the grammarians call it—a work of Euripides; and Paley has ably supported this view. But the scepticism first declared by Valcknaer has gained ground, and the *Rhesus* is now almost universally recognized as spurious. The art and the style, still more evidently the feeling and the mind, of Euripides are absent. If it cannot be ascribed to a disciple of his matured school, it is still less like the work of an Alexandrian. The most probable view seems to be that which assigns it to a versifier of small dramatic power in the latest days of Attic tragedy. It has this literary interest, that it is the only extant play of which the subject is directly taken from our *Iliad*, of which the tenth book—the Δολώνεια—has been followed by the playwright with a closeness which is sometimes mechanical.

When the first protests of the comic poets were over, Euripides was secure of a wide and lasting renown. As the old life of Athens passed away, as the old faiths lost their meaning and the peculiarly Greek instincts in art lost their truth and freshness, Aeschylus and Sophocles might cease to be fully enjoyed save by a few; but Euripides could still charm by qualities more readily and more universally recognized. The comparative nearness of his diction to the idiom of ordinary life rendered him less attractive to the grammarians of Alexandria than authors whose erudite form, afforded a better scope for the display of learning or the exercise of ingenuity. But there were two aspects in which he engaged their attention. They loved to trace the variations which he had introduced into the standard legends. And they sought to free his text from the numerous interpolations which even then had resulted from his popularity on the stage. Philochorus (about 306-260 B.C.), best known for his *Atthis*, dealt, in his treatise on Euripides, especially with the mythology of the plays. From 300 B.C. to the age of Augustus a long series of critics busied themselves with this poet. The first systematic arrangement of his reputed works is ascribed to Dicaearchus and Callimachus in the early part of the 3rd century B.C. Among those who furthered the exact study of his text, and of whose work some traces remain in the extant scholia, were Aristophanes of Byzantium, Callistratus, Apollodorus of Tarsus, Timachidas, and pre-eminently Didymus; probably also Crates of Pergamum and Aristarchus. At Rome Euripides was early made known through the translations of Ennius and the freer adaptations of Pacuvius. When Hellenic civilization was spread through the East, the mixed populations of the new settlements welcomed a dramatic poet whose taste and whose sentiment were not too severely or exclusively Attic. The Parthian Orodes and his court were witnessing the *Bacchae* of Euripides when the Agave of the hour was suddenly enabled to lend a ghastly reality to the terrible scene of frenzied triumph by displaying the gory head of the Roman Crassus. Mommsen has noted the moment as one in which the power of Rome and the genius of Greece were simultaneously abased in the presence of sultanism. So far as Euripides is concerned, the incident may suggest another and a more pleasing reflection; it may remind us how the charm of his humane genius had penetrated the recesses of the barbarian East, and had brought to rude and fierce peoples at least some dim and distant apprehension of that gracious world in which the great spirits of ancient Hellas had moved. A quaintly significant testimony to the popularity of Euripides is afforded by the Byzantine Χριστὸς πάσχων. This drama, narrating the events which preceded and attended the Passion, is a cento of no less than 2610 verses, taken from the plays of Euripides, principally from the *Bacchae*, the *Troades* and the *Rhesus*. The traditional ascription of the authorship to Gregory of Nazianzus is now generally rejected; another conjecture assigns it to Apollinaris of Laodicea, and places the date of composition at about A.D. 330.[4] Although the text used by the author of the cento may not have been a good one, the value of the piece for the diplomatic criticism of Euripides is necessarily very considerable; and it was diligently used both by Valcknaer and by Porson.

Literary history of Euripides.

Dante, who does not mention Aeschylus or Sophocles, places Euripides, with the tragic poets Antiphon and Agathon, and the lyrist Simonides, in the first circle of Purgatory (xxii. 106), among those

> "piùe
> Greci, che già di lauro ornar la fronte."

Casaubon, in a letter to Scaliger, salutes that scholar as worthy to have lived at Athens with Aristophanes and Euripides—a compliment which certainly implies respect for his correspondent's powers as a peacemaker. In popular literature, too, where Aeschylus and Sophocles were as yet little known, the 16th and 17th centuries testify to the favour bestowed upon Euripides. G. Gascoigne's and Francis Kinwelmersh's *Jocasta*, played at Gray's Inn in 1566, is a literal translation of Lodovico Dolce's *Giocasta*, which derives from the *Phoenissae*, probably through the Latin translation of R. Winter (Basel, 1541). Among early French translations from Euripides may be mentioned the version of the *Iphigenia in Tauris* by Thomas Sibilet in 1549, and that of the *Hecuba* by Bouchetel in 1550. About a century later Racine gave the world his *Andromaque*, his *Iphigénie* and his *Phèdre*; and many have held that, at least in the last-named of these, "the disciple of Euripides" has excelled his master. Bernhardy notices that the performance of the *Hippolytus* at Berlin in 1851 seemed to show that, for the modern stage, the *Phèdre* has the advantage of its Greek original. Racine's great English contemporary seems to have known and to have liked Euripides better than the other Greek tragedians. In the *Reason of Church Government* Milton certainly speaks of "those dramatic constitutions in which Sophocles and Euripides reign"; in the preface to his own drama, again, he joins the names of Aeschylus, Sophocles and Euripides,—"the three tragic poets unequalled yet by any." But the *Samson Agonistes* itself clearly shows that Milton's chief model in this kind was the dramatist whom he himself has called—as if to suggest the skill of Euripides in the delineation of pathetic women—"sad Electra's poet"; and the work bears a special mark of this preference in the use of Euripidean monodies. In the second half of the 18th century such men as J.J. Winckelmann (1717-1768) and G.E. Lessing (1729-1781) gave a new life to the study of the antique. Hitherto the art of the old world had been better known through Roman than through Greek interpreters. The basis of the revived classical taste had been Latin. But now men gained a finer perception of those characteristics which belong to the Greek work of the great time, a fuller sense of the difference between the Greek and the Roman genius where each is at its best, and generally a clearer recognition of the qualities which distinguish ancient art in its highest purity from modern romantic types. Euripides now became the object of criticism from a new point of view. He was compared

with Aeschylus and Sophocles as representatives of that ideal Greek tragedy which ranges with the purest type of sculpture. Thus tried, he was found wanting; and he was condemned with all the rigour of a newly illuminated zeal. B.G. Niebuhr (1776-1831) judged him harshly; but no critic approached A.W. Schlegel (1767-1845) in severity of one-sided censure. Schlegel, in fact, will scarcely allow that Euripides is tolerable except by comparison with Racine. L. Tieck (1773-1853) showed truer appreciation for a brother artist when he described the work of Euripides as the dawn of a romantic poetry haunted by dim yearnings and forebodings. Goethe—who, according to Bernhardy, knew Euripides only "at a great distance"—certainly admired him highly, and left an interesting memorial of Euripidean study in his attempted reconstruction of the lost *Phaëthon*. There are some passages in Goethe's conversations with Eckermann which form effective quotations against the Greek poet's real or supposed detractors. "To feel and respect a great personality, one must be something oneself. All those who denied the sublime to Euripides were either poor wretches incapable of comprehending such sublimity or shameless charlatans who, in their presumption, wished to make more of themselves than they were." "A poet whom Socrates called his friend, whom Aristotle lauded, whom Alexander admired, and for whom Sophocles and the city of Athens put on mourning on hearing of his death, must certainly have been some one. If a modern man like Schlegel must pick out faults in so great an ancient, he ought only to do it upon his knees" (J.A. Symonds, *Greek Poets*, i. 230). We yield to no one in admiration of Goethe; but we cannot think that these rather bullying utterances are favourable examples of his method in aesthetic discussion; nor have they any logical force except as against those—if there be any such—who deny that Euripides is a great poet. One of the most striking of modern criticisms on Euripides is the sketch by Mommsen in his history of Rome (bk. iii. ch. 14). It is, in our opinion, less than just to Euripides as an artist. But it indicates, with true historical insight, his place in the development of his art, the operation of those external conditions which made him what he was, and the nature of his influence on succeeding ages.

Manuscript tradition of Euripides.

The manuscript tradition of Euripides has a very curious and instructive history. It throws a suggestive light on the capricious nature of the process by which some of the greatest literary treasures have been saved or lost. Nine plays of Euripides were selected, probably in early Byzantine times, for popular and educational use. These were—*Alcestis, Andromache, Hecuba, Hippolytus, Medea, Orestes, Phoenissae, Rhesus, Troades*. This list includes at least two plays, the *Andromache* and the *Troades*, which, even in the small number of the extant dramas, are universally allowed to be of very inferior merit—to say nothing of the *Rhesus*, which is generally allowed to be spurious. On the other hand, the list omits at least three plays of first-rate beauty and excellence, the very flower, indeed, of the extant collection—the *Ion*, the *Iphigenia in Tauris*, and the *Bacchae*—the last certainly, in its own kind, by far the most splendid work of Euripides that we possess. Had these three plays been lost, it is not too much to say that the modern estimate of Euripides must have been decidedly lower. But all the ten plays not included in the select list had a narrow escape of being lost, and, as it is, have come to us in a much less satisfactory condition.

A. Kirchhoff was the first, in his editions, thoroughly to investigate the history and the affinities of the Euripidean manuscripts.[5] All our MSS. are, he thinks, derived from a lost archetype of the 9th or 10th century, which contained the nineteen plays (counting the *Rhesus*) now extant. From this archetype a copy, also lost, was made about A.D. 1100, containing only the nine select plays. This copy became the source of all our best MSS. for those plays. They are—(1) Marcianus 471, in the library of St Mark at Venice (12th century): *Andromache, Hecuba, Hippolytus* (to v. 1234), *Orestes, Phoenissae*; (2) Vaticanus 909, 12th century, nine plays; (3) Parisinus 2712, 13th century, 7 plays (all but *Troades* and *Rhesus*). Of the same stock, but inferior, are (4) Marcianus 468, 13th century: *Hecuba, Orestes, Medea* (v. 1-42), *Orestes, Phoenissae*; (5) Havniensis (from *Hafnia*, Copenhagen, according to Paley), a late transcript from a MS. resembling Vat. 909, nine plays. A second family of MSS. for the nine plays, sprung from the same copy, but modified by a Byzantine recension of the 13th century, is greatly inferior.

The other ten plays have come to us only through the preservation of two MSS., both of the 14th century, and both ultimately derived, as Kirchhoff thinks, from the archetype of the 9th or 10th century. These are (1) Palatinus 287, Kirchhoff's B, usually called Rom. C., thirteen plays, viz. six of the select plays (*Androm., Med., Rhes., Hipp., Alc., Troad.*), and seven others—*Bacchae, Cyclops, Heracleidae, Supplices, Ion, Iphigenia in Aulide, Iphigenia in Tauris*; and (2) Flor. 2, Elmsley's C., eighteen plays, viz. all but the *Troades*. This MS. is thus the only one for the *Helena*, the *Electra*, and the *Hercules Furens*. By far the greatest number of Euripidean MSS. contain only three plays,—the *Hecuba, Orestes* and *Phoenissae*,—these having been chosen out of the select nine for school use—probably in the 14th century.

It is to be remembered that, as a selection, the nine chosen plays of Euripides correspond to those seven of Aeschylus and those seven of Sophocles which alone remain to us. If, then, these nine did not include the *Iphigenia in Tauris*, the *Ion* or the *Bacchae*, may we not fairly infer that the lost plays of the other two dramatists comprised works at least equal to any that have been preserved? May we not even reasonably doubt whether we have received those masterpieces by which their highest excellence should have been judged?

Scholia.

The extant scholia on Euripides are for the nine select plays only. The first edition of the scholia on seven of these plays (all but the *Troades* and *Rhesus*) was published by Arsenius—a Cretan whom the Venetians had named as bishop of Monemvasia, but whom the Greeks had refused to recognize—at Venice in 1534. The scholia on the *Troades* and *Rhesus* were first published by L. Dindorf, from Vat. 909, in 1821. The best complete edition is that of W. Dindorf (1863).[6] The collection, though loaded with rubbish—including worthless analyses of the lyric metres by Demetrius Triclinius—includes some invaluable comments derived from the Alexandrian critics and their followers.

Editiones Principes.—1496. J. Lascaris (Florence), *Medea, Hippolytus, Alcestis, Andromache*. 1503. M. Musurus (Aldus, Venice), *Eur. Tragg.* XVII., to which in vol. ii. the *Hercules Furens* was added as an 18th; *i.e.* this edition contained all the extant plays except the *Electra*, which was first given to the world by P. Victorius from Florentinus C. in 1545. The Aldine edition was reprinted at Basel in 1537.

The complete edition of Joshua Barnes (1694) is no longer of any critical value. The first thorough work done on Euripides was by L.C. Valcknaer in his edition of the *Phoenissae* (1755), and his *Diatribe in Eur. perditorum dramatum relliquias* (1767), in which he argued against the authenticity of the *Rhesus*.

Principal Editions of Selected Plays.—J. Markland (1763-1771), *Supplices, Iphigenia A., Iphigenia T.*; Ph. Brunck (1779-1780), *Andromache, Medea, Orestes, Hecuba*; R. Porson (1797-1801), *Hecuba, Orestes, Phoenissae, Medea*; H. Monk (1811-1818), *Hippolytus, Alcestis, Iphigenia A., Iphigenia T.*; P. Elmsley (1813-1821), *Medea, Bacchae, Heraclidae, Supplices*; G. Hermann (1831-1841), *Hecuba* (animadv. ad R. Porsoni notas, first in 1800), *Orestes, Alcestis, Iphigenia A., Iphigenia T., Helena, Ion, Hercules Furens*; C. Badham (1851-1853), *Iphigenia T., Helena, Ion*; H. Weil, *Hipp., Medea, Hec., Iph. in T., Iph. in A., Electra, Orestes* (2nd ed., 1890). It is impossible to give a list of the English and foreign editions of single plays, but mention may be made of the *Bacchae*, by J.E. Sandys (4th ed., 1900) and R.Y. Tyrrell (1892); *Medea*, by A.W. Verrall (1883); *Hippolytus*, by J.P. Mahaffy (1881); and of the *Hercules Furens*, by Wilamowitz-Möllendorff (2nd ed., 1895), with a comprehensive introduction on the literature of Euripides. A selected list (up to 1896) will be found in J.B. Mayor's *Guide to the Choice of Classical Books*; see also N. Wecklein

in C. Bursian's *Jahresbericht*, xxviii. (1897), and for the earlier literature W. Engelmann, *Scriptores Graeci* (1881). The little volumes on Euripides by J.P. Mahaffy (1879) and W.B. Donne in Blackwood's "Ancient Classics for English Readers" will be found generally useful; see also P. Decharme, *Euripide et l'esprit de son théâtre* (1893); A.W. Verrall, *Euripides the Rationalist* (1895), and *Essays on Four Plays of Euripides* (1905); N.J. Patin, *Étude sur Euripide* (1872); O. Ribbeck, *Euripides und seine Zeit*; and (for the life of the poet) Wilamowitz's ed. of the *Hercules Furens* (i. 1-42); P. Masqueray, *Euripide et ses idées* (1908).

Modern Complete Editions.—W. Dindorf (1870, in *Poët. Scenici*, ed. 5); A. Kirchhoff (1855, ed. min. 1867); F.A. Paley (2nd ed., 1872-1880), with commentary; A. Nauck (1880-1887, Teubner series); G.G. Murray in Oxford *Scriptorum Classicorum bibliotheca* (1902, foll.).

English Translations.—Among these may be noted the complete verse translation by A.S. Way (1894-1898); that in prose by E.P. Coleridge (1896); and G.G. Murray's verse translations (1902-1906). A literary interest attaches to Robert Browning's "Transcript" of the *Alcestis* in his *Balaustion*, and to Goethe's reconstruction of Euripides' lost *Phaëthon* in the 1840 edition of his works, vol. xxxiii. pp. 22-43.

(R. C. J.; X.)

1 A considerable fragment of the *Antiope* was discovered in Egypt in the latter part of the 19th century; ed. J.P. Mahaffy in vol. viii. of the *Cunningham Memoirs* (Dublin, 1891); and quite recently fragments, probably from the *Hypsipyle*, the *Phaëthon*, and the *Cretans* (see *Berliner Klassikertexte*, v. 2, 1907).

2 (Originally simply *Heracles*, the addition *Mainomenos* being due to the Aldine ed.)

3 Introduction to the *Electra* of Sophocles, p. xiii., in *Catena Classicorum*, 2nd ed.

4 (According to Karl Krumbacher, *Gesch. der byz. Lit.*, it is an 11th-century production of unknown authorship.)

5 See also a clear account in the preface to vol. iii. of Paley's edition.

6 New ed. by E. Schwartz (1887-1891).

EUROCLYDON (Gr. εὖρος, east wind; κλύδων, wave), a stormy wind from the N.E. or N.N.E. in the eastern Mediterranean. Where the Authorized Version of the Bible (Acts xxvii. 14) mentions *euroclydon*, the Revised Version, taking the reading εὐρακύλων, has *euraquilo*, or north-easter. The word is sometimes used for the Bora (*q.v.*).

EUROPA (or rather, Europe), in Greek mythology, according to Homer (*Iliad*, xiv. 321), the daughter of Phoenix or, in a later story, of Agenor, king of Phoenicia. The beauty of Europa fired the love of Zeus, who approached her in the form of a white bull and carried her away from her native Phoenicia to Crete, where she became the mother of Minos, Rhadamanthys and Sarpedon. She was worshipped under the name of Hellotis in Crete, where the festival Hellotia, at which her bones, wreathed in myrtle, were carried round, was held in her honour (Athenaeus xv. p. 678). Some consider Europa to be a moon-goddess; others explain the story by saying that she was carried off by a king of Crete in a ship decorated with the figure-head of a bull. O. Gruppe (*De Cadmi Fabula*, 1891) endeavours to show that the myth of Europa is only another version of the myth of Persephone.

See Apollodorus iii. 1; Ovid, *Metam.* ii. 833; articles by Helbig in Roscher's *Lexikon der Mythologie*, and by Hild in Daremberg and Saglio's *Dictionnaire des antiquités*. Fig. 26 in the article Greek Art (archaic metope from Palermo) represents the journey of Europa over the sea on the back of the bull.

EUROPE, the smallest of those principal divisions of the land-surface of the globe which are usually distinguished by the conventional name of continents.

1. Geography and Statistics

Individuality of the continent.

It has justly become a commonplace of geography to describe Europe as a mere peninsula of Asia, but while it is necessary to bear this in mind in some aspects of the geography of the continent, more particularly in relation to the climate, the individuality of the continent is established in the clearest manner by the course of history and the resultant distribution of population. The earliest mention of Europe is in the Homeric *Hymn to Apollo*, but there Europe is not the name of a continent, but is opposed to the Peloponnesus and the islands of the Aegean. The distinction between Europe and Asia is found, however, in Aeschylus in the 5th century B.C., but there seems to be little doubt that this opposition was learnt by the Greeks from some Asiatic people. On Assyrian monuments the contrast between *asu*, "(the land of) the rising sun," and *ereb* or *irib*, "(the land of) darkness" or "the setting sun," is frequent, and these names were probably passed on by the Phoenicians to the Greeks, and gave rise to the names of Asia and Europe. Where the names originated the geographical distinction was clearly marked by the intervention of the sea, and this intervention marked equally clearly the distinction between Europe and Libya (Africa). As the knowledge of the world extended, the difficulty, which still exists, of fixing the boundary between Europe and Asia where there is land connexion, caused uncertainty in the application of the two names, but never obscured the necessity for recognizing the distinction. Even in the 3rd century B.C. Europe was regarded by Eratosthenes as including all that was then known of northern Asia. But the character of the physical features and climate finally determined the fact that what we know as Europe came to be occupied by more or less populous countries in intimate relation with one another, but separated on the east by unpeopled or very sparsely peopled areas from the countries of Asia, and the boundary between the two continents has long been recognized as running somewhere through this area. Within the limits thus

marked out on the east and on other sides by the sea "the climatic conditions are such that inhabitants are capable of and require a civilization of essentially the same type, based upon the cultivation of our European grains."[1] Those inhabitants have had a common history in a greater measure than those of any other continent, and hence are more thoroughly conscious of their dissimilarities from, than of their consanguinity with, the peoples of the east and the south.

Boundaries.

On the subject of the boundaries of Europe there is still divergence of opinion. While some authorities take the line of the Caucasus as the boundary in the south-east, others take the line of the Manych depression, between the upper end of the Sea of Azov and the Caspian Sea, nearly parallel to the Caucasus. Various limits are assigned to the continent on the east. Officially the crest of the Caucasus and that of the Urals are regarded in Russia as the boundaries between Europe and Asia on the south-east and east respectively,[2] although in neither case does the boundary correspond with the great administrative divisions, and in the Urals it is impossible to mark out any continuous crest. Reclus, without attempting to assign any precise position to the boundary line between the two continents, makes it run through the relatively low and partly depressed area north of the Caucasus and east of the Urals. The Manych depression, marking the lowest line of this area to the north of the Caucasus, has been taken as the boundary of Europe on the south-east by Wagner in his edition of Guthe's *Lehrbuch der Geographie*,[3] and the same limit is adopted in Kirchhoff's *Länderkunde des Erdteils Europa*[4] and Stanford's *Compendium of Geography and Travel*. In favour of this limit it appears that much weight ought to be given to the consideration put forward by Wagner, that from time immemorial the valleys on both sides of the Caucasus have formed a refuge for Asiatic peoples, especially when it is borne in mind that this contention is reinforced by the circumstance that the steppes to the north of the Caucasus must interpose a belt of almost unpeopled territory between the more condensed populations belonging undoubtedly to Asia and Europe respectively. Continuity of population would be an argument in favour of assigning the whole of the Urals to Europe, but here the absence of any break in such continuity on the east side makes it more difficult to fix any boundary line outside of that system. Hence on this side it is perhaps reasonable to attach greater importance to the fact that the Urals form a boundary not only orographically, but to some extent also in respect of climate and vegetation,[5] and on that account to take a line following the crest of the different sections of that system as the eastern limit between the two continents.[6] Obviously, however, any eventual agreement among geographers on this head must be more or less arbitrary and conventional. In any case it must be borne in mind that, whatever conventional boundary be adopted, the use of the name Europe as so limited must be confined to statements of extent or implying extent. The facts as to climate, fauna and flora have no relation to any such arbitrary boundary, and all statistical statements referring to the countries of Europe must include the part of Russia beyond the Urals up to the frontier of Siberia. In such statements, however, in the present article the whole of the lieutenancy of the Caucasus will be left out of account. As to extent it is provisionally advisable to give the area of the continent within different limits.

Extent.

The following calculations in English square miles (round numbers) of the area of Europe, within different limits, are given in Behm and Wagner's *Bevölkerung der Erde*, No. viii. (Gotha, Justus Perthes, 1891), p. 53:—Europe, within the narrowest physical limits (to the crest of the Urals and the Manych depression, and including the Sea of Azov, but excluding the Caspian Steppe, Iceland, Novaya Zemlya, Spitsbergen and Bear Island) 3,570,000 sq. m. The same, with the addition of the Caspian Steppe up to the Ural river and the Caspian Sea, 3,687,750 sq. m. The same, with the addition of the area between the Manych depression and the Caucasus, 3,790,500 sq. m. The same, with the addition of territories east of the Ural Mountains, the portion of the Caspian Steppe east of the Ural river as far as the Emba, and the southern slopes of the Caucasus, 3,988,500 sq. m. The same, with Iceland, Novaya Zemlya, Spitsbergen and Bear Island, 4,093,000 sq. m. In all these calculations the islands in the Sea of Marmora, the Canary Islands, Madeira, and even the Azores, are excluded, but all the Greek islands of the Aegean Sea and the Turkish islands of Thasos, Lemnos, Samothrace, Imbros, Hagiostrati or Bozbaba, and even Tenedos, are included.

Extreme points.

The most northern point of the mainland area is Cape Nordkyn in Norway, 71° 6′ N.; its most southern, Cape Tarifa in Spain, in 36° 0′ N.; its most western, Cape da Roca in Portugal, 9° 27′ W.; and its most eastern, a spot near the north end of the Ural Mountains, in 66° 20′ E. A line drawn from Cape St Vincent in Portugal to the Ural Mountains near Ekaterinburg has a length of 3293 m., and finds its centre in the W. of Russian Poland. From the mouth of the Kara to the mouth of the Ural river the direct distance is 1600 m., but the boundary line has a length of 2400 m.

Coastline.

Two of the most striking features in the general conformation of Europe are the great number of its primary and secondary peninsulas, and the consequent exceptional development of its coast-line—an irregularity and development which have been one of the most potent of the physical factors of its history. The total length of coast-line was estimated by Reuschle in 1869 at 19,820 m., of which about 3600 were counted as belonging to the Arctic Ocean, 8390 to the Atlantic, and 7830 to the Black Sea and Mediterranean. This estimate, however, does not take into account minor indentations. Reclus's estimate, including the more important indentations, brings the coast-line up to 26,700 m., and that of Strelbitsky up to 47,790 m. (smaller islands not included), or 1 m. of coast for about 75 sq. m. of area. Rohrbach[7] calculated the mean distance of all points in the interior of Europe from the sea at 209 m. as compared with 292 m. in the case of North America, the continent which ranks next in this respect. It must be pointed out, however, that such calculations are apt to be very misleading, inasmuch as the commercial value of the relations thus determined depends not merely on the existence of natural harbours or the presence of facilities for the construction of artificial harbours, but also on the presence of natural facilities for communication between such harbours and a productive interior.

Changes of coast-line.

The consideration just mentioned gives great significance to the fact that while the coast-line of Europe is in its general features very much the same as it was at the beginning of the true historic period, it has undergone a number of important local changes, some at least of which are due to causes that are at work over very extensive areas. These changes may be conveniently classified under four heads: the formation of deltas by the alluvium of rivers; the increase of the land-surface due to upheaval; the advance of the sea by reason of its own erosive activity; and the advance of the sea through the subsidence of the land. The actual form of the coast, however, is frequently due to the simultaneous or successive action of several of the causes—sea and river and subterranean forces helping or resisting each other. That changes in the coast-line on the shores of the Gulf of Bothnia have taken place within historical times through elevation of the land seems now to be generally admitted. The commune of Hvittisbofjärd north of Bjorneborg on the Finland side of that gulf gained about 2¼ sq. m. between 1784 and 1894, an amount greater than could be accounted for by the most liberal estimates of alluvial deposit, and the most careful investigation seems to show that on the Swedish coast of that gulf a rise has taken place in recent years on the east coast of Sweden from about 57° 20′ N. increasing in amount towards the north up to 62° 20′ N., where it reaches an average of about two-fifths of an inch annually.[8] Our information is naturally most complete in regard to the Mediterranean coasts, as these were the best known to the first book-writing nations. There we find that all the great rivers have been successfully at work—more especially the Rhone, the Ebro

and the Po. The activity of the Rhone, indeed, as a maker of new land, is astonishing. The tower of St Louis, erected on the coast in 1737, is now upwards of four miles inland; the city of Arles is said to be nearly twice as far from the sea as it was in the Roman period. The present St Gilles was probably a harbour when the Greeks founded Marseilles, and Aigues Mortes, which took its place in the middle ages, was no longer on the coast in the time of St Louis (13th century), but Narbonne continued to be a seaport till the 14th century. At the mouth of the Hérault, according to Fischer,[9] the coast advances at least two metres or about 7 ft. annually; and it requires great labour to keep the harbour of Cette from being silted up. The Po is even more efficient than the Rhone, if the size of its basin be taken into account. Ravenna, which was at one time an insular city like Venice, has now a wide stretch of downs partly covered with pine forest between it and the sea. Aquileia, one of the greatest seaports of the Mediterranean in the early centuries of the Christian era, is now 7 m. from the coast, and Adria, which gives its name to the sea, is 13. The islands on which Venice is built have sunk about 3 ft. since the 16th century: the pavement of the square of St Mark's has frequently required to be raised, and the boring of a well has shown that a layer of vegetable remains, indicating a flora identical with that observed at present on the neighbouring mainland, exists at a depth of 400 ft. below the alluvial deposits. A little to the south of Rovigno on the Istrian coast on the opposite side of the Adriatic a diver found at the depth of about 85 ft. the remains of a town, which has been identified with the island town of Cissa, of which nothing had been known after the year 679.[10] At Zara ancient pavements and mosaics are found below the sea-level, and the district at the mouth of the Narenta has been changed into a swamp by the advance of the sea. A process of elevation, on the other hand, is indicated along nearly all the coasts of Sicily, at the southern end of Sardinia, the east of Corsica, and perhaps in the neighbourhood of Nice, while the west coast of Italy from the latitude of Rome to the southern shores of the Gulf of Salerno has undergone considerable oscillations of level within historical times. About the time of the settlement of the Greeks the coast stood at least 20 ft. above the level of the present day. Depression began in Roman times, though then the land was still 16 ft. higher than now. A more rapid depression began in the middle ages, so that the sea-level rose from 18 to 20 ft. above the present zero, and the coast began gradually to rise again at the close of the 15th century.[11] Passing eastward to the Balkan peninsula, we find considerable changes on the coast-line of Greece; but as they are only repetitions on a smaller scale of the phenomena already described, it is sufficient to indicate the Gulf of Arta and the mouth of the Spercheios as two of the more important localities. The latter especially is interesting to the historian as well as to the geologist, as the river has greatly altered the physical features of one of the world's most famous scenes—the battlefield of Thermopylae.

If we proceed to the Atlantic seaboard we observe, as we might expect, great modifications in the embouchures of the Garonne and the Loire, but by far the most remarkable variations of sea and land have taken place in the region extending from the south of Belgium in the neighbourhood of the Straits of Dover to the mouth of the Elbe and the west coast of Schleswig-Holstein. Here there has been a prolonged struggle between man and nature, in which on the whole nature has hitherto had the best of the battle. While, as is well known, much land below sea-level in the Low Countries has been protected against the sea by dikes and reclaimed, and the coast-line has been, on the whole, advanced between the Elbe and the Eider,[12] there has been a great loss of land in the interior of Holland since the beginning of the Christian era, and on the balance a large loss of land north of the Eider since the first half of the 13th century.[13] In the 1st century A.D. the Zuider Zee appears to have been represented only by a comparatively small inland lake, the dimensions of which were increased by different inroads of the sea, the last and greatest of which occurred in 1395. Among the local changes of European significance within this area may be mentioned the silting up towards the end of the 15th century of the channel known as the Zwin running north-eastwards from Bruges, which through that cause lost its shipping and in the end all its former renown as a seat of commerce.

The Baltic shores of Germany display the same phenomena of local gain and loss. In the western section inroads of the sea have been extensive: the island of Rügen would no longer serve for the disembarkation of an army like that of Gustavus Adolphus; Wollin and Usedom are growing gradually less; large stretches of the mainland are fringed with submerged forests; and at intervals the sites of well-known villages are occupied by the sea. Towards the east the great rivers are successfully working in the opposite direction. In the Gulf of Danzig the alluvial deposits of the Vistula cover an area of 615 sq. m.; in the 13th century the knights of Marienburg enclosed with dikes about 350 sq. m.; and an area of about 70 sq. m. was added in the course of the 14th. The Memel is silting up the Kurisches Haff, which, like the Frisches Haff, is separated from the open sea by a line of dunes comparable with those of the Landes in France. The so-called strand or coast-lines at various altitudes round the Scandinavian peninsula, though belonging for the most part to glacial times, speak also of relative changes of level in the post-glacial period.

(Click to enlarge left side.)

(Click to enlarge right side.)

The changes briefly indicated above take place so gradually for the most part that it requires careful observation and comparison of data to establish their reality. It is very different with those changes which we usually ascribe to volcanic agency. Besides the great outlying "hearth" of Iceland, there are four centres of volcanic activity in Europe—all of them, however, situated in the Mediterranean. Vesuvius on the western coast of Italy, Etna in the island of Sicily, and Stromboli in the Lipari group, have been familiarly known from the earliest historic times; but the fourth has only attracted particular attention since the 18th century. It lies in the Archipelago, on the southern edge of the Cyclades, near the little group of islets called Santorin. The region was evidently highly volcanic at an earlier period, for Milo, one of the nearest of the islands, is simply a ruined crater still presenting smoking solfataras and other traces of former activity. The devastations produced by the eruptions of the European volcanoes are usually confined within very narrow limits; and it is only at long intervals that any part of the continent is visited by a really formidable earthquake. The only part of Europe, however, for which there are no recorded earthquakes is central and northern Russia; and the Alps and Carpathians, especially the intra-Carpathian area of depression, Greece, Italy, especially Calabria and the adjoining part of Sicily, the Sierra Nevada and the Pyrenees, the Lisbon district and the rift valley of the upper Rhine (between the Vosges and the Black Forest) are all regions specially liable to earthquake shocks and occasionally to shocks of considerable intensity. One well-marked seismic line extends along the south side of the Alps from Lake Garda by Udine and Görz to Fiume, and another forms a curve convex towards the south-east passing first through Calabria, then through the north-east of Sicily to the south of the Peloritan Mountains.[14] Of all European earthquakes in modern times, the most destructive are that of Lisbon in 1755, and that of Calabria in 1783; the devastation produced by the former has become a classical instance of such disasters in popular literature, and by the latter 100,000 people are said to have lost their lives. Calabria again suffered severely in 1865, 1870, 1894, 1905 and 1908.

Volcanoes and earthquakes.

If the European mountains are arranged according to their greatest elevations, they rank as follows:—(1) the Swiss Alps, with their highest peaks above 15,000 ft.; (2) the Sierra Nevada, the Pyrenees, and Etna, about 11,000 ft.; (3) the Apennines, the Corsican Mountains, the Carpathians, the Balkans, and the Despoto Dagh, from 8000 to 9000; (4) the Guadarrama, the Scandinavian Alps, the Dinaric Alps, the Greek Mountains, and the Cevennes, between 6000 and 8000; (5) the mountains of Auvergne, the Jura, the Riesengebirge, the mountains of Sardinia, Majorca, Minorca, and the Crimea, the Black Forest, the Vosges, and the Scottish Highlands, from 4000 to 6000.

Relief.

The following estimates are based on those contained in the fifth edition, by Dr Hermann Wagner, of Guthe's *Lehrbuch der Geographie*. In the original the figures are given in German sq. m. and in sq. kilometres in round numbers, and the equivalents here given in English sq. m. are similarly treated:—

	Sq. m.
The great European plain in its widest sense	2,660,000
The same exclusive of inland seas	2,300,000
The same exclusive of the Scandinavian and British lowlands	2,125,000
All other European lowlands	385,000
The Hungarian plain	38,000
The Po plain	21,000
The Scandinavian highlands	190,000
The Ural Mountains	127,000
The Alps	85,000
The Carpathians	72,000
The Apennines	42,500
The Pyrenees	21,500

Several estimates have been made of the average elevation of the continent, but it is enough to give here the main results. In the following list, where a conversion from metres into feet has been necessary, the nearest multiple of 5 ft. has been given:—Humboldt, 675 ft.; Leipoldt,[15] 975 ft.; De Lapparent,[16] 960 ft.; Murray,[17] 939 ft.; Supan,[18] 950 ft.; von Tillo,[19] 1040 ft.; Heiderich,[20] 1230 ft.; Penck,[21] 1085 ft. The exceptionally high estimate of Heiderich is due to the fact that by him Transcaucasia and the islands of Novaya Zemlya, Spitsbergen and Iceland are reckoned as included in Europe.

Of more geographical significance than these estimates are the facts with regard to the arrangement of the highlands of the continent. It is indeed this arrangement combined with the form of the coast-line which has indirectly given to Europe its individuality. Three points have to be noted under this head:—(1) the fact that the highlands of Europe are so distributed as to allow of the penetration of westerly winds far to the east; (2) the fact that the principal series of highlands has a direction from east to west, Europe in this point resembling Asia but differing from North America; and (3) that in Europe the mountain systems belonging to the series of highlands referred to not only have more or less well-marked breaks between them, but are themselves so notched by passes and cut by transverse valleys as to present great facilities for crossing in proportion to their average altitude. The first and second of these points have special importance with reference to the climate and will accordingly be considered more fully under that head. The second is also of importance with reference to the means of communication, to which the third also refers, and detailed consideration of these points in that relation will be reserved for that heading. Here, however, it may be noted that in Europe the distribution of the natural resources for the maintenance of the inhabitants is such that, if we leave out of account Russia, which is almost entirely outside of the series of highlands running east and west, the population north of the mountains is roughly about 50% greater than that south of the mountains, whereas in Asia the population north of the east and west highland barrier is utterly insignificant as compared with that to the south.

Arrangement of the highlands.

Name of River.	Length in English Miles.		Area of Basin in sq. m.
	Strelbitsky.	Other Authorities.	Strelbitsky.
Volga	1977[22]	2107[23]	563,300
Danube	1644	..	315,435
Ural	1446	1477[23]	96,350
Dnieper (Dnyepr)	1064	1328[23]	203,460
Kama	984		202,615

		1115[23]	
Don (Russia)	980	1123[23]	166,125
Pechora	915	1024[23]	127,225
Rhine	709	..	63,265
Oka	706	914[23]	93,205
Dniester (Dnyestr)	646	835[23]	29,675
Elbe	612	..	55,340
Vistula	596	646[23]	73,905
Vyatka	596	680[23]	50,555
Tagus	566	..	31,865[24]
Theiss (Tisza)	550	..	59,350
Loire	543	..	46,755
Save	535	..	37,595
Meuse	530	..	12,740
Mezen	496	507[23]	30,410
Donets	487	613[23]	37,890
Douro	485	..	36,705
Düna (S. Dvina)	470	576[23]	32,975
Ebro	470	..	38,580[24]
Rhone	447	..	38,180
Desna	438	590[23]	33,535
Niemen (Nyeman)	437	537[23]	34,965
Drave	434	..	15,745
Bug (Southern)	428	477[23]	26,225
Seine	425	..	30,030
Oder	424	..	17,150
Kuban	405	509[23]	21,490
Khoper	387	563[23]	23,120
Maros	390	..	16,975
Pripet	378	404[23]	46,805
Guadalquivir	374	..	21,580[24]
Pruth (Prutŭ)	368	503[23]	10,330
Northern Dvina	358	447[23]	141,075
Weser-Werra	355	..	19,925
Po	354	..	28,920[24]
Garonne-Gironde	342	..	32,745
Vetluga	328	464[23]	14,325
Pinega	328	407[23]	17,425
Glommen	326	352[25]	15,930
Bug (Western)	318	450[23]	22,460
Guadiana	316	..	25,300[24]
Aluta (Alt, Oltŭ)	308	..	9,095
Mosel	300	..	10,950
Main	300	..	10,600
Maritsa	272	..	20,790
Jucar	270	..	7,620[24]
Mologa	268	338[23]	15,005
Tornea	268	..	13,045
Inn	268	..	9,825
Saône	268	..	8,295
Moldau	255	267[25]	10,860
Moksha	249	371[23]	19,090
Ljusna	243	..	7,700
Mur	242	..	5,200
Morava, Servian	235	..	15,715
Klar	224	..	4,520
Voronezh	218	305[23]	7,760
Berezina	218	285[23]	9,295
Saale	215	..	8,970
Onega	212	245[23]	22,910
Vág (Waag)	212	..	6,245
Dema	209	275[23]	4,830
San	203	444[23]	6,135
Moskva	189	305[23]	5,910
Western Manych	176	295[23]	37,820
Klyazma	159	394[23]	15,200

From the table given on p. 909 (col. 1) it will be seen that the most extensive of the highland areas of Europe is that of Scandinavia, which has a general trend from south-south-west to north-north-east, and is completely detached by seas and plains from the highland area to the south. There are other completely detached highland areas in Iceland, the British Isles, the Ural Mountains, the small Yaila range in the south of the Crimea, and the Mediterranean islands. The connected series of highlands is that which extends from the Iberian peninsula to the Black Sea stretching in the middle of Germany northwards to about 52° N. In the Iberian peninsula we have the most marked example of the tableland form in Europe, and these tablelands are bounded on the north by the Cantabrian Mountains, which descend to the sea, and the Pyrenees, which, except at their extremities, cut off the Iberian peninsula from the adjoining country more extensively than any other chain in the continent. Between the foot-hills of the Pyrenees, however, and those of the central plateau of France the ground sinks in the Passage of Naurouse or Gap of Carcassonne to a well-marked gap establishing easy communication between the valley of the Garonne and the lower part of that of the Rhone. The highlands in the north spread northwards and then north-eastwards till they join the Vosges, but sink in elevation towards the north-east so as to allow of several easy crossings. East of the Vosges the Rhine valley forms an important trough running north and south through the highlands of western Germany. To the south of the Vosges again undulating country of less than 1500 ft. in elevation, the well-known Burgundy Gate or Gap of Belfort, constitutes a well-marked break between those mountains and the Jura, and establishes easy

communication between the Rhine and the Saône-Rhone valleys. The latter valley divides in the clearest manner the highlands of central France from both the Alps and the Jura, while between these last two systems there lies the wedge of the Swiss midlands contracting south-westwards to a narrow but important gap at the outlet of the Lake of Geneva. Between the Alps and the mountains of the Italian and Balkan peninsulas the orographical lines of demarcation are less distinct, but on the north the valley of the Danube mostly forms a wide separation between the Alps and the mountains of the Balkan peninsula on the south and the highlands of Bohemia and Moravia, the Carpathians and the Transylvanian Alps on the north. The valleys of the Eger and the Elbe form distinct breaks in the environment of Bohemia, and the Sudetes on the north-east of Bohemia and Moravia are even more clearly divided from the Carpathians by the valley of the upper Oder, the Moravian Gate, as it is called, which forms the natural line of communication between the south-east of Prussia and Vienna.

Rivers.

An estimate has been made by Strelbitsky of the length and of the area of the basins of all the principal rivers of Europe. In the table on p. 909 all the estimates given without any special authority are based on Strelbitsky's figures, but it should be mentioned that the estimates of length made by him evidently do not take into account minor windings, and are therefore generally less than those given by others. The authorities are separately cited for the originals of all other figures given in the table.[26]

The observations on the temperature of European rivers have been collected and discussed by Dr Adolf E. Forster.[27] He finds that the dominant factor in determining that temperature is the temperature of the air above, but that rivers are divisible into four groups with respect to the relation between these temperatures at different seasons of the year. These groups are rivers flowing from glaciers, in which the temperature is warmer than the air in winter, colder in summer; rivers flowing from lakes, characterized by peculiarly high winter temperatures, in consequence of which the mean temperature for the year is always above that of the air; rivers flowing from springs, which, at least near their source, are more rapidly cooled by low than warmed by high air temperatures; and rivers of the plains, which have a higher mean temperature than the air in all months of the year.

In various parts of Europe, more particularly in calcareous regions, such as the Jura, the Causses in the south-east of France, and the Karst in the north-west of the Balkan peninsula, there are numerous subterranean or partly subterranean rivers. Several of the more important rivers are of very irregular flow, and some are subject to really formidable floods. This is particularly the case with rivers a large part of whose basin is made up of crystalline or other impervious rocks with steep slopes, like those of the Loire in France and the Ebro in Spain. The Danube and its tributaries, the great rivers of Germany, above all eastern Germany, and those of Italy, are also notorious for their inundations. In southern Europe, where the summers are nearly rainless, most of the rivers disappear altogether in that season.

Name of Lake and Country.	Height above Sea.	Area.	Greatest Depth.	Mean Depth.	Volume. Millions of Cub. Ft.
	Ft.	Sq. m.	Ft.	Ft.	
Ladoga, Russia	15	7004	730	..	..
Onega, Russia	115	3765	About 1200	..	..
Vener, Sweden	145	2149	280	..	..
Chudskoye or Peipus, Russia	100	1357[28]	90	..	..
Vetter, Sweden	290	733	415	..	..
Saima, Russia	255	680	185	..	..
Päjäne, Russia	255	608	..	..	..
Enare, Russia	490	549	..	..	..
Segozero, Russia	481	140	..	..	..
Mälar, Sweden	1.6	449	170	..	..
Byelo-Ozero, Russia	400	434	35	..	..
Pielis, Russia	305	422	..	..	..
Topozero, Russia	..	411	..	..	..
Uleå, Russia	375	380	60	..	..
Ilmen, Russia	107	358	..	..	..
Vigozero, Russia	..	332	..	..	..
Imandra, Russia	..	329	..	..	..
Balaton, Hungary	350	266	13	..	..
Geneva, France and Switzerland	1220	225	1015	500	3,140,000
Kovdozero, Russia	..	225	..	..	..
Constance, Germany and Switzerland	1295	208	825	295	1,711,000
Hjelmar, Sweden	79	187	60	..	..
Neagh, Ireland	48	153	113	..	..
Kubinskoye, Russia	..	152	..	..	..
Mjösen, Norway	395	152	1485	..	..
Garda, Italy and Austria	215	143	1135	445	1,757,000
Torne-träsk, Sweden	1140	139	..	..	..
Neusiedler-see, Hungary	370	137	13	..	..
Scutari, Turkey	20	About 130	33	12½	45,900
Siljan, Sweden	..	123	..	..	..
Virzjärvi, Russia	115	107	24	..	..
Seliger, Russia	825	100	105	..	..
Stor Afvan, Sweden	1370	92	925	..	..
Yalpukh, Russia	..	89	..	..	..
Neuchâtel, Switzerland	1415	85	500	210	500,000
Ylikitkakärvi, Russia	680	85	30	..	..
Maggiore, Italy and Switzerland	645	82	1220	575	1,316,000
Corrib, Ireland	30	71	152	..	..
Como, Italy	655	56	1360	..	..

Lakes and marshes.

For many European lakes, especially the smaller ones, estimates have been made of the mean depth and the volume. A list of all the European lakes for which the altitude, extent, and greatest depth could be ascertained, compiled by Dr K. Peucker, is published in the *Geog. Zeitschrift* (1896), pp. 606-616, where estimates of the mean depth and the volume are also given where procurable. The table given above, comprising only the larger lakes, is mainly based on this list, where the original authorities are mentioned. The figures entered in the table not taken from this list are after Strelbitsky, the *Géog. Universelle* of V. de St Martin, or, in the case of Swedish lakes, from the official handbook of Sweden.[29]

The Alpine lakes break up into a southern and northern subdivision—the former consisting of the Lago Maggiore, and the lakes of Lugano and Como, Lago d'Iseo, and Lago di Garda, all connected by affluents with the system of the Po; and the latter the Lake of Geneva threaded by the Rhone, Lakes Constance, Zürich, Neuchâtel, Biel and other Swiss lakes belonging to the basin of the Rhine, and a few of minor importance belonging to the Danube. The north Russian lakes, Ladoga, Onega, &c., are mainly noticeable as the largest members of what in some respects is the most remarkable system of lakes in the continent—the Finno-Russian, which consists of an almost countless number of comparatively small irregular basins formed in the surface of a granitic plateau. In Finland proper they occupy no less than a twelfth of the total area.

A few of the number are very shallow. The Neusiedler See, for example (the Peiso Lacus of the Latins and Fertö-tava of the Hungarians), completely dried up in 1693, 1738 and 1864, and left its bed covered for the most part with a deposit of salt.[30] Lakes Copais in Boeotia and Fucino Celano in Italy have been entirely turned into dry land. The progress of agriculture has greatly diminished the extent of marsh land in Europe. The Minsk marshes in Russia form the largest area of this character still left, and on these large encroachments are gradually being made. Extensive marshes in northern Italy have been completely drained. The partial draining of the Pomptine marshes in Italy made Pope Pius VII. famous in the 18th century, and further reclamation works are still in progress there and elsewhere in the same country.

(G. G. C.)

Geology.

The geological history of Europe[31] is, to a large extent, a history of the formation and destruction of successive mountain chains. Four times a great mountain range has been raised across the area which now is Europe. Three times the mountain range has given way; portions have sunk beneath the sea, and have been covered by more recent sediments, while other portions remained standing and now rise as isolated blocks above the later beds which surround them. The last of the mountain ranges still stands, and is known under the names of the Alps, the Carpathians, the Balkans, the Caucasus, &c., but the work of destruction has already begun, and gaps have been formed by the collapse of parts of the chain. The Carpathians were once continuous with the Alps, and the Caucasus was probably connected with the Balkans across the site of the Black Sea.

These mountain chains were not raised by direct uplift. They consist of crumpled and folded strata, and are, in fact, wrinkles in the earth's outer crust, formed by lateral compression, like the puckers which appear in a tablecloth when we push it forward against a book or other heavy object lying upon it. How the lateral or tangential pressures originated is still matter of controversy, but the usually accepted explanation is as follows. The interior of the earth in cooling contracts more rapidly than the exterior, and, if no other change took place, the outer crust would be left as a hollow sphere without any internal support. But the materials of which it is composed are not strong enough to bear its enormous weight, and, like an arch which is too weak in its abutments, it collapses upon the interior core. Where the crust is rigid it fractures, as an ordinary arch would fracture; and some portions fall inward, while other parts may even be wedged a little outward. Where, on the other hand, the crust is made of softer rock, it crumples and folds, and a mountain chain is produced. Such a mountain chain, for want of a better term, is called a folded mountain chain. The folding is most intense where a flexible portion of the crust lies next to a more rigid part. Where the folding has occurred, the rocks which were once comparatively soft become hard and rigid, and the next series of wrinkles will usually be formed beyond the limits of the old one. This is what has happened in the European area.

The oldest mountain chain lay in the extreme north-west of Europe, and its relics are seen in the outer Hebrides, the Lofoten Islands and the north of Norway. The rocks of this ancient chain have since been converted into gneiss, and they were folded and denuded before the deposition of the oldest known fossiliferous sediments. The mountain system must therefore have been formed in Pre-Cambrian times, and it has been called by Marcel Bertrand the Huronian chain. It is probable that a great land-mass lay towards the north-west; but in the sea which certainly existed south-east of the chain, the Cambrian, Ordovician and Silurian beds were deposited. In Russia and South Sweden these beds still lie flat and undisturbed; but in Norway, Scotland, the Lake District, North Wales and the north of Ireland they were crushed against the north-western continent and were not only intensely folded but were pushed forward over the old rocks of the Huronian chain. Thus was formed the Caledonian mountain system of Ed. Suess, in which the folds run from south-west to north-east. It was raised at the close of the Silurian period.

Then followed, in northern Europe, a continental period. By the elevation of the Caledonian chain the northern land-mass had grown southward and now extended as far as the Bristol Channel. Upon it the Old Red Sandstone was laid down in inland seas or lakes, while farther south contemporaneous deposits were formed in the open sea.

During the earlier part of the Carboniferous period the sea spread over the southern shores of the northern continent; but later the whole area again became land and the Coal Measures of northern Europe were laid down. Towards the close of the Carboniferous period the third great mountain chain was formed. It lay to the south of the Caledonian chain, and its northern margin stretched from the south of Ireland through South Wales, the north of France and the south of Belgium, and was continued round the Harz and the ancient rocks of Bohemia, and possibly into the south of Russia. It is along this northern margin, where the folded beds have been thrust over the rocks which lay to the north, that the coalfields of Dover and of Belgium occur. The general direction of the folds is approximately from west to east; but the chain consisted of two arcs, the western of which is called by Suess the Armorican chain and the eastern the Variscian. The two arcs together, which were undoubtedly formed at the same period, have been named by Bertrand the Hercynian chain. Everywhere the chief folding seems to have occurred before the deposition of the highest beds of the Upper Carboniferous, which lie unconformably upon the folded older beds. The Hercynian chain appears to have been of considerable breadth, at least in western Europe, for the Palaeozoic rocks of Spain and Portugal are thrown into folds which have the same general direction and which were formed at approximately the same period. In eastern Europe the evidence is less complete, because the Hercynian folds are buried beneath more recent deposits and have in some cases been masked by the superposition of a later series of folds.

The formation of this Carboniferous range was followed in northern Europe by a second continental period somewhat similar to that of the Old Red Sandstone, but the continent extended still farther to the south. The Permian and Triassic deposits of England and Germany were laid down in inland seas or upon the surface of the land itself. But southern Europe was covered by the open sea, and here, accordingly, the contemporaneous deposits were marine.

The Jurassic and Cretaceous periods were free from any violent folding or mountain building, and the sea again spread over a large part of the northern continent. There were indeed several oscillations, but in general the greater part of southern and central Europe lay beneath the waters of the ocean. Some of the fragments of the Hercynian chain still rose as islands above the waves, and at certain periods there seems to have been a more or less complete barrier between the waters which covered northern Europe and those which lay over the Mediterranean region. Thus, while the estuarine deposits of the Upper Jurassic and Lower Cretaceous were laid down in England and Germany, the purely marine Tithonian formation, with its peculiar fauna, was deposited in the south; and while the Chalk was formed in northern Europe, the Hippurite limestone was laid down in the south.

The Tertiary period saw fundamental changes in the geography of Europe. The formation of the great mountain ranges of the south, the Alpine system of Suess, perhaps began at an earlier date, but it was in the Eocene and

Miocene periods that the chief part of the elevation took place. Arms of the sea extended up the valley of the Rhone and around the northern margin of the Alps, and also spread over the plains of Hungary and of southern Russia. Towards the middle of the Miocene period some of these arms were completely cut off from the ocean and large deposits of salt were formed, as at Wieliczka. At a later period south-eastern Europe was covered by a series of extensive lagoons, and the waters of these lagoons gradually became brackish, and then fresh, before the area was finally converted into dry land. Great changes also took place in the Mediterranean region. The Black Sea, the Aegean, the Adriatic and the Tyrrhenian Sea were all formed at various times during the Tertiary period, and the depression of these areas seems to be closely connected with the elevation of the neighbouring mountain chains.

Exactly what was happening in northern Europe during these great changes in the south it is not easy to say. The basaltic flows of the north of Ireland, the western islands of Scotland, the Faeroe Islands and Iceland are mere fragments of former extensive plateaus. No sign of marine Tertiary deposits of earlier age than Pliocene has been found in this northern part of Europe, and on the other hand plant remains are abundant in the sands and clays interbedded with the basalts. It is probable, therefore, that in Eocene times a great land-mass lay to the north-west of Europe, over which the basalt lavas flowed, and that the formation of this part of the Atlantic and perhaps of the North Sea did not take place until the Miocene period.

At a later date the climate, for some reason which has not yet been fully explained, grew colder over the whole of Europe, and the northern part was covered by a great ice-sheet which extended southward nearly as far as lat. 50° N., and has left its marks over the whole of the northern part of the continent. With the final melting and disappearance of the ice-sheet, the topography of Europe assumed nearly its present form, and man came upon the scene. Minor changes, such as the separation of Great Britain from the continent, may have occurred at a later date; but since the Glacial period there have, apparently, been no fundamental modifications in the configuration of Europe.

The elevation of each of the great mountain systems already described was accompanied by extensive eruptions of volcanic rocks, and the sequence appears to have been similar in every case. The volcanoes of the Mediterranean are the last survivors of the great eruptions which accompanied the elevation of the Alpine mountain system.

(P. La.)

Winds.

In western Europe by far the most prevalent wind is the S.W. or W.S.W. It represents 25% of the annual total; while the N. is only 6%, the N.E. 8, the E. 9, the S. 13, the W. 17 and the N.W. 11. Of the summer total it represents 22%, while the N. is 9, N.E. 8, E. 7, S.E. 7, W. 21 and N.W. 17. In south-eastern Europe, on the other hand, the prevailing winds are from the N. and E.—the E. having the preponderance in winter and autumn.[32] Of local winds the most remarkable are the föhn, in the Alps, distinguished for its warmth and dryness; the Rotenturm wind of Transylvania, which has similar characteristics; the bora of the Upper Adriatic, so noticeable for its violence; the mistral of southern France; the etesian winds of the Mediterranean; and the sirocco, which proves so destructive to the southern vegetation. Though it is only at comparatively rare intervals that the winds attain the development of a hurricane, the destruction of life and property which they occasion, both by sea and land, is in the aggregate of no small moment. About six or seven storms from the west pass over the continent every winter, usually appearing later in the southern districts, such as Switzerland or the Adriatic, than in the northern districts, as Scotland and Denmark.

Climate.

The great determining factors of the climate of Europe are these. The northern borders of the continent are within the Arctic Circle; the most southern points of the mainland are 13½° or more north of the Tropic of Cancer; to the east extends for about 3000 m. the continuous land surface of Asia; to the west lie the waters of the north Atlantic, which penetrate in great inland seas to the north and south of the great European peninsula; the prevailing winds in western Europe as already stated are more or less south-westerly; and the arrangement of the highlands is such as to allow of the penetration of winds with a westerly element in their direction far to the east. The first two of these factors are not distinguishing influences. They affect the climate of Europe in the same manner as they do that of any other land surface in the same latitudes.

The remaining factors, however, are of the highest importance. It is to them in fact that Europe owes in a very large measure those physical conditions which are the basis of its recognition as a separate continent. In estimating the value of those factors one must bear in mind, first, that the waters of the north Atlantic are exceptionally warm, especially on the European side of the ocean. The Gulf Stream carries a large body of warm water northwards to near the parallel of 40° N., and to the north of the Gulf Stream prevailing south-westerly winds, especially during the winter months, drift onwards to the western and northern shores of Europe, even as far east as Spitsbergen, large bodies of water of an exceptionally high temperature. Secondly, one must bear in mind that these relatively high temperatures over the ocean promote evaporation and thus favour the presence of a relatively large amount of water-vapour in the air over those parts of the ocean which adjoin the continent; and, thirdly, that, as the winds are the sole means of carrying water-vapour from one part of the earth’s surface to the other, and the sole means of carrying heat and cold from the ocean to the land, the prevailing south-westerly winds are allowed by the superficial configuration to bring a relatively high rainfall and a relatively large amount of heat in winter to land farther in the interior than in any corresponding latitudes. During the summer the winds referred to have a cooling effect, but not to the same degree as those of winter tend to raise the temperature. From the point of view just indicated the only part of the world that is fairly comparable with Europe is the west of North America; but, as there the outline and superficial configuration are quite different, the oceanic influences affect only a narrow strip of seaboard and not any extent of land which could be regarded as of continental rank. It is owing to these influences that in the greater part of Europe there is a more or less continuous population dependent on agriculture. On the east side of Europe, again, the existence of the continent of Asia has a marked effect on the climate which also aids in giving to Europe its individual character. It is owing to that circumstance that the south-east of the continent, which has temperatures as favourable to agriculture as the corresponding latitudes of eastern Asia or eastern North America, is without the copious rains which make those temperatures so valuable, and hence forms part of the desert that divides the populations of Europe and Asia.

Precipitation.

On the local distribution of rainfall and temperature, the physical configuration of the continent has very marked effects. Here as elsewhere there is a striking difference both in the amount of rainfall and the temperature on the weather and lee sides of mountains and even low hills. But with reference to this it should not be forgotten that water-vapour, heat and cold may be carried farther into the land by winds blowing in a different direction from that of those by which they were introduced from the ocean, and, with reference to rainfall, that the condensation of water-vapour may be brought out by different winds from those by which the water-vapour was brought to the area in which it is condensed. Water-vapour that may have been introduced by a south-westerly wind may be driven against a mountain side by a northerly or easterly wind, and thus cause rain on the northern or eastern side of the mountain. Still, any rainfall map of Europe indicates clearly enough the origin of the water-vapour to which the rainfall is due. Such a map, taking into account the results of more detailed investigations of different parts of the continent, is that of Joseph Reger.[33] This map shows the rainfall or rather total precipitation in seven tints at intervals of 250 mm. (about 10 in.) up to 1000 mm., and beyond that at intervals of 500 mm. up to 2000 mm. In some parts of the continent the limits of a rainfall of 200 mm. and 600 mm.

are also shown. The picture there given is too complicated for brief description except by saying quite generally that it shows on the whole a diminution in the total amount of precipitation from west to east, and that the heaviest precipitation is indicated on the west or south and most exposed sides of mountains. The areas of scantiest rainfall lie to the north and north-west of the Caspian Sea and in the interior of the Kola Peninsula, north-west of the White Sea. The Stye in the English Lake District, some 2 m. from and 650 ft. higher than Seathwaite, has long been reputed to be the station recording the heaviest rainfall in Europe, but it has been shown to have a rival in Crkvice, a station immediately to the north of the Bocche di Cattaro on the Dalmatian coast. In the period 1881-1890 the average rainfall at the Stye amounted to 177 in., in 1891-1900 that at Crkvice amounted to about 179 in.[34]

Snowfall.

The amount of the snowfall as distinguished from the rest of the precipitation is now coming to be recognized as an important climatological element. So far, however, the only European country in which a record of the snowfall is kept is Russia, but it may be pointed out that the scantiness of the winter precipitation and accordingly of snow in the south-east of Europe almost entirely prevents the cultivation of winter wheat, which is thus left without the protective blanket enjoyed in some other parts of the world with cold winters.

Seasonal distribution of rainfall.

The important subject of the seasonal distribution of the rainfall of Europe has received attention from Drs A.J. Herbertson, Köppen and Supan, and Mr A. Angot. The rainfall of each month in Europe as in the other continents is shown by Dr A.J. Herbertson in *The Distribution of Rainfall over the Land*.[35] On plate 19 of the *Atlas of Meteorology*, by J.G. Bartholomew and A.J. Herbertson, Dr Köppen has furnished maps showing the months of maximum rainfall and the seasons of maximum and minimum rain frequency in different parts of Europe. Mr A. Angot's work on the subject is published in two papers in the *Annales du bureau central météor. de France*, a series of memoirs in which the rainfall observations of Europe for the thirty years 1861-1890 are recorded and discussed. The first paper (1893, B, pp. 157-194) deals with the Iberian Peninsula, the second (1895, B, pp. 155-192) with western Europe (from about 43° to 58° N. and as far east as about 19° to 21° E.). Both papers are accompanied by maps showing by six tints the mean rainfall for each month as well as for the entire year; and that on western Europe, by maps extending in the west as far south as Avila, the proportion of the rainfall occurring during the winter, spring, autumn and summer months respectively. But the most instructive maps on the subject embracing the whole of Europe are four maps prepared by Dr Supan[36] to show the percentage of the total rainfall of the year occurring in spring, summer, autumn and winter respectively. From the maps it appears that all the southern and western coasts of Europe have a high proportion of rain in autumn, and that this is true also of the whole of the Italian peninsula and the islands of the western half of the Mediterranean, of all the south-west of the Balkan peninsula, including the Peloponnesus, of the Saône-Rhone valley and both sides of the Gulf of Bothnia, and that a high winter rainfall is characteristic of Iceland, the extreme western coasts of Scotland, Ireland, France and the Iberian peninsula, as well as of the greater part of the Mediterranean region, but more particularly the south-east, while in this region, and, again more particularly in the south-east, there is a great scarcity of summer rains, which, on the other hand, form the highest percentage in the interior and eastern parts of the continent. If the year be divided into a winter and summer half, the area with a predominance of summer rains begins in the east of Great Britain and extends eastwards, while the Mediterranean region generally is one of rainy winters and relatively dry summers. The consequence is that with similar conditions of soil and superficial configuration the Mediterranean region is agriculturally much less productive, except where there are means of irrigation, than the corresponding latitudes in the east of Asia and the east of North America, where there are corresponding summer temperatures but an opposite seasonal distribution of rainfall.

Sunshine.

In connexion with the seasonal distribution of rainfall may be noticed the prevalence of sunshine and cloud. The map accompanying König's paper on the duration of sunshine[37] shows on the whole, outside of the Mediterranean peninsulas, an increase from north-west to south-east (Orkney Islands, 1145 hours = 26% of the total possible; Sulina, 2411 hours = 55%). In the Mediterranean peninsulas the duration is everywhere great—greatest, so far as the records go, at Madrid, 2908 hours = 66%. Dr P. Elfert's[38] map illustrating cloud-distribution in central Europe embraces the region from Denmark to the basin of the Arno, and from the confluence of the Loire and Allier to the mouths of the Danube.

Temperature.

The temperature of the continent has been illustrated by Dr Supan in an interesting series of maps based on actual observations not reduced to sea-level, and showing the duration in months of the periods within which the mean daily temperature lies within certain ranges (at or below 32° F.; 50°-68° F.; above 68° F.).[39] The first of these maps strikingly illustrates the effect on temperature of the strong westerly winds of winter, and, in the south, that of winds from the Mediterranean Sea as well as the protection afforded to the Mediterranean countries against cold winds from the north by the barrier of mountains. South of the parallel of 60° there is no lowland area in the west of Europe where the average daily temperature is at or below the freezing point for as much as one month, and in the Mediterranean region only the higher parts of the mountains besides the northern part of the Balkan Peninsula are characterized by such prolonged frosts. On the other hand, on the parallel of 50° N. the duration of such low temperatures increases at first rapidly, afterwards more gradually, from west to east. The second map illustrating the duration of average daily temperatures between 50° and 68° F., that is, the temperatures favourable to the ordinary vegetation of the temperate zone, shows that the duration of such temperatures increases on the whole from south to north, and that by far the greater part of the continent south of 53° N. has at least six months within those limits, and south of 58° N. at least five months. The third of the maps shows that the high temperatures which it illustrates are prolonged for a month or more throughout the Mediterranean region, but outside of that region hardly anywhere except in the south-western plains of France, the Rhone valley and a large area in the south-east of Russia. Without doubt an important cause of the prolonged duration of high temperatures in this last area is the relatively long duration of sunshine already mentioned as shown by König's map to be characteristic of south-eastern Europe.

Mention should here be made also of Brückner's remarkable treatise on the variations of climate in time. Though it deals with such variations over the entire land-surface of the globe, a large proportion of the data are derived from Europe, for which continent, accordingly, it furnishes a great number of particulars with regard to secular variations in temperature, rainfall, the date of the vintage, the frequency of cold winters, the level of rivers and lakes, the duration of the ice-free period of rivers (in this case all Russian), and other matters. Those relating to the date of the vintage are of peculiar interest. They apply to 29 stations in France, south-west Germany and Switzerland, and for one station (Dijon) go back with few breaks to the year 1391; and as the variations of climate of which they give an indication correspond precisely to the indications derived from temperature and rainfall in those periods in which we have corresponding data for these meteorological elements, they may be taken as warranting conclusions with regard to these points even for periods for which direct data are wanting. A period of early vintages corresponds to one of comparatively scanty rains and high temperatures. It is accordingly interesting to note that the data referred to indicate, on the whole, for Dijon an earlier vintage for the average of all periods of five years down to 1435 than for the average of the periods of the same length from 1816-1880; but that the figures generally show no regular retardation from period to period, but more or less regular oscillations, differing in their higher and lower limits in different periods of long duration.

Much light has been thrown on the present state of agriculture in Europe by the publication of Engelbrecht's *Landbauzonen der aussertropischen Länder*.[40] Of the two chief bread-plants of Europe, wheat and rye, wheat is cultivated as far north as about 69° N. both in Norway and Finland, but the limit of the area in which more wheat is cultivated than rye to the west and south, more rye than wheat to the east and north, runs parallel to the west coast of the Netherlands and Belgium, then strikes south-eastwards so as to include nearly all Germany except Alsace-Lorraine and the south-west of Württemberg, also eastern Switzerland, nearly all the Alpine provinces of Austria and nearly the whole region north of the Carpathians, as well as the greater part of Bohemia within the area in which rye predominates, while in Russia the limit runs east-north-east from about 44° N. in the west to about 55° N. in the Urals. On one side of this line wheat makes up more than 80% of the entire grain area[41] in western Rumania, in Italy and a large part of the south-west of France, and from 40% to 60% in the south-east of England. Spelt is cultivated in the south-west of Germany, Belgium and northern Switzerland, on the middle Volga and in Dalmatia and Servia. Rye covers more than 50% of the grain area in the east of Holland and Belgium, in the north-west of Germany, in central and eastern Germany and in middle Russia. Oats are more cultivated than all varieties of wheat in Ireland, in the west and the northern half of Great Britain, in Finland and in the greater part of Denmark and Schleswig-Holstein. Barley is more largely cultivated than oats both in the extreme north and the south of the continent. Maize is cultivated to a great extent in the north-west of the Iberian Peninsula, in the south-west of France, in northern Italy and in the lands bordering the lower Danube; in many parts covering an area equal to or greater than that occupied by all grain crops. Millets (various species of panicum) are most extensively cultivated in the south-east of Europe. The kind of millet known as guinea-corn or durra (*Sorghum vulgare* Pers.), so extensively cultivated in Africa and India, is grown to a small extent on the east side and in the interior of Istria. Buckwheat is cultivated in the west and east of the continent—in the west from the Pyrenees to Jutland, in the east throughout southern and middle Russia. The potato is very largely cultivated in western, northern and central Europe, but has made comparatively little progress in Russia. The cultivation of lentils is most largely pursued in the west and south-west of Germany and in the south and north of France. That of lupines has spread with great rapidity since 1840 in the dry sandy regions of eastern Germany, where lupines have proved as well adapted for such soils as the more widely cultivated sainfoin has done for dry chalky and other limestone soils. Sugar beet is most largely cultivated in the extreme north of France and the adjoining parts of Belgium and in central Germany, to a less but still considerable extent in south-eastern Germany, northern Bohemia and the south-west of Russia. Flax, like other industrial plants, shows a tendency to concentrate itself on specially favourable districts. It is most extensively grown in Russia from the vicinity of Riga north-eastwards, even crossing in the north-east the 70th parallel of latitude; but it is also an important crop in the north-east of Ireland, in Belgium and Holland, in Lombardy and in northern Tirol. Hemp is more extensively cultivated in central and southern Europe, above all in Russia. Teasels are grown in various spots in the south-east of France and in south Germany. The cultivation of madder is not yet extinct in Holland and Belgium, that of weld (*Reseda luteola*), woad (*Isatis tinctoria*) and saffron not yet in France.

Cultivated plants.

The vine can be grown without protection in southern Scandinavia, and has been known to ripen its grapes in the open air at Christiansund in 63° 7′; but its cultivation is of no importance north of 47½° on the Atlantic coast, 50½° on the Rhine, and from 50° to 52° in eastern Germany, the limit falling rapidly southwards to the east of 17° E. The olive, with its double crop, is one of the principal objects of cultivation in Italy, Spain and Greece, and is not without its importance in Portugal, Turkey and southern Austria. Tobacco is grown to a considerable extent in many parts of western, central and southern Europe, for the most part under government regulation. The most important tobacco districts are the Rhine valley in Baden and Alsace, Hungary, Rumania, the banks of the Dnieper, Bosnia and the south-west and other parts of France. The cultivation is even carried on in Sweden and Great Britain, but the most northerly area in which it occupies as much as 0.1% of the grain area is the Danish island of Fyen (Funen).

Hop-growing is hardly known in the south, but forms an important industry in England, Austria, Germany and Belgium. Among the exotics exclusively cultivated in the south are the sugar-cane, the cotton plant, and rice. The first, which is found in Spain and Sicily, is of little practical moment; the second holds a secondary position in Turkey and Greece; and the third is pretty extensively grown in special districts of Italy, more particularly in the valley of the Po. Even pepper is cultivated to a small extent in the extreme south of Spain. Of the vast number of fruit trees which flourish in different parts of the continent only a few can be mentioned. Their produce furnishes articles of export to Austria-Hungary, Germany, France, Belgium, Italy and Spain. In Sardinia the acorn of the *Quercus Ballota* is still used as a food, and in Italy, France and Austria the chestnut is of very common consumption. In the Mediterranean region the prevailing forms—which the Germans conveniently sum together in the expression *Südfrüchte*, or southern fruits—are the orange, the citron, the almond, the pomegranate, the fig and the carob tree. The palm trees have a very limited range: the date palm (*Phoenix dactylifera*) ripens only in southern Spain with careful culture; the dwarf palm (*Chamaerops humilis*) forms thickets along the Spanish coast and in Sicily, and appears less frequently in southern Italy and Greece.

Wheat and rye.

Special interest attaches to the two main bread crops of Europe, wheat and rye, the average annual production of which in the different countries of the continent at three periods is shown in the following tables.

Average Production of Wheat in Millions of Bushels.

	1872-1876.[42]	1881-1890.[43]	1894-1903.[44]
Austria-Hungary[45]	137	161	191
Belgium	22	18	15
Bulgaria[46]	..	40	36
Denmark	4.7	5	3.6
France	277	309	335
Germany	101	93	127
Greece	..	7	4
Italy	140	122	131
Netherlands	6	6	6
Norway	0.3	0.3	0.4
Portugal	9	8	8
Rumania[46]	..	50	57
Russia[47]	275	242	325
Servia[46]	..	8	11
Spain[48]	168	73	101
Sweden	3	3.7	4.5
Switzerland	2	2.6	5
Turkey in Europe[46]	..	38	18
United Kingdom	91	78	57

Average Production of Rye in Millions of Bushels in the chief Rye-producing Countries of Europe.[49]

	1872-1876.	1881-1890.	1894-1903.
Austria-Hungary	129	122	124
Belgium	16	17	20
Denmark	15	17	22
France	69	69	73
Germany	209	228	368
Netherlands	10	11	16
Russia[50]	715	713	971
Spain	32	21	23
Sweden	18	20	27

Perhaps the most striking facts revealed by these two tables are these; first, that the United Kingdom is the only great wheat-growing country which has shown a great decline in the amount of production in two successive periods; and, second, that both Germany and Russia show a great advance under both wheat and rye between the last two periods. This gives interest to statistics of acreage under these two crops, and some data under that head are given in the adjoining tables.

Acreage under Rye.

Period.	Germany.	Russia (*ex*-Poland).
1881-1890	14.50	..
1883-1887	..	64.6
1899-1903	14.74	65.5

These figures show that the increased production is only in part, in some cases in small part, attributable to increase in area, and the following figures giving the average annual yield of wheat per acre (*a*) in the period preceding 1885, and (*b*) generally in the period of five years preceding 1905, shows that an improvement in yield in recent years has been very general.

	(*a*)	(*b*)		(*a*)	(*b*)
Austria	15.8	17.3	Italy	12.0	12.8
Hungary	15.5	17.5	Netherlands	25.0	30.7
Belgium	24.5	34.5	Russia	8.0	9.7
France	18.0	19.2	Poland	..	14.8
Germany	18.5	28.2	United Kingdom	29	29.9

Forests.

When the Aryan peoples began their immigration into Europe a large part of the surface must have been covered with primeval forest; for even after long centuries of human occupation the Roman conquerors found vast regions where the axe had made no lasting impression. The account given by Julius Caesar of the Silva Hercynia is well known: it extended, he tells us, for sixty days' journey from Helvetia eastward, and it probably included what are now called the Schwarzwald, the Odenwald, the Spessart, the Rhön, the Thüringerwald, the Harz, the Fichtelgebirge, the Erzgebirge and the Riesengebirge. Since then the progress of population has subjected many thousands of square miles to the plough, and in some parts of the continent it is only where the ground is too sterile or too steep that the trees have been allowed to retain possession. Several countries, where the destruction has been most reckless, have been obliged to take systematic measures to control the exploitation and secure the replantation of exhausted areas. To this they have been constrained not only by lack of timber and fuel, but also by the prejudicial effects exerted on the climate and the irrigation of the country by the denudation of the high grounds. But even now, on the whole, Europe is well wooded, and two or three countries find an extensive source of wealth in the export of timber and other forest productions, such as turpentine, tar, charcoal, bark, bast and potash.

Acreage under Wheat.[51]

Period.	United Kingdom.	France.	Italy.	Germany.	Austria.	Hungary.	Russia (*ex* Poland).	Rumania.
Average, 1881-1885	2.8	17.2	11.7[52]	4.6	2.6	6.5	28.9[53]	..
" 1886-1890	2.5	17.3	10.9[52]	4.8	2.8	7.1	..	..
" 1891-1895	2.0	16.7	11.3[52]	4.9	2.7	8.3	32.5	3.5
" 1896-1900	2.0	16.9	11.3[52]	4.9	2.6	8.2	36.9	3.8
" 1901-1903	1.7	16.3	12.0	4.4	2.6	9.0	42.8	3.9

The following estimates of the forest areas of European countries are given in G.S. Boulger's *Wood*:—

Countries.	Thousands of Acres.	Per cent. of Total Area.
Russia	469,500	34
Sweden	43,000	24
Austria-Hungary	42,634	29
France	20,642	19
Spain	20,465	16.3
Germany	20,047	25.6
Norway	17,290	25
Italy	9,031	18
Turkey	5,958	14

United Kingdom	2,500	3.8
Switzerland	1,905	18.8
Greece	1,886	11.8
Portugal	1,107	5
Belgium	1,073	12
Holland	486	6
Denmark	364	4.6

Horse-breeding is a highly important industry in almost all European countries, and in several, as Russia, France, Hungary and Spain, the state gives it exceptional support. Almost every district of the continent has a breed of its own: Russia reckons those of the Bashkirs, the Kalmucks, the Don-Cossacks, the Esthonians and the Finlanders as among its best; France sets store by those of Flanders, Picardy, Normandy, Limousin and Auvergne; Germany by those of Hanover, Oldenburg and Mecklenburg, which indeed rank among the most powerful in the world; and Great Britain by those of Suffolk and Clydesdale. The English racers are famous throughout the world, and Iceland and the Shetland Islands are well known for their hardy breed of diminutive ponies. The ass and the mule are most abundant in the southern parts of the continent, more especially in Spain, Italy and Greece. The camel is not popularly considered a European animal; but it is reared in Russia in the provinces of Orenburg, Astrakhan and Taurid, in Turkey on the Lower Danube, and in Spain at Madrid and Cadiz; and it has even been introduced into Tuscany. A much more important beast of burden in eastern and southern Europe is the ox: the long lines of slow-moving wains in Rumania, for example, are not unlike what one would expect in Cape Colony. In western Europe it is mainly used for the plough or fattened for its flesh. It is estimated that there are about 100 distinct local varieties or breeds in Europe, and within the last hundred years an enormous advance has been made in the development and specialization of the finer types. The cows of Switzerland and of Guernsey may be taken as the two extremes in point of size, and the “Durhams” and “Devonshires” of England as examples of the results of human supervision and control. The Dutch breed ranks very high in the production of milk. The buffalo is frequent in the south of Europe, more especially in the countries on the Lower Danube and in southern Italy. Sheep are of immense economic value to most European countries, above all to Spain and Portugal, Great Britain, France, Hungary, the countries of the Balkan Peninsula, the Baltic provinces of Germany and the south-east of Russia. The local varieties are even more numerous than in the case of the horned cattle, and the development of remarkable breeds quite as wonderful. In all the more mountainous countries the goat is abundant, especially in Spain, Italy and Germany. The pig is distributed throughout the whole continent, but in no district does it take so high a place as in Servia. In the rearing and management of poultry France is the first country in Europe, and has consequently a large surplus of both fowls and eggs. In Pomerania, Brandenburg, West Prussia, Mecklenburg and Württemberg the breeding of geese has become a great source of wealth, and the town of Strassburg is famous all the world over for its *pâtés de foie gras*. Under this heading may also be mentioned the domesticated insects, the silkworm, the bee and the cantharis. The silkworm is most extensively reared in northern Italy, but also in the southern parts of the Rhone valley in France, and to a smaller extent in several other Mediterranean and southern countries. Bee-keeping is widespread. The cantharis is largely reared in Spain, but also in other countries in southern and central Europe.

Domestic animals.

The most important mineral products of Europe are coal and iron ore. In order of production the leading coal-producing countries have long been the United Kingdom, Germany, France and Belgium. Since 1897 Russia has held the fifth place, followed by Austria-Hungary, Spain and Sweden. The production in other countries is insignificant. Besides coal, lignite is produced in great amount in Germany and Austria-Hungary, and to a small amount in France, Italy and a few other countries. Down to 1895 the United Kingdom stood first among the iron-ore producing countries of Europe, but since 1896 the order under this head has been the German Customs’ Union, the United Kingdom, Spain, France, Russia, Sweden, Austria-Hungary and Belgium. By far the most important iron-ore producing district of Europe is that which lies on different slopes of the hills in which German Lorraine, the grand duchy of Luxemburg and France meet, the district producing all the ore of Luxemburg and the principal supplies of Germany and France. Another important producing district is what is known as the Siegerland on the confines of the Prussian provinces of the Rhine and Westphalia. Next in importance to these are the iron-ore deposits of the United Kingdom, the chief being those of the Cleveland district south of the Tees, and the hematite fields of Cumberland and Furness.

Minerals.

With regard to the mineral production of Europe generally, perhaps the most notable fact to record is the relatively lower place taken by the United Kingdom in the production both of coal and iron. Here it is enough to state the main results. In the production of coal the United Kingdom is indeed still far ahead of all other European countries, but notwithstanding the fact that the British export of coal has been increasing much more rapidly than the production, this country has not been able to keep pace with Germany and Russia in the rate of increase of production. In 1878 the production of coal in the German empire was only about 34% of that of the United Kingdom, but in 1906 it had grown to nearly 50%. This, too, was exclusive of lignite, the production of which in Germany is increasing still more rapidly. It was equal to little more than one-fourth of the coal production in 1878, but more than two-fifths in 1906. The coal production of Russia (mainly European Russia) is still relatively small, but it is increasing more rapidly than that of any other European country. While in 1878 it was little more than 2% of that of the United Kingdom, in 1906 the corresponding ratio was above 8%. In the production of iron ores the decline in the position of the United Kingdom is much more marked. The production reached a maximum in 1882 (18,032,000 tons), and since then it has sunk in one year (1893) as low as 11,200,000 tons, while, on the other hand, there was a rapid increase in the production of such ores in the German Zollverein (including Luxemburg), France, Spain, Sweden and Russia, down to 1900, with a more progressive movement, in spite of fluctuations, in all these countries than in the United Kingdom in more recent years. In the total amount of production the United Kingdom in 1905 took the second place. While in 1878 the production of iron ores in the German Zollverein was little more than a third of that in the United Kingdom, in 1905 it exceeded that of the United Kingdom by nearly 60%.

An indication of the relative importance of different European countries in the production of ores and metals of less aggregate value than coal and iron is given in the following tables[54]:—

	Gold.	Silver.	Quicksilver Ore.	Tin Ore.
	kilos.	kilos.	m.t.	m.t.
Austria	126	38,940	91,494	54
German Empire	121	177,183	..	134
Hungary	3,738	13,642	..	..
Italy	..	..	80,638	..
Norway	..	6,367	..	..
Portugal	29	..	..	22
Russia	8,202[55]	..	?[57]	..

Spain	..	?[56]	26,186	86
United Kingdom	58	4,614	..	7,268[58]

Kilos = kilograms. M.t. = metric tons.

	Copper Ore.	Lead Ore.	Manganese Ore.	Zinc Ore.
	m.t.	m.t.	m.t.	m.t.
Austria	20,255	19,683	13,402	32,037
Belgium	..	121	120	3,858
Bosnia-Herzegovina	765	..	7,651	31
France	2,547	11,795[62]	11,189	53,466
German Empire	768,523	140,914	52,485	704,590
Greece	..	?[63]	10,040	26,258
Hungary	1,338	564	10,895	..
Italy	147,135	40,945	3,060	155,821
Norway	32,203	(see zinc)	..	3,308[66]
Portugal	352,689[59]	511	22	1,267
Russia	?[60]	..	?[65]	9,612
Spain	2,888,777[61]	263,519[64]	62,822	170,383
Sweden	19,655	1,938[62]	2,680	52,552[67]
United Kingdom	7,598	31,289	23,127	23,190

M.t. = metric tons.

Platinum has hitherto been obtained nowhere in Europe except in the auriferous sands in the Russian government of Perm. Nickel is derived from Germany, Norway and Sweden; antimony from Germany and Hungary; bismuth from Saxony and Bohemia. Bauxite, which is used in the manufacture of aluminium, is obtained from France, Styria and Ireland. In order of importance the chief salt-producing countries are the United Kingdom (in which for some years the amount produced has been for the most part stationary or declining), Germany (which is rapidly increasing its production), Russia, France, Spain, Italy, Austria-Hungary, Rumania and Switzerland. Besides common salt Germany has for many years been producing a rapidly increasing amount of potash salts, of which it has almost a monopoly. Italy (chiefly Sicily) is by far the most important producer of sulphur. Among other mineral products may be mentioned the boric acid and statuary marble of Tuscany, the statuary marble of Greece, the asphalt of Switzerland, Italy, Germany and Austria-Hungary, the slates of Wales, Scotland and France, the kaolin of Germany, England and France, and the abundant glass sands of Belgium, France and Bohemia.

Commerce, industries and railways.

With regard to commerce, industries and railways, as a whole, Europe may be said to be characterized by the rapid development of manufacturing at the expense of agricultural industry. With few exceptions the countries of Europe that export agricultural products are able to spare a diminishing proportion of the aggregate of such produce for export. Other countries are becoming more and more dependent on imported agricultural products. Most European countries, even if not able to export a large proportion of manufactured articles, are at least securing a greater and greater command of the home market for such products.[68] Inland centres of manufacturing industry are extending the range of their markets. All these changes have been largely, if not chiefly, promoted by the improvements in the means of communication, and the methods of transport by sea and land. Larger ships more economically propelled have brought grain at a cheaper and cheaper rate from all parts of the world, and improved methods of refrigeration have made fresh meat, butter and other perishable commodities even from the southern hemisphere articles of rapidly growing importance in European markets. Improvements in transport have likewise tended to cheapen British coal in many parts of the mainland of Europe. On the other hand, the extension of the railway network of the continent has brought a wider area within the domain of the manufacturing regions associated with the coalfields occurring at intervals in central Europe from the upper Oder to the basin of the Ruhr, as well as some of the more detached coalfields of Russia. As affecting the relative advantages of different European countries for carrying on manufacturing industry, three inventions or discoveries of recent years may be mentioned as of capital importance: (1) the invention in 1879 of the Thomas process for the manufacture of ingot iron and steel from the phosphoric iron ores, an invention which gave a greatly enhanced value to the ores on the borders of Lorraine, Luxemburg and Alsace, as well as others both in England and on the continent; (2) the invention of efficient machines for the application of power by means of electricity, an invention which gave greatly increased importance to the water-power of mountainous countries; and (3) the discovery of the fact that from lignite an even higher grade of producer gas may be obtained than from coal, a discovery obviously of special importance for the great lignite-producing districts of Germany and Bohemia.

Water-power.

Such particulars as can be procured with regard to the utilization of water-power in the countries of Europe which use that source of power most largely are given in the following table:—

Countries	Date.	Total Horse-power used in Mechanical Industry.	Total Horse-power in Hydraulic Installations.	Percentage belonging to Hydraulic Installations.
		Thousands.	Thousands.	Per cent.
Germany	1895	3427	629	18
France	1899	..	575	..
	1904	2581[69]	650[69]	25
Austria-Hungary	1902	..	437	..
Italy	1899	2209	337	15
Sweden	1903	453	..	about 50[70]
Norway	1904	254	186	73
Switzerland	1895	153	88	58
	1895	153	95[71]	62
	1901	320	185	58
	1901	320	223[71]	70
	1905	516	?	?

The figures derived from the three recent industrial censuses of Switzerland are very instructive, especially if one is justified in including the electric among the hydraulic installations. The estimates that have been made of the total available water-power in a few European countries are mostly based on such problematical data that they are not worth giving. One very uncertain element in such calculations is the amount of water-power that is capable of being

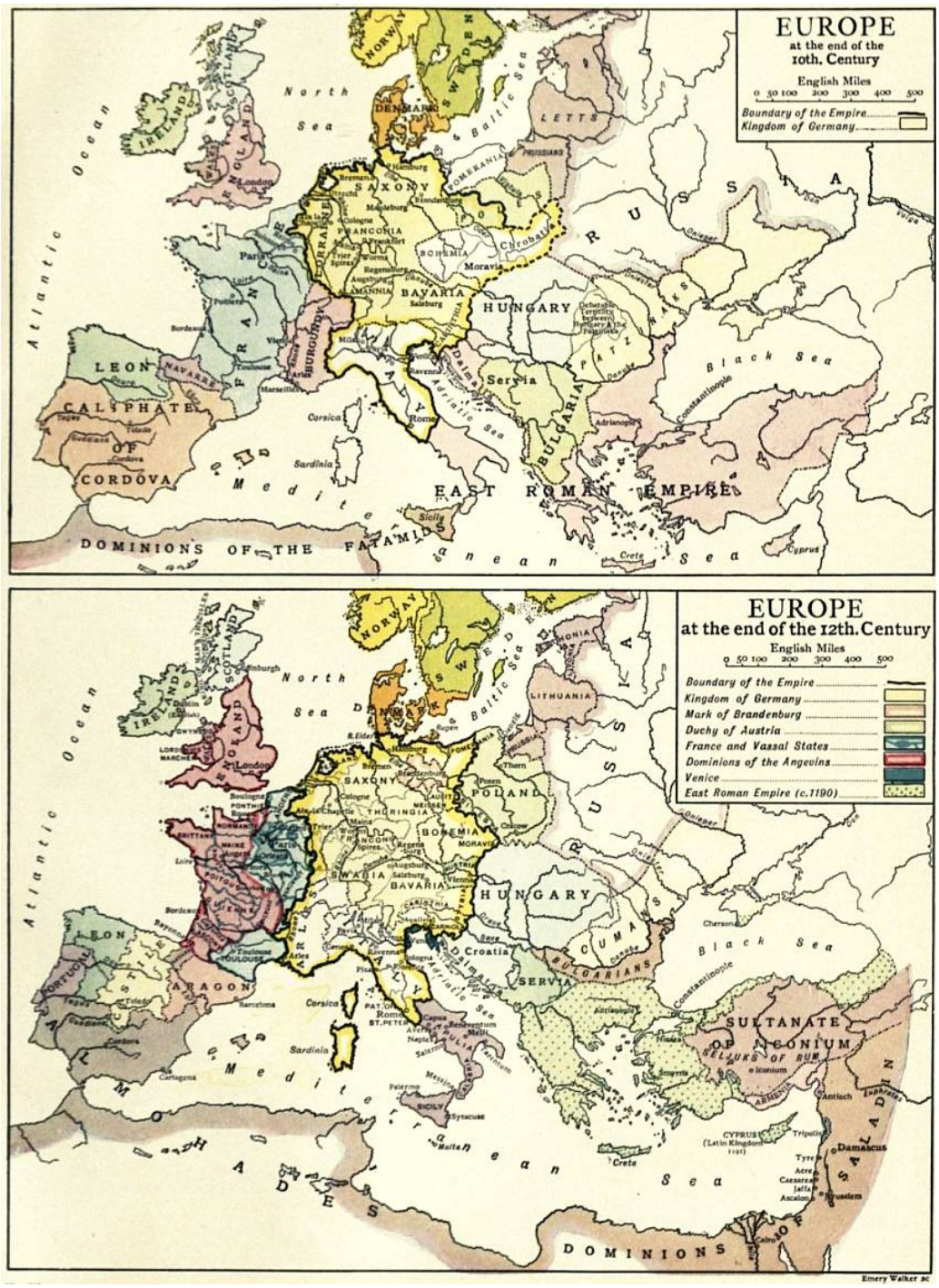
artificially created by the construction of valley-dams, such as have been erected on a small scale in the Harz and other mining and smelting regions of Germany from an early date, and are now being built on a much larger scale in the Rhine region and other parts of Europe, or is incidentally provided in the construction of canals.

Transcontinental routes.

The commercial history of Europe has illustrated from the earliest times the influence of the outline and physical features in determining great trade-routes along certain lines. At all periods land routes have connected the southern seas with the Baltic and the North Sea, effecting the great saving of distance more or less indicated by the following table:—

	Distance by Sea.	Direct Distance.	Distance by Rail.
	st. m.	m.	m.
St Petersburg-Odessa	5240	930	1217
Riga-Odessa	4985	765	1022
Danzig-Odessa	4735	745	1009
Stettin-Triest	4065	550	854
Lübeck-Venice	3920	640	871
Hamburg-Triest	3820	560	945
Hamburg-Venice	3805	555	886
Hamburg-Genoa	2845	640	880
Antwerp-Venice	3500	515	850
Antwerp-Genoa	2535	515	778
Antwerp-Marseilles	2350	?	725
Calais-Genoa	2400	555	780
Calais-Marseilles	2215	535	721
Havre-Marseilles	2135	475	678
Bordeaux-Cette	1945	227	295
Calais-Constantinople	3510	1445	2134
Calais-Salonica	3370	1215	1911
Christiania-Stockholm	780	260	357
Luleå-Narvik (Ofotenfjord)	1970	240	295

From the form of the continent it obviously results that the farther east the route lies the greater is the saving of distance. The precise direction of the routes has been very largely fixed, however, by the physical features; by the course of the rivers where navigable rivers formed parts of the routes; in other cases by the situation and form of the mountains, or the direction of the river valleys which is implied in the form of the mountains. From the Black Sea the most convenient starting-point is obviously towards the west, and two connecting routes with the Baltic lie wholly to the east of the mountains. One route makes use of the Bug or the Dniester, the San and the Vistula so far as possible, while another starting in the same way proceeds round the foot-hills of the Carpathians, thus finding easy crossing places on the head-streams of the rivers, as far as the Oder and then down that stream. Another route is up the Danube to the neighbourhood of Vienna, and then north-eastwards through the opening between the Carpathians and the Sudetic range to the head-waters of the Oder, crossing a water-parting little more than 1000 ft. in altitude. The first route was certainly used again and again by the ancient Greeks, starting from Olbia near the mouth of the Bug, the objective point being the coast in the south-east of the Baltic supplying the amber which was so important an article of commerce in early times. This route was again much used in the middle ages, when Visby, on Gotland, undoubtedly selected on account of the security afforded by an island station, was for hundreds of years an important centre of trade both in northern products (of which furs were the most valuable) and those of the East (pepper and other spices, silks and other costly articles). Numerous coins, Roman, Byzantine and Arabic, found not merely in Gotland itself but also at various points along the route indicated, testify to the long-continued importance of this route. In the middle ages the Oder route was also largely used whether reached by rounding the Carpathians or ascending the Danube, and in connexion with that route the island of Bornholm long formed a focus of commerce answering to that in Gotland farther east. The Danube route was also made use of farther west, and formed a large part of a great route connecting the East with the north-west of Europe. The valuable goods of the Orient could be conveyed up-stream as high as Ratisbon (Regensburg), and thence north-westward across Nuremberg to Frankfort-on-Main, from which access was had to the Rhine gorge leading on to Cologne and the ports of Dordrecht and Rotterdam, Bruges and Ghent; or they could be carried still farther up-stream to Ulm, thence by a route winding through the north of the Black Forest to Strassburg and from that point north of the Vosges to the Marne and Seine.



Farther west use was made at an early date of passes by which the whole system of the Alps could be crossed, or partly crossed and partly rounded, in a single rise. The ancient Etruscans, in exchanging their earthenware and bronzes for the amber found largely in those times not only in the Baltic but also on the eastern shores of the North Sea north of the Rhine mouths, made regular use of at least three such passes. One of these was the Brenner, the summit of which is under 4500 ft. in height, approached on the south side by the valley of the Adige and its tributary the Eisak, on the other side by the Inn valley and that of its small tributary the Sill. By this route the Alps at about their widest are crossed with exceptional ease; and hence it was natural that it should have been used by the Etruscans to reach the amber shores of the Baltic, and in all subsequent periods in intercourse between central Europe and northern Italy. In their trade with the mouth of the Rhine the Etruscans appear to have used only the passes approached by the Dora Baltea, which leads equally to the Little St Bernard, to the south of Mont Blanc, and so to the Isère valley and the Rhone, and to the Great St Bernard, to the east of Mont Blanc, and so directly to the Rhone valley above the Lake of Geneva, by which route the remainder of the Alps could be rounded on the west and the Rhine valley reached by crossing the northern Jura. Roman roads were afterwards made across all these passes, although that across the Great St Bernard (the highest of all, above 8100 ft.) seems never to have been made practicable for carriages. The Romans also made use of three intervening passes by which in a single rise from the Po basin the heads of valleys leading right down to the head of Lake Constance could be reached. These were the Bernardino, Splügen and Septimer, to mention them in the order from west to east. By the Romans the Simplon was also made use of as affording the most direct connexion between Milan and the upper Rhone valley. All these passes were likewise in use in the middle ages when Venice and Genoa were the great intermediaries in the trade in pepper and spices and other Oriental products. The Brenner afforded the most direct connexion between Venice and southern Germany, on a route leading also to northern Germany by way of Ratisbon and afterwards the rivers of the Elbe basin, and finally (from the end of the 14th century) by a canal to Lübeck, which was the great distributing centre of these and other products for the Baltic. To take the most direct route to the Rhine valley and north-western Europe some other pass (the Seefeld or the Fern) in the Bavarian Alps had to be crossed and the Rhine valley reached by Augsburg, and thence either by way of Ulm or Frankfort. From Genoa the routes in the early middle ages were by way of Milan to the Lake of Constance, and thence by way of Ulm if the Rhine valley was the goal, and by way of Augsburg if it was the Baltic. The St Gotthard route, the most direct connexion between Milan and the north of the

Alps, was added about the end of the 13th century. The Mont Cenis pass from an early date afforded the most direct connexion between Genoa and the middle Rhone valley by way of Turin. When modern carriage roads came to be built it was still the same routes that were chosen. The road across the Brenner, completed in 1772, was the first of these. The building of the great Swiss carriage roads across the passes in the early part of the 19th century was inaugurated by Napoleon's road across the Simplon completed in 1805. A later paragraph will show that modern railways follow much the same, if not exactly the same, routes. On the early use of the Saône-Rhone valleys, and the route between the foot-hills of the Cevennes and the Pyrenees, it is not necessary to insist, but it may be mentioned that English tin was sometimes conveyed to the Mediterranean (Marseilles) by this latter route in Roman times.

Since the introduction of railways inland waterways have in most countries taken a very inferior position as means of transport. The articles on the different countries supply the necessary information with respect to those which have a purely national interest, but here mention must be made of those which have significance as belonging to trans-European routes or have an international value. The importance of shortening the water-route between the opposite sides of the great European isthmus separating the Baltic and the Black Sea is brought into prominence by the constant revival of projects for a ship-canal connecting those coasts. A definite step taken with a view to carrying out such a project was the sanction given by the tsar in April 1905 for the appointment of a special commission to inquire into the practicability of a scheme for the excavation of a canal about 28 ft. deep between Riga and Kherson, utilizing the waters of the Duna or western Dvina, the Berezina and Dnieper. Since the completion in 1845 of the Ludwigs or Danube-Main Canal, running from the Main near Bamberg to Kelheim on the Danube, it has been possible to go by water from the mouth of the Rhine to the mouth of the Danube; but this canal has in reality no trans-European significance. It cannot take barges of a greater capacity than 125 tons, is not adapted for steamers, and carries only a very small amount of traffic. But projects for connecting the Danube with northern Europe by water are still entertained. Of these the most advanced are those for establishing connexions through Austria. On the 11th of June 1901 the Austrian diet passed an act prescribing the construction of a canal connecting the Oder with the Danube through the Morava, and another connecting the Danube at Linz with the Moldau-Elbe, and the improvement of the navigation on the connected waterways. The Oder-Danube canal thus authorized would have to cross a watershed of little more than 1000 ft. in altitude as against 1365 ft. in the case of the Ludwigs Canal; but the Elbe-Danube Canal would have to cross one of about 2250 ft. Under the provisions of the act the work is to be completed by 1924. In Germany projects have been actively agitated for improving the Danube-Main connexion either wholly or partly along the route of the present canal, and for establishing a new connexion by means of a canal of at least 6½ ft. in depth by way of the Neckar, the Rems and the Brenz, joining the Danube at Lauingen about midway between Ulm and Donauwörth. The Moldau-Elbe is itself an important international waterway, inasmuch as it allows of steamer traffic from Prague in Bohemia to Hamburg, and by means of a connecting canal to Lübeck. But the most important of all international waterways in Europe is the Rhine, on which even sea-going steamers regularly ascend to Cologne, and an amount of traffic crosses the Dutch frontier three or four times as great as that which makes use of the Manchester ship-canal. The river is also navigable to Basel in Switzerland, though above Strassburg the river is little used, being replaced since 1834 by the Rhine and Rhone canal, which connects the two rivers through the Ill and the Saône. The Rhine is also connected with the Seine by the Marne and Rhine canal passing north of the Vosges, and its tributary the Moselle is also navigable from France into Germany. The Meuse again is navigable from France through Belgium into Holland, and is connected by more than one route with the Seine, and in the densely peopled mining and manufacturing country in the north of France and the adjoining parts of Belgium numerous waterways ramify in different directions. Even in an article on Europe the entirely French canals connecting the Seine and Rhone (Burgundy canal, summit-level 1230 ft., completed 1832), the Loire and Rhone (Canal du Centre, summit-level 990 ft., completed in 1793), and the Canal du Midi, connecting the Garonne at Toulouse with Cette on the Mediterranean, may be mentioned inasmuch as they establish communication between different seas. The last is of special interest because it is the oldest (completed in 1681), because it makes use of the lowest crossing, surmounting the passage of Naurouse, or Gap of Carcassonne, at an altitude of 625 ft., and because it effects the greatest shortening of distance from sea to sea. On this account the project of establishing a ship-canal of modern dimensions along this route has been as often revived as that of the Black Sea and Baltic canal. In the east of Europe the Vistula and Memel are both international waterways, but they are of little importance compared with those in the west. The Kaiser Wilhelm or North Sea and Baltic canal, opened in 1895, has, however, no little international value, inasmuch as it shortens the sea-route to the Baltic for all North Sea ports to the south of Newcastle, and affords the means of avoiding a rather dangerous passage round the north of Jutland. A minor degree of international interest belongs to the ship-canal through the Isthmus of Corinth, opened on the 6th of August 1893.

Inland waterways.

Railways.

The following table gives a summary statement of the progress of railway construction in European countries down to the end of the 19th century:—

Railways in European Countries.

	Date of opening of first line.	Miles open.					
		1875.	1880.	1885.	1890.	1895.	1900.
Austria	1837	6,402	7.083	8,270	9,506	10,180	11,912
Belgium	1835	2,171	2,399	2,740	2,810	2,839	2,851
Bosnia-Herzegovina	1879	..	..	..	342	471	..
Bulgaria	1866	..	..	..	..	535	921
Denmark	1847	689	975	1,195	1,217	1,371	1,809
France	1828	13,529	16,275	20,177	20,666	22,505	26,739
German Empire	1835	17,376	20,693	22,640	25,411	27,392	30,974
Great Britain	1825	14,510	15,563	16,594	17,281	18,001	18,680
Greece	1869	7	7	278	452	?	641
Hungary	1846	3,992	4,421	5,605	6,984	8,651	10,624
Ireland	1834	2,148	2,370	2,575	2,792	3,173	3,183
Italy	1836	4,771	5,340	6,408	7,983	9,579	9,864
Luxemburg	1873	110	..	..	..	270	..
Netherlands	1839	1,006	1,143	1,496	1,653	1,869	2,007
Norway	1854	345	652	970	970	1,071	1,231
Portugal	1856	643	710	949	1,316	1,336	1,346
Rumania	1869	766	859	1,100	1,590	1,617	1,920
Russia*	1838	12,166	14,026	15,934	18,059	21,948	27,345
Servia	1884	..	..	155	335	335	355
Spain	1848	3,801	4,550	5,547	6,211	7,483	8,206
Sweden	1856	2,171	3,654	4,279	4,980	6,058	7,018

Switzerland	1844	1,257	1,596	1,795	2,014	2,233	2,401
Turkey	1872	..	727	657	657	935	..

* Excluding Finland.

The chief railways of most European countries are on the same gauge as that originally adopted in Great Britain, namely, 4 ft. 8½ in. Irish railways are, however, on the gauge of 5 ft. 3 in. The standard gauge in Russia is 5 ft., that of Spain and Portugal about 5 ft. 6 in. The still isolated railway system of Greece is upon a narrow gauge. The very general use of a common gauge obviously greatly facilitates international trade. It allows, for example, of wagons from Germany entering every country on its frontier except Russia. It allows of German coal being carried without break of bulk to Paris, Milan and the mainland of Denmark. By means of train-ferries German trains can also be conveyed to Copenhagen by way of Warnemünde and Gjedser and then across the channel separating Falster and Zealand; and there is a similar means of communication between Copenhagen and Malmö (Sweden) and between Lindau in Bavaria on the Lake of Constance and Romanshorn on the same lake in the Swiss canton of Thurgau. The establishment of this method of transport between England and France has been urged in opposition to the Channel Tunnel scheme.

Of the railway systems of the mainland of Europe as a whole the main features are these. There is a broad belt running from the North Sea eastwards between the lines marked by Amsterdam and Hanover on the north, and Calais, Liége, Düsseldorf and Halle on the south, in which important lines of railway run from west to east. About 12° E. those lines begin to converge on Berlin. This belt is crossed in the Rhine valley by a much narrower but very important belt running north and south, now connected with the Italian railway system through the St Gotthard tunnel. To the south of the west end of the west-to-east belt lies the principal railway focus in western Europe, Paris, from which important lines radiate in all directions; two of these radiating lines now establish communication with the Italian railway system, through the Mont Cenis and Simplon tunnels respectively, and other two connecting with the Spanish system round the ends of the Pyrenees. Berlin in central Europe is perhaps an even more important railway focus. Among the chief lines radiating from it are one through Leipzig and Munich and connecting with the Italian railway system by the Brenner route, and another through Dresden and Prague to Vienna, and then by the Semmering pass by one route to Triest and by another to Venice. East of Berlin the railways of Europe begin to form wider meshes. Two main lines diverge towards the north-east, one by Küstrin and Königsberg and the other by Frankfort on the Oder and Thorn, both uniting at Eydtkühnen to the east of Königsberg before crossing the Prussian frontier and passing on to St Petersburg. From Thorn a line branches off by Warsaw to Moscow, the chief railway focus in eastern Europe. South-east from Berlin there runs another important line through Breslau, Cracow and Lemberg to Odessa, skirting to a large extent the foot-hills of the Carpathians like the ancient trade route from Olbia to the Baltic. Two routes on which there are services organized by the International Sleeping Car Company connect London with Constantinople, and it is noteworthy that both of these indicate the importance of the physical feature which has determined the position of the great north-south belt of railways above mentioned, and also of towns famous as commercial centres in the middle ages. One of these is the route of the Orient Express, which goes by Calais, Paris and Strassburg, then east of Strassburg runs north in the Rhine valley for about 40 m. to Karlsruhe, then winds through the hilly country between the Black Forest proper and the Odenwald to Stuttgart, proceeding thence by Ulm, Augsburg and Munich to Linz and then by the valley of the Danube through Vienna and Budapest to Belgrade, and thence by the valleys of the Morava, Nishava and Maritza to Constantinople. The other is that of the Ostend-Vienna express, going by Ostend to Brussels, and through Aix-la-Chapelle to Cologne, then up the Rhine gorge southwards to Bingen and eastwards to Mainz and on to Frankfort (on the Main), thence south-eastwards by the route so celebrated in the middle ages through Nuremberg to Regensburg (Ratisbon), and thence down the valley of the Danube coinciding with the Orient Express route from a point a few miles above Linz. From the Orient Express route a branch crosses from the valley of the Morava to that of the Vardar, establishing a connexion with Salonica.

In the development of this railway system the mountains have proved the most formidable of natural obstacles, and at the head of the mountains in this respect as in others stand the Alps. The first railway to cross one of the main chains of the Alps was the Semmering line on the route from Vienna to the Adriatic, constructed in 1848-1854. Its summit is in a tunnel less than 1 m. long, 2940 ft. above sea-level or nearly 300 ft. below the level of the pass. South of the Semmering, however, various other passes have to be crossed, and it was not till 1857 that the railway to Triest (by Laibach) was completed, and not till the late seventies that the more direct route to Venice across the Tarvis pass in Carinthia was established. Of the route from Triest by Görz across the Karawanken and Tauern Alps to Salzburg and south-eastern Germany the first section was opened only in 1906. After the Semmering the next railway to cross the Alps was that following the Brenner route which crosses the summit of the pass at the height of 4490 ft., and, as already stated, is the only pass that has to be crossed on the way from Munich to the plains of Italy. Next followed in 1871 the western route through the so-called Mont Cenis tunnel, really under the Col de Fréjus, to the west of the Mont Cenis pass, and effecting a crossing between the valleys of the Arc (Rhone basin) and the Dora Riparia (Po basin) at an altitude of 4380 ft., or nearly 2500 ft. lower than the pass previously used, but only by piercing the mountains in a tunnel more than 7½ m. long. Next in order was the St Gotthard route, opened in 1882, the most direct route between northern Italy and western Germany, connecting the Lake of Lucerne with the valley of the Ticino. Here the altitude is reduced to 3785 ft., about 3150 ft. below the summit-level of the pass, but the tunnel length is increased to rather more than 9¼ m. The Simplon route opened in June 1906, between the upper Rhone valley and the Toce valley, shortening the route between Milan and northern France, effects the crossing at an altitude of only 2300 ft., nearly 4300 ft. lower than the pass, but by increasing the tunnel length to 12¼ m. Steps were subsequently taken to continue the Simplon route northwards by a tunnel through the Lötschberg in the Bernese Alps, and a project is entertained for continuing the Vintschgau (upper Adige) railway across or under the Reschenscheideck to the Inn valley. An important east-west crossing of the Alps was effected when the Arlberg tunnel (6.37 m. long, summit-level 4300 ft.) connecting the Inn valley with that of the Rhine above the Lake of Constance was opened in 1884.

Several lines wind through and cross the Jura. That which in 1857 pierced the Hauenstein, in the north of Switzerland, attained international importance on the opening of the St Gotthard tunnel, inasmuch as it lies on the route thence through Lucerne to the Rhine valley at Basel; and that which crosses the Col de Jougne between Vallorbe and Pontarlier acquired similar importance on the completion of the Simplon tunnel. Further projects are entertained for shortening the connexion between this tunnel and the north of France by making a more direct line from Vallorbe to the French side of the Jura, or by making a railway across or under the Col de la Faucille (4340 ft.), north-west of Geneva.

Of the two railways that pass round the extremity of the Pyrenees, the western was the first to be constructed, the eastern was not opened till 1878. Hitherto the intervening mountains have proved more of a railway barrier than the mightier system of the Alps, but in 1904 a convention was concluded between the French and Spanish governments providing for the establishment of railway connexion between the two countries at three points of the great chain.

There are several railways across the Carpathians, mostly by passes under 3000 ft. in height. The fact that the Tömös Pass, on the direct route from Hungary through Transylvania to Bucharest, attains an altitude of 3370 ft. was undoubtedly one reason why the railway following this route, completed in December 1879, passing through several

tunnels, was one of the last to be constructed. But the obstruction of mountains has not been the only cause of delay in the building of railways. Sparseness of population and general economic backwardness have also proved hindrances, especially in Russia and the Balkan Peninsula. The railways to Constantinople and Salonica were completed only in 1888, and yet the highest altitude on the Constantinople line is only 2400 ft., that on the Salonica line 1750 ft. Among other important railways of recent date and of more than merely national significance may be mentioned that bringing Bucharest into connexion with the Black Sea port of Costantza by means of a bridge across the Danube at Chernavoda (opened in September 1895); a line across the Carpathians connecting Debreczen with Lemberg, the continuation of the line eastwards from Lemberg to Kiev; a network bringing the coalfield of the Donets basin into connexion with ports on the Sea of Azov; a line in the south-east of Russia connecting Novocherkask with Vladikavkaz, and branches running from the same point connecting that line with Novorossiysk on the Black Sea on the one hand, and with Tsaritsyn at the last angle of the Volga on the other hand; a line in northern Russia bringing Archangel into connexion with the European system at Vologda (opened in 1898); a detached line in the north-east across the Urals from Perm by Ekaterinburg (completed in 1878) to Tyumeñ (completed in 1884). Chelyabinsk on the Siberian railway has a branch running northwards to Ekaterinburg, and this line now affords uninterrupted communication with the northern Dvina, inasmuch as the railway which originally started at Perm has been carried westwards through Vyatka and then northwards to Kotlas at the point of origin of that river, to which point it was opened in 1900; and a line in the east connecting the European system at Samara with the great mining centre at Zlatoust, already in 1890 continued across the Urals to Miyas, and since then carried farther east as the great Siberian railway.

The result of the construction of the numerous transcontinental railways has been to bring rail and sea-routes and ports on opposite sides of the continents into competition with one another to a greater degree than is possible in any other continent. The more valuable, and above all perishable commodities may be sent right across the continent even through the mountains. Even from Great Britain, which is bound to carry on its external commerce in part by sea, goods are sometimes sent far south in Italy by railways running from one or other of the North Sea ports. It will hence be readily understood that for inland trade on the mainland the competition between ports on opposite sides of the continent and between different railways will be very keen, greatly to the advantage of the inland centres to which that competition extends. This competition is inevitably all the more keen now that the trade of Europe with the East is once more carried on through the Mediterranean as it was in ancient times and the middle ages. The great shortening of the sea-route in this trade at such ports as Marseilles, Triest, Venice and Genoa, indicated by the figures below, goes far to counterbalance the extra cost even of railway transport across the mountains.

Distance in Nautical Miles from Port Said.

London	3215	Marseilles	1506
Bremen	3502	Genoa	1426
Hamburg	3520	Venice	1330
Stettin	3749	Brindisi	930
St Petersburg	4300	Odessa	1130

Ethnology.

An enormous amount of investigation with regard to European ethnology has been carried on in recent years. These labours have chiefly consisted in the study of the physical type of different countries or districts, but it is not necessary to consider in detail the results arrived at. It should, however, be pointed out that the idea of an Aryan race may be regarded as definitely abandoned. One cannot even speak with assurance of the diffusion of an Aryan civilization. It is at least not certain that the civilization that was spread by the migration of peoples speaking Aryan tongues originated amongst and remained for a time peculiar to such peoples. The utmost that can be said is that the Aryan languages must in their earliest forms have spread from some geographical centre. That centre, however, is no longer sought for in Asia, but in some part of Europe, so that we can no longer speak of any detachment of Aryan-speaking peoples entering Europe.

The most important works, summarizing the labours of a host of specialists on the races of Europe, are those of Ripley and Deniker.[72] Founding upon a great multitude of data that have been collected with regard to the form of the head, face and nose, height, and colour of the hair and eyes, most of the leading anthropologists seem to have come to the conclusion that there are three great racial types variously and intricately intermingled in Europe. As described and named by Ripley, these are: (1) the Teutonic, characterized by long head and face and narrow aquiline nose, high stature, very light hair and blue eyes; (2) the Alpine, characterized by round head, broad face, variable rather broad heavy nose, medium height and “stocky” frame, light chestnut hair and hazel grey eyes; and (3) the Mediterranean, characterized by long head and face, rather broad nose, medium stature and slender build, dark brown or black hair and dark eyes. The Teutonic race is entirely confined to north-western Europe, and embraces some groups speaking Celtic languages. It is believed by Ripley to have been differentiated in this continent, and to have originally been one with the other long-headed race, sometimes known as the Iberian, and to the Italians as the Ligurian race, which “prevails everywhere south of the Pyrenees, along the southern coast of France, and in southern Italy, including Sicily and Sardinia,” and which extends beyond the confines of Europe into Africa. The Alpine race is geographically intermediate between these two, having its centre in the Alps, while in western Europe it is spread most widely over the more elevated regions, and in eastern Europe “becomes less pure in proportion as we go east from the Carpathians across the great plains of European Russia.” This last race, which is most persistently characterized by the shape of the head, is regarded by Ripley as an intrusive Asiatic element which once advanced as a wedge amongst the earlier long-headed population as far as Brittany, where it still survives in relative purity, and even into Great Britain, though not Ireland, but afterwards retired and contracted its area before an advance of the long-headed races. Deniker, basing his classification on essentially the same data as Ripley and others, while agreeing with them almost entirely with regard to the distribution of the three main traits (cephalic index, colour of hair and eyes, and stature) on which anthropologists rely, yet proceeds further in the subdivision of the races of Europe. He recognizes six principal and four secondary races. The six principal races are the Nordic (answering approximately to the Teutonic of Ripley), the Littoral or Atlanto-Mediterranean, the Ibero-Insular, the Oriental, the Adriatic or Dinaric and the Occidental or Cevenole.

Language.

Although language is no test of race, it is the best evidence for present or past community of social or political life; and nothing is better fitted to give a true impression of the position and relative importance of the peoples of Europe than a survey of their linguistic differences and affinities.[73] The following table contains the names of the various languages which are still spoken on the continent, as well as of those which, though now extinct, can be clearly traced in other forms. Two asterisks are employed to mark those which are emphatically dead languages, while one indicates those which have a kind of artificial life in ecclesiastical or literary usage.

I. INDO-EUROPEAN.		
1. Indic branch, represented by		Gipsy dialects.
2. Iranic branch, represented by	(*a*)	Ossetian.
	(*b*)	Armenian.
3. Hellenic branch, represented by	*(*a*)	Greek.
	(*b*)	Romaic.
	(*c*)	Neo-Hellenic.
4. Italic branch, represented by	*(*a*)	Latin.
	**(*b*)	Oscan.
	**(*c*)	Umbrian, &c.
Neo-Latin	(*d*)	French.
	(*e*)	Walloon.
	(*f*)	Provençal.
	(*g*)	Italian.
	(*h*)	Ladin (Rumonsh, Rumansh, Rheto-Romance).
	(*i*)	Spanish.
	(*j*)	Portuguese.
	(*k*)	Rumanian.
5. Celtic branch, represented by	(*a*)	Irish.
	(*b*)	Erse or Gaelic.
	(*c*)	Manx.
	(*d*)	Welsh.
	**(*e*)	Cornish.
	(*f*)	Low Breton.
6. Teutonic branch, represented by	**(*a*)	Gothic.
Scandinavian	**(*b*)	Norse or Old Norse.
	(*c*)	Icelandic and Faeroese.
	(*d*)	Norwegian.
	(*e*)	Swedish.
	(*f*)	Danish.
Low German	**(*g*)	Saxon, Anglo-Saxon, or First English.
	(*h*)	English.
	**(*i*)	Old Saxon.
	(*j*)	Platt-Deutsch or Low German.
	(*k*)	Flemish Netherlandish.
	(*l*)	Dutch
	(*m*)	Frisic.
High German	**(*n*)	Old High German.
	(*o*)	Middle High German.
	(*p*)	New High or Literary German
7. Slavonic branch, represented by	*(*a*)	Church Slavonic.
South-Eastern	(*b*)	Russian.
	(*c*)	Ruthenian, Rusniak, or Little-Russian.
	(*d*)	White Russian or Bielo-Russian.
	(*e*)	Bulgarian.
	(*f*)	Servo-Croatian.
	(*g*)	Slovenian.
Western	(*h*)	Czech (Bohemian).
	(*i*)	Slovakish.
	(*j*)	Polish.
	(*k*)	Sorbian (Wendic, Lusatian).
	*(*l*)	Polabian.
8. Lettic branch, represented by	**(*a*)	Old Prussian
	(*b*)	Lettish.
	(*c*)	Lithuanian.
9. Unattached	**?(*a*)	Old Dacian.
	(*b*)	Albanian.
II. SEMITIC.		
1. Canaanitic branch, represented by	*(*a*)	Hebrew.
	**(*b*)	Phoenician or Punic.
2. Arabic branch, represented by	**(*a*)	Arabic.
	**(*b*)	Mozarabic.
	(*c*)	Maltese.
III. FINNO-TATARIC (Turanian, Ural-Altaic, &c.).		
1. Finno-Ugric languages	(*a*)	Samoyede.
	(*b*)	Finnish or Suomi.
	(*c*)	Esthonian, Livonian, Vepsish, Votish.
	(*d*)	Lappish.
	(*e*)	Cheremissian.
	(*f*)	Mordvinian.
	(*g*)	Ziryenian and Permian.
	(*h*)	Votiak.
	(*i*)	Magyar.
2. Tatar-Turkish languages	(*a*)	Turkish.
	(*b*)	Kazan Tatar, Crimean Tatar, Bashkir, Kirghiz.
	(*c*)	Chuvash.
3. Mongolian languages		Kalmuk.
4. Unattached		Basque.

From this conspectus it appears that there are still about 60 distinct languages spoken in Europe, without including Latin, Greek, Old Slavonic and Hebrew, which are still used in literature or ecclesiastical liturgies. Besides all those which are spoken over extensive territories, and some even which are confined within very narrow limits, are broken up into several distinct dialects.

The boundaries of European countries have of course been determined by history, and in some cases only historical

events can be held to account for their general situation, the influence of geographical conditions being seen only on a minute examination of details. In most cases, however, it is otherwise. The present political boundaries were all settled when the general distribution of population in the continent was in a large measure determined by the geographical conditions, and accordingly the lines along which they run for the most part show the influence of such conditions very clearly, and thus present in many cases a marked contrast to the political boundaries in America and Australia, where the boundaries have often been marked out in advance of the population. In Europe the general rule is that the boundaries tend to run through some thinly peopled strip or tract of country, such as is formed by mountain ranges, elevated tablelands too bleak for cultivation, relatively high ground of no great altitude where soil and climate are less favourable to cultivation than the lower land on either side, or low ground occupied by heaths or marshes or some other sterile soil; but it is the exception for important navigable rivers to form boundaries between countries or even between important administrative divisions of countries, and for such exceptions a special explanation can generally be found. Navigable rivers unite rather than separate, for the obvious reason that they generally flow through populous valleys, and the vessels that pass up and down can touch as easily on one side as the other. Minor rivers, on the other hand, flowing through sparsely peopled valleys frequently form portions of political boundaries simply because they are convenient lines of demarcation. A brief examination of the present political map of Europe will serve to illustrate these rules.

Political boundaries.

The eastern frontier of the Netherlands begins by running southwards through a marsh nearly parallel to the Ems but nowhere touching it, then winds south or south-westwards through a rather sparsely peopled district to the Rhine. This river it crosses, it then approaches but does not touch the Meuse, but runs for a considerable distance roughly parallel to that river along higher ground, where the population is much more scanty than in the valley. On the side of Belgium the Dutch boundary is for the most part thoroughly typical, winding between the dreariest parts of the Dutch or Belgium provinces of North Brabant, Limburg and Antwerp. The Scheldt nowhere forms a boundary between countries, not even at its wide estuary. The eastern frontier of Belgium is quite typical both on the side of Germany and Luxemburg. It is otherwise, however, on the south, there that country confines with France, and indeed the whole of the north-east frontier of France may be called a historical frontier, showing the influence of geographical conditions only in details. One of these details, however, deserves attention, the tongue in which it advances northwards into Belgium so as to give to France the natural fortress of Givet, a tongue, be it noted, the outline of which is as typical a boundary as is to be seen in Europe in respect of scantiness of population, apart from the fortress.

The mountainous frontiers of France on the east and south require hardly any comment. Only in the Burgundy Gate between the Vosges and the Jura has an artificial boundary had to be drawn, and even that in a minor degree illustrates the general rule. The division of the Iberian peninsula between Spain and Portugal goes back in effect to the Christian reaction against the Moors. The valley of the Miño and its tributaries establishes a natural connexion between Galicia and the rest of Spain; but an independent crusade against the Moors starting from the lower part of the valley of the Douro resulted in the formation of the kingdom of Portugal, which found its natural eastern limit on the scantily peopled margin of the Iberian tableland, where the rivers cease to be navigable and flow through narrow gorges, that of the Tagus, where the river marks the frontier, being almost without inhabitants, especially on the Spanish side.

The greater part of the Italian boundary is very clearly marked geographically, though we have to look back to the weakness of divided Italy to account for the instances in which northern mountaineers have pushed their way into southern Alpine valleys. Even in these parts, however, there are interesting illustrations of geographical influence in the way in which the Italian boundary crosses the northern ends of the Lago Maggiore and the Lake of Garda, and cuts off portions of Lake Lugano both in the east and west. In all these cases the frontier crosses from one steep unpeopled slope to another, assigning the population at different ends or on different sides of the lakes to the country to which belongs the adjacent population not lying on their shores.

Of the Swiss frontiers all that it is necessary to remark is that the river Rhine in more than one place marks the boundary, in one, however, where it traverses alluvial flats liable to inundation (on the side of Austria), in the other place where it rushes through a gorge below the falls of Schaffhausen. The southern frontier of Germany is almost throughout typical, the northern is the sea, except where a really artificial boundary runs through Jutland.

In the east of Germany and the north-east of Austria the winding frontier through low plains is the result of the partition of Poland, but in spite of the absence of marked physical features it is for the most part in its details almost as typical as the mountainous frontier on the south of Germany. All the great rivers are crossed. Most of the line runs through a tract of strikingly scanty population, and the dense population in one part of it, where upper Silesia confines with Russian Poland, has been developed since the boundary was fixed.

In the Balkan Peninsula the most striking facts are that the Balkans do not, and the Danube to a large extent does form a boundary. Geographical features, however, bring the valley of the Maritsa (eastern Rumelia) into intimate relation with upper Bulgaria, the connexion of which with Bulgaria north of the Balkans had long been established by the valley of the Isker, narrow as that valley is. On the side of Rumania, again, it is the marshes on the left bank of the Danube even more than the river itself that make of that river a frontier. An examination of the eastern boundary of all that is included in Russia in Europe will furnish further illustrations of the general rule.

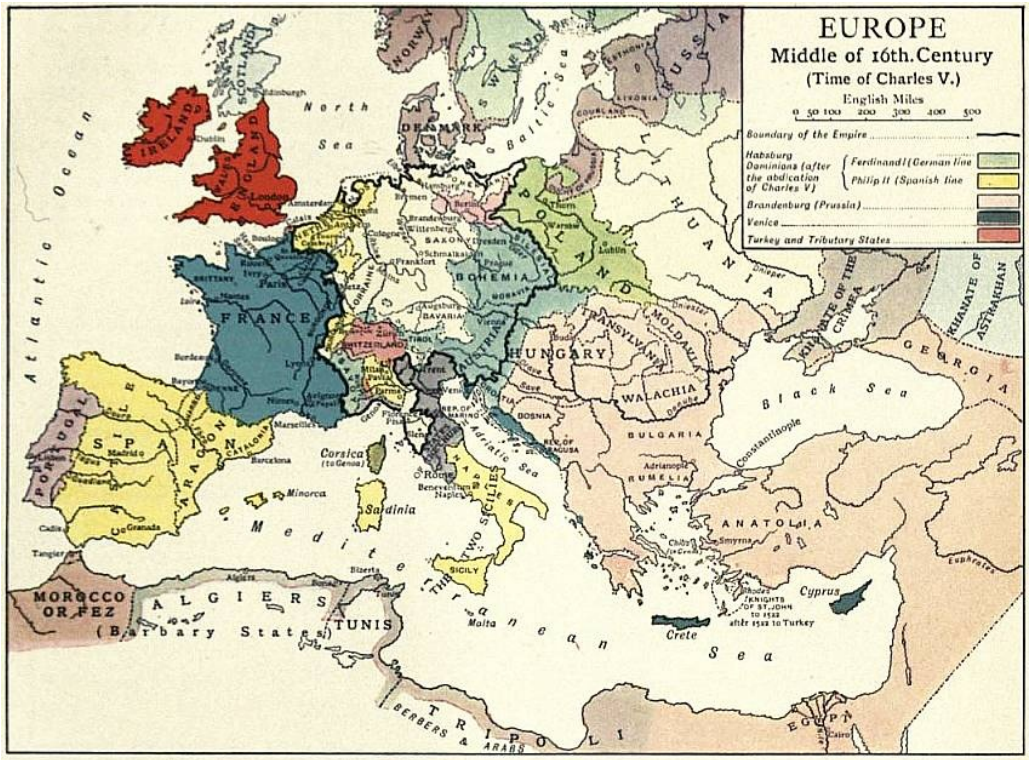
Finally, on the north-west of Russia it was only natural that the Tornea and the Tana should be taken as lines of demarcation in that thinly peopled region, and it was equally natural that where the boundary between Norway and Sweden descends from the fjeld in the south it should leave to Norway both sides of the valley of the Glommen.

Countries.	Area.	Population.			Pop. per sq. m.
	English sq. m.	About 1880.	About 1890.	About 1900.	
Austria-Hungary	241,466	37,884	41,358	45,405[11]	188
Bosnia-Herzegovina[(a)]	19,735	1,336[1]	..	1,568[12]	81
Liechtenstein	61		9[7]	..	147
Belgium	11,373	5,520	6,069	6,694[16]	589
Denmark[(b)]	15,431	1,980	2,185	2,465[14]	160
France	207,206		38,343[7]	38,596[14]	186
Monaco	8	..	..	15[13]	..
German Empire	208,760	45,234	49,428	56,345[16]	270
Luxemburg	1,003			237[16]	247
Greece	24,974		2,187[8]	2,434[15]	97
Italy	110,676	28,460[2]		32,450[14]	293
San Marino	23	..		11[17]	435
Montenegro	3,500	..		228[15]	65

Netherlands	12,741	4,013[3]	4,511[8]	5,103[17]	400
Portugal	34,347[(c)]	4,160[4]	4,660	5,423[16]	153
Rumania	50,588			5,913[17]	117
Russia	1,951,249	89,685[1]	..	103,671[18]	53
Finland	144,255	2,176[1]	..	2,555[11]	18
Servia	18,762	1,908[5]		2,494[16]	133
Spain[(a)]	191,994	16,432[6]	17,262[9]	18,618[16]	97
Andorra	175	..	5	..	29
Sweden	173,968	4,566	4,785	5,136[16]	30
Norway	126,053		2,001[7]	2,231[16]	18
Switzerland	15,976	2,846	2,933[10]	3,314[16]	207
Turkey (Europe)[(e)]	66,840			5,892 ?	90
Bulgaria[(f)]	37,323	2,008[2]	3,154[10]	3,733[14]	100
Crete	3,328	..	302[9]	304[16]	91
Thasos	152	..	..	12 ?	79
United Kingdom	121,742	35,026[2]	37,881[7]	41,455[14]	341

[(a)] Annexed by imperial decree to Austria-Hungary in 1908.
[(b)] Including Faeroe Islands.
[(c)] Area exclusive of Tagus and Sado inlets (together 161 sq. m.).
[(d)] Excluding Canary Islands.
[(e)] With Novi-bazar.
[(f)] Bulgaria proclaimed its independence of Turkey in 1908.

[1] 1885.
[2] 1881.
[3] 1879.
[4] 1878.
[5] 1884.
[6] 1887.
[7] 1891.
[8] 1889.
[9] Census 1890.
[10] 1888.
[11] Census 1900.
[12] Census 1895.
[13] Estimate 1897.
[14] Census 1901.
[15] Census 1896.
[16] Census 1900.
[17] Census 1899.
[18] Census 1897.



Population. The preceding table shows the area of the countries of Europe, with their estimated or enumerated populations in thousands (000 omitted) at different dates.

A noteworthy feature of the distribution of population in Europe, especially in western, southern and central Europe, in modern times, is the high degree of aggregation in towns, which is exhibited in the following table[74] for the different countries or regions of the continent:—

	Percentage in Towns.		All Towns over 20,000.
	Over 100,000.	From 20,000 to 100,000.	
England and Wales	34.8	23.5	58.3
Scotland	29.7	9.9	39.7
Ireland	14.2	5.3	19.5
Norway	10.8	6.8	17.6
Sweden	8.5	2.6	11.2
Denmark	19.4	6.6	26.0
German Empire	17.0	11.2	28.2
Netherlands	22.3	15.0	37.3
Belgium	18.6	12.0	30.6
France	13.7	10.3	24.0
Spain and Portugal	10.5	5.7	16.2
Bosnia, Servia and Bulgaria	..	4.2	4.2
Rumania	4.6	7.2	11.8
Hungary	3.7	9.1	12.8
Galicia and Bukovina	2.0	4.8	6.8
Cis-Leithan provinces of Austria (exclusive of the two latter)	12.4	5.9	18.3
Poland	10.6	4.2	14.8

Baltic Provinces, Russia	11.4	8.3	19.7
Moscow region[75]	9.6	5.4	15.0
Black earth governments, Great Russia[76]	0.7	4.9	5.6
Governments of middle and lower Volga[77]	3.3	4.0	7.3
South Russia[78]	7.0	8.5	15.5
Finland	3.8	4.3	8.1

The following table contains a list of the towns with more than 100,000 inhabitants, not in every case according to the most recent census, but, in order to make the populations fairly comparable with one another, according to the nearest census or available estimate to 1900. Population in thousands (000 omitted):—

*London (Greater, 1901)	6581	Charlottenburg (1900)	189
London (Registration, 1901)	4536	Königsberg (1900)	188
*Paris (w. subs.)	2877	Triest (1900)	179
” (City, 1901)	2661	Plymouth-Devonport (1901)	177
*Berlin (w. subs.)	2073	Stuttgart (1900)	176
” (1900)	1884	Kharkov (1897)	174
Vienna (1900)	1662	Bolton (1901)	168
*St Petersburg (w. subs., 1897)	1267	Oporto (1900)	168
*Constantinople (w. subs.)	1200	Cardiff (1901)	164
Moscow (w. subs., 1897)	1036	Bremen (1900)	163
Glasgow (w. subs., 1901)	910	Ghent (1901)	162
Hamburg-Altona (1900)	867	Dundee (1901)	161
Liverpool (w. subs., 1901)	767	Vilna (1897)	160
Manchester-Salford (1901)	765	Brighton-Hove (1901)	160
Budapest (1900)	732	Lemberg (1900)	160
Warsaw (1897)	638	Liége (1901)	160
†Birmingham (w. subs., 1901)	599	Halle a S. (1900)	157
*Naples (comm., 1901)	565	Aberdeen (1901)	153
Brussels (1901)	563	Bologna (comm., 1901)	152
*Madrid (1900)	540	*Venice (comm., 1901)	152
Amsterdam (1902)	540	Catania (comm., 1901)	150
*Barcelona (1900)	533	Messina (comm., 1901)	150
Munich (1900)	500	Salonica	150
Marseilles (1901)	495	Strassburg (1900)	150
*Milan (comm., 1901)	493	Zürich (comm., 1900)	150
Copenhagen (w. subs., 1901)	477	Seville (1900)	148
*Rome (comm., 1901)	463	St Etienne (1901)	147
Lyons (1901)	460	Sunderland (1901)	147
Leipzig (1900)	455	Dortmund (1900)	142
Leeds (w. subs., 1901)	444	Danzig (1900)	141
Breslau (1900)	423	Mannheim (1900)	140
Odessa (1897)	405	Stettin (1895)	140
Dresden (1900)	395	Croydon (1901)	139
Edinburgh-Leith (1901)	393	Graz (1900)	138
Sheffield (1901)	381	Oldham (1901)	137
Dublin (w. subs., 1901)	373	Saratov (1897)	137
Cologne (1900)	372	Aachen (1900)	135
*Lisbon (1900)	356	Gothenburg (1902)	134
Belfast (1901)	349	Toulouse (1896)	134
Rotterdam (1902)	348	Nantes (1901)	133
Turin (comm., 1901)	335	Kazan (1897)	132
Bristol (1901)	329	Malaga (1900)	130
Newcastle-Gateshead (1901)	325	Havre (1901)	130
Prague (w. subs., 1900)	317	Blackburn (1901)	128
Lódz (1897)	315	Brunswick (1900)	128
*Palermo (comm., 1901)	310	Ekaterinoslav (1897)	121
Stockholm (1902)	306	Rostov-on-Don (1897)	120
Elbferfeld-Barmen (1901)	299	Essen (1900)	119
Bordeaux (w. subs., 1896)	289	Posen (1900)	117
Frankfort-on-Main	288	Preston (1901)	113
Riga (w. subs., 1897)	283	Astrakhan (1897)	113
Bucharest (1899)	282	Norwich (1901)	112
Bradford (1901)	280	Murcia (1900)	112
Antwerp (1901)	273	Birkenhead (1901)	111
‡West Ham (1901)	267	Athens (1896)	111
Nuremberg (1900)	261	Tula (1897)	111
Kiev (1897)	247	Brünn (1900)	110
Hull (1901)	241	Kishinev (1897)	109
Nottingham (1901)	240	Basel (comm., 1900)	109
Hanover (1900)	237	Utrecht (1902)	109
Genoa (comm., 1901)	235	Kiel (1900)	108
Magdeburg (1900)	230	Reims (1901)	108
Christiania (1900)	226	Krefeld (1900)	107
The Hague (1902)	222	Derby (1901)	106
Roubaix-Tourcoing (1901)	220	Kassel (1900)	106
Düsseldorf (1900)	214	Halifax (1901)	105
*Valencia (1900)	214	Nice (1901)	105
Florence (comm., 1901)	205	Southampton (1901)	105
Leicester (1901)	212	Nancy (1901)	103
Lille (1901)	211	Szeged (1900)	103
Chemnitz (1900)	207	Toulon (1901)	102
Portsmouth (1901)	189	Cartagena (1900)	100

Comm. = commune. w. subs. = with suburbs.

* In 1800 only those to which an asterisk is prefixed rose above 100,000. Thirty-four out of the 144 towns enumerated in the list above belong to the British Isles.

† The contiguous parliamentary boroughs of Birmingham and Aston Manor.

‡ Part of Greater London.

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(G. G. C.)

2. Political History

The origin of the name of Europe has been dealt with above, and the difficulty of any exact definition of the geographical limits covered by this term has been pointed out. A similar difficulty meets us when we come to deal with European history. We know what we mean when we speak of European civilization, though in its origins, as in its modern developments, this was not confined to Europe. In one sense the history of Europe is the history of this civilization and of the forces by which it was produced, preserved and developed; for a separate history of Europe could never have been written but for the alien powers by which this civilization was for centuries confined within the geographical limits of the European continent. Moreover, within these geographical limits the tradition of the Roman empire, and above all the organization of the Catholic Church, gave to the European nations, and the states based upon them, a homogeneity which without them could not have survived. The name of Europe, indeed, remained until modern times no more than "a geographical expression"; its diplomatic use, in the sense of a group of states having common interests and duties, is, indeed, no older than the 19th century; in the middle ages its place was taken by the conceptions of the Church and the Empire, which, though theoretically universal, were practically European. Yet the history of the states system of Europe, though enormously influenced by outside forces, possesses from the first a character of its own, which enables it to be treated as a separate unit. This historical Europe, however, has never been exactly commensurate with Europe considered as a geographical division. Russia, though part of Europe geographically—even if we set the limits of Asia at the Don with certain old geographers—had but slight influence on European history until the time of Peter the Great. The Ottoman empire, though its influence on the affairs of Europe was from the first profound, was essentially an Asiatic power, and was not formally introduced into the European system until the treaty of Paris of 1856. It still remains outside European civilization.

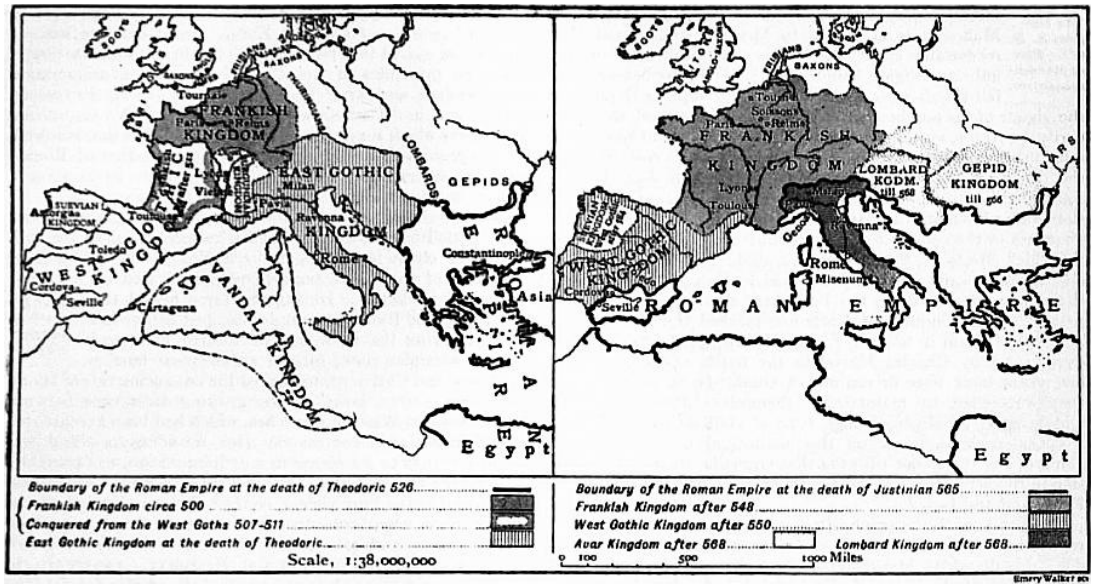
Europe, then, as we now conceive the term in its application to the political system and the type of culture established in this part of the world, may, broadly speaking, be traced to four principal origins: (1) The Aegean civilization (Hellenic and pre-Hellenic); (2) the Roman empire; (3) Christianity; (4) the break-up of the Roman empire by the Teutonic invasions. All these forces helped in the development of Europe as we now know it. To the Aegean civilization, whether transformed by contact with Rome, and again transformed by the influence of Christianity and the religious genius of the middle ages—or rediscovered during the classical Renaissance—Europe owes the characteristic qualities of its thought and of its expression in literature and art. From republican Rome it largely draws its conceptions of law and of administrative order. From the Roman empire it inherited a tradition of political unity which survived, in visible form, though but as a shadowy symbol, until the last Holy Roman emperor abdicated in 1806; survived also, more fruitfully, in the rules of the Roman lawyers which developed into modern international law. Yet more does Europe owe to Christianity, an Asiatic religion, but modified by contact with Greek thought and powerfully organized on the lines of the Roman administrative system. The Roman Church remained a reality when

the Roman empire had become little more than a name, and was throughout the period of chaos and transformation that followed the collapse of the Roman empire the most powerful instrument for giving to the heterogeneous races of Europe a common culture and a certain sense of common interests.

The history of Europe, then, might well begin with the origins of Greece and Rome, and trace the rise of the Roman empire and the successive influence upon it of Hellenism and Christianity. These subjects are, however, very fully dealt with elsewhere (see Aegean Civilization; Greece; Rome; Church History); and it will, therefore, be more convenient to begin this account with the Teutonic invasions and the break-up of the Roman empire, events which mark the definite beginning of the modern European states system.

In a sense the Roman empire had been already "barbarized" before the invasions of the barbarians *en masse*. Land left vacant by the dwindling of the population was colonized by immigrants, Teutonic and other, from beyond the frontiers; the Roman legions were largely recruited from Germans and other non-Romans, some of whom even rose to the imperial purple. Thus, in the end, the Roman emperor, with his guard and his household, ruling over an empire mercilessly exploited to fill his treasury, was essentially indistinguishable from those barbarian chiefs, with their *antrustions* and their primitive fiscal methods, who entered into portions of his inheritance and carried on the traditions of his rule.

The history of the Teutonic peoples prior to their organized invasions of the empire is dealt with elsewhere (see Teutonic Peoples). It was in the 4th century that the pressure of their advance was first felt on the frontiers, and this led to a change in the government of the empire which was to have notable consequences. In A.D. 330 Constantine had transferred the capital from Rome to Byzantium (Constantinople), but the empire, from the Forth to the Tigris, continued to be administered successfully from a single centre. Not, however, for long: the increasing perils from without made a closer supervision essential, and after the death of Theodosius I. (395) the empire was divided between emperors of the East and West. It was the beginning not only of the break-up of the empire, but of that increasing divergence between the eastern and western types of European religion and culture which has continued to this day.



The pressure of the Teutonic invasions became increasingly strong during the reigns of the emperor Valens and his successors. These invasions were of two types, (1) migrations of whole peoples with their old German patriarchal organization complete, (2) bands, larger or smaller, of emigrants in search of land to settle on, without tribal cohesion, but organized under the leadership of military chiefs. The earlier invaders, Goths and Vandals, and later the Burgundians and Lombards were of the first type; to the second belonged the Franks, "free" men from the Saxon plain, and the Saxon invaders of Britain. The distinction was a vital one; for the Goths, Vandals, Burgundians and Lombards never took root in the soil, and succumbed in turn, while the Frankish and Saxon immigrants, each man lord in his own estate, not only maintained themselves, but set up at the cost of the Roman organization and of the power of their own kings a wholly new polity, based on the independence of the territorial unit, which later on was to develop into feudalism.

The Teutonic Invasions.

It was owing to the pressure of Turanian invaders from the East that the Teutonic peoples were first forced to take refuge within the empire. In 378 the Goths defeated and slew the emperor Valens in a battle near Adrianople; in 410 Alaric, king of the West Goths, sacked Rome; and shortly after his death the Goths passed into Gaul and Spain. In 429 Gaiseric, king of the Vandals, at the invitation, it is said, of the governor Bonifacius, passed over from Spain to Roman Africa, which became the centre of another Teutonic kingdom, soon established as a great naval power which for a while commanded the Mediterranean and devastated the coasts of Italy and Sicily with its piracies.

Meanwhile the Franks and Burgundians were pressing into Germany and Gaul, while from 449 onwards the Saxons, the Angles and the Jutes invaded and occupied Britain. For a moment it was doubtful if the Aryan or Turanian races would be supreme, but in 451 Attila, king of the Huns, was decisively beaten in the battle of Châlons by a combination of Franks, Goths and Romans, under the Roman general Aetius and Theodosius, king of the Goths. This battle decided that Europe was to be Christian and independent of Asia and Africa. In 476 the succession of Western emperors came to an end with Odoacer's occupation of Rome, and with the decision of the Roman senate that one emperor was enough, and that the Eastern emperor, Zeno, should rule the whole empire. For a time Theodoric, king of the East Goths, ruled Italy, Gaul and Spain; but after his death in 526 the empire of the East Goths was shattered, and changes took place which led to the rise of independent Teutonic kingdoms in Gaul and Spain. In Gaul Clovis (d. 511), the king of the Franks, had already established his power, and in Spain, the West Gothic kingdom, with its capital at Toledo, now asserted its Teutonic independence. Under the emperor Justinian (527-565), indeed, the Roman empire seemed in a fair way to recover its supremacy; the Vandal kingdom in Africa was destroyed; in 555 the

Byzantine general Narses finally shattered the power of the East Goths in Italy, and the exarchate of Ravenna was established in dependence on the Eastern emperor; the West Goths were forced to give up the south of Spain; and the Persians were checked. But with the death of Justinian troubles began. In 568 the Lombards, under Alboin, appeared in Italy, which they overran as far south as the Tiber, establishing their kingdom on the ruins of the exarchate. Though in Asia the emperor Heraclius, in a series of victorious campaigns, broke the Persian power and succeeded even in extending the Roman dominion, Italy, save for a while Ravenna itself and a few scattered sea-coast towns, was thenceforth lost to the empire of which in theory it still formed a part.

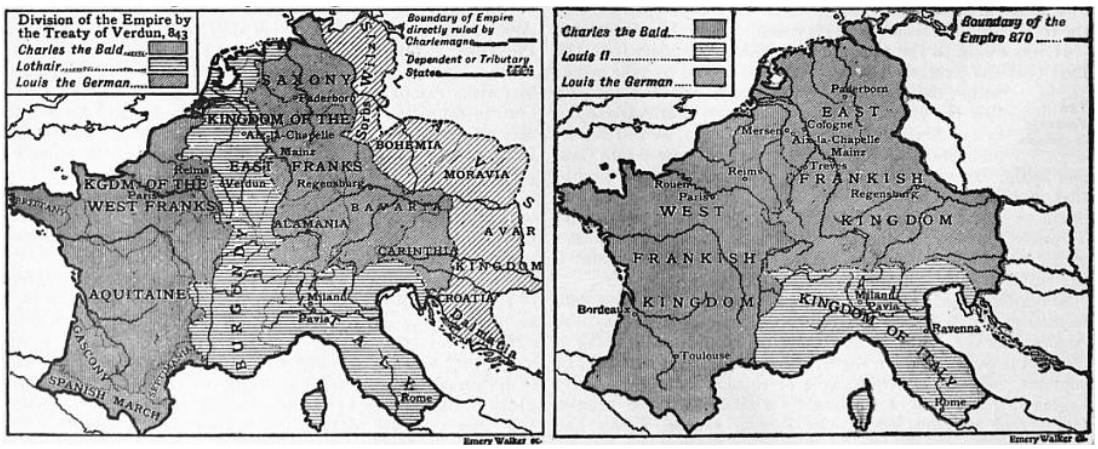
This catastrophe produced one result the importance of which it is impossible to exaggerate; the development of the political power of the papacy. At the beginning of the 6th century Rome, under Theodoric the Goth, was still the city of the Caesars; the tradition of its ancient life was yet unbroken; at the end of the century Rome, under Pope Gregory the Great (590-604), had become the city of the popes. And with the city the popes entered into some of the inheritance of the Caesars; in the world-wide activity of Gregory we already have a foreshadowing of universal claims, often effectively asserted, which made the great medieval popes, in a truer sense than the medieval emperors, the representatives of the idea of Roman imperial unity (see Rome, sec. ii. *Middle Ages*; Papacy).

The Hegira, A.D. 622. Rise of Mahommedanism.

The next event that profoundly affected the history of Europe was the rise of Mahommedanism. In A.D. 622, sixteen years after Gregory's death, occurred the flight (*Hijra*) of Mahomet from Mecca to Medina, which fixed the memorable era of the Hegira. The full force of the militant religion founded by the Arab prophet was not felt till after his death (632). The emperor Heraclius, the vigour of his manhood passed, was unable to meet this new peril; the Arabs, strong in their hardy simplicity, and new-born religious fanaticism, and aided by the treason and cowardice of the decadent Roman governing classes, overran Asia Minor, conquered Egypt and the whole of northern Africa, overwhelmed the Gothic kingdom in Spain, and even penetrated beyond the Pyrenees to the conquest of the province of Narbonne. One of the chief effects of these Arab conquests was that Christian civilization became gradually confined to Europe, another was that the trade routes to the East were closed to the Western nations. The conquest of Narbonne marked the limit of the advance of Islam in western Europe, for in 732 the Arabs were overthrown by Charles Martel in the battle of Tours, and a few years later were driven out of Gaul. In Spain, however, they succeeded in maintaining themselves throughout the middle ages; developing a high type of civilization which had a considerable influence on the intellectual life of medieval Europe; and it was not till 1494 that Granada, their last possession in the peninsula, was conquered by the Christian monarchs, Ferdinand and Isabella.

The Carolingians.

The battle of Tours emphasized and increased the power and reputation of Charles Martel. As a mayor of the palace to the decadent Merovingian successors of Clovis, he was virtually ruler of the Franks, and, after his death, the last of the *rois fainéants* of the house of Merovech was deposed, and Pippin, Charles's son, was elected king of the Franks. The prestige of the Carolingian house (to give it the name it was later known by) was increased when, at the urgent entreaty of Pope Stephen III., Pippin marched into Italy and saved Rome from the Lombards, who were endeavouring to extend their power southwards. Pippin's son Charles (Charlemagne) finally conquered the Lombards in 774 and thus added part of northern Italy to his dominions.



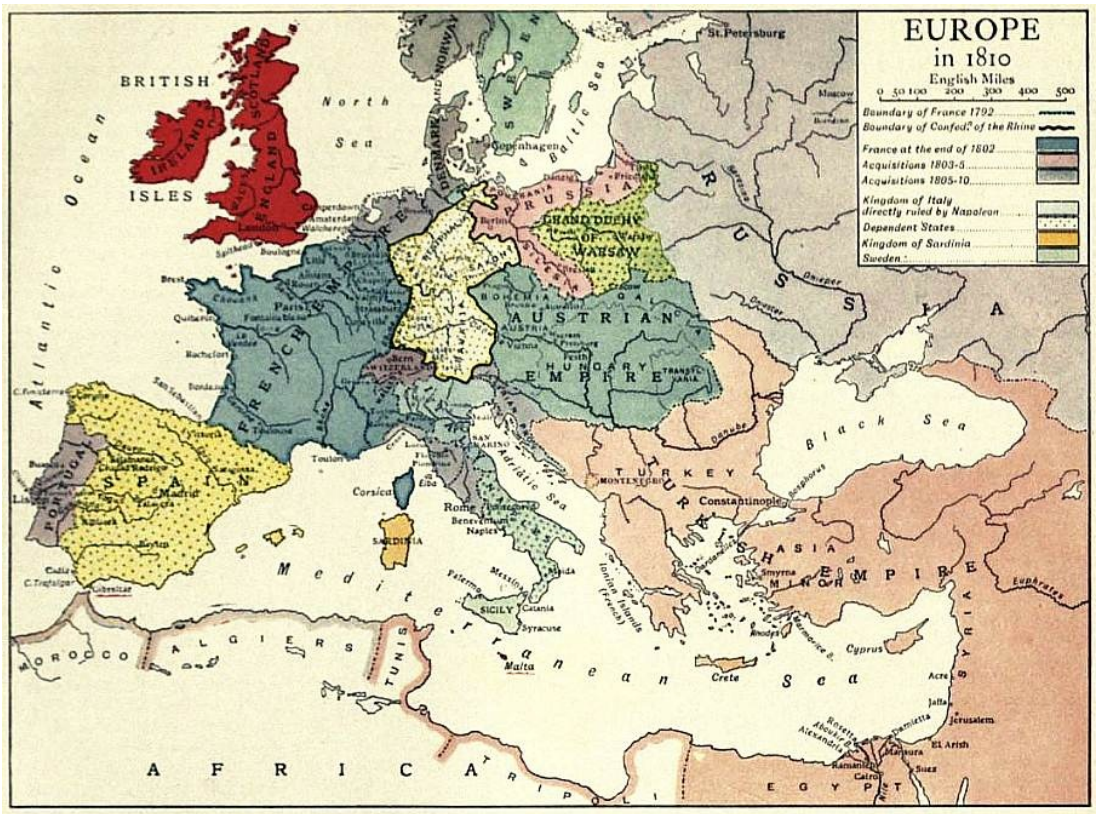
The coronation of Charles the Great as emperor. 800.

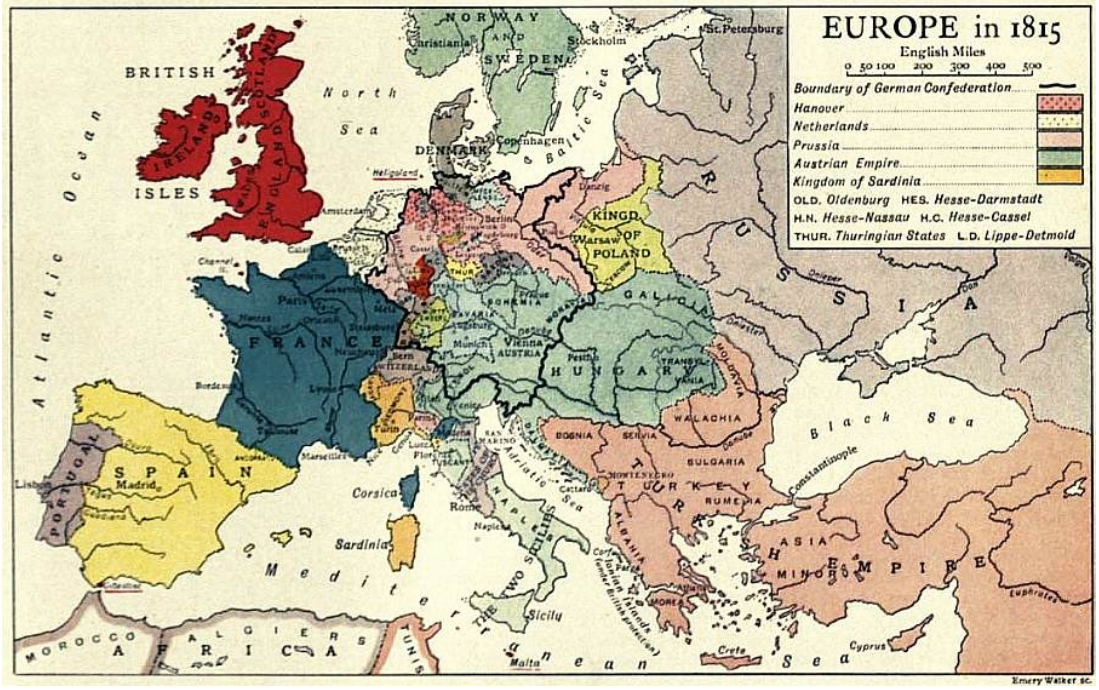
In 797 an event of the highest importance to the European world took place. The emperor Constantine VI. was deposed by his mother Irene, who seized the throne. Thereupon Pope Leo and the Roman people definitely threw off the authority of the emperors of Constantinople, on the ground that a woman could not hold the position of Caesar. In 800 Leo crowned Charlemagne emperor at Rome, and henceforth till 1453, when Constantinople was conquered by the Turks, there was an Eastern and a Western empire. Till his death in 814 Charlemagne was king of the Franks as well as emperor. His kingdom embraced not only all German and modern France, but included a large part of Italy and Spain as far as the Ebro. Under his rule western Europe was united in a powerful empire, in the organization of which the principles of Roman and Teutonic administration were blended; and, after his death, he left to his successors, the Frankish and German kings, the tradition of a centralized government which survived the chaos of the period that followed, and the prescriptive right to the title and prestige of Roman emperors —a tradition and a claim that were to exercise a notable effect on the development of European history for centuries to come. (See France: *History* and Charlemagne.)

Europe after the death of Charlemagne.

The period from the death of Charlemagne (814) to the 12th century is characterized in western Europe by the general weakening of the idea of central government and by the rise of feudalism. During the same period the East Roman or Byzantine empire escaped disruption and, preserving the traditions of Roman civil and military administration, formed an effective barrier for Europe and Christendom against the advancing tide of Islam. At the same time, however, the growing divergence between the Eastern and Western Churches, which had been accentuated by the iconoclastic controversy (see Iconoclasts), and was destined in 1053 to culminate in a definite schism, was gradually widening the breach between the two types of European civilization, which came into violent conflict at the beginning of the 13th century, when crusaders from western Europe captured Constantinople and set up a Latin empire in the East (see Roman Empire, Later; Church History; Crusades). In western Europe, meanwhile, the unity of the empire did not long

survive Charlemagne. Its definite break-up dates from the treaty of Verdun (843), by which Charles the Bald received Neustria, Aquitaine and western Burgundy, Louis the German Bavaria, Swabia, Saxony and Thuringia, and the emperor Lothair the middle kingdom known by his name, the *regnum Lotharii* or Lotharingia (see Lorraine). By the partition of Mersen (870) Lotharingia itself was divided between the West and East Frankish realms—France and Germany, terms which from this time begin to represent true national divisions. With the treaties of Verdun and Mersen the history of the European state system may be said to begin.





At first, indeed, it seemed as though the nascent states were about to be dissolved by disruption from within and attacks from without. All alike were subject to the attacks of the Norse sea-rovers, hardy pirates who not only scourged all the coasts of Europe but penetrated, burning and harrying, far inland up the great waterways. Meanwhile, the weakening of central government due to dynastic struggles had led to the growth of independent or semi-independent powers within the states themselves. The Frank landowners had successfully asserted their independence of the jurisdiction of the king (or emperor) and his officials; the imperial officials themselves, dukes or counts, had received grants of lands with similar immunities (*beneficia*), and these had become hereditary. Thus sprang up a class of great territorial nobles to whom, amid the growing anarchy, men looked for protection rather than to the weak and remote central power; and so, out of the chaos that followed the break-up of the empire of Charlemagne, was born the feudal system of the middle ages (see Feudalism). This organization was admirable for defence; and with its aid, before the close of the first decade of the 10th century, the frontiers of France and Germany had been made safe against the northern barbarians, who had either been driven off and barriers erected against their return—*e.g.* the marks established by Henry the Fowler along the middle Elbe—or, as in the case of the Normans, absorbed into a system well adapted for such a process. By the treaty of St Claire-sur-Epte (911) between Charles the Simple and Rollo, chief of the Norsemen, the Normans

Rise of feudalism.

were established in the country since known as Normandy (*q.v.*), as feudatories of the French crown. In England, by the treaty of Wedmore (878) between Alfred and the Danish king Guthrum, the Danes had already been established in a large part of England.

Feudalism, by the time the Northmen had been subdued by its aid, was quite firmly established in the western part of Europe. During the 11th century it was carried by the Normans into England, into Sicily and southern Italy, and by the nobles of the first crusade into the newly established kingdom of Jerusalem (1099). By the kings of France, England and Germany, however, who saw themselves in danger of being stripped of all but the semblance of power by its delegation to their more or less nominal vassals, the feudal organization was early recognized as impossible as a form of state government, if the state was to be preserved; and the history of the three great European powers during the succeeding centuries is mainly that of the struggle of the sovereigns against the disruptive ambitions of the great feudal nobles. In England the problem was, from the outset, simplified; for though William the Conqueror introduced the system of feudal land tenure into England in 1066 he refused to set it up as his system of government, retaining alongside of it the old English national policy. In France, on the other hand, feudalism as a system of government had become firmly established; and it was not till the days of Philip Augustus (1180-1223) and Louis IX. (1226-1270) that the monarchy began to get the upper hand. From this time until the 17th century the power of the French monarchy, in spite of occasional lapses, grew steadily stronger. The reverse was the case with the German kingship. Its association with the undefined claims involved in the title of Roman emperor, traditionally attached to it, and notably those to authority in Italy, necessitated concession after concession to the feudal nobles, in order to purchase their support for their assertion. The kingship, moreover, became elective; the imperial title was obtainable only at Rome at the hands of the pope; and the German kings thus became entangled in contests, not only with their own vassals, but with the tremendous spiritual force of the medieval papacy by which, for its own ends, the spirit of feudal insubordination was from time to time fomented. Thus in Germany the feudal nobles gradually acquired a sovereign status which, in some cases, has survived the territorial rearrangements of the 19th century and left its mark on the federal constitution of modern Germany; while the kingship and the imperial title grew more and more shadowy till in 1806 it vanished altogether. (See English History; France: *History*, Germany: *History*.)

Royalty and feudalism.

In France the process by which a strong hereditary monarchy was established was a slow one. During the greater part of the 10th century the Carolingians, stripped of the vast domains which had been the basis of the power of Pippin, owed their continued existence to the forbearance of Hugh the Great, count of Paris. In 987, however, the last Carolingian king died, and Hugh Capet, son of Hugh the Great, the most powerful of the territorial magnates, was chosen king of France. With his election dates the real beginning of the French monarchy, and under him and his successors Paris became the capital of France. Hugh's election, however, was the work of the great feudatories, and France remained divided among a number of great fiefs, of which the chief were Brittany, Anjou, Flanders, Vermandois, Champagne, Burgundy, Aquitaine, Poitou, Gascony, Toulouse and Normandy.

The rise of the house of Capet.

While the central power in France advanced slowly but steadily, the development of the royal authority in Germany was in the 10th and 11th centuries more rapid. In 911 the German magnates had elected Conrad the Franconian to reign over them, and in 919 Henry "the Fowler" of Saxony, "whose reign forms one of the great turning-points in the history of the German nation." He defeated the Hungarians, the Slavs and the Danes, and by encouraging the growth and development of towns he contributed greatly to the formation of the German kingdom. His immediate successors, Otto the Great and Otto II., continued his work, which was only interrupted for a short time during the reign of the idealist Otto III., whose "cosmopolitan imperialism" brought him into collision with the German Church and to some extent with the German nobles. Henry II. (1002-1025) asserted with success his authority over Germany, and his successor Conrad II., who belonged to the Salian or Franconian line, did much to secure unity and prosperity to the Empire. His son and successor Henry III. (1039-1056) governed Germany wisely, and his reign witnessed the culminating point of the Holy Roman Empire. At the time of his death it seemed probable that Germany, like England and France, would gradually escape from the thraldom of the great feudatories. The future of the German monarchy depended upon the ability of future kings to suppress the forces of feudal disintegration in Germany, and to withstand the temptation of struggling to establish their influence over Italy. Unfortunately for German kingship Henry IV. (1056-1106) was only six years old on his accession, and when he became a man he found that the papacy under Hildebrand's influence was practically independent of the emperor. Had Henry confined his efforts to coercing the German barons he might, like the Normans and Angevins in England, and like the Capetians in France, have proved successful. Unfortunately for Germany Henry entered upon the famous contest with the papacy under Gregory VII. (1073-1080), which ended in the 13th century in the defeat of the Empire in the person of Frederick II. The struggle began in 1073 over the question of investiture (*q.v.*), and widened into a duel between the spiritual and temporal powers. During the early years of the contest the influence of the papacy reached a high pitch and made itself felt in the crusading movement, which received its first impetus from Pope Urban II., who appealed to Europe at the council of Clermont in 1095 to recover the Holy Places from the Turks.

The royal power in Germany.

During the 11th century the Eastern Empire was attacked by the Russians, the Normans and the Seljuks. The emperor Alexius Comnenus found himself on his accession in 1081 threatened by the Seljuks (the victors in the decisive battle of Manzikert in 1071) and by the Sicilian Normans who in 1081 besieged Durazzo. In 1083 he defeated the Normans in the battle of Durazzo, and with the death of Robert Guiscard in 1085 all danger from a fresh Norman invasion passed away. But the first crusade brought new anxieties to Alexius, for he feared that the crusaders might attack Constantinople. That fear removed, he took advantage of the increased connexion between eastern and western Europe by bestowing commercial privileges upon the Italian trading republics, who thus gained access to the ports of the Empire on easy terms.

The eastern Empire and the Crusades.

With the era of the Crusades, which lasted till the middle of the 13th century, Europe entered upon a period of change, the importance of which is realized by contrasting the condition of western Christendom in the 11th with its condition in the 13th century. Between the opening and close of the crusading movement Europe underwent a complete revolution. While the Crusades tended to enhance the prestige and authority of the papacy and the power of European monarchs, they also led to increased knowledge of the East, to the rapid development of commerce, to the introduction of new industries, to the rapid decline of the influence of the feudal nobility, and to the rapid development of town life (see Commune). At the same time the Hildebrandine reformation was having an immense influence upon the intellectual condition of Europe. The 12th century saw the establishment of many new monastic orders (see Monasticism), and at the same time a remarkable speculative and literary revival (see Scholasticism). This movement owed not a little of its success to the influence of the Crusades, which stirred up intellectual as well as commercial

The Crusades and the Hildebrandine reformation.

activity. This intellectual activity, as well as the fruits of commercial expansion, were—since learning was still a monopoly of the clerical order—weapons in the hands of the papacy, which in the 12th century attained the height of its power, if not of its pretensions. It is, indeed, impossible to exaggerate the influence of the Roman Church upon the development of Europe at this period. The popes, in fact, represented Europe in a sense that could not be predicated of the emperors; the terror of their spiritual power, their vast wealth derived from the tribute of all the West, their unique experience of international affairs, and—in the case of the great popes of this epoch—the superiority of their minds and characters, made them not only the spiritual rulers of Europe, but the effective centres of whatever political unity it possessed. As a Byzantine observer was to observe of Innocent III., they had become the successors of the Caesars rather than of Peter (see Papacy).

Growth of the royal power in France.

Nowhere were the beneficial effects of the Crusades seen more clearly than in France. The smaller fiefs were steadily absorbed by the greater lordships, which in their turn fell victims to the royal power. It might almost be said that "modern France is a creation of the Crusades." The effects of the crusading movement were felt in France as early as the reign of Louis VI. (1108-1137). Aided by his able minister Suger, Louis managed before his death to add to the possessions of his house the Île de France and a prospective claim to Poitou and Aquitaine. Under his successor Louis VII. (1137-1180) the consolidation movement was checked owing to the marriage of Eleanor of Aquitaine (after her divorce from Louis VII.) to Henry II of England. By the addition of his wife's lands (Gascony and Guienne) to those which he had already inherited from his father and mother (Normandy, Anjou, Touraine and Maine) Henry was enabled to form the powerful though short-lived Angevin empire. But the lost ground was rapidly recovered by Philip Augustus (1180-1223), who took advantage of the weakness and folly of John of England, and before 1215 had united firmly to France Normandy, Maine, Anjou and Touraine. Louis VIII. and Louis IX. adhered firmly to the policy of Philip IV., and in 1258, by the treaty of Paris, Henry III. of England recognized the loss of Poitou. There thus remained to England out of the vast continental domains of Henry II. only Gascony and Guienne.

General results of the Crusades.

The rest of Europe was also in various degrees affected by the Crusades. While Spain was occupied in a crusade of her own against the Moors and gradually driving them into Granada, Germany, Italy, and to some extent England, were interested in, and influenced by, the Crusades against the Turks. During the absence of many of the nobles in the East the growth of towns and the development of the mercantile class proceeded without interruption. The trading classes demanded strong governments and equal justice, and vigorously supported the monarchs in their suppression of feudalism.

During the 12th and 13th centuries the Crusades thus proved a large factor in the commercial prosperity of the Italian maritime states, an "open door" between East and West was secured, and reinforcements from Europe were poured into Syria as long as the peoples of the West regarded the stability of the Latin kingdom of Syria as a matter of prime importance. During the crusading period a check was placed to the tide of Mahommedan conquest, while to the caliphate the Crusades proved a perpetual drain upon its material resources. To the Mahommedans the possession of the Holy Places by the Christians was as great a humiliation as their desecration by the Mahommedans was to the crusaders. Unfortunately the Crusades led to a disastrous schism between the Byzantine empire and western Christendom, which had calamitous results. The decay of the crusading spirit was a necessary result of the growth of the consolidation of the European nations, but the price paid was the fall of Constantinople and the establishment of the Turks in eastern Europe. The Crusades thus not only postponed the conquest of Constantinople by the Turks for some two hundred years, but led, as had already been said, to a vast expansion of commerce, as seen in the rapid growth and development of the Italian cities, and to a striking development of town life.

The struggle between the Empire and the papacy.

The Crusades had enormously strengthened the power and prestige of the papacy, and indirectly contributed to its victory over the Empire in the person of Frederick II. From the reign of the emperor Henry IV. to the death of Frederick II. in 1250 the struggle between the Empire and the papacy continued, and is coincident in point of time with the Crusades. The reign of Frederick Barbarossa (1152-1190) saw that struggle at its height, and during that reign it became apparent that the emperor's efforts to unite Italy and Germany under one crown were doomed to failure. The rise and success of the alliance of Italian republics known as the Lombard League no doubt contributed to the success of the papacy, but in their contest with the popes the emperors never had any chance of gaining a permanent victory. Frederick II continued with great energy to attempt the hopeless task of dominating the papacy, but his possession of Sicily only made the popes more determined than ever to establish their predominance in Italy. Frederick's death in 1250 marked not only the triumph of the papacy in Italy, but also that of feudalism in Germany. He has been called the "most dazzling of the long line of imperial failures," and with him ends the Empire as it was originally conceived. Henceforward the Holy Roman Empire, which implied the unity of Italy and Germany, and the close alliance of pope and emperor, no longer exists save in name, and its place is taken by a glorified German kingship presiding over a confederation of turbulent German nobles.

Europe in the 14th and 15th centuries.

Thus with the later years of the 13th century Europe had arrived at the definite close of one epoch and the beginning of another. The period of the Crusades was over, the theory of the Holy Roman Empire had broken down. The period from the beginning of the 14th to the close of the 15th century might well be styled the latter days of medieval Europe.

During the 14th and 15th centuries the idea of regarding Europe as one state in which emperor and pope presided over a number of subordinate kings gave way before the spirit of nationalism and particularism. England, France and Spain were rapidly becoming strong centralized monarchies which stood in striking contrast to the weakened Empire. Partly no doubt owing to the failure of the Empire and papacy to work together, a great impetus had been given to the formation of national monarchies. While Frederick II. had failed, Louis IX. and Philip IV. of France, Ferdinand III. of Castile (1217-1252), James the Conqueror, king of Aragon (1213-1276) and Edward I. of England (1239-1307) succeeded in laying the foundations of strong monarchies which after two centuries of struggles with the dying efforts of feudalism were established on a firm basis. In spite of the intellectual activity and political developments which characterized the 13th, 14th and 15th centuries it remains true that the later middle ages were marked by the decay of those remarkable social and political forces which had been such striking characteristics of the earlier period (see Middle Ages).

Summary of the characteristics

Thus the 14th and 15th centuries have characteristics which differentiate them from all preceding and succeeding centuries, The triumph of the papacy over the Empire had been short-lived. Owing to the disturbed state of Italy, Clement V. was in 1305 compelled to take refuge at Avignon, and till 1377—a period known as the Babylonish captivity—the popes remained in France. While the Empire and papacy steadily decline, while the Byzantine empire falls before the Turks, strong monarchies are gradually formed in England, France, Spain, and Portugal, and in Italy the Renaissance movement covers the later years

of the 14th and 15th centuries.

of the 15th century with glory (see Renaissance). During these centuries there is common to Europe no one principle which is to be found in all kingdoms. But while the old system, founded on belief in the unity of Europe under the Empire and papacy, declines amid chaos and turbulence, there is much intellectual and political activity which portends the appearance of an entirely new state of things. The 14th and 15th centuries may truly be styled a period of transition.

The decline of the Empire, 1254-1519.

From the death of Conrad IV., the son of Frederick II., in 1254 to 1273, when Rudolph of Habsburg became king, chaos reigned in Germany, and the period is known as the Great Interregnum. The forces of decentralization strengthened themselves, and the emperors found that the formation of a strong and united German kingdom was an impossibility. Rudolph of Habsburg (1273-1291), realizing what were the limits of his power in Germany and the futility of attempting to establish his hold upon Italy, began that policy of family aggrandizement which was continued so notably by successive members of his house. His reign witnessed the firm establishment of the house of Anjou in Naples, and, after the Sicilian Vespers in 1282, the supremacy of the house of Aragon in Sicily. Refusing to follow the example of Frederick II. and to take part in distant expeditions, Rudolph conquered Austria, Styria, Carinthia and Carniola, Vienna became the capital of the Habsburg dominions in Germany, and his son Albert of Austria, who was king from 1298 to 1308, was careful to continue the policy of his father. Though no Habsburg was again elected to the imperial throne till 1438, when the long succession of emperors began which continued unbroken till 1742, the establishment of the Habsburgs in Austria by Rudolph proved an event of European importance. From that time the leading members of the Habsburg family never lost an opportunity of aggrandizement. In 1335 they received Carinthia, in 1363 the Tirol. While, however, the Habsburgs, the Wittelsbachs and later the house of Brandenburg were strengthening themselves, the Empire was steadily declining in power and influence. The 14th century saw Switzerland shake itself free from the Austrian house and establish its independence, which was, however, not formally acknowledged till the treaty of Westphalia in 1648.

During the 14th century the weakness of the Empire became more and more accentuated under the weak rule of Louis IV. On his death in 1346 his successor Charles of Luxemburg, known as the emperor Charles IV., made a celebrated attempt to form a strong centralized German monarchy. With that object he issued in 1356 the Golden Bull, by which it was hoped that all matters connected with the imperial election would be settled. The number of imperial electors was settled, and henceforth they were to consist of the archbishops of Cologne, Mainz and Trier, and of the king of Bohemia, the duke of Saxony, the margrave of Brandenburg and the count palatine of the Rhine. Charles hoped to concentrate gradually in his house all the chief German provinces, and having by the Golden Bull endeavoured to check the growth of the towns, he expected to establish firmly the imperial influence in Germany. But the towns were too strong to be coerced, and during his reign the Swabian cities formed a union; and though the marriage of his son Sigismund to the heiress of the king of Hungary and Poland, and the possession of Brandenburg, which fell to him in 1373, seemed steps towards the realization of his hopes, his death in 1378 left his work unfinished. Moreover, his son and successor Wenceslaus (1378-1400) proved, like Richard II. of England and Charles VI. of France, unequal to the task of checking the growing independence of the nobles and the cities. The Hanseatic League (*q.v.*) was at the height of its power, and in 1381 the Rhenish towns formed a confederation. Wenceslaus, like Richard II., had fallen upon evil times. The advance westwards by the Turks occupied the attention of his brother Sigismund, now king of Hungary; he was himself unpopular in Bohemia, and at the same time was exposed to the intrigues of his cousin Jobst of Moravia, who had secured Brandenburg. In 1400 Wenceslaus was formally deposed by the electors, and spent the rest of his life in Bohemia, where he died in 1419. His successor Rupert of the palatinate reigned from 1400 to 1410, and during his reign the council of Pisa endeavoured to bring to an end the great schism which had followed upon the return of Pope Urban VI. from Avignon to Rome in 1377. Two popes had been elected, one living at Rome, the other at Avignon, and Christian Europe was scandalized at the sight of two rival pontiffs. On Rupert's death the electors chose Sigismund the brother of Wenceslaus, and he ruled as emperor from 1411 to 1437.

Decline of the papacy.

Thus at the beginning of the 15th century the papacy was seen to have fallen from the high position which it occupied at the time of the death of Frederick II. The Avignon captivity followed by the great schism weakened its temporal as well as its spiritual power and prestige, while national developments and dynastic ambitions, such as led to the Hundred Years' War, diverted men's minds from religious to purely temporal concerns. The work of Wycliffe and Hus illustrated not only the decline of papal prestige but also the general opinion that reform in the papacy was necessary. Sigismund's reign as emperor was rendered noteworthy by the part which he took in the council of Constance (*q.v.*), and by his successful efforts to suppress the Hussite movement in Bohemia (see Hussites). That country on the death of Wenceslaus in 1419 fell to Sigismund, but it was not till 1431, after a long and sanguinary war, that the opposition to the union of Bohemia with the Empire was suppressed. Led by Žižka and other able chiefs, the Bohemians who were Slavs utilized the Hussite movement in a vigorous attempt to secure their independence. In 1436 Sigismund was formally acknowledged king of Bohemia. In 1431, the year of the final overthrow of the Bohemians and the Hussites, he opened the council of Basel (*q.v.*), being resolved to establish a religious peace in Europe and to prevent the Hussite doctrines from spreading into Germany. In 1438 Sigismund died, leaving Germany involved in a quarrel with the papacy, but having successfully withstood the efforts of the Bohemians to acquire independence. Sigismund's death marks an epoch in the history of the Empire, for his successor Albert of Austria proved to be the first of a long line of Habsburg emperors. Albert himself reigned only from 1438 to 1440, but on his death the imperial dignity was conferred upon another member of the Habsburg house, Frederick, duke of Styria and Carinthia, known as the emperor Frederick III. With his accession the imperial throne became practically hereditary in the Habsburg family. Frederick's long reign, which lasted from 1440 to 1493, was of little benefit to Germany; for he showed no administrative skill and proved a weak and incapable ruler. Undoubtedly his lot fell upon evil days, for not only were the Turks at the height of their power, but both Bohemia and Hungary gave him much anxiety. The imminent fall of Constantinople, the last barrier of Christendom against Islam in the East, was a threat not only to the Empire, but to all Christian Europe. But western Europe was too much occupied with internecine feuds to unite effectively against the common enemy. In vain the emperor John VI. had gone in person to solicit aid at the various courts of the West; in vain he had humbled himself to pay the price asked, by subscribing to the abnegation of the distinctive tenets of the Orthodox Church, which secured the ephemeral reunion of Christendom at the council of Florence (1438). The crusading spirit was dead; the European powers stirred no finger to save the imperial city; and in 1453 Sultan Mahommed II. rode through the breach over the body of the last of the Eastern Caesars, and planted the crescent on the dome of the metropolitan church, of Eastern Christendom (see Turkey, and Roman Empire, Later).

Sigismund, emperor, 1411-1437.

The taking of Constantinople by the Turks.

The fall of Constantinople marked the definite establishment on European soil of a power alien and hostile to all that was characteristic of European civilization. It was a power, moreover, which could live only by expanding; and for over two hundred years to come the dread of Ottoman aggression was a dominant factor in the politics of eastern Europe. The tide of Turkish advance could have been arrested by a union of Europe; but the appeals of Pope Nicholas

V. fell unheeded upon a sceptical age, intent only on its dynastic and particularist ambitions. To the emperor the ousting of the Ottomans from the Balkan peninsula seemed of less importance than the consolidation of the Habsburg power in Germany, and its extension over the neighbouring kingdoms of Hungary and Bohemia. France was exhausted by the long agony of the Hundred Years' War, which came to an end the very year of the fall of Constantinople, and the French kings—especially Louis XI. (1461-1483)—were busy for the rest of the century crushing out the remnants of feudalism and consolidating the power of the monarchy. As for Italy, with its petty tyrants and its *condottieri*, there was no hope of uniting it for any purpose whatever, least of all a religious purpose, and Spain was busy with her own crusades against the Moors. The exploits of John Hunyadi, king of Hungary, against the Turks, therefore, remained isolated and unsupported. In 1456 he checked their advance northwards by a brilliant victory which led to the relief of Belgrade; but he died the same year, and his death was followed by a struggle for the succession between Hungarians and Bohemians. The racial and religious quarrels of the Balkan peoples had made it possible for the Turks to obtain a foothold in Europe; the jealousies and internecine struggles of the Christian states made possible the vast expansion of the Ottoman power, which in the 17th century was to advance the frontiers of Islam to those of Germany and to reduce the emperors, in their relations with the Porte, to the status of tributary princes.

The victory of Ladislaus, son of Casimir, king of Poland, who succeeded in uniting in his own person the crowns of Bohemia, Hungary and Poland, threatened to result in the permanent independence of those countries of the house of Habsburg. But in 1490 Ladislaus was compelled by Maximilian, son of Frederick III., to sign the treaty of Pressburg, providing for the eventual succession of the Habsburgs to Hungary and Bohemia.

Consolidation of the Habsburg power.

In other ways the reign of Frederick III. laid the foundations of the greatness of his family. In 1477 Maximilian married Mary, duchess of Burgundy and heiress of Charles the Bold, and through her the Habsburgs obtained Franche Comté and the Netherlands. The line, *Bella gerant alii, tu felix Austria nube*, well described the method by which the house of Habsburg increased its possessions and established its fortunes. A.E.I.O.U. (*Austriae est imperare orbi universo*), was the device invented for his house at that time by Frederick III. and it proved no idle boast. Maximilian I, the son of Frederick III., reigned from 1493 to 1519, and during his reign Europe passed from medieval to modern times. Some reforms in the Empire were carried out, but the events of his reign made it apparent that it was impossible to set up a centralized monarchy in Germany (see Maximilian I.; Germany and Austria: *History*).

France in the 13th and 14th centuries.

Far different developments were taking place during the 14th and 15th centuries in France, Spain, the Scandinavian north and in England. During the greater part of the 14th century France was engaged in foreign wars and in internal complications, and it seemed doubtful if a strong centralized monarchy would be firmly established. The failure of Philip VI. (1328-1350) and John (1350-1364) in their contest with England weakened the central power in France, and, though Charles V. (1364-1389), owing to his own sagacity and the weakness of the English government, managed to regain for France many of her lost provinces, the French power both at home and abroad again declined under the rule of the incapable Charles VII. (1380-1422). In fact the year 1422 may be said to mark the lowest stage in the history of the French monarchy. From that year an improvement gradually set in. A national sentiment, as exemplified in the career of Joan of Arc (*q.v.*), was developed; an alliance, essential for the successful expulsion of the English from France, was made in 1435 between the king of France and the duke of Burgundy; and in 1439 the famous ordinance empowering the king to maintain a standing army and to raise money for its maintenance was passed at Orleans by the states-general. These measures proved successful; in 1453 the Hundred Years' War came to an end, and Louis XI. managed between 1461 and 1483 to establish an absolutism in France on sure foundations. Under his successor Charles VIII. (1483-1498), Brittany was annexed, and France, secure from all danger of a feudal reaction, entered with the invasion of Italy in 1494 by Charles VIII. upon modern times. A similar process is observable in England and Spain. In England the Wars of the Roses were followed by the establishment of a strong monarchy under Henry VII., while in Spain Ferdinand and Isabella established in place of anarchy the royal authority, and during their reign suppressed all attempts at provincial independence. In 1491 the consolidation of Spain was completed by the conquest of Granada. In 1397, by the union of Calmar, the three kingdoms of Norway, Sweden and Denmark were united under Eric XIII. This union was, however, short-lived, and in the early years of the 16th century came definitely to an end (see Norway; Sweden; Denmark).

The close of the middle ages.

The close of the middle ages and the beginning of modern times was marked by several noteworthy events. The invention of printing, the discovery of America and the invasion of Italy by Charles VIII. all occurred before the end of the 15th century, while in the early years of the 16th century the ideal of civil and ecclesiastical unity was finally shattered by the Reformation and by the development of the modern states system, accompanied by the prominence henceforward attached to the question of the balance of power.

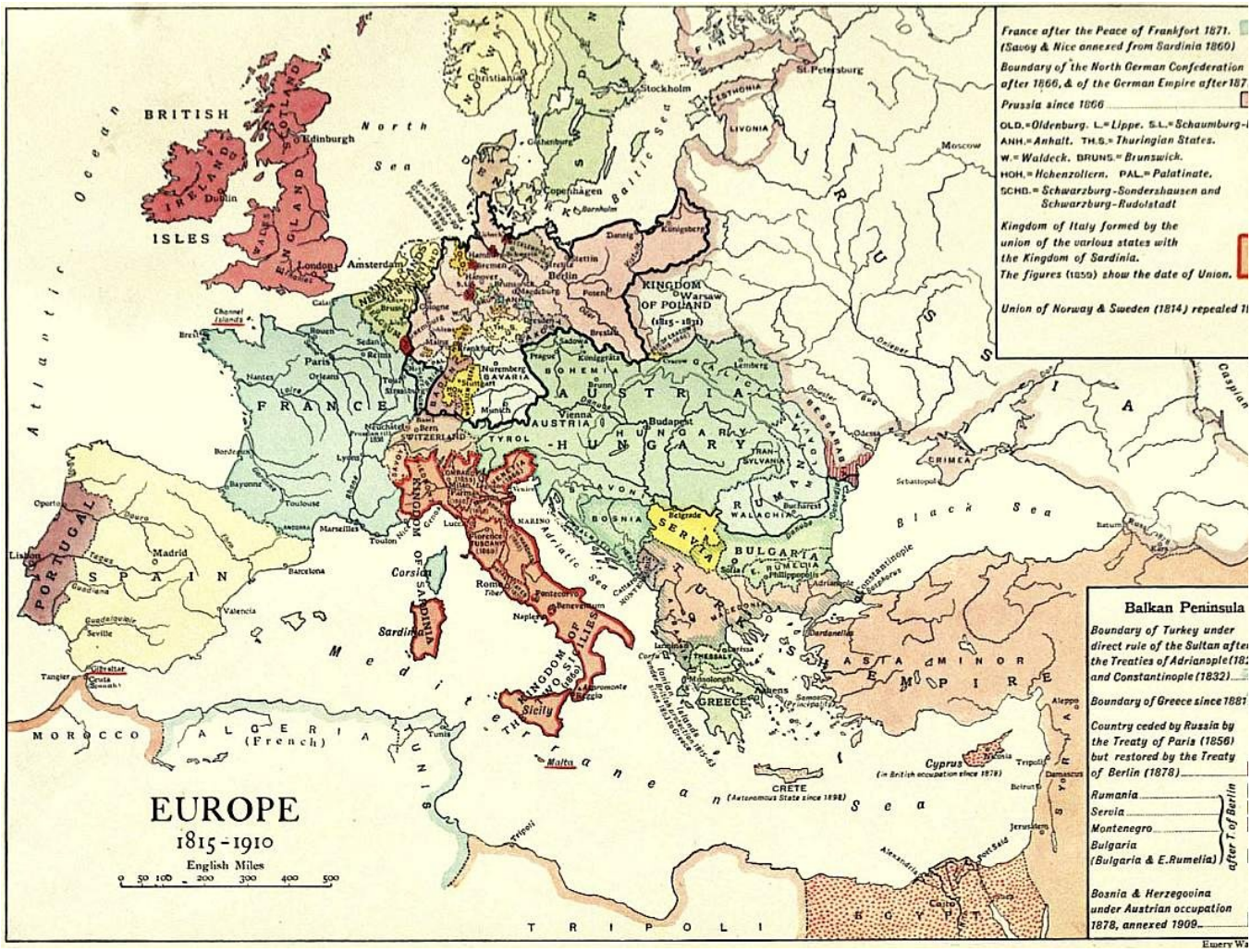
The Renaissance.

During the whole of the 15th century Europe had been affected by what is known as the Renaissance movement, which marked the transition from the medieval to the modern order. This movement, caused by the growth of learning, had its first home in Italy, which had witnessed a marvellous revival of interest in classical antiquity, in painting and in sculpture, accompanied by a keen intellectual activity in religious and political, no less than in literary matters. Criticism of existing beliefs was developed, knowledge became widely diffused, and, while the way was prepared for the substitution of individualism for the old ecclesiastical system, the development of commerce coincident with the discovery of America and the establishment of monarchical systems destroyed feudalism (see Renaissance). The later years of the 15th, and the early years of the 16th, centuries may be described as the transition from medievalism to modern times, from feudalism to individualism, from the idea of a world church and a world empire to one in which national consolidation was the chief feature and monarchical government a necessity.

Summary of European history from 1500.

From the beginning of the 16th century Europe entered upon modern times. Many events marked the close of the middle ages. The discovery of America, the decay of Venice, the development of the European states system, the rise of diplomacy as a permanent international system (see Diplomacy), the wars of religion—all these are the general characteristics of the new period upon which Europe now enters. With the growth of monarchies arises the belief in the divine right of kings, the development of territorial sovereignty, and wars of ambition like those waged by Louis XIV.

With the 18th century democratic ideas first begin to appear side by side with the rule of the enlightened despots such as Frederick the Great, Catherine II. and Joseph II. The outbreak of the French Revolution brings to an end the old European system, upsets the ideas on which it was founded, and leads to important territorial changes.



The advent of the Reformation, as has already been pointed out, finally shattered that ideal of civil and religious unity which had been the main characteristic of the middle ages. Thus from the beginning of the 16th century Europe sees the development of the modern states system and becomes the scene of national wars in which the idea of the balance of power was the leading principle (see Balance of Power). That principle did not allow of the recognition of the rights of nationalities, and till the wars of the French Revolution the interests of the various European states were usually subordinated to the dynastic aims of their rulers. During the ensuing centuries the balance of power in Europe was seriously threatened; during the first half of the 16th century by Charles V., during the latter half of the same century by Philip II., in the first half of the 17th century by the house of Habsburg, and in the latter half by Louis XIV.

The balance of power and the beginning of modern times.

The close of the Seven Years' War seemed to prelude a period of British ascendancy on the continent, but that danger passed away with the outbreak of the war between Great Britain and her American colonies. For a time the balance of power in Europe was completely shattered by Napoleon's brilliant conquests, but his fall, while to a great extent restoring the political equilibrium, gave an opportunity to Alexander of Russia to dominate Europe. Thus the 16th century definitely marked the beginning of modern times both from a political as well as from a religious point of view.

With the accession of Francis I. to the French and Charles V. to the imperial throne began the long rivalry between France and the house of Habsburg, which continued with few interruptions till 1756. In the struggle between Charles V. and Francis I., which began in 1521, the former had the advantage, and the battle of Pavia (1525) seemed likely to lead to the permanent pre-eminence of the imperial cause. But unexpected allies were found by Francis in the German reformers and in the Turks. The nailing by Luther of his ninety-five theses to the door of the Wittenberg church, followed by the decisions of the diet of Worms in 1521, led to a rapid development of Lutheran opinions among the princes of the north of Germany. Charles V.'s victory over France in 1525 and his reconciliation with the papacy in 1529 seemed, however, to prelude the suppression of the Protestant opinions. But Francis I. again took up arms, while the invasions of Suleiman the Magnificent, during whose reign the Turkish influence was not only felt in Hungary and Germany but extended to the west basin of the Mediterranean, forced Charles to temporize. When in 1544 the conclusion of the peace of Crépy with Francis I. enabled Charles to turn his attention to the rapid growth of Protestantism, it was too late to adopt with any chance of success a policy of suppression. In 1552 he found himself compelled to agree to the treaty of Passau which implied the adoption of a policy of compromise, and which in 1555 was followed by a definite arrangement at Augsburg, which admitted the principle of *cujus regio, ejus religio*. Till the outbreak of the Thirty Years' War in 1618, the settlement of Augsburg tended to keep peace between the Catholics and the Protestants. Equally unsuccessful were Charles's later efforts against France; in 1553 he lost Metz, Toul and Verdun, and in 1556 he retired to Spain, leaving the Empire to his brother Ferdinand, and Spain, the Netherlands and his Italian possessions to his son Philip. The latter, after winning the battle of St Quentin in 1557, made peace with Henry II. of France by the treaty of Cateau-Cambrésis in 1559.

The Reformation and the rivalry of Charles V. and Francis I.

By this peace a term was put to the struggle between France on the one hand and the Empire and Spain on the other, and the kings of France and Spain were enabled to turn their attention to the issues raised by the immense

The Counter-Reformation. growth of Protestantism since 1521. While Charles V. had been engaged in his struggles with the Turks and the French, Protestantism had rapidly developed. In Sweden, in Denmark, in England, in various parts of Germany, and in France Protestant principles had been largely adopted (see Reformation).

Though the forces of Roman Catholicism had for a time been vanquished they had still to be counted with. From the middle of the 16th century the growth of Protestantism began to be checked, and a period of reaction against the Reformation set in. For a time it seemed that the efforts of Roman Catholicism would be successful and that the cause of Protestantism would be permanently weakened. The papacy since the beginning of the 16th century had reformed itself, the council of Trent (*q.v.*), which closed its sittings in 1564, had given Roman Catholicism a "clearly and sharply defined body of doctrine," and the Catholic Church had become "more united, less worldly; and more dependent on herself." In this work of reorganization the Jesuits had played a great part, and the success of the Counter-Reformation was largely due to their efforts (see Jesuits). Paul III., Pius IV. and V., Gregory XIII. and Sixtus V. are all good examples of the reforming popes of the 16th century. Under them the Jesuits worked; they restored Catholicism in Poland, Bohemia and south Germany; and supported by them the Inquisition crushed Protestantism out of Spain and Italy.

The aims of Philip II. The interest of the Counter-Reformation movement from 1559 to 1618 centres round Philip II. of Spain. While Pius V. (1566-1572) is the best example of the Counter-Reformation popes, Philip II. took the lead among European Catholic monarchs in working for the extinction of Protestantism. His recovery of the southern Netherlands for the Catholic cause, his attempt to conquer England, his intention of subjugating France, were all parts of a scheme to advance simultaneously his own power and that of the Counter-Reformation.

Circumstances combined to aid Philip, and while he was endeavouring to carry out his political aims, the Jesuits were busily occupied in winning back large portions of Europe to allegiance to the papacy. But failure attended most of Philip's projects. Though he succeeded in recovering the southern or Walloon provinces of the Netherlands, he was unable to conquer the northern provinces, which under William of Orange formed themselves into the Dutch republic (see Holland: *History*). His scheme for the conquest of England failed, and the Spanish Armada was totally defeated in 1588. Nor was his plan for the subjection of France more successful. After a tedious civil war between the Catholics and Huguenots, Henry of Navarre appeared as a national leader, who, having overcome the armies of the League with which Philip was allied, concluded the peace of Vervins in 1598. In consenting to this treaty Philip acknowledged that his schemes for the establishment of his influence over France had failed. Thus, when the 16th century closed, England's independence was assured, the Dutch republic was established, the French monarchy was rapidly recovering from the effects of the religious wars and the decadence of the Spanish monarchy had set in. But the religious question was still unsettled, religious passions ran high, and no satisfactory agreement between Catholicism and Protestantism had been, or seemed likely to be arrived at. The successes of the Counter-Reformation under the Jesuits and such men as Ferdinand of Styria (afterwards the emperor Ferdinand II.) and Maximilian of Bavaria only roused strenuous opposition on the part of Calvinist princes such as Frederick IV., the elector palatine.

The approach of the Thirty Years' War. Various events had indicated the approach of a final struggle between Protestantism and Catholicism during the early years of the 17th century. The seizure of Donauwörth, a town with Protestant sympathies, by Maximilian of Bavaria in 1607, the formation of the Protestant Union in 1608 and of the Catholic League in 1609, the questions raised in 1609 by the Cleves-Jülich affair, the preparations of Henry IV. of France for an anti-Habsburg campaign—all these showed that the political atmosphere was charged with electricity. Till 1618, however, an open conflict between Protestantism and Catholicism in Germany was averted; in that year the acceptance, by the Calvinist Frederick, the elector palatine, of the crown of Bohemia, proved the starting-point of the Thirty Years' War.

The Thirty Years' War. Till the death of Gustavus Adolphus in 1632 that war preserved a religious or semi-religious character. The emperor Ferdinand II., Philip III. of Spain and Maximilian of Bavaria undoubtedly hoped to suppress Protestantism in Germany, while Wallenstein, the great imperial general, was prepared to conquer Denmark, Sweden and Norway, and to convert the Baltic into an Austrian lake. Though the resistance of Christian IV. of Denmark was vain, the jealousy felt by the Catholic princes of Wallenstein and the skill of Gustavus Adolphus caused the total failure of these ambitious schemes. All hope of seeing the imperial flag waving over the Baltic was dispelled by the victory of Breitenfeld, and that of Lützen in 1632, and though Gustavus Adolphus fell in the last-named battle, he had saved north Germany from falling into the hands of the Jesuits.

Entry of France into the war. With his death the Thirty Years' War became in the main a political struggle between France and the Habsburgs—a continuation of the wars of Francis I. and Henry II. against Charles V., and of the war between Henry IV. and Philip II. Ferdinand II. had attempted to carry back the religious history of the Empire more than seventy years, and had failed. He had endeavoured to make the Empire a reality and to revive and carry out the designs of Charles V. His failure was now complete. The edict of Restitution issued in 1629 remained a dead letter, and from 1632 to 1648 he and his successor Ferdinand III. had to employ all their energies in defending their possessions from the attacks of the French and Swedes.

The death of Gustavus Adolphus followed in 1634 by the assassination of Wallenstein proved an admirable opportunity for the entry of France into the Thirty Years' War. And till 1648, in spite of occasional reverses, the French and their allies gradually wore down their adversaries. After the death of Henry IV. in 1610 France had temporarily retired from a foremost place in the politics of Europe, and for some thirty years her ministers were busy in coercing the Huguenots and establishing the supremacy of the crown which was threatened by the nobles. Once united at home France was ready and eager to seize the opportunity for inflicting a severe blow upon the Habsburgs in Spain and Austria. The time for such action was well chosen. Austria was weakened by the war which had been waged since 1618, while Spain, exhausted by her efforts in the preceding century, had entered upon a long period of decay, and was about to see Portugal regain its independence. The Protestant princes in the north of Germany were ready to ally with France and Sweden against the emperor, even the Catholic Bavarian duke was to prove a doubtful ally of the Habsburg house. In 1642 Richelieu and in 1643 Louis XIII. died, but though Louis XIV. was an infant, and the French nobles by their cabals hindered the work of the regency, Mazarin successfully carried out the anti-Habsburg policy of his predecessors and brought the war against Austria to a successful conclusion. (See further Thirty Years' War.)

The peace of The peace of Westphalia in 1648 marked the virtual close of religious conflicts in Europe. It also marked the end of the attempts of the Habsburgs to establish a monarchical system throughout all Germany. By that peace the practical independence of the German princes was assured. Henceforward each prince could decide what form of religion was to be observed in his dominions. Thus Lutheranism, Calvinism and Catholicism

Westphalia, 1648.

were alike tolerated, and this recognition of the principle of compromise prepared the way for a wider toleration. Moreover, the petty principalities of the Empire, which numbered over 300, were allowed the right of concluding alliances with any foreign power, of making their own laws, and of carrying on war. Thus, in consequence of this most important concession of the emperor, the Empire lost all cohesion and became little more than a confederation. The states had firmly established their "liberties," the princes were now emancipated from imperial control, and it was evident that, unless by some means the house of Austria could re-establish its ascendancy, the eventual dissolution of the Empire must sooner or later follow. The peace of Westphalia thus marks for Europe, and in a special sense for Germany, the end of an important epoch. For Germany the changes introduced into its political life amounted to nothing less than a revolution, for there "the mainspring of the national life was broken." For Europe the Thirty Years' War brought to a close "the mighty impulses which the great movements of the Renaissance and Reformation had imparted to the aspirations" of men in all parts of the western world.

It was not, however, till the treaties of the Pyrenees (1659) and Oliva (1660) were signed that the echoes of the Thirty Years' War died away, and Europe entered upon a period in which the political ambitions of Louis XIV. threatened the interests of Europe and absorbed the attention of all European statesmen. During the intervening years from 1648 to 1659 Spain and France continued the struggle, while Charles X. of Sweden in 1654 entered upon a career of aggression and conquest in the north of Europe, which was only ended with his death on the 23rd of February 1660. Upon the balance of power in the north of Europe the wars of Charles X. had little permanent effect, and the peace of Oliva to a great extent merely marked the restoration of the *status quo*. But the peace of the Pyrenees was far more important. During its struggle with France, Spain found itself also involved in hostilities with England, and the real rottenness of the Spanish monarchy became rapidly apparent. Any assistance which might have been hoped for from the emperor was prevented by the formation of leagues of German princes—lay and ecclesiastical—in 1657 and 1658, which had the full support of France. The effect of the formation of the second league was at once apparent: all hope of assistance to Spain from the emperor was seen to have disappeared, and the conclusion of a pacific settlement between France and Spain was at once arrived at. The peace of the Pyrenees was a triumph for the *Rheinbund*, no less than for France.

The treaties of the Pyrenees and Oliva.

With the beginning of the personal rule of Louis XIV. in 1661, and the return of Charles II. to England in 1660, a new period in the history of personal monarchy in Europe began. At the time of the peace of Westphalia the monarchy in Europe was under a cloud. In England the cause of Charles I. was lost; in France the Fronde was holding its own against Mazarin; in Germany the princes had triumphed over the emperor; even in Russia the nobles were aiming at the curtailment of the power of the crown. But from 1660 it became evident that these attempts to secure the curtailment of the monarchical power were, with few exceptions, not destined to be successful. Though all chance of the establishment of a strong central authority in Germany had disappeared, the various states composing the Empire now entered upon a new period in their history and speedily formed miniature despotisms. Of these Brandenburg, Saxony and Bavaria were the most important. In Denmark Frederick III. made his crown hereditary, and his establishment of an absolutism was imitated by Charles XI. of Sweden a few years later.

The age of Louis XIV.

Thus when Louis XIV. took into his own hands the government of France, the absolutist principle was triumphant all over Europe. The period of his personal rule lasted from 1661 to his death in 1715, and is known as "the age of Louis XIV." During that period France was the leading monarchy in Europe, and the most conspicuous not only in arms but also in all the arts of civilization. While Turenne, Luxemburg, Villars and many others exemplified, till the rise of Marlborough, the pre-eminence of French generals, Pascal, Racine, Corneille, Molière and Fénelon testified to the commanding position taken by France in the world of literature. The building of Versailles and the establishment of the French court there was an event of importance not only in the history of France, but also in the history of Europe. The history of Europe may without exaggeration be said during the reign of Louis XIV. to centre round Versailles.

During his reign France took the lead in European politics, and established her supremacy all the more easily, owing partly to the weakness of most of the European countries, partly to the aggressions of the Turks, whose invasions of eastern Europe occupied from 1683 to 1699 the attention of the Poles and of the Austrians. The weakness or neutrality of the various European states was due to various causes. England was prevented till 1689 from taking a part in opposing the ambitious schemes of Louis XIV. owing to the personal aims of Charles II. and James II. Philip IV. and Charles II. of Spain could do nothing to resist the growing ascendancy of France, owing to the increasing weakness and rapid decadence of Spain, whose disappearance from the rank of great powers was one of the most striking features in the history of Europe during the second half of the 17th century. The weakness of Germany from the peace of Westphalia to the end of the century, due partly to the establishment of the independence of the princes of the Empire, partly to the unrest in Hungary, partly to the aggressions of the Turks, was obviously an immense gain to Louis XIV.

The political condition of Europe, 1661-1688.

Realizing the strength of his own position and the weakness of that of most of the European states, he entered in 1667 into the Devolution war and secured several fortresses in the Spanish Netherlands. From 1672 to 1678 he was again at war with Holland, and from 1673 with the emperor, Spain and Brandenburg as well. At the same time the Turks invaded Poland, but were successfully resisted by John Sobieski. In 1676, however, they made the favourable treaty of Zurawna, securing Kamenets and portions of Podolia and the Ukraine. Thus, while the Turks were threatening the independence of eastern Europe, Louis XIV. was attacking the independence of western Europe. In 1678 he made the treaty of Nijmwegen, securing great advantages for France. Till the end of the century Europe was faced with two serious problems: Could she successfully cope with the Turks on her eastern frontier? And could she resist the continued aggressions of France on her western frontier? Consequently the years from 1678 to the end of the century were of vital importance to the European world. For during that period the French and Turks made unceasing efforts to extend their frontiers at the expense of Germany. Encouraged by the weakness of the chief European states, Louis set up the Chambers of Reunion, seized Strassburg in time of peace and attempted to annex Luxemburg. At the same time it seemed that an independent Gallican Church would be set up, and that Louis, like Henry VIII., would sever all connexion with Rome. The persecution of the Jansenists and the revocation of the edict of Nantes in 1685 established something akin to religious uniformity in France. Buoyed up by his successes abroad and at home, and conscious that he had nothing to fear from England or from Spain, Louis prepared to carry out his schemes, with regard to the extension of his territory eastwards, at the expense of Germany. Simultaneously with Louis' aggressions in western Europe, the Turks had made an attempt to capture Vienna in 1683. Fortunately the efforts of the emperor Leopold, aided by John Sobieski, king of Poland, were successful, and the Turkish tide of conquest was gradually but successfully checked. It

Louis' aggressions.

was not, however, till the accession of William III. to the English throne that the tide of French conquest in western Europe was in like manner successfully resisted, and it was not till the treaty of Ryswick in 1697 that Louis realized that Europe had set a limit to his conquests. That treaty inflicted a blow on the prestige of France, just as the treaty of Karlowitz, concluded in 1699, was an important step in the decline of the Ottoman power. By that treaty, which marks a definite beginning in the history of the Austro-Hungarian monarchy, the hands of the emperor were freed, and he was able to devote his attention to the Spanish succession question, which already engrossed the attention of all Europe.

The Spanish Succession War.

The decadence of Spain had been obvious to all Europe since the middle of the century, and in anticipation of the death of the Spanish king Charles II., Louis XIV. and William III. had made a partition treaty in October 1698, which was superseded in March 1700 by a second partition treaty. However, on the death of King Charles on the 1st of November 1700 Louis repudiated the partition treaties and accepted the crown of Spain for his grandson Philip, who became Philip V. of Spain. Not content with this success Louis committed a number of aggressive acts which led to the War of the Spanish Succession in 1702. That war continued till 1713, when the treaty of Utrecht, followed in 1714 by the treaties of Rastadt and Baden, ended a struggle which had many results of vital importance to Europe. Great Britain, strengthened by the possession of Gibraltar and Minorca, by her establishment in Canada, and by trading rights in South America, henceforward stood forth as a rising colonial power to whom the command of the sea was essential. Austria obtained not only Belgium, which she held till the French Revolution, but also a firm foothold in Italy, which she maintained till 1859. To Spain the war indirectly brought unexpected benefits. Freed from her expensive possessions in Belgium and Italy, and now ruled by a new dynasty, Spain, so far from meeting with the fate which later attended Poland, entered upon a new period in her career, and throughout the 18th century showed considerable power of resistance to the colonial policy of Great Britain.

The 18th century.

With all its defects the treaty of Utrecht proved in many ways an excellent settlement. Till 1740, although a few short wars took place, Europe as a whole enjoyed peace. But with the settlement of Utrecht Europe seemed to have lost all touch with the high ideals which occasionally, as in the career of Gustavus Adolphus, or in the English great rebellion, or in the defence of Vienna by John Sobieski, were met with. The 18th century was marked by the dominance of a perverted system of the balance of power, which regarded such acts as the Prussian seizure of Silesia and the partition of Poland as justifiable on the ground that might is right.

European politics—1715-1740.

Before many years had passed after the treaty of Utrecht it became evident that two new nations were forcing themselves into the front rank of European powers. These were Russia and Prussia. The treaty of Nystäd in 1721 was to the north of Europe what the treaty of Utrecht was to the western and southern nations. It marked the decline of Sweden and the rise of Russia, which henceforth played an important part in European politics. Nevertheless till 1740 with the exception of the short Polish Succession War 1733-35 and the equally short war of 1737-39, in which Russia and Austria fought against Turkey, no general European struggle took place. That this was so was due in great measure to the alliance of 1717 between Great Britain and France, to the subsequent peace policy upheld by Walpole, Fleury, Patiño and Horn (the English, French, Spanish and Swedish ministers), to the hostility between the courts of Vienna and Madrid—only momentarily healed by the treaty of Vienna in 1725—and to the uncertain character of Russian politics.

During those years from 1713 to 1740 the great powers were slowly forming themselves into groups, bound together by motives of interest. Thus Spain and France after 1729 began to realize that both countries were interested in checking Great Britain’s colonial developments, while Spain was also ready to seize every opportunity of increasing her possessions in Italy at the expense of Austria.

1740 a new epoch.

With the year 1740 Europe entered upon a new epoch. The rivalry of Austria and Prussia for the leadership of Germany definitely began, and the struggle between Great Britain and France for supremacy in India, Canada and the West Indies entered upon an acute phase. The War of the Austrian Succession (1740-48) holds therefore an important place in the history of Europe, and proved with the Seven Years’ War, which was practically a continuation of it, of very real interest to Europe.

The Treaty of Aix-la-Chapelle, 1748.

In April 1748 Great Britain, France and Holland signed preliminaries of peace, which on the 18th of October became the definitive treaty of Aix-la-Chapelle. The other powers concerned agreed to the treaty with reluctance, Spain on the 20th of October, Austria on the 8th of November, and Sardinia on the 20th of November. By the terms of the peace France and Great Britain restored the conquests in America, India and Europe which each had made from the other. As regards the other powers, the peace left serious heart-burnings. Sardinia, though gaining territory in the Milanese, was compelled to relinquish her hold on Piacenza and its territory, and to restore Finale to Genoa; Austria had to yield Parma and Piacenza to Don Philip, and to recognize the loss of Silesia to Prussia; Spain was compelled to forgo all hope of regaining Gibraltar. The importance of the terms of this treaty lies in the fact that they indicate not only the lines followed by later European settlements, but also the tendency of later European developments. To Great Britain the treaty was only a pause in her expansion in Canada and in her advance to the establishment of her influence over all India. To France the treaty was equally a presage of future disasters in India and Canada. The retention of Silesia by Prussia was a pronouncement to all Europe that a new power had arisen which was destined in 1866 to oust Austria from her dominant position in Germany. The gains won by Sardinia, too, indicated that the real danger to Austria’s position in Italy would come from the house of Savoy.

The Seven Years’ War.

The Seven Years’ War (1756-63) opened with a diplomatic revolution as important as that of 1717, when France and Great Britain made an alliance. In May 1756, as a reply to the treaty of Westminster the Second, made in January between Great Britain and Prussia, France and Austria, united in the treaty of Versailles. This unexpected union, which lasted till the French Revolution, between two powers which had been hostile to each other from the beginning of the 16th century, amazed all Europe. However, it had not the results expected, for although Russia, which was allied with Austria, sent large armies headed by capable generals to the war, Frederick the Great remained unconquered. This result was partly due to the English alliance, partly to the incapable French generals, and partly to the state of internal politics in Russia. The treaties of Paris (February 10, 1763) and Hubertsburg (February 15) marked an important stage in the history of Europe. By the first Great Britain emerged from the war an imperial power with possessions all over the world, by the second Prussia was recognized as the equal of Austria in Europe.

The period from the close of the Seven Years’ War to the French Revolution saw all the special characteristics and tendencies of the 18th century in an accentuated form. Benevolent despotism found representatives not only in Frederick the Great and Maria Theresa, but also in Joseph II., Catherine II., Charles III. of Spain, and

Close of the Seven Years' War to the French Revolution.

Leopold of Tuscany. Reforming ministers, too, flourished in the persons of Tanucci, Turgot, Squillaci, Florida Blanca, D'Aranda and many others. Instances, too, of the low state of political morality are to be found. The indefensible seizure of Silesia by Frederick the Great was followed in 1772 by the equally immoral partition of Poland, and it was clearly apparent that monarchs, though ostensibly actuated by a desire for the welfare of their subjects, were resolved that reforms should come from above and not from below. The chief European events during these years were (1) the partition of Poland; (2) the war of the Bavarian Succession; (3) the alliance of Russia with Prussia in 1764 and with Austria in 1781; (4) the entry of France and Spain into war between Great Britain and her American colonies; (5) the combined attack of Russia and Austria against Turkey (1787-92); (6) the Triple Alliance of 1788.

No sooner was the Seven Years' War ended than France and Spain, having made the third family compact in 1761 (the other two were signed in 1733 and 1743), prepared to take revenge upon Great Britain at the first favourable opportunity. The result of this determination, and of Great Britain's absorption in internal politics, was that Russia, Prussia and Austria were enabled to carry out the first partition of Poland in 1772. The entry of France into the American war of independence rendered it impossible for Joseph II., single-handed, to carry out his project of exchanging the Austrian Netherlands for Bavaria, and he was compelled, after a short war, to give up for the time his project and to agree to the treaty of Teschen (1779). The continuance of the American War proved of great value to Russia and enhanced her position in Europe. Not only had she, together with France, brought about the treaty of Teschen, but in 1780 she headed the league of armed neutrality, and between 1780 and 1784 annexed the Crimea. The conclusion of the war of American Independence enabled Great Britain to regain her influence in Europe, and when Russia and Austria combined to attack Turkey, and when France threatened to re-establish her influence in Holland, Pitt formed with the Prussian king and the stadtholder the famous Triple Alliance of 1788. During the ensuing four years the influence of that alliance made itself felt in an unmistakable way. All hope of the establishment of French influence in Holland was destroyed; Denmark was forced to relinquish an attack on Sweden, then at war with Russia; and after Leopold of Tuscany had succeeded Joseph II. as emperor in 1790, the revolution in the Netherlands was brought to an end. Moreover, through the influence of Leopold the hostility of Prussia to Austria was removed, and the two powers in July 1790 made the treaty of Reichenbach. Great Britain, the chief member of the Triple Alliance, had supported the pacific solution of all these questions so menacing to European peace, and Pitt was aided in his policy by the emperor Leopold, who in 1791 made the treaty of Sistova with the Turks. Danger to the peace of Europe was, however, caused by the attempt of the Spaniards to annex Nootka Sound, and by the continuance of the war between Russia and Turkey. The former difficulty was, however, removed in November 1790 by an agreement between Great Britain and Spain, and in January 1792 Russia made the treaty of Jassy with Turkey.

Instead of Europe remaining at peace the year 1792 saw the beginning of a series of wars which did not come to a final conclusion till the battle of Waterloo. While the east of Europe was engaged in war, and while the Triple Alliance was busy attempting to restore peace to Europe, the French Revolution had broken out in 1789. The assistance given by France to the American colonists had brought the country to bankruptcy, and no course was left to Louis XVI. except to summon the states-general in May 1789. In that year a revolution against the reforms of Joseph II. had taken place in the Netherlands, and a revolution was being prepared in Poland for the overthrow of the aristocratic constitution and for the establishment of an hereditary monarchy. At first the revolution in France was entirely occupied with internal reforms, but after the dissolution of the Constituent Assembly in September 1791 the Girondists, whose influence became paramount, determined by the advice of Brissot to insist upon a policy of menace towards the Empire which would inevitably lead to war. War would, they hoped, result in the downfall of monarchy in France. On the other hand, Lafayette and his party advocated war on the ground that it would strengthen the cause of monarchy. In April 1792 war was accordingly declared upon Austria, then in alliance with Prussia. After a short period of failure the French in September won the battle of Valmy, and in November the battle of Jemappes. French armies advanced to the Rhine, Belgium was occupied, the Scheldt was declared open, and Holland was threatened. In consequence of the danger to Holland, Pitt adopted a warlike tone, and in February 1793 France declared war upon Great Britain.

French Revolution, 1789.

Opening of the war between France and Great Britain, 1793.

In that war Spain, Sardinia and Tuscany joined, so that France was practically fighting all Europe. Nevertheless, owing to the want of union among the allies, to the Polish questions which distracted Prussia and Austria, and to the determination and patriotism of all classes in France, the allies were discomfited and the league of powers broken up in 1795, when the treaties of Basel were made. Only Great Britain, Austria and Sardinia remained in arms against France, which was till 1799 ruled by the Directory. The next few years witnessed a series of most startling events. The successes of Napoleon Bonaparte in the Italian campaigns of 1797 and 1798 led to the peace of Cherasco with Sardinia, and the peace of Campo Formio with Austria. Only Great Britain remained at war with France. In 1799, taking advantage of the absence of Napoleon in Egypt, the Second Coalition was formed by Russia, Great Britain and Austria. Though the French were driven from Italy, Massena defeated the Russians in Switzerland, and the English were forced to retire from Holland. The return of Napoleon from Egypt was followed by the establishment of the Consulate in November 1799, by the overthrow of the Austrians at Marengo and Hohenlinden, by the treaty of Lunéville with the emperor, and by the treaty of Amiens in 1802 with the English government. (See French Revolutionary Wars.)

The treaties of Lunéville and Amiens.

Up to this point the Revolution may be said to have benefited Europe and to have shaken to its base the 18th-century ideas of government. During the years succeeding the peace of Campo Formio a revolution was effected in Germany. The Holy Roman Empire had become an anachronism, and as soon as France became possessed of the left bank of the Rhine it was obvious that the imperial constitution required revision. The jealousies existing among the German princes and the overthrow of Austria at Austerlitz enabled Napoleon to carry out a revolution in Germany according to his own ideas. At first, in 1804, new arrangements were made with regard to the character and formation of the diet. The constitution of that assembly was so altered that a Protestant majority free from Austrian influence was now assured. The middle states, such as Prussia, Baden, Bavaria, Württemberg and Hanover, received additions of territory, taken either from the ecclesiastical states or from the lands belonging to the imperial knights. After Austerlitz Napoleon in 1806 established the Confederation of the Rhine, and the Holy Roman Empire came finally to an end. A great European revolution had now been effected, but much remained to be done before a feeling of nationality could be aroused among the people of central Europe.

The German Revolution.

Already before the peace of Amiens Pitt had tried to stir up national feeling in Austria and Prussia, the means which he suggested for opposing Napoleon being in great measure those which were adopted in 1813 and 1814. But during Pitt's lifetime central Europe was not moved by any feeling of nationality or of patriotism. During the war of the Second Coalition in 1799 Austria had acted without any regard for her allies, while Prussia, from motives of jealousy of and from want of confidence in Austria, had refused to move. It was not till the small states which hitherto had formed independent units had been destroyed and

The causes of Napoleon's success.

Austria and Prussia trampled under foot by Napoleon that a strong national spirit in Germany was evoked. Until the treaty of Tilsit had been signed in 1807 there was no visible growth of a national uprising in any part of Europe. During the intervening years Prussia had been crushed at Jena and her kingdom cut short (1806), while Alexander I. of Russia, after a fierce campaign against Napoleon, had agreed in 1807 to the treaty of Tilsit, which apparently placed Europe at the feet of France and Russia. Napoleon was, as he thought, now in a position to bring about the humiliation of Great Britain. Already in November 1806, realizing that he could not ruin England by direct invasion, he had issued the first Berlin Decree, which ordered the exclusion of British goods from the continent. The Continental System necessitated by the victory of Trafalgar was thus definitely set up. After Tilsit he proposed to become supreme in the Baltic, and, by securing the dependence of Spain and Portugal, to dominate the Mediterranean, and to resume his plans for conquests in the East, and for the destruction of the British power in India. Thus the effects of the British naval victories of the Nile and Trafalgar would be completely nullified, the Mediterranean would be closed to British ships, Great Britain's Indian possessions would be lost, and Great Britain herself would be forced by starvation into surrender. Fortunately for Europe various circumstances hindered the realization of these ambitious schemes. Alexander, who feared that the French emperor, desired Constantinople, never proved a very helpful ally, the measures taken by Great Britain seriously interfered with Napoleon's schemes, and, before he had subjugated Spain, first Austria in 1809 and then Russia in 1812 offered an active resistance to his projects. The first note of opposition to Napoleon's plans was struck by Canning, when in 1807 he carried off the Danish fleet to England. Then the British fleet conveyed to Brazil in safety the Portuguese royal family when Portugal was invaded by Junot, while the surrender of 30,000 French troops at Baylen in July 1808, which was followed in August by the convention of Cintra, indicated that Spanish patriotism was, when roused, as effective as in the days of the Spanish Succession War. Austria was the first country to follow the example of Spain, and though she was defeated at Wagram and forced to accept Napoleon's hard terms, the national feeling aroused in Germany in 1809 rapidly developed. But Napoleon was apparently unconscious of the growth and importance of a national sentiment in any of the subject countries. In 1810 he had married Marie Louise of Austria, on the 20th of March 1811 a son was born to him, and he now seems to have resolved upon the establishment of a strictly hereditary empire with Paris its capital and Rome its second city. In extent, his empire would be vaster than that of Charlemagne, and the pope was to be completely subordinate to the emperor. This conception of the establishment of a reformed Holy Roman Empire with its centre at Paris did not appear unrealizable in 1811 when everything seemed to favour the new Charlemagne. Napoleon's power was apparently securely established, and during the years 1810 and 1811 he was again returning to his vast oriental designs. A sudden check, however, was about to be placed upon his ambitious schemes.

Napoleon aims at the destruction of Great Britain.

The establishment of French influence in Italy and Germany had stirred up in both countries a national feeling, the growth of which was encouraged by the example of Spain. No greater mistake was ever made by Napoleon than when, ignoring the strength of the Spanish resistance, and the development of a national movement in Germany, he resolved to enter upon the Russian campaign and to march to Moscow. Unconsciously Napoleon "had called into vigorous life the forces of Democracy and Nationality in Germany and Italy." The failure of the Moscow campaign led at once to a national rising in Prussia, and as soon as Austria had united her forces with those of Prussia and Russia, the overthrow of Napoleon at Leipzig in October 1813 was the result, and "the imperial yoke was shaken from the neck of the German people." Napoleon's wars had roused feelings of patriotism in Italy, Germany, Russia and Spain. It was at least realized by the nations of continental Europe, what had long been apparent to Englishmen, that a nation to be strong must be united. To "the subversive cosmopolitanism" of the French Revolution was now opposed the modern idea of nationality, against which the Napoleonic legions hurled themselves in vain. (See Napoleon I.; Napoleonic Campaigns; French Revolution; Alexander I., emperor of Russia; Metternich.)

The triumph of "nationality."

(A. Hl.)

The downfall of Napoleon involved that of the political system of Europe which he had constructed. The changes wrought by the revolutionary period in the old states system were, however, too profound to admit of any attempt at a complete restoration, even had the interests of the allied powers been consistent with such a course. The object of the four great powers in whose hands the settlement of Europe now lay, was rather, after taking precautions to confine France within her "legitimate boundaries," to arrange such a "just equilibrium" in Europe that no individual state should for the future be in a position to overset the balance of power. The first object was to be attained by the re-establishment of the ancient dynasty in France, as a guarantee to Europe against a renewal of the revolutionary propaganda; the second was the work of the congress of Vienna, by which, between September 1814 and June 1815, the reconstruction of Europe was taken in hand. The opening of the congress, in which for the first time all Europe seemed to be united for the friendly settlement of common interests, was hailed as the dawn of a new era. In a sense it was so; but hardly in the manner nor to the degree that some had hoped. In its councils the arts of the old diplomacy, still inspired by the traditional principles or lack of principles, were directed to the old ends; and the world, as though the popular upheaval of the Revolution had never been, was treated as real estate to be parcelled out by the executors of Napoleon's empire among sovereigns by divine right, regardless of the wishes of the populations, which figured in the protocols merely as numbers to be balanced and bartered one against the other.

Reconstruction of Europe.

Congress of Vienna, 1814-1815.

This process of "dividing the spoils," as Gentz called it, was naturally pregnant with possibilities of quarrels. Of these the most dangerous was that provoked by the resolution of the emperor Alexander I. at all costs to keep the former grand-duchy of Warsaw for himself, while compensating Prussia for the loss of some of her Polish territories by the annexation to her of all Saxony. The deadlock caused by the stubborn insistence on this plan, which the other great powers were equally determined to frustrate, all but led to war, and by a secret treaty signed on the 3rd of January 1815, Great Britain, France, and Austria agreed to make common cause in that event against Russia and Prussia. It needed Napoleon's return from Elba (March 1815) to remind the powers that their particular interests must still be subordinated to those of Europe. The common peril restored the broken harmony; and while the armies of the Alliance were closing in for the final struggle with the French emperor, the congress hurried on its deliberations, and on the 9th of June 1815, a few days before the battle of Waterloo, by which Napoleon's power was finally shattered, the Final Act, embodying the treaties of Vienna, was signed.

The territorial arrangements thus effected were for half a century the basis of the states system of Europe, and the treaties in which they were defined the charter of international relations. It was in central Europe, where Napoleon's policy had most profoundly affected the pre-revolutionary system, that the greatest changes were made. No attempt, indeed, was made to restore the Holy Roman Empire, in spite of the protest of the pope against the failure to re-establish "the centre of political unity"; but the Confederation of the Rhine having come to an end, Germany was reconstituted as a confederation of sovereign states, in which all the former members of the Empire which had survived

Territorial adjustments of the Vienna treaties.

the revolutionary epoch found a place (see GERMANY). Austria, in virtue of the imperial tradition of the house of Habsburg, received the presidency of the federal diet; but the bulk of her territories lay outside the frontiers of the Confederation, and the non-German character of the Habsburg monarchy was accentuated by the other arrangements at the congress. In Italy Lombardo-Venetia was erected into a kingdom under the Austrian crown; while the dynastic settlements in the other Italian states tended to make Austrian influence supreme in the peninsula (see ITALY). In return for this, Austria surrendered her claim to her former possessions in the Low Countries, which were annexed to the crown of Holland, so as to form, under the title of the United Netherlands, an efficient barrier to French aggression northwards. The function of defender of Germany on the Rhine frontier which Austria thus abandoned was assigned to Prussia, an arrangement pregnant with momentous issues. In compensation for her disappointment in the matter of Saxony, half of which was ultimately restored to the dynasty of Wettin, she received a large accession of territory in the Rhine provinces, carved partly out of the suppressed kingdom of Westphalia, partly out of the former ecclesiastical states, and comprising the imperial city of Aix-la-Chapelle and the former electorate of Cologne. To Prussia also was conceded the right to garrison the federal fortress of Luxemburg.

Of the other German states, Bavaria, which alone was sufficiently powerful to be of any great importance in the general affairs of Europe, reaped the reward of her timely defection from the cause of her protector Napoleon. She had, indeed, to restore to Austria the territories annexed to her at the expense of the Habsburg monarchy by the French emperor: Tirol, the Quarters of the Inn and of the Hausruck, and part of Salzburg. But she received ample compensation elsewhere, notably the former Bavarian Palatinate with a strip of territory to connect it with Bavaria proper. The right to garrison the federal fortress of Mainz was also ultimately conceded to her. Bavaria was thus placed in a position to continue her traditional policy of aiming at the position of a European great power and holding the balance between Austria and Prussia (see BAVARIA: *History*). The two other German states whose elevation to kingdoms had symbolized a similar ambition, Saxony and Württemberg, were henceforth relegated to a position of third-rate importance; Saxony depended for her very existence on the rivalry of her more powerful neighbours: Württemberg protested in vain against the dictatorship of the great powers to which she was forced to submit. Finally, the electorate of Hanover, partly out of compliment to the king of Great Britain, partly because with the abolition of the Holy Empire the title elector had fallen obsolete, was elevated to a kingdom. The request of the elector of Hesse for a similar concession in his case was refused by the powers assembled at Aix-la-Chapelle in 1818.

Of great importance were the changes effected in the north and east of Europe. The affairs of the Ottoman empire, which the treaty of Bucharest (1812) between Russia and Turkey had left in a very unsatisfactory condition, were not dealt with by the congress, in spite of the efforts of Great Britain to bring them into discussion. But the concessions made to the emperor Alexander elsewhere represented a notable advance in the European position of Russia. The possession of Finland, conquered from the Swedes in 1808, was confirmed to her; and, above all, the erection of the former grand-duchy of Warsaw into a constitutional kingdom of Poland under the Russian crown not only thrust the Muscovite power like a wedge into the heart of Germany, but seemed to threaten the Polish possessions of Austria and Prussia by setting up a quasi-independent Poland as a centre of attraction to the scattered elements of the Polish nation; though in the sequel the establishment of the city of Cracow and its territory as an independent republic, to avoid the difficult question of its assignment elsewhere, proved a more fruitful source of nationalist unrest. In the north the settlement confirmed by the congress marked the definite withdrawal of the Scandinavian Powers from any active influence on the affairs of the continent. Alone of the *parvenu* monarchs of the Napoleonic age Bernadotte retained the crown of Sweden, to which, by the treaty of Kiel, that of Norway had been added. On the other hand, by the cession of Swedish Pomerania to Prussia, Sweden finally withdrew from the southern shores of the Baltic. The Scandinavian states ceased henceforth to play any determining part in European politics. In the south, on the other hand, the restoration of Savoy and Piedmont to Victor Emmanuel I., king of Sardinia, and the incorporation in his dominions of the territories of the former republic of Genoa, were factors pregnant with mighty issues. The object of this increase of the power of the house of Savoy was but to erect a barrier against any possible renewal of French aggression in Italy; in effect it established the nucleus of the power which was to struggle successfully with Austria for the hegemony of Italy.

The gains of Great Britain in Europe were comparatively small, though by no means unimportant. By the retention of Malta she secured her power in the Mediterranean, and this was further increased by the treaty of Paris (November 5, 1815), by which the powers recognized her protectorate over the Ionian Islands. (See VIENNA, CONGRESS OF.)

The powers and France.

But for the episode of the Hundred Days, France would have emerged from the congress with recovered prestige and mistress of at least some of the territorial gains of the revolutionary wars; though Napoleon had thrown away, during the negotiations at Châtillon, the chance of preserving for her her "natural frontiers" of the Rhine, the Alps and the Pyrenees. After Napoleon's second downfall she was in serious danger of dismemberment, for which the German powers clamoured as essential to their safety. That Louis XVIII. continued to rule over the territories "handed down to him by his ancestors" was due to the magnanimity, or policy, of the emperor Alexander I. (*q.v.*), and the commonsense of Castlereagh and Wellington, who saw well that the "just equilibrium," which it was their object to establish, could not be secured if France were unduly weakened, and that peace could never be preserved if the French people were left to smart under a sense of permanent injury. By the second peace of Paris, signed on the 20th of November 1815, France retained her traditional boundaries. The unsatisfied ambition to secure her "national frontiers" was to bear troublesome fruit later.

That the treaties embodied in the Final Act of Vienna represented a settlement of all outstanding questions was believed by nobody. They had been negotiated for weary months in an atmosphere of diplomatic and feminine intrigue; they had been concluded in a hurry, under the influence of the panic caused by Napoleon's return from Elba. To Friedrich von Gentz they were at best but "partial arrangements," useful as forming an authoritative basis for the establishment of a more complete and satisfactory system. The history of the international politics of Europe for the years immediately succeeding the congress of Vienna is that of the attempt to establish such a system.

Treaty of Nov. 20, 1815, and the Concert of Europe.

After a quarter of a century of almost ceaseless wars, what Europe needed above all things was peace and time to recuperate. This conviction was common to all the powers who had inherited Napoleon's dictatorship in Europe; but on the question of the method by which peace should be secured, and the principles which should guide their action, a fateful divergence of view soon became apparent within their councils. All were agreed that France still represented the storm centre of Europe; and a second treaty, signed on the 20th of November 1815, renewed the provisions of the treaty of Chaumont, in view of any fresh outburst of the French revolutionary spirit. But the new treaty went further. By its 6th article it was declared that "in order to consolidate the intimate tie that unites the four sovereigns for the happiness of the world, the High Contracting Powers have agreed to renew at fixed intervals ... meetings consecrated to great common objects and to the examination of such measures as at each of these epochs shall be judged most salutary for the peace and prosperity of the nations and for the maintenance of the peace of

Europe." This was the formal charter of the concert of the great powers by which for the next seven years Europe was governed, a concert to which the name "Holy Alliance" has been commonly but erroneously applied. The Holy Alliance, drawn up by the emperor Alexander I., and signed by him, the emperor Francis, and King Frederick William III. of Prussia on the 26th of September 1815, represented a different and conflicting ideal. Actually it was not a treaty at all, but at best a declaration of principles to which any Christian could subscribe, at worst—to quote Castlereagh—"a piece of sublime mysticism and nonsense" from the political point of view (see Holy Alliance). It gained its sole political importance from the persistent efforts of the tsar and his ministers to replace the committee of the great powers, established by the treaty of the 20th of November, by a "Universal Union" of all the powers, great and small, who had signed the Holy Alliance, and thus to establish that "Confederation of Europe" of which the autocratic idealist had borrowed the conception from the theorists of the 18th century (see Alexander I., emperor of Russia). It was clear from the first that any attempt to set up such a central government of Europe under a "universal guarantee" would imperil the independence of the sovereign states; and from the first Great Britain, represented by Castlereagh, protested against it. She would consent to take common action on the basis of the treaties she had actually signed, consulting with her allies on each case as it arose; but to vague and general engagements she refused to commit herself. The attitude of Austria and Prussia was from the outset less clear. Metternich was torn between dread of revolution and dread of Russia; the Holy Alliance, though essentially "verbiage," might be useful in holding the imperial Jacobin in check; the "universal guarantee" could not but be discouraging to the "sects"; on the other hand, the extreme willingness of the tsar to march 200,000 Russians for any "European" purpose in any direction convenient or inconvenient to Austria, was—to say the least—disconcerting. Frederick William III., on the other hand, though he too had signed the Holy Alliance with reluctance, in moments of panic saw in the "universal guarantee" his best defence against the renewed attack by France which was his nightmare. In effect, owing to the firm attitude of Castlereagh at the congress of Aix-la-Chapelle, "the transparent soul of the Holy Alliance" never received a body, though attempts were subsequently made at the congresses of Troppau, Laibach and Verona to apply some of its supposed principles—attempts that led to the definitive breach of Great Britain with the Alliance.

The Holy Alliance.

England and the Concert.

The highwater-mark of the activity of the Allies as a central government for Europe was reached at the congress of Aix-la-Chapelle (*q.v.*) in 1818. France was now admitted to the Alliance, the objects of which were reaffirmed by a public declaration to which she adhered; but at the same time a secret treaty renewed the compact of Chaumont between the four other powers. Certain questions outstanding from the congress of Vienna were referred for settlement to a ministerial conference to meet at Frankfort in the following year. The treaty which was the result of this conference was signed on the 20th of July 1819. The bulk of it was concerned with territorial settlements in Germany: between Austria and Bavaria, and Bavaria and Baden; but some of the articles arranged for the cession of the border fortresses Philippeville and Mariembourg to the Netherlands, defined the frontiers of Savoy, and settled the reversion of the Italian duchies held by the empress Marie Louise.

Congress of Aix-la-Chappell, 1818

Meanwhile the balance of forces within the European concert had shown a tendency to shift. At the outset the restless activity of the emperor Alexander, his incalculable idealism, and his hardly veiled ambitions had drawn Austria and Great Britain together in common suspicion of an influence that threatened to be little less disturbing to the world's peace than that of Napoleon. But at Aix Metternich had begun to realize that, in the long-run, the system of repression which he held to be essential to the stability of the European, and above all of the Austrian, polity would receive little effective aid from Great Britain, fettered as she was by constitutional forms; while Alexander, alarmed at the discovery of revolutionary plots against his person, had already shown gratifying signs of repentance. The "Jacobin" propaganda of the tsar's agents continued, it is true, especially in Italy; and, in spite of the murder of the dramatist Kotzebue, as a Russian emissary, by the fanatical "Bursche" Karl Sand, Alexander joined with Castlereagh in protesting against the reactionary policy embodied in the Carlsbad Decrees of October 1819. But the murder of the duke of Berri on the 13th of February 1820 completed the Russian autocrat's "conversion." At the congress of Troppau, which met in the autumn of the same year, he was a "changed man," committed henceforth heart and soul to Metternich and his policy. The outcome of this new understanding was the famous Troppau Protocol, published to the world on the 19th of November 1820, and signed by Austria, Prussia and Russia. The immediate occasion of this manifesto was the military insurrection, under General Pepe, at Naples, by which the Spanish constitution of 1812 had been forced on the king (see Naples: *History*). But the protocol embodied a general principle involving issues infinitely more important than any arising out of this particular question. "States which have undergone a change of government due to revolution," it declared, "the results of which threaten other states, *ipso facto* cease to be members of the European alliance, and remain excluded from it till their situation gives guarantees for legal order and stability. If, owing to such alterations, immediate danger threatens other states, the powers bind themselves, by peaceful means, or if need be by arms, to bring back the guilty state into the bosom of the Great Alliance."

Alexander I. of Russia and Metternich.

Congress and protocol of Troppau, 1820.

This was, in effect, an attempt to apply the principle of the Carlsbad Decrees to all the world; and, had the attempt succeeded, all Europe would have been turned into a confederation on the model of that of Germany; for a political alliance, charged with the safeguarding of the territorial settlement defined by treaty, would have been substituted a central diet of the great powers, armed with undefined authority; and the sovereign independence of the nations would have been at an end. To any such principle, and therefore to the protocol in which it was embodied, Great Britain offered an uncompromising opposition. In vain Metternich urged upon Castlereagh that the protocol was but the logical conclusion drawn from premises to which he was already committed; for, if the alliance was to be effective in maintaining peace, it must interfere wherever and whenever peace should be threatened, and therefore to crush internal revolutions which could not but have an external result. The logic was perfect; the proposition that on which every "project of peace" must eventually break. Castlereagh's reply was, in brief, that Great Britain could never admit a principle which she would not in any circumstances allow to be applied in her own case.

The absence of the signatures of Great Britain and France from the Troppau protocol marked the first rift in the alliance, a rift that was soon to develop into a breach. For the time, indeed, the crack was "papered over." Castlereagh was prepared to leave Austria a free hand to deal with the risings in Naples and Piedmont, since she had treaty rights in the former case and her interests, as an Italian power, were threatened in both. Great Britain was even represented at the congress which reassembled at Laibach in January 1821, though Lord Stewart, the ambassador at Vienna, was not armed with full powers. Castlereagh had approved of the invitation sent to the king of Naples to attend the congress, as implying "negotiation," an improvement on the dictatorial attitude of the protocol. But everything in the conferences tended still further to shatter the unstable foundations of the alliance. Capo d'Istria, as though the debates of Aix-la-Chapelle had never been, raised once more the spectre of the

First rift in the alliance.

Congress of Laibach, 1821.

"Universal Union" which Castlereagh believed he had laid for ever. Metternich, anxious to prove to the Italian Liberals that the tsar was no longer their friend, welcomed the demonstration, and Prussia followed obediently in Austria's wake. "It is clear," wrote Lord Stewart, "that a Triple Understanding has been created which binds the parties to carry forward their own views in spite of any difference of opinion which may exist between them and the two great constitutional governments." (See Troppau and Laibach.)

But the narrower "Holy Alliance" of the three autocratic monarchies, as opposed to the two western constitutional monarchies, was not in fact destined to take shape till after the Paris revolution of 1830. Several factors delayed the process, notably the revolt of the Greeks against the Ottoman rule, and the Spanish question, which latter formed the main subject of discussion at the congress of Verona in 1822. In the Eastern Question the interests of Austria and Great Britain were identical; both desired to maintain the integrity of Turkey; both saw that this integrity was in the greatest peril owing to the possible intervention of the Orthodox tsar in favour of his co-religionists in revolt; and both agreed that the best means of preventing such intervention was to bind the Russian emperor to the European concert by using his devotion to the principles of the Holy Alliance. At Verona, however, the Eastern question was entirely overshadowed by that of Spain, and in this matter the views of Great Britain were diametrically opposed to those of the other powers of the alliance. She shared indeed with France and Austria the strenuous objection to the emperor Alexander's proposal to march 150,000 Russians into Piedmont in order to deal with Jacobinism whether in France or Spain; but she protested equally strenuously against the counter-proposal of France, which was ultimately adopted, that a French army should march into Spain to liberate the king from his constitutional fetters in the name of Europe. George Canning, carrying on the tradition of Castlereagh, once more protested, through Wellington, as British plenipotentiary at the congress, against the whole principle of intervention; and when, in spite of the British protest, the other powers persisted, the breach of Great Britain with the continental alliance was proclaimed to all the world. When, on the 7th of April 1823, the French army under the duke of Angoulême crossed the Bidassoa, the great experiment of governing Europe through a central committee of the great powers was at an end. (See Verona, Congress of; Alexander I.; Londonderry, Robert Stewart, 2nd marquess of; Canning, George.)

Effect of revolution in Spain.

Congress of Verona, 1822.

Henceforth, though the treaties survived, and with them the principle of the concert on which they were based, "Europe" as a diplomatic conception tends to sink into the background and to be replaced by the old international anarchy of the 18th century. To Canning this development seemed wholly welcome. He applied to the rivalry of states the Liberal principle of free competition as the sole condition of healthy growth. "Villèle is a minister of thirty years ago," he wrote to Bagot on the 3rd of January 1823, "no revolutionary scoundrel: but constitutionally hating England, as Choiseul and Vergennes used to hate us, and so things are getting back to a wholesome state again. Every nation for itself, and God for us all." But the essential difference between the rivalries of the 18th and 19th centuries was in the conception of the "nation." To Canning, as to the diplomatists of the congress of Vienna, "nation" was synonymous with "state," and national boundaries were those defined by the treaties, which Canning was as bent on preserving as any of his reactionary contemporaries. The conception of the divine right of every nationality to readjust political frontiers to suit its own ideals was as foreign to him as to Metternich. Yet this principle of nationality, which was destined during the 19th century to wreck the political structure consecrated at Vienna, and to leave to the succeeding age a host of unsolved and insoluble problems, found in Canning its earliest champion in the higher councils of Europe. The recognition of the independence of the South American republics and of the belligerent rights of the Greek insurgents were both in the first instance motived by the particular interests of Great Britain; but they were none the less hailed as concessions to the principles of nationality, to which they gave an impetus which was destined to continue till the face of Europe had been transformed.

End of the "Confederation of Europe."

Principle of nationality.

This in fact constitutes the main significance for Europe of the War of Greek Independence, which lasted from the first rising of the Greeks in the Morea in 1821 till the signature of the treaty of London on the 7th of May 1832 (see Greek Independence, War of; Turkey: *History*). Its actual outcome, so far as the political structure of Europe was concerned, was but to add an insignificant kingdom to the European states system. But its moral effect was immense. The sacrosanctity of the *status quo* had been violated, and violated with the active aid of three of the powers of the continental alliance: Russia, France and Great Britain. Metternich was right when he said that, in principle, there was no difference between the Greek insurgents and any other "rebels against legitimate authority," and the Liberals of all Europe, forced into inactivity by the Austrian police system, hailed in the Greeks the champions of their own cause. Philhellenism, beyond its proper enthusiasm, served as a convenient veil for agitations that had little concern with Greece. Other forces making for political change were simultaneously at work. The peace secured by the concert of the powers had given free play to the mechanical and industrial innovations that heralded the marvellous economic revolution of the coming age; wealth increased rapidly, and with it the influence and the ambition of the middle classes. The revolution of July 1830, which established the *bourgeois* monarchy in France, marked their first triumph. In countries less economically advanced, *e.g.* Germany and Italy, the attempt to follow French example ended in failure; but the revolt of the Belgians, for reasons partly economic and partly national, against the domination of the Dutch, resulted in the establishment of the independent kingdom of Belgium—the first actual breach in the territorial settlement of 1815. In Great Britain the agitation of the disfranchised middle classes, which seemed to threaten a violent revolution, ended in 1832 in the passing of the Reform Bill and their admission to political power. (See France; Germany; Italy; Belgium; English History.)

Europe and the revolt of Greece.

Economic progress; rise of the middle classes.

Revolutions of 1830.

The easy success of the revolutions in the west of Europe had been due, not to any reluctance of the reactionary powers to interfere on the basis of the old agreements, but to their preoccupation with the national revolt in Poland (*q.v.*). In view of this, and of the attitude of Great Britain, they had to recognize the title of Louis Philippe as king of the French, merely stipulating that he should guarantee to maintain the treaties. In spite of the overthrow of the legitimate dynasty in France, and of the partition of the kingdom of the Netherlands, the territorial settlement of Vienna remained, after the revolution of 1830, substantially intact. Outside the limits of the treaties, however, fateful changes were in progress. These were determined, broadly speaking, by the two main questions that dominated international politics between the years 1831 and 1841: (1) the antagonism between the western constitutional powers, France and Great Britain, and the eastern autocratic powers, Russia, Austria and Prussia; and (2) the crisis in the Eastern question resulting from the revolt of Mehemet Ali, pasha of Egypt, against the Porte.

The strained relations between Great Britain and France, resulting from the French policy of aggression in the Spanish peninsula, which had more than once brought the two powers to the verge of war, had been eased before the fall of the government of Charles X. The peril of a French hegemony over the vast colonial empire of

Anglo-French "entente."

Spain had been forestalled by Canning's recognition of the independence of the South American republics; the intrigues of France in favour of the partisans of Dom Miguel in Portugal had been checkmated by a politic breach, on behalf of the Portuguese Liberals, of the British principle of non-intervention, and finally the chief cause of offence had been removed, in 1827, by the withdrawal of the French army of occupation from Spain. In the Greek question the two powers had acted cordially in concert; and this good understanding even the French conquest of Algiers in 1830, which laid the foundations of the French empire in Africa, had not availed to shatter; for the eyes of the Tory ministry were still fixed on France as the potential focus of revolutionary propaganda, and any over-sea possessions she might acquire were, in Wellington's opinion, so many hostages for her good behaviour given to British sea-power. The results of the July revolution in Paris were accepted by Great Britain so soon as it became clear that Louis Philippe stood for peace and not for revolutionary aggression; the armed intervention of France in favour of the Belgians in August 1831 was stopped by the firm language of Palmerston; the French occupation of Ancona, as a countermove to Austrian aggressions in Italy, was accepted as "an incident of the balance of power"; and the intention of the king of the French to abide by the treaties, which became clearer with the consolidation of his power at home, paved the way for that *entente* between the two Liberal powers which lasted until 1840.

The cleavage between the fundamental principles of the two groups of autocratic and constitutional powers was not only apparent in their general attitude towards constitutional and national movements, but affected also the position taken up by them during the crisis of the Eastern question evoked by the revolt of Mehemet Ali, pasha of Egypt, a crisis by which between 1839 and 1841 all other diplomatic issues were overshadowed. (See Mehemet Ali.) During the Greek revolt the efforts of Austria had been directed to preventing a Russian attack upon Turkey; these efforts had failed, and Metternich's worst fears seemed to be realized when the Russo-Turkish campaigns of 1828-29 issued in the treaty of Adrianople (September 14, 1829) and the apparently complete vassalage of the sultan to the tsar. But when, in 1832, Sultan Mahmud appealed in his despair to the emperor Nicholas to save him from ruin at the hands of the Egyptian rebels, and, as the result, the treaty of Unkiar Skelessi (July 8, 1833) seemed to place definitely in the hands of Russia the keys of the Black Sea, it was left to France and Great Britain to give voice to the protest of Europe. Austria, alarmed by the revolutionary movements of 1830, accepted the fact of Russian preponderance at Constantinople, rather than risk a breach with the autocrat who was now the main pillar of the Holy Alliance. The emperor Nicholas, for his part, was equally prepared to surrender some of his ambitions in the East for the sake of the common cause, the more so since to Russian statesmen the maintenance of Turkey in a condition of weakness and dependence now seemed preferable to any attempt to break it up. The result of these dispositions was the convention of Münchengrätz (September 18, 1833) between Russia, Austria and Prussia, by which the three powers undertook to guarantee the integrity of the Ottoman empire. In the following month a secret convention was signed at Berlin between the same powers (October 15), reaffirming the right of the powers to intervene in the internal affairs of a friendly state at the request of its legitimate sovereign, a right with which no third power would be allowed to interfere, such interference to be regarded by the three powers as an act of hostility directed against all of them.

The constitutional v. the autocratic powers.

The Eastern question, Mehemet Ali.

Conventions of Münchengrätz and Berlin, 1833.

This reconstitution of the "Holy Alliance" on a narrower basis was the work of the emperor Nicholas, whose masterful personality had by this time quite overshadowed the influence of Metternich in the councils of the autocratic powers. There was no formal breach of the Grand Alliance; the "treaties" remained in force; but the French revolution of 1830 had produced a practical disruption which was every day accentuated by the attitude of the British government under the influence of Palmerston. For Palmerston had now become "the firebrand of Europe," openly proclaiming his contempt for international law and equally openly posing as the protector of "oppressed nationalities." "If these two powers (France and England)," wrote the tsar to King Frederick William of Prussia, "have the courage to profess loudly rebellion and the overturn of all stability, we ought to have the right and the courage to support Divine right." This deep cleavage of principles was immediately exhibited in the attitude of the powers towards the troubles in the Spanish peninsula. In September 1833 Ferdinand VII. of Spain died, and, under the Pragmatic Sanction, his daughter Isabella succeeded under the regency of Queen Christina; in July, Dom Miguel, the absolutist pretender to the throne of Portugal, had made himself master of Lisbon. In Spain Don Carlos, Ferdinand's brother, claimed the crown as the legitimate heir, and began the long agony of the Carlist wars; in Portugal the constitutionalists upheld in arms the rights of Queen Maria da Gloria (see Spain and Portugal). Carlists and Miguelists, making common cause, had the moral support of the allies of Münchengrätz; while France and Great Britain took the side of the Liberals. A formal alliance between the two western powers, proposed by Talleyrand, was indeed refused by Palmerston, who had no wish to commit Great Britain to an irrevocable breach with Austria and Russia, and was suspicious of the ambitions of France in Spain; but ultimately a triple alliance between Great Britain, Spain and Portugal—-with the object of restoring order in the peninsula—was converted, under pressure from the French government, into the Quadruple Alliance of the 22nd of April 1834.

The Tsar Nicholas I. and Palmerston.

Affairs of Spain and Portugal. Quadruple Alliance of 1834.

The *entente* implied by this formal instrument was, however, more apparent than real. When, in the spring of 1835, Queen Christina applied to the Allies for help against a renewed Carlist rising, Palmerston's suspicions were again aroused by the somewhat naïve suggestion of Thiers that France should once more intervene as in 1823, a suggestion that was firmly rejected. Palmerston's counter-proposal of an English expedition met with as little favour in Paris. The Anglo-French *entente* was proving but a "cardboard alliance," as Wellington called it; and the emperor Nicholas, to whom the existence of Louis Philippe as king of the French was at once a sacrilege and a menace, began with a good hope to work for its destruction. The fears roused by the Reform Act of 1832 had been belied by its results; the conservative temper of the British electorate had restored to Great Britain the prestige of a legitimate power; and the pledge of the tsar's renewed confidence and goodwill was the visit of the cesarevich (afterwards the emperor Alexander II.) to the English court in 1839. This was not without its effect on the public sentiment; but the triumph of the tsar's diplomacy was due to fresh complications in the Eastern question, due to the renewed effort of Sultan Mahmud to crush the hated viceroy of Egypt. These events will be found outlined in the article Mehemet Ali. Here it will suffice to say that the convention of London of the 15th of July 1840, signed by Great Britain, Austria, Prussia and Russia without calling France into counsel, marked the definite breach of the Anglo-French *entente*, a breach which was but imperfectly healed by the Straits' Convention signed by all the powers on the 13th of July 1841.

Nicholas I. and Great Britain.

Breach of Anglo-French "entente" 1840.

The Straits' Convention was hailed by Count Nesselrode, the Russian foreign secretary, as having re-established "the federative system of the European states on its old basis." This was true, in so far as it created yet another precedent for the concerted action of the European powers, and once more consecrated the right of

Great Britain and France. "Europe" to decide in common on questions of first-rate international importance. But the divergence of interests and principles within the concert were too great to be healed by the settlement of a single issue, however important, and this divergence increased as events moved towards the revolutionary outbreaks of 1848. When, in 1846, the independent republic of Cracow was suppressed by agreement of the three autocratic powers, on the ground that it had become a dangerous centre of revolutionary agitation, it was Great Britain and France that protested against an arbitrary infraction of the treaties by the very governments which had laid the greatest stress upon their sanctity. The *entente* between the two Liberal powers had been patched up after the closure of the Egyptian Question; it was cemented by visits of Queen Victoria and the prince consort to the Chateau d'Eu (1843 and 1845), and of King Louis Philippe to Windsor (1844); and it survived, in spite of several causes of friction, notably the crisis in Morocco (*q.v.*), until 1846, when the affair of the Spanish Marriages brought it to a somewhat dramatic conclusion.

The "Spanish Marriages." The attempt to secure the succession to the Spanish throne for his descendants by pressing on the marriage of the duke of Montpensier with the infanta Luisa, before that of the young queen Isabella had been proved to be fruitful in children, was on the part of Louis Philippe more than a breach of faith with Great Britain (how deeply it was resented may be learnt from Queen Victoria's letters); it was a breach of faith with the revolution that had made him king. Since 1840, indeed, the whole tendency of the king's policy had been to revert to the traditional standpoint of the Bourbons; internally, "resistance" to the growing claims of the democracy; externally, dynastic ambition. But in endeavouring to win the goodwill of the reactionary powers he only succeeded in losing that of the classes of his own people on which his authority was based. In 1847 he joined with the three autocratic powers in supporting the clerical and reactionary *Sonderbund* in Switzerland, in defiance of the protests of Great Britain and the attitude of the majority of Frenchmen. When, in February 1848, the revolution broke out in Paris, the *bourgeois* monarchy, utterly discredited, fell without a struggle (see France and Louis Philippe).

The "February Revolution," 1848.

Revolution of 1848 outside France. The revolution in Paris was not the cause of the political upheaval which in the year 1848 convulsed Europe from Ireland to the banks of the Danube; it had indeed been preceded by the triumph of Liberalism in Switzerland, by successful revolutions in Naples and Palermo, and by the grant of a constitution in Piedmont; but flaming up as it were in the revolutionary centre of Europe, it acted as the beacon signal for the simultaneous outbreak of movements which, though long prepared, might but for this have been detached and spasmodic. It was this simultaneity which gave to the revolutions of 1848 their European character and their formidable force. They were the outcome of various, dissimilar and sometimes contradictory impulses—political, social, racial. In France the issue resolved itself into a struggle between the new working-class ideal of Socialism and the *bourgeois* ideal of the great Revolution; in England the Chartist movement presented, in a less degree, the same character; in Germany, in the Austrian empire, in Italy, on the other hand, the dominant motives were constitutional and nationalist, and of these two the latter became in the end the determining factor. The events of the different revolutions are described elsewhere (see France; Austria; Germany; Hungary; Italy). From the point of view of Europe such unity as they possessed was due to their being, so far as Central Europe was concerned, directed against the system of "stability" associated with the name Metternich. In hatred of this system German, Czech, Magyar, and Italian were united; Kossuth's great speech of the 3rd of March echoed far beyond the frontiers of Hungary; the fall of Metternich (March 13) was a victory, not only for the populace of Vienna, but for all the peoples and races which had worn the Austrian fetters. It was the signal for revolutions in Hungary (the passing of the "March Laws"), in Bohemia, in Prussia (March 15), in Milan; on the 23rd of March, Charles Albert of Sardinia, placing himself at the head of the Italian national movement, declared war against Austria. Against a movement so widespread and apparently inspired by a common purpose the governments were powerless. The collapse of the Austrian administration, of which the inherent rottenness was now revealed, involved that of those reactionary powers which had leaned upon it. One by one they accepted what seemed to be the inevitable; even Pope Pius IX. sent troops to fight under the banner of St Peter for the Italian cause; while in Berlin Frederick William IV., wrapped in the gold and black colours of imperial Germany, posed as the leader of "the glorious German revolution." When, on the 18th of May, the parliament of United Germany was opened at Frankfort, it seemed as though pan-German dreams were on the threshold of realization; while in Italy, early in the same month, Lombardy, Modena, Parma and Piacenza declared by plebiscites for incorporation in the north Italian kingdom, Venice following suit on the 4th of June. A profound modification of the European states system seemed inevitable.

Causes of the failure of the revolutionary movements. That, in the event, the revolutions of 1848 left the territorial settlement of Vienna intact, was due in the main to the marvellous resisting power of the Habsburg monarchy, the strength of which lay in the traditional loyalty of the army and the traditional policy of balancing race against race within the empire. The triumph of democracy in Germany was made possible only by the temporary collapse of the Habsburg power, a collapse due to the universality and apparent unanimity of the onslaught upon it. But it was soon clear that the unanimity was more apparent than real. The victory of the democratic forces had been too easy, too seemingly overwhelming; the establishment of the constitutional principle in the main centres of autocracy seemed to make common action against the powers of reaction of secondary importance, and free play was allowed to the racial and national antagonisms that had been present from the first. The battle of German, as well as of Italian, liberty was being fought out on the plains of Lombardy; yet the German democrats, whether in Vienna or Frankfort, hailed the victories of the veteran Radetzky as triumphs of Germanism. In Bohemia the revolution was wrecked on the rivalry of German and Czech; and when the Hungarians drew the sword against Austria, the imperial government was reinforced by the hatred of the southern Slavs for their Magyar task-masters.

Victory of the conservative forces. Thus, from the chaos of warring races, the old order began slowly to reappear. So early as the 15th of June 1848 Prince Windischgrätz had restored order in Prague and received the thanks of the Frankfort parliament; on the 25th of July Radetzky's victory at Custozza set free the imperialist army in Italy; on the 4th of September Jellachich, ban of Croatia, invaded Hungary in the name of the united empire; on the 1st of November Windischgrätz entered democratic Vienna. The alliance of the army and the Slav races had won the victory over German democracy. The combating of Hungarian nationalism proved a longer and a harder task; but the Austrian victory of Kapolna (February 26-27, 1849) encouraged Schwarzenberg to dissolve the rump of the *Reichsrath* at Kremsier and proclaim a new constitution for the whole empire, including Hungary. The Magyar victories that followed issued in the proclamation, on the 14th of April, of the independence of Hungary. But though the Austrian arms had not been strong enough to crush the Hungarian revolt, they had proved at least the vitality of the conservative principle. The emperor Nicholas I. of Russia had watched in disgusted silence the weak spirit of concession with which the revolutions had been everywhere met; so long as the sovereigns seemed to forget their divine mission he had held rigorously aloof, and had only broken silence to congratulate Windischgrätz on his capture of Vienna and Schwarzenberg on his reassertion of vigorous principles. Now, however, that Divine Right was in arms against the forces of disorder, he was prepared to listen to the prayer of

the emperor Francis Joseph for assistance against the Hungarian rebels. The engagements of 1833 were remembered; and in the brotherly spirit of the Holy Alliance, Hungary was subdued by Russian armies and handed over, without *quid pro quo*, to her legitimate king.

Görgei's capitulation of Világos (August 14, 1849) cleared the ground for the complete restoration of the system destroyed by the March revolutions of the year before. The refusal of Frederick William IV. of Prussia to accept the imperial crown (April 21,1849) had already advertised the failure of the constitutional and unionist movement in Germany; and Prussia, her military prestige restored, stood once more face to face with Austria in rivalry for the hegemony of Germany. In the diplomatic contest that followed Prussia was worsted, her claims to an independent supremacy in the north were defeated, and the convention of Olmütz (November 29, 1850) restored the *status quo* of the Confederation as established in 1815.

Prussia and Austria. Convention of Olmütz, 1850.

Within three years of the great upheaval of 1848 the forces of revolution seemed everywhere to have been subdued, the states system of Europe to have been re-established on the basis of the treaties of Vienna. In reality, however, this restoration was only on the surface; the cracks in the structure of the European system had—to use Bismarck's phrase applied to another occasion—only been "papered over"; and soon ominous rents revealed the fact that the forces that had threatened it with sudden ruin were still at work. One fateful breach in the treaties had, indeed, been accepted as beyond repair; when the dust of the revolutionary turmoil was at length laid a Bonaparte was once more firmly seated on the throne of France. The emperor Nicholas, watching from the calm of Russia, had realized all that the recognition of this fact would involve; he had proposed to set in motion the somewhat rusty machinery of the Grand Alliance, but the other autocratic powers were in no case to support a legitimist crusade, and when Napoleon in 1852 assumed the title of emperor, all Europe recognized his right to do so, even Nicholas being fain to content himself with refusing to treat the *parvenu* monarch as his "brother," and to admit his style of "third" Napoleon, which seemed to imply a dynastic claim. Napoleon, indeed, was accepted by the powers, as he was welcomed by the French people, as the "saviour of society" from the newly revealed perils of the social revolution. For new and ominous forces had made their appearance since the revolution of 1830 had established the middle classes in power. The industrial development had proceeded in the west of Europe with astonishing rapidity, with its resulting concentration of vast populations in factories and factory cities; and this "proletariat," excluded from any voice in the government, and exposed in accordance with the prevailing economic theories of doctrinaire Liberalism to the horrors of unrestricted competition, had begun to organize itself in a movement, of which the catchword was "the right to work" and the banner the red flag of the socialist commune. The reign of Charles X. had been the *reductio ad absurdum* of the principle of legitimacy; that of Louis Philippe had discredited for ever government based solely on the *bourgeoisie*; the socialistic experiments of 1848 in Paris had collapsed amid the anarchy and bloodshed of the June days. At this opportune moment Louis Napoleon Bonaparte proclaimed to the French people the "Napoleonic Idea" as conceived by himself. The great Napoleon had been the incarnation of the Revolution, had "sprung armed from the Revolution, like Minerva from the head of Jupiter"; he had ruled because to him the people, by whom the Revolution had been made, had delegated the duty of representing, protecting and guiding it. Of this idea Louis Napoleon conceived himself to be the heir; and when by a double plebiscite the French nation had established him in supreme power, first as president for life (1851), then as emperor (1852), he was able to claim that he represented the people in a far more immediate sense than could be asserted of the chance majority of any representative assembly.

Napoleon III. and Europe.

Rise of socialism.

"The Napoleonic Idea."

It was clear that, sooner or later, Napoleon III. would prove a disturbing force in Europe. His title to rule was that he represented France; it followed therefore that he must be hostile to "the treaties," by which the traditional aspirations of France, *e.g.* for her "natural boundaries" of Rhine, Alps and Pyrenees, were restrained. He reigned as "emperor of the French"; it followed that he represented that principle of nationality which the treaties ignored. He could not afford—as Metternich had said of Ferdinand of Naples—"to treat his throne as an arm-chair"; and any activity he might display would be almost certainly at the expense of the established order. At the outset, indeed, it was his policy to pose as its custodian. To conciliate the French clericals he supported the pope against the Italian Liberals; but otherwise he proclaimed aloud his devotion to the arts of peace. A period of rapid material expansion succeeded the unrest of the revolutionary years; engineers and men of science were quickly producing a change in all the material conditions of life, greater than could have been effected by any political revolution; especially the face of Europe was gradually being covered with a network of railways, which it was hoped would draw the European nations not only materially but morally closer together. The first universal exhibition, opened under the auspices of the prince consort at London in 1851, was intended to advertise and consecrate the dawn of a new era of international peace and goodwill. The Crystal Palace at Sydenham, once hailed as the "bright Koh-i-nur of the West," remains the dismal monument of a hope so soon to be belied by the hard logic of events. For no period since 1815 has been so occupied with wars and the rumours of war as the twenty years that followed the opening of this great temple of peace.

Economic revolution in Europe.

One question, that of the ultimate destination of the duchies of Schleswig and Holstein, which threatened the tranquillity of the West, was temporarily settled by the conference of London in 1852 (see Schleswig-Holstein Question). But about the same time anxious watchers noticed on the political horizon in the East a cloud, no bigger than a man's hand, that threatened a serious storm. At first this was no more than a quarrel between Greek and Latin monks about the custody of certain holy places and things in Palestine. It soon, however, became clear that behind these insignificant combatants loomed the figures of the emperors of Russia and France. The motives that induced Napoleon to take up the cause of the rights of the Latin church in this matter were partly political, partly personal. He resented the tsar's attitude towards himself; he wished to gain the firm support of the clergy for his throne; he desired to win prestige for himself and his dynasty by reasserting the traditional influence of France in the Ottoman empire. The events that led up to the Crimean War, and those of the war itself, are told elsewhere (see Crimean War). Great Britain had been drawn into the war by her traditional policy of preserving the Ottoman empire as a barrier against the advance of Russia to the Mediterranean and the consequent danger to the British empire in India. It is now generally conceded that, so far as these objects were concerned, the war was a tragic mistake. The hopes that were built on the capacity of Turkey to reform itself were disappointed; the restrictions imposed upon Russia were repudiated at the first opportunity, during the Franco-German War in 1870; and the results of the Russo-Turkish War of 1876 have shown that a far more effective barrier against Russia than the weakened Ottoman empire has been furnished by the young and vigorous national states of the Balkan Peninsula. None the less, the treaty of Paris (1856), by which the war was closed, marks an important epoch in the diplomatic history of Europe; and it is impossible to say that the blood spilled in the Crimea was wholly wasted. At the time the main success of the allied powers seemed to be in the thrusting back of Russia from the Danube by the cession of Bessarabia, the extinction of Russian sea-power in the Black Sea, the formal repudiation of the tsar's claim to a special right of interference in

The Crimean War.

Congress of Paris, 1856.

Turkey. But the true significance of the work of the congress of Paris lies in the impetus given by it to the development of an effective international law. The concert of Europe was consecrated anew by the solemn admission of the Ottoman empire to an equality of *status* with the European powers and the declaration of the collective obligations of Europe towards it. The congress, moreover, acted in some sort as the legislative body of Europe; it established the principle of the free navigation of the Danube and of the right of all nations to carry their commerce into the Black Sea; by a declaration, signed by all the powers present, it abolished the practice of granting letters of marque to privateers in war time. The question was even discussed of establishing some sanction by which the rules of international law agreed upon should be enforced upon recalcitrant states; and, though nothing was settled, a *vœu* to this effect was entered upon the protocol. The congress of Paris thus set a precedent more hopeful than those of the congresses held earlier in the century, because the issues were not confused by the supposed necessity for upholding "legitimacy" at all costs; it was a stage in the progress from the ideals of the Grand Alliance to those of the Hague Conference.

The conclusion of the Crimean War left the emperor Napoleon the most influential personage in Europe; and Paris, the seat of the congress, became also the centre of the diplomatic world. Russia had been bled almost to death by the war; Austria was discredited and isolated owing to the dubious part she had played in it; Prussia had not recovered from the humiliation of Olmütz; Great Britain was soon plunged into the critical struggle of the Indian Mutiny. The time was obviously opportune for the realization of some of the aspirations implied in the Napoleonic idea. The opportunity came from the side of Italy. By sending Sardinian troops to fight in a quarrel not their own, alongside the Allies in the Crimea, Cavour had purchased for Piedmont the right to be heard in the councils of the powers—a right of which he had made use at the Paris congress to denounce before all Europe the Austrian misrule in Italy. The Italian unionists were at one with Napoleon in desiring to overset "the treaties"; and the Franco-Italian alliance which, in 1859, drove the Austrians out of Lombardy and established the nucleus of the Italian kingdom was the beginning of a process which, within twelve years, was to change the balance of Europe. It was ominous of the future that it was largely the menace of Prussian intervention that persuaded Napoleon to conclude the armistice of Villafranca (July 11, 1859), which, contrary to his agreement with Victor Emmanuel, left Venice to the Austrians. In spite of the peace of Zürich (November 10), indeed, the union of Italy continued during the succeeding years, and Savoy and Nice were the reward of the French emperor's connivance (see Italy). France thus once more gained her "natural frontier" of the Alps; the question was whether she would be able to regain her other natural frontier on the Rhine. The times were not unpropitious for an enterprise which was undoubtedly one of the main objects of Napoleon's policy. The European concert had ceased to exist as an effective force; the treaties had been violated with impunity; in Germany, where the tension between the two great powers had not been eased by Prussia's dubious attitude during the war, there was little prospect of a united opposition to French aggression, and the conditions seemed highly favourable for reviving the traditional policy of exploiting German disunion for the aggrandizement of France. Prussia was arming, but her armaments were directed not against Napoleon but against Austria, and the beginning of the reign of William I., who had become regent in 1858 and king in 1861, pointed to the development of a situation in which the French emperor would once again become the arbiter of Germany. On the 29th of March 1862 Prussia signed a commercial treaty with France on a basis that involved the exclusion of Austria from the Zollverein, and replied to the protests of the court of Vienna by recognizing the new kingdom of Italy. In September of the same year King William placed the supreme direction of Prussian policy in the hands of Otto von Bismarck, whose views on the exclusion of Austria from Germany were known to all the world.

Preponderance of France.

Napoleon and Italy. War of 1859.

Napoleon and Germany

The outcome of the Polish insurrection of 1863, however, again altered the aspect of things, and in a direction unfavourable to France (see Poland: *History*). Napoleon had been forced by French public opinion to come forward as the protector of the Poles; but the spectacle of a Bonaparte posing as the champion of "the treaties" was not impressive; his brave words were not translated into action; and he only succeeded in offending Russia by his protests and alienating Great Britain by his tergiversations. The proffered intervention of Austria, France and Great Britain was rejected in a note of Prince Gorchakov to Baron Brunnow, the Russian ambassador in London (July 1, 1863); no action followed; and the last effort to put forward the treaties of Vienna as the common law of Europe ended in a fiasco. British ministers, who had been made to look somewhat ridiculous, henceforth began to be chary of active intervention in continental affairs; Austria and France were alike discredited and isolated. Prussia which, under Bismarck's auspices, had aided Russia in suppressing the Poles (convention of February 8, 1863) alone emerged from the crisis with increased prestige. Bismarck, indeed, was too wary to accept the tsar's suggestion of an offensive alliance and an immediate combined attack on Austria and France; but in the coming struggle for the hegemony of Germany he was assured at least of Russia's neutrality.

Decline of Napoleon's influence.

The final act in this long rivalry began with the opening up of the Schleswig-Holstein question on the death of Frederick VII. of Denmark and the accession of the "protocol-king" Christian IX. (November 15, 1863). The German claim to the Elbe duchies, the Danish claim to at least Schleswig as an integral part of the northern kingdom, were but subordinate issues of questions far more fateful, the developments of which once more illustrated the hopeless enfeeblement of the idea of the European concert. In the struggle for the possession of the duchies the general sentiment of Germany was on one side, that of Europe on the other. By the protocol of 1852 the duchies had been treated as an integral part of Denmark, and France and Great Britain, as signatory powers, alike protested against the action of Austria and Prussia in asserting the German claim by force of arms. But, as in the case of Poland, protests were not followed by action; Napoleon in the end contented himself with proposing his favourite "Napoleonic idea" of a plebiscite, to discover the wishes of the populations concerned; Palmerston, who realized some of the important issues involved, allowed his warlike attitude, under exalted influences, to evaporate in words. Thus Great Britain earned the lasting resentment of Germans, without succeeding in preventing the establishment of German sea-power in the Baltic. For the Prussian war-harbour of Kiel and the Kiel Canal were in Bismarck's mind from the outset. Throughout he intended to make the duchies a part of Prussia and to use the whole question as a means for the solution of that of Germany. The Austro-Prussian War of 1866 grew inevitably out of the Dano-German War of 1864; and the treaty of Prague (Aug. 23, 1866), which excluded Austria from Germany and established the North German Confederation under the headship of Prussia, not only absorbed into Prussia the North German states which had sided with Austria, but by the annexation to her of Schleswig and Holstein laid the foundations of German power in the North Sea, and of German rivalry with England in the future.

Rivalry of Prussia and Austria. Schleswig-Holstein question.

Austro-Prussian War of 1866. Prussia supreme in Germany.

More immediate were the effects of the campaign of Königgrätz on France. The rapid and overwhelming victory of Prussia overthrew all the calculations of Napoleon, who had looked to intervening as arbiter between exhausted combatants. The sudden menace of the new German power alarmed him, and he sought to secure

Napoleon and Prussia. the Rhine frontier for France, by negotiations with Prussia, in the form of "compensations" at the expense of the South German states. He succeeded only in placing a fresh weapon in Bismarck's hands. The communication of the French overtures to the South German courts was enough to throw them into the arms of Prussia; and treaties of offensive and defensive alliance were signed in August 1866 between Prussia and Württemberg (3rd), Baden (17th), and Bavaria (22nd), by which the king of Prussia was to receive the supreme command of the allied armies in time of war. In vain Napoleon tried to retrieve his damaged prestige by securing compensation elsewhere. His proposal that the grand-duchy of Luxemburg, which had not been included in the new German Confederation, should fall to France by agreement with Prussia was no more successful than his other demands for "compensation." Luxemburg was declared a neutral state by the convention of London in 1867 (see Luxemburg), and the French proposal, published by Bismarck in *The Times* at the outset of the war of 1870, only damaged the French emperor's cause in the eyes of Europe.

Meanwhile public feeling in France had become seriously excited by this sudden menace of a hostile power on her eastern frontier, and this excitement was raised to fever heat when it became known that the vacant throne of Spain had been offered to and accepted by a prince of the house of Hohenzollern. Napoleon's policy had become hopelessly discredited by the successive fiascos in Poland, Mexico and Germany, and even the establishment of a liberal constitution in 1869 could not avail to restore confidence in him. He knew the risk he ran in challenging a conflict with a power whose military efficiency had been so strikingly displayed; but by refusing to do so, in the excited state of public feeling, he would have risked his throne. He reckoned on the traditional jealousy of the South German states for Prussia and their traditional friendship with France; he was assured, too, of the support of Austria, in the event of a victorious opening of the campaign. On the other hand Bismarck was bent on war, which, in accordance with his policy of "blood and iron," he believed to be the sole effective means of binding the heterogeneous elements of Germany into a coherent whole. The device of the "Ems telegrams" (see Bismarck) was sufficient to end the hesitations of Napoleon by giving an irresistible volume to the cry of the war party in France; and on the 19th of July the French emperor's declaration of war was handed in at Berlin.

The story of the struggle that followed is told elsewhere (see Franco-German War). The hopes that Napoleon had based on the action of the South German courts was belied; and the first crushing German victories (Weissenburg, August 4, and Wörth, August 6) not only removed all chance of Austrian co-operation but brought down with a crash the imposing facade of the Second Empire. On the 2nd of September Napoleon surrendered, with his army, at Sedan; and two days later the Empire was overthrown and a provisional republican government set up at Paris. On the 19th Paris itself was invested and, after a heroic defence, capitulated on the 28th of January 1871. On the 18th of January, at the palace of Versailles, William I., king of Prussia, was proclaimed German emperor. On the 26th of February were signed the preliminaries of peace, by which France agreed to cede to the German empire Alsace (except Belfort and its territory) and German Lorraine, with Metz and Thionville (Diedenhofen), and to pay a war indemnity of five milliards of francs (£200,000,000) in three years, to be secured by the occupation of French territory. The definitive treaty was signed at Frankfort-on-Main on the 10th of May 1871.

The Franco-German War, 1870-1871.

The new German Empire.

The most important outcome of the events which culminated in the Franco-German War and its result was the establishment of a powerful German empire, which was destined to dominate the continent for years to come, and the expansive ambitions of which remain pregnant with menace for the future. So great an overturn, however, involved other changes in the territorial system, which may be briefly summarized. The most notable of these was the reconstruction of the Austrian monarchy as a result of the war of 1866. By the treaty of Vienna (October 3, 1866) between Austria and Italy, Austria recognized the Italian kingdom and ceded to it the city and territory of Venice, thus surrendering the traditional claim of the Habsburgs to domination in Italy. This was followed in 1867 by the establishment of the Dual Monarchy in the Habsburg dominions under the auspices of Bismarck's rival, Count Beust,—Francis Joseph being crowned king of Hungary, and a separate constitution being established for Hungary and the *Cis-Leithan* dominions of the Austrian emperor (see Austria: *History*). In Italy, meanwhile, the unification of the kingdom had continued after the conclusion of the war of 1859 by the treaty of Zürich. In 1860 Tuscany, Parma and Modena were united to the monarchy of Victor Emmanuel, at the cost of the cession of Nice and Savoy to Napoleon. In May of the same year Garibaldi and his "Thousand" landed in Sicily, which he reduced by the end of June; in August he crossed to the mainland, and the capitulation of Francis II. of the Two Sicilies at Gaeta on the 13th of February 1861 ended the Bourbon kingdom in southern Italy. On the 17th of March Victor Emmanuel II. was proclaimed king of United Italy. This title, as mentioned above, was recognized by Austria in 1866, when Italy was increased by the cession of Venice. Finally, Rome, which had been preserved to the papacy by Napoleon's troops, was on their withdrawal occupied by the Italians on the 20th of September 1870. Thus the temporal power of the popes came to an end; and the unification of Italy was completed (see Italy: *History*).

Dual system in Austria-Hungary.

Union of Italy.

Another significant outcome of the collapse of France was the denunciation by Russia of the "Black Sea" clauses of the treaty of Paris of 1856, an action rendered possible by the *entente* between the governments of Berlin and St Petersburg. In the note addressed to the signatory powers announcing that Russia no longer felt herself bound by the clauses of the treaty limiting her sovereign rights in the Black Sea, Prince Gorchakov wrote: "It would be difficult to affirm that the written law founded on the respect for treaties, as the basis of public right and rule of the relations of states, has preserved the same moral sanction as in former times." The action of Russia was, in fact, a practical illustration of Bismarck's *dicta* that "*rebus sic stantibus* is involved in all treaties that require performance" (*Mem.* ii. 280), and that "*ultro posse nemo obligatur* holds good in spite of all treaty obligations whatsoever, nor can any treaty guarantee the discharge of obligations when the private interest of those who lie under them no longer reinforces the text" (*ib.* ii. 270). Great Britain did her best to counteract a doctrine so subversive of international confidence. For a moment at least a diplomatic breach with Russia seemed inevitable. At Bismarck's suggestion, however, a conference was held at London to arrange the affair. There was, in the circumstances, no chance of forcing Russia to recede from her position; but in order "to reconcile facts with principles" the conference on the 17th of January 1871 agreed on a formula announcing that "contracting powers can only rid themselves of their treaty engagements by an understanding with their co-signatories." Thus the principle of the European concert was saved. But, for the time at least, it seemed that the triumph of Bismarck's diplomacy had re-established

> ... the simple plan
> That they should take who have the power
> And they should keep who can.

Beust was not far wrong when he exclaimed, "Je ne vois plus de l'Europe!"

(W. A. P.)

By the Franco-German War of 1870-71 and the creation of the German empire the political condition of Europe was profoundly changed. Germany became for a time the leading power on the continent of Europe, and German statesmanship had to devise means for preventing, until the new edifice was thoroughly consolidated, the formation of a hostile coalition of jealous rivals. The first thing to be done in this direction was to secure the support of Russia and Austria to the new order of things.

With regard to Russia there was little cause for apprehension. She had aided Bismarck to carry out his audacious schemes in the past, and there was no reason to suppose that she would change her policy in the immediate future.

Russian policy towards Germany.

The *rapprochement* dated from the Polish insurrection of 1863, when the governments of France and England, yielding to popular excitement, made strong diplomatic representations to Russia in favour of the Poles, whereas Bismarck not only refused to join in the diplomatic campaign, but made a convention with the cabinet of St Petersburg by which the Russian and German military authorities on the frontiers should aid each other in suppressing the disturbances. From that time the friendship ripened steadily. The relations between the two powers were not, it is true, always without a cloud. More than once the bold designs of Bismarck caused uneasiness and dissatisfaction in St Petersburg, especially during the Schleswig-Holstein complications of 1864 and the Austro-Prussian conflict of 1866; but the wily statesman of Berlin, partly by argument and partly by dexterously manipulating the mutual trust and affection between the two sovereigns, always succeeded in having his own way without producing a rupture, so that during the Franco-German War of 1870-71 Russia maintained an extremely benevolent neutrality, and prevented Austria and Italy from taking part in the struggle. So benevolent was the neutrality that the emperor William at the end of the campaign felt constrained to write to the tsar that he owed to His Majesty the happy issue of the campaign and would never forget the fact. Having thus helped to create the German empire, Alexander II. was not likely to take an active part in destroying it, and Bismarck could look forward confidently to a long continuance of the cordial relations between the two courts.

The second part of the German chancellor's programme, the permanent conciliation of Austria, was not so easily carried out. Austria had been the great sufferer, more perhaps even than France, from Bismarck's aggressive policy.

Austrian relations with Germany.

For generations she had resisted strenuously and successfully the efforts of the Hohenzollerns to play the leading part in Germany, and she had always considered her own influence in Germany as essential to the maintenance of her position as a first-class power. By the disastrous campaign of 1866 and the consequent treaty of Prague, Austria had been formally excluded from all direct influence in German affairs. With these events still fresh in his recollection, the emperor Francis Joseph could hardly be expected to support the new empire created by his rival at Austria's expense, and it was known that on the eve of the Franco-German War he had been negotiating with the French government for a combined attack on Prussia. To an ordinary statesman the task of permanently conciliating such a power might well have seemed hopeless, but Bismarck did not shrink from it, and even before the signature of the treaty of Prague he had prepared the way for attaining his object. "With regard to Austria," he himself explained on one occasion, "I had two courses open to me after her defeat, either to destroy her entirely or to respect her integrity and prepare for our future reconciliation when the fire of revenge had died out. I chose the latter course, because the former would have been the greatest possible act of folly. Supposing that Austria had disappeared, consider the consequences." He then described very graphically those probable consequences, and drew the conclusion: "for the sake of our own life Austria must live. I had no hesitation, therefore, and ever since 1866 my constant effort has been to stitch up the great torn texture and to re-establish amicable relations with our ancient associate of the Confederation." For this purpose he tried to soothe Austrian susceptibilities, and suggested confidentially that compensation for the losses of territory, influence and prestige in Italy and Germany might be found in south-eastern Europe, especially by the acquisition of Bosnia and Herzegovina; but so long as his rival Count Beust was minister for foreign affairs in Vienna, and Austria had the prospect of being able to recover her lost position by the assistance of Russia and France, these efforts had no success. It was only when Prince Gorchakov had declined Count Beust's advances, which took the form of suggesting the abolition of the Black Sea clauses of the treaty of Paris, and when France had been paralysed for some years by her war with Germany, that a *rapprochement* between the cabinets of Vienna and Berlin became possible. Bismarck lost no time in making advances. From the German headquarters at Versailles he sent a despatch to Vienna suggesting the establishing of more cordial relations between the two countries, and Count Beust replied in an equally amicable tone. The emperor Francis Joseph, finding himself isolated, had evidently accepted the inevitable with his customary resignation, and abandoned his dreams of again playing the leading part in Germany. As a further proof of the change in his disposition and aims he replaced Count Beust by Count Andrássy, who was a personal friend of Bismarck, and who wished, as a Hungarian, to see Austria liberated from her German entanglement, and he consented to pay a visit to Berlin for the purpose of drawing still closer the relations between the two governments.

Bismarck was delighted at this turn of affairs, but he advanced with his usual caution. He gave it to be clearly understood that improvement in his relations with Vienna must not disturb the long-established friendship with St Petersburg. The tsar, on hearing privately of the intended meeting, gave a hint to Prince Reuss, the German ambassador, that he expected an invitation, and was invited accordingly. The meeting of the three sovereigns took place at Berlin at the end of August 1872. The three ministers, Prince Bismarck, Prince Gorchakov and Count Andrássy, held daily conferences, on the basis that the chief aim in view should be the maintenance of peace in Europe, and that in all important international affairs the three powers should consult with each other and act in concert. As a result of three days' consultation the Three Emperor's League was founded, without any formal treaty being signed. In this way the danger of a powerful coalition being formed against the young German empire was averted, for in the event of a conflict with France, Germany could count on at least the benevolent neutrality of Russia and Austria, and from the other powers she had nothing to fear. What ulterior designs Bismarck may have had in forming the league, or "Alliance" as it is often called, must be to some extent a matter of conjecture, but we shall probably not be far wrong in adopting the view of a competent Russian authority, who defines the policy of the German chancellor thus: "To make Austria accept definitively her deposition as a Germanic power, to put her in perpetual conflict with Russia in the Balkan Peninsula, and to found on that irreconcilable rivalry the hegemony of Germany."

The Dreikaiserbund.

For more than two years there was an outward appearance of extreme cordiality between the three powers. They acted together diplomatically, and on all suitable occasions the three allied monarchs exchanged visits and sent each other congratulations and good wishes. There was, however, from the beginning very little genuine confidence between them. Before the breaking up of the conferences at Berlin, Alexander II. and his chancellor had conversations with the French ambassador, in which they not only showed that they had suspicions of future aggressive designs on the part of Germany, but also gave an assurance that so long as France fulfilled her engagements to Germany she had nothing to fear. A few months later, when the emperor William paid his return visit to the tsar in St Petersburg, a defensive convention was concluded by the two monarchs behind the back of their Austrian ally. Without knowing anything about the existence of this convention, the Austrian ally did not feel

comfortable in his new position. In Vienna the old anti-Prussian feeling was still strong. The so-called party of the archdukes and the military resisted the policy of Andrássy, and sought to establish closer relations with Russia, so that German support might be unnecessary, but as Bismarck has himself testified, “Russia did not yet respond. The wound caused by the conduct of Austria during the Crimean War was not yet healed. Andrássy made himself very popular in the court society of St Petersburg during his visit there with his imperial master, but the traditional suspicion of Austrian policy remained.” Altogether, the new league was not a happy family. So long as all the members of it were content to accept the *status quo*, the latent germs of dissension remained hidden from the outside world, but as soon as the temporary state of political quietude was replaced by a certain amount of activity and initiative, they forced their way to the surface. No one of the three powers regarded the *status quo* as a satisfactory permanent arrangement. In Berlin much anxiety was caused by the rapid financial and military recovery of France, and voices were heard suggesting that a new campaign and a bigger war indemnity might be necessary before the recuperation was complete. In St Petersburg there was a determination to take advantage of any good opportunity for recovering the portion of Bessarabia ceded by the treaty of Paris, and thereby removing the last tangible results of the Crimean War. In Vienna there was a desire to obtain in the Balkan Peninsula, in accordance with the suggestion of Bismarck, compensation for the losses in Italy and Germany. Thus each of the members of the league was hatching secretly a little aggressive scheme for its own benefit, and the danger for the rest of Europe lay in the possibility of their reconciling their schemes so far as to admit of an agreement for action in common. Fortunately for the onlookers there were important conflicting interests, and the task of reconciling them was extremely difficult, as the subsequent course of events proved.

The storm-cloud of 1875.

The first of the three powers to move was Germany. In February 1875 M. de Radowitz was despatched to St Petersburg on a secret mission in order to discover whether, in the event of hostilities between Germany and France, Russia would undertake to maintain a neutral attitude as she had done in 1870-1871; in that case Germany might be relied on to co-operate with her in her great designs in the East. Prince Gorchakov did not take the bait with the alacrity that was expected. Having overcome in some measure his hatred of Austria, which had distorted for so many years his political vision, he had come to understand that it was not for the interests of his own country to have as neighbour a powerful united Germany instead of a weak confederation of small states, and he now perceived that it would be a grave error of policy to allow Germany to destroy still more to her own advantage the balance of power in Europe by permanently weakening France. No doubt he desired to recover the lost portion of Bessarabia and to raise Russian prestige in the East, but he did not wish to run the risk of exciting a great European war, and he believed that what he desired might be effected without war by the diplomatic skill which had warded off European intervention during the Polish troubles of 1863, and had recovered for Russia her freedom of action in the Black Sea during the Franco-Prussian War of 1870-71. In reply, therefore, to M. de Radowitz’s inquiries and suggestions, he declared that the Russian court fostered no ambitious designs in the East or in the West, and desired only peace and the maintenance of the *status quo*, with possibly an amelioration in the miserable condition of the Christian subjects of the sultan. This rebuff did not suffice to dispel the gathering storm. The warlike agitation in the German inspired press continued, and the French government became thoroughly alarmed. General Leflô, the French ambassador in St Petersburg, was instructed to sound the Russian government on the subject. Prince Gorchakov willingly assured him that Russia would do all in her power to incline the Berlin cabinet to moderation and peace, and that the emperor would take advantage of his forthcoming visit to Berlin to influence the emperor William in this sense. A few days later General Leflô received similar assurances from the emperor himself, and about the same time the British government volunteered to work likewise in the cause of peace. Representations were accordingly made by both governments during the tsar’s visit to Berlin, and both the emperor William and his chancellor declared that there was no intention of attacking France. The danger of war, which the well-informed German press believed to be “in sight,” was thus averted, but the incident sowed the seeds of future troubles, by awakening in Bismarck a bitter personal resentment against his Russian colleague. By certain incautious remarks to those around him, and still more by a circular to the representatives of Russia abroad, dated Berlin and beginning with the words *maintenant la paix est assurée*, Gorchakov seemed to take to himself the credit of having checkmated Bismarck and saved Europe from a great war. Bismarck resented bitterly this conduct on the part of his old friend, and told him frankly that he would have reason to regret it. In the Russian official world it is generally believed that he took his revenge in the Russo-Turkish War and the congress of Berlin. However this may be, he has himself explained that “the first cause of coldness” was the above incident, “when Gorchakov, aided by Decazes, wanted to play at my expense the part of a saviour of France, to represent me as the enemy of European peace, and to procure for himself a triumphant *quos ego* to arrest by a word and shatter my dark designs!” In any case the incident marks the beginning of a new phase in the relations of the three powers; henceforth Bismarck can no longer count on the unqualified support of Russia, and in controlling the Russo-Austrian rivalry in south-eastern Europe, while professing to be impartial, he will lean to the side of Count Andrássy rather than to that of Prince Gorchakov. He is careful, however, not to carry this tendency so far as to produce a *rapprochement* between Russia and France. The danger of a Franco-Russian alliance hostile to Germany is already appearing on the political horizon, but it is only a little cloud no bigger than a man’s hand.

Russia and Germany divided.

The next move in the aggressive game was made by Austria, with the connivance of Russia. During the summer of 1875 an insurrection of the Christian Slavs in Herzegovina, which received support from the neighbouring principalities of Montenegro and Servia, was fostered by the Austrian authorities and encouraged by the Russian consuls on the Adriatic coast. A European concert was formed for the purpose of settling the disturbance by means of local administrative reforms, but the efforts of the powers failed, because the insurgents hoped to obtain complete liberation from Turkish rule; and in the beginning of July, with a view to promoting this solution, Servia and Montenegro declared war against the Porte. Thereupon Russia began to show her hand more openly. The government allowed volunteers to be recruited in Moscow and St Petersburg, and the Russian general Chernayev, who had distinguished himself in Central Asia, was appointed to the command of the Servian army. When the ball had thus been set rolling, the two powers chiefly concerned considered that the time had come for embodying the result of their informal confidential pourparlers in a secret agreement, which is known as the convention of Reichstadt, because it was signed at a meeting of the two emperors in the little Bohemian town of that name. It bore the date of the 8th of July 1876—exactly a week after Servia and Montenegro had declared war—and it contained the following stipulations: (1) That so long as the struggle which had just begun remained undecided, the two sovereigns should refrain from interference, and that in the event of the principalities being defeated, any modification of the territorial or political *status quo ante* to their detriment should be prevented; (2) that in the event of the principalities proving victorious, and territorial changes taking place, Austria should claim compensation in Bosnia and Herzegovina, and Russia should demand the restitution of the portion of Bessarabia which she had lost by the Crimean War; (3) that in the event of the collapse of the Ottoman empire, the two powers should act together to create autonomous principalities in European Turkey, to unite Thessaly and Crete to Greece, and to proclaim Constantinople a free town.

Austro-Russian agreement, 1876.

The contracting parties evidently expected that the two principalities would be victorious in their struggle with the Porte, and that the compensations mentioned would be secured without a great European war. Their expectations were disappointed. Montenegro made a brave stand against superior forces, but before five months had passed Servia was at the mercy of the Turkish army, and Russia had to come to the assistance of her protégé. A Russian ultimatum stopped the advance of the Turks on Belgrade, and an armistice, subsequently transformed into a peace, was signed.

Russia and Austria had now to choose between abandoning their schemes and adopting some other course of action, and unforeseen incidents contributed towards making them select the latter alternative. In June 1876 an attempt at insurrection in Bulgaria had been repressed with savage brutality by the Turks, and the details, as they became known some weeks later, produced much indignation all over Europe. In England the excitement, fanned by the eloquence of Gladstone, became intense, and compelled the Disraeli cabinet to take part, very reluctantly, in a diplomatic campaign, with the object of imposing radical reforms on Turkey. In Russia the excitement and indignation were equally great, and the tsar gradually formed the resolution that if the powers would not act collectively and energetically, so as to compel the Porte to yield, he would undertake the work single-handed. This resolution he announced publicly in a speech delivered at Moscow on the 10th of November 1876. The powers did not like the idea of separate Russian action, and in order to prevent it they agreed to hold a conference in Constantinople for the purpose of inducing the Porte to introduce the requisite reforms. The Porte was at that moment under the influence of popular patriotic excitement which made it indisposed to accept orders, or even well-meant advice, from governments more or less hostile to it, and the inconsiderate mode of procedure suggested by General Ignatiev, and adopted by the other delegates, made it still more unconciliatory. At the first plenary sitting of the conference the proceedings were disturbed by the sound of artillery, and the Turkish representative explained that the salvo was in honour of the new Ottoman constitution, which was being promulgated by the sultan. The inference suggested was that as Turkey had spontaneously entered on the path of liberal and constitutional reform for all Ottoman subjects, it became superfluous and absurd to talk of small reforms for particular provinces, such as the conference was about to propose. The deliberations continued, but finally the Porte refused to accept what the plenipotentiaries considered an irreducible minimum, and the conference broke up without obtaining any practical result. The tsar’s Moscow declaration about employing single-handed the requisite coercive measures now came to be fulfilled.

Bulgarian Question.

In order to make a successful aggressive move on Turkey, Russia had first of all to secure her rear and flank by an arrangement with her two allies. In Berlin she encountered no difficulties. Bismarck had no objection to seeing Russia weaken herself in a struggle with Turkey, provided she did not upset the balance of power in south-eastern Europe, and he felt confident that he could prevent by diplomatic means any such catastrophe. He was inclined, therefore, to encourage rather than restrain the bellicose tendencies of St Petersburg. In Vienna the task of coming to a definite arrangement was much more difficult, and it was only after protracted and laborious negotiations that a convention was concluded on the 15th of January 1877, and formally signed three months later. It was a development of the agreement of Reichstadt, modified according to the changes in the situation, but retaining the essential principle that in the event of the territorial status quo being altered, Russia should recover the lost portion of Bessarabia, and Austria should get Bosnia and a part of Herzegovina. Having made these preliminary arrangements, Russia began the campaign simultaneously in Europe and Asia Minor, and after many reverses and enormous sacrifices of blood and treasure, she succeeded in imposing on the Turks the “preliminary peace” of San Stefano (3rd March 1878). That peace was negotiated with very little consideration for the interests of the other powers, and as soon as the terms of it became known in Vienna and London there was an outburst of indignation. In negotiating the treaty General Ignatiev had ignored the wishes of Austria, and had even, according to the contention of Andrássy, infringed the convention signed at the beginning of the war. However this may be, the peace of San Stefano brought to the surface the latent conflict of interests between the two empires. Russia’s aim was to create a big Bulgaria under the influence of St Petersburg, and to emancipate Servia and Montenegro as far as possible from Austrian influence, whereas Austria objected to the creation of any large Slav state in the Balkan Peninsula, and insisted on maintaining her influence at Belgrade and Tsetigne (Cetinje). In vain Prince Gorchakov endeavoured to conciliate Austria and to extract from Count Andrássy a clear statement of the terms he would accept. Count Andrássy was in no hurry to extricate Russia from her difficulties, and suggested that the whole question should be submitted to a European congress. The suggestion was endorsed by Great Britain, which likewise objected to the San Stefano arrangements, and Bismarck declined to bring any pressure to bear on the cabinet of Vienna.

San Stefano.

Deceived in her expectations of active support from her two allies, Russia found herself in an awkward position. From a military point of view it was absolutely necessary for her to come to an arrangement either with Austria or with England, because the communications of her army before Constantinople with its base could be cut by these two powers acting in concert—the land route being dominated by Austria, and the Black Sea route by the British fleet, which was at that time anchored in the Sea of Marmora. As soon, therefore, as the efforts to obtain the support of her two allies against the demands of England had failed, negotiations were opened in London, and on the 30th of May a secret convention was signed by Lord Salisbury and Count Schuvalov. By that agreement the obstacles to the assembling of the congress were removed. The congress met in Berlin on the 13th of June, and after many prolonged sittings and much secret negotiation the treaty of Berlin was signed on the 13th of July. By that treaty the preliminary peace of San Stefano was considerably modified. The big Bulgaria defined by General Ignatiev was divided into three portions, the part between the Danube and the Balkans being transformed into a vassal principality, the part between the Balkans and the Rhodope being made into an autonomous province, called Eastern Rumelia, under a Christian governor named by the sultan with the assent of the powers, and the remainder being placed again under the direct rule of the Porte. The independence of Montenegro, Servia and Rumania was formally recognized, and each of these principalities received a considerable accession of territory. Rumania, however. in return for the Dobrudja, which it professed not to desire, was obliged to give back to Russia the portion of Bessarabia ceded after the Crimean War. In Asia Minor Russia agreed to confine her annexations to the districts of Kars, Ardahan and Batum, and to restore to Turkey the remainder of the occupied territory. As a set-off against the large acquisitions of the Slav races, the powers recommended that the sultan should cede to the kingdom of Greece the greater part of Thessaly and Epirus, under the form of a rectification of frontiers. At first the sultan refused to act on this recommendation, but in March 1881 a compromise was effected by which Greece obtained Thessaly without Epirus. Bosnia and Herzegovina were to be occupied and administered by Austria-Hungary, and the Austrian authorities were to have the right of making roads and keeping garrisons in the district of Novi-Bazar, which lies between Servia and Montenegro. In all the provinces of European Turkey for which special arrangements were not made in the treaty, the Porte undertook (Art. 23) to introduce organic statutes similar to that of Crete, adapted to the local conditions. This article, like many of the subordinate stipulations of the treaty, remained a dead letter. We may mention specially Art. 61, in which the Sublime Porte undertook to realize without

Berlin Congress.

delay the ameliorations and reforms required in the provinces inhabited by Armenians, and to guarantee their safety against the Circassians and Kurds. Equally unreliable proved the scheme of Lord Beaconsfield to secure good administration throughout the whole of Asia Minor by the introduction of reforms under British control, and to prevent the further expansion of Russia in that direction by a defensive alliance with the Porte. A convention to that effect was duly signed at Constantinople a few days before the meeting of the congress (4th June 1878), but the only part of it which was actually realized was the occupation and administration of Cyprus by the British government. The new frontiers stipulated in the treaty of San Stefano, and subsequently rectified by the treaty of Berlin, are shown in the accompanying sketch-map.

Cyprus Convention.

The secret schemes of Russia and Austria, in so far as they were defined in the agreement of Reichstadt and the subsequent Austro-Russian treaty of Vienna, had thus been realized. Russia had recovered the lost portion of Bessarabia, and Austria had practically annexed Bosnia and Herzegovina, though the nominal suzerainty of the sultan over the two provinces was maintained. But Russia was far from satisfied with the results, which seemed to her not at all commensurate with the sacrifices imposed on her by the war, and her dissatisfaction led to a new grouping of the powers. Before the opening of the Berlin congress Bismarck had announced publicly that he would refrain from taking sides with any of the contending parties, and would confine himself to playing the part of an honest broker. The announcement was received by the Russians with astonishment and indignation. What they expected was not an impartial arbiter, but a cordial and useful friend in need. In 1871 the emperor William, as we have seen, had spontaneously declared to the tsar that Germany owed to His Majesty the happy issue of the war, and that she would never forget it, and we may add that on that occasion he signed himself “Your ever grateful Friend.” Now, in 1878, when the moment had come for paying at least an instalment of this debt, and when Russia was being compelled to make concessions which she described as incompatible with her dignity, Bismarck had nothing better to offer than honest brokerage. The indignation in all classes was intense, and the views commonly held regarding Bismarck’s “duplicity” and “treachery” were supposed to receive ample confirmation during the sittings of the congress and the following six months. On the 4th of February 1879 Prince Gorchakov wrote to the ambassador in Vienna: “Needless to say, that in our eyes the Three Emperors’ Alliance is practically torn in pieces by the conduct of our two allies. At present it remains for us merely to terminate the liquidation of the past, and to seek henceforth support in ourselves alone.” The same view of the situation was taken in Berlin and Vienna, though the result was attributed, of course, to different causes, and the danger of serious complications became so great that Bismarck concluded with Andrássy in the following October (1879) a formal defensive alliance, which was avowedly directed against Russia, and which subsequently developed into the Triple Alliance, directed against Russia and France.

Russian resentment against Bismarck.

The causes of the rupture are variously described by the different parties interested. According to Bismarck the Russian government began a venomous campaign against Germany in the press, and collected, with apparently hostile intentions, enormous masses of troops near the German and Austrian frontiers, whilst the tsar adopted in his correspondence with the emperor William an arrogant and menacing tone which could not be tolerated. On the other hand, the Russians declare that the so-called Press-Campaign was merely the spontaneous public expression of the prevailing disappointment among all classes in Russia, that the military preparations had a purely defensive character, and that the tsar’s remarks, which roused Bismarck’s ire, did not transgress the limits of friendly expostulation such as sovereigns in close friendly relations might naturally employ. Subsequent revelations tend rather to confirm the Russian view. After an exhausting war and without a single powerful ally, Russia was not likely to provoke wantonly a great war with Germany and Austria. The press attacks were not more violent than those which frequently appear in newspapers which draw their inspiration from the German foreign office, and the accusations about the arrogant attitude and menacing tone of Alexander II. are not at all in harmony with his known character, and are refuted by the documents since published by Dr Busch. The truth seems to be that the self-willed chancellor was actuated by nervous irritation and personal feeling more than by considerations of statecraft. His imperial master was not convinced by his arguments, and showed great reluctance to permit the conclusion of a separate treaty with Austria. Finally, with much searching of heart, he yielded to the importunity of his minister; but in thus committing an unfriendly act towards his old ally, he so softened the blow that the personal good relations between the two sovereigns suffered merely a momentary interruption. Bismarck himself soon recognized that the permanent estrangement of Russia would be a grave mistake of policy, and the very next year (1880), negotiations for a treaty of defensive alliance between the two cabinets were begun. Nor did the accession to the throne of Russia of Alexander III., who had long enjoyed the reputation of being systematically hostile to Germans, produce a rupture, as was expected. Six months after his father’s death, the young tsar met the old kaiser at Danzig (September 1881), and some progress was made towards a complete renewal of the traditional friendship. Immediately afterwards a further step was taken towards re-establishing the old state of things with regard also to Austria. On his return to St

Petersburg, Alexander III. remembered that he had received some time previously a telegram of congratulation from the emperor Francis Joseph, and he now replied to it very cordially, referring to the meeting at Danzig, and describing the emperor William as "that venerable friend with whom we are united in the common bonds of a profound affection." The words foreshadowed a revival of the Three Emperors' League, which actually took place three years later.

Growth of the Triple Alliance.

The removal of all immediate danger of a Franco-Russian alliance did not prevent Bismarck from strengthening in other ways the diplomatic position of Germany, and the result of his efforts soon became apparent in the alliance of Italy with the two central powers. Ever since the Franco-German War of 1870-71, and more especially since the congress of Berlin in 1878, the Italian government had shown itself restless and undecided in its foreign policy. As it was to France that Italy owed her emancipation from Austrian rule, it seemed natural that the two countries should remain allies, but anything like cordial co-operation was prevented by conflicting interests and hostile feeling. The French did not consider the acquisition of Savoy and Nice a sufficient compensation for the assistance they had given to the cause of Italian unity, and they did not know, or did not care to remember, that their own government was greatly to blame for the passive attitude of Italy in the hour of their great national misfortunes. On the other hand, a considerable amount of bitterness against France had been gradually accumulating in the hearts of the Italians. As far back as the end of the war of 1859, popular opinion had been freely expressed against Napoleon III., because he had failed to keep his promise of liberating Italy "from the Alps to the Adriatic." The feeling was revived and intensified when it became known that he was opposing the annexation of central and southern Italy, and that he obtained Savoy and Nice as the price of partly withdrawing his opposition. Subsequently, in the war of 1866, he was supposed to have insulted Italy by making her conclude peace with Austria, on the basis of the cession of Venetia, before she could wipe out the humiliation of her defeats at Custozza and Lissa. Then came the French protection of the pope's temporal power as a constant source of irritation, producing occasional explosions of violent hostility, as when the new Chassepot rifles were announced to have "worked wonders" among the Garibaldians at Mentana. When the Second Empire was replaced by the Republic, the relations did not improve. French statesmen of the Thiers school had always condemned the imperial policy of permitting and even encouraging the creation of large, powerful states on the French frontiers, and Thiers himself publicly attributed to this policy the misfortunes of his country. With regard to Italy, he said openly that he regretted what had been done, though he had no intention of undoing it. The first part of this statement was carefully noted in Italy, and the latter part was accepted with scepticism. In any case his hand might perhaps be forced, for in the first republican chamber the monarchical and clerical element was very strong, and it persistently attempted to get something done in favour of the temporal power. Even when the party of the Left undertook the direction of affairs in 1876, the government did not become anti-clerical in its foreign policy, and Italian statesmen resigned themselves to a position of political isolation. The position had its advantages. Events in the Balkan Peninsula foreshadowed a great European war, and it seemed that in the event of Europe's being divided into two hostile camps, Italy might have the honour and the advantage of regulating the balance of power. By maintaining good relations with all her neighbours and carefully avoiding all inconvenient entanglements, she might come forward at the critical moment and dictate her own terms to either of the contending parties, or offer her services to the highest bidder. This Machiavellian policy did not give the expected results. Being friends with everybody in a general way may be the best course for an old, conservative country which desires merely the maintenance of the *status quo*, but it does not secure the energetic diplomatic support required by a young enterprising state which wishes to increase its territory and influence. At the congress of Berlin, when several of the powers got territorial acquisitions, Italy got nothing. The Italians, who were in the habit of assuming, almost as a matter of principle, that from all European complications they had a right to obtain some tangible advantage, were naturally disappointed, and they attributed their misfortune to their political isolation. The policy of the free hand consequently fell into disrepute, and the desire for a close, efficient alliance revived. But with what power or powers should an alliance be made? The remnants of the old party of action, who still carried the *Italia Irredenta* banner, had an answer ready. They recommended that alliances should be concluded with a view to wresting from Austria the Trentino and Trieste, with Dalmatia, perhaps, into the bargain. On the other hand, the Conservatives and the Moderates considered that the question of the Trentino and Trieste was much less important than that of political influence in the Mediterranean. A strong Austria was required, it was said, to bar the way of Russia to the Adriatic, and France must not be allowed to pursue unchecked her policy of transforming the Mediterranean into a French lake. Considerations of this kind led naturally to the conclusion that Italy should draw closer to the powers of central Europe. So the question appeared from the standpoint of "la haute politique." From the less elevated standpoint of immediate political interests, it presented conflicting considerations. A *rapprochement* with the central powers might prevent the conclusion of a commercial treaty with France, and thereby increase the financial and economic difficulties with which the young kingdom was struggling, whereas a *rapprochement* with France would certainly excite the hostility of Bismarck, who was retiring from the *Kulturkampf* and journeying towards Canossa, and who might possibly conciliate the pope by helping him to recover his temporal sovereignty at the expense of Italy. Altogether the problem was a very complicated one. The conflicting currents so nearly balanced each other, that the question as to which way the ship would drift might be decided by a little squall of popular sentiment. A very big squall was brewing.

France and Tunis.

During the congress of Berlin the French government was very indignant when it discovered that Lord Beaconsfield had recently made a secret convention with the sultan for the British occupation of Cyprus, and in order to calm its resentment Lord Salisbury gave M. Waddington to understand that, so far as England was concerned, France would be allowed a free hand in the Regency of Tunis, which she had long coveted. Though the conversations on the subject and a subsequent exchange of notes were kept strictly secret, the Italian government soon got wind of the affair, and it was at first much alarmed. It considered, in common with Italians generally, that Tunis, on the ground of historic right and of national interests, should be reserved for Italy, and that an extension of French territory in that direction would destroy, to the detriment of Italy, the balance of power in the Mediterranean. These apprehensions were calmed for a time by assurances given to the Italian ambassador in Paris. M. Gambetta assured General Cialdini that he had no intention of making Italy an irreconcilable enemy of France, and M. Waddington declared, on his word of honour, that so long as he remained minister of foreign affairs nothing of the sort would be done by France without a previous understanding with the cabinet of Rome. M. Waddington honourably kept his word, but his successor did not consider himself bound by the assurance; and when it was found that the Italians were trying systematically to establish their influence in the Regency at the expense of France, the French authorities, on the ground that a Tunisian tribe called the Kroumirs had committed depredations in Algeria, sent an armed force into the Regency, and imposed on the bey the Bardo treaty, which transformed Tunis into a French protectorate.

The establishment of a French protectorate over a country which the Italians had marked out for themselves as necessary for the defence and colonial expansion of the kingdom had the effect which Gambetta had foreseen—it

made Italy, for a time at least, the irreconcilable enemy of France. Whilst the French were giving free expression to their patriotic exultation, and even Gambetta himself, in defiance of what he had said to Cialdini, was congratulating Jules Ferry on having restored France to her place among the nations, the Italians were trying to smother their indignation and to discover some means of retrieving what they had lost. The only remedy seemed to be to secure foreign alliances, and there was now no hesitation as to where they should be sought. Simple people in Italy imagined that if an alliance had been concluded sooner with Germany and Austria, these powers would have prevented France from trampling on the sacred interests of Italy. This idea was entirely erroneous, because Austria had little or no interest in the Tunisian Question, and Bismarck was not at all sorry to see France embark on an enterprise which distracted her attention from Alsace-Lorraine and removed all danger of a Franco-Italian alliance. The illusion, however, had a powerful influence on Italian public opinion. The government was now urged to conclude without further delay an alliance with the central powers, and the recommendation was not unwelcome to the king, because most of the Italian Gallophils had anti-dynastic and republican tendencies, and he was naturally disposed to draw nearer to governments which proclaimed themselves the defenders of monarchical institutions and the opponents of revolutionary agitation. After protracted negotiations, in which Italy tried in vain to secure protection for her own separate interests in the Mediterranean, defensive treaties of alliance were concluded with the cabinets of Vienna and Berlin in May 1882. Though the Italian statesmen did not secure by these treaties all they wanted, they felt that the kingdom was protected against any aggressive designs which might be entertained by France or the Vatican, and when the treaties were renewed in 1887 they succeeded in getting somewhat more favourable conditions.

Triple Alliance signed 1882.

By the creation of this Triple Alliance, which still subsists, the diplomatic position of Germany was greatly strengthened, but Bismarck was still haunted by the apprehension of a Franco-Russian alliance, and he made repeated attempts to renew the old cordial relations with the court of St Petersburg. He was bold enough to hope that, notwithstanding the Austro-German treaty of October 1879, avowedly directed against Russia, and the new Triple Alliance, by which the Austro-German Alliance was strengthened, he might resuscitate the Three Emperors' League in such a form as to ensure, even more effectually than he had done on the former occasion, the preponderance of Germany in the arrangement. With this object he threw out a hint to the Russian ambassador, M. Sabourof, in the summer of 1883, that the evil results of the congress of Berlin might be counteracted by a formal agreement between the three emperors. The suggestion was transmitted privately by M. Sabourof to the tsar, and was favourably received. Alexander III. was disquieted by the continuance of the Nihilist agitation, and was not averse from drawing closer to the conservative powers; and as he desired tranquillity for some time in the Balkan Peninsula, he was glad to have security that his rival would do nothing in that part of the world without a previous understanding. M. de Giers, who had now succeeded Prince Gorchakov in the direction of foreign affairs, was accordingly despatched to Friedrichsruh to discuss the subject with Bismarck. The practical result of the meeting was that negotiations between the two governments were begun, and on the 21st of March 1884 a formal document was signed in Berlin. About six months later, in the month of September, the three emperors met at Skiernevice and ratified the agreement. Thus, without any modification of the Triple Alliance, which was directed against Russia, the old Three Emperors' League, which included Russia, was revived. Germany and Austria, being members of both, were doubly protected, for in the event of being attacked they could count on at least the benevolent neutrality of both Russia and Italy. France was thereby completely isolated.

Dreikaiserbund revived 1884.

In drawing up the secret treaty of Skiernevice, which may be regarded as the *chef-d'œuvre* of Bismarckian diplomacy, the German chancellor's chief aims evidently were to paralyse Russia by yoking her to Germany and Austria, to isolate France, and to realize his old scheme of holding the balance between Russia and Austria in the Balkan Peninsula. With a view to attaining the first two objects it was stipulated that if any one of the three powers were forced to make war on a fourth power, the two other contracting parties should observe a benevolent neutrality towards their ally. If we may believe a well-informed Russian authority, Bismarck wished it to be understood that in the event of *two* of the powers being at war with a fourth, the stipulation about benevolent neutrality should still hold good, but Alexander III. objected, on the ground that he could not remain a passive spectator of a duel in which France would be confronted by two antagonists. In his third object Bismarck was successful, for it was expressly laid down that in all cases of a disagreement between two of the parties in the affairs of the Balkan Peninsula, the third power should decide between them. This meant, of course, that in all discussions between Russia and Austria, the two great rivals in the Eastern Question, Bismarck should always have a casting vote. In return for all this, Russia obtained two small concessions: firstly, that Germany and Austria should seek to restrain the sultan from permitting the passage of the Dardanelles to an English fleet, as he had done in 1878, when the Russian army was before Constantinople; and, secondly, that they should not oppose the union of Bulgaria and Eastern Rumelia, if it was accomplished by the force of things and within the limits traced by the congress of Berlin.

This new form of the Three Emperors' League had all the organic defects of its predecessor, and was destined to be still more short-lived. The claims of Russia and Austria might be reconcilable in theory, but in practice they were sure to conflict; and however much Bismarck might try to play the part of an honest broker, he was certain to be suspected of opposing Russia and favouring Austria. It was therefore only during a period of political stagnation in south-eastern Europe that the arrangement could work smoothly. The political stagnation did not last long. Prince Alexander of Bulgaria had for some time been fretting under the high-handed interference of the Russian agents in the principality, and had begun to oppose systematically what the Russians considered their legitimate influence. Relations between Sofia and St Petersburg had consequently become strained, when a crisis was suddenly brought about by the revolution of Philippopolis in September 1885. The conspirators arrested and expelled the governor-general, who had been appointed by the sultan with the assent of the powers, and at the same time proclaimed the union of the autonomous province of Eastern Rumelia with the principality of Bulgaria, in defiance of the stipulations of the treaty of Berlin. The revolution had been effected with the connivance and approval of the regularly accredited Russian agents in Philippopolis, but it had not received the sanction of the Russian government, and was resented as a new act of insubordination on the part of Prince Alexander. When he arrived in Philippopolis and accepted the declaration of union, the cabinet of St Petersburg protested against any such infraction of the Berlin treaty, and the Porte prepared to send an army into the province. It was restrained from taking this step by the ambassadors in Constantinople, so that an armed conflict between Turks and Bulgarians was prevented; but no sooner had the Bulgarians been relieved from this danger on their eastern frontier, than they were attacked from the west by the Servians, who were determined to get ample compensation for any advantage which the Bulgarians might obtain. The Bulgarian army defeated the Servians at Slivnitza (November 19-20, 1885), and was marching on Belgrade when its advance was stopped and an armistice arranged by the energetic intervention of the Austrian government. Following the example of the Servians, the Greeks were preparing to exact territorial compensation likewise; but as their mobilization was a slow process, the powers had time to restrain them from entering on active hostilities, first by an ultimatum (April 26, 1886), and

Bulgarian crisis.

afterwards by a blockade of their ports (May 1886). By that time, thanks to the intervention of the powers, a peace between Bulgaria and Servia had been signed at Bucharest (March 3); and with regard to Eastern Rumelia a compromise had been effected by which the formal union with the principality was rejected, and the prince was appointed governor-general of the province for a term of five years. This was in reality union in disguise.

The diplomatic solution of the problem averted the danger of a European war, but it left a great deal of dissatisfaction, which soon produced new troubles. Not only had Prince Alexander escaped punishment for his insubordination to Russia, but he and the anti-Russian party among the Bulgarians had obtained a decided success. This could not well be tolerated. Before six months had passed (August 21, 1886) Prince Alexander was kidnapped by conspirators in his palace at Sofia and conveyed secretly to Russian Bessarabia. As soon as the incident was reported to the tsar, the prince was released, and he at once returned to Sofia, where a counter-revolution had been effected in his favour; but he considered his position untenable, and formally abdicated. A fortnight after his departure General Kaulbars arrived from St Petersburg with instructions from the tsar to restore order in accordance with Russian interests. In St Petersburg it was supposed that the Bulgarian people were still devoted to Russia, and that they were ready to rise against and expel the politicians of the Nationalist party led by Stambolof. General Kaulbars accordingly made a tour in the country and delivered speeches to the assembled multitudes, but Stambolof's political organization counteracted all his efforts, and on the 20th of November he left Bulgaria and took the Russian consuls with him. Stambolof maintained his position, suppressed energetically several insurrectionary movements, and succeeded in getting Prince Ferdinand of Coburg elected prince (July 7, 1887), in spite of the opposition of Russia, who put forward as candidate a Russian subject, Prince Nicholas of Mingrelia. Prince Ferdinand was not officially recognized by the sultan and the powers, but he continued to reign under the direction of Stambolof, and the Russian government, passively accepting the accomplished facts, awaited patiently a more convenient moment for action.

These events in the Balkan Peninsula necessarily affected the mutual relations of the powers composing the Three Emperors' League. Austria could not remain a passive and disinterested spectator of the action of Russia in Bulgaria. Her agents had given a certain amount of support to Prince Alexander in his efforts to emancipate himself from Russian domination; and when the prince was kidnapped and induced to abdicate, Count Kalnoky had not concealed his intention of opposing further aggression. Bismarck resisted the pressure brought to bear on him from several quarters in favour of the anti-Russian party in Bulgaria, but he was suspected by the Russians of siding with Austria and secretly encouraging the opposition to Russian influence. This revived the hatred against him which had been created by his pro-Austrian leanings after the Russo-Turkish War. The feeling was assiduously fomented by the Russian press, especially by M. Katkoff, the editor of the *Moscow Gazette*, who exercised great influence on public opinion and had personal relations with Alexander III. On the 31st of July 1886, three weeks before the kidnapping of Prince Alexander, he had begun a regular journalistic campaign against Germany, and advocated strongly a new orientation of Russian policy. M. de Giers, minister of foreign affairs, was openly attacked as a partisan of the German alliance, and his "pilgrimages to Friedrichsruh and Berlin" were compared to the humiliating journeys of the old Russian grand-princes to the Golden Horde in the time of the Tatar domination. The moment had come, it was said, for Russia to emancipate herself from German diplomatic thraldom, and for this purpose a *rapprochement* with France was suggested. The idea was well received by the public, and it seemed to be not unpalatable to the tsar, for the *Moscow Gazette* was allowed to continue its attacks on M. de Giers's policy of maintaining the German alliance. In Berlin such significant facts could not fail to produce uneasiness, because one of the chief aims of Bismarck's policy had always been to prevent a Russo-French *entente cordiale*. The German press were instructed to refute the arguments of their Russian colleagues, and to prove that if Russia had really lost her influence in the Balkan Peninsula, the fact was due to the blunders of her own diplomacy. The controversy did not produce at once a serious estrangement between the two cabinets, but it marked the beginning of a period of vacillation on the part of Alexander III. When the treaty of Skiernevice was about to expire in 1887, he positively refused to renew the Three Emperors' League, but he consented to make, without the cognizance of Austria, a secret treaty of alliance with Germany for three years. Not satisfied with this guarantee against the danger of a Franco-Russian alliance, Bismarck caused attacks to be made in the press on Russian credit, which was rapidly gaining a footing on the Paris bourse, and he imprudently showed his hand by prohibiting the Reichsbank from accepting Russian securities as guarantees. From that moment the tsar's attitude changed. All his dormant suspicions of German policy revived. When he passed through Berlin in November 1887, Bismarck had a long audience, in which he defended himself with his customary ability, but Alexander remained unmoved in his conviction that the German government had systematically opposed Russian interests, and had paralysed Russian action in the Balkan Peninsula for the benefit of Austria; and he failed to understand the ingenious theory put forward by the German chancellor, that two powers might have a severe economic struggle without affecting their political relations. Bismarck had to recognize that, for the moment at least, the Three Emperors' League, which had served his purposes so well, could not be resuscitated, but he had still a certain security against the hostility of Russia in the secret treaty. Soon, however, this link was also to be broken. When the treaty expired in 1890 it was not renewed. By that time Bismarck had been dismissed, and he subsequently reproached his successor, Count Caprivi, with not having renewed it, but in reality Count Caprivi was not to blame. Alexander III. was determined not to renew the alliance, and was already gravitating slowly towards an understanding with France.

Russian hostility to Germany.

No treaty or formal defensive engagement of any kind existed between Russia and France, but it was already tolerably certain that in the event of a great war the two nations would be found fighting on the same side, and the military authorities in both countries felt that if no arrangements were made beforehand for concerted action,—such arrangements having been long ago completed by the powers composing the Triple Alliance—they would begin the campaign at a great disadvantage. This was perfectly understood by both governments; and after some hesitation on both sides. Generals Vannovski and Obruchev, on the one side, and Generals Saussier, Miribel and Boisdeffre on the other, were permitted to discuss plans of co-operation. At the same time a large quantity of Lebel rifles were manufactured in France for the Russian army, and the secret of making smokeless powder was communicated to the Russian military authorities. The French government wished to go further and conclude a defensive alliance, but the tsar was reluctant to bind himself with a government which had so little stability, and which might be induced to provoke a war with Germany by the prospect of Russian support. Even the military convention was not formally ratified until 1894. The enthusiastic partisans of the alliance flattered themselves that the tsar's reluctance had been overcome, when he received very graciously Admiral Gervais and his officers during the visit of the French fleet to Cronstadt in the summer of 1891, but their joy was premature. The formal *rapprochement* between the two governments was much slower than the unofficial *rapprochement* between the two nations. More than two years passed before the Cronstadt visit was returned by the Russian fleet, under Admiral Avelan. The enthusiastic ovations which the admiral and his subordinates received in Toulon and Paris (October 1893) showed how eager and anxious the French people were for an alliance with Russia, but the Russian government was in no hurry to gratify their wishes. Of the official

Franco-Russian entente.

action all we know with certainty is, that immediately after the Cronstadt visit in 1891 a diplomatic protocol about a defensive alliance was signed; that during the special mission of General Boisdeffre to St Petersburg in 1892 negotiations took place about a military convention; that in 1894 the military convention was ratified; that in the summer of 1895 M. Ribot, when prime minister, first spoke publicly of an alliance; and that during the visit of the president of the French Republic to St Petersburg, in August 1897, France and Russia were referred to as allies in the complimentary speeches of the tsar and of M. Félix Faure. Though we are still in the dark as to the precise terms of the arrangement, there is no doubt that close friendly relations were established between the two powers, and that in all important international affairs they sought to act in accord with each other. It is equally certain that for some years Russia was the predominant partner, and that, in accordance with the pacific tendencies of the tsar, she systematically exercised a restraining influence on France.

The Triple entente and the Triple Alliance.

The great expectations excited among the French people by the *entente cordiale* were consequently not realized, and there appeared gradually premonitory symptoms of a reaction in public opinion, but the alliance between the two governments was maintained, and though the Triple Alliance was weakened by the internal troubles of Austria-Hungary and by a tendency on the part of Italy to gravitate towards France, the grouping of the great powers was not radically changed till the Russo-Japanese War of 1904-5. By that war the balance of power in Europe was seriously disturbed. Russia inadvertently provoked a struggle with Japan which made such a drain on her energies and material resources that her political influence in Europe necessarily suffered a partial eclipse. Thus the Triple Alliance outweighed its rival, and there was a danger of the German emperor's taking advantage of the situation to secure for himself a diplomatic predominance in Europe. France at once perceived that there was a grave danger for herself, and naturally looked about for some diplomatic support to replace that of Russia, which had lost much of its value. From her uncomfortable isolation there were only two possible exits—a *rapprochement* with Germany or a *rapprochement* with England. Both of these demanded sacrifices. The former required a formal abandonment of all ideas of recovering Alsace and Lorraine; the latter a formal recognition of British predominance in Egypt. Under the influence of M. Delcassé the French government chose what seemed the lesser of two evils, and concluded with the English foreign office in April 1904 a general agreement, of which the most important stipulation was that France should leave England a free hand in Egypt, and that England in return should allow France, within certain limits, a free hand in Morocco. On that basis was effected a *rapprochement* between the two governments which soon developed into an *entente cordiale* between the two nations. The efforts of the German emperor to undermine the *entente* by insisting on the convocation of a conference to consider the Morocco question caused M. Delcassé to resign, and produced considerable anxiety throughout Europe, but the desired result was not attained. On the contrary, the conference in question, which met at Algeciras in January 1906, ended in strengthening the *entente* and in accentuating the partial isolation of Germany.

The grouping of the great continental states into two opposite but not necessarily hostile camps helped to preserve the balance of power and the peace of Europe. The result was that the causes of conflict which arose from time to time up to the end of the 19th century were localized. Some of the principal questions involved may be more particularly mentioned.

Armenia.

The Armenian Question was brought prominently before Europe by the Russo-Turkish War of 1877-78. In the treaties of San Stefano and Berlin the Sublime Porte undertook "to carry out without delay the ameliorations and reforms required by local needs in the provinces inhabited by the Armenians, and to guarantee their security against the Circassians and the Kurds." This stipulation remained a dead letter, and the relations between the Armenians and the Mussulmans became worse than before, because the protection of the powers encouraged in the oppressed nationality far-reaching political aspirations, and the sultan regarded the political aspirations and the intervention of the powers as dangerous for the integrity and independence of his empire. For some fifteen years the Armenians continued to hope for the efficacious intervention of their protectors, but when their patience became exhausted and the question seemed in danger of being forgotten, they determined to bring it again to the front. Some of them confined themselves to agitating abroad, especially in England, in favour of the cause, whilst others made preparations for exciting an insurrectionary movement in Constantinople and Asia Minor. These latter knew very well that an insurrection could be suppressed by the Turkish government without much difficulty, but they hoped that the savage measures of repression which the Turks were sure to employ might lead to the active intervention of Europe and ensure their liberation from Turkish rule, as the famous "atrocities" of 1876 had led to the political emancipation of Bulgaria. In due course—1895-1896—the expected atrocities took place, in the form of wholesale massacres in Constantinople and various towns of Asia Minor. The sultan was subjected to diplomatic pressure and threatened with more efficient means of coercion. In the diplomatic campaign England took the lead, and was warmly supported by Italy, but Germany, Austria and France showed themselves lukewarm, not to say indifferent, and Russia, departing from her traditional policy of protecting the Christians of Turkey, vetoed the employment of force for extracting concessions from the sultan. In these circumstances the Porte naturally confined itself to making a few reforms on paper, which were never carried out. Thus the last state of the Armenians was worse than the first, but the so-called European concert was maintained, and the danger of a great European war was averted.

Crete.

The next attempt to raise the Eastern Question was made by the Greeks. In 1896 a semi-secret society called the Ethniké Hetairia began a Panhellenic agitation, and took advantage of one of the periodical insurrections in Crete to further its projects. In February 1897 the Cretan revolutionary committee proclaimed the annexation of the island to the Hellenic kingdom, and a contingent of Greek regular troops landed near Canea under the command of Colonel Vassos to take possession of the island in the name of King George. The powers, objecting to this arbitrary proceeding, immediately occupied Canea with a mixed force from the ships of war which were there at the time, and summoned the Greek government to withdraw its troops. The summons was disregarded, and the whole of the Greek army was mobilized on the frontier of Thessaly and Epirus. In consequence of a raid into Turkish territory the Porte declared war on the 17th of April, and the short campaign ended in the defeat of the Greeks. The powers intervened to put an end to the hostilities, and after prolonged negotiations a peace was concluded by which Greece had to consent to a strategical rectification of frontier and to pay a war indemnity of £4,000,000. Thus a second time the European concert acted effectually in the interests of peace, but it did not stand the strain of the subsequent efforts to solve the Cretan Question. Finding the Turks less conciliatory after their military success, and being anxious to remain in cordial relations with the Porte, Germany withdrew from further co-operation with the powers, and Austria followed her example. They did not, however, offer any active opposition, and the question received a temporary solution by the appointment of Prince George, second son of the king of Greece, as high commissioner and governor-general of the island. (See Crete.)

The conflicting desires of several of the powers to obtain colonial possessions in various parts of the world, and to forestall their competitors in the act of taking possession, were bound to introduce complications in which England,

Africa.

as the greatest of colonial powers, would generally be involved; and as the unappropriated portions of the earth's surface at the beginning of the period under discussion were to be found chiefly in Africa, it was in the Dark Continent that the conflicts of interests mostly took place. England's chief competitors were France and Germany. Her traditional policy, except in the south of the continent, where the conditions of soil and climate were favourable to European colonists, had been purely commercial. She had refrained from annexation of territory, as involving too much expenditure and responsibility, and confined her protection to the trading stations on the coast. When France came into the field this policy had to be abandoned. The policy of France was also commercial in a certain sense, but the methods she adopted were very different. She endeavoured to bring under her authority, by annexation or the establishment of protectorates, the largest possible extent of territory, in order to increase her trade by a system of differential tariffs; she encroached on the hinterland of British settlements, and endeavoured to direct artificially the native inland trade towards her own ports. A glance at the map of the African West Coast will suffice to show the success with which this policy was carried out. When the British government awoke to the danger, all that could be done was to prevent further encroachments by likewise annexing territory. The result is shown in the article Africa: § 5. In her dealings with France about the partition of Africa, England was generally conciliatory, but she was always inflexible in guarding carefully the two entrances to the Mediterranean. There was, therefore, a permanent danger of conflict in Egypt and Morocco. When England in 1882 considered it necessary to suppress the Arabi insurrection, she invited France to co-operate, but the French government declined, and left the work to be done by England alone. England had no intention of occupying the country permanently, but she had to take precautions against the danger of French occupation after her withdrawal, and these precautions were embodied in an Anglo-Turkish convention signed at Constantinople in May 1887. France prevented the ratification of the convention by the sultan, with the result that the British occupation has been indefinitely prolonged. She still clung persistently, however, to the hope of obtaining a predominant position in the valley of the Nile, and she tried to effect her purpose by gaining a firm foothold on the upper course of the river. The effort which she made in 1898 to attain this end, by simultaneously despatching the Marchand mission from her Congo possessions and inciting the emperor Menelek of Abyssinia to send a force from the east to join hands with Major Marchand at Fashoda, was defeated by the overthrow of the Khalifa and the British occupation of Khartum. For a few days the two nations seemed on the brink of war, but the French government, receiving no encouragement from St Petersburg, consented to withdraw the Marchand mission, and a convention was signed defining the respective spheres of influence of the two countries.

In Morocco the rivalry between the two powers was less acute but not less persistent and troublesome. France aspired to incorporate the sultanate with her north African possessions, whilst England had commercial interests to defend and was firmly resolved to prevent France from getting unfettered possession of the southern coast of the Straits of Gibraltar. As in Egypt, so in Morocco the dangers of conflict were averted, in 1904, by a general agreement, which enabled France to carry out in Morocco, as far as England was concerned, her policy of pacific penetration, but debarred her from erecting fortifications in the vicinity of the straits. Germany thereafter strongly opposed French claims in Morocco, but after a period of great tension, and the holding of an ineffectual conference at Algeciras in 1906, an understanding was come to in 1909 (see Morocco: *History*).

With Germany likewise, from 1880 onwards, England had some diplomatic difficulties regarding the partition of Africa, but they never reached a very acute phase, and were ultimately settled by mutual concessions. By the arrangement of 1890, in which several of the outstanding questions were solved, Heligoland was ceded to Germany in return for concessions in East Africa. A conflict of interests in the southern Pacific was amicably arranged by the Anglo-German convention of April 1886, in which a line of demarcation was drawn between the respective spheres of influence in the islands to the north and east of the Australian continent, and by the convention of 1899, in virtue of which Germany gained possession of Samoa and renounced in favour of England all pretensions to the Tonga Archipelago.

In Asia the tendencies of the European powers to territorial expansion, and their desire to secure new markets for their trade and industry, have affected from time to time their mutual relations. More than once England and Russia

Asia.

have had disputes about the limits of their respective spheres of influence in central Asia, but the causes of friction have steadily diminished as the work of frontier delimitation has advanced. The important agreement of 1872-1873 was supplemented by the protocol of the 22nd of July 1887 and the Pamir delimitation of 1895, so that the Russo-Afghan frontier, which is the dividing line between the Russian and British spheres of influence, has now been carried right up to the frontier of the Chinese empire. The delimitation of the English and French spheres of influence in Asia has also progressed. In 1885 France endeavoured to get a footing on the Upper Irrawaddy, the hinterland of British Burma, and England replied in the following year by annexing the dominions of King Thebaw, including the Shan States as far east as the Mekong. Thereupon France pushed her Indo-Chinese frontier westwards, and in 1893 made an attack on the kingdom of Siam, which very nearly brought about a conflict with England. After prolonged negotiations an arrangement was reached and embodied in a formal treaty (January 1896), which clearly foreshadows a future partition between the two powers, but guarantees the independence of the central portion of the kingdom, the Valley of the Menam, as a buffer-state. Farther north, in eastern China, the aggressive tendencies and mutual rivalries of the European powers have produced a problem of a much more complicated kind. Firstly Germany, then Russia, next England, and finally France took portions of Chinese territory, under the thin disguise of long leases. They thereby excited in the Chinese population and government an intense anti-foreign feeling, which produced the Boxer movement and culminated in the attack on the foreign legations at Pekin in the summer of 1900. (See China: *History*.)

In 1899-1901 the relations of the European powers were disturbed by the Boer War in South Africa. In nearly every country of Europe popular feeling was much excited against England, and in certain influential quarters the idea was entertained of utilizing this feeling for the formation of a coalition against the British empire; but in view of the decided attitude assumed by the British government, and the loyal enthusiasm displayed by the colonies, no foreign government ventured to take the initiative of intervention, and it came gradually to be recognized that no European state had any tangible interest in prolonging the independence and maladministration of the Boer republics.

One permanent factor in the history of Europe after the war of 1870-71 was the constant increase of armaments by all the great powers, and the proportionate increase of taxation. The fact made such an impression on the young emperor of Russia, Nicholas II., that he invited the powers to consider whether the further increase of the burdens thereby imposed on the nations might not be arrested by mutual agreement; and a conference for this purpose was convened at the Hague (May 18-July 29, 1899), but the desirable object in view was not attained. (See Arbitration, International.)

(D. M. W.)

Though neither the first Hague Conference nor the second, which met in 1907, did much to fulfil the expectations of those who hoped for the establishment of a system which should guarantee the world against the disasters of war,

Progress of the Peace movement.

they undoubtedly tended to create a strong public opinion in favour of peaceful methods in the solution of international problems which has not been without its effect. Any attempt to organize the concert of the powers must always fail, as it failed in the early part of the 19th century, so long as the spirit of national and racial rivalry is stronger than the consciousness of common interests; and the early years of the 20th century showed no diminution, but rather an accentuation of this rivalry. The court of arbitration established at the Hague early in 1901 may deal effectively with questions as to which both parties desire a *modus vivendi*, and the pacific efforts of King Edward VII., which did so much to prevent misunderstandings likely to lead to war, resulted from 1903 onwards in a series of arbitration treaties between Great Britain and other powers which guaranteed the Hague court an effective activity in such matters. But more perilous issues, involving deep-seated antagonisms, have continued to be dealt with by the methods of the old diplomacy backed by the armed force of the powers. How far the final solution of such problems has been helped or hindered by the general reluctance to draw the sword must for some time to come remain an open question. Certainly, during the early years of the 20th century, many causes of difference which a hundred years earlier would assuredly have led to war, were settled, or at least shelved, by diplomacy. Of these the questions of Crete, of Armenia, and of contested claims in Africa have already been mentioned. Other questions of general interest which might have led to war, but which found a peaceful solution, were those of the separation of Norway and Sweden, and the rivalry of the powers in the northern seas. In October 1905 Sweden formally recognized the separate existence of Norway (see Norway: *History* and Sweden: *History*). On the 23rd of April 1908 were signed the "Declarations"; the one, signed by the four Baltic littoral powers, recognized "in principle" the maintenance of the territorial *status quo* in that sea; the other—to which Great Britain, France, Germany, Denmark, Sweden and Holland were the parties—sanctioned a similar principle in regard to the North Sea. These were followed, in June of the same year, by two agreements intended to apply the same principles to the southern European waters, signed by France and Spain and Great Britain and Spain respectively. Another agreement, that signed between Russia and Great Britain in 1907 for the delimitation of their spheres of influence in Persia and the northern borders of the Indian empire, though having no direct relation to European affairs, exercised considerable influence upon them by helping to restore the international prestige of Russia, damaged by the disasters of the war with Japan and the internal disturbances that followed. The new cordial understanding between the British and Russian governments was cemented by the meeting of King Edward VII. and the emperor Nicholas II. at Reval in June 1908.

More perilous to European peace, however, than any of these issues was the perennial unrest in Macedonia, which threatened sooner or later to open up the whole Eastern Question once more in its acutest form. The situation was

Revival of the Eastern Question.

due to the internecine struggle of the rival Balkan races—Greek, Bulgarian, Servian—to secure the right to the reversion of territories not yet derelict. But behind these lesser issues loomed the great secular rivalries of the powers, and beyond these again the vast unknown forces of the Mahommedan world, ominously stirring. The very vastness of the perils involved in any attempt at a definitive settlement compelled the powers to accept a compromise which, it was hoped, would restore tolerable conditions in the wretched country. But the "Mürzsteg programme," concerted between the Austrian and Russian emperors in 1903, and imposed upon the Porte by the diplomatic pressure of the great powers, did not produce the effects hoped for. The hideous tale of massacres of helpless villagers by organized Greek bands, and of equally hideous, if less wholesale, reprisals by Bulgarian bands, grew rather than diminished, and reached its climax in the early months of 1908. The usefulness of the new *gendarmerie*, under European officers, which was to have co-operated with the Ottoman authorities in the restoration of order, was from the outset crippled by the passive obstruction of the Turkish government. The sultan, indeed, could hardly be blamed for watching with a certain cynical indifference the mutual slaughter of those "Christians" whose avowed ideal was the overthrow of Mahommedan rule, nor could he be expected to desire the smooth working of a system against which he had protested as a violation of his sovereign rights. In 1908 the powers were still united in bringing pressure to bear on the Porte to make the reforms effective; but the proposal of Great Britain to follow the precedent of the Lebanon and commit the administration of Macedonia to a Mussulman governor appointed by the sultan, but removable only by consent of the powers, met with little favour either at Constantinople or among the powers whose ulterior aims might have been hampered by such an arrangement.

Such was the condition of affairs when in October 1908 the revolution in Turkey altered the whole situation. The easy and apparently complete victory of the Young Turks, and the re-establishment without a struggle of the

Young Turkish revolution, 1908.

constitution which had been in abeyance since 1876, took the whole world by surprise, and not least those who believed themselves to be most intimately acquainted with the conditions prevailing in the Ottoman empire. The question of the Near East seemed in fair way of settlement by the action of conflicting races themselves, who in the enthusiasm of new-found freedom appeared ready to forget their ancient internecine feuds and to fraternize on the common ground of constitutional liberty (see Turkey: *History*). By the European powers the proclamation of the constitution was received, at least outwardly, with unanimous approval, general admiration being expressed for the singular moderation and self-restraint shown by the Turkish leaders and people. Whatever views, however, may have been openly expressed, or secretly held, as to the revolution so far as it affected the Ottoman empire itself, there could be no doubt that its

European results.

effects on the general situation in Europe would be profound. These effects were not slow in revealing themselves. On the 5th of October Prince Ferdinand of Bulgaria proclaimed himself king (*tsar*) of the Bulgarians; and two days later the emperor Francis Joseph issued a rescript announcing the annexation of Bosnia and Herzegovina to the Habsburg monarchy (see Bulgaria: *History* and Bosnia and Herzegovina: *History*). Whatever cogent reasons there may have been for altering the status of these countries in view of the changed conditions in Turkey, there could be no doubt that the method employed was a violation of the public law of Europe. By the declaration of London of 1871, to which Austria-Hungary herself had been a principal party, it had been laid down that "contracting powers could only rid themselves of their treaty engagements by an understanding with their co-signatories." This solemn reaffirmation of a principle on which the whole imposing structure of international law had, during the 19th century, been laboriously built up was now cynically violated. The other powers, confronted with the *fait accompli*, protested; but the astute statesman who had staked his reputation as foreign minister of the Dual Monarchy on the success of this *coup* had well gauged the

European crisis provoked by Austria.

character and force of the opposition he would have to meet. Baron von Aehrenthal, himself more Slav than German, in spite of his name, had served a long apprenticeship in diplomacy at Belgrade and St Petersburg; he knew how fully he could rely upon the weakness of Russia, and that if Russian Pan-Slav sentiment could be cowed, he need fear nothing from the resentment of the Servians. He was strong, too, in the moral and—in case of need—the material support of Germany. With Germany behind her, Austria-Hungary had little to fear from the opposition of the powers of the triple *entente*, Great Britain, France and Russia. This diagnosis of the situation was justified by the event. For months, indeed, Europe seemed on the verge of a general war. During the autumn the nationalist excitement in Servia and Montenegro rose to fever-heat, and Austria responded by mobilizing her forces on the frontiers and arming the

Catholic Bosnians as a precaution against a rising of their Orthodox countrymen. Only the winter seemed to stand between Europe and a war bound to become general, and men looked forward with apprehension to the melting of the snows. It is too early as yet to write the history of the diplomatic activities by which this disaster was avoided. Their general outline, however, is clear enough. The protests of Turkey at a violation of treaty rights, doubly resented as likely to damage the prestige of the new constitutional régime, were sympathetically received by the powers of the triple *entente*. An international conference was at once suggested as the only proper authority for carrying out any modifications of the treaty of Berlin necessitated by the new conditions in Turkey; the right of Austria-Hungary to act on her own initiative was strenuously denied; Bulgarian independence and Prince Ferdinand's title of king were meantime refused recognition. In the assertion of these principles Great Britain, Russia and France were united. Germany, on the other hand, maintained an attitude of reserve, though diplomatically "correct"; she accepted the principle of a conference, but made her consent to its convocation conditional on that of her ally Austria-Hungary. But the latter refused to agree to any conference in which the questions at issue should be reopened; the most that she would accept was a conference summoned merely to register the *fait accompli* and to arrange "compensations" not territorial but financial.

The German-Austrian victory.

For a while it seemed as though Baron Aehrenthal's ambition had o'erleaped itself. The reluctance of the Russian government, conscious of its military and political weakness, to take extreme measures seemed likely to be overborne by the Pan-Slav enthusiasm of the Russian people, and the Austrian statesman's policy to have placed him in an *impasse* from which it would be difficult to extricate himself, save at an expense greater than that on which he had calculated. At this point Germany, conscious throughout of holding the key to the situation, intervened with effect. Towards the end of March 1909 the German ambassador at St Petersburg, armed with an autograph letter from the emperor William II., had an interview with the tsar. What were the arguments he used is not known; but the most powerful are supposed to have been the German forces which had been mobilized on the Polish frontier. In any case, the result was immediate and startling. Russia, without previous discussion with her allies, dissociated herself from the views she had hitherto held in common with them, and accepted the German-Austrian standpoint. All question of a conference was now at an end; and all that the powers most friendly to Turkey could do was to persuade her to make the best of a bad bargain. The Ottoman government, preoccupied with the internal questions which were to issue in the abortive attempt at counter-revolution in April, was in no condition to resist friendly or unfriendly pressure. The principle of a money payment in compensation for the shadowy rights of the sultan over the lost provinces was accepted,[79] and Bulgarian independence under King Ferdinand was recognized on the very eve of the new victory of the Young Turks which led to the deposition of Abd-ul-Hamid II. and the proclamation of Sultan Mahommed V. (see Turkey: *History*).

Its moral.

The change made by these events in the territorial system of Europe was of little moment. A subject principality, long practically independent, became a sovereign state; the *Almanach de Gotha* was enriched with a new royal title; the sentiment of the Bulgarian people was gratified by the restoration of their historic tsardom. Two provinces long annexed to the Habsburg monarchy *de facto* became so *de jure*, and the vision of a Serb empire with a free outlet to the sea, never very practicable, was finally dissolved. Of vastly greater importance were the moral and international issues involved. The whole conception of an effective concert of Europe, or of the World, based on the supposed sacred obligation of treaties and the validity of international law, was revealed, suddenly and brutally, as the baseless fabric of a dream. The most momentous outcome of the international debates caused by Austria's high-handed action was the complete triumph of Bismarck's principle that treaties cease to be valid "when the private interest of those who lie under them no longer reinforces the text." Henceforth, it was felt, no reaffirmation of a principle of international comity and law, so successfully violated, could serve to disguise the brutal truth that in questions between nations, in the long-run, might is right—that there is no middle term between the naked submission preached by Tolstoy and his disciples and Napoleon's *dictum* that "Providence is with the big battalions." In Great Britain, especially, public opinion was quick to grasp this truth. It was realized that it was the immense armed power of Germany that had made her the arbiter in a question vitally affecting the interests of all Europe. Germany alone emerged from the crisis with prestige enormously enhanced; for without her intervention Austria could not have resisted the pressure of the powers. The cry for disarmament, encouraged by the action of Sir Henry Campbell-Bannerman's government, suddenly died down in England; and the agitation in favour of an increased ship-building programme, that followed the revelation by the first lord of the admiralty (April 1909) of Germany's accelerated activity in naval construction, showed that public opinion had been thoroughly awakened to the necessity of maintaining for Great Britain her maritime supremacy, on which not only her position in Europe but the existence of her over-sea empire depended.

Bibliographical Note.—(1) *Bibliographies*.—Lists of the principal works on the history of the various European countries, and of their main sources, are given in the bibliographies attached to the separate articles (see also those appended to the articles Papacy; Church History; Diplomacy; Crusades; Feudalism, &c.). For the sources of the medieval history of Europe see Ulysse Chevalier's monumental *Repertoire des sources historiques du moyen âge; Bio-Bibliography* (Paris, 1877, &c.), which with certain limitations (notably as regards the Slav, Hungarian and Scandinavian countries) gives references to published documents for all names of people, however obscure, occurring in medieval history. In 1894 M. Chevalier began the publication of a second series of his *Répertoire*, under the somewhat misleading title of *Topo-Bibliographie*, intended as a compendious guide to the places, institutions, &c., of the middle ages; though very useful, this is by no means so complete as the *Bio-Bibliographie*. August Potthast's *Bibliotheca historica medii aevi* (2nd ed., Berlin, 1895-1896) gives a complete catalogue of all the annals, chronicles and other historical works which appeared in Europe between the years 375 and 1500 and have since been printed, with short notes on their value and significance, and references to critical works upon them. See also the article Record. For authorities on the history of Europe from the end of the 15th to the 19th centuries inclusive the excellent bibliographies appended to the volumes of the *Cambridge Modern History* are invaluable.

(2) *Works*.—Of general works the most important are the *Histoire générale du IV^me^ siècle à nos jours*, published under the direction of E. Lavisse and A. Rambaud (Paris, 1894, &c.), in 12 vols., covering the period from the 4th to the end of the 19th century: Leopold von Ranke's *Weltgeschichte* (Leipzig, 1881, &c.), in 9 vols., covering (i.) the oldest group of nations and the Greeks; (ii.) the Roman Republic; (iii.) the ancient Roman Empire; (iv.) the East Roman empire and the origin of the Romano-German kingdoms; (v.) the Arab world-power and the empire of Charlemagne; (vi.) dissolution of the Carolingian and foundation of the German empire; (vii.) zenith and decay of the German empire; the hierarchy under Gregory VII.; (viii.) crusades and papal world-power (12th and 13th centuries); (ix.) period of transition to the modern world (14th and 15th centuries). To this may be added Ranke's works on special periods: *e.g. Die Fürsten und Völker von Süd-Europa im 16ten und 17ten Jahrhundert* (2nd ed., Leipzig, 1837-1839); *Geschichten der romanischen und germanischen Völker*, 1494-1514 (2nd ed., Leipzig, 1874, Eng. trans. 1887). In English the most important general work is the *Cambridge Modern History* (1903, &c.), produced by the collaboration of English and foreign scholars, and covering the ground from the end of the 15th to the 19th century inclusive. The *Historians' History of the World*, edited by Dr H. Smith Williams (1908), is a compilation from the works of eminent historians of all ages, and the value of its various parts is therefore that of the historians responsible

for them. Its chief merit is that it makes accessible to English readers many foreign or obscure sources which would otherwise have remained closed to the general reader. It also contains essays by notable modern scholars on the principal epochs and tendencies of the world's history, the texts of a certain number of treaties, &c., not included as yet in other collections, and comprehensive bibliographies. On a less ambitious scale are the volumes of the "Periods of European History" series (London, 1893, &c.): Per. I. *The Dark Ages, 476-918*, by C.W.C. Oman (1893); Per. II. *The Empire and the Papacy, 918-1273*, by T.F. Tout (1898); Per. III. *The Close of the Middle Ages, 1273-1494*, by R. Lodge (1901); *Europe in the 16th Century, 1494-1598*, by A.H. Johnson (1897); *The Ascendancy of France*, by H.O. Wakeman (1894); *The Balance of Power*, by A. Hassal (1896); *Revolutionary Europe*, by H. Morse Stephens (1893); *Modern Europe*, by W. Alison Phillips (1901, 5th ed., 1908). See also T.H. Dyer, *History of Modern Europe from the fall of Constantinople*, revised and continued to the end of the 19th century by A. Hassal (6 vols., London, 1901). Besides the above may be mentioned, for European history since the outbreak of the French Revolution, A. Sorel, *l'Europe et la Révolution Française* (7 vols., Paris, 1885, &c.), a work of first-class importance; A. Stern, *Geschichte Europas seit den Wiener Verträgen von 1815* (Stuttgart and Berlin, 1894, &c.), based on the study of much new material, still in progress (1908); C. Seignobos, *Histoire politique de l'Europe contemporaine* (Paris, 1897), a valuable text-book with copious bibliography (Eng. trans., London, 1901); C.M. Andrews, *Historical development of Europe*, 2 vols. (New York, 1896-1898).

(3) *Published Documents.*—For the vast mass of published sources reference must be made to the bibliographies mentioned above. It must be borne in mind, however, that these represent but a fraction of the unpublished material, and that the great development of original research is constantly revealing fresh sources, throwing new light on old problems, and not seldom upsetting conclusions long established as final. For these latest developments of scholarship the numerous historical and archaeological reviews published in various countries should be consulted: *e.g. The English Historical Review* (London); *The Scottish Hist. Rev.* (Glasgow); *The American Hist. Rev.* (London and New York); the *Revue historique* (Paris); the *Historische Zeitschrift* (Munich). The most notable collections of treaties are J. Dumont's *Corps diplomatique*, covering the period from A.D. 800 to 1731 (Amsterdam and the Hague, 1726-1731); F.G. de Martens and his continuators, *Recueil des traités*, &c. (1791, &c.), covering with its supplements the period from 1494 to 1874; F. (T.T.) de Martens, *Recueil des traités conclus par la Russie*, &c. (14 vols., St Petersburg, 1874, &c.); A. and J. de Clercq, *Recueil des traités de la France* (Paris, 1864; new ed., 1880, &c.); L. Neumann, *Recueil des traités conclus par l'Autriche* (from 1763), (6 vols., Leipzig, 1855); new series, by. L. Neumann and A. de Plason (16 vols., Vienna, 1877-1903); *Österreichische Staatsverträge* (vol. i. *England*, 1526-1748), published by the Commission for the modern history of Austria (Innsbruck, 1907), with valuable introductory notes; *British and Foreign State Papers* (from the termination of the war in 1814), compiled at the Foreign Office by the Librarian and Keeper of the Papers (London, 1819, &c.); Sir E. Hertslet, *The Map of Europe by Treaty* (from 1814), (4 vols., London, 1875-1891). See the article TREATIES.

(W. A. P.)

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1 H. Wagner's edition of Guthe's *Lehrbuch der Geographie* (5th ed., Hanover 1882).

2 At the summit of each of the Trans-Ural railways (Perm-Tyumen and Ufa-Chelyabinsk) and that of the road across the Caucasus from Vladikavkaz to Tiflis, sign-posts, with the name Europe on one side, Asia on the other, mark this boundary.

3 Fifth edition, vol. ii. pp. 24-25.

4 Pt. i. pp. 11-12.

5 Griesbach, on the strength of Middendorff's observations, remarks that, in addition to European fruit trees, oak, maples, elms, ashes and the black alder do not cross the Urals, while the lime tree is reduced to the size of a shrub (*La Végétation du globe*, translated by Tchihatchef, i. p. 181).

6 On the history of the boundary between Asia and Europe see F.G. Hahn in the *Mitteilungen des Vereins für Erdkunde zu Leipzig* (1881), pp. 83-104. Hahn, on the ground that true mountain systems must be regarded as forming geographical units, pronounces against the practice of making "natural boundaries" run along mountain crests, and assigns the whole of the Caucasus region to Europe as all belonging to such a system, but orographically quite different from the Armenian plateau (p. 103). But surely it is no less different from the European plain.

7 *Petermanns Mitteilungen* (1890), p. 91.

8 See Supan's *Physische Erdkunde*, 4th ed., pp. 376-377, and the authorities there quoted.

9 "Kustenveranderungen im Mittelmeergebiet," in *Ztschr. der Ges. für Erdkunde zu Berlin* (1878).

10 See *Mitteil der Wiener Geog. Gesellschaft* (1890), p. 333.

11 See R.T. Gunther, *Contributions to the Study of Earth-Movements in the Bay of Naples* (Oxford, 1903), and "Earth-Movements in the Bay of Naples," in the *Geog. Journ.* vol. xxii. pp. 121-149, 269-285.

12 See *Petermanns Mitteil.* (1891), Pl. 8.

13 *Ib.* (1893), Pl. 12.

14 See Ed. Suess, *The Face of the Earth*, translated by H.B.C. Sollas, vol. i. (Oxford, 1904); J. Milne, *Seismology* (London, 1886); R. Hörnes, *Erdbebenkunde* (Leipzig, 1893).

15 *Die mittlere Höhe Europas* (Plauen, 1874).

16 *Traité de géologie* (Paris, 1883).

17 *Scot. Geog. Mag.* (1888), p. 23.

18 *Petermanns Mitteilungen* (1889), p. 17.

19 *Trans. (Izvestiya) Imp. Rus. Geog. Soc.* (1889), p. 113.

20 *Die mittleren Erhebungsverhaltnisse der Erdoberfläche*, pt. i., in Penck's *Geographische Abhandlungen*, vol. v. (Vienna, 1891).

21 *Morphologie der Erdoberfläche*, vol. i.

22 The equivalent of the figures given in *Superficie de l'Europe*. A later measurement by Strelbitsky yielded a result equal to 2215 English miles.

23 General von Tillo, in *Transactions (Izvestiya) Imp. Rus. Geog. Soc.* vol. xix. (1883), pp. 160-161.

24 Dr Al. Bludau in *Petermanns Mitteilungen* (1898), pp. 185-187, has given new calculations of the areas of the basins of certain European rivers, namely, the Tagus, 31,250 sq. m.; Ebro, 32,810 sq. m.; Guadalquivir, 21,620 sq. m.; Po, 28,800 sq. m.; Guadiana, 25,810 sq. m.; and Jucar, 8245 sq. m.

25 St Martin, *Dict. de géog. univ.*

26 In other parts of this work areas of river-basins and lakes, and other measurements, may be observed to conflict in some

degree with those given here. Various authorities naturally differ, both in methods of estimating and in standards of precision.

27 Penck's *Geographische Abhandlungen*, vol. v. pt. iv. (Vienna, 1894); noticed in *Geog. Journ.* vol. vi. p. 264.

28 Including L. Pskov as well as the connecting arm known as Teploye.

29 *Sweden, its People and its Industry* (Stockholm, 1904).

30 See Ascherson, "Die Austrocknung des Neusiedler Sees," in *Z. der Ges. für Erdkunde zu Berlin* (1865).

31 See Suess, *The Face of the Earth*; M. Bertrand, "Sur la distribution géographique des roches éruptives en Europe," *Bull. Soc. Géol. France*, ser. 3, vol. xvi. (1887-1888), pp. 573-617. A translation of a lecture by Suess, giving a short summary of his views on the structure of Europe, will be found in the *Canadian Record of Science*, vol. vii. pp. 235-246.

32 Vesselovski, as quoted by Voeikov, *Die atmosphärische Circulation*.

33 Plate 1 in *Petermanns Mitteilungen* (1903).

34 See a paper on "Das regenreichste Gebiet Europas," by Prof. Kassner, Berlin, in *Petermanns Mitteilungen* (1904), p. 281.

35 London, 1901 (one of the publications of the Royal Geog. Society).

36 Plate 21 in *Petermanns Mitteilungen* (1900).

37 *Nova Acta Leop. Karol. d. deutschen Akad. d. Naturforscher*, vol. lxvii. No. 3 (Halle, 1896).

38 *Petermanns Mitteilungen* (1890), pl. 11 (text pp. 137-145).

39 *Ib.* (1887), pl. 10 (text pp. 165-172).

40 Berlin, 3 vols. (one made up of maps), 1898-1899.

41 By this term (*Getreidefläche*) Engelbrecht designates the area occupied by wheat and other varieties of triticum, rye, oats and barley.

42 Based on Scherzer, *Das wirtschaftliche Leben der Völker*, p. 12.

43 From the *Fifth Report of the United States Department of Agriculture*, Division of Statistics, Miscellaneous Series, p. 13.

44 Based on the *Corn Trade Year-book* (1904), p. 284.

45 Exclusive of Bosnia and Herzegovina, in which the average production in 1894-1903 was about 2½ million bushels.

46 The estimates for Bulgaria, Rumania, Servia and Turkey in Europe for 1872-1876 are not comparable with those of the two later periods on account of the territorial changes since that date. Those for Bulgaria in the period 1881-1890 include Eastern Rumelia.

47 Including Poland.

48 Spanish statistics very imperfect.

49 Based on the same authorities as the wheat table. In the original, however, the figures for 1894-1903 are given in "quarters of 480 lb.," while the figures given above are calculated on an average quarter of 462 lb.

50 Including Poland, but not Finland, in which the average production of rye is estimated at about 11,000,000 bushels.

51 Mainly from or based on the Agricultural Returns for Great Britain, 1905.

52 Single years.

53 Period 1883-1887.

54 Based on *Mines and Quarries: General Report and Statistics for 1906*, pt. iv. (Cd. 4145), 1908.

55 Production in the Ural districts only.

56 See note 11.

57 A considerable quantity of quicksilver is produced in the government of Ekaterinoslav.

58 Dressed.

59 Cupreous pyrites and cupreous iron pyrites, besides which a considerable quantity of copper precipitate is produced.

60 A small quantity of copper ore is produced in Finland, but the bulk of the Russian production is in the Asiatic provinces.

61 Mainly cupreous iron pyrites.

62 Argentiferous.

63 In 1906 Greece produced 12,308 m.t. of argentiferous pig lead.

64 Of which 158,424 m.t. argentiferous.

65 A considerable quantity of manganese ore is produced in the government of Ekaterinoslav, but the main seat of Russian production is the Caucasus.

66 Zinc and lead ore.

67 In addition to 28,891 m.t. of calcined zinc ore.

68 Probably the most complete synopsis of the evidence on this point is to be found in Prince Kropotkin's *Fields, Factories and Workshops* (London, 1899).

69 The total horse-power used in mechanical industries is obtained by adding 650,000, the estimated total of horse-power in hydraulic installations given in an article in the *Annales de géographie* for January 1904, to the total steam-power in fixed engines officially given for 1903, and accordingly excludes gas and other engines not driven by steam- or water-power.

70 The proportion estimated in the official publication entitled *Sweden: its People and its Industry*, edited by G. Sundbärg (Stockholm, 1904).

71 Including the installations returned in the Swiss industrial censuses as electric, most if not all of which are probably driven by water-power.

72 See bibliography at the end of the article.

73 See on the whole subject Hovelacque's *Science of Language*, Latham's *Nationalities of Europe*, and the same author's *Philology*.

74 Taken from a paper by Professor Voeikov on "Verteilung der Bevölkerung auf der Erde unter dem Einfluss der Naturverhältnisse und der menschlichen Tatigkeit," in *Petermanns Mitteil.* (1906), p. 249, where corresponding figures are given for other parts of the world.

75 Kaluga, Smolensk, Tver, Moscow, Yaroslav, Kostromer and Vladimir.

76 Kursk, Orel, Tula, Ryazan, Tambov, Voronezh and Penza.

77 Nizhniy Novgorod, Kazan, Simbirsk, Samara, Saratov and Astrakhan.

78 Bessarabia, Kherson, Taurida, Ekaterinoslav and Don Province.

79 The Austro-Turkish protocol had been signed at Constantinople on the 5th of March; it was now ratified by the Turkish parliament on the 5th of April.

EUROPIUM, a metallic chemical element, symbol Eu, atomic weight 152.0 (O = 16). The oxide Eu_2O_3 occurs in very small quantity in the minerals of the rare earths, and was first obtained in 1896 by E, A. Demarçay from Lecoq de Boisbaudran's samarium; G. Urbain and H. Lacombe in 1904 obtained the pure salts by fractional crystallization of the nitric acid solution with magnesium nitrate in the presence of bismuth nitrate. The salts have a faint pink colour, and show a faint absorption spectrum; the spark spectrum is brilliant and well characterized.

EURYDICE (Εὐρυδίκη), in Greek mythology, the wife of Orpheus (*q.v.*). She was the daughter of Nereus and Doris, and died from the bite of a serpent when fleeing from Aristaeus, who wished to offer her violence (Virgil, *Georgics*, iv. 454-527; Ovid, *Metam.* x. 1 ff.).

EURYMEDON, one of the Athenian generals during the Peloponnesian War. In 428 B.C. he was sent by the Athenians to intercept the Peloponnesian fleet which was on the way to attack Corcyra. On his arrival, finding that Nicostratus with a small squadron from Naupactus had already placed the island in security, he took the command of the combined fleet, which, owing to the absence of the enemy, had no chance of distinguishing itself. In the following summer, in joint command of the land forces, he ravaged the district of Tanagra; and in 425 he was appointed, with Sophocles, the son of Sostratides, to the command of an expedition destined for Sicily. Having touched at Corcyra on the way, in order to assist the democratic party against the oligarchical exiles, but without taking any steps to prevent the massacre of the latter, Eurymedon proceeded to Sicily. Immediately after his arrival a pacification was concluded by Hermocrates, to which Eurymedon and Sophocles were induced to agree. The terms of the pacification did not, however, satisfy the Athenians, who attributed its conclusion to bribery; two of the chief agents in the negotiations were banished, while Eurymedon was sentenced to pay a heavy fine. In 414 Eurymedon, who had been sent with Demosthenes to reinforce the Athenians at the siege of Syracuse, was defeated and slain before reaching land (Thucydides iii., iv., vii.; Diod. Sic. xiii. 8, 11, 13).

EUSDEN, LAURENCE (1688-1730), English poet, son of the Rev. Laurence Eusden, rector of Spofforth, Yorkshire, was baptized on the 6th of September 1688. He was educated at St Peter's school, York, and at Trinity College, Cambridge. He became a minor fellow of his college in 1711, and in the next year was admitted to a full fellowship. He was made poet laureate in 1718 by the lord chancellor, the duke of Newcastle, as a reward for a flattering poem on his marriage. He was rector of Coningsby, Lincolnshire, where he died on the 27th of September 1730. His name is less remembered by his translations and gratulatory poems than by the numerous satirical allusions of Pope, *e.g.*

> "Know, Eusden thirsts no more for sack or praise;
> He sleeps among the dull of ancient days."
>
> *Dunciad*, bk. i. 11. 293-294.

EUSEBIUS (Gr. Εὐσέβιος, from εὐσεβής, pious, cf. the Latin name Pius), a name borne by a large number of bishops and others in the early ages of the Christian Church. Of these the most important are separately noticed below. No less than 25 saints of this name (sometimes corrupted into Eusoge, Euruge, Usoge, Usuge, Uruge and St Sebis) are venerated in the Roman Catholic Church, of whom 23 are included in the Bollandist *Acta Sanctorum*; many are obscure martyrs, monks or anchorites, but two deserve at least a passing notice.

EUSEBIUS, bishop of Vercelli (d. 371), is notable not only as a stout opponent of Arianism, but also as having been, with St Augustine, the first Western bishop to unite with his clergy in adopting a strict monastic life after the Eastern model (see Ambrose, *Ep. 63 ad Vercellenses*, § 66). The legend that he was stoned to death by the Arians was probably invented for the edification of the Orthodox.

EUSEBIUS, bishop of Samosata (d. 380), played a considerable part in the later stages of the Arian controversy in the East. He is first mentioned among the Homoean and Homoeusian bishops who in 363 accepted the Homousian

formula at the synod of Antioch presided over by Meletius, with whose views he seems to have identified himself (see Meletius of Antioch). According to Theodoret (5, 4, 8) he was killed at Doliche in Syria, where he had gone to consecrate a bishop, by a stone cast by an Arian woman. He thus became a martyr, and found a place in the Catholic calendar (see the article by Loofs in Herzog-Hauck, *Realencykl.*, ed. 1898, v. p. 620).

Eusebius of Laodicea, though not included among the saints, was noted for his saintly life. He was an Alexandrian by birth, and gained so great a reputation for his self-denial and charity that when in 262 the city was besieged by the troops of the emperor Gallienus he obtained permission, together with Anatolius, from their commander Theodotus, to lead out the non-combatants, whom he tended "like a father and physician." He went with Anatolius to Syria, and took part in the controversy against Paul of Samosata, bishop of Antioch. He became bishop of Laodicea, probably in the following year (263), and died some time before 268. His friend Anatolius succeeded him as bishop in the latter year (see the article by E. Hennecke in Herzog-Hauck, v. 619).

EUSEBIUS, bishop of Rome for four months under the emperor Maxentius, in 309 or 310. The Christians in Rome, divided on the question of the reconciliation of apostates, on which Eusebius held the milder view, brought forward a competitor, Heraclius. Both competitors were expelled by the emperor, Eusebius dying in exile in Sicily. He was buried in the cemetery of St Calixtus at Rome; and the extant epitaph, in eight hexameter lines, set up here by his successor Damasus, contains all the information there is about his life.

EUSEBIUS [of Caesarea] (*c.* 260-*c.* 340), ecclesiastical historian, who called himself Eusebius Pamphili, because of his devotion to his friend and teacher Pamphilus, was born probably in Palestine between A.D. 260 and 265, and died as bishop of Caesarea in the year 339 or 340. We know little of his youth beyond the fact that he became associated at an early day with Pamphilus, presbyter of the Church of Caesarea, and founder of a theological school there (see *Hist. Eccl.* vii. 32). Pamphilus gathered about him a circle of earnest students who devoted themselves especially to 954
the study of the Bible and the transcription of Biblical codices, and also to the defence and spread of the writings of Origen, whom they regarded as their master. Pamphilus had a magnificent library, which Eusebius made diligent use of, and a catalogue of which he published in his lost *Life* of Pamphilus (*Hist. Eccl.* vi. 32). In the course of the Diocletian persecution, which broke out in 303, Pamphilus was imprisoned for two years, and finally suffered martyrdom. During the time of his imprisonment (307-309) Eusebius distinguished himself by assiduous devotion to his friend, and assisted him in the preparation of an apology for Origen's teaching (*Hist. Eccl.* vi. 33), the first book of which survives in the Latin of Rufinus (printed in Routh's *Reliquiae sacrae*, iv. 339 sq., and in Lommatzsch's edition of Origen's Works, xxiv. p. 293 sq.). After the death of Pamphilus Eusebius withdrew to Tyre, and later, while the Diocletian persecution was still raging, went to Egypt, where he seems to have been imprisoned, but soon released. He became bishop of Caesarea between 313 and 315, and remained such until his death. The patriarchate of Antioch was offered him in 331, but declined (*Vita Constantini*, iii. 59 sq.).

Eusebius was a very important figure in the church of his day. He was not a great theologian nor a profound thinker, but he was the most learned man of his age, and stood high in favour with the emperor Constantine. At the council of Nicaea in 325 he took a prominent part, occupying a seat at the emperor's right hand, and being appointed to deliver the panegyrical oration in his honour. He was the leader of the large middle party of Moderates at the council, and submitted the first draft of the creed which was afterwards adopted with important changes and additions. In the beginning he was the most influential man present, but was finally forced to yield to the Alexandrian party, and to vote for a creed which completely repudiated the position of the Arians, with whom he had himself been hitherto more in sympathy than with the Alexandrians. He was placed in a difficult predicament by the action of the council, and his letter to the Caesarean church explaining his conduct is exceedingly interesting and instructive (see Socrates, *Hist. Eccl.* i. 8, and cf. McGiffert's translation of Eusebius' *Church History*, p. 15 sq.). To understand his conduct, it is necessary to look briefly at his theological position. By many he has been called an Arian, by many his orthodoxy has been defended. The truth is, three stages are to be distinguished in his theological development. The first preceded the outbreak of the Arian controversy, when, as might be expected in a follower of Origen, his interest was anti-Sabellian and his emphasis chiefly upon the subordination of the Son of God. In his works written during this period (for instance, the *Praeparatio evangelica* and *Demonstratio evangelica*), as in the works of Origen himself and other ante-Nicene fathers, expressions occur looking in the direction of Arianism, and others looking in the opposite direction. The second stage began with the outbreak of the controversy in 318, and continued until the Nicene Council. During this period he took the side of Arius in the dispute with Alexander of Alexandria, and accepted what he understood to be the position of Arius and his supporters, who, as he supposed, taught both the divinity and subordination of the Son. It was natural that he should take this side, for in his traditional fear of Sabellianism, in which he was one with the followers of Origen in general, he found it difficult to approve the position of Alexander, who seemed to be doing away altogether with the subordination of the Son. And, moreover, he believed that Alexander was misrepresenting the teaching of Arius and doing him great injustice (cf. his letters to Alexander and Euphration preserved in the proceedings of the second council of Nicaea, Act. vi. tom. 5: see Mansi's *Concilia*, xiii. 316 sq.; English translation in McGiffert, *op. cit.* p. 70). Meanwhile at the council of Nicaea he seems to have discovered that the Alexandrians were right in claiming that Arius was carrying his subordinationism so far as to deny all real divinity to Christ. To this length Eusebius himself was unwilling to go, and so, convinced that he had misunderstood Arius, and that the teaching of the latter was imperilling the historic belief in the divinity of Christ, he gave his support to the opposition, and voted for the Nicene Creed, in which the teachings of the Arians were repudiated. From this time on he was a supporter of Nicene orthodoxy over against Arianism (cf., *e.g.*, his *Contra Marcellum, De ecclesiastica theologia*, and *Theophania*). But he never felt in sympathy with the extreme views of the Athanasian party, for they seemed to him to savour of Sabellianism, which always remained his chief dread (cf. his two works against Marcellus of Ancyra). His personal friends, moreover, were principally among the Arians, and he was more closely identified with them than with the supporters of Athanasius. But he was always a man of peace, and while commonly counted one of the opponents of Athanasius, he did not take a place of leadership among them as his position and standing would have justified him in doing, and Athanasius never spoke of him with bitterness as he did of other prominent men in the party. (For a fuller description of the development of Eusebius' Christology and of his

attitude throughout the Arian controversy, see McGiffert, *op. cit.* p. 11 sq.)

Eusebius was one of the most voluminous writers of antiquity, and his labours covered almost every field of theological learning. If we look in his works for brilliancy and originality we shall be disappointed. He was not a creative genius like Origen or Augustine. His claim to greatness rests upon his vast erudition and his sound judgment. Nearly all his works possess genuine and solid merits which raise them above the commonplace, and many of them still remain valuable. His exegesis is superior to that of most of his contemporaries, and his apologetic is marked by fairness of statement, breadth of treatment, and an instinctive appreciation of the difference between important and unimportant points. His style, it is true, is involved and obscure, often rambling and incoherent. This quality is due in large part to the desultory character of his thinking. He did not always clearly define his theme before beginning to write, and he failed to subject what he produced to a careful revision. Ideas of all sorts poured in upon him while he was writing, and he was not always able to resist the temptation to insert them whether pertinent or not. His great learning is evident everywhere, but he is often its slave rather than its master. It is as an historian that he is best known, and to his *History of the Christian Church* he owes his fame and his familiar title "The Father of Church History." This work, which was published in its final form in ten books in 324 or early in 325, is the most important ecclesiastical history produced in ancient times. The reasons leading to the great undertaking, in which Eusebius had no predecessors, were in part historical, in part apologetic. He believed that he was living at the beginning of a new age, and he felt that it was a fitting time, when the old order of things was passing away, to put on record for the benefit of posterity the great events which had occurred during the generations that were past. He thus wrote, as any historian might, for the information and instruction of his readers, and yet he had all the time an apologetic purpose, to exhibit to the world the history of Christianity as a proof of its divine origin and efficacy. His plan is stated at the very beginning of the work:—

> "It is my purpose to write an account of the successions of the holy Apostles as well as of the times which have elapsed from the day of our Saviour to our own; to relate how many and important events are said to have occurred in the history of the church; and to mention those who have governed and presided over the church in the most prominent parishes, and those who in each generation have proclaimed the divine word either orally or in writing. It is my purpose also to give the names and number and times of those who through love of innovation have run into the greatest errors, and proclaiming themselves discoverers of knowledge, falsely so called, have like fierce wolves unmercifully devastated the flock of Christ. It is my intention, moreover, to recount the misfortunes which immediately came on the whole Jewish nation in consequence of their plots against our Saviour, and to record the ways and times in which the divine word has been attacked by the Gentiles, and to describe the character of those who at various periods have contended for it in the face of blood and tortures, as well as the confessions which have been made in our own day, and the gracious and kindly succour which our Saviour has accorded them all."

The value of the work does not lie in its literary merit, but in the wealth of the materials which it furnishes for a knowledge of the early church. Many prominent figures of the first three centuries are known to us only from its pages. Many fragments, priceless on account of the light which they shed upon movements of far-reaching consequence, have been preserved in it alone. Eusebius often fails to appreciate the significance of the events which he records; in many cases he draws unwarranted conclusions from the given premises; he sometimes misinterprets his documents and misunderstands men and movements; but usually he presents us with the material upon which to form our own judgment, and if we differ with him we must at the same time thank him for the data that enable us independently to reach other results. But the work is not merely a thesaurus, it is a history in a true sense, and it has an intrinsic value of its own, independent of its quotations from other works. Eusebius possessed extensive sources of knowledge no longer accessible to us. The number of books referred to as read is enormous. He also had access to the archives of state, and gathered from them information beyond the reach of most. But the value of his work is due, not simply to the sources employed, but also to the use made of them. Upon this matter there has been, it is true, some diversity of opinion among modern scholars, but it is now generally admitted, and can be abundantly shown, that he was not only diligent in gathering material, but also far more thorough-going than most writers of antiquity in discriminating between trustworthy and untrustworthy reports, frank in acknowledging his ignorance, scrupulous in indicating his authorities in doubtful cases, less credulous than most of his contemporaries, and unfailingly honest. His principal faults are his carelessness and inaccuracy in matters of chronology, his lack of artistic skill in the presentation of his material, his desultory method of treatment, and his failure to look below the surface and grasp the real significance and vital connexion of events. He commonly regards an occurrence as sufficiently accounted for when it is ascribed to the activity of God or of Satan. But in spite of its defects the *Church History* is a monumental work, which need only be compared with its continuations by Socrates, Sozomen, Theodoret, Rufinus and others, to be appreciated at its true worth.

In addition to the *Church History* we have from Eusebius' pen a *Chronicle* in two books (*c.* 303; later continued down to 325), the first containing an epitome of universal history, the second chronological tables exhibiting in parallel columns the royal succession in different nations, and accompanied by notes marking the dates of historical events. A revised edition of the second book with a continuation down to his own day was published in Latin by St Jerome, and this, together with some fragments of the original Greek, was our only source for a knowledge of the Chronicle until the discovery of an Armenian version of the whole work, which was published by Aucher in 1818 (Latin translation in Schoene's edition), and of two Syriac versions published in Latin translation respectively in 1866 (by Roediger in Schoene's edition) and in 1884 (by Siegfried and Gelzer). Other historical works still extant are the *Martyrs of Palestine* and the *Life of Constantine*. The former is an account of martyrdoms occurring in Palestine during the years 303 to 310, of most of which Eusebius himself was an eye-witness. The work exists in a longer and a shorter recension, the former in a Syriac version (published with English translation by Cureton, 1861), the latter in the original Greek attached to the *Church History* in most MSS. (printed with the History in the various editions). *The Life of Constantine*, in four books, published after the death of the emperor, which occurred in 337, is a panegyric rather than a sober history, but contains much valuable material. Of Eusebius' apologetic works we still have the *Contra Hieroclem*, *Praeparatio evangelica*, *Demonstratio evangelica*, and *Theophania*. The first is a reply to a lost work against the Christians written by Hierocles, a Roman governor and contemporary of Eusebius. The second and third, taken together, are the most elaborate and important apologetic work of the early church. The former, in fifteen books, aims to show that the Christians are justified in accepting the sacred writings of the Hebrews, and in rejecting the religion and philosophy of the Greeks. The latter, in twenty books, of which only the first ten and fragments of the fifteenth are extant, endeavours to prove from the Hebrew Scriptures themselves that the Christians are right in going beyond the Jews and adopting new principles and practices. The former is thus a preparation for the latter, and the two together constitute a defence of Christianity against all the world, heathen as well as Jews. In grandeur of conception, comprehensiveness of treatment, and breadth of learning, this apology surpasses all other similar works of antiquity. The *Praeparatio* is also valuable because of its large number of quotations from classical literature, many of them otherwise unknown to us. The *Theophania*, though we have many fragments of the original Greek, is extant as a whole only in a Syriac version first published by Lee in 1842. Its subject is the manifestation of God in the incarnation of the Word, and it aims to give with an apologetic purpose a brief exposition of the divine authority and

influence of Christianity. Of Eusebius' dogmatic and polemic writings, we still have two works against his contemporary, Marcellus, bishop of Ancyra, the one known as *Contra Marcellum*, the other as *De theologia ecclesiastica*. The former and briefer aims simply to expose the errors of Marcellus, whom Eusebius accuses of Sabellianism, the latter to refute them. We also have parts of a General Introduction (Ἡ καθόλου στοιχειώδης εἰσαγωγή), which consisted of ten-books (the sixth to the ninth books and a few other fragments still extant), under the title of *Prophetical Extracts* (Προφητικαὶ ἐκλογαί). Although this formed part of a larger work it was complete in itself and circulated separately. It contains prophetical passages from the Old Testament relating to the person and work of Christ, accompanied by explanatory notes. Of Biblical and exegetical works we have a considerable part of Eusebius' Commentaries on the Psalms and on Isaiah, which are monuments of learning, industry and critical acumen, though marred by the use of the allegorical method characteristic of the school of Origen; also a work on the names of places mentioned in Scripture, or the *Onomasticon*, the only one extant of a number of writings on Old Testament topography; and an epitome and some fragments of a work in two parts on Gospel Questions and Solutions, the first part dealing with the genealogies of Christ given in Matthew and Luke, the second with the apparent discrepancies between the various gospel accounts of the resurrection. Other important works which have perished wholly or in large part, and some orations and minor writings still extant, it is not necessary to refer to more particularly. (See Preuschen's list in Harnack's *Alt-christliche Litteraturgeschichte*, i. 2, p. 55 sq. Preuschen gives thirty-eight titles, besides orations and letters, but it is doubtful whether all of the Commentaries mentioned really existed.)

Bibliography.—The only edition of Eusebius' extant works which can lay claim even to relative completeness is that of Migne (*Patrologia graeca*, tom, xix.-xxiv.). The publication of a new critical edition was begun in 1902 in the Berlin Academy's *Greek Fathers* (*Die griechischen christlichen Schriftsteller der ersten drei Jahrhunderte*, Leipzig). Many of Eusebius' works have been published separately. Thus the *Church History*, first by Stephanus (Paris, 1554); by Valesius with copious notes, together with the *Life of Constantine*, the *Oration in Praise of Constantine*, and the Histories of Socrates, Sozomen, Theodoret, &c. (best edition that of Reading (Cambridge, 1720), in three volumes, folio); by Heinichen (1827, second edition 1868-1870 in three volumes, a very useful edition, containing also the *Life of Constantine* and the *Oration in Praise of Constantine*, with elaborate notes); by Burton (1838; a handy reprint in a single volume by Bright, 1881), and by many others. The most recent and best edition is that of Schwartz in the Berlin Academy's *Greek Fathers*, of which the first half has appeared, accompanied by the Latin version of Rufinus edited by Mommsen. The history was early put into Syriac (edited by Bedjan, Leipzig, 1897; also by Wright, McLean and Merx, London, 1898), Armenian (edited by Djarian, Venice, 1877), and Latin, and has been translated into many modern languages, the latest English version being that of McGiffert, in the *Nicene and Post-Nicene Fathers*, second series, volume i. (New York, 1890). Of the *Chronicle*, the best edition is by Schoene in two volumes (Berlin, 1866-1875). The *Life of Constantine* and the *Oration in Praise of Constantine* are published by Valesius, Heinichen and others in their editions of the *Church History*, also in the first volume of the Berlin Academy's edition (ed. by Heikel), and an English translation by Richardson in the volume containing McGiffert's translation of the *Church History*. Gaisford published the *Prophetical Extracts* (Oxford, 1842), the *Praeparatio evangelica* (1843), the *Demonstratio evangelica* (1852), and the works against Hierocles and Marcellus (1852); and the works against Marcellus have appeared in the edition of the Berlin Academy (vol. iv.). The *Onomasticon* has been published frequently, among others by Lagarde (Göttingen, 1870; 2nd ed., 1887), and is contained in the edition of the Berlin Academy (vol. iii.). The *Theophania* was first published by Lee (Syriac version, 1842; English translation, 1843). A German translation of the Syriac version, with the extant fragments of the original Greek, is given in the edition of the Berlin Academy (vol. iii.).

Acacius, the pupil of Eusebius and his successor in the see of Caesarea, wrote a life of him which is unfortunately lost. His own writings contain little biographical material, but we get information from Athanasius, Philostorgius, Socrates, Sozomen, Theodoret, Jerome's *De vir. ill.*, and Photius. Among the many modern accounts in church histories, histories of Christian literature, encyclopaedias, &c., may be mentioned a monograph by Stein, *Eusebius Bischof von Caesarea* (Würzburg, 1859), meagre but useful as far as it goes; the magnificent article by Lightfoot in the *Dictionary of Christian Biography*; the account by McGiffert in his translation of the *Church History*; Erwin Preuschen's article in Herzog-Hauck, *Realencyklop.* (3rd ed., 1898); the treatment of the Chronology of Eusebius writings in Harnack's *Alt-christliche Litteraturgeschichte*, ii. 2, p. 106 sq.; and Bardenhewer's *Patrologie*, p. 2260 f. The many special discussions of Eusebius' separate works, particularly of his *Church History*, and of his character as an historian, cannot be referred to here. Elaborate bibliographies will be found in McGiffert's translation, and in Preuschen's article in Herzog-Hauck.

(A. C. McG.)

EUSEBIUS [of Emesa] (d. *c.* 360), a learned ecclesiastic of the Greek church, was born at Edessa about the beginning of the 4th century. After receiving his early education in his native town, he studied theology at Caesarea and Antioch and philosophy and science at Alexandria. Among his teachers were Eusebius of Caesarea and Patrophilus of Scythopolis. The reputation he acquired for learning and eloquence led to his being offered the see of Alexandria in succession to the deposed Athanasius at the beginning of 339, but he declined, and the council (of Antioch) chose Gregory of Cappadocia, "a fitter agent for the rough work to be done." Eusebius accepted the small bishopric of Emesa (the modern Horns) in Phoenicia, but his powers as mathematician and astronomer led his flock to accuse him of practising sorcery, and he had to flee to Laodicea. A reconciliation was effected by the patriarch of Antioch, but tradition says that Eusebius finally resigned his charge and lived a studious life in Antioch. His fame as an astrologer commended him to the notice of the emperor Constantius II., with whom he became a great favourite, accompanying him on many of his expeditions. The theological sympathies of Eusebius were with the semi-Arian party, but his interest in the controversy was not strong. His life was written by his friend George of Laodicea. He was a man of extraordinary learning, great eloquence and considerable intellectual power, but of his numerous writings only a few fragments are now in existence.

See Migne, *Patrol. Graec.* vol. lxxxvi.

EUSEBIUS [of Myndus], Greek philosopher, a distinguished Neoplatonist and pupil of Aedesius who lived in the time of Julian, and who is described by Eunapius as one of the "Golden Chain" of Neoplatonism. He ventured to criticize the magical and theurgic side of the doctrine, and exasperated the emperor, who preferred the mysticism of

Maximus and Chrysanthius. He devoted himself principally to logic. Stobaeus in the *Sermones* collected a number of ethical dicta of one Eusebius, who may perhaps be identical with the Neoplatonist.

The fragments have been collected by Mullach in his Fragmenta *Phil. Graec.*, and by Orelli, in *Opuscula veter. graec. sentent. et moral.*

EUSEBIUS [OF NICOMEDIA] (d. 341?), Greek bishop and theologian, was the defender of Arius in a still more avowed manner than his namesake of Caesarea, and from him the Eusebian or middle party specially derived its name, giving him in return the epithet of Great. He was a contemporary of the bishop of Caesarea, and united with him in the enjoyment of the friendship and favour of the imperial family. He is said to have been connected by his mother with the emperor Julian, whose early tutor he was. His first bishopric was Berytus (Beirut) in Phoenicia, but his name is especially identified with the see of Nicomedia, which, from the time of Diocletian till Constantine established his court at Byzantium, was regarded as the capital of the eastern part of the empire. He warmly espoused the cause of Arius in his quarrel with his bishop Alexander, and wrote a letter in his defence to Paulinus, bishop of Tyre, which is preserved in the *Church History* of Theodoret. Trained in the school of Lucian of Antioch, his views appear to have been identical with those of Eusebius of Caesarea in placing Christ above all created beings, the only begotten of the Father, but in refusing to recognize him to be "of the same substance" with the Father, who is alone in essence and absolute being.

At the council of Nicaea Eusebius of Nicomedia earnestly opposed, along with his namesake of Caesarea, the insertion of the Homousian clause, but after being defeated in his object he also signed the creed in his own sense of ὅμοιος κατ᾽ οὐσίαν. He refused, however, to sign the anathema directed against the Arians, not, as he afterwards explained, because of his variance from the Athanasian theology, but "because he doubted whether Arius really held what the anathema imputed to him" (Sozom. ii. 15). After the council he continued vigorously to espouse the Arian cause, and was so far carried away in his zeal against the Athanasians that he was temporarily banished from his see as a disturber of the peace of the church. But his alienation from the court was of short duration. He retained the confidence of the emperor's sister Constantia, through whose influence he was promoted to the see of Nicomedia, and by her favour he was restored to his position, and speedily acquired an equal ascendancy over the emperor. He was selected to administer baptism to him in his last illness. There seems no doubt that Eusebius of Nicomedia was more of a politician than a theologian. He was certainly a partisan in the great controversy of his time, and is even credited (although on insufficient evidence) with having used unworthy means to procure the deposition of Eustathius, the "orthodox" bishop of Antioch (Theodoret i. 21). His restless ambition and love of power are not to be denied. To the last he defended Arius, and at the time of the latter's sudden death, 336, it was chiefly through his menace, as representing the emperor, that the church of Constantinople was thrown into anxiety as to whether the leader should be readmitted to the bosom of the church. The death of Constantine followed hard upon that of Arius; and Eusebius, who was promoted in 339 to the see of Constantinople, became the leader of the anti-Nicene party till his own death in (probably) 341. The real activity of Eusebius and his party must be studied in connexion with the Arian controversy (see ARIUS).

EUSKIRCHEN, a town of Germany, in the Prussian Rhine province, on a plateau lying to the E. of the Eifel range, at the junction of railways from Cologne and Bonn and 10 m. W. of the latter. Pop. (1905) 10,285. It has an Evangelical and a Roman Catholic church, and its industries include cloth, sugar and stocking manufactures, besides breweries and tanneries.

EUSTACE, the name of four counts of Boulogne.

EUSTACE I., a son of Count Baldwin II., held the county from 1046 until his death in 1049.

His son, EUSTACE II. (d. 1093), count of Boulogne, was the husband of Goda, daughter of the English king Æthelred the Unready, and aunt of Edward the Confessor. Eustace paid a visit to England in 1051, and was honourably received at the Confessor's court. A brawl in which he and his servants became involved with the citizens of Dover led to a serious quarrel between the king and Earl Godwine. The latter, to whose jurisdiction the men of Dover were subject, refused to punish them. His contumacy was made the excuse for the outlawry of himself and his family. In 1066 Eustace came to England with Duke William, and fought at the battle of Hastings. In the following year, probably because he was dissatisfied with his share of the spoil, he assisted the Kentishmen in an attempt to seize Dover Castle. The conspiracy failed, and Eustace was sentenced to forfeit his English fiefs. Subsequently he was reconciled to the Conqueror, who restored a portion of the confiscated lands.

Eustace died in 1093, and was succeeded by his son, EUSTACE III., who went on crusade in 1096, and died about 1125. On his death the county of Boulogne came to his daughter, Matilda, and her husband Stephen, count of Blois, afterwards king of England, and in 1150 it was given to their son, Eustace IV.

EUSTACE IV. (d. 1153) became the heir-apparent to his father's possessions by the death of an elder brother before 1135. In 1137 he did homage for Normandy to Louis VII. of France, whose sister, Constance, he subsequently married. Eustace was knighted in 1147, at which date he was probably from sixteen to eighteen years of age; and in 1151 he joined Louis in an abortive raid upon Normandy, which had accepted the title of the empress Matilda, and was now defended by her husband, Geoffrey of Anjou. At a council held in London on the 6th of April 1152 Stephen induced a small number of barons to do homage to Eustace as their future king; but the primate, Theobald, and the other bishops declined to perform the coronation ceremony on the ground that the Roman curia had declared against

the claim of Eustace. The death of Eustace, which occurred during the next year, was hailed with general satisfaction as opening the possibility of a peaceful settlement between Stephen and his rival, the young Henry of Anjou. The *Peterborough Chronicle*, not content with voicing this sentiment, gives Eustace a bad character. "He was an evil man and did more harm than good wherever he went; he spoiled the lands and laid thereon heavy taxes." He had used threats against the recalcitrant bishops, and in the war against the Angevin party had demanded contributions from religious houses; these facts perhaps suffice to account for the verdict of the chronicler.

See Sir James Ramsay, *Foundations of England*, vol. ii. (London, 1898); J.M. Lappenberg, *History of England under the Norman Kings* (trans. B. Thorpe, Oxford, 1857); and E.A. Freeman, *History of the Norman Conquest* (Oxford, 1867-1879).

EUSTATHIUS, of Antioch, sometimes styled "the Great" (fl. 325), was a native of Side in Pamphylia. About 320 he was bishop of Beroea, and he was patriarch of Antioch before the council of Nicaea in 325. In that assembly he distinguished himself by his zeal against the Arians, though the *Allocutio ad Imperatorem* with which he has been credited is hardly genuine. His anti-Arian polemic against Eusebius of Caesarea made him unpopular among his fellow-bishops in the East, and a synod convened at Antioch in 330 passed a sentence of deposition, which was confirmed by the emperor. He was banished to Trajanopolis in Thrace, where he died, probably about 337, though possibly not till 360.

The only complete work by Eustathius now extant is the *De Engastrimytho contra Origenem* (ed. by A. Jahn in *Texte und Untersuchungen*, ii. 4). Other fragments are enumerated by F. Loofs in Herzog-Hauck's *Realencyklopädie*.

EUSTATHIUS, or Eumathius, surnamed Macrembolites ("living near the long bazaar"), the last of the Greek romance writers, flourished in the second half of the 12th century A.D. His title *Protonobilissimus* shows him to have been a person of distinction, and if he is also correctly described in the MSS. as μέγας χαρτοφύλαξ (chief keeper of the ecclesiastical archives), he must have been a Christian. He was the author of *The Story of Hysmine and Hysminias*, in eleven books, a tedious and inferior imitation of the *Cleitophon and Leucippe* of Achilles Tatius. There is nothing original in the plot, and the work is tasteless and often coarse. Although the author borrowed from Homer and other Attic poets, the chief source of his phraseology was the rhetorician Choricius of Gaza. The style is remarkable for the absence of hiatus and an extremely laboured use of antithesis. The digressions on works of art, apparently the result of personal observation, are the best part of the work. A collection of eleven *Riddles*, of which solutions were written by the grammarian Manuel Holobolos, is also attributed to Eustathius.

The best edition of both romance and riddles is by I. Hilberg (1876, who fixes the date of Eustathius between 850 and 988), with critical apparatus and prolegomena, including the solutions; of the *Riddles* alone by M. Treu (1893). On Eustathius generally, see J.C. Dunlop, *History of Fiction* (1888, new ed. in Bohn's *Standard Library*); E. Rohde, *Der griechische Roman* (1900); K. Krumbacher, *Geschichte der byzantinischen Litteratur* (1897). There are many translations in modern languages, of which that by P. le Bas (1825) may be recommended; there is an English version from the French by L.H. le Moine (London and Paris, 1788).

EUSTATHIUS, archbishop of Thessalonica, Byzantine scholar and author (probably a native of Constantinople), flourished during the second half of the 12th century. He was at first a monk, and afterwards deacon of St Sophia and teacher of rhetoric in his native city. In 1174 he was chosen bishop of Myra in Lycia, but in 1175 was transferred to Thessalonica. He was outspoken and independent, and did not hesitate to oppose the emperor Manuel, when the latter desired an alteration in the formula of abjuration necessary for converts from Mahommedanism. In 1185, when Thessalonica was captured by the Normans under William II. of Sicily, Eustathius secured religious toleration for the conquered. He died about 1193. His best known work is his *Commentary on the Iliad and Odyssey of Homer* (παρεκβολαί, critical compilations), valuable as containing numerous extracts from the scholia of other critics, whose works have now perished. He also wrote a commentary on the geographical epic of Dionysius Periegetes, in which much of Stephanus of Byzantium and the lost writings of Arrian is preserved. A commentary on Pindar has been lost, with the exception of the preface, which contains an essay on lyric poetry, a life of Pindar, and an account of the Olympic games. A history of the conquest of Thessalonica by the Normans, a congratulatory address to the emperor Manuel, a plea for an improved water-supply for Constantinople, and an extensive correspondence with clerical and lay dignitaries, are evidence of his versatility. He is also the author of various religious works, chiefly directed against the prevailing abuses of his time, which almost anticipate, though in a milder form, the denunciations of Luther; the most important of these is *The Reform of Monastic Life*. A commentary on the pentecostal hymn of John of Damascus may also be mentioned.

Editions: Homer Commentary, by G. Stallbaum (1825-1830); preface to Pindar Commentary, by F.W. Schneidewin (1837); Dionysius Commentary in C.W. Müller, *Geographici Graeci minores*, ii.; pentecostal hymn, in A. Mai. *Spicilegium Romanum*, v. 2 (1841). The smaller works have been edited (1832) and the *De Thessalonica* (1839) by L.F. Tafel; many will be found in J.P. Migne, *Patrologia Graeca*, cxxxv., cxxxvi. Five new speeches have been edited by W. Regel, *Fontes rerum Byzantinarum*, i. (1892).

EUSTYLE (from Gr. εὖ well, and στῦλος, column), the architectural term for the intercolumniation defined by Vitruvius (iii. 3) as being of the best proportion, *i.e.* two and a half diameters (see INTERCOLUMNIATION).

EUTAWVILLE, a town of Berkeley county, South Carolina, U.S.A., about 55 m. N.N.W. of Charleston. Pop. (1900) 305; (1910) 405. It is served by the Atlantic Coast Line railway. The town lies on high ground near the Santee river, in a region abounding in swamps, limestone cliffs and pine forests. At present its chief interest is in lumber, but in colonial days it was a settlement of aristocratic rice planters. The neighbouring Eutaw Springs issue first from the foot of a hill and form a large stream of clear, cool water, but this, only a few yards away, again rushes underground to reappear about ⅛ m. farther on. At Eutaw Springs, on the 8th of September 1781, was fought the last battle in the field in the Southern States during the War of American Independence. About 2300 Americans under General Nathanael Greene here attacked a slightly inferior force under Colonel Alexander Stewart; at first the Americans drove the British before them, but later in the day the latter took a position in a brick house and behind palisades, and from this position the Americans were unable to drive them. On the night of the 9th, however, Colonel Stewart retreated toward Charleston, abandoning 1000 stand of arms. The battle has been classed as a tactical victory for the British and a strategical victory for the Americans, terminating a campaign which left General Greene in virtual possession of the Carolinas, the British thereafter confining themselves to Charleston. The Americans lost in killed and wounded 408 men (including Colonel William Washington, wounded and captured); the British, 693.

EUTHYDEMUS, a native of Magnesia, who overturned the dynasty of Diodotus of Bactria, and became king of Bactria about 230 B.C. (Polyb. xi. 34; Strabo xi. 515 wrongly makes him the first king). In 208 he was attacked by Antiochus the Great, whom he tried in vain to resist on the shores of the river Arius, the modern Herirud (Polyb. x. 49). The war lasted three years, and was on the whole fortunate for Antiochus. But he saw that he was not able to subdue Bactria and Sogdiana, and so in 206 concluded a peace with Euthydemus, through the mediation of his son Demetrius, in which he recognized him as king (Polyb. xi. 34). Soon afterwards Demetrius (*q.v.*) began the conquest of India. There exist many coins of Euthydemus; those on which he is called god are struck by the later king Agathocles. Other coins with the name Euthydemus, which show a youthful face, are presumably those of Euthydemus II., who cannot have ruled long and was probably a son of Demetrius.

(ED. M.)

EUTIN, a town of Germany, capital of the principality oi Lübeck, which is an enclave in the Prussian province of Schleswig-Holstein and belongs to the grand-duchy of Oldenburg, picturesquely situated on the Lake Eutin, 20 m. N. from Lübeck by the railway to Kiel. Pop. (1905) 5204. It possesses a Roman Catholic and two Protestant churches, a palace with a fine park, and a monument to Weber, the composer, who was born here. Towards the end of the 18th century Eutin acquired some fame as the residence of a group of poets and writers, of whom the best-known were Johann Heinrich Voss, the brothers Stolberg, and Friedrich Heinrich Jacobi. In the neighbourhood is a beautiful tract of country, rich in beech forests and fjords, known as “the Holstein Switzerland,” largely frequented in summer by the Hamburgers.

Eutin was, according to tradition, founded by Count Adolf II. of Holstein. In 1155 it fell to the bishopric of Lübeck and was often the residence of the prelates of that see. After some vicissitudes of fortune during the middle ages and the Thirty Years’ War, it came into the possession of the house of Holstein, and hence to Prussia in 1866.

EUTROPIUS, Roman historian, flourished in the latter half of the 4th century A.D. He held the office of secretary (*magister memoriae*) at Constantinople, accompanied Julian on his expedition against the Persians (363), and was alive during the reign of Valens (364-378), to whom he dedicates his history. This work (*Breviarium historiae Romanae*) is a complete compendium, in ten books, of Roman history from the foundation of the city to the accession of Valens. It was compiled with considerable care from the best accessible authorities, and is written generally with impartiality, and in a clear and simple style. Although the Latin in some instances differs from that of the purest models, the work was for a long time a favourite elementary school-book. Its independent value is small, but it sometimes fills a gap left by the more authoritative records. The *Breviarium* was enlarged and continued down to the time of Justinian by Paulus Diaconus (*q.v.*); the work of the latter was in turn enlarged by Landolfus Sagax (*c.* 1000), and taken down to the time of the emperor Leo the Armenian (813-820) in the *Historia Miscella*.

Of the Greek translations by Capito Lycius and Paeanius, the version of the latter is extant in an almost complete state. The best edition of Eutropius is by H. Droysen (1879), containing the Greek version and the enlarged editions of Paulus Diaconus and Landolfus; smaller critical editions, C. Wagener (1884), F. Rühl (1887). J. Sorn’s *Der Sprachgebrauch des Historikers Eutropius* (1892) contains a systematic account of the grammar and style of the author. There are numerous English school editions and translations.

EUTYCHES (*c.* 380-*c.* 456), a presbyter and archimandrite at Constantinople, first came into notice in A.D. 431 at the council of Ephesus, where, as a zealous adherent of Cyril (*q.v.*) of Alexandria, he vehemently opposed the doctrine of the Nestorians (*q.v.*). They were accused of teaching that the divine nature was not incarnated in but only attendant on Jesus, being superadded to his human nature after the latter was completely formed. In opposition to this Eutyches went so far as to affirm that after the union of the two natures, the human and the divine, Christ had only *one nature*, that of the incarnate Word, and that therefore His human body was essentially different from other human bodies. In this he went beyond Cyril and the Alexandrine school generally, who, although they expressed the unity of the two natures in Christ so as almost to nullify their duality, yet took care verbally to guard themselves against the accusation of in any way circumscribing or modifying his real and true humanity. It would seem, however, that Eutyches differed from the Alexandrine school chiefly from inability to express his meaning with proper safeguards, for equally with them he denied that Christ's human nature was either transmuted or absorbed into his divine nature. The energy and imprudence of Eutyches in asserting his opinions led to his being accused of heresy by Domnus of Antioch and Eusebius, bishop of Dorylaeum, at a synod presided over by Flavian at Constantinople in 448. As his explanations were not considered satisfactory, the council deposed him from his priestly office and excommunicated him; but in 449, at a council held in Ephesus convened by Dioscurus of Alexandria and overawed by the presence of a large number of Egyptian monks, not only was Eutyches reinstated in his office, but Eusebius, Domnus and Flavian, his chief opponents, were deposed, and the Alexandrine doctrine of the "one nature" received the sanction of the church. This judgment is the more interesting as being in distinct conflict with the opinion of the bishop of Rome—Leo—who, departing from the policy of his predecessor Celestine, had written very strongly to Flavian in support of the doctrine of the two natures and one person. Meanwhile the emperor Theodosius died, and Pulcheria and Marcian who succeeded summoned, in October 451, a council (the fourth ecumenical) which met at Chalcedon (*q.v.*). There the synod of Ephesus was declared to have been a "robber synod," its proceedings were annulled, and, in accordance with the rule of Leo as opposed to the doctrines of Eutyches, it was declared that the two natures were united in Christ, but without any alteration, absorption or confusion. Eutyches died in exile, but of his later life nothing is known. After his death his doctrines obtained the support of the Empress Eudocia and made considerable progress in Syria. In the 6th century they received a new impulse from a monk of the name of Jacob, who united the various divisions into which the Eutychians, or Monophysites (*q.v.*), had separated into one church, which exists at the present time under the name of the Jacobite Church, and has numerous adherents in Armenia, Egypt and Ethiopia.

See R.L. Ottley, *The Doctrine of the Incarnation*, ii. 97 ff.; A. Harnack, *History of Dogma*, iv. *passim*; F. Loofs, *Dogmengeschichte* (4th ed., 1906), 297 f., and the art. in Herzog-Hauck, *Realencyk. für prot. Theol.*, with a full bibliography.

EUTYCHIANUS, pope from 275 to 283. His original epitaph was discovered in the catacombs (see Kraus, *Roma sotterranea*, p. 154 et seq.), but nothing more is known of him.

EUTYCHIDES, of Sicyon in Achaea, Greek sculptor of the latter part of the 4th century B.C., was a pupil of Lysippus. His most noted work was a statue of Fortune, which he made for the city of Antioch, then newly founded. The goddess, who embodied the idea of the city, was seated on a rock, crowned with towers, and having the river Orontes at her feet. There is a small copy of the statue in the Vatican (see GREEK ART). It was imitated by a number of Asiatic cities; and indeed most statues of cities since erected borrow something from the work of Eutychides.

EUYUK, or EYUK (the *eu* pronounced as in French), a small village in Asia Minor, in the Angora vilayet, 12 m. N.N.E. of Boghaz Keui (*Pteria*), built on a mound which contains some remarkable ruins of a large building—a palace or sanctuary—anterior to the Greek period and belonging to the same civilization as the ruins and rock-reliefs at Pteria. These ruins consist of a gateway and an approach enclosed by two lateral walls, 15 ft. long, from the outer end of which two walls return outwards at right angles, one to right and one to left. The gateway is flanked by two huge blocks, each carved in front into the shape of a sphinx, while on the inner face is a relief of a two-headed eagle with wings displayed. Of the approach and its returning walls only the lower courses remain: they consist of large blocks adorned with a series of bas-reliefs similar in type to those carved on the rocks of Boghaz Keui. Behind the gateway is another vestibule leading to another portal which gives entrance to the building, the lateral walls and abutments of the portal being also decorated with reliefs much worn. These reliefs belong to that pre-Greek oriental art generally called Hittite, of which there are numerous remains in the eastern half of the peninsula. It is now generally agreed that the scenes represented are religious processions. On the left returning wall is a train of priestly attendants headed by the chief priest and priestess (the latter carrying a *lituus*), clad in the dress of the deities they serve and facing an altar, behind which is an image of a bull on a pedestal (representing the god); then comes an attendant leading a goat and three rams for sacrifice, followed by more priests with *litui* or musical instruments, after whom comes a bull bearing on his back the sacred *cista* (?). On the lateral walls of the approach we have a similar procession of attendants headed by the chief priestess and priest, who pours a libation at the feet of the goddess seated on her throne; while on the right returning wall are fragments of a third procession approaching another draped figure of the goddess on her throne (placed at the angle opposite the bull on the pedestal), the train being again brought up by a bull.

These are all scenes in the ritual of the indigenous naturalistic religion which was spread, in slightly varying forms, all over Asia Minor, and consisted in the worship of the self-reproductive powers of nature, personified in the great mother-goddess (called by various names Cybele, Leto, Artemis, &c.) and the god her husband-and-son (Attis, Men, Sabazios, &c), representing the two elements of the ultimate divine nature (see GREAT MOTHER OF THE GODS). Here, as in

the oriental mysteries generally, the goddess is made more prominent. Where Greek influence affects the native religion, emphasis tends to be laid on the god, but the character of the religion remains everywhere ultimately the same (see Ramsay, *Cities and Bishoprics of Phrygia*, ch. iii.).

AUTHORITIES.—Perrot, *Explor. de la Galatie* (1862) and *Hist. de l'art* (Eng. trans., 1890); Humann and Puchstein, *Reisen in Kleinasien u. Nordsyrien* (1890); Hogarth in Murray's *Handbook to Asia Minor* (1895); Chantre, *Mission en Cappadoce* (1898). See also HITTITES.

(J. G. C. A.)

EVAGORAS, son of Nicocles, king of Salamis in Cyprus 410-374 B.C. He claimed descent from Teucer, half-brother of Ajax, son of Telamon, and his family had long been rulers of Salamis until supplanted by a Phoenician exile. When the usurper was in turn driven out by a Cyprian noble, Evagoras, fearing that his life was in danger, fled to Cilicia. Thence he returned secretly in 410, and with the aid of a small band of adherents regained possession of the throne. According to Isocrates, whose panegyric must however be read with caution, Evagoras was a model ruler, whose aim was to promote the welfare of his state and of his subjects by the cultivation of Greek refinement and civilization, which had been almost obliterated in Salamis by a long period of barbarian rule. He cultivated the friendship of the Athenians, and after the defeat of Conon at Aegospotami he afforded him refuge and hospitality. For a time he also maintained friendly relations with Persia, and secured the aid of Artaxerxes II. for Athens against Sparta. He took part in the battle of Cnidus (394), in which the Spartan fleet was defeated, and for this service his statue was placed by the Athenians side by side with that of Conon in the Ceramicus. But the energy and enterprise of Evagoras soon roused the jealousy of the Great King, and relations between them became strained. From 391 they were virtually at war. Aided by the Athenians and the Egyptian Hakor (Acoris), Evagoras extended his rule over the greater part of Cyprus, crossed over to Asia Minor, took several cities in Phoenicia, and persuaded the Cilicians to revolt. After the peace of Antalcidas (387), to which he refused to agree, the Athenians withdrew their support, since by its terms they recognized the lordship of Persia over Cyprus. For ten years Evagoras carried on hostilities single-handed, except for occasional aid from Egypt. At last he was totally defeated at Citium, and compelled to flee to Salamis. Here, although closely blockaded, he managed to hold his ground, and took advantage of a quarrel between the Persian generals to conclude peace (376). Evagoras was allowed to remain nominally king of Salamis, but in reality a vassal of Persia, to which he was to pay a yearly tribute. The chronology of the last part of his reign is uncertain. In 374 he was assassinated by a eunuch from motives of private revenge.

The chief authority for the life of Evagoras is the panegyric of Isocrates addressed to his son Nicocles; see also Diod. Sic. xiv. 115, xv. 2-9; Xenophon, *Hellenica*, iv. 8; W. Judeich, *Kleinasiatische Studien* (Marburg, 1892), and art. HELLENISM.

EVAGRIUS (*c.* 536-600), surnamed SCHOLASTICUS, Church historian, was born at Epiphania in Coele-Syria. His surname shows him to have been an advocate, and it is supposed that he practised at Antioch. He was the legal adviser of Gregory, patriarch of that city, whom he successfully defended at Constantinople against certain serious charges. Through this connexion he was brought under the notice of the emperor Tiberius Constantine, who honoured him with the rank of quaestorian; Maurice Tiberius made him master of the rolls. His influence and reputation were so considerable that on the occasion of his second marriage a public festival was celebrated in his honour, which was interrupted by a terrible earthquake. Evagrius's name has been preserved by his *Ecclesiastical History* in six books, extending over the period from the third general council (that of Ephesus, 431) to the year 593. It thus continues the work of Eusebius, Socrates, Sozomen and Theodoret. Though not wholly trustworthy, and often very credulous, this work is on the whole impartial, and appears to have been compiled from original documents, from which many valuable excerpts are given. It is particularly helpful to the student of the history of dogma during the 5th and 6th centuries, while the political history of the time is by no means neglected. Evagrius made use of the writings of Eustathius, John of Epiphania, John Malalas, Procopius, and (possibly) Menander Protector.

The best edition of the History is that of L. Parmentier and J. Bidez (London, 1898), which contains the Scholia; it is also included in Migne's *Patrologia Graeca*, lxxxvi. There is an English translation in Bohn's *Ecclesiastical Library*. See Krumbacher, *Geschichte der byzantinischen Litteratur* (1897); F.C. Baur, *Die Epochen der kirchlichen Geschichtsschreibung* (1852); L. Jeep, *Quellenuntersuchungen zu den griechischen Kirchenhistorikern* (1884).

EVANDER (Gr. Εὔανδρος, "good man"), in Roman legend, son of Mercury and Carmenta, or of Echemus, king of Arcadia. According to the story, Evander left the Arcadian town of Pallantion about sixty years before the Trojan War and founded Pallanteum or Palatium on the hill afterwards called the Palatine. This is only one of the many Greek legends adopted by the Romans for the purpose of connecting places in Italy with others of like-sounding name in Greece. To Evander was attributed the introduction of Greek rites and customs into his new country; of writing, music and other arts; of the worship of Pan (called Faunus by the Italians) and the festival of Lupercalia. In Virgil he receives Aeneas hospitably, and assists him against Turnus. Probably Evander was identical with the god Faunus (the "favourer"), and the tale of his Arcadian origin was due to the desire to establish connexion with Greece; the name of his reputed mother (or wife) Carmenta is genuinely Italian.

See Livy i. 6. 7; Ovid, *Fasti*, i. 471, v. 99; Dion. Halic. i. 31-33; Virgil, *Aeneid*, viii. 335.

EVANGELICAL ALLIANCE, an association of individual Christians of different denominations formed in London in August 1846, at a conference of over 900 clergymen and laymen from all parts of the world, and representing upwards of fifty sections of the Protestant church. The idea originated in Scotland in the preceding year, and was intended "to associate and concentrate the strength of an enlightened Protestantism against the encroachments of popery and Puseyism, and to promote the interests of a scriptural Christianity," as well as to combat religious indifference. A preliminary meeting was held at Liverpool in October 1845. The movement obtained wide support in other countries, more especially in America, and organizations in connexion with it now exist in the different capitals throughout the world. The object of the alliance, according to a resolution of the first conference, is "to enable Christians to realize in themselves and to exhibit to others that a living and everlasting union binds all true believers together in the fellowship of the church." At the same conference the following nine points were adopted as the basis of the alliance: "Evangelical views in regard to the divine inspiration, authority and sufficiency of the Holy Scriptures; the right and duty of private judgment in the interpretation of the Holy Scriptures; the unity of the Godhead and the Trinity of persons therein; the utter depravity of human nature in consequence of the fall; the incarnation of the Son of God, His work of atonement for sinners of mankind, and His mediatorial intercession and reign; the justification of the sinner by faith alone; the work of the Holy Spirit in the conversion and sanctification of the sinner; the immortality of the soul, the resurrection of the body, the judgment of the world by our Lord Jesus Christ, with the eternal blessedness of the righteous and the eternal punishment of the wicked; the divine institution of the Christian ministry, and the obligations and perpetuity of the ordinances of Baptism and the Lord's Supper," it being understood, however, (1) that such a summary "is not to be regarded in any formal or ecclesiastical sense as a creed or confession," and (2) that "the selection of certain tenets, with the omission of others, is not to be held as implying that the former constitute the whole body of important truth, or that the latter are unimportant."

Annual conferences of branches of the alliance are held in England, America and several continental countries; and it is provided that a general conference, including representatives of the whole alliance, be held every seventh year, or oftener if it be deemed necessary. Such conferences have been held in London in 1851; Paris, 1855; Berlin, 1857; Geneva, 1861; Amsterdam, 1867; New York, 1873; Basel, 1879; Copenhagen, 1885; Florence, 1891; London, 1896 and 1907. They are occupied with the discussion of the "best methods of counteracting infidelity, Romanism and ritualism, and the desecration of the Lord's Day," and of furthering the positive objects of the alliance. The latter are sometimes stated as follows: (*a*) "The world girdled by prayer"; a world-wide week of prayer is held annually, beginning on the first Sunday in the year, (*b*) "The maintenance of religious liberty throughout the world." (*c*) "The relief of persecuted Christians in all parts"; the alliance has agents in many countries to help the persecuted by distributing relief, &c., and in Russia there is a travelling agent who endeavours to help the Stundists. (*d*) "The manifestation of the unity of all believers and the upholding of the evangelical faith."

The following publications may be mentioned:—*The Evangelical Alliance Monthly Intelligencer*, *The Evangelical Alliance Quarterly*, both published in London; A.J. Arnold, *History of the Evangelical Alliance* (London, 1897); and the reports of the proceedings of the different conferences.

EVANGELICAL ASSOCIATION of North America, a religious denomination, founded about the beginning of the 19th century by Jacob Albright (1759-1808), a German Lutheran of Pennsylvania. About 1790 he began an itinerant mission among his fellow-countrymen, chiefly in Pennsylvania; and meeting with considerable success, he was, at an assembly composed of adherents from the different places he had visited, elected in 1800 presiding elder or chief pastor, and shortly afterwards rules of government were adopted somewhat similar to those of the Methodist Episcopal Church. The theological standards of the two bodies are also in close agreement. In 1807 Albright was appointed bishop of the community, which adopted its present name in 1818. In 1816 the first annual conference was held, and in 1843 there was instituted a general conference, composed of delegates chosen by the annual conferences and constituting the highest legislative and judicial authority in the church. The members of the general conference hold office for four years. In 1891 a long internal controversy resulted in a division. A law-suit awarded the property to the branch making its headquarters at Indianapolis, whereon the other party, numbering 40,000, that met at Philadelphia, constituted themselves the United Evangelical Church. The Association in 1906 had about 105,000 members, besides some 10,000 in Germany and Switzerland, and has nearly 2000 churches and 1200 itinerant and other preachers. There are four bishops. It distributes much evangelical literature, and supports a mission in Japan.

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