

He has also written nine symphonies showing an ultra-Wagnerian tendency.

Brudenell, JAMES THOMAS. See **CARDIGAN, EARL OF.**

Brueghel. See **BREUGHEL.**

Brueys, DAVID AUGUSTIN DE (1640-1723), French dramatist and theologian, was born at Aix. Educated in the religious principles of the Calvinists, he engaged in controversy on their behalf; but being converted by Bossuet, he entered the Roman Catholic Church, and wrote religious pamphlets from the new standpoint. He is best remembered by his plays, some of them written in collaboration with Jean Palaprat (1650-1721), the chief being *Le Concert Ridicule* (1689), *Le Grondeur* (1691), *Le Muet* (1691). De Brueys's original works are *Gabinie* (1699) and two or three other plays (some never performed), including *L'Avocat Patelin* (1706). His dramatic works were published in two volumes in 1712.

Bruges (Flem. *Brügge*), tn. and episc. see of Belgium, chief tn. of W. Flanders, 63 m. N.W. of Brussels and 8 m. inland from the North Sea, with which it is connected by two canals leading to Ostend and Sluis respectively, and by a third and much larger (230 ft. wide and 26½ ft. deep) ship canal, constructed at a cost of over 1½ millions sterling, and officially opened in July 1907. Zeebrügge is the sea terminus. From the 12th to the 16th century Bruges was the largest commercial city in the north of Europe, a centre for the English and Scandinavian trade, as well as the emporium of Hanseatic, Venetian, and other Italian merchants, and had at the height of its prosperity a population of 200,000. At the present time it is a quiet, quaint mediæval place, traversed by canals, with small houses turning their gable ends towards the streets,

and a great number of charitable and religious asylums, hospices, refuges, etc. The present cathedral (St. Salvator)—the old cathedral was destroyed by the French in 1799—is of all periods between the 12th and the 19th century. The church of Our Lady, also dating from the 12th century, contains the fine tombs of Charles the Bold, Duke of Burgundy, and his daughter Maria, wife of the Emperor Maximilian. Both churches, and also the church of St. James (13th to 19th century), are adorned with notable Flemish pictures; but the most valuable works of this description in Bruges are the small collection of Memling's pictures in the hospital of St. John. Amongst other public buildings are the Gothic town hall (14th century); the town chancellery (16th century); the famous belfry of Bruges (353 ft. high), built between the 13th and the 15th century, but equipped with its present carillon only in 1743; the museum and picture gallery, with valuable Flemish pictures; the museum of antiquities in the Gruuthuis, a 15th-century structure; the 14th-century (Poorters Loge) archives, the municipal library, a former palace of the dukes of Burgundy, the law courts (with a magnificent 16th-century fireplace), the chapel and museum of the Sacred Blood (12th century), and the Beguinage (13th century). In the lower part of the belfry is an archaeological museum. Pop. 55,000. The foundation of Bruges goes back to before the 7th century. Its citizens played a prominent part in the bloody 'Flemish Vespers,' and the succeeding defeat of the French at Courtrai (1302). In the 15th century the sanding up of the seaway to and at Sluis, the growth of Antwerp, and the shifting of the centres of European commerce brought about by the

Brugg

discovery of America and the sea route to India, tended (with certain political causes) to weaken and destroy the commercial supremacy of Bruges. The independent yet turbulent spirit of its people was shown in 1488, when they kept prisoner for some months the Roman king (afterwards emperor) Maximilian, and forced him to abdicate the government of Flanders. Its chief manufacture is lace. See W. C. Robinson's *Bruges* (1900), and Omond and Forestier's *Bruges and W. Flanders* (1906).

Brugg, a very quaint little mediæval tn. in the Swiss canton of Aargau, 19 m. N.W. of Zürich; commands 'the bridge' over the Aar, just above its junction successively with the Reuss (from Lucerne) and the Limmat (from Zürich). Pop. 2,400.

Brugger, FRIEDRICH (1815-70), German sculptor, born at Munich. In 1843 Ludwig I. of Bavaria commissioned him to execute marble busts for the Pantheon or Hall of Fame, and several bronze statues, such as *Gluck* (1848) and *Prince Max Emanuel* for Munich, *Field-marshal Wrede* for Heidelberg, *H. L. Fugger* (1857) for Augsburg, etc. But Brugger shows to greater advantage in mythological subjects, as *Penelope Longing for her Husband*, *Icarus and Dædalus*, and *Ædipus in Exile with Antigone*.

Brugsch, HEINRICH KARL (1827-94), German Egyptologist, was born at Berlin. He was sent by the Prussian government to Egypt in 1853, where he joined Mariette in the Memphis excavations. Appointed assistant curator of Berlin Egyptological Museum (1855), he visited Persia in 1860, and acted as German consul at Cairo (1864-8), returning to the chair of Oriental languages at Göttingen. In 1870 he became head of the Khedive's school of Egyptology at Cairo.

On economical grounds he was dismissed from his post in 1879, and afterwards resided principally in Germany, making a visit to Persia in 1884 as member of a German embassy, and again visiting Egypt on behalf of the Prussian government. He died at Charlottenburg. Of his numerous works on Egyptology (over thirty), the most important are *Geschichte Aegyptens unter den Pharaonen* (1877; trans. 1880); *Dictionnaire Géographique de l'Ancienne Egypte* (1877-80); *Thesaurus Inscriptionum Aegyptiacarum* (1882-91); *Religion u. Mythologie der alten Aegypter* (1884-8). See his *Mein Leben und mein Wandern* (1894).

Brühl, vil., Rhineland, Prussia, 10 m. S.S.W. of Cologne, with lignite mines and a royal castle (1725-8). Pop. 7,500.

Brühl, HEINRICH, COUNT VON (1700-64), minister of Augustus III., elector of Saxony and king of Poland, whose position on the throne was established (1733) mainly by Brühl's assistance. From that date to 1746 he gradually got into his own hands the principal offices of state, and from 1746 ruled Saxony in his master's name. He brought the country to the verge of ruin, involving it in a war (1756-63) with Frederick II. of Prussia, who took his capital. After the death of the Elector Augustus, his favourite, dismissed by his successor, survived his master only three weeks. Brühl amassed great wealth, and his collection of 62,000 volumes forms part of the royal library at Dresden. See biographies, *Leben des Grafen von Brühl*, by Justi (1760-1), and *Zuverlässige Lebensbeschreibung d. Grafen von Brühl* (1766).

Bruises are the result of laceration of subcutaneous tissues, the skin itself being unbroken. They commonly result from direct violence, such as a blow with a blunt

weapon, a crush, or a pinch, but are also produced by sudden, violent muscular efforts. The softer the flesh the more easily it is bruised, and fatty tissues bruise easily; some diseases, such as anæmia, scurvy, and hæmophilia, predispose to it. In a bruise the discoloration is caused by hæmorrhage from capillaries and other small blood-vessels, the changes in colour arising from the different stages of blood disintegration and absorption.

Medico-legal investigations frequently involve the question of bruising before and after death. A bruise visible on the surface, and produced before death, would be accompanied by more or less swelling; and on incision coagulated blood would be found, with discoloration of the skin proper. A body bruised after death shows no swelling; and on cutting into the bruise little coagulated blood is found, and the skin is not blackened. It must also be remembered that in the case of a deep-seated injury, received shortly before death, there might be no external sign; though, on cutting down, the hæmorrhage of a severe bruise might be found. A bruise may be distinguished from the post-mortem stain, due to hypostasis, by incision, when the bruise will show coagulated blood, and the post-mortem stain only a few bloody points. The position of the discoloration will also help a decision; for hypostasis is produced by gravitation, and occurs at those points upon which the weight of the dead body has been for some time pressing.

Treatment.—If firm elastic pressure can be applied immediately after the injury and maintained for twenty-four hours, the discoloration will be comparatively slight. The popular remedy of a piece of beef-steak applied to a bruised eye owes its virtue to the elasticity

with which the raw meat can be fitted accurately into the orbit, and presses equally on the loose tissues of the eyelids, where otherwise blood would find its way. A cold compress, say of lead lotion, is also useful, as helping toward coagulation and the stoppage of further subcutaneous hæmorrhage. Later, or if the bruise is already fully developed, frequent gentle massage over the part will greatly hasten the removal of the coagulated blood, and consequently of the disfigurement. Free movement of the part will also help, once the bruise has developed; but perfect rest is necessary if pressure has been applied with the view of preventing discoloration. In very severe cases of bruising, amounting practically to crushing, the flesh is sometimes so severely damaged as to be the seat of gangrene. See GANGRENE.

Brülov, or BRYLOV, CONSTANTIN PAVLOVICH (1799–1852), Russian painter, born at St. Petersburg; spent six years in Italy, where he made copies from Raphael for the imperial house, especially good being the reproduction of the *School of Athens* (now in the St. Petersburg Academy). Between 1830 and 1833 he executed one of his greatest works, *The Destruction of Pompeii* (now in the Hermitage, St. Petersburg), and in 1834 the *Death of Inez de Castro* (now in the St. Petersburg Academy). On his return to Russia he was appointed (1836) professor at the St. Petersburg Academy. To this period belongs the great canvas *The Siege of Pskov* (now in the St. Petersburg Academy); but he confined his activity chiefly to portraiture and sacred painting, the most notable results being an *Assumption* (in the cathedral of St. Petersburg) and *The Apostles* and other frescoes (in the church of St. Isaac at St. Peter-

burg). See Muther's *Hist. of Modern Painting* (1895-6).

Brumaire, the second month of the year in the French republican calendar, extended from October 22 to November 20 in the years I.-III. and V.-VIII. The 18th Brumaire of the eighth year of the republic (Nov. 9, 1799) is the date on which Napoleon overthrew the Directory and became first consul.

Brumath, or BRUMPT, tn., Elsass, Germany, 10 m. N. by W. of Strassburg. Pop. 5,600.

Brummen, vil., Gelderland prov., Netherlands, 4 m. S.W. of Zutphen; a residential locality. Pop. (comm.) 7,500.

Brummell, GEORGE BRYAN (1778-1840), or BEAU BRUMMELL, English leader of fashion, was a friend of George IV. when prince regent. Owing to his gambling losses he fled (1816) to Calais, where he renewed his old course of life, and in Caen was cast into prison for debt; but being released, he was appointed consul (1830-2) at Caen, where he died in a lunatic asylum. Brummell is remembered for his readiness in repartee and for his fastidious neatness in dress, in which, however, he was not extravagant and foppish, but studiously moderate. See Jesse's *Life of G. Brummell* (1844; new ed. 1886), Fitzgerald's *Life of George IV.* (1881), Bulwer's *Pelham* (1880), Lister's *Granby* (1826), and Boutat de Monval's *Beau Brummell* (1908).

Brun, RUDOLF (c. 1285-1360), first burgomaster of Zürich, Switzerland—an office created in 1336. Brun induced the town to enter the Swiss Confederation (1351). Later he was won over to the Austrian side, and induced the town in 1356 to make an alliance with Austria, with which the Confederation had made peace in 1355. See *Life* by Hottinger in *Schweiz Museum*, vol. i. (1837);

Blüntschli's *Geschichte der Republik Zürich* (3 vols. 1847-57).

Brunamonti, MARIA ALINDA (1842-1903), Italian poetess, born in Perugia; published her first book in 1856, and between 1859 and 1878 issued various *Canti Nazionali*. These and other poems were collected in 1875, and in 1887 augmented by a volume of *Nuovi Canti*. In these verses patriotic and religious fervour are united to genuine poetic feeling.

Brunanburh, a place in the north of England, where Athelstan and his brother Eadmund, in 937, won a decisive victory over Anlaf of Dublin, Constantine of Scotland, the Celtic king of Northumberland, and the Northumbrian Danes, the battle practically establishing the unity of England for many years. The site of Brunanburh is uncertain, but it has been variously located in Northumbria, in Yorkshire, Bamber Bridge in Lancashire, and Brunswark or Birrenswark in Dumfriesshire. The battle was commemorated by a stirring alliterative ballad contained in the Anglo-Saxon Chronicle, and in the *Saga of Egil Skallagrimsson* (trans. by W. G. Green, 1893). The most spirited version is that of Lord Tennyson.

Brunck, RICHARD FRANÇOIS PHILIPPE (1729-1803), one of the greatest classical scholars of the 18th century, was born at Strassburg. After serving for some time in the Seven Years' war (1756-63), he took up (1760) the study of Greek, and from 1776 devoted the greater part of his income as receiver of taxes to the issue of editions of the Greek authors, with emendations of the text. These included *Analecta Veterum Poetarum Græcorum* (1772-6), *Anacreon* (1778), *Apollo-nius Rhodius* (1780), *Aristophanes* (1781-3), *Gnomici Poetæ Græci* (1778), and *Sophocles* (1786-9).

Brundusium. See BRINDISI.

Brune, GUILLAUME MARIE ANNE (1763-1815), marshal of France under Napoleon, served in the army of the revolution under Dumouriez (1793). After establishing the Helvetic republic in Switzerland and the Batavian republic in Holland, and defeating the Duke of York at Bergen in Holland (1799), he was deputed in 1800 to suppress the Chouan rebellion. In the same year he was named commander-in-chief in Italy, and defeated the Austrians on the Mincio. In 1803 he was sent as ambassador to Constantinople, and during his absence was created (1804) a marshal. He was appointed French governor of the Hanseatic League towns in 1806, and captured (1807) Stralsund and Rügen. At Napoleon's first abdication he joined Louis XVIII., whom he deserted during the Hundred Days, but rejoined after Waterloo. He was murdered at Avignon by a royalist mob (1815). See *Vie de Brune* (1887); and Marmouton, *Le Maréchal Brune* (1900).

Brunei, British protectorate in N.W. Borneo, between British N. Borneo and Sarawak. It was until 1888 an independent (Mohammedan) territory, and its sultan was at one time overlord of the whole island. The population is estimated at about 30,000. Area, 4,000 sq. m. Brunei, the capital (pop. 10,000), is mostly built on piles. Valuable coal is found. The chief export is sago. See Alleyne Ireland's *Far Eastern Tropics* (1905).

Brunel, ISAMBARD KINGDOM (1806-59), English civil engineer, was the only son of Sir Marc Isambard Brunel; entered his father's office in 1823. He assisted in the two great undertakings—his father's block machinery and the Thames Tunnel (1825-43). Upon his own account he constructed (1831) Monkwearmouth Docks, and many other

works of a similar character; and he designed (1831) the plans for the Clifton Suspension Bridge, though the bridge was not completed (1864) until after his death. As engineer (1833-46) to the Great Western Railway, he persuaded the directors, after much controversy, to adopt the broad gauge. His last great railway undertaking was the Royal Albert Bridge of the Cornwall Railway at Saltash (1853-9). Brunel was also one of the pioneers in the development of ocean steam-navigation. He designed the *Great Western* steamship, which was the first to make regular voyages (1838) across the Atlantic. He next built the *Great Britain*, the first large iron steamship which was navigated (1845) by the screw propeller. Under the auspices of the Eastern Steam Navigation Company, he began (1853) the construction of the huge *Great Eastern*. Brunel gave much attention to gun improvement, and designed a floating gun-carriage for the attack on Kronstadt in 1854. He also designed and erected the hospital buildings at Renkioi, on the Dardanelles, in 1855. He was seized with paralysis on board the *Great Eastern*, Sept. 5, 1859, and died ten days afterwards. See *Life*, by his son, Isidore Brunel (1870).

Brunel, SIR MARC ISAMBARD (1769-1849), engineer, was the son of a farmer and landowner in Normandy. Obligated to leave France in 1793 on account of his royalist opinions, he settled temporarily in the United States, and began business as an engineer. In 1799 he came to England, and persuaded the Admiralty to accept his designs for making ship blocks by machinery. The invention was perfected in 1806, and Brunel was awarded a sum of £17,000. In 1824 the Duke of Wellington accepted his plan for the construction of a tunnel be-

neath the bed of the Thames. The work was completed in 1843, with the assistance of his son. Brunel's inventions included machines for knitting, for ruling paper, for manufacturing nails, for making druggists' boxes, and for making seamless shoes for the army. He was knighted in 1841. See Beamish's *Memoirs of Sir Marc Brunel* (1862).

Brunelleschi, FILIPPO (1377-1446), Italian architect and sculptor, was born at Florence. He promoted the restoration of the ancient classical style of architecture as a substitute for Gothic. His first great work was the church of San Lorenzo in Florence; and in 1418 he became architect of the unfinished cathedral of Florence, for which he designed the great dome, the largest in the world, imitated by Michael Angelo in the design for that of St. Peter's. He was also the architect of the Pitti Palace, and of the chapel of the Pazzi, Florence. See *Life* by Manetti (ed. Milanese, 1887); and Scott, *F. di ser Brunelleschi* (1901).

Brunetière, FERDINAND (1849-1906), born at Toulon, member of the French Academy since 1893, one of the most influential of modern French critics. From 1875 he contributed regularly to the *Revue des Deux Mondes*, of which he was editor. His articles were collected from time to time in series, entitled *Etudes Critiques sur l'Histoire de la Littérature Française* (6 vols. 1880-98), *Questions de Critique* (2 vols. 1889-90), *Essais sur la Littérature Contemporaine* (2 vols. 1892-5), and *Histoire et Littérature* (3 vols. 1884-87). He confirmed his reputation and achieved considerable popularity by four series of lectures dealing respectively with *Evolution des Genres dans l'Histoire de la Littérature* (1890), *Epoques du Théâtre Français* (1892), *Evolution de la Poésie Lyrique en France*

au XIX^e Siècle (2 vols. 1893; 3rd ed. 1900-1), and *Bossuet* (unpublished). His work is characterized by wide and accurate knowledge, and it would be difficult to find his equal in tracing a tendency in literature, or in stating an author's relationship to his predecessors. He was an extreme classicist, holding that French literature attained its perfection in the reign of Louis XIV., and that earlier literature was but a preparation, and subsequent literature a decadence. He, accordingly, hardly did justice to the middle ages, and, on the other hand, never ceased to oppose, since his *Roman Naturaliste* (1883), the realistic school of modern literature. He will be best remembered by his application of the theory of evolution to the study of literature. His later publications include *La Science et la Religion* (1895); *Education et Instruction* (1895); *La Renaissance de l'Idéalisme* (1896); *La Moralité de la Doctrine Evolutive* (1896); *L'Art et la Morale* (1898); *L'Idée de Patrie* (1897); *Les Ennemis de l'Âme Française* (1899); *Manuel de l'Histoire de la Littérature Française* (1898; Eng. trans. 1898); *Brunetière's Essays in French Literature*, trans. by D. Nichol Smith (1898); *Histoire de la Litt. Française Classique* (1905, etc.).

Brunhilda, the name of two queens. (1.) The Brunhild of the *Nibelungenlied*, queen of Iceland, wife of Gunther, who procured the murder by Hagen of Kriemhild's husband Siegfried. She is identified with Brynhilda, a beautiful maiden, one of the Valkyrie, in Norse mythology, whom Odin deprived of her divinity, and threw into a deep sleep, from which Sigurd awakened her. (2.) The other Brunhilda was a Visigoth princess, married (567) to Sigbert, king of Austrasia, and became (596) regent for her

two grandsons in the rule of half the Frankish kingdom, Fredegond ruling the other half for Clotaire II. On Fredegond's death (598) she became sole Merovingian queen, but was deposed and killed in 613.

Bruni, isl. of Tasmania, 32 m. long, with an area of 160 sq. m., in w. of Storm Bay, and 15 m. s. of Hobart Town; there is a lighthouse on s. end.

Bruni, LEONARDO (1369-1444), Italian humanist and historian, was born at Arezzo, devoted his youth to the study of the classics, and was papal secretary under four Popes (1405-15). He then retired to Florence, of which city he became the historian and (in 1427) the chancellor. Bruni's *Historiarum Florentinarum Libri XII.* (printed at Strassburg, 1610; a modern edition, Florence, 1856-60) is a monument of research; and his *Commentarius Rerum suo Tempore Gestarum* (vol. xix. of Muratori's *Script. Rerum Ital.*) and *Epistolæ Familiæ* (Florence, 1742) are full of interest regarding the history of the time. Though small in compass, the best known of Bruni's writings is the *Vita* of Dante, one of the most valuable of the early lives of the poet (Eng. trans. by P. H. Wicksteed, Hull, 1898). See C. Monzani's '*Vita di L. Bruni Aretino*,' in the *Arch. Stor. Ital.* (2nd series, vol. v. 1861).

Brünig Pass (3,396 ft.) leads from the Swiss canton of Unterwalden and Lucerne to that of Bern, reached at Meiringen in the Hasli or Upper Aar valley. It is extremely easy. Since 1888 it has been traversed by a little mountain railway.

Brünn, tn. and episc. see, cap. of Moravia, Austria, 70 m. N.N.E. of Vienna, at the foot of the Spielberg, an isolated hill rising 185 ft. above the town, and crowned with a citadel which from 1621 to 1855 served as

an imperial state prison, where, among other political offenders, Baron von der Trenck (1746-9) and the Italian poet Silvio Pellico (1822-30) were incarcerated. Among the churches the most noteworthy are the cathedral (15th century) and the Gothic church of St. James. There are also the handsome meeting-house of the Moravian Estates (built in 1876-81), the national (Franz) museum, the Moravian industrial art school, the technical high school, the picture gallery, and the blind institute for Moravia and Silesia. Brünn is one of the busiest industrial towns in the Austrian empire. Woollen factories are the most important; but the manufacture of machinery, leather, gloves, hats, chemicals, sugar, starch, spirits, brewing, dyeing, flour-milling, and brick-making, are carried on on a large scale. The town was besieged, but in vain, by the Hussites in 1428, by the Bohemian king George Podiebrad in 1467, by the Swedes in 1645, by the Prussians in 1742, and by the French in 1805; but the last named forced it to capitulate four years later. Pop. 110,000—of whom rather less than one-half are of Czech race, the rest being mostly of Teutonic descent.

Brunne, ROBERT OF. See MANNING, ROBERT.

Brunnen, vil. (much frequented in summer), Switzerland, on the N. shore of the L. of Lucerne, and in the canton of Schwyz. It is on the St. Gothard line, 18 m. E. by s. of Lucerne.

Brunner, HEINRICH (1840), German lawyer, born at Wels, Upper Austria. Since 1873 he has been professor of the history of law at the Berlin University. His works on the history of German, Frank, Norman, and Anglo-Norman jurisprudence are of great value—*Das Anglo-Normannische Erbfolgesystem* (1869); *Das Gerichtszeugnis und die Fränk-*

ische Königsurkunde (1873); *Mithio und Sperantes* (1885); *Zur Rechtsgeschichte der Römischen und Germanischen Urkunde* (1880). His two principal works are, however, *Die Entstehung der Schwurgerichte* (1871), in which he shows the relation between the English jury system and the Frankish methods of legal procedure, the connecting link being the Normans, and *Deutsche Rechtsgeschichte* (2 vols. 1887-92).

Brunnow, ERNST PHILIPP, COUNT VON (1797-1875), Russian diplomatist, was born at Dresden. After acting for Russia at the congress of Laibach, and in Turkey and the Hague, he was appointed ambassador to London in 1840, when he effected the convention which settled temporarily the affairs of the East on a satisfactory footing. Here he remained until the outbreak of the Crimean war (1854). He took part with Orlov (Orloff) in the Paris Conference (1856), and signed the treaty of peace. In 1858 he returned to London, and remained there until 1874.

Bruno, GIORDANO (?1550-1600), Italian philosopher, was born at Nola, in the kingdom of Naples. In his youth he was a Dominican monk, but fled (1576) to Switzerland on account of his heretical opinions. After spending two years (1577-9) in Geneva, he proceeded to Toulouse, and finally (1581) to Paris, where, in 1582, he published a satirical comedy, *Il Candelajo*, in which he ridiculed several classes and professions. Bruno next gave lectures on philosophy, and strongly attacked the Aristotelians. Thereafter he visited England (1583), where he contracted a friendship with Sir Philip Sidney, to whom he dedicated his two next works, the *Spaccio della Bestia Trionfante* (or 'Expulsion of the Triumphant Beast'), an attack upon Rome; and the *Cena delle Ceneri* (or

'Evening Conversations on Ash Wednesday'), in which the author defended the Copernican system of astronomy. Bruno's *Della Causa Principio ed Uno* (1584) and his *Del Infinito Universo e Mondi* (1584) are his chief metaphysical works, and in these he developed a pantheistic system. Bruno's philosophy seems to have attracted and influenced Spinoza, Descartes, Schelling, and other thinkers. He afterwards obtained (1586) a professorship at Wittenberg, where he published in 1587 his treatise *De Lampade Combinatoria Lulliana*. In 1592 he returned to Italy, but was at length arrested (1593) and imprisoned by the Inquisition. Refusing to recant his heresies, he was condemned to death, and was burnt at the stake in Rome (Feb. 17, 1600). His Italian writings were published by Dr. Wagner in 1830, and by P. de Lagarde in 1888-9; those in Latin by Gfrörer in 1834, and by Fiorentino in 1880-91. See the *Life of G. Bruno, the Nolan*, by Miss J. Frith (1887); *G. Bruno*, by L. M'Intyre (1903); and in German by A. Riehl (1900), Louis (1900), and Zandsack (1891); and see also the edition of his *Works* by F. Tocco (1891).

Bruno, ST. (c. 1040-1101), was born at Cologne, and became a canon of Rheims, and director of the schools of the diocese. In 1040, with six companions, he retired to the desert near Grenoble and founded the Carthusian order (1084). (See **CARTHUSIANS**.) Pope Urban II. summoned him to Rome; but after a few years of the papal court he retired (1094) into Calabria, where he founded a second Carthusian monastery at Della Torre. He was canonized in 1628. His day is October 6. See the *Acta Sanctorum*, and *Lives*, in German, by Löbbel (1899) and Gorse (1902).

Bruno THE GREAT (925-965), archbishop of Cologne (953) and

Duke of Lorraine (954), was son of Henry the Fowler and brother of Otho I. A celebrated scholar and statesman, he reconciled his brother and the French court, and is credited with the authorship of a commentary on the Pentateuch and of a work on the lives of the saints.

Brunow, LUDWIG (1843), German sculptor, born in the duchy of Mecklenburg-Schwerin. In 1871 Moltke gave him a sitting for a bust in bronze: in consequence of this he obtained the order for the *Moltke Memorial* (1875) at Parchim. In 1880 he executed two colossal statues of *Frederick I.* and *Frederick William II.* for Berlin. In 1886 he finished the statue of *Gustavus Adolphus* for Lützen, in 1893 a colossal equestrian statue of the *Grand Duke of Schwerin*, and in 1905 executed a bust of *Friedrich Wilhelm I.* Besides these works, he has produced the following groups: *The Love Messenger*; *The Realization of the Dream*; *The Bride of Corinth*, after Goethe; and a *Pegasus* for the National Theatre at Frankfort-on-the-Main.

Brunsbüttel, seapt. tn., prov. Schleswig-Holstein, Prussia, at mouth of riv. Elbe, 15 m. E. of Cuxhaven. The North Sea-Baltic Canal terminates in two locks at this place. Pop. 2,500.

Brunswick (Ger. *Braunschweig*). (1.) A sovereign duchy of the German empire, embracing five small enclaves and three larger divisions, surrounded by the provinces of Hanover, Saxony, and Westphalia. The N. division is, on the whole, fertile, and consists partly of undulating hills, offshoots of the Harz Mts. It partly merges into the Lüneburg Heath. The two S. divisions belong to the Harz and Weser Mts., while the river Weser crosses the W. division. Area, 1,424 sq. m. Pop. 500,000, the majority be-

ing Lutherans. The leading industries are agriculture (especially cattle-grazing and fruit-growing), mining (lignite, iron, asphalt) in the Harz, and some manufacturing (chiefly sugar, sulphuric acid, beer, and spirits). The duchy includes extensive forests. It has two votes in the Imperial Federal Council, and sends three representatives to the Imperial Diet. Originally Brunswick formed part of the duchy of Saxony, but in 1235 the independent duchy of Brunswick was created. Subsequently, along with Hanover, Lüneburg, Celle, and other territories, it was transferred and reconveyed several times as the various Brunswick dynasties were founded and died out. The direct Welf (Guelf) line became extinct in 1884, and since 1885 the duchy has been governed by a regent. (2.) Town, cap. of above, 32 m. by rail S.E. of Hanover. The central portions consist of the old town, built in typical German architectural style, surrounded by a chain of parks. Among the noteworthy public buildings are the cathedral (1172), containing the tomb of Henry the Lion, Duke of Saxony, and the ducal palace, with fine collections of pictures, majolica, and gems, among the finest in Germany. Spohr, the musician (1784), and the mathematician Gauss (1777) were born here, and Lessing died in the town (1781). The principal manufactures are jute-spinning, printing, the manufacture of sewing-machines, sugar, gold and silver wares. Pop. 140,000. The town owed much of its importance to the fact that it stood at the intersection of the trade routes from the Rhine to the Elbe and from Hamburg to Leipzig, and to its alliance with the Hanseatic towns (1274). (3.) City of Georgia, U.S.A., co. seat of Glynn co., situated on the Atlantic coast,

70 m. S.S.W. of Savannah. It has an excellent harbour, and commerce in cotton and lumber, and is visited as a summer and winter resort. Pop. 10,000. (4.) Town of Cumberland co., Maine, U.S.A., on the Androscoggin R., 25 m. N.E. of Portland, with which it is connected by the Maine Central Ry. It is the seat of Bowdoin College, and of the medical school of Maine. Flour, patent medicines, and canned goods are manufactured. Pop. 7,000. (5.) Town, Victoria, Australia, 3 m. N. of Melbourne, of which it is an industrial suburb. It has potteries and brickworks, iron foundries and sawmills. Pop. 24,000.

Brunswick, FRIEDRICH WILHELM, DUKE OF (1771-1815), fourth son of Duke Ferdinand, served in the Prussian army in the war against France (1792), and on the death of his father in 1806 continued his opposition to Napoleon, who abolished the duchy at the peace of Tilsit in 1808. In 1809 he cut his way through Germany, shipped to Heligoland, reached England, and served under Wellington in the Peninsula. Reinstated in his duchy by the allies in 1813, he afterwards took part in the campaign of 1814-15, and was killed at Quatre Bras. See *Life* by Spehr (1865).

Brunswick Black, a varnish composed of asphalt or pitch, linseed oil, and turpentine; used to give a glossy appearance to metal and other articles. Berlin black is a finer variety of the varnish.

Brunswick Green. See PIGMENTS.

Brunton, SIR THOMAS LAUDER (1844), consulting physician to St. Bartholomew's Hospital, London, was born in Roxburghshire, and educated at Edinburgh University. His first appointment was as lecturer on materia medica at the Middlesex Hospital in 1870, and in the following year he was appointed to St. Bartholomew's

Hospital. In 1886 he went to Paris to examine Pasteur's system of treatment for hydrophobia, and has also reported on the action of chloroform and of snake poisons. He has attended many distinguished patients, including King Edward VII. His principal publications are: *Text-Book of Pharmacology* (1892), *The Action of Medicines* (1897), *Disorders of Assimilation* (1901), *Circulation and Respiration* (1907), and *Therapeutics of the Circulation* (1908). He is also the author of *The Bible and Science* (1881).

Brunton, WILLIAM (1777-1851), Scottish mechanical engineer and inventor, son of a Dalkeith watchmaker, was known chiefly for his improvements in metallurgy; for his pioneer work in steam navigation (1814); for the curious walking machine—the 'steam-horse' (1813); and for his improved ventilation of collieries (1851).

Brusa, or BROUSSA, tn., Asiatic Turkey, at the base of Mt. Olympus or Keshish Dag, 60 m. S. by E. of Constantinople; has important silk manufactures, and produces fruit and wine. It is the seat of an archbishop of the Greek and of the Armenian Church. Near it are iron and sulphur springs, known formerly as Pithya. Connected by rail (26 m.) with its port, Mudania. Under the name of Prusa it was the capital of Bithynia, and for some years the residence of the younger Pliny. In 1329 it was captured by Orkhan, the chief of the Ottoman Turks; burnt by the Mongols (1402); occupied by Ibrahim Pasha of Egypt (1833); and nearly destroyed by an earthquake in 1855. Pop. 76,000.

Brush, CHARLES FRANCIS (1849), American electrician, was born at Euclid, Ohio, and is the inventor and manufacturer of arc lamps, the Brush dynamo, etc., and founder of the Brush Electric Co.

In 1899 he received the Royal Society's Rumford medal.

Brushes. A great variety of material is employed, according to the purpose for which the brushes are to be used. For coarse work, twigs of broom, birch, heather, and rushes are generally employed; also rope, yarn, and the fibre of cane, cocoanut, and many other plants. Scratch brushes for cleaning metal surfaces are made of wire; brushes for working in acids are made of spun glass. Small brushes are known as pencils, and for these the carefully-chosen hair of certain animals is used. For artists' pencils sable is the best and dearest, but the hair from the camel, the ichneumon, and the cow's ear is much used. Varnishing brushes, being rather coarse, are made from bears' fur; while badgers' hair, being long and elastic, is used for graining and gilding. By far the greatest number of brushes are made from pigs' bristles, obtained from Russia and Poland. They are classified according to colour, quality, length, and coarseness; and the whites are further bleached for particular purposes, such as tooth-brushes.

Brushes are divided into two classes, simple and compound—the former consisting of one tuft, the latter of many. Simple flat or round brushes are made by fastening a bundle of arranged bristles into the specially-shaped socket. In the manufacture of artists' brushes, the hairs, after cleaning, are arranged in bunches, the point being formed very carefully. This work needs delicate touch, and is done by women and children. The bunch is then tied and inserted in a quill which has previously been expanded by heating in hot water. On drying it contracts, holding the bunch securely. Metal caps are also used in place of quills. Other brushes are made of broom-corn and of feathers.

Compound brushes may be 'set' or 'drawn.' In the former, the tuft is fastened directly into the hole bored in the stock or head; in the latter, the bristles are bent double across a wire, which is then used as a loop to draw the tuft into position. Compound brushes are made chiefly by the Woodbury machine. Many materials other than wood—such as celluloid, ebonite, and metal—are used for stocks and handles. Bottle-brushes are made by fastening the bristles between two wires and allowing them to project on both sides. The wires are then twisted firmly together.

In electro-technics brushes are strips of copper gauge or carbon rods which convey the current from the terminals of an electric motor to the commutator, or in the case of a dynamo in the reverse direction.

Brush Turkey, the popular name of *Cathartus lathami*, of the order Gallinæ, which includes all domesticated poultry. The birds are natives of Australia, about the size of the common turkey, blackish brown in colour, and construct mounds in which the eggs are laid. See also MOUND BIRDS.

Brussels (Fr. *Bruxelles*), the capital of Belgium, stands near the middle of the country, 27 m. by rails. of Antwerp. The modern city is handsome, and has a ring of large industrial suburbs (Schaerbeek, St. Josse ten Noode, Ixelles, St. Gilles, Molenbeek St. Jean, Laeken, Anderlecht, and Itterbeek), separated from it by a girdle of exceptionally wide boulevards. In the heart of it, towards the N.W., is the older and lower town, inhabited chiefly by Flemings. Among the many fine buildings, the massive and modern pile of the Palais de Justice (1866-83) must rank first; the Hôtel de Ville (1402-54), the Brood Huis ('Bread House'), and the guild

houses are unique ornaments of the picturesque old market-place. The cathedral of St. Gudule is renowned for its statues, painted glass, and carved pulpit. In the park are the ministries of state and Belgian houses of parliament at its northern end, and at its southern the royal palace and the palace presented to William II. in 1829 by the nation, and now used by the academies of science, fine arts, and medicine. The palace of the fine arts and the museum of modern paintings are both extremely rich in works by the great Flemish masters. East of the park is the handsome and aristocratic (French) quarter of Léopold. Still farther east are the royal museum of the industrial and decorative arts (Palace of the Cinquantenaire), the museum of education, the museum of natural history, and the unique Wiertz museum. In April 1910 an international exhibition was opened by King Albert. Later it was partially destroyed by fire, in which the British section suffered considerably.

Brussels, together with her suburbs, is the seat of considerable industries, especially the manufacture of lace, furniture, bronzes, woollen, fine cottons, vehicles, etc. There is connection by canal with the Scheldt, with Ostend, and with the Sambre; and an extensive port has been constructed at Laeken, to the N.E.

Brussels is said to date from the 6th century. In the 11th it was chosen by the Duke of Lower Burgundy as his capital, and in 1477 it became the capital of Austrian Netherlands. Between 1815 and 1830 it was, alternately with the Hague, capital of the Netherlands, and in 1830 became capital of the new kingdom of Belgium. In 1695 the older town suffered from a bombardment by Marshal Villeroi. It was the centre of a flourishing school of art in the

19th century. Pop. 200,000, or including suburbs, 720,000. See Gilliat-Smith's *The Story of Brussels* (1906).

Brussels Conferences. Several international conferences have been held at Brussels—*e.g.* in 1874 an international declaration was drawn up defining the laws and usages of civilized warfare. (See BELLIGERENTS, RIGHTS AND DUTIES OF.) For a full discussion, see H. Wheaton's *International Law* (new ed. 1904). In 1876, Leopold, king of the Belgians, summoned to a conference at Brussels representatives—entirely unofficial—of the great powers, in order to decide upon the best methods for the exploration and opening up of Africa to European trade and civilization. It resulted eventually in the creation of the Congo Free State. In 1899-1900 another conference took place in the same city, for the suppression of the slave trade in Africa.

Brussels Sprouts, like the cabbage, cauliflower, and broccoli, a form of *Brassica oleracea*, is distinguished from the cabbage in the growth of small heads (each of them a miniature cabbage) in the axils of the leaves for the whole length of the stem, the leaves being cut away as the buds develop. Its cultivation is similar to that of the cabbage, a deep rich soil being necessary to bring it to perfection. Seeds are sown in February or March, and the plants should be set in the ground about twenty inches apart.

Brussels Sugar Convention. In 1898, and again in 1901-2, the representatives of the powers assembled at Brussels to discuss the abolition of bounties on the export of sugar, this result being finally achieved by an agreement dated March 1902. By this convention the powers (Great Britain, Germany, Austria-Hungary, Italy, the Netherlands, and Sweden)

undertake to suppress the direct and indirect bounties by which the production or export of sugar might benefit, and not to establish bounties of such a kind during the duration of the convention. In August 1903 the British Parliament passed the Sugar Convention Act, for prohibiting the importation of bounty-fed sugar. Opponents of the convention affirm that we now pay considerably more for sugar, and that the benefit to the West Indies is altogether out of proportion to the injury inflicted on the home consumers and the confectionery trades. Supporters of the convention urge that the increase in price is due merely to drought. They point out that bounties are unfair, and should be abolished whatever the result, and they believe that in time the convention will tend to increase production and to steady low prices. See SUGAR.

Brut, or BRUTUS, the hero of Troy, was great-grandson of Æneas, and on his banishment from Italy managed to reach Albion (Britain), whose gigantic warriors he overcame in battle, and took possession of the island. See Wace's *Brut* or *Geste des Bretons* (ed. Leroux de Lincy, 1836-8).

Brütt, ADOLF (1855), German sculptor, born at Husum; studied at Berlin. Among his works are *Saved* (1887) and *Eve with her Children* (1890), both in the National Gallery at Berlin. He executed in 1894 the *Emperor William I. Memorial* at Kiel, and in 1897 the *Bismarck Memorial* at Altona. For the Siegesallee in Berlin he produced *Margrave Otto the Indolent* (1899) and *King Frederick William II.* (1900). Other works are *The Emperor Frederick III.* (1903); *The Emperor William I.*, in Berlin; *Diana* (1903), in the National Gallery, Berlin. His statues are distinguished by close

and delicate fidelity to nature, and by energetic characterization.

Brütt, FERDINAND (1849), German painter, born at Hamburg; has lived mostly in Düsseldorf. His early canvases deal with peasant life—as, *A Peasant Deposition*, *The Hope of the Country*, and *Rest Disturbed*; but since 1880 he has made a speciality of town life, and has produced some remarkably good pictures in *Convicted* (now in the Hamburg Museum), *Acquitted*, *A Difficult Choice*, *On the Stock Exchange* (1888), and *The Peasant in Court* (1890), now at the Berlin Museum.

Bruttium, ancient name of the south extremity or 'toe' of Italy. The sea-coast was occupied almost entirely by Greek colonies; the interior was held by the Bruttii, who were subdued by Rome in 272 B.C. In the second Punic war they helped Hannibal, and after its conclusion their territory was confiscated.

Brutus, a Roman family of the Junian clan, of which the most famous members were:—(1.) LUCIUS JUNIUS BRUTUS, son of M. Junius and Tarquinia, sister of Tarquinius Superbus. When this king murdered his possible rivals, Lucius saved himself by pretending to be an idiot; hence his name Brutus, 'the imbecile.' After the foul outrage on Lucretia, Brutus vowed vengeance on the Tarquins, and roused the people to expel the king and his family. He became the first consul of Rome in 509 B.C., and executed his two sons, who were found guilty of a conspiracy to restore the Tarquins. Brutus fell the same year, fighting against Aruns, son of Tarquinius.

(2.) MARCUS JUNIUS BRUTUS (85-42 B.C.). By Cato he was imbued with a love of learning, which he retained throughout life. On the outbreak of the civil war in 49 he joined Pompey, and fought with distinction near Dyrrachium. After Pharsalia, in 48, he asked

and obtained pardon from Cæsar. In 46 Cæsar made him governor of Cisalpine Gaul. In 44 he was prætor, and, for no obvious reason, except that his great vanity and weak will succumbed to Gaius Cassius's strong persuasions, joined the conspirators who murdered Cæsar on March 15. (Cæsar's dying words, 'Et tu, Brute,' do not refer to Marcus, but to (3), who was a great friend and one of his heirs.) In 42 he and Cassius fought Antony and Augustus at Philippi: in a first engagement, Brutus defeated Augustus, while Cassius lost to Antony; in a second encounter, three weeks later, Brutus was completely defeated, and killed himself. His flagrant treachery to Cæsar justifies Dante in coupling him with Judas Iscariot and Cassius as undergoing the extremest punishment in hell. See Plutarch's *Lives* and Cicero's *Letters*, where Brutus is revealed in his true colours; Shakespeare's *Julius Cæsar*, in which the conception of his character is misleading, but, taken as it stands, has been very finely discussed by A. Göll's *Criminals of Shakespeare* (1909).

(3.) DECIMUS JUNIUS BRUTUS ALBINUS, another of the murderers of Cæsar, the hero of 'Et tu, Brute!' In 49 he commanded Cæsar's fleet which took Massilia, where he remained true to Cæsar, in spite of Mark Antony's attempts to draw him into a plot against Cæsar's life. After Cæsar's death he went to his province, Cisalpine Gaul; but the coalition of Antony, Lepidus, and Augustus induced him to attempt to join Marcus Brutus in Macedonia. On his way he was betrayed by a Gaulish chieftain to Antony, who had him put to death. See Boissier's *Cicero and his Friends* (1897).

Bruun, CHRISTIAN WALTHER (1831), Danish author and bibliographer, born at Copenhagen; was appointed (1863) director of the National Library at Copen-

hagen. He edited *Bibliotheca Danica*, 1482-1830 (1873-96); *Danske Samlinger for Historie, Topographie, Personal- og Litteratur-Historie* (1865-79); *Holbergs Epistler* (1865-75); and *Viser fra Reformationstiden* (1864); and written *Frederik Rostgaard og hans Samtid* (2 vols. 1870-1); *Curt Sivertsen Adelaer* (1871); *Slaget paa Kolberger Reede* (1879); *Gunde Rosenkrantz* (1885); *Kaj Lykke til Gisselfeld* (1886); and *Peter F. Suhm* (1898).

Brüx, tn., Bohemia, Austria, at the s. foot of the Erzgebirge, 45 m. N.W. of Prague, with lignite mines and manufacture of sugar, agricultural machinery, and spirits. Pop. 22,000.

Bruxelles. See BRUSSELS.

Bruyère. See LA BRUYÈRE.

Bry, or BRIE, THÉODORE DE (1528-98), goldsmith, engraver, and painter, was born at Liège. When a young man he spent some time in London, where he executed two engravings, now rare—viz. *The Procession of the Knights of the Garter in 1556* (12 plates), from M. Geeraerts; and *The Funeral of Sir Philip Sidney* (34 plates), from T. Laut. With his sons, Jean Théodore and Jean Israël (d. 1611), he published several illustrated books of travel, the best known being *Collectiones Peregrinationum in Indiam Orientalem et Occidentalem* (6 vols. 1590-9). This monumental work was continued by his sons, being published in 19 vols. (1599-1634) with Latin text, though some parts are in English, French, and German.—JEAN THÉODORE (1561-1623), son of above, was born at Strassburg. As an artistic engraver he was better known than his father, and executed *The Triumph of Bacchus*, *The Triumph of Jesus Christ*, *The Marriage of Isaac and Rebekah*, in the form of a frieze.

Bryan, ELMER BURRITT (1865), American educator, was born at

Van Wert, Ohio, and graduated at Harvard and Clark Universities. He was for some time superintendent of education in the Philippine Islands. Subsequent appointments have been as professor of psychology in Indiana University (1903), president of Franklin College (1905), and president of Colgate University (1909). His publications include *The Basis of Practical Teaching* and *The Longer Life*.

Bryan, WILLIAM JENNINGS (1860), Democratic candidate for the United States presidency, was born at Salem, Illinois. In 1888 he started as a lawyer at Lincoln, Nebraska. In 1890 he was elected for Illinois to Congress, where his success as an orator was immediate. In 1894 he became editor of the *Omaha World Herald*, and lectured through the country on free silver. In 1896 he was selected as the Democratic candidate for the presidency against M'Kinley. The contest was a battle between gold and silver—M'Kinley supporting the retention of the gold standard, and Bryan advocating the cause of the free coinage of silver. M'Kinley became president. In 1900 M'Kinley was again successful, with Bryan as his opponent. Mr. Bryan was once more (1908) brought forward as a candidate for the presidency, but was severely defeated by Mr. Taft. He has published *The First Battle* (1897), and *The Old World and its Ways* (1907). A volume of his *Speeches* has been published (1910).

Bryan, WILLIAM LOWE (1860), American author, born in Indiana, U.S.A., has been professor of philosophy since 1887, vice-president (1893-1902) of Indiana University, and president since 1902. In 1889 he married Charlotte A. Lowe, psychologist, and in collaboration with her has written *Plato the Teacher: Selections from Plato* (1897); *The Republic of*

Plato (1898); and *The Acquisition of a Hierarchy of Habits* (1899).

Bryanites. See METHODISM.

Bryansk. See BRIANSK.

Bryant, JACOB (1715-1804), English antiquary, was private tutor, and afterwards (1756) secretary, to the Duke of Marlborough. His chief writings are *Analysis of Ancient Mythology* (1774-6), and *Gemmarum Antiquarum Delectus* (1781), a work on the Marlborough gems.

Bryant, WILLIAM CULLEN (1794-1878), American poet and journalist, was born in Hampshire, Massachusetts. In 1816 he was admitted to the bar, settling soon after at Great Barrington. Ultimately he gave up the law in favour of a literary life. Meanwhile he had been contributing poetry and prose to the *North American Review*; and his *Thanatopsis*, a fine poem in blank verse, was printed in that journal. In 1825 he removed to New York as editor of the *N.Y. Review*. That paper ceased publication a year later, and he became assistant editor of the *Evening Post*, being subsequently, in 1829, promoted to the editorship. Thenceforward for many years he devoted himself almost entirely to journalism, though in 1832 a collection of his poems appeared, which was reprinted in England through Washington Irving. In his old age he returned to poetry, and produced several notable pieces, besides metrical translations of the *Iliad* (1870) and the *Odyssey* (1871-2). His complete works were published in 4 vols. (1883-4). See the *Life* by his son-in-law, Parke Godwin (2 vols. 1883); the monograph by Bigelow in the American 'Men of Letters Series' (1890); and E. C. Stedman's *The Poets of America* (1885).

Bryce, DAVID (1803-76), Scottish architect, born in Edinburgh. He devoted himself largely to

Bryce

the form of Gothic architecture known as 'Scottish Baronial,' in which style he built many castles and mansions. Among his public buildings in Edinburgh are Fettes College, Royal Infirmary, and Bank of Scotland. See *The Builder*, 27th May, 1876.

Bryce, GEORGE (1844), author and educationist, born at Mount Pleasant, Upper Canada. He was ordained a Presbyterian minister in 1871, and was appointed to Manitoba to organize a church and college. He was one of the founders of Manitoba University, and was the principal of Manitoba College (1877-1909), and president Royal Society of Canada (1909). His chief books are *Manitoba: its Infancy, Growth, and Present Condition* (1881); *Short History of the Canadian People* (1887); *Remarkable History of the Hudson's Bay Company* (1900); *Makers of Canada—Mackenzie, Selkirk, Simpson* (1905); *Everyman's Geology of Western Canada* (1907); and *The Romantic Settlement of Lord Selkirk's Colonists* (1909).

Bryce, RIGHT HON. JAMES (1838), statesman and man of letters, was born at Belfast. He was called to the bar in 1867, and entered the House of Commons in 1880 as the member for Tower Hamlets. In 1862 he published *The Holy Roman Empire* (20th ed. 1905), an expansion of his Arnold prize essay, and stepped into the front rank of historical writers. Since 1880 he has written a monumental work on *The American Commonwealth* (1888; new ed. 1910), *Two Centuries of Irish History, 1691-1870* (1888), *Impressions of S. Africa* (3rd ed. 1899), *Studies in History and Jurisprudence* (1901), and *Studies in Contemporary Biography* (1903). In Gladstone's short administration (February to August 1886), Mr. Bryce, who at the general election of 1885 had been elected for S. Aber-

deen, was under-secretary for foreign affairs, his chief being Lord Rosebery. In August 1892, when Gladstone was again in power, Mr. Bryce became Chancellor of the Duchy of Lancaster, with a seat in the cabinet; and in May 1894, on the resignation of A. J. Mundella, was promoted to be President of the Board of Trade in Lord Rosebery's administration. Here he remained till the defeat of the ministry on the cordite vote on June 21, 1895. The measures he has been instrumental in placing on the statute book include the City of London Parochial Charities Act (1883), the Guardianship of Infants Act, International Copyright Act (1886), Railway Rates Act (1894), and the Merchant Shipping Consolidation Act (1895). As President of the Board of Trade, he laid before Parliament (1895) a scheme for the construction of light railways. This was carried into law by his Conservative successor, Mr. Ritchie. During the Home Rule debates of 1886 and 1892, Mr. Bryce was a strenuous supporter of Mr. Gladstone's proposals. In January 1906 he was again elected for S. Aberdeen, and appointed (1905-6) Chief Secretary for Ireland, with a seat in the cabinet, which was followed in 1907 by his appointment as British ambassador at Washington, U.S.A. In this capacity he has been highly successful in promoting good relations between the U.S.A. and Canada. He was a member of the Royal Commission on the Medical Acts; and chairman of the Royal Commission on Secondary Education (1894). In 1902 he became one of the first fellows of the British Academy, and chairman of its historical and archæological committee.

Brydges, SIR SAMUEL EGER-TON (1762-1837), barrister and author. He did valuable work

as a genealogist in his edition of Collins's *Peerage of England* (1812), as a bibliographer in his *British Bibliographer* (1810-14) and *Censura Literaria* (1805-9), and most of all as an editor of early English literature by reprints, executed (1812-18) at his press at Lee Priory, of many rare and interesting treatises. See his *Autobiography* (1834).

Bryennios, PHILOTHEOS (1833), Greek theologian, was born at Constantinople. He represented the Greek Church at the Old Catholic conference at Bonn in 1875, and was chosen metropolitan (archbishop) of Serres (1875), and of Nicomedia (1877). In 1873 he discovered, in a monastery at Constantinople, the first complete MS. of the *Clementine Epistles* (pub. 1875), and the MS. of *The Teaching of the Twelve Apostles* (pub. 1883).

Brymner, DOUGLAS (1823-1903), Canadian archivist, born at Greenock, Scotland. He went to Canada in 1857, settling first in the Eastern Townships, Lower Canada, and later in Montreal, as journalist. In 1872 he was appointed to collect, take charge, and organize the department of archives, continuing in office for thirty-one years. His collection of manuscripts—English and French, originals and copies—amounts to 3,155 volumes, and his reports, published by the Department of Agriculture, contain synopses of the several papers and extracts from the more important of them. See *Dominion Archives* (from 1872).

Bryniolf, BISHOP (1605-75), Icelandic ecclesiastic, bishop of Skalholt (1639-75), made a valuable collection of old Icelandic MSS., many of which were sent by him to the king's library at Copenhagen by the hands of the traveller Thormod Torfæus; but a large proportion of the remainder perished soon after his death. See

G. Vigfusson and F. Y. Powell's *Corpus Poeticum Boreale* (1883).

Brynmawr, tn., Brecknockshire, Wales, on L. & N.W.R., 8 m. w. by s. of Abergavenny; has extensive coal mines and iron works. Pop. 7,000.

Bryology, the science of mosses. See MOSSES.

Bryony. Two climbing plants, both common in Britain, are popularly known as bryony, being distinguished, according to the colour of their tuberous roots, as white and black bryony. These two plants, though both climbers with perennial roots, annual stems, and berries which turn red in autumn, are really unrelated to each other. The white bryony (*Bryonia dioica*) belongs to the order of Cucurbitaceæ, or gourds; the black species (*Tamus communis*) is a member of the order of Dioscoreaceæ, or yams. The former bears palmate leaves, with tendrils at their bases, and round berries; whereas the latter bears heart-shaped leaves and elliptical berries. The black bryony sometimes goes by the name of Our Lady's seal, and its fruit once had much reputation as a cure for freckles.

Bryophyta, the name given to a division of the higher flowerless plants, comprising the Musci and Hepaticæ. See MOSSES and LIVERWORTS.

Bryozoa ('moss animals'), a name of the POLYZOA.

Bryum, a large genus of common mosses, forming small, dense patches on damp earth and rocks. The capsules are pear-shaped, with a double row of transverse teeth, and are pendent at the end of the stems.

Brzezany, tn., Galicia, Austria, 31 m. w.s.w. of Tarnopol. Pop. 11,000.

Brzeziny, tn., Russian Poland, Piotrkov gov., 14 m. E. of Lodz; has woollen manufactures. Pop. 8,000.

B.Th.U.

B.Th.U., or BRITISH THERMAL UNIT, is the unit quantity of heat employed by engineers. It is the amount of heat required to raise the temperature of 1 lb. of water from 49° to 50° F., and is mechanically equal to 778 ft.-lbs. of work.

B.T.U. See BOARD OF TRADE UNIT.

Buache, PHILIPPE (1700-73), French geographer; born at Paris; became geographer-royal (1729), and a member of the Academy of Sciences (1730). His principal works are *Considérations Géographiques et Physiques sur les Nouvelles Découvertes au Nord de la Grande Mer* (1753), and *Atlas Physique* (1754). His nephew, JEAN NICOLAS BUACHE DE LA NEUVILLE (1741-1825), also a geographer, wrote *Géographie Élémentaire Ancienne et Moderne* (1769-72).

Bubalis. See HARTEBEEEST.

Bubastis, in the Nile delta, Lower Egypt; once a famous city, but now a heap of ruins (Tell Basta), 40 m. N.N.E. of Cairo. The Pi-beseth of Ezekiel (30:17), it is described from personal knowledge by Herodotus (G. Rawlinson's ed., ii. 60, 137; 1875), under its Greek name of Bubastis. It had a magnificent temple to the goddess Ubasti, the Egyptian Artemis. It was captured by Mentor, the general of Artaxerxes III., and began to decay after the foundation of Alexandria. See Naville's accounts, 8th and 10th *Memoirs* of the Egypt Exploration Fund (1891-2).

Bubble, SOUTH SEA. See SOUTH SEA BUBBLE.

Bubo, an inflammatory swelling of a lymphatic gland in any part of the body. The term is usually confined to swelling of the glands of the groin. Buboec are divided into (1) *simple*, due to inflammation of a gland through ordinary irritation from an inflamed surface; (2) *specific*, an abscess inoculated with the pus of a chancre; and (3) the indolent

enlargement of the lymphatic glands which accompanies the development of the initial sore of syphilis. The treatment consists in rest in bed, hot fomentations, baths, opening freely, scraping and dressing with iodoform or other antiseptics. Should such treatment fail, the diseased glands must be excised.

Bubo. See OWL.

Bubonic Plague. See PLAGUE.

Bucaramanga, tn., Colombia, near the Lebrija R., 180 m. N.N.E. of Bogotá. It is one of the three great coffee markets of Colombia, and has hat and cigar factories. Iron, copper, and gold are found in the region. Alt. 3,250. Pop. 25,000.

Buccaneers, or FILIBUSTERS, piratical adventurers of divers nationalities who preyed upon Spanish trade and property in the W. Indies and on the neighbouring mainland in the 17th century. The buccaneers were originally cattle-hunters, who made San Domingo their headquarters; also Tortuga in 1630. San Domingo was full of wild cattle, and the buccaneers took their name from the grating or barbecue on which the flesh was roasted, which in the Indian language was called a *boucan*. The flesh was called *viande boucannée*, and the hunters *boucaniers*. Eight years later Spain destroyed this settlement; but the adventurers returned in force, and thenceforward, for about seventy years, were the terror of the Spaniards in that part of the world. The British conquest of Jamaica in 1655 gave the buccaneers a new headquarters. The leaders among the earlier buccaneers were Montbars, Olonnais (Frenchmen), Mansvelt, and Henry Morgan (a Welshman). New Segovia, in Honduras, was taken and sacked in 1654; Maracaibo and Gibraltar, on the Gulf of Venezuela,

were plundered; and Providence, in the Bahamas, was settled by the freebooters. Morgan distinguished himself especially by the capture and sack of Puerto Bello; but his successes, directed from Jamaica, induced Great Britain and Spain, in 1670, to conclude a treaty in virtue of which buccaneering was to be suppressed. Morgan and his friends revolted against this, and in 1671, with a fleet of thirty-nine vessels, crossed to the mainland, traversed the isthmus, and took and burnt the rich town of Panama, with circumstances of great cruelty and outrage. Morgan afterwards made terms with the British government, became deputy-governor of Jamaica, and died a knight. A second time the outlaws took Puerto Bello. In 1680 they again crossed the isthmus of Panama, took Santa Maria, and embarked on the Pacific under John Coxon. Defeating a Spanish squadron, various bands, under Sharp, Watling, and Sawkins, pushed south to the coasts of Peru and Chile, and returned by Cape Horn. In 1683 Van Horn, with six vessels and 1,200 men, took and plundered Vera Cruz. Another body of pirates, under John Cook, in 1683 went by Cape Horn, picked up at sea a vessel which had been sent out to them by English sympathizers under the command of one Eaton, and after Cook's death served under Edward Davis and Swan in the Pacific, pushing up to Panama, and being there joined in 1685 by more buccaneers, who had crossed the isthmus—one body under Grognet and L'Escuyer, and another under Townley and others. They won extraordinary successes, but fell out among themselves, the result being that the French and English deserted each other. Davis sacked Leon and Realejo (Ria Lexa), in Nicaragua, and returned by Cape Horn in 1688. Townley and Swan took different

courses. Some of the survivors afterwards co-operated with a French expedition against Cartagena. The buccaneers were further divided by the war which broke out between Great Britain and France in 1689, and in 1697 they were very roughly handled by a combined English and Dutch fleet outside Cartagena. After the treaty of Ryswick they were discountenanced by both England and France. From that time they gradually disappeared, although bands of pirates lingered on at Providence in the Bahamas. William Dampier, the navigator (later in the royal navy, served with Cook, Davis, and Swan. See PIRACY; also Exquemelin or Oexmelin, *De Americaensche Zee Roovers* (1678; Eng. trans., *Hist. of the Bucaniers of America*, 1741); Wafer, *Voyage and Description of the Isthmus of America* (1699); Archenholz, *Hist. of the Pirates, Freebooters, or Buccaneers of America* (trans. 1807); Capt. Chas. Johnson, *Hist. of Highwaymen and Pirates* (2nd ed. 1734-42); Burney, *Hist. of the Buccaneers of America* (1816-1902); Pyle, *Buccaneers and Marooners of America* (1891); Dampier, *New Voyage Round the World* (1697; new ed. 1847); Stockton, *Buccaneers and Pirates of our Coasts* (1898); and Haring's *Buccaneers in the W. Indies in the 17th Century* (1910).

Buccinator (Lat. 'trumpeter'), the muscle forming the wall of the cheek.

Buccino, tn., prov. Salerno, Italy, 25 m. w. of Potenza. Pop. 6,000.

Buccinum. See WHELK.

Buccleuch, old par. in Ettrick par., Selkirkshire, Scotland; gave title to the dukes of Buccleuch.

Buccleuch Family. The Border house of the Scotts of Buccleuch is traced back to Sir Richard le Scot, a man of distinction in the reign of Alex-

ander III. of Scotland. He died in 1320, and from him was lineally descended Sir David Scot of Branxholm, who sat in the Parliament held by James III. at Edinburgh in 1487, under the designation of 'Dominus de Buccleuch,' being the first of the family so designated. His grandson was Sir Walter Scott of Branxholm and Buccleuch, who figures in Sir Walter Scott's *Lay of the Last Minstrel*. The first 'Lord Scott of Buccleuch' was Sir Walter Scott, warden of the Western Marches, who is celebrated for his rescue of one of his attendants, 'Kinmont Will,' from the castle of Carlisle. He was elevated to the peerage in 1606 as Lord Scott of Buccleuch. He afterwards won distinction in the Netherlands under Maurice, Prince of Orange. The first Earl of Buccleuch was Walter Scott, who received the title in 1619. He had command of a regiment under the states of Holland against the Spaniards. His grand-daughter, Anne, Countess of Buccleuch, married, in 1663, the Duke of Monmouth, illegitimate son of Charles II. On their marriage they were created Duke and Duchess of Buccleuch. The duke's honours were forfeited on his execution in 1685, while those of the duchess in her own right remained unaffected by the attainder. Francis, her grandson, succeeded as second duke. Henry, the third duke, succeeded to the dukedom of Queensberry, the title from that time being Buccleuch and Queensberry. The present holder of the title is the sixth duke. One of the branches of the Buccleuch family was that of Harden, which produced the Scotts of Raeburn, ancestors of Sir Walter Scott. See Fraser's *The Scotts of Buccleuch* (1878).

Bucentaur, the name of the state galley of the republic of Venice, in which the doges an-

nually, from 1311 to 1789, on Ascension day, 'married the Adriatic,' in token of Venice's sovereignty of the seas. This custom is traced to a naval victory gained on Ascension day 1177 by Doge Sebastiano Liani over the emperor Frederick Barbarossa. The last *Bucentaur*, made in 1722-9, was burned by the French in 1798.

Bucephala, a city on the Hydaspes (the Jhelum), in N. India, founded by Alexander the Great in 326 B.C. in honour of his horse Bucephalus.

Bucephalus, favourite charger of Alexander the Great, which died on the banks of the Hydaspes in N. India in 326 B.C.

Bucer, or BUTZER, MARTIN (1491-1551), German reformer, was born in Lower Alsace. He entered the Dominican order at fifteen, but in 1518 was converted by Luther and by Erasmus's writings to the reformed faith. Quitting the order in 1521, he became court preacher to the Elector Palatine, and in 1523 pastor in Strassburg, which place he did much to make the centre of Protestant light and learning. During the controversy on the eucharist between Luther and Zwingli, in which the Strassburgers supported the latter, Bucer sought to promote agreement among the reformers; but being compelled to leave Strassburg because of his refusal to accept the Augsburg Interim (1549), he went, at Cranmer's invitation, to England, where he was appointed regius professor of divinity at Cambridge, and lectured there until his death. His *Correspondence* with the Landgrave Philip of Hesse was published by Lenz in 1880-91. See Erichson, *Martin Butzer* (1891); and Baum, *Capito und Butzer* (1860).

Buch, CHRISTIAN LEOPOLD VON, BARON VON GELMERSDORF (1774-1853), Prussian geologist,

born at the castle of Stolpe, in the Uckermark. He contributed largely to the development of geology, though his extreme view of the Vulcanian theory of the origin of the earth's crust is no longer tenable. In 1815 he accompanied the botanist Smith to the Canaries, and published *Physikalische Beschreibung der Kanarischen Inseln* (1825). Besides this he wrote *Beiträge zur Bestimmung der Gebirgsformationen in Russland* (1840); *Betrachtungen über die Verbreitung und die Grenzen der Kreidebildungen* (1849). He prepared a geognostic chart of Germany in 42 sheets (2nd ed. 1832), and wrote monographs on the *Terebratula* (1834), *Spirifers* (1838), *Leptæna* (1842), *Ceratites* (1849). A complete edition of his works appeared in 4 vols. (1867-85).

Buchan, dist. now included in Banffshire and Aberdeenshire, Scotland, N.E. corner between the rivers Deveron and Ythan. The district gives its title to one of the most ancient of Scottish earldoms, held by Comyns, Stewarts, and Erskines. The coast-line of 40 m. is mostly bold and rocky, especially at the *Bullers* ('boilers') of Buchan (6 m. S. of Peterhead), so called in reference to the 'boiling' of the cauldron-like 'pot' in its granite cliffs during storms. Formerly a haunt of smugglers, it has been the subject of pen pictures by Sir Walter Scott and Dr. Johnson. See *The Book of Buchan*, ed. by J. F. Tocher (1910); and Pratt's *Buchan* (new ed. 1901).

Buchan, ALEXANDER (1829-1907), Scottish meteorologist, became secretary to the Scottish Meteorological Society in 1860, and was for many years curator of the library and museum of the Royal Society of Edinburgh. Among his works are *Handy Book of Meteorology* (1867), *Introductory Text-book of Meteorology* (1871),

and *Atmospheric Circulation and Oceanic Circulation* ('Challenger' Reports for 1889 and 1895).

Buchan, DAVID (1780-?1837), British explorer. In 1818 he, with Franklin, received the command of two vessels, the *Dorothea* and the *Trent*, with the charge to find a way from the Atlantic to the Pacific Ocean. Unable to get beyond Spitzbergen, Buchan returned, and was appointed high sheriff of Newfoundland (1825). A few years later he sailed again into northern seas, but never returned.

Buchan, ELSPETH (1738-91), Scottish religious enthusiast, was the daughter of a Banffshire innkeeper. Having pretended to miraculous powers, she and her followers were expelled from Irvine, and established themselves near Closeburn, Dumfriesshire. According to Robert Burns, they held community of goods and of women. See Train's *The Buchanites from First to Last* (1846).

Buchan, PETER (1790-1854), ballad collector, born at Peterhead, Scotland. In 1819 he constructed a new press on an original plan, which was worked with the feet, and printed from wood, stone, and copper, as well as from ordinary type. Importance attaches only to his collection of *Ancient Ballads and Songs of the North of Scotland* (2 vols. 1828; new ed. 1845).

Buchan, WILLIAM (1729-1805), Scottish physician, a native of Ancrum, Roxburghshire, practised medicine at Ackworth (Yorkshire), Sheffield, Edinburgh (c. 1766), and after 1778 in London, where he was well known for his medical skill, convivial habits, and great benevolence. His chief work, *Domestic Medicine* (1769), the first English book of its kind, reached its twenty-first edition in 1813.

Buchanan (41,644 ac.), par., W. Stirlingshire, Scotland, 2 m. N.W. of Drymen station. Wild and barren tract of mountainous country;

only small portion under cultivation. Buchanan Castle is a fine seat of the Duke of Montrose. Pop. 500.

Buchanan, CLAUDIUS (1766-1815), acted as curate to John Newton, later (1797) as an Indian chaplain; and finally (1799-1808) was vice-provost of the Fort William College, founded at Calcutta by Wellesley. He undertook important tours through S. and W. India, investigating native religions, examining the Christian churches and libraries, and doing much to forward learning and the dissemination of the Scriptures. See *Life* by Pearson (1819).

Buchanan, GEORGE (1506-82), Scottish historian and scholar, born at Killearn. He was a kinsman of James VI.'s goldsmith, George Heriot (the 'Jingling Geordie' of *The Fortunes of Nigel*). From 1520-2 Buchanan studied 'the humanities' at the University of Paris. In 1526 he proceeded with John Mair or Major to Paris, where he entered at the Scottish College, and (1528) obtained the M.A. degree. For some years (from 1528) he held a professorship in the college of Sainte-Barbe, and in 1535 he returned to Scotland in the capacity of tutor to the young Earl of Cassillis (Gilbert, third earl, 1517-58), whose subsequent career was unquestionably influenced by the teaching of Buchanan. King James V. now engaged him as tutor to one of his natural sons, James Stewart, who later became abbot of Kelso. But the anger aroused among the higher clergy by his three powerful satires (*Somnium*, *Palinodia*, and *Franciscanus*), in which he held up to contempt the ignorance and depravity of the monks, led to his imprisonment, as a Lutheran, in the castle of St. Andrews; from which, however, he speedily made his escape, and sought refuge in England (1539), but soon crossed

to France, where he received the appointment of professor of Latin in the college of Bordeaux, one of his pupils being the young Montaigne. This position he held till 1542, when he accepted a professorship in Paris. In 1547, however, he was induced by his friend Gouvéa, principal of the new university of Coimbra, Portugal, to exchange his chair in Paris for a similar appointment at Coimbra, where Buchanan's brother Patrick was also a professor. But Buchanan's Lutheranism soon brought him into conflict with the Portuguese clerics, and he was made to undergo a period of confinement in a monastery. Thereafter he visited England, and later (1552) France, where he wrote his tragedy *Jephthes*, dedicating it to the Maréchal Comte de Brissac, who appointed Buchanan tutor to his son Timoléon de Cosse. After five years of this life he again returned to Scotland, and became successively classical tutor to the young Queen Mary, principal (1566) of St. Leonard's College, St. Andrews, and (1567) moderator of the General Assembly of the Reformed Church of Scotland, of which he had formally become a member about 1562. His sympathies were consequently all on the side of the Protestant lords in their revolt against Queen Mary; and his sentiments were displayed with much arrogance and vehemence in his *Detectio Mariæ Reginae* (1569).

On the assassination of the Regent Moray (1570), the queen being now a prisoner of her cousin Elizabeth, Buchanan was chosen as one of the preceptors of the boy-king, to whom he afterwards dedicated his *De Jure Regni apud Scotos* (1579), and who owed to this erudite instructor the scholarly attainments which distinguished him in after life. For a short time Buchanan was director of the chancery, and then (1570) for

some years keeper of the privy seal, an office which he resigned (1578) in favour of his nephew, Thomas Buchanan of Ibert, near his native Killearn. The closing event of his life was the publication (1582) of his famous *Rerum Scoticarum Historia*. His death took place at Edinburgh.

Buchanan's outstanding work is undoubtedly the *History of Scotland*; but the high scholarship which made him remarkable throughout Europe is eminently displayed in his Latin paraphrase of the Psalms of David, and his power as a debater and a reformer is manifest in the *De Jure Regni*. One distinguishing characteristic was a strong Rabelaisian humour. The only two editions of his works are those of Ruddiman (Edin. 1715) and Burman (1725).

Until 1890, Irving's *Life of Buchanan* (1817) was the modern authority; but it was then superseded by P. Hume Brown's more precise and critical work, *George Buchanan, Humanist and Reformer* (new ed. 1906). See also *George Buchanan: A Memorial, 1506-1906*, by various writers (1907).

Buchanan, JAMES (1791-1868), president of the United States, was born near Mercersburg, Pennsylvania. He was called to the bar, in 1812. In 1820 he was elected a member of Congress, and in 1831 became minister to Russia, with which country he concluded a commercial treaty very advantageous to the United States. He returned home in 1833. Elected a senator in December 1834, he favoured the annexation of Texas by the United States. Political parties having been greatly disturbed, Buchanan threw in his lot with the Democratic party, and from 1845 to 1849 he was secretary of state to President Polk. In 1853 he was appointed minister of the United States in London; and in 1856 he was elected president

of the United States. Although his principles would not have allowed him to become individually a slaveholder, he strongly supported the maintenance of slavery as an existing institution. After Lincoln's election to the presidency in 1860, he retired from public life. See *Mr. Buchanan's Administration on the Eve of the Rebellion*, written by himself (1866); Greeley's *American Conflict* (1864); and *Life of Buchanan*, by G. Ticknor Curtis (2 vols. 1883). A collected edition of his works, by J. B. Moore, appeared in 1908.

Buchanan, ROBERT WILLIAMS (1841-1901), poet, novelist, and dramatist, was born in Warwickshire, of Scottish parents. His first volume of poems, *Under-tones*, appeared in 1860; but he rose to a much higher level in his *London Poems* (1866). The life of the poor of London is here vividly, humorously, and pathetically described. Among his subsequent poetical works are *The Book of Orm* (1870), *Balder the Beautiful* (1877), *The City of Dreams* (1888), and *The Wandering Jew: a Christmas Carol* (1893). His miscellaneous works include *The Land of Lorne* (1871), *David Gray* (1868), and *The Hebrid Isles* (1882). He had much success as a novelist—e.g. *The Shadow of the Sword* (1876), *God and the Man* (1881), *The New Abelard* (1884), *The Heir of Linne* (1888), *Rachel Dene* (1894), and *The New Rome* (1899). In conjunction with H. Murray, he also wrote *The Charlatan* (1895). As a playwright he had several distinct successes—*Lady Clare*, *Sophia*, and *Joseph's Sweetheart*—intermingled with many failures. Buchanan was at war with the critics nearly all through his literary career. His attack on Rossetti and other poets in his pamphlet, *The Fleshly School of Poetry*, provoked a famous rejoinder from Swinburne.

Buchanites. See BUCHAN, EL-SPETH.

Buchan Ness, or BODDAM POINT, rocky peninsula, 3 m. s. of Peterhead, Aberdeenshire, Scotland; most easterly point in Scotland.

Bucharest, or BUKHAREST (Roum. *Bucuresci*), tn. and cap. of Roumania, situated on both banks of the river Dimbovitza, in the midst of a fertile plain, 30 m. N. of the Danube. It is surrounded by modern fortifications, constructed after the plans of the Belgian general Brialmont. Bucharest was much improved during the last two decades of the 19th century, and is now a very handsome city. It is the seat of the Roumanian Greek-Orthodox primate and of a Roman Catholic bishop. Among the principal streets, besides the boulevards, are the Strada Lipsani, the commercial quarter, on which stands the National Bank, one of the finest buildings in the city; and the Calea Victoriei, where are situated the Royal Palace, the National Theatre, Post Office, etc. Among other noteworthy edifices are the Athenæum (built 1887), art exhibition, library, university, and the law courts (1897). Bucharest has several public gardens—*e.g.* the Cismegiu, in the middle of the city; and the Shoseaua Kisselef, in the neighbourhood, a sort of Champs Elysées. Among the churches are the cathedral (1656), on a commanding site above the city; the Domnitza Balasa, in the Byzantine style, lavishly decorated; St. Spiridon (rebuilt in 1890); the chapel Stravropolos, small, but a gem of Byzantine art. Bucharest possesses a university (founded in 1864), with 4,144 students in the different faculties in 1903-4; two Greek-Orthodox seminaries; an academy of arts, and a conservatory of music; and is the seat of the Roumanian Academy

of Sciences. It is also the centre of the railway system of the country. Manufacturing industry is yet in its infancy, but the commerce is very active, Bucharest being the distributing centre for the whole of Roumania as well as for some parts of the Balkan Peninsula. The climate is extreme, with very hot summers and very cold winters, the latter owing to the winds from the north. Pop. 300,000. From the 15th century until 1698 it was the winter residence of the princes of Walachia. It was devastated by plague on several occasions, especially in 1794 and 1812, when over 50,000 persons perished; by severe earthquake in 1802; by fire in 1847. In 1859, on the union of the provinces of Walachia and Moldavia, it became the capital of the country. Here were concluded the treaty of 1812, between the Turks and the Russians; and the treaty of 1886, between the Servians and the Bulgarians.

Buchau, tn., Württemberg, Germany, 32 m. s.w. of Ulm, with cotton mills. It was formerly famous for its imperial abbey (of nuns), founded in the 8th century. Pop. 2,400.

Bucher, LOTHAR (1817-92), German politician, was born at Neu-Stettin. In 1848 he was elected to the National Assembly, and became a democratic leader. With others he was condemned to imprisonment for refusing to pay taxes, but escaped to England, where he acted as correspondent to the *National Zeitung*. In 1860 he returned to Germany, and became Lassalle's literary executor. Bismarck made him his private secretary. He was responsible for the constitution of the N. German Confederation, and was intermediary in the Hohenzollern overtures for the Spanish crown. He was strongly anti-British in sentiment. See Busche's *Bismarck*;

Some Secret Pages of his History (1898); and *Bucher's Leben und Werke* (1890).

Bucheze, PHILIPPE BENJAMIN JOSEPH (1796-1865), French philosopher and politician, was born at Matagne-la-Petite (now in Belgium). A thorough democrat, he took part in numerous conspiracies against the Bourbons, and was one of the founders of the French Carbonari Society, which made several attempts at revolution. About 1825 he attached himself to the St. Simonian Society, but left it in 1829, and shortly afterwards founded a Neo-Catholic school, and, to expound the doctrines of Buchezism, published a periodical, *L'Européen* (1831-48). Expositions of his theory of the progress and development of the human race are contained in *L'Introduction à la Science de l'Histoire* (1833), *Essai d'un Traité Complet de Philosophie au Point de Vue du Catholicisme et du Progrès* (1839-40), and *Traité de Politique et de Science Sociale* (1866). In conjunction with Roux Lavergne he published *L'Histoire Parlementaire de la Révolution Française* (40 vols. 1834-8)—one of the chief sources of information regarding the French revolution. At the revolution of 1848 he was made president of the Constituent Assembly.

Buchholz, tn., Saxony, Germany, on riv. Sehna, 18 m. s. by E. of Chemnitz; is largely engaged in the manufacture of lace (an industry dating from the 16th century), and has many bookbinding establishments. Pop. 9,500.

Büchner, FRIEDRICH KARL CHRISTIAN LUDWIG (1824-99), German physician and naturalistic philosopher, was born at Darmstadt, and qualified for the medical profession. While he was lecturer in the university at Tübingen he brought out *Kraft und Stoff* (1855; 20th ed. 1902; Eng. trans. 1870), which aroused

violent controversy. His later writings were devoted to the popularization of Darwinism and similar theories. Of these works may be mentioned *Die Darwinsche Theorie* (5th ed. 1890); *Der Mensch und seine Stellung in der Natur* (1870; 3rd ed. 1889), trans. into Eng. under the title *Man in the Past, Present, and Future* (1872); *Der Fortschritt in Natur und Geschichte im Licht der Darwinischen Theorie* (1884); *Das Goldene Zeitalter oder das Leben vor der Geschichte* (2nd ed. 1891); *Die Macht der Vererbung* (1882); *Licht und Leben* (1881); *Das künftige Leben und die moderne Wissenschaft* (2nd ed. 1889). He translated into German Lyell's *Antiquity of Man* (2nd ed. 1873). See his biography in *Last Words on Materialism* (Ger. 1901), by his brother, A. Büchner.

Bucine, tn., Italy, 25 m. S.E. of Florence. Pop. 8,000.

Buck, LEFFERB (1837-1900), American engineer, born at Canton, New York. He was a noted bridge builder, constructing many in the U.S.A. and S. America. His rebuilding of the Suspension bridge at Niagara Falls was his greatest achievement.

Buck-bean. See BOG BEAN.

Bückeberg, cap. of the principality of Schaumburg-Lippe, Germany, 6 m. E.S.E. of Minden. From 1770 to 1776 Herder was court preacher here. Pop. 5,700.

Bucket-shop. See STOCK EXCHANGE.

Buckhaven, fishing tn., Fifeshire, Scotland, on the Firth of Forth, 1 m. S.W. of Methil. Manufactures cordage and nets, and has coal mines in neighbourhood. Pop. 8,000.

Buckhound, a breed of dog formerly very common in England, but comparatively rare now. It used to be exclusively employed for buck-hunting, and closely resembles the staghound. Until 1897 a royal pack was maintained.

In 1901, on the recommendation of a select committee to consider the provision to be made for the crown, the mastership of the buckhounds and the royal hunt were abolished.

Buckie, *quoad sacra* par. and fishing tn., in par. of Rathven, N. Banffshire, Scotland, 7 m. N.E. of Fochabers, with stations on the G.N.S.R. and H.R. It has two harbours. It is a fishing centre for the district between Findhorn and Banff, and has rope, net, and sail factories, and a distillery. Pop. 7,500.

Buckingham, munic. bor., mrkt. tn., and par., Buckinghamshire, England, on the Ouse and a branch of Grand Junction Canal, station on Bletchley and Banbury line (L. & N.W.R.), 17 m. N.W. of Aylesbury. The town comprises three districts—the Borough, Bourton Hold, and Prebend End. The industrial products include malt, flour, condensed milk, and artificial manure. The grounds and mansion of Stowe lie 3 m. to the N.W., where the famous gardens were first laid out by Richard Temple, Lord Cobham. Pop. 3,000.

Buckingham, tn., Labelle co., Quebec, Canada, on the Rivière du Lièvre, 20 m. N.E. of Ottawa. Pop. 3,000.

Buckingham, GEORGE VILLIERS, FIRST DUKE OF (1592–1628), was the second son of a Leicestershire knight, Sir George Villiers. His handsome person and engaging manners early won for him court favour and rapid promotion. In the course of two years (1616–18), after the fall of Carr, Earl of Somerset, he was knighted, and was created successively Viscount Villiers, Baron Waddon, Earl of Buckingham, and Marquis of Buckingham. In 1620 he married the daughter of the Earl of Rutland, the richest heiress in the kingdom. During the negotiations for a treaty of marriage

between Prince Charles and the Spanish Infanta, Buckingham accompanied the prince on his fruitless mission to Spain; and he continued to maintain his ascendancy after Charles's accession to the throne in 1625. But those events which culminated in the failure of the expedition against Cadiz greatly diminished Buckingham's popularity. On two occasions Parliament attempted his impeachment, but each time this measure was thwarted by the dissolution of Parliament by the king. In 1627 Buckingham commanded a fleet sent to relieve La Rochelle; but he was unsuccessful, and returned in disgrace to England. Next year he planned a second expedition against La Rochelle, and went down to Portsmouth to embark. On August 23 he was stabbed to the heart by a disappointed officer named John Felton. Buckingham's character has been well portrayed by Scott in *The Fortunes of Nigel*; also by Dumas in the *Vicomte de Bragelonne*. See S. R. Gardiner's *Hist. of Eng., 1603–42*; Buckingham's *Memoirs* (1819); his *Life and Times*, by Mrs. A. T. Thomson (1860); and *Life*, by P. Gibbs (1908).

Buckingham, GEORGE VILLIERS, SECOND DUKE OF (1628–87), son of the preceding, was born at Westminster. On the outbreak of the civil war he served with the royal forces at the storming of Lichfield Close (1643). At the restoration he became one of the most influential men at court. The downfall in 1667 of the chancellor Clarendon made him paramount; and Pepys records that at this time the king had 'become a slave to the Duke of Buckingham.' Buckingham, however, became more and more deeply involved in political intrigues, notably with France, until at length, in 1674, the king definitely threw

him over in consequence of pressure from both houses of Parliament. At the accession of James II. his public career was practically at an end. He died the year before the English revolution, and was buried in Westminster Abbey. Buckingham was an accomplished courtier, and the author of certain satirical poems, political pamphlets, and a comedy entitled *The Rehearsal*, which held the stage for a long time, and probably inspired Sheridan's *Critic*. The latter was first printed in 1672; his *Miscellaneous Works* in 1705. Sir Walter Scott has portrayed Buckingham in *Peveril of the Peak*; and Butler in *Hudibras* has delineated him with merciless accuracy in 'A Duke of Bucks.' See *Life* by Winifred, Lady Burghclere (1903).

Buckingham and Chandos, RICHARD PLANTAGENET TEMPLE NUGENT BRYDGES CHANDOS GRENVILLE, SECOND DUKE OF (1797-1861), only child of the first duke, known as Marquis Chandos, author of the Chandos clause in the Reform Bill of 1832, by which the county franchise was fixed at £50; was M.P. for Buckinghamshire (1818-39). He was popularly called 'the farmer's friend,' and obtained a commission for the relief of agriculturists (1836). He took office under Peel, but opposed the repeal of the Corn Laws (1845-46). In 1839 he succeeded to the dukedom and £100,000 a year, but by lavish expenditure became bankrupt for over a million in eight years; and many of his estates, with the valuable library at Stowe, were sold. His interesting series of *Memoirs of the Courts and Cabinets* (from George III. to Victoria) were published in 1861, and his *Private Diary* in 1862.

Buckingham, JAMES SILK (1786-1855), English journalist, was born at Flushing, near Falmouth. At first a seaman, he later founded and edited the *Calcutta*

Journal (1818), which was suppressed for its criticism of the government; the *Oriental Herald and Colonial Review* (1824), which was designed to spread information regarding India; and finally the *Athenæum* (1828). See his *Autobiography* (1855).

Buckingham Canal, salt-water canal connecting Madras with the Godavari, British India.

Buckinghamshire, or BUCKS, inland county, England, bounded on the N. by Northamptonshire, on the W. by Oxfordshire, on the E. by Middlesex, Hertfordshire, and Bedfordshire, and on the S. by the Thames. Its greatest length is 53 m.; its extreme breadth, 27 m. The surface is on the whole undulating, and the highest part is the chalk range of the Chiltern Hills (900 ft.), near Wendover. The soil is fertile, especially in the centre and the south. The vale of Aylesbury is one of the most productive districts in the county, and is noted for its dairy produce; its sheep are famed for the weight and the length of their wool. The Chilterns are well wooded, especially with beeches. The chief rivers of the county are the Thames and its tributaries the Colne and the Thame; the N. part is in the Ouse watershed. The Grand Junction Canal, the G.W.R., and N.W.R. are the means of communication. The county town is Buckingham, but the chief commercial centre is Aylesbury. The principal industries are agriculture (wheat being the most important crop), straw-plaiting, lace-making, paper-making, and turnery at High Wycombe. There are three parliamentary divisions—Aylesbury, Buckingham, and Wycombe. Eton school is situated in the county. Area, 636 sq. m. Pop. 185,000. See Lipscomb's *Buckinghamshire* (4 vols. 1847); Gibb's *Buckingham* (1878-82); and Clement Shorter's *Buckinghamshire* (1910).

Buckland, FRANCIS TREVELYAN (1826-80), English naturalist, was born at Oxford. After studying medicine for five years at St. George's Hospital, London, he was house surgeon there from 1852-3; then assistant surgeon to the 2nd Life Guards from 1854-63, during which time he devoted himself to the study of zoology, and published *Curiosities of Nat. Hist.* (1857-72). He was a constant contributor to the *Field* from its establishment in 1856 till 1865, and founded *Land and Water* in 1866. He was the highest authority of his day on pisciculture, especially on the artificial rearing of salmon; and in 1865 he promoted an exhibition of fisheries at South Kensington. Buckland was inspector of salmon fisheries (1867), and special commissioner on the salmon fisheries in Scotland (1870). His other works are *Fish-hatching* (1863), *Nat. Hist. of British Fishes* (1881), and *Notes and Jottings from Animal Life*, published posthumously (1882). See *Life* by Bompas (1885); and in Walpole's *Essays Political and Biographical* (1908).

Buckland, WILLIAM (1784-1856), English geologist, a native of Tiverton, succeeded Dr. Kidd as professor of mineralogy at Oxford in 1813, and in 1818 was presented to the readership in geology. About this time he began his geological collection, now at Oxford. In 1825 he was presented to the living of Stoke Charity, and in 1845 became dean of Westminster. He received the Copley medal of the Royal Society in 1822 for his account of the remains in Kirkdale Cave, which he more fully described in his *Reliquiæ Diluvianæ* (1823). Other important works are one of the Bridgewater Treatises, *Geology and Mineralogy Considered with Reference to Natural Theology* (1836), and *A Description of the S.-W. Coal-field of England* (1825).

Buckle, a device for fastening, consisting of a metal frame having one or more movable tongues, teeth, or catches. Buckles became generally worn in England, in place of shoe-strings, during the reign of Charles II. They were then made of very expensive materials. Buckles for shoes are mentioned much earlier than this, and were forbidden to be imported by an act of 1483. Others of an elaborate kind were used for sword-belts. The fashion of wearing shoe-buckles reached its height in the reign of George II.

Buckle, HENRY THOMAS (1821-62), English historian and sociologist, was born at Lee, in Kent. He was educated at home, being a delicate boy. The death of his father having placed him in command of a fortune of £1,500 a year, he turned to the acquisition of learning, with one great end in view. This was no less than to write a 'history of civilization;' and in order to equip himself for the work, he spent the next ten years in foreign travel, in the study of races and institutions, in learning languages, and in forming a library. In 1857 the first volume of his *History of Civilization* appeared, and its author suddenly achieved fame. The second volume was published in 1861, but all further progress was arrested by the death of the author at Damascus in the following year. It appears that he had projected a huge work, of which these two volumes formed but the introduction. Buckle's *History of Civilization* is an attempt to give a scientific basis to history, by demonstrating the effect of natural conditions upon the progress of any race. He regards social progress as intellectual and not moral—a point of view which has been wholly superseded. See *Life* by Huth (1880), and *Works*, ed. by Miss Taylor (1872); Grant Allen (1880);

and *Buckle and his Critics*, by J. M. Robertson (1895).

Buckle, GEORGE EARLE (1854), born at Twerton-on-Avon, near Bath, was called to the bar at Lincoln's Inn in 1880, joining in the same year the editorial staff of the *Times*, of which he was appointed editor on the death of Thomas Chenery in 1884.

Bucklersbury, a dist. of London, originally spelt *Bokerelesburi*, takes its name from the opulent family of Bokerels or Bukerels, who dwelt there in the 13th century. Bucklersbury formerly extended from the east end of Cheapside to Charlotte Row, on the west side of the Mansion House; but it was cut in half and greatly shortened by the formation of Queen Victoria Street.

Buckley, ARABELLA BURTON—MRS. FISHER (1840), English naturalist, was born at Brighton. She has written many popular works on natural history, specially adapted for the young, including *A Short Hist. of Nat. Science* (1876; 5th ed. 1894), *Life and her Children* (1880; new ed. 1882), *Winners in Life's Race* (1882; new ed. 1888), *Moral Teachings of Science* (1891), *Eyes and no Eyes* (1901).

Bucknall Steamship Lines, Limited. This company was formed in 1900 to take over and extend the British and Colonial Line (from London to S. and E. African ports), established in 1892, for passengers and cargo; also lines between New York and S. Africa, New York and Australia and New Zealand, New York and Manchuria and Far East ports, New York and India. London and other English ports to ports on the Red Sea and Persian Gulf ports *via* Marseilles. Fleet—29 steamers (123,463 tons). London office: 23 Leadenhall Street, E.C.

Buckner, SIMON BOLIVAR (1823), American soldier, was born in Kentucky. He was a professor

(1845-6, 1848-50) at the military academy at West Point, and distinguished himself under Scott in the Mexican war. On the outbreak of the civil war he invaded Hart County in the Southern interest in 1861; but at Fort Donelson, in 1862, he surrendered with 15,000 men to General Grant. He was exchanged as a prisoner, and fought again at Murfreesboro and Chickamauga. He became governor of Kentucky, and in 1896 was the gold Democrats' candidate for the vice-presidency of the United States.

Bucknill, SIR JOHN CHARLES (1817-97), English physician, studied medicine at University College, London. He began practice in Chelsea, but owing to ill-health removed to Exminster, to take charge of the Devon County Asylum (1844-62). He was elected fellow of University College, London (1850), and was the lord chancellor's medical visitor of lunatics from 1862 to 1876. He was knighted in 1894. Bucknill was the highest authority of his time on insanity; he wrote *Unsoundness of Mind in Relation to Criminal Acts* (1854), *The Psychology of Shakespeare* (1867), *Habitual Drunkenness and Insane Drunkards* (1878), *A Manual of Psychological Medicine* (4th ed. 1879), etc. He edited the *Journal of Mental Science* (1855-62), and helped to found *Brain, A Journal of Neurology* (1878).

Buckskin, a very soft leather, prepared from the skin of a buck or sheep; used for gloves, and formerly by the American Indians for clothing. Also a strong twilled cloth with shorn pile, carefully finished, used for breeches.

Buckstone, JOHN BALDWIN (1802-79), English actor and dramatist, was born at Hoxton, London. He was articled to a solicitor, but in 1820 abandoned law for the stage, and played at Peckham in

melodrama. In 1823 he appeared in London in the Surrey Theatre as Ramsay in *The Fortunes of Nigel*, and in 1827 joined D. Terry's company at the Adelphi, where he produced some of his best-known dramas. In 1833 he removed to the Haymarket, where he was manager from 1853 to 1876. His most famous rôles were Tony Lumpkin, Bob Acres, Sir Benjamin Backbite, and Scrub. Buckstone was noted for his humour and pathos, and for his droll interpretation of comic characters. He wrote over a hundred dramas, the most popular being *Green Bushes*, *Flowers of the Forest*, and *Popping the Question*.

Buckthorn. The common buckthorn, waythorn, or harts-horn (*Rhamnus catharticus*) is fairly abundant in hedges and woods over the greater part of Britain. It is a spreading shrub, about ten feet in height, and is characterized by a smooth bark, branches terminating in thorns, small unisexual four-petaled green flowers, occurring between the serrated leaves in May, and four-seeded black berries about the size of currants. The juice of the berries is sometimes used in medicine, as the specific name of the plant indicates. From the juice is prepared the colour known as sap green. The alder buckthorn (*R. frangula*) is also a native of Britain. Its habit is more tree-like than spreading, its leaves are entire, its flowers five-petaled, and its berries two-seeded. Another species (*R. palinurus*), not British, is one of the plants which were fabled to have been used in making Christ's crown of thorns.

Buckwheat (*Fagopyrum esculentum*) is a member of the natural order Polygonaceæ, to which belong also the dock, sorrel, and rhubarb. It is an annual plant, growing to a height of three feet, and is extensively cultivated in America and Europe, and to a

small extent in England. Its fruit is used as human food, but in England it is chiefly grown as a poultry food. The flower, which is pink, is much liked by bees. Buckwheat may be grown on soil too poor and sandy for any of the ordinary cereals to be profitably sown. Not being quite hardy, it should not be sown until the end of May. The seed should be sown in drills, eighteen inches from row to row, at the rate of a bushel per acre. It is harvested about the end of August, a fair crop being thirty to fifty bushels per acre.

Buczacz, tn., Galicia, Austria, 35 m. s.s.w. of Tarnopol. Pop. 12,000.

Bud. A bud is an unexpanded branch—stem, leaves, and sometimes flowers being all present in a miniature and undeveloped form. This branch is formed in advance, so that, when spring and sunshine arrive, no time may be lost in pushing ahead and effecting growth before winter again arrives and checks activity. In some cases, by the efforts of art or nature, the bud, while growing in size, never really develops. We see this in the cabbage head, which is nothing but a large bud. As buds have often to live through severe weather, with excessive cold and wet, their parts are packed tightly together, so that the minimum of surface may meet the outer world; and they are usually covered by certain scales, which are modified leaf-bases, stipules, or leaves. The buds of evergreens have usually no protecting scales. Often additional protection is afforded to the buds by means of hairs or resin; and many plants which die down every year have their buds waiting beneath the earth's surface until the sun's warmth tempts them to push forth and develop into the stems, leaves, and flowers that they really are. Buds usually arise in the axils of leaves, though

circumstances may cause them to form elsewhere. The so-called fruit-buds of apple and pear trees may usually be distinguished from those buds which will yield stems and leaves only, by their greater size, and by their being commonly situated at the end of a stem or spur. See Lord Avebury's *Flowers, Fruits, and Leaves* (1873), and *Buds and Stipules* (1872).

Budæus, or BUDÉ, GUILLAUME (1467-1540), French philologist, was born at Paris. After a somewhat reckless youth, he became one of the most profound Greek scholars of his day. He was highly esteemed by Francis I. His most remarkable works are *De Asse* (1514), a treatise on ancient Greek and Latin coins, measures, etc.; and *Commentarii Linguae Græcæ* (1529; improved ed. 1548). His collected works were published at Basel (1557). See *Lives* by Rebitté (1846) and Eugène de Budé (1884).

Budaörs, vil. and summer resort, Hungary, 5 m. s.w. of Budapest. Pop. 6,000.

Budapest (anc. *Aquincum*), cap. of Hungary, a twin city on both banks of the Danube, on the edge of the great Hungarian plain, 163 m. by rail E.S.E. of Vienna. It was formed in 1873 by the union of Buda, on the w. bank, and Pest, on the E. bank, together with two suburbs, Ó Buda (Alt-Ofen) and Köbanya. The centre of Pest is the quarter Belvaros, beside the Danube, enclosed within a boulevard which has replaced the old city walls. From this boulevard the streets radiate S.E., E., N.E., and N., the finest being the Andrassy Street, the Kerepesi, and the Ullöi. Along the Danube the Francis Joseph quay stretches 1½ m. between the Francis Joseph bridge and the Margaret bridge. Near the N. end of the quay are imposing houses of parliament built in 1903, and near

them are the Curia Regia and the law courts. Towards the middle are the Academy of Sciences, the Bourse, and the 'Redout.' On or near Museum Street stand the National Museum, National Theatre, and University (over 6,000 students). On Ullöi Street are the Industrial Art Museum, hospitals, botanical gardens, and, in the Orczy Gardens, the royal military academy. The Leopold basilica stands near the s.w. end of Andrassy Street. On the outskirts of the city, to the s., is the cemetery, with memorials of Count L. Batthyany, Deak, and Kossuth. One of the most notable structures in Buda is the royal castle, crowning a hill some 230 ft. above the river. To the s.e. is the Blocksberg (400 ft.), crowned by the old citadel. A new quarter is growing up on the south side of Blocksberg. Buda possesses numerous hot sulphur springs, one of them on Margaret Island, in the river. The bath-houses are among the most perfect of the kind in Europe; the Cæsar springs were used by the Romans. Industrially and commercially Budapest is the principal city in Hungary. The chief industries include engineering, flour-milling, carriage-building, printing, shipbuilding, brewing, distilling, the manufacture of tobacco, glass, chemicals, fancy and leather goods. Pop. about 835,000.

Buda, or Ofen, originated in the Roman military colony of Aquincum, and was the capital of Lower Pannonia. Destroyed by the Mongols in 1241, it was rebuilt by Bela IV., and from 1351 to its conquest by the Turks in 1526 it was the residence of the kings of Hungary. While in Turkish hands, from 1526-1686, it was six times besieged by the imperialist forces, who took it in the latter year. The Hungarians stormed it in 1849. Pest existed from Roman

times, but was not of much consequence till the 18th century. In 1867 it was made the capital of Hungary. From the 10th to the 14th century the Hungarian national assemblies used to meet in the open air on the Rikos plain, east of the city. See Szalay and Kahn's *Die Ungarische Metropole* (1889), and Hevest's *Budapest und Seine Umgebungen* (1873).

Budaun, or BUDAON, tn., United Provs., India, 125 m. S.E. of Delhi. Founded, according to tradition, by Budh, an Ahar prince, about 905 A.D., it was a centre of disturbance during the mutiny of 1857. Pop. 40,000.

Budd, GEORGE (1808-82), English physician, born at North Tawton, Devonshire; was appointed professor of medicine (1840), and, on his retirement, honorary fellow of King's College, Cambridge (1863). In 1867, owing to ill-health, he gave up his large practice, and retired to Barnstaple. His writings include *Diseases of the Liver* (1845), *Diseases of the Stomach* (1855), a *Report on Cholera in the 'Dreadnought' Hospital Ship, 1837*, and numerous important papers in medical journals.

Budd, WILLIAM (1811-80), English physician, younger brother of the preceding, was born in Devonshire, and settled at Bristol (1842). As a specialist on epidemic diseases he did much to promote better modes of sanitation. His principal work is *Typhoid Fever: its Nature, Mode of Spreading, and Prevention* (1873). He also published *Malignant Cholera* (1849), *The Siberian Cattle Plague* (1865), *Scarlet Fever and its Prevention* (1871), and *Cholera and Disinfection* (1871).

Buddha, 'The Enlightened One,' was the founder of Buddhism. His father, Suddhodana, was the chief of a small Aryan tribe named the Sakyas, whose capital, Kapila-vastu, was situ-

ated about 100 m. N.E. of Benares. As a child he received the name of Gautama. He is also known as Siddhartha and as Sakyamuni, and lived from about 560 to 480 B.C. Miraculous circumstances are alleged to have attended the conception and birth of Gautama, and many legends are preserved of the wisdom and prowess which marked his childhood and youth. It was not until his twenty-ninth year that Gautama saw the visions which led him to devote himself to the study of religion and philosophy. Paternal promptings which followed the birth of a son threatening to interfere with the divine call, Gautama, in a pathetic parting from his sleeping wife and babe, completed his great act of renunciation—leaving family and friends, wealth and power, to become a penniless and despised student and homeless wanderer. It is impossible, within the scope of this article, to follow Gautama in his wanderings and in his efforts to 'acquire merit.' Repeatedly tempted to return to the comforts of his home, assailed by doubts as to the reality of that virtue for which he had sacrificed so much, deserted by his followers, overwhelmed by the bitterness of failure, it was long ere, brooding in silent solitude under the bo-tree (tree of wisdom), there dawned the divine light which enabled him triumphantly to exclaim, 'I know it all.' Henceforth he was the Buddha. His wife became one of the first of Buddhist nuns. His son and his half-brother joined the order of pious mendicants which he established. His mission was the reformation of Hinduism. In withstanding the corruption and sensuality of his age, his broad philanthropy opened a heaven to the meanest outcast; and although he was thus placed in an attitude of passive antagonism to the distinctions of caste, he con-



tinued a devout Hindu. In spite of the inherent weakness of the creed he promulgated—its end contemplation, inertia, Nirvāna—there is much that is fascinating in Buddha's devotion to duty, and in the example of a lifelong sacrifice which sought no selfish or sordid end. For a poetic rendering of Buddha's life and work, see Edwin Arnold's *Light of Asia* (1900); and see also K. E. Neumann's *Buddha* (1904) and Oldenburg's *Buddha* (Eng. trans., 4th ed., 1904).

Buddh Gaya, or BODH GAYA, vil., Behar div., Bengal, India, 70 m. s. of Patna. It is said to have been the dwelling-place of the founder of Buddhism, and has interesting Buddhist remains, including the palace of Asoka, the great Buddhist emperor.

Buddhism. About five centuries before Christ a Hindu ascetic, born in what is now Nepal, evolved a new 'way' of salvation. This prophet was the Buddha, and the faith which he promulgated was Buddhism. In its inception Buddhism was a reformation. Brahmanism had run to seed in the indecent worship and corrupt ritual of Hinduism; the arrogance of the priesthood and the injustice of caste were crying evils when Buddha preached his broad philanthropy. Making no attempt to solve the problem of the origin of things, he proclaimed the equality and brotherhood of man, and that the great end and object of existence was to attain non-existence (*Nirvāna*) by self-sacrifice, contemplation, and suppression of all passion. Subtly mingled with this inertia was the doctrine of *Karma*—a subject which has given rise to much speculation and controversy—a mysterious dogma of which it is not easy to give any concise and popular definition. Buddhism recognizes no soul, and therefore no future corporeal existence; but

each human act, right or wrong, each thought, pure or impure, is not only irrevocable but irredeemable. After death these actions (or results of actions) and thoughts (or their results), good or evil, have an inexplicable existence, until in due time they meet with their reward or punishment. Thus *karma* leads to the transmigration of Buddhism—far removed from the psychological transmigration taught by Hinduism—and is the mainspring of Buddhist activity. Innumerable 'precepts' and 'paths' of duty and of holiness point the 'way' by which each human being is to work out his salvation. By temperance, chastity, kindness, brotherly love, the body and the senses are brought under subjection, until being is absorbed in blissful *Nirvāna*. The life of an insect is as precious as that of a man; therefore to kill the humblest creature is accounted murder. Theft, deception, insobriety are denounced. Marriage is discouraged, but incontinence and unchastity are condemned. The encouragement of celibacy led to the formation of monastic orders, male and female. These monks and nuns were addressed by the Buddha as 'mendicants.' In time the monasteries became the repositories of learning, and thus gradually, almost imperceptibly, the priestly supremacy and arrogance which Buddha exerted himself to overthrow were once more re-established.

The Buddha wrote nothing. It was at least one hundred and thirty years after his death, when the Emperor Asoka—the Constantine of Buddhism— assembled a council of monks, that the first attempt was made to reduce the philosophy of Buddhism to writing. Subsequent councils sought to amplify its doctrines and to explain difficulties, but each attempt to reduce to dogma the precepts of the great teacher raised

fresh doubts and further objections. Astute Brahmans, quick to mark evidences of decay in the voice of dissent, at once adopted Buddha as an incarnation of Vishnu, and by concessions and adaptations enticed dissenters back into the fold of Hinduism. Thus was Buddhism driven from its birthplace, and at the present day it exists in India only under the form of Jain worship. There are many passages of remarkable and poetic beauty in the Buddhist scriptures, but the apparent hopelessness of the creed makes small appeal to the more sanguine and robust Western mind. This 'knowledge of the way'—a religion without theology, without deity, and with no gorgeous ritual—was spread by mendicant missionaries, northwards over Nepal and Tibet, eastwards through Burma and China to far-away Japan, and over Ceylon in the south. In our day it is the acknowledged faith of probably five hundred millions of people. In its diffusion it has lost some of its characteristics, and it has been absorbed in other and even antagonistic faiths. The Lamaism of isolated Tibet is far removed from the religion of progressive Japan; deep gulfs separate the Burman, the Chinaman, and the Sinhalese; yet all reverence the benign Buddha. See T. W. Rhys Davids's *Buddhism* (1877; new ed. 1903), in which all the leading authorities are given; Grünwedel's *Mythologie des Buddhismus in Tibet und der Mongolei* (1901); Oldenberg's *Buddha, sein Leben, seine Lehre und seine Gemeinde* (3rd ed. 1898); and *Buddhist India*, by Rhys Davids (1903).

Budding. The process of budding consists in taking from the tree which it is desired to propagate a piece of the bark with bud attached, and inserting it beneath the bark and against the wood of

the tree which is to serve as parent or stock. The process is chiefly employed in the propagation of roses, but it is also much used for propagating plums, pears, and apples, and occasionally for multiplying choice varieties of maples and other ornamental trees. June, July, and August are the months usually chosen for performing the operation, and it is very desirable that the bark should slip readily from the subjacent wood. Where possible, the stock for fruit-tree buds should be not less than an inch in circumference, and the bud should be inserted a very few inches above the ground-level, the leaves of the stock being rubbed off for two inches on either side just previous to the operation. Everything being in readiness, a vertical incision one inch long is made with a sharp budding-knife just through the bark of the stock, and a horizontal incision of half an inch across its highest point—the two cuts forming a T. A well-ripened shoot of the current season's growth is next cut from the variety which it is desired to increase, and its leaves cut off, leaving a small piece of each leaf-stalk attached to the stem. The best buds are situated at the lower and older part of the stem. By a careful use of the knife, the bud, together with half an inch of bark above and below, is cut out. Should there be no wood, but a hollow opposite to the bud, then the bud is useless. If, on the other hand, there is much thickness of wood left attached, the harder part of it should be carefully cut away. The whole bud and bark ought to be shield-shaped, widest in the middle where the bud is situated, and tapering to a point above and below. The bark of the stock must next be carefully loosened from the wood by means of the handle of the budding-knife, and the bud inserted in the cleft so that its in-

ner surface presses against the surface of the bared wood of the stock. The whole must then be closed and carefully bandaged over, above and below the bud, with raffia. The raffia, which must be applied securely, but not too tightly, should completely cover the bark of the scion and the wound of the stock—only the bud itself projecting uncovered. In three weeks the raffia should be removed. In the following spring, if the budding has been successful, the stock should be cut off immediately above the bud, so that all the energy may be concentrated in its development. See L. H. Bailey's *The Nursery Book* (1895); Batlet's *Grafting and Budding*. See GRAFTING.

Buddon Ness, prom., Forfarshire, Scotland, on N. side of entrance to Firth of Tay.

Bude, or BUDE HAVEN, eccles. par., seapt., and wat.-pl., Cornwall, England, 35 m. W.N.W. of Okehampton, amidst grand cliff scenery. Pop. 1,400.

Budge, ERNEST A. WALLIS, Egyptologist, studied at Cambridge, where he was a distinguished Oriental scholar. He has conducted excavations at Assouan in Egypt, at Jebel Barkal in the Sudan, and at Nineveh and Der in Mesopotamia, and is now keeper of Egyptian and Assyrian antiquities in the British Museum. Among the most important of his works are *Assyrian Texts* (1880), *Babylonian Life and History* (1884), *The Dwellers on the Nile* (1885), *Memoir of Dr. Birch* (1886), *The Laughable Stories of Bar-Hebræus* (1896), *Egyptian Ideas of the Future Life* (1899), *Life and Exploits of Alexander the Great* (1896), *Guide to the Babylonian and Assyrian Antiquities in the British Museum* (1900), *The Book of the Dead* (Eng. trans. of the Theban Recension, 3 vols. 1901), *History of Egypt* (8 vols. 1902, etc.), *The*

Gods of the Egyptians (1903), *Decrees of Memphis and Canopus* (1904), *Handbook for Egypt and the Sudan* (1905), *The Egyptian Heaven and Hell* (1906), *The Egyptian Sudan, its History and Monuments* (1907), *The Book of the Kings of Egypt* (1908), *Liturgy of Funeral Offerings, etc.* (1909), *Coptic Homilies* (1910), *Book of the Dead* (Egyptian text and trans., 7 vols. 1910), and several works on the texts and inscriptions of ancient Assyria and Babylonia.

Budgerigar. See PARRAKEET.

Budget, the annual statement relative to the finances of a country—in Britain the statement made every spring in the House of Commons by the chancellor of the exchequer. The figures in this statement are given under two heads—first, those relating to the actual expenditure and income of the country for the financial year; and, second, an estimate of the probable expenditure and income for the subsequent twelve months, with proposals as to how any extra expenditure or probable deficit has to be met, either by additional taxation, by loan, or by suspension of the sinking fund, or proposals as to how any surplus is to be utilized, by the reduction of taxation or extinction of debt.

The term budget is often used to indicate the income and expenditure of smaller bodies—e.g. workmen's budgets, family budgets.

Budrio, fort. tn., Italy, 12 m. N.E. of Bologna. Pop. (comm.) 17,000.

Budrissin. See BAUTZEN.

Budrum, seapt., Asiatic Turkey, on N. shore of Gulf of Kos, 96 m. S. of Smyrna; site of ancient Halicarnassus, birthplace of Herodotus. Pop. 6,000.

Budweis, tn. and bishop's see, Bohemia, Austria, on the Moldau, 80 m. S. of Prague. It is an active

trading and industrial town, manufacturing stoneware, needles, nails, pencils, beer, cigars, spirits, and flour. The cathedral (1500), municipal museum, and episcopal residence are the principal buildings. Pop. 40,000.

Buell, DON CARLOS (1818-98), American soldier, was born in Ohio; graduated at West Point (1841); fought in Texas (1845-46), and in the Mexican war, being wounded at Churubusco. On the outbreak of the civil war he sided with the North, and in 1861, after helping to organize the army of the Potomac, succeeded Sherman in Kentucky. He occupied Bowling Green in 1862, and gained distinction by co-operating with Grant at Shiloh at a critical juncture. Subsequently he met General Bragg (Confederate) in Kentucky, rescued Louisville, and then forced him to retreat at Perryville. He was, however, superseded on account of charges brought against him, and in 1864 resigned from the army. See his defence in *Statement of Major-General Buell* (1884) and Fry's *Operations of the Army under Buell* (1884).

Buenaventura, seapt., Colombia, 10 m. from the Pacific, at the head of Choco Bay. It is an unhealthy tn., but is of importance as the port of the Cauca valley, the richest portion of Colombia. Pop. 5,000.

Buenvista. See BOAVISTA.

Buen Ayre, or BONAIRE. See CURAÇOA. (Fr. *Bonaire*), the most easterly of the Dutch W. Indies, w. coast of Venezuela, 12° 10' N., 68° 25' W. Pop. 5,000.

Buenos Ayres ('good air'). (1.) The largest and most important province of the Argentine Republic. The country is for the most part a plain intersected by numerous streams and studded with lakes. The Atlantic coastline, 740 m. in length, and the river Paraná, 150 m., contain twelve

ports, the chief being Ensenada and Bahia Blanca, besides Buenos Ayres, which has been federalized. The capital of the province is La Plata. The chief industry is sheep-farming. Cattle-grazing is extensively carried on, and the cultivation of wheat, maize, linseed, alfalfa, sugar-cane, vines, and tobacco is spreading. Occasionally the crops are devastated by locusts. Fruit thrives, but its cultivation receives little attention. Area, 117,777 sq. m. Pop. 1,700,000 (without Buenos Ayres).

(2.) Capital of the Argentine Republic, on the w. bank of Rio de la Plata; founded in 1535 by Pedro de Mendoza. The city and its suburbs form a federal district. The city is uniformly laid out, the streets intersecting at right angles. There are several wide boulevards, and about a dozen fine squares planted with palms, the finest being the Plaza de la Victoria, with a statue of Liberty. The chief public buildings are the Casa Rosada, or government house, the university (700 to 800 students), with the state library and museum, the cathedral, post office, and exchange. The present cathedral, built in 1752, holds 9,000 persons. The archbishop is head of the Roman Catholic Church in Argentina. The opera-house is an imposing edifice, fit to rank with that of Paris. The centre of the town has been practically rebuilt during the last twenty years, stately buildings of European design replacing the former one-storied whitewashed houses. The chief suburbs are San José de Flores, 5 m. s.w.; Belgrano, 5 m. n.w.; and Barracas, 3 m. s. of the city. They are very beautiful, and are dotted with 'quintas' or country-seats, with well-laid-out gardens. Palermo Park, 2 m. N., on the bank of the La Plata, covers 840 ac., and has its 'Rotten Row' and a zoological

garden. The Recoleta, or Roman Catholic cemetery, lies midway between Palermo Park and the city. The climate is moist, and the temperature is very high at times during the summer, with tropical thunderstorms, and 'pamperos' or dust-storms. The winter is comparatively mild, and frost seldom occurs. The Buenos Ayres docks, known as the Puerto Madero, are very extensive. The north entrance channel has a depth of 20 to 23 ft., the south of 17 to 22 ft., but they have to be kept open by continual dredging. The annual value of the imports reaches £50,000,000, and of exports £55,000,000, nearly one-third being shipped to or from the United Kingdom. Of the trade of the Argentine Republic, about 85 per cent. of imports and 42 of exports pass through the port of Buenos Ayres. Pop. 1,250,000, of whom one-third are Italians.

Buenos Ayres and Pacific Railway, an English company incorporated in 1882. The first section from Villa Mercedes to Chacabuco was opened March 1, 1884. Total mileage (including lines mentioned below), 3,186; gauge, 5 ft. 6 in. The main line is from Buenos Ayres westward across the Argentine to Mendoza, by means of the Trans-Andine Ry. (111 m. long, metre gauge); thence to Las Cuevas, where the Chilian railway system is reached, and through rail connection made with Valparaiso on the Pacific coast. The Buenos Ayres and Pacific Ry. works the Bahia Blanca Ry. (665 m. in length), as well as the Trans-Andine, Villa Maria, and Rufino Ry., and the Argentine Great Western (733 m.). The capital of the Buenos Ayres and Pacific Ry. (apart from the worked railways) is £24,450,000; revenue (year to June 1910), £4,294,432; expenditure, £2,465,253; dividend, 3 per cent.; 674 locomotives, 345 pas-

senger vehicles, and 11,106 goods vehicles, and 29 service vehicles.

Buenos Ayres Great Southern Railway is one of the large railways in the Argentine, its present total length being 3,093 m., the gauge is 5 ft. 6 in. The British company controlling the railway was incorporated Oct. 8, 1862. The first sections opened were as follows: Buenos Ayres to Jeppener (48 m.) on Aug. 14, 1865, and Jeppener to Chascomús on Dec. 14, 1865. The country covered by this system is that between Buenos Ayres and Bahia Blanca, and westward to Neuquen. Capital, £43,481,410; revenue (year to June 30, 1910), £4,601,924; expenditure, £2,516,752; dividend on ordinary stock, 7 per cent.; 546 locomotives, 834 passenger vehicles, 12,320 goods vehicles, and 7 ocean-going steamers.

Buenos Ayres Western Railway forms an important portion of the railways of the Argentine, and includes in its system the first line constructed in that country, 6.2 m. in length, from Buenos Ayres to Floresta, opened Aug. 30, 1857. The 5 ft. 6 in. gauge of the Argentine railways was governed by the gauge of this line, which in turn was chosen because it was the gauge of the contractor's locomotive, purchased secondhand by him from the British military railway in the Crimea, the locomotive itself having been built for an Indian railway, and obtained by the War Office for use in the Crimea! The present Buenos Ayres Western Ry. was incorporated in 1900, and the system is now 1,533 m. in length. The capital received (including £5,966,666 4 per cent. debentures), was £21,566,666; revenue for year ending June 1910, £2,300,509; expenditure, £1,214,569; dividend on ordinary shares, 7 per cent.; 310 locomotives, 344 passenger vehicles, and 7,367 goods vehicles, and 86 service vehicles.

Buen, tn., Spain, prov. of and 12 m. s.w. of Pontevedra. Pop. 7,000.

Buer, vil., prov. Westphalia, Prussia, 9 m. N. of Essen, with coal-mining. Pop. 24,000.

Buff, CHARLOTTE (1753-1828), won the love of Goethe on the occasion of a visit which he paid to her native town of Wetzlar in 1772. She was the prototype of the heroine of his *Leiden des jungen Werther* (1774). See *Goethe und Werther*, ed. A. Kestner (1854).

Buffalo, city and port of entry, New York, U.S.A., co. seat of Erie co., one of the most important commercial and manufacturing centres in the U.S., situated at the foot of Lake Erie and the head of Niagara R., 20 m. above the falls. The area covered by the city is 42 sq. m. It is a great railway centre, and is also connected with the Hudson R. and New York city by the Erie Canal, while the Welland Canal, which connects Lake Ontario with Lake Erie, gives it access to the commerce of ports on Lake Ontario and the St. Lawrence. It has a very large steamship traffic in grain, iron ore, and lumber with the upper lakes. There is a water front of nearly 8 m., and harbours have been constructed for the protection of vessels. The chief industries include iron and steel manufacture, in which it is second to Pittsburg, railroad and street-car works, oil refineries, breweries and distilleries, meat packing, flour mills, brickyards, and manufactories of soap, starch, cigars, furniture, leather goods, etc. The power for these industries is largely obtained from the Niagara R. by a tunnel, and to an increasing extent from the electric supply station at the Falls. The most notable feature of its immense commerce is the shipment through Buffalo of grain and flour from the north central States, and

from the Canadian North-West, to Atlantic ports, both for home use and for Europe. It has also a large trade in coal, lumber, and live stock. The principal parks are Delaware Park (350 ac.) and Humboldt Park (60 ac.). The chief buildings include the City and County Hall, Music Hall, the State Armory and Arsenal, the Masonic Temple, the Buffalo Savings Bank, the Grosvenor Free Library, and the Buffalo Library. Among educational institutions are the university, the State Normal School, and the colleges of St. Joseph and Canisius. There are also several hospitals and charitable institutions. Buffalo dates from 1793, and its commercial development began with the opening of the Erie Canal (1825), since when it has steadily and rapidly advanced. A Pan-American Exposition was held here in 1901, while attending which President M'Kinley was assassinated by an anarchist. The pop. in 1810 was only 1,500; in 1910 it was 423,715. See Smith's *Hist. of the City of Buffalo* (1884), and Powell's *Historic Towns of the Middle States* (1899).

Buffaloes, large mammals placed by Linnæus in his genus *Bos* (oxen), but now sometimes placed in a distinct genus *Bubalus* (buffalo). They are characterized by the fact that their horns are flattened and angulated, not rounded as in oxen and bison, and are placed below the vertex of the skull. The back has a distinct ridge in the region of the withers. Buffaloes are confined to the Old World, occurring especially in India and Africa; but they are sometimes confused with the bison of N. America. In Celebes there occurs the least specialized of the buffaloes, the small anoa (*B. depressicornis*), while the large Indian buffalo (*B. buffelus*) is a

widely distributed domesticated species. Africa is said to have two species—the *B. caffer* of the Cape, and the smaller *B. pumilus*, which has a wide distribution; but several connecting varieties occur, and it is not quite certain that the two are distinct.

Buffon, GEORGE LOUIS LECLERC, COMTE DE (1707–88), French naturalist, was born at Montbard (Côte d'Or) in Burgundy. During his early manhood he published many scientific treatises, and this resulted in his election as a member of the Academy of Sciences, and in the same year (1739) his appointment as superintendent of the Jardin du Roi in Paris, the present Jardin des Plantes. This was the turning-point of his career, and after ten years' assiduous labour there appeared in 1749 the first three volumes of his famous *Histoire Naturelle*, in the production of which he was assisted by Daubenton. Succeeding years brought forth fresh volumes, the last of which, the thirty-sixth, was published in 1789, one year after his death. He was created Comte de Buffon by Louis XV., and enjoyed the favour and friendship of Louis XVI. Buffon's *Histoire Naturelle* is now almost obsolete, and of comparatively little scientific value; but it had an immense popularity, and created a taste for the study of natural history. See Bazile's *Buffon* (1863).

Bufs, the old 3rd regiment of foot, formed 1572, now the East Kent regiment. In recognition of its descent from the London trained-bands, it has the right to march through the city with colours flying and drums beating.

Bug, a name used sometimes to denote all the insects included in the order Hemiptera, and sometimes reserved for one section of this order, the Hemiptera-Heteroptera. It may be sufficient to say that while all bugs are in-

cluded in the order Hemiptera, the order also includes insects—*e.g.* the cicadas—to which the term is not applied in common parlance. All bugs are characterized by the fact that the mouth is adapted for sucking; their food consists of the juices of plants or the blood of animals; and as reproduction is frequently very rapid, they may be of great importance in connection with agriculture. Only a few of the more important forms can be mentioned here. The bed-bug (*Cimex lectularius*), a singularly repulsive blood-sucker, is known only among civilized and semi-civilized races, and reproduces with great rapidity. As in most bugs, 'stink glands' are present, and give the insect its disgusting smell. It is generally considered to have been introduced into England by the Huguenots in the 16th century. Allied species occur on birds and bats. The chinch bug (*Blissus leucopterus*) is an American form which attacks corn and grasses, while the cotton-stainer (*Dysdercus suturellus*) similarly injures cotton. The bark-bugs (*Aradidæ*) live under the bark of trees, while the very remarkable marine bug (*Halobates*) lives on the surface of the sea. Many bugs live in fresh water. (See BOAT-FLY and WATER-BUGS.) The family Reduviidæ includes numerous free-living, predatory forms, which feed chiefly upon insects. A few attack man—*e.g.* *Conorhinus sanguisuga*, from Arizona, whose bite produces serious and painful results. In this case, as in those of some other poisonous bugs, there is a possibility that the bite introduces some specific organism into the blood.

Bug, two rivers of Russia. (1.) The S. or Black Sea Bug rises in Volhynia, on the frontier of Podolia, and flows S.E. along almost all its course of 450 m. It is only navigable 53 m. above

the mouth at Nikolaiev, where it forms a *limen* (estuary) 30 m. long which joins that of the Dnieper. The S. Bug is the Hypanis of Greek and Roman geographers, the Ak-su of the Turks. (2.) The W. or Polish Bug rises on the E. slope of the Carpathians, in Galicia, and falls into the Vistula at Novogeorgievsk (Modlin), some 20 m. N.N.W. of Warsaw, after a course of 437 m. Of its whole course, more than half is navigable for vessels of moderate size.

Buga, tn. in the Cauca valley, Colombia, 55 m. by rail E. of the port of Buenaventura. Alt. 3,600 ft. It is in a region of great fertility, and much sugar-cane and coffee are grown. Pop. 12,000

Bugason, or BUGASAN, coast tn., W. side of Panay I., Philippines, 24 m. N. by E. of San José de Buenavista. Pop. 14,000.

Bugeaud de la Piconnerie, THOMAS ROBERT (1784-1849), Duc d'Isly and marshal of France, joined the army as a private (1804), and rose to the rank of colonel (1815). By the revolution of July 1830 he obtained a seat in the Chamber of Deputies, was created marshal of France by Louis Philippe, and sent to quell the Arabs in Algeria (1837). His success over Abd-el-Kader gave him the field-marshal's *bâton*, and his victory over the Moors at Isly won his ducal title. He governed Algeria (1840-7), and died of cholera at Paris. See his *Œuvres Militaires* (1883), and D'Joleville's *Le Maréchal Bugeaud* (1881-2).

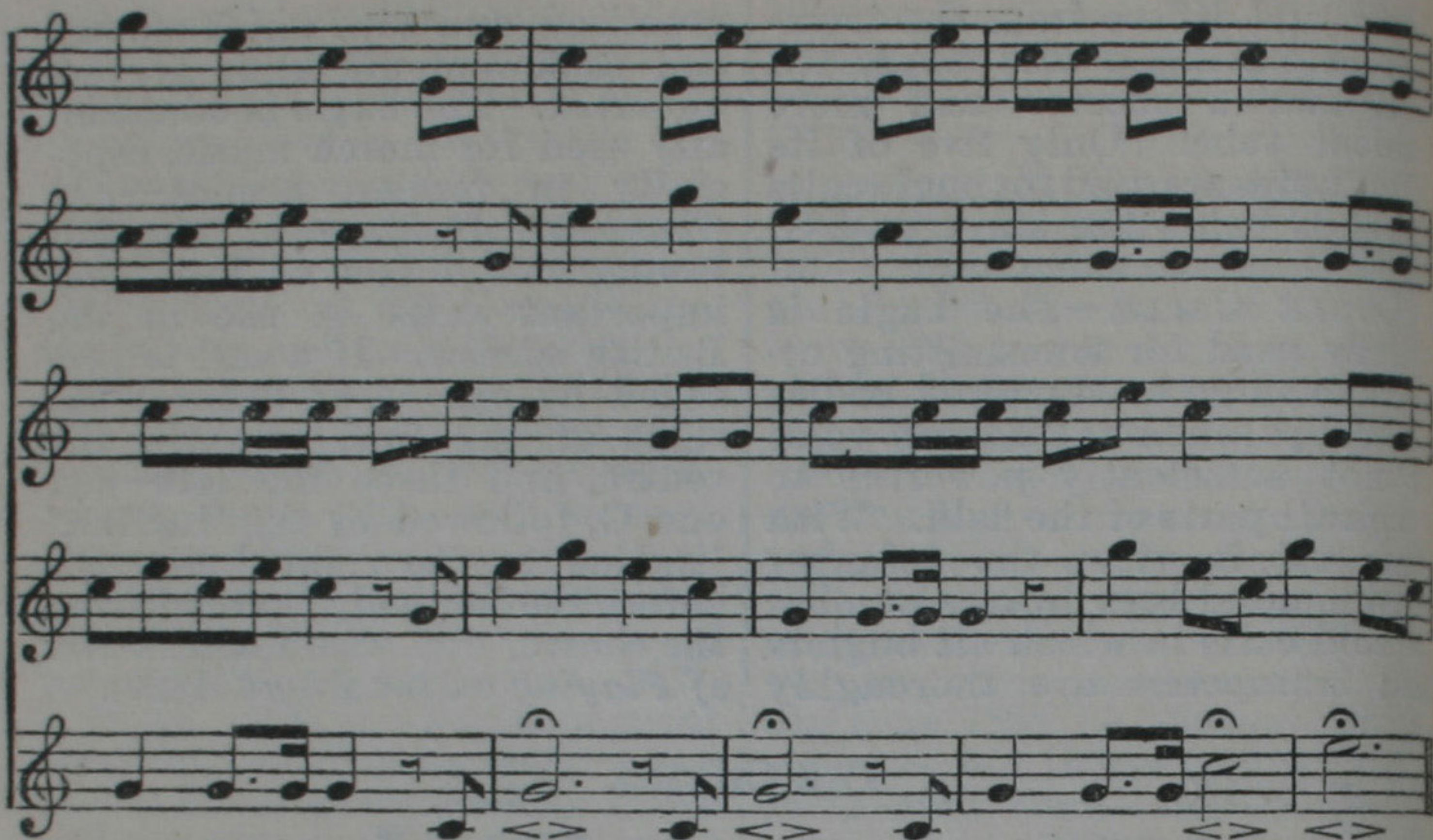
Bugenhagen, JOHANN (1485-1558), a German Protestant reformer, born on the island of Wollin, in Pomerania. He was converted to the doctrines of Luther (1520), and remained his close and lifelong friend. He wrote a Commentary on the Psalms (1524); and assisted Luther in his translation of the Bible, and in organizing the

reformed church in Germany and in Denmark (1537). He also wrote a *History of Pomerania* (1728; new ed. 1901). See *Life* in German, by Graepp (1897).

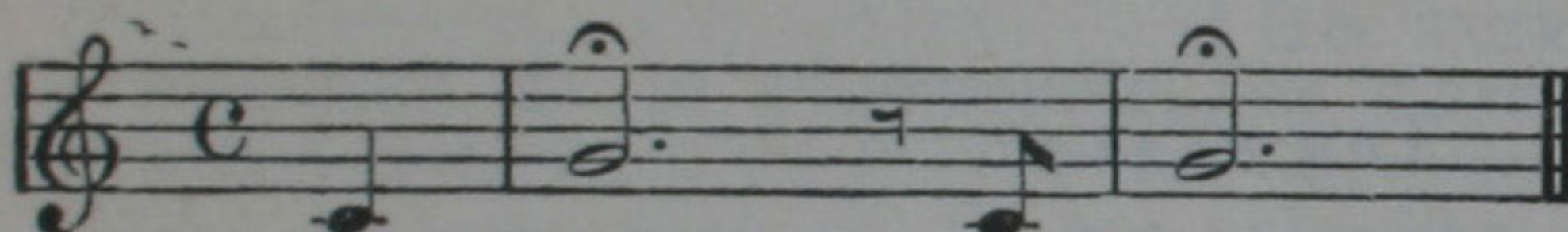
Bugge, ELSSENS SOPHUS (1833-1907), Norwegian antiquary and philologist, was born at Laurvig; from 1866 to his death professor at the University of Christiania. His specialty was old Norse literature and archæology, including the Germanic languages, and notably Anglo-Saxon. In 1891 he began the publication of a complete set of the Norwegian runic monuments. As early as 1858 he showed his interest in old Norse folk-songs by publishing *Gamle Norske Folkeviser*; and in 1867 he issued an edition of the songs of the *Edda* under the title of *Norræne Fornkvæði*. His works embrace *Studier over de Nordiske Gude og Heltesagns Oprindelse* (1881-9); *Norges Indskrifter med de Aeldre Runer* (1891); *Norræne Skrifter af Sagnhistorisk Indhold* (1864-73); *Bidrag til den Aeldste Skaldedichtnings-historie* (1894); *Lykische Studier* (1897; English trans., *The Home of the Eddic Poems*, trans. Schofield, Grimm Library, xi., 1899); *Studies on Northern Mythology* (trans. Stephens, 1884).

Buginese, or BUGIS, a Malayan people originally inhabiting the southern peninsula of Celebes, but now spread all over the E. Indies as merchants and traders. They are lighter in colour than the Malays, and superior to them morally, resembling the Javanese in appearance. They are Mohammedans by religion; speak a Malayo-Polynesian dialect akin to the Macassar (see W. Cool's *With the Dutch in the East*; Eng. ed. 1897); and have developed a written literature.

Bugle, a wind instrument emitting a penetrating note. It is generally made of copper and



LIGHTS OUT.



Bugulma, tn., Samara gov., Russia, 150 m. N.E. of Samara; important fair in September. Pop. 8,000.

Buguruslan, tn., Samara gov., Russia, 106 m. by rail E.N.E. of Samara; cattle and leather trade. Pop. 12,000.

Buhi, tn., Camarenes prov., Luzon I., Philippines, on Buhi Lake, 30 m. S.E. of Nueva Caceres. Pop. 10,000.

Buhl Work, or more correctly **BOULE WORK**, is a species of marquetry invented by Charles André Boule (1642-1732), a French wood-carver. Tortoise-shell, brass, and rosewood are the materials most frequently used in this kind of inlaid work, with highly decorative effect. This artistic method of treatment is applied to the more ornamental articles of furniture, such as drawing-room tables, clock cases, *bric-à-brac* stands.

Buhrstone, or **BURRSTONE**, a name given to certain quartzose

rocks, the worked surfaces of which possess the property of cutting or grinding. They are used principally as millstones. The best kinds are of creamy white, with a granular and somewhat cellular texture, and are obtained in the Tertiary formation of the Paris basin and the surrounding district.

Builder, THE, an English illustrated weekly newspaper, was founded in 1842 as the organ of builders, engineers, and architects, by Mr. J. A. Hansom, the architect of the church of St. Philip Neri at Arundel, better known as the inventor of the hansom cab. Nearly two months elapsed between the first and second issues of the *Builder*; but from February 18, 1843, the paper has appeared weekly without intermission. Mr. Hansom retired in 1843, and was succeeded by Mr. George Godwin, who occupied the editorial chair for forty years.

In 1883 Mr. Godwin's place was taken by Mr. H. H. Statham, F.R.I.B.A., the present editor. At a very early date the original design of making the paper a mere trade journal was abandoned, and it became speedily the recognized organ not only of the architectural profession, but of those interested in archæology and architecture. All subjects are dealt with by specialists, sometimes of world-wide repute.

Building. The erection of any edifice is the work of several distinct trades and professions, and an account of the more important will be found under their respective titles.

The drawings of the proposed building having been prepared by the architect to the satisfaction of the client, a specification governing the workmanship and materials is prepared, and a bill of quantities drawn up, either by the architect, or more generally by a quantity surveyor acting under the direction of the architect. The bill of quantities is afterwards priced by the builder or contractor tendering for the work. The fees for the preparation of the quantities are calculated at rates varying from $2\frac{1}{2}$ per cent. for small contracts to $1\frac{1}{2}$ per cent. for large contracts. The quantity surveyor's charges are generally included in the tender, and paid by the builder or contractor.

The bill of quantities separates the work into various trades.

1. Preamble, including contract conditions and provisions.
2. Excavator, including, all digging for foundations, drains, etc.
3. Bricklayer, including all walls of brick, brick arches, floor tiling, etc.
4. Mason, including all work in stone—*e.g.* walls, sills, steps.
5. Slater or tiler.
6. Carpenter, including floors,

IV.

roofs, and constructional wood-work.

7. Joiner and ironmonger, including skylights, window frames and sashes, doors, wood stairs, architraves, skirtings, hinges, locks, bolts, etc.

8. Plumber and zinc worker, including all coverings of lead or zinc, lead and iron pipe work of water supply and wastes, etc.

9. Plasterer.

10. Founder and smith, including columns, rolled-steel joists, beams, etc.

11. Gasfitter.

12. Bellhanger and Electrician.

13. Glazier.

14. Paperhanger.

15. Painter.

On all works of any magnitude, the client's interests are protected by a 'clerk of works,' acting for the architect, who has the right to reject any unsuitable materials, and to condemn bad or incorrect workmanship.

The workmen in the various trades of sufficient importance work under foremen of those trades—*e.g.* foreman bricklayer, etc., all of whom are under the superintendence of a general foreman, acting for the builder or contractor.

See for different sections under EXCAVATOR'S WORK, ASPHALTER'S WORK, BRICKWORK, SMITH'S WORK, PLUMBER'S WORK, SLATER'S WORK.

Building By-laws. Town and district councils may make various by-laws for the regulation of building in their areas, under the Public Health Act of 1875, amended in 1890 and 1907. This act applies to all town and district councils in England and Wales, and, so far as its principal powers are concerned, is in substance the same as the London and Scotland Acts of 1894 and 1897 respectively. Building by-laws come into force after application by the local

authority and confirmation by the Local Government Board. Model by-laws are given in the Act of 1875, and supplemental by-laws under the Act of 1890. The model by-laws regulate the width and construction of new streets, and lay down a series of rules for the construction of buildings, which must be of 'bricks, stone, or other hard and incombustible material' (clause 11). The regulations as to thickness of walls and size of timbers, etc., are subject to local modification. Plans for the laying out of new estates, streets, and buildings must be duly deposited with the clerk or surveyor of the council, and must give certain specified information. Buildings begun or put up in contravention of by-laws may, under certain conditions, be pulled down. The building authority in the large Scottish burghs is the Dean of Guild Court. See *Knight's Annotated Model Bye-laws of the Local Government Board* (7th ed. 1905), and *The London Building Acts, 1894-1905*, by E. A. Cohen (1906).

During 1904 the building by-laws, and especially clause 11, were frequently denounced in connection with the movement for building in the country cheap, wholesome, and sightly cottages, of materials other than those specified in the model by-laws. Sec. 44 of the Housing, Town Planning, etc., Act, 1909, empowers the Local Government Board to revoke by-laws which unreasonably impede the erection of dwellings for the working classes.

Building Lease, in Britain, a lease under which the lessee is bound to build on the land demised. It is, consequently, generally for a long term at a ground rent. The ordinary way of developing a building estate is for the owner of the land to enter into an agreement with a builder

to build a certain number of houses on the land, and to covenant to grant him leases of the several plots as the houses are built. Tenants for life under the Settled Land Acts, the universities and colleges under the University and College Estates Act, 1898, and the Commissioners of Woods and Forests, may grant building leases for ninety-nine years, the crown for thirty-one years or three lives, and municipalities for seventy-five years. See **GROUND-RENT**.

Building Society, a society established by a number of persons to raise by their subscriptions a fund for making advances to members upon mortgage. Such societies are either terminating or permanent. The former terminate at a date fixed by the rules, or when a result aimed at has been attained. The latter are not limited in duration. In Britain these societies are incorporated by registration by the registrar of friendly societies, with whom their rules, which correspond to the articles of association of a company, must be lodged. The liability of members is limited. A society may borrow to the extent of two-thirds of the amount advanced on mortgage, and if this limit is exceeded the committee of management are personally liable. The registrar has extensive powers of control. The annual accounts must be sent to him; he may, under certain circumstances, order an inspection of the books, or convene a special meeting; he has power to cancel the certificate of incorporation if it has been obtained by fraud, or for other specified causes. A dissolution may take place (1) in accordance with the rules; (2) by resolution of three-fourths in number and two-thirds in value of the members; (3) by a winding-up by the court; or (4) by order of the registrar, if sat-

ified, on petition of one-tenth of the members, that the society cannot meet its liabilities. The Building Societies Act of 1894 provides that, in societies established subsequent to that date, applicants for advances from the funds must not ballot for precedence; and power is given to older societies to make an alteration in their constitution in this respect if necessary. Building Societies Acts are dated 1874, 1875, 1884, and 1894. A few earlier societies still survive which have not been incorporated under these acts. See Davis, *On Building Societies* (1887), and Rigley's *How to Manage Building Associations* (1873).

Building Stone. The qualities necessary to a first-class building stone are so many that it is rare to find one which combines them all and is, at the same time, accessible, abundant, and cheap. One prime essential is ability to resist a great, crushing stress, and to bear the weight of a lofty superstructure. This excludes nearly all clay rocks and shales and such granular limestones as chalk, and renders firm, fine-grained sandstone and crystalline rocks such as granite of special value for some kinds of work, as the pillars and abutments of bridges. Resistance to atmospheric action and weathering is of great importance, especially in structures which are meant to endure. Granite and pure siliceous sandstone in this respect hold the first place; calcareous and ferruginous sandstones, limestones of many different kinds, and marbles are less resistant, but are nevertheless largely employed. A good building stone should also be of uniform and pleasing colour; not liable to discoloration on exposure, as are many sandstones containing pyrites and compounds of iron; obtainable in large blocks

and in any quantity; not too expensive to saw and dress; accessible, and easily quarried.

The best varieties of granite are durable, strong, impervious to moisture, and, when of suitable colour, have a pleasing and even ornamental effect; hence such rocks as those of Aberdeen (gray), Peterhead (red), Ross of Mull, Cornwall, and Shap Fell are highly valued in the British Isles. But as they are difficult to dress, and are quarried in remote districts, they are too expensive for general use in large towns. In Aberdeen, however, granite is the principal building stone, and a large amount of polished and cut granite is prepared and exported for ornamental work both in Britain and abroad. Sandstone is perhaps the most widely used of building stones, most of our large cities being to a great extent built of it; but it varies greatly in quality. A good example of a sandstone of tough quality and pure colour, with great durability, is the Craigleith stone, formerly extensively used in Edinburgh and neighbourhood. Limestones are widely employed, especially in the south of England; and the famous Portland stone, which came into favour early in the 18th century, furnished the material for St. Paul's Cathedral. Pure crystalline marbles, though producing a fine effect, are little used in Britain, because of their great expense and their inability to stand the smoke of towns; but they are admirably adapted for interiors. (See MARBLE.) Magnesian limestones, which vary greatly in quality, are among the principal building stones of the British Isles. The siliceous dolomite of Mansfield has been used in many important buildings. Both oolite and Caen stone are limestones of the Oolitic formation; the latter, because of its fine grain and beautiful colour, is

very suitable for delicate ornamental work. Serpentine, dolerite, diorite, and basalt are little used as building stones; their dark colour, and the difficulty in dressing them, are sufficient reasons for their neglect. See the valuable *Report with reference to the Selection of Stone for the New Houses of Parliament* (addressed to Commissioners of Woods and Forests, 1839); E. Hull's *Building and Ornamental Stones* (1872); Hull's 'Building Stones,' in Bevan's *British Manufacturing Industries* (1876); Rivington's *Building Construction* (vol. 'Materials'); J. Gwilt's *Encyc. of Architecture* (1900). For French building stones, Chateau's *Technologie du Bâtiment* (1863-6); for German methods of quarrying and testing, Hermann's *Steinbruchindustrie u. Steinbruchgeologie*; for American building stones, *Stones for Building and Decoration* (Wiley and Sons, New York).

Buitenzorg (= sans souci: 'without care'), tn., Java, stands in the interior at an alt. of 865 ft., 34 m. by rail s. of Batavia. Here the governor-general of the Dutch E. Indies has his summer palace in the midst of one of the best-laid-out botanic gardens (1817) in the world. Pop. 25,000. See M. Treub, *Der botanische Garten zu Buitenzorg auf Java* (1893); and Professor Ernst Haeckel, in *Deutsche Rundschau*, March 1901.

Bujalance, tn., Spain, prov. and 24 m. E. of Cordova; manufactures woollens, etc. Pop. 11,000.

Bujnurd, tn. and Kurd colony, prov. Khorassan, Persia, 155 m. N.W. of Meshed. Pop. 8,000.

Bukhara. See BOKHARA.

Bukharest. See BUCHAREST.

Bukkefjord. See BUKNEFJORD.

Bukkur, or BAKKAR, a fort. isl. of the Indus, Sindh, India, lying between the towns of Sukkur and Rohri; is a limestone rock, 800 yds. long, 300 yds. wide, and about 30 ft. above the stream.

Buknfjord, a large fjord on the w. coast of Norway, crossed by 60° N. lat., between Stavanger and Bergen, with numerous ramifications—e.g. Lysifjord, Sandsfjord, and Sandeidsfjord.

Bukoba, station of German E. Africa, on w. shore of Victoria Nyanza, lat. 1° 20' s.

Bukowina, or BUKOVINA, a duchy and crown-land of Austria; stretches from the Dniester across the Pruth and Sereth, and up the E. face of the Carpathians to the border line with Transylvania. It is very mountainous, and almost one-half of the surface is covered with forests (beech, conifers, alder, etc.). The principal crop is maize. Much fruit is grown, especially in the valley of the Suczawa. Manganese and salt are the only minerals extracted. The area is 4,030 sq. m., and the pop. 175,000. In the w. the majority of the people are Ruthenians, in the E. Roumanians; but there are also Jews, Germans, Magyars, Poles, and Czechs. There is a university at Czernowitz, the capital. See Kaindl's *Geschichte der Bukowina* (1895-98).

Bulacan. (1.) Prov. Luzon I., Philippines; bounded on the s. by Manila Bay. Area, 840 sq. m. It has rich deposits of coal, lead, copper, silver, and magnetic ores; and grows sugar, rice, corn, indigo, and coffee. Malolos, 20 m. N.W. of Manila, is the capital. Pop. 225,000. (2.) Town in Bulacan prov., 7 m. S.E. of Malolos. Pop. 12,000. It was totally destroyed by fire in 1898.

Bulak, or BOULAK, tn., Egypt, r. bk. of Nile; river port of Cairo, of which it forms a N.W. suburb.

Bulan, pueb., Luzon I., Philippines, prov. of and 28 m. S.W. of Sorsogon; a port of call for coasting steamers. Pop. 12,000.

Bulandshahr. (1.) District of the Meerut division of the United Provinces, India, with an area of

1,908 sq. m. It is an alluvial plain lying between the Ganges and the Jumna. The Ganges Canal passes through the district from N. to S. Indigo is the main crop. Pop. 1,150,000. (2.) Or BARAN, the cap. of the dist., 40 m. S.E. of Delhi, is a place of great antiquity. Pop. 20,000.

Bulawayo. See BULUWAYO.

Bulb. From a gardening point of view, all underground stores of plant nutriment which in a dormant state show no signs of roots, stems, or leaves, yet when placed under suitable conditions develop all these appendages, are considered to be bulbs. Tuber of dahlia, corm of crocus, rhizome of anemone, share with the true bulb of onion or tulip this general name. And functionally they all may be considered together, though morphologically the differences are considerable. In a true bulb, such as that of a tulip, we find that almost the whole substance is composed of a series of overlapping fleshy scales. These are really modified leaves, and the little that remains when they are removed is a rudimentary stem to which they were attached. After the tulip has flowered, it accumulates fresh food material in a new bulb, formed by the development of a bud contained among the scales of the old and now withered bulb of the previous year.

A corm is composed of the swollen base of the stem, and not, as with true bulbs, of the leaves—the latter having degenerated into mere membranous sheaths, which have no function beyond serving as protective envelopes for the food-store and living nucleus within.

Among bulbous plants are many of the most beautiful flowering species of our gardens, of our hedgerows, and of our meadows. Lilies, snowdrops, crocuses, daffodils, fritillaries, anemones, and

gladioli are all of this habit. Great care must be taken that no damage be done to the leaves of bulbous plants when their flowering has finished, for it is on the activity of those leaves that the next year's flowers depend. This especially applies to bulbs planted in lawns where the grass requires cutting before the leaves have died their natural death. It is when planted in grass, however, that many bulbous plants, notably crocuses and snowdrops, are seen to best advantage. They should be planted in bold groups, not in mere lines or dots. A good plan in planting is to throw the bulbs boldly about from the hand, and then plant them where they fall. Bulb-growing is a great Dutch industry. The import of bulbs in 1901 realized over 600,000 guilders. See S. Arnott's *The Book of Bulbs* (1901).

Bulbar Paralysis. See PARALYSIS.

Bulbul, an Arabic word, much used in Persian poetry, though there is some dispute as to the bird to which it applies. Ornithologists apply the term to the members of the Indian and African family Pycnonotidæ, but the true bulbul is probably a nightingale called *Daulias hafizi*.

Buldana, dist. and tn. in S.W. of Berar, British India. The area of the district is 2,809 sq. m. The chief industry is the manufacture of cotton cloth; the exports are cotton and wheat. Pop. of dist. 425,000; of tn. 4,000.

Bulgaria, a European kingdom, bounded W. by Servia, N. by Roumania, E. by the Black Sea, and S. by Turkey. The chief mountain range is the Balkan, south of which the Sredna Gora range runs parallel. It includes the Vitosha, Rila, and the N. slope of the Rhodope Mts., in which latter range lies Mt. Mus Alla (9,600 ft.), the loftiest peak in Bulgaria. The rivers of Bulgaria

either belong to the Danubian system (*e.g.* the Timok, forming the boundary towards Servia, the Lom, Osma, Vid, Skit, Isker, etc.), or flow direct into the Black Sea (*e.g.* the Kamchyk) or the Ægean (*e.g.* the Maritsa and Struma). The land is, for the most part, hilly, and the geology is that of the Balkans. The climate of Bulgaria is characterized by short, hot, rainless summers, short, dry winters, rainy springs and autumns, and extreme variations of temperature. Including E. Rumelia, joined to Bulgaria in 1885, Bulgaria has an area of 38,080 sq. m., and a population of over 4,250,000. The Bulgarians proper form 74 per cent. of the total population; the Turks, who come next, 19 per cent. Elementary education is compulsory. There is a university at Sofia, attended by about 1,000 students. The state is theoretically the owner of the land; the land-holder has a perpetual lease descending to heirs, and pays one-tenth of the produce by way of rent. About five-sevenths of the population are engaged in agriculture, most of them being peasant proprietors holding from one to six acres. Agricultural produce constitutes 72 per cent. of the exports; cattle, 23 per cent. The imports in 1909 were valued at £6,417,000, and the exports at £4,457,000. The chief fisheries are mackerel in the Black Sea and caviare in the Danube. All minerals belong by law to the state. Coal is mined at Pernik to the extent of 160,000 tons annually. Iron exists in large quantities, and there are deposits of lead and salt. Building stone is extensively quarried. Including the Oriental Company's line, seized by Bulgaria in 1908, there are 1,070 m. of railway open, all belonging to the state, and further lines are under construction. The executive power

is vested in a council of eight ministers nominated by the king, and the legislative power in the Sobranje or National Assembly, elected for five years by manhood suffrage in the proportion of one member to every 20,000 of the population. There is also a Great Sobranje, to which constitutional and other questions may be referred. The state religion is the Greek Orthodox (which 80 per cent. of the people profess), but there is absolute religious toleration. Military service is universal and compulsory. The peace establishment is 55,000, the war establishment 350,000 men.

History.—The earliest inhabitants of this part of the world (Moesia) were Thracians, who can be traced as early as the 3rd and 4th centuries A.D. They were subjugated (7th century) by a horde of Ugro-Finnish conquerors, from whom they took the name of Bulgarians. These Bulgarians came from the banks of the Volga, and the ruins of their capital, Bolgari, still remain there. In the beginning of the 9th century we find Krum reigning, against whom the Greek emperor Nicephorus undertook three expeditions, in the last of which he was killed (811). His skull, chased with gold, became a drinking cup at the Bulgarian banquets. The Bulgarians accepted Christianity in the time of Boris, or Bogoris, who was baptized under the name of Michael in 864. The most flourishing time of the Bulgarian empire was the reign of Simeon (893–927). He had been educated at Constantinople, and was a patron of letters; he defeated the Byzantines in war, twice capturing Adrianople. We have, however, many instances of his cruelty recorded in the chronicles. In the time of Peter (927–968) Bulgaria was divided into Eastern and Western. In

1018 the first Bulgarian empire was brought (1040) to an end by the Byzantine sovereign Basil II., surnamed Βουλγαροκτόνος; but it was revived under the brothers Peter and Asen in 1186. In 1211 began the great persecution of the religious sect called the Bogomiles. From 1218-41 John Asen II. ruled, and Bulgaria again enjoyed prosperity. In 1353 the Turks came into Europe, and the whole peninsula gradually fell under their yoke, Bulgaria's turn coming in 1393. From that time till the 19th century the Bulgarians were almost forgotten as a nation. But from 1830, through the influence of the monk Paisios, who in 1762 wrote a Bulgarian chronicle telling of the glorious past of his nation, and through the influence of his pupil, Bishop Sophronius of Vratza, an intellectual movement arose among the upper classes of the nation, with the double object of founding national schools and of getting rid of the influence of the Greek clergy. After the Crimean war, the attacks on the Greek clergy—who by employing only Greek priests, conducting the services of the church in the Greek language, and founding Greek schools, especially after the destruction of the old Bulgarian bishopric of Okhrida, had contributed, perhaps even more than the long years of Turkish tyranny, to the suppression of Bulgarian nationality—led the Sultan to intervene, and in 1870 to grant the Bulgarians an autonomous church organization, with an independent head, the Bulgarian exarch, at Constantinople. In 1876, after the revolt in Bosnia and Herzegovina, the Bulgarian population, chiefly in the vicinity of Philippopolis, revolted; but the rising was speedily crushed by the Turkish troops. Then their example was followed north of the Balkans, and with the same

result. But at the same time the Turkish population, aided by the Pomaks—*i.e.* Bulgarians who had adopted Mohammedanism—committed excesses against the Christian population, so that by the end of May over fifty villages had been destroyed, and about 12,000 people killed. These atrocities evoked great indignation in Europe, and especially in England, where Mr. Gladstone denounced them in a celebrated pamphlet. These occurrences led to the international conference at Constantinople of December 1876, and to the outbreak of the Russo-Turkish war of 1877-8. The treaty of Berlin, which mutilated the more generous terms of that of San Stefano, created Bulgaria a principality under the suzerainty of Turkey, while S. Bulgaria was made into a province called E. Rumelia, and Macedonia was handed back to the Turks. The first prince of Bulgaria was Alexander of Battenberg (1879-87). Since 1885 E. Rumelia has been annexed to Bulgaria. The rule of Alexander of Battenberg saw a war with Servia, in which the Servians were defeated at Slivnitza. The further progress of Alexander was stopped by the intervention of Austria, which resulted in the treaty of Bucharest (1886), and the re-establishment of the *status quo*. Alexander's success did not, however, please Russia, which fomented a conspiracy, by which, on the night of August 21, 1886, the prince was kidnapped, carried to Reni on Russian territory, and forced to abdicate. But Stambulov, then president of the Sobranje (parliament), headed another revolution, which overthrew the provisional government of the conspirators, and recalled Prince Alexander. But through his imprudent submission to the Czar, Alexander left himself no option but to abdicate on September 7,

1886; and he resigned the government into the hands of a regency, presided over by Stambulov. The Sobranje, on July 7, 1887, elected Prince Ferdinand of Coburg, who chose Stambulov for his prime minister. Under the new *régime* the country made rapid progress, notwithstanding several conspiracies against both Ferdinand and Stambulov. Of these the most notable were the military plot of Major Panitza, who was shot in 1889; and the assassination of the minister Beltchev in the streets of Sofia in 1891. Although Russia refused to recognize Ferdinand as prince, this did not prevent Stambulov from concluding commercial treaties with several of the great powers (1892), and establishing good relations with Turkey, from which he received important concessions for the Bulgarian exarchate in Macedonia. Stambulov resigned in 1894, and in 1895 this statesman, who had contributed so much to the foundation and advance of Bulgaria, was murdered in the streets of Sofia (July 15, 1895), and his assassins were never apprehended. In 1896 Russia formally recognized Prince Ferdinand. In 1903, through the activity of the Macedonian Committee in Sofia, Bulgaria played a persistent, though not fully avowed, part in the troubles in Macedonia. In April 1904 Bulgaria by agreement undertook to prevent the formation of revolutionary committees and armed bands upon her territory, and to prevent brigands and revolutionaries from crossing the border, Turkey undertaking to apply a reform scheme. In 1906 a strong anti-Hellenic movement caused much bloodshed between the Bulgar and Greek populations. On October 5, 1908, Bulgaria threw off her allegiance to Turkey, and declared herself an independent kingdom

—her ruler taking the title of King of the Bulgarians. His sovereignty was recognized by the powers in April 1909. See MACEDONIA; Dicey's *The Peasant State* (1895); Jirecek's *Das Fürstenthum Bulgarien* (1891); Lamouche's *La Bulgarie dans le Passé et le Présent* (1892); Battenberg's *Die Volkswirtschaftliche Entwicklung Bulgariens von 1879* (1891); Samuelson's *Bulgaria Past and Present* (1888); Kanitz's *Donau-Bulgarien u. der Balkan* (3rd ed. 1882); Le Queux's *An Observer in the Near East* (1907).

Bulgarian Language. Bulgarian, an inflected language belonging to the s.e. Slavonic branch of the Indo-European stock, forms but a mutilated remnant of the ecclesiastical idiom of St. Cyril (845 A.D.), the apostle of the Slavs, and inventor of the Cyrillic alphabet, or Cyrillitza, composed of forty-two letters fashioned from the ancient Greek. Two remarkable peculiarities should be noted: the article is placed after the noun—thus, *kon*, 'a horse;' *konét*, 'the horse;' also it possesses the vowel *ú*, which has its analogy only in Roumanian. The geographical limits of the tongue are responsible for a large admixture of foreign words; and Turkish, Russian, Servian, Greek, Romanic, Albanian, Italian, and Persian elements abound. The meanings of words have also altered. Thus, *pravít*, 'to say,' now means 'to do;' and *dumat*, 'to think,' signifies 'to speak.' Turkish adjectives, substantives, and verbs are used, and even pure Slavonic verbs are conjugated in a Turkish way, especially when elegance of expression is aimed at. The literary idiom differs widely from that of conversation and song, and is not very widely understood. See Morse and Vasilief's *Grammar and Dictionary* (Bulgarian-English, 1860), and

Strausz and Dugovich's *Bulgarische Grammatik* (1895).

Bulgarian Milk. See LACTIC ACID BACILLI.

Bulgarin, TADEI VENEDIKTOVITCH (1789-1859), Russian journalist and author, of Polish descent, was born in Lithuania. After 1815 he established himself at St. Petersburg, and founded (1823) the *Northern Archive*, and in 1825 a new edition of the political daily the *Northern Bee*. He also wrote several novels in the manner of Sir Walter Scott—e.g. *Ivan Vishigin, or the Russian Gil Blas* (1829; Eng. trans. as *Ivan Vejeeghen, or Life in Russia*, 1831); its continuation, *Peter Ivanovitch Vishigin* (1830); *Mazzeppa* (1832); etc. He also published (in Russian) *Russia: an Historical, Geographical, and Literary Survey* (1837); and his *Memoirs* (1846-50).

Bulkheads. (1.) *In tunneling*, the vertical partitions of timbers or masonry to keep out water, air, or mud. Such structures may be solid, or provided with doors to give ingress and egress to workmen and materials. (2.) *In harbour work*, the seawalls marking the shore-line. From them project piers and quays. (3.) *On shipboard*, steel partitions, both transverse and longitudinal, which divide a vessel into a number of water-tight compartments, and thus lessen the danger of foundering when the ship is breached. In men-of-war the bulkheads are provided with water-tight doors. Many ships are now fitted with hydraulically-operated bulkhead doors, which close automatically when a compartment is flooded, and are also controllable from the bridge and other stations in the ship. A door can be opened from inside by any person entrapped, but closes behind him. In ships with two or three screws each engine is in a separate com-

partment, as are also the boilers and the coal-bunkers. *Collision bulkheads* are those nearest the bow and the stern.

Bull, an instrument, ordinance, decree, or letter of the Pope, written down to 1878 on parchment in antiquated Gothic script in the Latin tongue, and having usually a leaden seal appended. The word is derived from the Latin *bullā* (*q.v.*), which means a bubble or capsule of wax enveloping a seal; then it was applied to the seal itself, and, lastly, to the document to which the seal gave authority. Some of the most celebrated bulls were *Clericis Laicos* (1296) and *Unam Sanctam* (1302), by Boniface VIII. against Philip le Bel, king of France; *In Cœna Domini* (1362), by Urban V. against the heretics; *Execrabilis* (1460), by Pius II., in which he proclaimed the superiority of the Pope over the councils; *Exsurge Domine* (1520), by Leo X. against Luther; *Dominus ac Redemptor Noster* (1773), by Clement XIV., for the dissolution of the Jesuit order; *Ecclesia Christi* (1801), for the establishment of the Concordat with France, and *Sollicitudo Omnium* (1814), for the re-establishment of the Jesuit order, by Pius VII.; *Ineffabilis* (1854), which contains the dogma of the Immaculate Conception, and *Pastor Æternus* (1870), which proclaims the infallibility of the Pope, by Pius IX. A collection of bulls is called a bullary. The best editions of bullaries are those collected by Coquelines in *Bullarum Collectio* (14 vols. 1733; new ed. 1857), and by Barberi in *Magnum Bullarium Romanum* (19 vols. 1835). See BRIEF.

Bull (Irish), an unconscious and amusing blunder in speech, and implying an evident contradiction in terms, generally attributed, although not confined, to Irishmen. An Irish bull is perhaps better illustrated than defined. Horace

Walpole, in his *Walpoliana*, records one which he considers the best that he had ever heard. 'I hate that woman,' said a gentleman, 'for she changed *me* at nurse'! A classical example was elicited by the Parnell Commission: 'Better be a coward for five minutes than be dead all the rest of your life.' Cf. *Essay on Irish Bulls*, by R. L. Edgeworth and his daughter Maria (1802; new ed. 1898).

Bull. See CATTLE.

Bull, GEORGE (1634-1710), English bishop, born at Wells, gained a great reputation, especially among continental theologians, by three books on the Trinity—*Defensio Fidei Nicenæ* (1685), to prove that ante-Nicene fathers held the Nicene faith; *Judicium Ecclesie Catholicæ* (1694), to prove that Nicene fathers accepted in its full sense the divinity of Jesus; and *Primitiva et Apostolica Traditio* (1703), to prove that the doctrines of Christ's pre-existence and incarnation were not inventions of early heretics. See R. Nelson's *Life of Bishop Bull* (1827).

Bull, JOHN. This typical Englishman takes his origin from an amusing skit by John Arbuthnot, a contemporary of Swift, in his *History of John Bull* (1712). See also *John Bull and Co.*, by Max O'Rell, a satire on English life and customs from a French point of view.

Bull, JOHN (?1563-1628), English musician, and first music lecturer in Gresham College, London. After a brilliant career in England he went to the Continent, where he was organist of Antwerp cathedral. Bull's printed music is small in quantity, the mass of it being unpublished.

Bull, OLE ORNEMANN (1810-80), Norwegian violin virtuoso, born at Bergen, was largely self-taught. After hearing Paganini he followed his style of playing, and

made his *début* in Paris in 1832. Bull seldom performed other than his own compositions, but his playing was full of fire, poetry, and charm; he possessed a 'magnetic personality,' and never failed to rouse his audience to enthusiasm. He played everywhere, but had perhaps most success in America, where, for several years from 1844, Major Pond, the famous *impresario*, paid him £100 a night. See *Memoir* by Sara C. Bull (Eng. 1886), and *Life* (in Norwegian) by Vik (1890).

Bulla, or BUBBLE-SHELL, a genus of gasteropod molluscs in which the oval shells are thin, with a concealed spire, and usually prettily marked with blotches of colour on a pale ground. The species are widely distributed in both tropical and temperate seas, in shallow water.

Bulla, an ornament worn by Etruscan and Roman children as an amulet, and laid aside at maturity. The name was also given to the seals used by the emperors of Constantinople and of the Holy Roman empire, and by the Pope. (See BULL.) In pathology, bulla is a small raised portion of the epidermis filled with watery fluid like a blister.

Bullas, tn., Spain, prov. of and 30 m. w. by N. of Murcia; has many Roman remains. Pop. 8,000.

Bull-baiting, an obsolete sport in which a bull, tied to a stake, and having the points of his horns guarded, was worried to death by dogs. In 1835 the practice was declared illegal in Britain.

Bulldog, THE. The modern bulldog of the show bench is a triumph of the breeder's art. The courage of the modern animal is generally tempered by a host of ailments, while the activity and strength that formerly led to his use for bull-baiting are lost in his crippled malformation and his inability for quick movement.

But this refers chiefly to 'show dogs;' the ordinary animal still retains much of its pristine courage. The bulldog is of a surly disposition, and not capable of strong attachment. In attack it is silent, and for this reason cannot be accounted a good watchdog. It is, perhaps, the most 'fancied' of all breeds, and nearly a dozen special clubs are engaged in fostering its development. There is no whelp more difficult to rear to maturity, the constitution of the breed having been undermined by inbreeding; and the 'toy' bulldog, a miniature replica of the larger animal, is even more fragile. There is great variety in the size of this breed, individuals scaling from 12 to 60 lbs. in weight. Toy bulldogs must be under 22 lbs., and the other classifications are under or over 35, 45, and 55 lbs. The points of the bulldog are as follows:—Thick set and compact in build; very heavy in front, and comparatively light behind; legs strong and short, muscular, and set outside the body; shoulders massive, and standing well out; chest wide and deep; skull large; temples high, with stop well defined; eyes wide apart and black; under jaw wide, projecting, and turned upwards; face as short as possible, and deeply wrinkled; nose large, black, and good 'lay back;' small rose ears; the bottom teeth should project at least half an inch in advance of the top ones; a good dew-lap; back short and roached; ribs well sprung; fine loin, well tucked up; tail short, kinked, and set on low; accepted colours are brindle, fawn, red, and white, or white pied; coat fine and smooth; action rather slovenly, the hind legs not being lifted high, and in the motion a swing of the body peculiar to this breed.

Bullen, FRANK THOMAS (1857), English writer on sea life, born at Paddington, London; served at

sea (1869-83) on a whaler. From 1883 to 1899 he worked as clerk in the Meteorological Office. Among his writings are *The Cruise of the 'Cachalot,'* with introduction by Kipling (1898), *Idylls of the Sea* (1899), *The Log of a Sea Waif* (1899), *Men of the Merchant Service* (1900), *With Christ at Sea* (1900), *Deep-sea Plunderings* (1901), *A Whaleman's Wife* (1902), *A Sailor Apostle* (1903), *Sea-Wrack* (1903), *Creatures of the Sea* (1905), *Back to Sunny Seas* (1905), *Frank Brown* (1906), *Our Heritage the Sea* (1906), *The Call of the Deep* (1907), *Young Nemesis* (1908), *Cut off from the World* (1909), and *The Bitter South* (1909).

Buller, CHARLES (1806-48), lawyer and politician, born at Calcutta, was a private pupil of Thomas Carlyle. He practised chiefly in Indian and colonial appeals; was interested in reforms of parliamentary procedure and of the poor law; and originated the Record Commission. He was secretary (1838) to Lord Durham when the latter was governor-general of Canada, and along with Wakefield drew up the famous Canadian report. See Froude's *Carlyle* (new ed. 1890); Lord Houghton's *Monographs* (1873), 236-45; Walpole's *Hist. of Eng.*, vol. iii. (1878-86).

Buller, SIR REDVERS HENRY (1839-1908), English general, was born near Crediton, Devonshire. He served in China (1860), in the Red River expedition (1870), and in the Ashanti war (1874). But it was in the Kaffir and Zulu wars of 1878-9 that Sir Redvers came to the front as a soldier of exceptional resource and daring. In the Boer war of 1881 he served as chief of the staff to Sir Evelyn Wood. In 1882 he was head of the intelligence department in the Egyptian campaign, and again he was chief of the staff in the Sudan war, 1884-5. He was appointed quartermaster-general in 1887,

and under-secretary for Ireland in the same year. From 1890 to 1897 he acted as adjutant-general; in 1899-1900 he served in S. Africa, first as general commanding the forces in S. Africa, and afterwards as general officer commanding in Natal. He conducted three unsuccessful operations for the relief of Ladysmith, which was effected only after an investment of 119 days. He was subsequently engaged in the expulsion of the Boers from Natal; and on his return to England he was appointed to the command of the First Army Corps at Aldershot—a position which he was called on to resign (1901) owing to an imprudent speech. He retired in 1906. See *Life* by L. Butler (1909).

Buller, SIR WALTER LAWRY (1838-1906), New Zealand lawyer, was born at Canterbury. He was called to the bar of the Inner Temple in 1874; was commissioner for the colony to the Colonial and Indian exhibition (1886), to the Paris exhibition (1889), and colonial representative at the Imperial Institute (1891-6). He wrote *A History of the Birds of New Zealand* (1873; 2nd ed. 1888), and a *Supplement* to the same (1906). He was made K.C.M.G. in 1886.

Bullet. The solid projectiles fired from small-arms are known as 'bullets,' in contradistinction to cannon balls (now obsolete), which were artillery projectiles. With smooth-bore muskets the form of bullet was necessarily spherical. Those used in the British army before the introduction of rifles were of lead, $14\frac{1}{2}$ to the pound in weight. For some of the earlier forms, see RIFLE.

When small-bore rifles were adopted, the diameter of the bullet was necessarily much reduced. Although its weight was diminished, it was still necessary for its efficiency that it should not be too light. It had therefore to

be made much longer proportionately to its diameter than the old bullet. It is essential to the accuracy in direction of an elongated projectile that it should fly point foremost, and it is the rotation imparted to it by the grooving of the rifle which prevents its turning over during its flight. The longer the bullet is in proportion to its diameter, the more rotation it requires to keep it in position. This is why the grooving of the small-bore rifle has a far more rapid twist than had that of the large-bore. A bullet, however, of so soft a metal as lead, treated to this rapid rotation in the bore of a rifle, would issue from it a shapeless mass, and fly quite inaccurately; therefore the modern bullet has a casing of hard metal (usually cupro-nickel) covering a core of lead and antimony. This hard metal envelope cannot be expanded by the explosion of the charge, and accordingly the small-bore bullet has no cavity in the base. To force it to take the grooves, it is made to cut its way into them by giving the bullet a slightly larger diameter than that of the barrel through which it will have to travel.

The bullet for the Lee-Enfield firearm (calibre .303 in.), at present in use in the British army, has a diameter of .311 in. It weighs 215 grains, and is $1\frac{1}{4}$ in. long. Most foreign powers, and notably Japan, France, Germany, and America, have decided on a pointed bullet. This form is found to retain its velocity longer than does the old pattern. Its trajectory is consequently flatter, and its danger zone longer. Thus at 500 yards the British bullet is over 13 feet above the ground, while the German-pointed bullet is under 7 feet. For the prohibition of explosive and expansive bullets, see HAGUE CONFERENCE.

Bull-fighting is the national sport of Spain, but has been in-

roduced into Spanish America and France, where, in spite of the prohibitive laws of the country, it has taken a great hold on the people. The bulls used in Spain are bred upon the plain between the sierras and the marshy coast-land of the south. The choosing of suitable animals from a large herd is considered excellent sport, and by many Englishmen is preferred to the amphitheatre performance; agility and courage are required in the highest degree. The owners ride to the grazing ground with their friends and several *novilleros*, or apprentice fighters. The *novilleros* tease the young bulls (*novillos*), and ward off dangerous rushes by long lances with blunt points. On the occasion of a bull-fight the processional entry into the arena is one of the chief attractions. In the front rank walk three *matadors* (popularly 'espadas'), who are the principal actors in the show. Then come the *banderilleros*, whose task it is to infuriate the bull by planting darts (*banderillas*) in his shoulders. The *picadores*, mounted on worn-out horses and armed with lances, follow. Last of all come the *monos sabios*, attendants who lead spare horses with bright-coloured saddles. The procession passes across the arena and salutes the mayor. Then the *picadores* move off with their horses, the *banderilleros* shake out their red and yellow capes, and the arena fills with attendants in blue overalls, vermilion shirts, and red hats with blue knobs. All these supers carry sticks, with which to urge on the horses when they show signs of falling.

Directly the bull is let into the arena, a *banderillero* runs up to it and flourishes a cape before its eyes. He then runs toward the railing, the bull at his heels, and the fight commences. The *banderilleros* throw their

bright-coloured darts, with streamers attached, into the animal's neck. In the event of the bull not showing sport, crackers are attached to the heads of the *banderillas*. These explode and burn under the skin, driving the poor animal nearly frantic. When this has gone on for some time, and the bull is half mad with pain and rage, the *matador* salutes the mayor. He wears a pigtail, and carries a bright vermilion cloth, called the *muleta*, and a sword. Then ensue the most exciting moments of the fight, ending with the death of the bull at the hands of the *matador*, although in some cases the encounter proves fatal to the latter.

The popularity of these chiefs of the ring is remarkable. One of the most popular *matadors* was Rafael Guerra, commonly known as Guerrita, who retired with an enormous fortune. He was probably the greatest bull-fighter of any time; his chief rival was Manuel Espartero, who was killed in the bull-ring of Madrid. See Degado's *La Tauromachia* (1894); Hoot's *Les Courses de Taureaux à Paris* (1890); Lozano's *Manual de Tauromaquia* (Seville, 1882); and Chapman's *Wild Spain* (1893).

Bullfinch (*Pyrrhula europæa*), a common and handsome bird, with a red breast, coal-black head and quills, and gray back. It is readily tamed, and is often kept in confinement.

Bullhead, or MILLER'S THUMB, a name applied to various species of the genus *Cottus*, small fresh-water or littoral bony fishes, common in the north temperate zone. The head is broad, depressed, and armed with spines; as in many shallow-water fish, scales are absent. The common marine species, *C. bubalis* and *C. scorpius*, are typical littoral fish, to be found in every pool. The fresh-water *C. gobio* is stated to be sometimes used as food.

Bulli,² tn., Camden co., New South Wales, 40 m. s. of Sydney; headquarters of the Bulli and other coal-mining companies. Pop. 2,500.

Bullinger, HEINRICH (1504-75), Swiss reformer, was born at Bremgarten; became Protestant pastor of Bremgarten in 1529, and of Zürich (1531) in succession to Zwingli, of whose followers he became leader in their struggle against Catholics and Lutherans. He assisted in drawing up the first Helvetic confession of faith at Basel in 1536. With Calvin and Farel he drafted an agreement on the subject of the Lord's Supper between the churches of Geneva and Zürich. He wrote numerous volumes of sermons, in high repute in England, and published at Cambridge by the Parker Society; a *Life of Zwingli* (1535); and *Reformationsgeschichte* (3 vols. 1838-40). See *Life* by Pestalozzi (1858) and Christoffel (1875).

Bullion, uncoined gold and silver in bars or other masses; the word is also used to distinguish metallic from paper money, and occasionally means coin not allowed to pass, or not current at the place where it is tendered. The word was originally applied to the mint, or the place where precious metals were alloyed and converted into stamped money; derived from the Latin *bullā*, 'a lead stamp.' At different periods in history the proportions of bullion—gold and silver—produced have varied considerably: in 1493-1520 the production of gold and silver was respectively 57 and 43 per cent., while in 1581-1600 the production was in the ratio of 17 and 83; but when the gold mines in Australia were brought into operation, the proportion of gold to silver was in the ratio of 77 to 22—a marvellous transformation. In recent years, however, the production of silver has exceeded that

of gold on several occasions; but at the present day there are not many points per cent. between the relative production of the two metals. In 1810 a bullion report was made to the British Parliament by Francis Horner and Sir Robert Peel, who promoted the resumption of specie payments, which had for many years been suspended. See GOLD, SILVER, MINT; also Jacob's *Historical Inquiry into the Production and Consumption of the Precious Metals* (1831), and Soetbeer's *Materiālien zur Beurteilung der wissenschaftlichen Edelmetallverhältnisse* (1886), which is undoubtedly the standard book on the subject. Among recent English works see Lord Avebury's *History of Coins and Currency* (1903), Del Mar's *History of the Precious Metals* (1880), and Shaw's *History of Currency* (1895).

Bull-roarer, the name given by English boys to a plaything which consists of an oblong piece of wood tied to the end of a long string. This, when swung rapidly round, produces a loud humming sound. Mr. Andrew Lang (*Custom and Myth*, 1884, pp. 29-44; new ed. 1898) has raised this toy into a position of scientific importance by showing that it is no other than the *rhombos* used in ancient Greek rites, and that it is an essential in certain ceremonies practised by the aborigines of Australia and by other primitive races. The question has been further studied by Dr. Schmeltz (*Das Schwirrholz*, 1896), by Dr. J. G. Frazer, and by other writers cited by him (*The Golden Bough*, 1900, iii. p. 423 f.).

Bull Run, river in N.E. of Virginia, U.S.A., a sub-tributary of the Potomac, famous for two battles fought on its banks during the American civil war—(1) on July 21, 1861, when the Northern forces under M'Dowell were defeated by the Confederates led by Beauregard and J. Johnston;

(2) on Aug. 29-30, 1862, when the Northern general Pope was defeated by Lee and Jackson in command of the Confederate forces. To the victors these battles were known as the first and second battles of Manassas.

Bulls and Bears. See STOCK EXCHANGE.

Bull-terrier. The bull-terrier is an essentially English dog, and is perhaps commoner than any other terrier. It is a fighting dog; in the pottery districts there is a great demand for it, and its breeding has been carried to high perfection. It has great courage, and tackles badgers and other hard-biting vermin with delight; but to its master it is of a gentle disposition, and this has made it a favourite everywhere. The average weight of the original type was about 35 lbs., but the fancier has evolved the toy variety, and there are now classes for under 7 lbs., 7 lbs. to 10 lbs., 10 lbs. to 30 lbs., and over 30 lbs. Points:—Head long and wedge-shaped, level as possible from skull to head of nose; jaw strong; mouth level; eyes small, dark, and not too prominent; chest broad; body short and well ribbed up; fore legs medium length, showing plenty of bone and muscle; feet strong and well arched; hind legs well hocked; tail fine and straight, carried in line with back when not excited (if excited, game dogs will uplift them); coat fine, short, and smooth. As to colour, pure white, with a black nose or eye, is most approved; but red, fawn, blue, brindle, and pied colours are allowed, although they stand little chance in competition.

Bull Trout, or GRAY TROUT (*Salmo cambricus*), a fish allied to the salmon, common in many British waters. In comparison with the salmon its lower jaw is less elongated, the scales are smaller, the anal fin is nearer the tail, the vertebræ (fifty-nine) are

one less in number, and the shoulders are thicker. Its flesh is somewhat coarser, and as it is a bad riser to the fly, it is not so much prized by anglers. In the spawning season the head of the male becomes olive-brown, and the body orange-brown, while the female is dark gray. The name is also given to other varieties of the Salmonidæ.

Bully, comm., Pas de Calais dep., France, 10 m. N. by W. of Arras. Pop. 5,800.

Bulmer, WILLIAM (1757-1830), eminent London printer, who produced the *Boydell Shakespeare* (1791-1805), 9 vols. folio, with vol. of engravings by Boydell (1803) entitled the *Shakespeare Gallery*. The book was illustrated by the engravings of Bewick, a close friend of the printer. Other magnificent works printed by Bulmer were *Milton* (1793-7, 3 vols. folio), *Goldsmith* (1795, 4to), *Parnell's Poems* (1795, 4to).

Bülow, BABETTE VON. See ARNOLD, HANS.

Bülow, BERNHARD HENRY MARTIN CHARLES, PRINCE VON (1849), imperial chancellor of the German empire (1900-9), was born at Klein Flottbeck, Holstein. In 1873 he entered the diplomatic service, and in 1878 was secretary of the Berlin Congress. He was successively first secretary of the embassy at Paris (1880) and at St. Petersburg (1883), minister at Bucharest (1888), and ambassador at Rome (1893-7), when he was appointed Prussian minister of state, and was made count in 1899, after the acquisition of the Caroline and Marianne Islands. In the following year he became chancellor of the German empire and prime minister of Prussia, in succession to Prince Hohenlohe. He was supported in the Reichstag by the 'bloc'—a combination of Conservatives, National Liberals, and Centre. He resigned in 1909 in consequence

of the rejection by the Reichstag of the Government Inheritance Tax Bill. In June 1905 he was raised to the rank of prince.

Bülow, FRIEDRICH WILHELM, COUNT VON (1755-1816), Prussian general, served with distinction in the campaign of the Rhine; fought with Blücher at Eylau and Friedland; and in 1813 defeated the French at Möckern, saved Berlin, and routed Marshal Ney at Dennewitz—which gained him the title of Count of Dennewitz. He was engaged in the battles of Leipzig and Soissons. At Waterloo he was in command of Blücher's division. He then returned to his post in Lithuania, where he died. See *Life* by Varnhagen von Ense (1854).

Bülow, HANS GUIDO VON (1830-94), German pianist and conductor, born at Dresden; adopted the theories of Wagner, under whose guidance he placed himself, and, having completed his training under Liszt, made his first concert tour in 1853. From 1855 to 1864 he was principal pianoforte teacher at the Stern Conservatorium, Berlin, and in 1864 became conductor of the royal opera and director of the Conservatorium at Munich, where he organized model performances of Wagner's works. After 1869, when he left Munich, he held appointments as conductor at Hanover, Meiningen, St. Petersburg, Hamburg, and elsewhere. Allowing for some eccentricities both as a man and as a musician, he was a splendid interpreter of the pianoforte classics, and was eminently successful as a conductor. His memory was extraordinary, and he was the first to set the fashion of conducting without book. His editions of Beethoven and other masters of the pianoforte are of high value. See his *Briefe*, ed. by Marie von Bülow (5 vols. 1895-1905).

Bulrush. The true bulrush (*Scirpus lacustris*) is a native of Britain, occurring in streams, ponds, and occasionally in boggy ground, its spiked inflorescence of reddish-brown flowers appearing in late summer. The plant is four feet or more in height, the stems are terete, and the leaves are flat or ribbon-shaped. The great reed-mace (*Typha latifolia*) is often called the bulrush. The stem of this handsome plant is often seven feet in height, and in July culminates in a brownish cylinder of pistillate flowers, this again being crowned with a thin spike of male flowers.

Bulsar, seapt. tn., India, 115 m. N. by E. of Bombay, with an export trade in timber. Pop. 13,000.

Bulthaupt, HEINRICH (1849-1905), German poet and dramatist, born at Bremen, where he became (1879) librarian of the municipal library. He belonged to the school of German poets who aimed at the special cultivation of form; and among his more notable works were the dramas, *Die Arbeiter* (1876), *Eine neue Welt* (1886), *Der verlorene Sohn* (1889), and a volume of poems, *Durch Frost und Gluten* (3rd ed. 1900). He gained great renown by his *Dramaturgie des Schauspiels* (4 vols. 1882-1901), *Dramaturgie der Oper* (2 vols. 1887; 2nd ed. 1902), and *Shakespeare und der Naturalismus* (1893).

Bulti. See BALTISTAN.

Buluwayo, or BULAWAYO ('the place of killing'), in Rhodesia, S. Africa, formerly the kraal of Lobengula, king of the Matabele, now a British town and centre of trade. The present town lies on the open veld, 220 m. s.w. of Salisbury, and has a white population of about 4,000. It is connected with Cape Town and with Beira (*via* Salisbury) by railway and telegraph, and with the Wankies coal field and the Zambezi at Victoria Falls.

Amongst its public buildings is the Rhodesia Museum. There are gold mines in the vicinity. The transcontinental telegraph now connects it with Ujiji, on Lake Tanganyika.

Bulwark, a British battleship of 15,000 tons and 18 knots, launched at Devonport in 1899.

Bulwer, WILLIAM HENRY LYTTON EARLE, BARON DALLING AND BULWER (1801-72), English diplomatist, known as Sir Henry Bulwer, and elder brother of Lord Lytton, was born in London. He sat in Parliament for Wilton (1830), Coventry (1831), and Marylebone (1835). For the next thirty years he devoted himself entirely to diplomacy at Constantinople, Paris, Madrid, and America (where his name is still associated with the Clayton-Bulwer treaty). After serving as envoy-extraordinary to Tuscany (1852-5), he was again accredited to Constantinople in 1857, and remained there till 1865. In 1868 he was elected member for Tamworth, and retained that seat until his elevation to the peerage (1871). Bulwer had a great reputation as a diplomatist, and achieved some distinction as the author of two volumes (1867-70) of *Historical Characters* (Talleyrand, Cobbett, Canning, and Mackintosh), and a *Life of Viscount Palmerston* (1870).

Bulwer-Lytton, SIR EDWARD. See LYTTON.

Bumboat, a wide, flat boat used in Holland. The name is also applied to the boats of small traders (often women) who sell provisions, clothing, etc., to vessels lying in roadsteads.

Bunbury, seapt. tn., W. Australia, beautifully situated on the shore of Koombanah Bay, 112 m. s. of Perth. Favourite resort of summer visitors. Fish are abundant, and feathered game, especially black swans, are plentiful. Pop. 3,000.

Bunbury, SIR HENRY EDWARD (1778-1860), seventh baronet, in 1815 was appointed special commissioner with Lord Keith to convey to Napoleon the British government's decision regarding his exile. Bunbury was greatly interested in the volunteer and working-class movements, formed a fine library and collection of pictures, and wrote *Narrative of Certain Passages in the Late War with France* (1852), and other valuable books. See *Memoir and Literary Remains*, edited by his son (privately printed, 1868).

Bunbury, HENRY WILLIAM (1750-1811), father of preceding, English caricaturist, was the younger son of Sir William Bunbury of Mildenhall in Suffolk. His caricatures, which, though somewhat broad, were free from personalities and non-political, were founded on the style of Gillray and Rowlandson, and were executed in pencil and chalk. His sketches of foreign costumes, burlesques, and illustrations to *Tristram Shandy* (1773) achieved great popularity; and of his *Directions to Bad Horsemen* (1781), Sir Joshua Reynolds said that the plates excelled everything else of the kind.

Buncrana, mrkt. tn. and sea-bathing resort, Co. Donegal, Ireland, on E. coast of Lough Swilly, 10 m. N.W. of Londonderry; famous for salmon-fishing.

Bund, AFRIKANDER. See AFRICANDER.

Bundaberg, port on the Burnett R., Cook co., Queensland, 8 m. from its mouth, 217 m. by rail N. of Brisbane, in important sugar-growing and manufacturing district. Pop. 5,200; with 5 m. radius, 10,000.

Bundelkhand, or BANDALKHAND, tract of country in Central India, lying between the Jumna and Chambal. Area, 10,322 sq. m.

The country is very fertile. It possesses deposits of iron ore, diamonds, and copper. Pop. 1,300,000.

Bunder or Bandar Abbas. See BENDER ABBAS.

Bundesrath, the federal council of the German empire, consisting of fifty-eight delegates appointed by the governments of the individual states for each session. In conjunction with the Reichstag it exercises legislative functions, and though mainly a confirming body, it may reject measures passed by the Reichstag, and has limited initiatory powers. Members may appear and speak in the Reichstag on matters directly connected with their states, but are not eligible for election to that body. See *Cambridge Modern History*, vol. xi. ch. 16 (1909), for a full account.

Bundheim. See HARZBURG.

Bundi, or BOONDEE, feudatory state in Rajputana, India. Area, 2,220 sq. m. Pop. 170,000. — **BUNDI**, the chief town, is 95 m. S.E. of Ajmere. Pop. 20,000.

Bundoran, vil. and wat.-pl., Co. Donegal, Ireland, on Donegal Bay, 4 m. S.W. of Ballyshannon. Near it are barytes mines.

Bungalow, the Anglo-Indian word for a one-storied house with a wide veranda, the typical residence of Europeans in the tropics. It is also used for similar types of house which have been erected in Europe and America. The dak-bungalows are the rest-houses built by the Indian government for the use of travellers.

Bungay, mrkt. tn., Suffolk, England, on Waveney and G.E.R., 14 m. W. of Lowestoft; has large printing works, flour mills, silk factory, etc. Pop. 2,000.

Bungener, LOUIS FÉLIX (1814-74), French Protestant theological writer, born at Marseilles, of German descent. He studied theology at Geneva, and taught there from 1843 to 1848. He

wrote several very popular works which, in the form of novels, defended Protestantism—e.g. *Un Sermon sous Louis XIV.* (1844; 7th ed. 1881), *Histoire du Concile de Trente* (1846), *Trois Sermons sous Louis XV.* (1849; 6th ed. 1902), *Voltaire et son Temps* (1850), *Rome et la Bible* (1859), *Rome et le Vrai* (1873), *Calvin* (1862), *Lincoln* (1865), *St. Paul* (1867), *Pape et Concile au XIX^e Siècle* (1870). Almost all these were translated into English shortly after their publication. See Gambier's *Félix Bungener* (1891).

Bunion, a swelling at the base of the great toe. Gout, or the rheumatic constitution, may predispose to it; but the exciting cause is always ill-fitting foot-gear, causing abnormal pressure on the joint. Chronic inflammation is set up, and perhaps a false bursa is formed over the joint. In bad cases the tendon of the muscle which extends the great toe may be displaced. The bones are thickened by chronic inflammation, and the joint may become disorganized, with suppuration. The trouble is more common with women than with men. Soothing lotions may be used, and iodine painted over the enlargement of the joint later. In bad chronic cases the remedy recommended is excision of the head of the metatarsal bone.

Bunker Hill, one of two small hills behind Charlestown, a northern suburb of Boston, Massachusetts, U.S.A. Here was fought the first battle of the American War of Independence, June 17, 1775, in which victory finally rested with the British. A granite column commemorates the action.

Bunkimachandra Chatterji, or BANKIM CHANDRA CHATTERJI (1838-94), Bengali novelist; first graduate of Calcutta University; served for many years as a magistrate in Bengal. He wrote his-

torical and social romances, distinguished for richness of imagination and constructive ability. The most famous were *Dargesa Nandini*, or *The Chieftain's Daughter* (1880); *Kapala Kundala* (trans. H. A. D. Phillips, 1885); *Bisha-Brikka* (1872), or *The Poison Tree* (trans. Mrs. Knight, 1884); and *Krishna Kanta's Will* (trans. Mrs. Knight, 1895).

Bunkum, or BUNCOMBE, empty speech-making, tall-talk oratory intended to gull rather than to enlighten. The word is derived from Buncombe, N. Carolina, U.S.A. Near the close of a debate on the Missouri question in the sixteenth Congress, the member for that division insisted on inflicting a long speech on a dwindling house, saying apologetically that he was 'speaking for Buncombe.'

Bunsen, CHRISTIAN CHARLES JOSIAS, BARON VON (1791-1860), German diplomatist and scholar, was born at Korbach, Waldeck. After spending some years (1818-27) as secretary to the Prussian embassy in Rome, he was appointed ambassador there in 1827, and filled this office until his recall in 1838. After serving a short time as ambassador at Berne (1839-41), he was appointed to the corresponding post in England, where he remained for the rest of his official life. On questions of church organization he did not always agree with the king of Prussia, and he formulated his views in *Die Verfassung der Kirche der Zukunft* (1845). Appointed commissioner to settle the dispute with Denmark about Schleswig-Holstein, he in 1848 presented to Lord Palmerston a *Memoir on the Constitutional Rights of the Duchies of Schleswig and Holstein*; but his views were not accepted by the British premier. The outbreak of the Crimean war led to his recall (1854). Although he retired in-

to private life, his *Zeichen der Zeit* (1855, showed that he still took a deep interest in political affairs. See the *Memoir*, in German, by his widow (1868-71); her own *Life and Letters*, ed. by Hare (1879; 6th ed. 1890); Bunsen's *Correspondence with Frederick William IV.*, ed. by Ranke (1873).

Bunsen, ROBERT WILHELM (1811-99), German chemist, was born in Göttingen. He held four chairs—at Kassel in 1836; Marburg, 1838; Breslau, 1851; and Heidelberg, 1852-89. He laid the foundations of modern organic chemistry. His examination of the waste gases from blast-furnaces led to great economies in their working, as well as to his development of the methods of gas analysis. In 1852 he investigated the electrolytic preparation of the metals, including magnesium, of which he examined the light-giving capabilities; and with Kirchhoff, in 1859, he developed the methods of spectrum analysis, discovering the elements caesium and rubidium. In the course of these and other researches he invented the battery, burner, grease-spot photometer, filter-pump, ice and vapour calorimeters that are associated with his name and in use in every laboratory throughout the world. Among other books, he wrote *Chemische Analyse mit Spektralbeobachtungen* (1861), with Kirchhoff; *Gasometrische Methoden* (1857; Eng. trans. by Roscoe 1857); and *Flammenreaktionen* (1880; 2nd ed. 1886). See *R. W. Bunsen: ein Gedächtnissblatt* (1900), Debus's *Erinnerungen an R. W. Bunsen* (1901), and Roscoe's *Memorial Lecture Jour. Chem. Soc.* (1900).

Bunsen Burner. In this appliance a jet of coal gas is directed into a tube which is open at both ends, and usually vertical. As a result air is drawn in by the current of gas, and mixes with it, so