the Spanish king. Jealousy on the part of his enemy Pedrarias Davila (whose daughter he had married) led to his execution.

Balbriggan ('town of Brecan'), mrkt. tn. and seapt. (small harbour), Balrothery par., Co. Dublin, Ireland, 21 m. N.E. of Dublin; long noted for the manufacture of fine hosiery. There is also a linen factory. Pop. 2,300.

Balbus, L. CORNELIUS, a Spaniard of Gades (Cadiz), who served under Pompey the Great against Sertorius, and received from him the Roman citizenship. In 56 B.C. he was prosecuted for having assumed the rights of a citizen contrary to law; was defended by Cicero, whose speech on the occasion is extant; and was acquitted. Cæsar entrusted him with his affairs at Rome during the civil war, and in 40 B.C. Augustus made him consul.

Balcarres. See CRAWFORD AND BALCARRES, EARLS OF.

Balcescu, NICOLAE (1819–52), Roumanian author, who greatly promoted the study of Roumanian history in the *Magazinul Istoric pentru Dacia;* he took a prominent part in the revolution of 1848, and died an exile at Palermo. His chief work is *Istoria Românilor sub Mihaiu-Viteazul* (1887).

Balchen, ADMIRAL SIR JOHN (1670–1744), British naval officer, made captain in 1697; was in command of the *Chester* in 1707 when she was captured while protecting a fleet of merchant ships. In 1709 he was again captured, while in command of the *Gloucester*, by Duguay Trouin's squadron. At Cape Passaro, in 1718, he was in command of the *Shrewsbury*. He was lost while returning in the *Victory* (110 guns), with about 1,200 souls, on the Casquet rocks, off Alderney, on Oct. 4, 1744.

Balcony, platform outside a window or windows, enclosed by balustrade or parapet, and usually supported on consoles or brackets. The balcony became popular in Southern Europe during the middle ages, and formed a feature of Renaissance architecture. The stone balconies of Italy are famous; they were usually uncovered, but those of France are sometimes canopied. The chalets of Switzerland and Germany owe much of their picturesqueness to their balconies. The iron balconies now common do little for the grace and dignity of a building. The term balcony is also applied to that part of a theatre between the dress circle and the gallery.

Baldachin. (1.) A canopy of silk cloth borne over the head of a dignitary (*e.g.* the Pope), especially in the East, sometimes also over the eucharist when carried processionally. (2.) The canopy of metal or stone, sometimes called *ciborium* supported by pillars or suspended over the high altar, in the Eastern and Roman Churches, from which is suspended a vessel containing the host. That in St. Peter's at Rome is over 126 ft. high.

Balder, or BALDR, the central figure of one of the most significant of the Scandinavian myths, was the son of Odin and Frigg, the brother of Thor, and the husband of Nanna. When Balder complained to his mother that he suffered from evil dreams, Frigg exacted an oath from all nature, animate and inanimate, not to harm Balder, but did not require this pledge from the mistletoe, which was too young to take the oath. As Balder was now immune from harm, the gods amused themselves by throwing their darts at him. But Loki, who had found out about the mistletoe, persuaded Höd, the blind god of war, to shoot a dart made from that plant. The arrow pierced the heart of Balder, and he fell dead, his wife also dying of grief. At the request of Hermodr the

Nimble, Hel promised to send Balder back to Asgard again if all nature should weep for him—an offer frustrated by the refusal of Thöck, the step-daughter of Loki. A fine poem by Sydney Dobell on the story of *Balder the Beautiful* appeared in 1854; see also Matthew Arnold's poem, *Balder Dead*.

Baldissera, ALESSANDRO (1838), Italian general, born at Venice; entered the Italian army from the Austrian (1866). In 1888 he was appointed commander-in-chief of the Italian forces in Eritrea. After the death of King John of Abyssinia he was recalled (Dec. 1899); but after the disaster at Adua he was again sent out to Africa, to replace General Baratieri (Feb. 1896), and opened negotiations for peace, which was concluded at the end of the year.

Baldmoney (*Meum athamanticum*), the only species of its genus (order Umbelliferæ), is found throughout Britain, but is not common. The flowers are yellowish white, the leaves look like dark-green feathers. The whole plant is strongly aromatic.

Baldness. See HAIR, DISEASES OF.

Baldric, a belt worn from either shoulder, and crossing the body diagonally; used as an ornament, or to sustain a sword, dagger, or horn.

Baldung, HANS (1476–1545), called also GRÜN or GRIEN, German painter and engraver. His best works are engravings on copper, marked by exaggeration and fantastic ornament. Of his paintings, in which the influence of Dürer is discernible, the chief are his *Coronation of the Virgin*, *The Crucifixion*, etc. (1513–16), which form the altar-piece of Freiburg Cathedral; the *Adoration of the Magi* (1507), now in Berlin; *Dance of Death* (1517), in Basel; a *Madonna* (1530), in Vienna; *Youth and Old Age*, in Liverpool. Reproductions of his drawings and paintings were issued by Terey in 1894–5 and 1897.

Baldwin, the name of nine counts of Flanders, of whom the most important are: BALDWIN I. (d. 879), surnamed *Bras de fer* ('Iron Arm'), who founded the countship; BALDWIN V. (d. 1067), *Le Débonnaire*, who was regent of France during the minority of Philip (1060–7), and assisted William of Normandy in his conquest of England; and the BALDWIN IX. mentioned below as first Latin emperor of Constantinople.

Baldwin I. (1058–1118), first Latin king of Jerusalem. Having taken part in the first crusade with his eldest brother, Godfrey of Boulogne, he succeeded, on the death of the latter in 1100, to the government of Jerusalem. He was succeeded by his cousin, BALDWIN II., who reigned from 1118–31. BALDWIN III., who reigned from 1143–62, was the pattern of all knightly graces. After his death the Latin kingdom grew weak before the attacks of Saladin. BALDWIN IV., the Leper, son of Amalric, who reigned from 1173–83, resigned in favour of his nephew, BALDWIN V., a child six years old, who was poisoned by his mother in 1187 to make way for her second husband.

Baldwin I. (1171–1205), first Latin emperor of Constantinople, took part, as ninth count of Flanders, in the fourth crusade, and in 1202 assisted Alexius to recover Constantinople from the usurper Alexius Angelus. Disappointed of the promised rewards, the Latins sacked the city and proclaimed Baldwin emperor (1204). He was taken prisoner by John, king of Bulgaria, while besieging Adrianople (1205), and died in captivity.—His nephew, BALDWIN II. (1217–73), was proclaimed emperor of Constantinople in 1228, Jean de Brienne being regent during his minority. He

was driven from Constantinople in 1261 by Michael Palæologus.

Baldwin, EVELYN BRIGGS (1862), American Arctic explorer, born at Springfield, Missouri; accompanied, as meteorologist, the Peary N. Greenland expedition (1893–4), the Wellman expedition to Franz Josef Land (1898–99), and was the leader of the Baldwin-Ziegler Polar expedition (1901), which, through internal dissensions, accomplished nothing, and returned in 1902. He is author of *Search for the N. Pole* (1903), and *Auroral Observations, Franz Josef Land* (1898–9).

Baldwin, JAMES MARK (1861), American psychologist, born in Columbia, S.C.; studied in Leipzig, Berlin, and Tübingen; was professor of philosophy at Lake Forest University, Illinois, from 1887–9, and at Toronto University from 1889–93, when he was appointed to the professorship of psychology at Princeton (till 1903), and at Johns Hopkins University (1903). His chief works are *German Psychology of To-day* (1886), *Mental Development in the Child and the Race* (1895), *Social and Ethical Interpretations in Mental Development* (1898), *The Story of the Mind* (1898), *Development and Evolution* (1902), *Fragments of Philosophy and Science* (1902), and *Thoughts and Things or Genetic Logic* (1906–8). He founded *The Psychological Review*, and edited the *Dictionary of Philosophy and Psychology* (1901–6).

Baldwin, ROBERT (1804–58), Canadian statesman, born in Toronto. He became a lawyer (1825), a member of the Upper Canada Assembly (1829), solicitor-general (1840), and premier and attorney-general of Upper Canada (1842–3 and 1848–51). He is regarded as the founder of the Reform party.

Baldwin Locomotive Works, North Bridge Street, Philadelphia, U.S.A., one of the leading railway engine-shops of the world, with an annual capacity of 1,500 locomotives. The works were founded by Matthias Baldwin, who built his first locomotive in Philadelphia in 1833.

Bâle. See BASEL.

Bale, JOHN (1495–1563), bishop of Ossory, was born at Cove, near Dunwich, in Suffolk, and held the living of Thornden, in Suffolk. Before 1534 he had adopted extreme Protestant opinions and taken a wife. From 1540 till after the death of Henry VIII. Bale lived in exile in Germany. Under Edward VI. he was made rector of Bishopstoke, and in 1552 bishop of Ossory. On the accession of Mary he fled to Basel, where he lived till 1559. He wrote the first literary history of England, *Scriptorum Illustrium Majoris Britanniæ Catalogus* (1548–59), and in English a number of interludes and morality plays, the most important being the historical play of *King John*. *Select Works of Bishop Bale* were published by the Parker Society in 1849, and his *King John* by the Camden Society in 1838. See Cooper and Thompson's *Athenæ Cantabrigienses* (1858–61).

Balearic Isles ('Slingers' Islands'), a prov. of Spain, consisting of Majorca, Minorca, Iviza, Formentera, and some smaller islets, in Mediterranean, 125 m. E. from the coast of Catalonia-Valencia. Originally dependencies of the Phœnicians and Carthaginians, they were conquered by the Romans in 123 B.C., by the Moors in 798 A.D., and by Jayme of Aragon (1229–32). From 123[illegible] to 1344 they constituted the kingdom of Mallorca. Minorca was in British possession from 1713 to 1783. The inhabitants of these islands rendered valuable service as slingers in the ancient Carthaginian and Roman armies, and they get their name (Sp. *Baleares*) from the Greek *ballein*, 'to

throw.' The climate is very fine; soil for most part fertile; mines rich, but little worked. There are busy manufactures similar to those of Catalonia, and the export trade is active. There is constant communication by steamer with Barcelona and Valencia. Cap. Palma. Area, 1,936 sq. m. Pop. 312,000. See *Die Balearen in Wort und Bild* (7 vols. 1869–90), a magnificently illustrated work by the Archduke Ludwig Salvator of Tuscany; Bidwell's *The Balearic Islands* (1876); Vuillier's *The Forgotten Isles* (1906); and Mary Boyd's *The Fortunate Islands* (1911).

Baleen. See WHALE.

Balestier, CHARLES WOLCOTT (1861–91), American novelist and journalist, born at Rochester, N.Y.; died at Dresden, Germany. He wrote a number of novels—*e.g. Benefits Forgot* (1894)—and collaborated with Rudyard Kipling, his brother-in-law, in *The Naulahka* (1892), a tale of Indian life.

Balfe, MICHAEL WILLIAM (1808–70), Irish operatic composer, was born at Dublin. As a baritone vocalist, he was engaged (1826) by Rossini for the Italian opera at Paris. In 1835 he settled in London, and began to produce a long series of English operas, including *The Maid of Artois* (1836), *The Bohemian Girl* (1843), *The Daughter of St. Mark* (1844), *The Rose of Castile* (1857), *Satanella* (1858), and *Il Talismano* (1874). Balfe, who has been styled 'the English Rossini,' had a rich vein of melody which distinguishes all his compositions. A number of his songs, such as *Come into the Garden, Maud*, and *Killarney*, are still very popular. See *Lives* by Kenney (1875) and Barrett (1882).

Balfour, ARTHUR JAMES (1848), son of the late Mr. James Maitland Balfour of Whittinghame, Haddingtonshire, Scotland, and Lady Blanche Cecil, sister to the late Marquis of Salisbury, entered the House of Commons, as member for Hertford, at the general election of 1874, and continued to represent that constituency until 1885. In 1878 he acted as Lord Salisbury's private secretary at the Berlin Congress. Mr. Balfour was introduced to official life only so recently as 1885. Although he had at that date been a member of the House for eleven years, he had not hitherto actively interested himself in its affairs. He had an association, more or less occasional, with the historic 'Fourth Party,' but up to within twelve months of his first official appointment he was regarded 'at best as a parliamentary *flâneur*, a trifler with debate.' In 1885, when the Conservative party were placed in power, Mr. Balfour was returned as member for E. Manchester, and again in 1886, 1892, 1895, and 1900; but was rejected in 1906. The Hon. Alban Gibbs voluntarily resigned his seat for the City of London, and Mr. Balfour was elected to the vacant seat, and re-elected in Jan. 1910, and again in Dec. 1910. When the Marquis of Salisbury formed his first administration, in June 1885, on the resignation of Mr. Gladstone's government, he made his nephew President of the Local Government Board. Fourteen months later, when Lord Salisbury was successful at the polls (1886–92), Mr. Balfour became Secretary for Scotland. Sir Michael Hicks-Beach was Chief Secretary for Ireland, but he retired, through ill-health, in March 1887, and Mr. Balfour was appointed to the office, and retained his seat in the cabinet. The period was one of great political excitement, disaffection, and unrest in Ireland. Mr. Balfour applied himself to the task of 'restoring the reign of law and order,' as he expressed it, with extraordinary vigour and resolution. His

administration of the Crimes Act (passed in 1887) was of the most drastic, thorough-going character. Members of Parliament were imprisoned (at the beginning of the session of 1888 nine Irish representatives were in jail), the Land League was 'proclaimed,' the 'Plan of Campaign' was declared an illegal conspiracy, meetings were suppressed and dispersed, and acts of disorder or lawlessness were repressed with an iron hand. All this provoked the bitter hostility and resentment of Mr. Parnell and his followers —who invented for the Chief Secretary the sobriquet of 'Bloody Balfour'—and led to some of the stormiest and most exciting scenes the House of Commons has ever witnessed. But at least two remedial measures were passed into law by Mr. Balfour which have been of the greatest benefit to the country. These were the Light Railways Act (1889), and the Act creating the Congested Districts Board (1890); while his organization and administration of the Zetland Relief Fund (1891) extorted grateful recognition even from his bitterest political opponents. The other chief incidents of his secretaryship were the Parnell Commission (1888), the downfall of Mr. Parnell after the disclosures in the O'Shea divorce case (1890), and, as a direct consequence, the disruption of the Irish party. Mr. W. H. Smith, who had been First Lord of the Treasury and leader of the House of Commons since the meeting of Parliament on Jan. 27, 1887, died on Oct. 6, 1891, and Mr. Balfour was promoted to this responsible position, which he filled until the dissolution in 1892. In Lord Salisbury's third administration (1895–1900)—in the interval the alliance with the Liberal Unionists had been effected —Mr. Balfour resumed the leadership of the House of Commons as First Lord of the Treasury and he was continued in this office when, in October 1900, the general election again gave the Unionist party an overwhelming majority. Mr. Balfour, who formed his first government as Prime Minister in August 1902, on Lord Salisbury's retirement, was the principal minister in charge of the English Education Bill of that session, by which school boards were abolished, and both elementary and secondary education were placed under the control of the local authorities; and of the London Education Bill of 1903, which transferred the work of the school board to the county council. In 1903, when Mr. Chamberlain resigned and raised the fiscal question, Mr. Balfour expressed agreement with his proposals, but held that the country was not ripe for the taxation of food. Subsequently he committed the government to a policy of retaliation, but repudiated the title of protectionist. (See TARIFF REFORM.) In 1904 he spoke frequently and strongly on the Licensing Bill, the most important measure of the session. He resigned office in December 1905. He was one of the strongest opponents of the Liberal budget of 1909, and in the general election of Jan. 1910 avowed his general adherence to the principles of tariff reform. At the election in Dec. of the same year, he supported the Referendum as a means of settling differences between the two Houses of Parliament and declared his willingness to submit tariff reform to the popular test. Apart from politics, Mr. Balfour has shown great interest in scientific and philosophical speculation. In 1904 he presided at the British Association meeting at Cambridge, and delivered an address, 'Reflections suggested by the New Theory of Matter.' In 1909 he delivered the

Romanes lecture at Oxford on 'Theories of Beauty.' His writings include *A Defence of Philosophic Doubt* (1879), *Essays and Addresses* (1893), *The Foundations of Belief: being Notes introductory to the Study of Theology* (1895), and *Economic Notes on Insular Free Trade* (1903). See B. Alderson's *A. J. Balfour—the Man and his Work* (1903).

Balfour, EDWARD GREEN (1813–89), surgeon-general in the British army, born at Montrose. His great achievement is *The Encyclopædia of India* (1857), in five volumes.

Balfour, FRANCIS MAITLAND (1851–82), Scottish embryologist, brother of the Right Hon. A. J. Balfour, was appointed lecturer on animal morphology at Cambridge (1876). In 1882 a special professorship was instituted for him, but an Alpine accident cut short his promising career. His fame rests on his work, *Comparative Embryology* (1880–1), though he also wrote *On the Development of Elasmobranch Fishes* (1878), and, with Michael Foster, *Elements of Embryology* (2nd ed. 1883).

Balfour, RT. HON. GERALD WILLIAM (1853), President of Local Government Board (1905–6), younger brother of the Right Hon. A. J. Balfour, entered Parliament at the general election of 1885, for the central division of Leeds (re-elected 1886, 1892, 1895, 1900, but rejected in 1906). In the third Salisbury administration (1895–1900) he was made Chief Secretary for Ireland, without a seat in the cabinet. His policy aroused great resentment among the Irish landlord party. His Land Bill (1895) had a stormy passage, and local government was extended to Ireland in 1898, when a large grant was made to the landlords under the Tithe Rent Charge Bill (1900). Mr. Gerald Balfour's establishment of a department of agriculture and technical instruction met with the approval of all parties in Ireland (1899). In 1900, on the formation of Lord Salisbury's fourth government, he was transferred to the English Board of Trade, with a seat in the cabinet. The principal legislative results of his occupancy of this post were a reform of the Patents Acts (1902); and the Sugar Convention Bill (1903), to give effect to a convention entered into at Brussels for the abolition of foreign sugar bounties. He lost his seat at the general election of 1906, and retired from political life.

Balfour, ISAAC BAYLEY (1853), regius keeper of Royal Botanic Gardens, Edinburgh, and professor of botany at Edinburgh University since 1888, son of John Hutton Balfour, who held the same chair (1845–79), was educated at Edinburgh; elected to the chair of botany at Glasgow (1879), where he remained until appointed Sherardian professor of botany at Oxford in 1884. He has published monographs on the flora of Rodriguez (1879) and of Socotra (1888), trans. of Goebel's *Organography of Plants* (2 vols. 1900–5), and has edited (since 1887) the *Annals of Botany*.

Balfour, SIR JAMES (d. *c.* 1583), of Pittendreich, Scottish lawyer and statesman, son of Sir Michael Balfour of Mountquhanie, Fifeshire. For his share in the plot against Beaton he was sent (1547) with John Knox to the French galleys. On his return (1549) he became one of the most shameless political intriguers of his time, frequently betraying both Queen Mary's party and that of her opponents. He succeeded in securing the execution of Morton for the murder of Darnley, in which he himself was almost as deeply involved as Bothwell. In 1561 he was appointed lord president of the Court of Session. He had a partial connection with Balfour's

Practicks, or A System of the most ancient Law of Scotland.

Balfour, SIR JAMES (1600–57), Scottish Lyon King of Arms, antiquarian and historian, was the eldest son of Sir Michael Balfour of Denmiln, Fifeshire. His *Annals of Scotland*—valuable for their genealogical details and their account of contemporary events—were published in 1837. See *Memoir* by James Haig (1825).

Balfour, JOHN (d. 1688), third Lord Balfour of Burleigh, is sometimes confused with John Balfour of Kinloch, the Covenanter, the principal actor in the assassination of Archbishop Sharp in 1679—the latter having been wrongly designed 'John Balfour of Burley' by Scott in *Old Mortality*. He succeeded his father in the title in 1663. See Anderson's *Scottish Nation*.

Balfour, JOHN HUTTON (1808–84), Scottish botanist, was born at Edinburgh; graduated M.D. in 1832. He founded the Botanical Society of Edinburgh in 1836, and in 1840 began to deliver lectures on botany in that city. In 1841 he succeeded Hooker as professor of botany at Glasgow, and in 1845 succeeded Graham in Edinburgh, becoming also regius keeper of the Royal Botanic Gardens and queen's botanist for Scotland.

Balfour of Burleigh, LORD (1849). Alexander Hugh Bruce, in whom the attainted title of Baron Balfour of Burleigh (created 1607) was restored by Act of Parliament in 1869, is a representative peer for Scotland, elected in 1876. In the Marquis of Salisbury's second administration he succeeded (1889–92) the Earl of Onslow as parliamentary secretary to the Board of Trade. In the Unionist government of 1895–1900 Lord Balfour of Burleigh became Secretary for Scotland, with a seat in the cabinet, and was continued in that office when the Marquis of Salisbury was again returned to power in October 1900, and on the formation of Mr. Arthur Balfour's first administration in July 1902, but resigned his position in September 1903, in consequence of differences existing in the cabinet on the question of fiscal reform. In 1909 he was a leader of the opposition in the House of Lords to the action of that house in vetoing the budget of 1909. The principal legislative fruits of his secretaryship have been the codification and amendment of the Public Health Acts of Scotland (1897), the establishment of the Congested Districts Board for Scotland (1898), and an important reform of the procedure relating to the promotion of Scottish private bills (1899). The administrative results include a reorganization of the system of imperial grants for education, the transfer of science and art grants from South Kensington to the Scotch Education Department, and the systematizing of the inspection of higher education in Scotland. Lord Balfour has been associated, either as chairman or member, with many of the most important royal commissions (*e.g.* of the Metropolitan Water Supply Commission in 1893–4) which have sat since 1874, and has acted as arbiter in such considerable disputes as those between the London and North-western Ry. Co. and the Manchester Ship Canal Co., the Great Central Ry. Co. and the Eyre Estate, and St. Bartholomew's Hospital and Christ's Hospital. He has recently been chairman of the commission to investigate the conditions of the trade between Canada and the West Indies. Lord Balfour is also a prominent Scottish Churchman, and is a familiar figure in the debates of the General Assembly.

Balfrush, BALAFRUSH, or BARFRUSH (Pers. *Barfurush*), tn., Persia, prov. Mazanderan, separated from the cap., Teheran (95 m. S.W.), by the Elburz Mts. It is an important commercial (provincial) centre, with a considerable trade in silks and cotton. Pop. 50,000 to 60,000.

Bali, or LITTLE JAVA, island (Lesser Sunda group) of Dutch E. Indies, immediately E. of Java. Its centre consists of volcanic mountains 7,500 to 10,500 ft. (Gunong Agung). Its climate, vegetation, and native population resemble those of E. Java. Dutch rule was established in 1849. The Siboga expedition (1899) ascertained that a submarine threshold, only 1,020 ft. from the surface, connects Bali with Lombok, thus disposing of the well-known 'Wallace's line.' Area, 4,063 sq.m. Pop. 1,100,000. See *Scot. Geog. Mag.*, 1900, pp. 44–46; Van Vlijmen's *Bali* (1875).

Bali, or BALLY, tn. on the Hugli, 4 m. N. of Howrah, Bengal, India. Pop. 18,000.

Balihri, tn., Jabalpur dist., Central Provinces, India; once a flourishing city, 24 m. in circumference, and filled with temples to which pilgrims flocked from all parts of India.

Balikesri, BALAK-HISSAR, or BALIK-SHEHR, tn., 75 m. S.W. of Brusa, Asia Minor, on a fertile plain; has a large fair on August 15. Pop. 15,000 to 20,000.

Balik Papan, seapt., Dutch Borneo, on E. coast, 220 m. N.N.E. of Bandjermasin; exports petroleum. Pop. 4,000.

Balin and **Balan,** two brothers, knights, who came to Arthur's court. Balan went away on an adventure; but Balin, remaining behind, overheard a love passage between Lancelot and the queen, and rode away, mad with the discovery. The two brothers met abroad, and, not recognizing one another, fought, and slew each other. See Tennyson's *Idylls of the King* (1869), Swinburne's *Tale of Balen* (1896), and Malory's *Morte d'Arthur* (Globe ed. 1868).

Baliol, THE FAMILY OF, a wealthy family owning in Normandy the lands of Bailleul, Nyvelle, Harcourt, and other fiefs, prior to the Norman conquest. GUIDO DE BALIOL, who crossed with William I., received from William Rufus large estates in Durham and Northumberland, and his successors took an active part in Border warfare.—One BERNARD DE BALIOL (fl. 1135–67) did homage with David I. of Scotland to the Empress Matilda, daughter of Henry I. (1135), but joined King Stephen's party (1138). He was taken prisoner at Lincoln (1141).—JOHN DE BALIOL (d. 1269) was regent of Scotland during Alexander III.'s minority, and founded Balliol College (1263). He married Dervorguilla, one of the daughters of Alan of Galloway, constable of Scotland, by Margaret, eldest daughter of David, Earl of Huntingdon, brother of William the Lion.—JOHN DE BALIOL (1249–1315), king of Scotland, was third son of John de Baliol. On the death (1290) of Margaret, the Maid of Norway, grandchild of Alexander III., he claimed the throne of Scotland in right of his maternal grandmother, Margaret, eldest daughter of David, brother of William the Lion. Edward I. of England, a self-nominated arbiter, adjudged the throne to Baliol, and he was crowned at Scone (1292). The allegiance that he swore to Edward as overlord soon became intolerable, and after a revolt he was compelled to abdicate, and was imprisoned (1296); liberated (1299); died at Castle Galliard, Normandy (1315).—His son, EDWARD DE BALIOL (d. 1363), king of Scotland, invaded Scotland at the head of the barons displaced by Bruce, and, landing

at Kinghorn, Fife, defeated and slew the regent Mar at Dupplin Moor (1332), and was crowned at Scone; did homage to Edward III., to whom he subsequently surrendered ancient Lothian; compelled to take refuge in England from Scottish patriots under Sir Andrew Murray and Earl of Moray (1334); restored by Edward III.'s aid (1335); surrendered the kingdom of Scotland to Edward III. (1356) in return for a pension of £2,000; and died at Doncaster (1367), the last of his race.

Balistes, FILE-FISH, or TRIGGER-FISH, a genus of bony fish, including tropical or sub-tropical forms, which have the dorsal fin supported by three spines. The first spine is very strong, is roughened like a file, and is locked to the second so that the two can only be raised simultaneously. The body is covered with small, rough scutes, and eight strong teeth are present in both jaws. The diet consists of hard-shelled molluscs and corals.

Baliuag, tn., prov., Bulacan, Luzon, Philippine Is., 25 m. N. by W. of Manila; has hat, silk, and cotton industries. Pop. 16,000.

Balize. See BELIZE.

Balkan Peninsula, or ILLYRIAN PENINSULA, the most easterly of the three great Mediterranean peninsulas of S. Europe, stretching southwards from the Danube and its tributary the Save as a broad quadrilateral, having the Black Sea on the E., the Sea of Marmora and the Ægean Sea on the S.E. and S. respectively, and the Adriatic on the W. The Bosporus connects the Sea of Marmora with the Black Sea, and the Dardanelles continues the waterway to the Ægean Sea. The peninsula of the Chalcidice is mountainous and deeply indented. The coasts of the secondary peninsula formed by the Greek extension are lofty and mountainous, and deeply cleft by long indentations, forming good harbours. The Adriatic coast is flat to the mouth of the Drin; thence N. to Fiume it is mountainous, and scalloped into a complicated series of peninsulas, with a parallel fringe of islands, due to the 'drowning' of a folded mountain region.

The term Balkan Mountains (anc. *Hæmus; cf.* Cape Emine) is loosely applied to the whole mountain region of the N., but specifically to the range (Turkish, *Khoja* or *Koja*) which sweeps round from the Iron Gates of the Danube, where it is continuous with the Carpathians, first S., then E. to Cape Emine, on the Black Sea, shutting in the lower plain of the Danube on the S. The section which occupies E. Servia consists of limestone ridges rising to 6,500 ft., alternating with ranges of crystalline schist yielding iron, lead, and copper ore. The Central Balkans form a long and nearly uniform ridge running E., with dome-like summits, reaching in Yumrukchal 7,790 ft., and clad on the flanks with forests of oak, beech, and fir. Bordering this central ridge on the N., and continuing the mountain region E. after the main ridge has disappeared, are the E. Balkans, with gradual slopes to the N., but steep declivities to the S., sinking to a series of intermont basins, the most important being that of Sofia, from which the Isker R. flows N. to the Danube, breaking through the Balkans in a narrow gorge. South of these basins are several mountain masses, such as the Anti-Balkans, which overlook the valley of the Maritsa, the most considerable stream of Turkey proper. On its way to the Ægean Sea this river circles round the E. extremity of the gigantic wall of the Rhodope Mts., buttressed by the peaks of Musa Alla (9,615 ft.) and Rila Dagh (8,790 ft.), between which rise

the great syenite mass of Vitosa (Vitosha), 7,515 ft.

Important factors in the political, social, and economic development of the peninsula are the passes, many of which are mere tracks for baggage animals. The great historic highway ('Diagonal Furrow') from Belgrade, on the Danube, to Constantinople, follows the valley of the Servian river Morava to the basin of Sofia, and then proceeds along the valley of the Maritsa. At one point near the basin of Sofia the mountains approximate so closely that the Romans were able to barricade it with a thick wall (Trajan's Gate). The modern railway which follows this route avoids the gorge by ascending a side valley. Communication with the upper valley of the Nisava (Nishava), the principal tributary of the Morava, is facilitated by the Pass of Dragoman (2,380 ft.); the Pass of Vladaja (2,980 ft.) gives access to the valley of the Struma, the Pass of Güveshevo to the valley of the Vardar, the Pass of Ginci (Gintsi) to the Danube at Lom Palanka, the Baba Konak Pass to Plevna. The Shipka Pass, strategically important, crosses the Balkans, and connects Kazanlik with Tirnova. The two highest passes over this range are the Rabanica (6,285 ft.) and the Rosalita (6,160 ft.).

The west of the peninsula is occupied by the broad folds of the Dinaric Alps, the main chain of which (N.W. to S.E.) separates Dalmatia from Bosnia and Herzegovina. The chains show the peculiar features of the karst region, the loftiest peak being Mt. Dinara (6,010 ft.), a dazzling mass of hippurite limestone.

The proximity of the mountains to the W. coast makes the rivers on that watershed short, rapid, and useless for transport. On either side of the Chalcidice peninsula are the Vardar and the Struma, which flow to the Ægean Sea, and have built up deltas, but are of little use for navigation, the Maritsa being the only navigable stream. The only river entering the Black Sea is the Danube.

The centre and the E. coast as far S. as the Bosporus have a climate intermediate between that of Central Europe and the S. of Germany—the winter temperature often sinking below zero F.; the summer temperature resembling that of the S. of France. June is the wettest month, but rain is fairly general throughout the year. The Ægean coast has a Mediterranean climate; and the Adriatic coast, with its heavy rainfall, has a January temperature 7° F. higher than that of the E. coast. The higher inland parts have a semi-continental climate, with a considerable range between the summer and winter mean. In Bosnia snowfalls and frosts sometimes occur as late as the middle of May at 1,500 ft. Typical Mediterranean vegetation is luxuriant along the whole W. coast, poorly developed in the S., and wanting in the interior, where the flora of Central Europe is predominant. The wolf and the bear are found in the mountains; the jackal, the buffalo, and the Oriental fat-tailed sheep in the S. plains.

The Balkan Peninsula (omitting Greece) is occupied by five states (since 1878): (1) Bosnia, Herzegovina, since the treaty of Berlin politically attached to Austria, but formally annexed by her in 1908; (2) Montenegro, a small independent kingdom; (3) Kingdom of Servia; (4) Kingdom of Bulgaria; (5) Turkey. See articles dealing with separate states; also Fischer's *Die drei südeuropäischen Halbinseln*, in Kirchhoff's *Unser Wissen von der Erde* (1893); E. de Laveleye's *La Péninsule des Balkans*, 2 vols. (Eng. trans. 1887); Reclus's *Géographie Universelle*, vol. i. (1876); Tuma's *Die östliche Balkanhalbinsel* (1886); Lux's *Die*

Balkanhalbinsel (1887); Hogarth's *The Nearer East* (1902); Villari's *The Balkan Question* (1905); and Lyde's *Military Geography of the Balkan Peninsula* (1905).

Balkh, or BACTRIA. (1.) Province of Afghan Turkestan, Central Asia, subject to the Ameer of Afghanistan; extends 250 m. E. to W. between 63° and 69° E., and for 120 m. N. to S. between 37° and 35° N. Its climate is unhealthy. The Bactrian camel gets its name from this province. (2.) Former capital of prov., on the Balkh R.; once 'the mother of cities' and a centre of trade between India, Persia, China, and Central Asia, now in ruins. It is a place of great antiquity, famous as the cradle of Zoroastrianism; indeed, Zoroaster is said to have been born and to have died at Balkh (anc. *Bactria*). Between the 7th and 12th centuries it was a centre of Buddhism, and seems (from Sven Hedin's and Stein's discoveries) to have extended its influence as far as the now sand-buried cities of E. Turkestan. It was sacked by Jenghiz Khan in 1220. The capital was removed to Mazar-i-Sherif, 10 m. E., in 1877. Pop. about 15,000, mostly Uzbegs. See Justi's *Das Baktrische Reich;* Gutschmid's *Geschichte Iranans* (1887).

Balkhan Mountains, GREAT and LITTLE, a calcareous chain on the E. side of the Caspian, S. of Aji Daria Bay, between 39° and 40° N. lat. The highest point towards the S. extremity of the range is about 3,300 ft.

Balkhash, or TENGHIZ, a slightly salt lake lying above sea-level between 45° and 47° N. lat. and 73° 30′ and 79° 20′ E. long., in Russian Central Asia. Length, 340 m.; extreme breadth, 53 m. Its depth is from 70–80 ft., and consequently, though its area is thirty-two times that of the Lake of Geneva, its volume is only twice as great. It is a relict of a formerly much more extensive sheet of water (although during recent years its level has again risen), but its elevation (900 ft.) is too great for it to have formed one water with the Aral.

Ball, GAMES OF. That these are of high antiquity is shown by their mention as part of the daily life of the Greeks and Romans in classical times. The balls used in Greece were usually of leather, and hollow. The Romans used, among other kinds, balls stuffed with hair (*pila*). Forms of football and polo appear to have been known in quite early times. Lawn tennis is the lineal descendant of the *jeu de paume*, which was so popular an amusement at the French court. The American game of lacrosse originated among the American Indians; and football is so widespread that its origin is impossible to trace. See special articles on the various ball games.

Ball, JOHN (d. 1381), an English priest who fomented the insurrection of Wat Tyler, was hanged, drawn, and quartered at St. Albans. See C. E. Maurice's *Eng. Pop. Leaders* (1872–5).

Ball, JOHN (1818–89), Irish scientist and traveller, born in Dublin; became under-secretary of state for the colonies (1855), and was first president of the Alpine Club (1857). He published the *Alpine Guide* (1863–8; new ed. 1903), and wrote various works on the Alpine flora and glaciers, and *Notes of a Naturalist in S. America* (1887). See *Jour. of Botany* (1889), and bibliog. in *Annals of Botany*, vol. iii. (1889).

Ball, JOHN THOMAS (1815–98), Irish lawyer, born in Dublin; M.P. for Dublin University (1868); solicitor-general (1868) and attorney-general (1868 and 1874) for Ireland; lord chancellor of Ireland (1875–80), and vice-chancellor of Dublin University (1880–95). He

was author of *The Reformed Church of Ireland* (1886), and *Hist. Rev. of the Legislative Systems in Ireland* (1888), praised by Lecky for its 'clearness and its perfectly judicial impartiality.'

Ball, Sir Robert Stawell (1840), Irish astronomer, born in Dublin. After graduating at Trinity College, Dublin, he was appointed, in 1865, astronomer to the Earl of Rosse; in 1867, professor of applied mathematics to the Royal Irish College of Science; and in 1874, astronomer-royal of Ireland. Sir Robert became widely known by his power of popularizing science, and by the publication of *Atlas of Astronomy* (1892), *Story of the Heavens* (1885), *Time and Tide* (1889), *Story of the Sun* (1893), *Treatise on Theory of Screws* (1900), *The Earth's Beginning* (1901), and *Popular Guide to the Heavens* (1905). In 1892 he was appointed Lowndean professor of astronomy at Cambridge University and director of the observatory, and in 1897 president of the Royal Astronomical Society. He was knighted in 1886.

Ball, Thomas (1819), American sculptor, born at Charlestown, Massachusetts; after meeting with some success as a singer and painter, devoted himself to sculpture about 1852. From 1865 to 1897 he resided in Florence. Among his works are the statue of Daniel Webster in the Central Park, New York, and the statue in bronze of Washington in the public garden of Boston. In 1905 he resumed his palette to complete a picture, *Christ in the house of Martha and Mary*, begun 1853. In 1891 he published *My Threescore Years and Ten.*

Ballachulish, a straggling village, Argyllshire, Scotland, on S. shore of L. Leven, 16 m. S.W. of Fort William, and extending to the wild and historic Glencoe. Famous slate quarries, opened in 1760. Railway from Connel completed 1903. Pop. 1,200.

Ballad (Fr. *ballade*) is derived, according to Littré, from *baller, danser.* Thus, etymologically speaking, the ballad was originally a song chanted as an accompaniment to the dance. This fact gives to ballads a primeval antiquity and a non-literary origin; that is to say, the dance songs of early peoples were not composed by professional minstrels, who did not exist in primeval stages of society. We are acquainted with no race more primitive than the Australian aborigines, whose stone implements are on the line between the Palæolithic and the Neolithic. This people, in its corroborees, magical, religious, or secular, accompanies the dance with song. These ditties, if admired, are transmitted, as part of the dance, across the continent, reaching tribes to whom the words of the song are partially or wholly unintelligible. The song also accompanies the dance among other savage peoples, American and African, and it holds its old place in the dance games traditional among English children; while we have abundant mediæval evidence of the existence of the dance song in Scotland, France, and Europe generally. (See Léon Gautier's *Les Epopées Françaises*, 2nd ed. 1865-8.) The ballad, like the popular tale (*märchen*), is, as a dance song, an invention of the folk, with savage origins and direct modern survivals.

The word 'ballad,' however, has long lost the special sense of a dance song. As early as 1568 the poems in fourteen lines each, said to have been addressed by Mary Queen of Scots to the Earl of Bothwell, were spoken of indifferently as 'sonnets' or 'fond ballads.' Knox talks of the 'ballatis' made against the four Marys; and if the famous ballad of *The Queen's Marie*, or Mary Hamilton, be a

survival of one of these, then the word, about 1564, was used, on this occasion, of a popular narrative poem, whether written by a man of the people, a courtier, or a Puritan. The early 'gude and godly ballatis' are popular songs, travestied for purposes of religious edification in the time of Knox. The ballad, in short, is a popular form of verse, often adapted, during the last four centuries at least, to the purposes of educated men of letters. The verse, as a rule, runs in this measure,—

'The king he writ a letter then,
A letter which was large and long;
He signed it with his own hand,
And he promised to do him no wrong.'

The precise date of the evolution of this form of verse is of no great importance as regards the question, 'Are the ballads of popular or of literary origin?' All races have had their purely popular dance songs and other songs, composed for the people by members of the people, not professional minstrels. Before the extant forms of ballad verse arose, there must have been other shapes of popular songs, to which the now familiar shape succeeded.

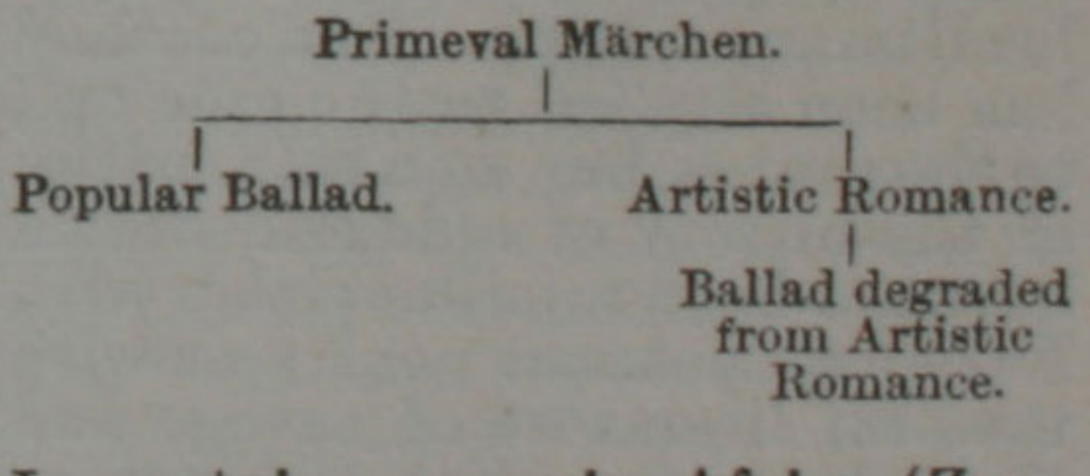
Many writers on the old ballads regard them as, in origin, the composition of professional minstrels, not courtly attendants on kings and earls, but wanderers with viol and rebec, who chanted at street corners or in rural halls and cottages. These minstrels (whose historical existence is certain) are supposed to have vulgarized and degraded the literary romances and heroic poems on knightly deeds. It is denied, even with mockery, that ballads were composed 'by the people for the people,' and it is pointed out that 'the people' (of modern European cities) have not the necessary taste and culture for the task.

There is some truth, but perhaps more of error, in this argument. It is true that several old ballads are vulgarizations of known literary romances. An example is *King Arthur and King Cornwall* (Child's *English and Scottish Ballads*, new ed. 1882–98, part ii. pp. 274–288). Here we find 'apparently an imitation, or a traditional variation, of Charlemagne's Journey to Jerusalem, a *chanson de geste*.' Now a *chanson de geste* is a long, formal literary French epic, which, with other elements, has been Anglicized, vulgarized, and abbreviated (by a professional minstrel, probably) into the ballad of *King Arthur and King Cornwall*. There are many such examples, especially in the Arthurian ballads. As far as all this goes nothing can well be more certain than the literary and professional origin, and relatively degraded character, of this class of romantic ballads. But when we examine the contents of the *chanson de geste*, and of the ballad of similar character, we find that the ideas on which both are based, the ideas which both have in common, are often popular and ancient. The general notion of a story, the ground idea, may occur in *The Arabian Nights*; the perilous tasks are the theme of *märchen* (popular tales) even among the rudest and remotest tribes of savages. Before the time of Homer, and long before the time of Pindar, this theme had been borrowed by professional Greek minstrels from Greek popular tradition, a form of which occurs in the native mythology of remote Samoa.

Now, it must be remembered that this is the usual course of evolution in literature. First we have the purely popular elements or factors. These are ideas, often of magic, and concerning animals gifted with human personality, or romantic incidents based on sav-

age manners. These ideas occur equally in the tales of savages, in Greek and Scandinavian epic, in rustic popular tales, and popular ballads. The notions, like the particles of glass in the kaleidoscope, fall into innumerable combinations; but the notions, the story roots, the incidents and situations, are in many cases the flowers of savage fancy. As civilization advances, these story roots are inherited by the peasantry, among whom they even now survive in rural districts of England and Scotland. By-and-by a clan of professional bards and minstrels is developed. They go for their materials to the great popular stock of story roots, which they weave into rhapsodies, lays, epics, romances, *chansons de geste*, and so on, attributing adventures, whose heroes were originally anonymous, to legendary or historical personages—Jason, Odysseus, Charlemagne, Arthur, Sigurd, and so on. Then a poor wandering but still professional and rudely literary minstrel may take hold of, abbreviate, and vulgarize the new aristocratic lay, epic, romance, or *chanson de geste* to suit the taste of his humble audiences. The result will be a ballad, like *King Arthur and King Cornwall*, degraded from an aristocratic *chanson* or romance. But the *fond*, the story roots, is of perhaps primeval popular origin.

Once more, it frequently occurs that while a given set of primeval story roots, or even a given sequence of these in a definite order, is borrowed by Homer, Pindar, a romance writer, or an author of *chansons de geste*, and is adapted to familiar legendary or historical characters, the same story (without the embellishments, and without the newly-added attribution to Charlemagne, Arthur, or Sigurd) survives, as a mere *märchen* or popular tale, among the people. If, then, a man of the people, a rhymer, takes up the old popular *märchen* and versifies it as a ballad, we shall possess (1) the artistic, literary, aristocratic epic or romance; (2) the inartistic, unprofessional popular ballad; (3) the popular tale, which is the origin of both the others. Thus the literary composition and the ballad will possess the same foundation, situation, and incidents, but the ballad (unlike the case of *King Arthur and King Cornwall*) will *not* be a degradation of the professional artistic poem or romance; it will be merely a popular versification of a popular tale which has also been used by some artistic poet. A scientific criticism ought, therefore, to analyze the romantic ballads in the late Professor Child's vast collection, and distinguish between ballads degraded by humble professional minstrels and artistic romances and ballads based by some non-professional rhymer on data of *märchen* not now known to exist in the form of artistic romance. The class of ballads clearly derived direct from peasant *märchen* may also be contrasted with artistic romances and lays which have the same basis. The results will probably be capable of statement thus:—



In certain cases, in Africa (Zanzibar), as in Scotland and France, and among the Red men of North America, there exists the combined *volkslied märchen*, the narrative told in alternating passages of verse and prose. The famous *chante-fable* of *Aucassin et Nicolette* is the only surviving example of the mediæval artistic and literary use of a form popular once of

old in Scotland, as it still is in Africa and elsewhere. See Steere's *Swahili Tales* (2nd ed. 1889); Miss Fletcher's *Indian Story and Song from N. America* (1900); R. E. Dennett's *Folklore of the Fjort* (1898).

Among romantic ballads which do not seem to be degradations of literary and professional compositions may be noted *Clerk Sanders*, *May Colvin*, *The Wife of Usher's Well*, *Tamlane*, *The Bonny Hind*, *The Elphin Nourice*, *Willie's Lady*, and many others. *Thomas the Rhymer*, the Arthurian ballads, and others, seem more probably to be vulgarizations of romances which, in the last resort are often based on popular data. A reader who wishes to understand the come and go, the warp and woof of influences popular and artistic in the ballad can hardly do better than read Professor Child's introduction to that of *Lord Bateman* or *Susie Pye*. Here we have ancient story roots of nearly universal diffusion, we have an early mediæval literary element, and we can trace the ballad to its very dregs in the *modern* popular versions of the workhouse and the tavern in the slums.

The method of criticism of ballads here indicated is that of the whole neglected study of popular literary origins. The method has been applied to the epic and to the drama, but, as a rule, critics of the history of epic and drama have not been familiar either with European peasant poetry or with the oral literature of savage and barbaric races. Yet this knowledge is as indispensable to the student of the evolution of literature as the knowledge of savage and barbaric institutions is to the student of the growth of human society. Meanwhile theories of the ballad which rest only on a knowledge of artistic and professional literature cannot be adequate, cannot hold their ground. Nobody can dogmatize about the share of the folk in the ballads unless he is widely read in the oral literature, in verse and prose, of Red men, Africans, Australians, Maoris, and European peasants.

We have spoken of romantic ballads. The next largest and most important species is that of the historical ballad. A resounding event like the battle of Otterburn would inevitably become the subject of popular song, as, much earlier, we know, did the defeat of the rear-guard of Charlemagne, under Roland, at Roncesvalles. The historical ballads, in their earliest oral form, are lost; what we possess are but echoes, contaminated with many modernisms in their passage through the lips of several generations of reciters. We cannot go to the ballads for history, only for historical legend. We cannot be certain whether the ballad of *Johnnie Armstrong* is the source of Pitscottie's account of that hero, or whether Pitscottie is the source of the ballad, or whether both rest on similar local traditions. Events of the 14th century and early 15th leave their traces in ballads, but the ballad may have been vastly altered in the course of recital. The ballad-maker always introduces romantic motives, love affairs, and domestic treasons, which probably never occurred, while the persons of the story are socially promoted. Local, clannish, and family jealousies find expression, and ancient story roots are accommodated to the tale, and fitted with local habitations beside Ettrick or Yarrow. Examples of all these contaminations occur in *Tamlane;* in the snatch on the slaying of the Knight of Liddesdale; in the fragment on the judicial murder of the Douglases under James II.; in *Mary Hamilton* (where a French waiting-woman becomes the queen's Marie, and an apothecary wears the shad-

owy crown of King Henry—*i.e.* Darnley); in *The Bonny Earl Moray;* in late things like *The Outlaw Murray, Philiphaugh, Bothwell Brig*, the lay of *Robin Og Macgregor*, and so on, till the death of the popular ballad. It is impossible to be dogmatically certain as to how much *Kinmont Willie* owes to Sir Walter Scott. *Auld Maitland* (a ballad on an affair of the 13th century) is rejected as a forgery by Professor Child. But popular ballads on the theme existed, beyond doubt, in the 16th century. The only conceivable forger is James Hogg, about 1802; and at that date how could Hogg, an utter rustic, get access to manuscript materials lying in Edinburgh University library? The space filled by this article would not be too long for an attempt to solve the mystery of *Auld Maitland*, and the attempt would be inconclusive. *Jamie Telfer* is only less puzzling; and a volume would scarcely hold the learning on the Robin Hood ballads. The student will soon discover that many variants of ballads, especially in England, have lost pith and merit in the hands of lowly hacks who prepared them for the broadsides of the cheap press.

While there are many interesting collections—Ramsay's, Percy's, Sir Walter Scott's, etc.—the amateur of ballads can find full information only in the ten volumes of Professor Child of Harvard University. He died, and left no introduction expressing his general ideas on the subject of the problems of the ballad. 'No scholar has had the hardihood,' says his biographer, Mr. Kettridge, 'to do what is undone. But we trust that we need not say,—

"The unfinished window in Aladdin's tower
Unfinished must remain."'

Professor Child's volumes present most of the materials for the accomplishment of his task, which it would be pious for an American *savant* to undertake. Though the writer of this article expresses opinions independently evolved, he inclines to the belief that they vary little from those casually indicated in the notes and introductions of Professor Child, to whom he was able to offer some facts, and some variants of ballads. For opinions opposed to those here expressed, see T. F. Henderson's *Vernacular Scottish Literature;* for other views, Professor Gummere's *The Beginnings of Poetry*, containing many references to continental criticism. Also A. Lang's article on ballads in *Encyclopædia Britannica*, 11th ed., and *The Cambridge History of English Literature*, chap. xvii. vol. ii. (1908). The most recent collection is the *Oxford Book of Ballads* (ed. by Sir A. T. Quiller Couch, 1910).

Ballade, a poem divided into one or more triplets, each formed of seven or eight lined stanzas, the last line being a refrain common to each stanza. In the ballade of eight lines there are only three rhymes, thus—A, B, A, B; B, C, B, C. An *envoi* is usually attached. Its four lines repeat the rhymes of the last four lines of the stanza. This form was almost predominant in French literature from the 14th to the 16th century. In the 19th century it was the popular medium of poets like Verlaine, Theodore de Banville, and Baudelaire. Modern English poets who have revived the *ballade* are Swinburne, Austin Dobson, W. E. Henley, and Andrew Lang.

Ballagi, Moritz (1815–91), Hungarian philologist and theological writer, while studying theology at the Tübingen University, became a Protestant, and in 1851 was appointed professor of theology at Budapest, where he

founded, in 1858, the *Protestant Journal*, which became the leading Protestant paper in Hungary. He is, however, more important as a philologist, his chief works being *Ausführliche theoretisch-praktische Grammatik der Ungarischen Sprache* (8th ed. 1880), *Vollständiges Wörterbuch der Ungarischen und Deutschen Sprache* (5th ed. 1882), and a *Collection of Hungarian Proverbs* (2 vols. 1855).

Ballance, JOHN (1839–93), New Zealand premier; of Irish parentage, emigrated to New Zealand, where he founded and edited the *Wanganui Herald*. He served in the Maori war (1867), and entering Parliament (1875) was treasurer (1878–9), minister for lands and native affairs (1884), leader of the Liberal opposition (1889), and prime minister in 1891. He especially distinguished himself by his advanced finance, including progressive land and income taxes.

Ballanche, PIERRE SIMON (1776–1847), French philosopher, born at Lyons. He became a member of the Academy (1841). His best works are *Palingénésie Sociale* (1828) and *Vision d'Hébal* (1832). His system received the name of 'Ballancheism.' See *Life* by Ampère (1848); Sainte-Beuve's *Portraits Contemporaines*, vol. ii. (1847); *Revue des Deux Mondes*, vol. ii. pp. 410–456.

Ballantine, JAMES (1808–77), Scottish poet and artist, born in Edinburgh, studied glass-painting, upon which he wrote a treatise (1845), and was entrusted, after competition, with the stained-glass windows of the House of Lords. Some of his lyrics—the most popular of which are *Ilka blade o' grass keps its ain drap o' dew*, and *Castles in the Air*—appeared in his well-known *Gaberlunzie's Wallet* (1843), and others in *The Miller of Deanhaugh* (1845).

Ballantine, WILLIAM (1812-87), serjeant-at-law, born in London; called to the bar (1834); appointed serjeant (1856); engaged in the Müller murder trial, the Tichborne case, the Gaikwar of Baroda defence, etc. He wrote *Experiences of a Barrister's Life* (1882), and *The Old World and the New* (1884).

Ballantrae, fishing vil., S.W. Ayrshire, Scotland, 13 m. S.W. of Girvan; a summer resort, and formerly a smugglers' haunt; name familiarized through R. L. Stevenson's novel *The Master of Ballantrae*. Pop. 500.

Ballantyne, JAMES (1772-1833), the printer of Sir Walter Scott's works, was a solicitor and then a printer in his native Kelso and in Edinburgh, whither he removed in 1802. The firm of James Ballantyne and Co., which included Scott, James Ballantyne, and his brother John (1774–1821), whom Scott nicknamed 'Rigdum-funnidos,' became involved in the bankruptcy of Constable and Co., publishers, by which Scott's finances were wrecked. James Ballantyne was a man of some literary ability, and Scott, who named him 'Aldiborontiphoscophornio,' owed a good deal to his critical suggestions while the Waverley Novels were passing through the press. See *History of the Ballantyne Press* (1871), and under SCOTT, SIR WALTER.

Ballantyne, JAMES ROBERT (d. 1864), Orientalist, was superintendent, from 1845, of the Sanskrit College established at Benares; librarian, India Office, London (1861). He made a large number of translations from Sanskrit, and did much to establish more intelligent relations between Indian and European thought. See his *Christianity and Hindu Philosophy* (1859), and *The Practical Oriental Interpreter* (1843).

Ballantyne, ROBERT MICHAEL (1825–94), writer of stories for

boys, nephew of Scott's James Ballantyne, was born in Edinburgh, and died in Rome. He served as a clerk of the Hudson's Bay Fur Company at Rupert's Land (1841–7), and held a position in the printing and publishing firm of Thomas Constable, Edinburgh (1848–55). He devoted himself to writing in 1855, and published over eighty vols. See his *Personal Reminiscences of Bookmaking* (1893).

Ballarat, or BALLAARAT, the second city of Victoria, Commonwealth of Australia, in the counties of Grant and Grenville, 76 m. W.N.W. of Melbourne, is a well-built city. Owing to its elevation (1,438 ft.) its climate is exceptionally cool and healthy. The land around is fertile; large crops of potatoes and oats are grown, and sheep are pastured. Gold-mining (alluvial leads and quartz reefs), however, is the chief industry, the deepest mine being the South Star (2,520 ft.); the output is estimated at £80,000,000 since 1851. The discovery of gold at Golden Point in October 1851, and the Ballarat riots of 1854, are the main facts in its history. Ballarat is the see of an Anglican and a Roman Catholic bishop. Pop. 45,000. See Withers's *History of Ballarat* (1887), and Meek's *Past and Present of Ballarat* (1893).

Ballast. See SHIP; YACHT; RAILWAYS.

Ballater, vil. in W. Aberdeenshire, Scotland, on l. bk. of the Dee, 43 m. W.S.W. of Aberdeen; present terminus of Deeside Ry.; owes its origin, in 1770, to the Pannanich mineral wells in the vicinity. The rugged Pass of Ballater lies ¾ m. from the village. The bracing air of the district makes it a favourite summer resort. Pop. 1,200.

Ball Bearings, a device for reducing friction, usually applied to the shaft or axle of a rotating wheel or disc, as in the cycle, and consisting of a series of fine hardened and perfectly true steel balls, usually one-eighth inch in diameter and upwards. Each ball is separate, and rotates with the shaft. Sometimes the balls run in a channel or 'ball race,' sometimes between coned surfaces. In vehicles of heavier load rollers are used in place of balls. Experiments with a railway wagon on the level have proved that roller bearings reduce the tractive effort required three and a half times as compared with plain bearings. See FRICTION.

Ballenstedt, tn., duchy Anhalt, Germany, at the E. end of the Harz Mts., 13 m. by rail S.W. of Aschersleben, the summer residence of the Duke of Anhalt. Pop. 5,700.

Ballet, a dramatic representation, consisting of dancing and pantomime, regulated by the strains of music, and generally accompanied by scenery and decoration. The ballet was introduced into France from Italy about 1580 by Baltasarini, under the patronage of Catherine de' Medici, and improved by Rinuccini. Richelieu invented splendid effects, and engaged Louis XIII. himself as a dancer in one of the ballets at St. Germain. Louis XIV. was also an active ballet dancer in his youth. The famous ballet masters of his time were Chicanneau, Noblet, St. André, and Magnus. But the ballet as an exclusively dancing establishment came into being with the foundation in 1669 of the Académie Royale de Musique et de Danse in Paris. Lulli, the composer, director of the opera, paid great attention to the ballet, and to him has been attributed the introduction of rapid dancing, in opposition to the solemn and deliberate steps favoured by the court in the early part of the reign of Louis XIV. Quinault,

the opera poet, who decorated his pieces with dance and pantomime, had also much to do with making the incidental ballet a recognized part of opera performance, with his great ballets *Armida* and *The Triumph of Love*. But the true creator of the later power of the ballet, as an independent entertainment, was Jean Georges Noverre, who wholly parted it from opera about 1776, shut the mouths of the dancers, and set the ballet very high on its own toes as a five-act play of music, dance, and pantomime. The ballet was introduced into England from France by two female dancers named De Subligny and Sallé, the latter of whom achieved great success at Covent Garden Theatre in 1734 as Ariadne and Galatea. Although the *ballet d'action* has never been really naturalized in Britain, it was for many years a prosperous entertainment at the Italian Opera House. Since 1870 the ballet has lost much of its importance in opera, and except in Paris and Vienna, where a portion of the subsidy granted by the state is expressly devoted to the encouragement of dancing, it is no longer recognized by operatic managers as an indispensable feature of their programme. In fact, the real home of the ballet is now the English music halls, especially the Empire, where a scenic ballet is the chief feature of the programme. Recently there has been a reaction in favour of ballet and other fancy dancing, and there have been one or two really great artists in the former line, notably Adeline Gènée, and Mdlle. Pavlova, who, with other members of the St. Petersburg *corps de ballet*, took London by storm in 1910. See Menestrier's *Des Ballets Anciens et Modernes* (1682); Noverre's *Lettres sur . . . les Ballets* (1807); A. Pougin's *Dict. Hist. du Théâtre* (1885).

Ball-flower, an ornament in Gothic architecture of the 13th and 14th centuries, in which the petals of a sculptured flower enclose a ball, instead of pistils or stamens. There are some fine specimens at York and Hereford.

Ballia, tn., Ghazipur dist., United Provinces of Agra and Oudh, India, 70 m. N.E. of Benares. A bathing festival, largely attended, is held in November.

Ballin, ALBERT (1857), German merchant, born in Hamburg; joined (1880) the staff of the German steamship company, the Hamburg-America Line; was soon elected to the board, and later on became its managing director. It is owing to his business capacity and organizing talent that the company has been brought to its present supreme position in German shipping.

Ballina, mrkt. tn. and seapt., cap. of Co. Mayo, prov. Connaught, Ireland, 20 m. N. by E. of Castlebar. It is beautifully situated on the Moy, and has considerable trade in corn. There are an important salmon fishery and a large salmon-curing establishment. The town was taken by the French under Humbert in 1798. Pop. 4,500.

Ballinasloe, mrkt. tn., Co. Galway, prov. Connaught, Ireland, on railway from Dublin to Galway, 15 m. S.W. of Athlone, on both sides of the Suck, here joined by a branch of the Grand Canal; has corn mills, coach factories, and agricultural implement works. A great fair (horses, cattle, and sheep), lasting four days, is held annually in October. Near the town is Garbally Park, the seat of the Earl of Clancarty. Pop. 5,000.

Ballinrobe, mrkt. tn., Co. Mayo and Galway, prov. Connaught, Ireland, 4 m. from mouth of Robe in Lough Mask and 17 m. S.S.E. of Castlebar. Pop. 1,600.

Balliol College, Oxford, was founded in 1263 by John de Baliol (d. 1269), father of John de Baliol, king of Scotland. Several of the existing buildings date from the 15th century; a Gothic chapel by Butterfield was added in 1856–57, and a hall by Waterhouse in 1876. Its benefactors include John Snell (d. 1679), who by his will left lands in Warwickshire to support ten students (now fourteen) of Glasgow University at Balliol for five years. Among Snell exhibitioners have been Adam Smith, John Gibson Lockhart, and John Wilson ('Christopher North'). Among its famous masters have been Wycliffe and Jowett, and among its distinguished *alumni* Southey, Matthew Arnold, Swinburne, Cardinal Manning, W. G. Ward, T. H. Green, Archbishops Tait and Temple, H. H. Asquith, Sir Edward Grey, Lord Milner, and Lord Curzon.

Ballista, or BALISTA, an ancient military engine, often confounded with a catapult, used in throwing large stones. At the end of the 4th century each centurion in a legion had a ballista, drawn on wheels by mules, and served by eleven men. In the middle ages it was known variously as trébuchet, mangonel, and caable, and was used as a bearing in heraldry.

Ballistic Pendulum, an apparatus invented (about 1740) by Benjamin Robins (1707–51) to ascertain the velocity of projectiles fired from a gun. It is now almost superseded by other contrivances, such as the electro-ballistic.

Ballistics. See GUNNERY.

Ballistite, smokeless powder, somewhat similar to cordite. It contains nitro-glycerin and soluble nitro-cellulose in equal proportions. See EXPLOSIVES.

Balloch, vil., Dumbartonshire, Scotland, at s. end of Loch Lomond; terminus for the steamers plying on the loch.

Ballochmyle, locality, Ayrshire, Scotland, near Mauchline; celebrated by Burns in the *Lass o' Ballochmyle* and *Farewell to Ballochmyle.*

Balloon. The discovery of hydrogen gas by Cavendish in 1760 led Black to suggest that a weight might be lifted from the ground by attaching to it a sphere of hydrogen gas. In 1783 the brothers Montgolfier of Annonay filled paper bags with heated air, which ascended; two and a half months later, Charles, the Parisian, sent up the first balloon filled with hydrogen, and unmanned; three months later, Pilâtre de Rozier and the Marquis d'Arlandes ascended from Paris in a fire balloon; and on Dec. 1. 1783, MM. Charles and Robert ascended in a gas balloon. This last balloon included all the features of a modern gas balloon, such as the spherical envelope, net with hoop attached for suspending the car, and valve at the top of the balloon. Amongst the early balloonists the most notable were Tytler, the first aeronaut who ascended from British soil, in 1784; Lunardi; Sadler; Pilâtre de Rozier, who was killed (1785) when attempting to cross the Channel in a compound fire and gas balloon; and Blanchard, who first crossed the Channel with Dr. Jeffries in 1785. The substitution of coal gas for hydrogen is due to Charles Green, who made about four hundred ascents, the first of which took place in 1821. Another memorable ascent by Green, in company with Sparrow, took place in 1823, during commemoration week at Oxford. To Green we owe the invention of the guide-rope.

Scientific Balloon Ascents.—The first scientific balloon ascent of any importance was made by Gay-Lussac and Biot in 1804 from the Conservatoire des Arts, Paris, when it was observed (1)

that the dryness of the air increased with the altitude; (2) that there was no sensible variation of the earth's magnetic force at the heights attained; (3) that the chemical composition of the atmosphere was the same at 23,000 ft. as it was on the surface of the earth.

The most important scientific ascents were perhaps those undertaken for a committee of the British Association by Mr. Glaisher in 1862–6. The principal object of these ascents was the determination of the temperature of the air and its dryness at different elevations, to as great a height as could be reached. During the period named Glaisher made twenty-eight ascents, thirteen of which were specially undertaken for the attainment of the objects of the association. In most of these ascents Glaisher was piloted by Coxwell. An important conclusion arrived at was to negative the supposition that the decrease of temperature in ascending was uniformly at the rate of 1° for 300 ft. of elevation. Observations proved that the temperature at any point in the lower atmosphere depends upon many circumstances—*e.g.* the season, the time of day, a clear or a cloudy sky, and the direction of the aerial currents. Very surprising changes of temperature were encountered. For instance, in his ascent of Jan. 12, 1864, the temperature of the air on the ground was 41½° F.; on ascending, it decreased steadily till a height of 1,300 ft. was reached. At this point a warm current was encountered. At 3,000 ft. the temperature was 45°, being 3½° warmer than on the ground; and up to 6,000 ft. it was higher than on starting. In September 1862 the famous high ascent of seven miles was made, from Wolverhampton, by Glaisher and Coxwell. The exact height reached has, however, been disputed, since the last recorded observation was taken at 29,000 ft., when Glaisher became unconscious, and the height at which Coxwell (who was almost paralyzed) opened the valve with his teeth is merely estimated. In Glaisher's ascents valuable information was collected as to the direction of currents, thickness of currents and clouds, etc. The highest recorded ascent was made from Berlin, by Dr. Berson and Dr. Süring, July 31, 1901, when, by inhaling oxygen, they ascended 34,000 ft. Other notable scientific ascents have been made by De Fonvielle, Tissandier, and Flammarion. Among the more important observations recorded in these ascents, those of Tissandier, concerning the varying direction of aerial currents at different altitudes, suggested the possibility of using contrary currents as a means of aerial navigation.

On July 11, 1897, three Swedes —Andrée, Fränkel, and Strindberg—ascended from Spitzbergen in a large balloon furnished with drag-ropes, with the object of reaching the North Pole. But except for three brief messages by carrier-pigeon and floating buoys, liberated within a few hours of the ascent, nothing more has been heard of them.

Dirigible Balloons or Airships. — Although during last century various attempts were made to convert balloons into vessels capable of being steered and propelled, and to use steam and electricity and even gas as the motive power, the problem of constructing a successful dirigible balloon had really to wait upon the coming of the petrol motor, as no other form of prime mover answered the requirements of practical aerial navigation, particularly in regard to sufficient power combined with lightness in weight. The history of the earlier efforts, however, taught many valuable lessons.

As far back as 1784 an egg-shaped balloon was designed by a distinguished Frenchman, General Meusnier in which two envelopes were employed — one inside the other. The inner one contained the gas, and the space between the two envelopes was filled with compressed air. By varying the quantity of air pumped into the air space, the aeronaut reduced or increased the lifting power of the balloon. The air is thus used as ballast, and the invention is important inasmuch as it really originated the principle of the air ballonet, which is used in practically every modern airship. Several ascents were made with Meusnier's balloon, which carried oars worked by hand; but with such crude propelling power it naturally was not a success.

The first power-driven airship was that constructed by Henri Giffard about 1852, in which a cigar-shaped balloon was used, fitted with a propeller driven by a 3 horse-power steam engine. The balloon was 144 ft. long, with 39 ft. maximum diameter, and the ship attained a speed of some 4½ to 6¾ m. per hour; but the design and equipment were too faulty and crude to permit of results of practical value being achieved.

Haenlein, in 1872, applied a gas engine as the motive power for his airship, and the shape of the gas envelope designed by him was a great improvement upon previous efforts.

The same year (1872) Dupuy de Lome turned out an elongated balloon 118 ft. long with 48 ft. maximum diameter, and propelled by a screw made of sails driven by eight men, and attained a speed of about 6¼ m. an hour. Tissandier in 1883 had an elongated balloon of 91 ft. long by 30 ft. maximum diameter, fitted with a primary battery of twenty-four cells, and an electric motor driving by gearing a 9 ft. screw propeller. The speed attained was, in 1883, about 6½ m. per hour, and about 8 m. per hour in 1884.

In 1884 Renard and Krebs built an airship having an envelope similar to Haenlein's, and a long, rigid framework fashioned into a car; also an improved rudder and a sliding balance weight. The length of the balloon was 163 ft., with maximum diameter of 27 ft. The main deficiency of the vessel lay in the driving power, which was derived from an electric motor worked by cells—a battery of thirty-two accumulators — a hopeless arrangement for practical purposes, although the ship, on an experimental trip, got up a speed of about 6 m. per hour. The design of the ship resembled that adopted for some of the modern vessels, and might have proved quite successful had suitable driving power been obtainable, and generally it is regarded as marking an epoch in the development of the airship.

In 1893 David Schwartz designed an aluminium airship, and is generally credited with being the originator of what is known as the 'rigid' type of airship.

Wolfert, in 1897, fitted the first petrol motor to an airship, but during an ascent the petrol caught fire and blew up the ship, and Wolfert and his assistant both perished. Schwartz, the same year, fitted a 12 horse-power petrol motor to another vessel, which was wrecked in a high wind. He was certainly the first to drive a rigid airship by petrol motor, and had he been able to get the necessary funds to replace his destroyed ships and continue his experiments, would probably have turned out a successful type of vessel. He died suddenly in 1897.

About 1899 the rigid airship

designed by the now famous Count Zeppelin made its appearance. He used aluminium in the form of a skeleton framework, divided into some seventeen compartments, in each of which was a separate balloon, while outside the framework was a rubberized cotton covering or envelope. The air space between the outer envelope and the gas bags thus afforded the latter good protection from damage and from too sudden variations of temperature. Zeppelin further employed an aluminium keel, a sliding weight for balancing purposes, and also elevating planes. Two cars were attached, each equipped with a petrol motor, each motor driving by gearing two four-bladed propellers, while reversing gear was also provided. A speed of about 16 m. per hour was attained; and between 1899 and 1902 a series of trials was carried out, during which many practical defects in design and working became apparent, and were as far as possible rectified. It is to the credit of Count Zeppelin that in spite of failures, discouragement, and derision, and at enormous personal expense, he steadily pursued his experiments, and later on he was assisted financially both by government and by the German public, and he now has a very large and complete works at Friedrichshafen, embracing docks, aluminium foundry, hydrogen factory, workshops, etc., capable of producing at least eight ships per annum. The Zeppelin fleet of ships have now made many runs, the longest recorded being one of about 840 m. The best speeds attained are about 32 m. per hour, and on long runs an average of 22 to 24 m. an hour has been maintained. The vessel can carry about forty people on a short run, and on long runs generally carries from twelve to twenty persons.

Concurrently with the early experiments of Count Zeppelin in Germany, Santos Dumont was tackling the problem in France, and his first efforts were in applying light automobile motors to small balloons. He produced a neat design of small ship, cigar-shaped, of which he built a number at different times, and generally did a great deal to popularize aircraft. In October 1902 he won the Deutsch prize of 100,000 francs by sailing round the Eiffel Tower with a balloon 110 ft. long, with maximum diameter 20 ft., and capacity 22,239 cub. ft. The ship was driven by a four cylinder 12 horse-power water-cooled petrol engine. During 1902 the airships of Severo and of Bradsky were both wrecked when on their trials, with fatal results in each case. Then came the first ship produced by the Lebaudy brothers, in which the bending and buckling strains were taken off the gas envelope by the keel of metallic tubing to which it was attached. The production of this ship is generally held by experts to mark the beginning of practical aerial navigation. After many trials, which included some disasters, a ship of this type was, in 1904, taken over by the French government as a model for the aerial fleet, and at the works at Moisson the *Patrie* was produced in 1906. The envelope was 196 ft. long by 33¾ ft. maximum diameter, with a capacity of 113,000 cub. ft. To give greater vertical and lateral stability, the balloon had four fins at the rear end. The engine was a 75 horse-power Panhard, driving two propellers through bevel gearing, and the propeller speed could be varied from 200 to 900 revolutions per minute. The lifting power was 2,772 lbs. The ship had a speed of 25 m. per hour, and made many trips, and took part in the military manœuvres in 1907. Late

that year she broke from her moorings and was lost, simply because there was no efficient harbourage, this being one of the many examples of the necessity of providing a sufficient number of properly-constructed aerial harbours for airships before they are put into commission. France had another airship, the *République*, then building, and during the interval the government had presented to it the *Ville de Paris* and the ship of *Count de la Vaulx*. The *République*, which was 210 ft. long and fitted with an 80 horse-power motor, was launched in July 1908, could do 35 m. per hour, and carry six to nine men; but unfortunately she met with disaster in 1909 returning from the manœuvres, when a propeller blade broke and tore through the gas envelope, and the vessel fell from a height of several hundred feet, totally wrecking herself and killing her crew of four men. Several new vessels were launched in France in 1909, notably the *Liberté* (sister ship to the ill-fated *République*), the *Ville de Nancy*, and *Clement I.*, the last named being shortly afterwards wrecked.

Other ships in France then included the *Deutsch de la Meurthe* (201 ft. long), the *Colonel Renard* (200 ft.), the *Ville de Paris* (220 ft.), the *Egalité* (200 ft.), etc. The chief feature of the *Deutsch de la Meurthe* lay in the eight cylindrical balloons for stability purposes placed on the cylindrical tail of the main balloon. All the Lebaudy ships are of the 'semi-rigid' type, and the others are nearly all 'non-rigid,' the French builders never having favoured the 'rigid' type. A small dirigible called the *Zodiac*, capable of carrying two or four people, has recently become popular in France, and has made many trips. Early in 1910, owing mainly to the German progress, the French military authorities decided upon the construction of a large fleet of airships, to be carried out with all speed—one of the new vessels is to be named *Captain Marchal*, in honour of the commander of the ill-fated *République*.

Meanwhile, in 1907, Great Britain produced her first military airship, which was sausage-shaped, with rounded ends, and carried only a 12 horse-power motor. It was not satisfactory, and after its trial trip to the Crystal Palace was taken back to Aldershot, rebuilt, and turned out anew in 1908.

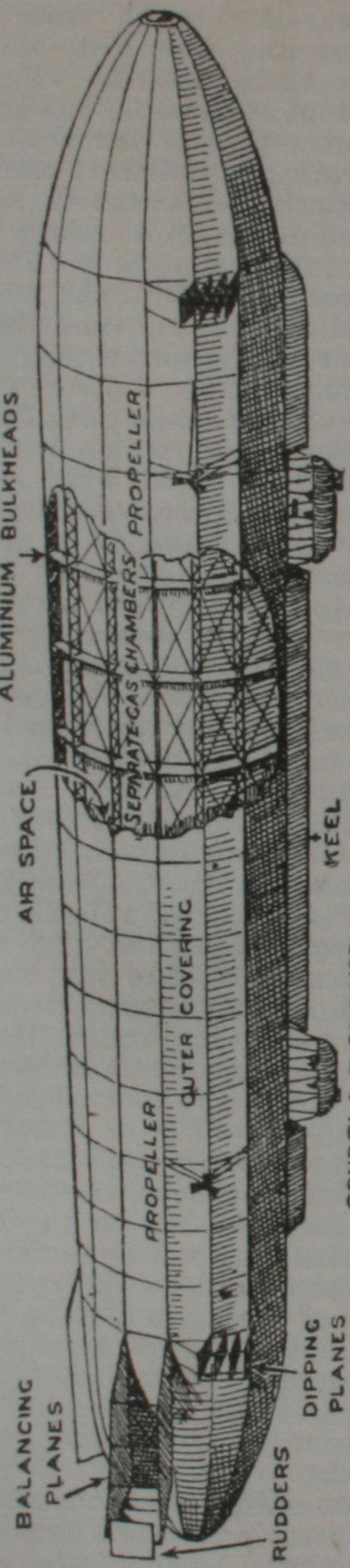
Still the results were unsatisfactory, and later in the year the ship was dismantled. Early in 1909 there was produced another small non-rigid ship called *Baby*, 100 ft. long with a 24 horse-power engine, capable of doing about 16 m. an hour; but the design and equipment were proved to be of little use for military purposes. The government thereafter increased materially the vote for aeronautical purposes, and in February 1910 there was launched at Aldershot still another ship — this time really a semi-rigid type—of 150 ft. long, cigar-shaped, having a capacity of about 75,000 cubic ft., fitted with a Green engine of about 100 horse power. The vessel is small compared to most of the continental ships, though larger than any of its predecessors. It is named the *Beta*, and within its known limitations appears to work satisfactorily. The *Gamma* is being rebuilt, and the *Delta*, almost as large as the *Clement-Bayard*, is under construction.

In connection with the military aspect of airships in Great Britain in 1910, mention must also be made of the rigid type of vessel being built for the Admiralty at the works of Messrs. Vickers Sons and Maxim at Barrow, and of the *Clement-Bayard* ship brought from France

and first housed in the hangar erected (at the expense of the proprietors of the *Daily Mail*) at Wormwood Scrubbs; and also the *Lebaudy* ship, purchased for the nation by the *Morning Post* fund. Both of these two last named represent the latest construction of these well-known French types.

Outside military and naval circles there have been other ships constructed in England in recent years, and of these may be mentioned that of Barton and Rawson, about 1904, which had a balloon of 176 ft. long and 43 ft. maximum diameter, with a total capacity of 235,000 ft., and lifting power equal to about 16,000 lbs. There were four propellers, driven by two 50 horse-power Buchet motors. The ship had a series of planes for ascending and descending, and horizontal balance was preserved by water-tanks at each end of the framework, and a semi-rotary pump transferred water from one to the other as occasion required. Another vessel, of 75 ft. long and 20 ft. maximum diameter, and a capacity of about 20,000 cubic ft., was turned out by Spencer Brothers. In 1910 Willows produced a type of ship which has made a number of successful journeys, notably those from Cardiff to London and from London to Paris.

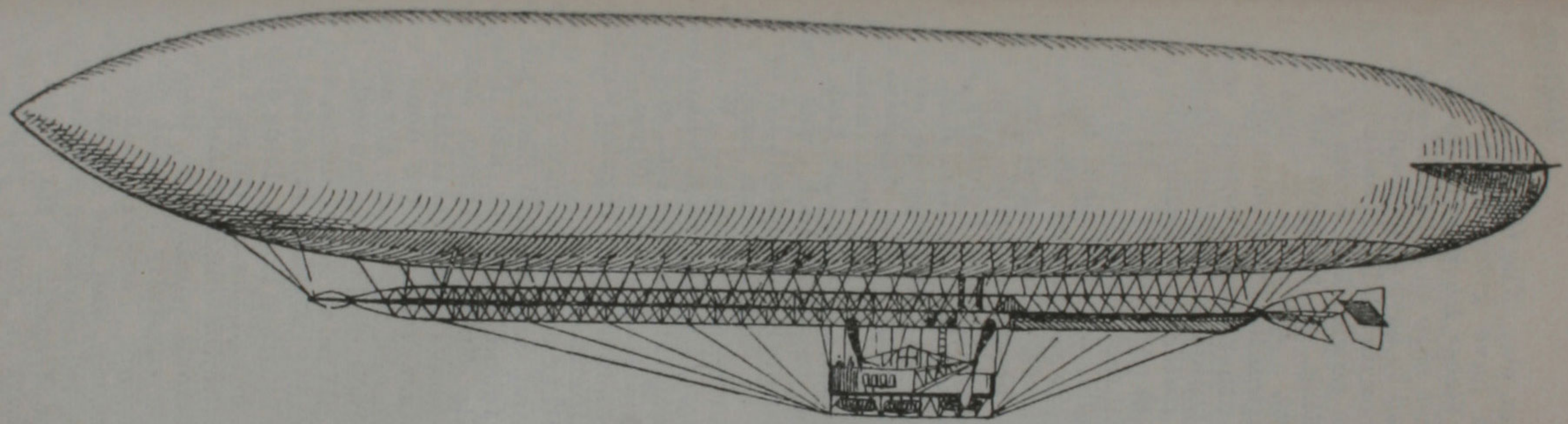
Before referring to the most recent development to date in airship construction abroad, it may be noted that airships generally now fall within one of three classes—viz. the 'rigid,' 'semi-rigid,' and 'non-rigid.' As every dirigible balloon is subject to the pressure of the air current against which it is being driven, and as the gas envelope must be able to retain its normal shape against the strain of this as well as that of lifting and sustaining the car and its total load, the problem is one of the most difficult



Zeppelin Airship—Rigid System.

with which the designer has to deal. In the rigid type of ship, of which the *Zeppelin* is the outstanding example, a rigid

1



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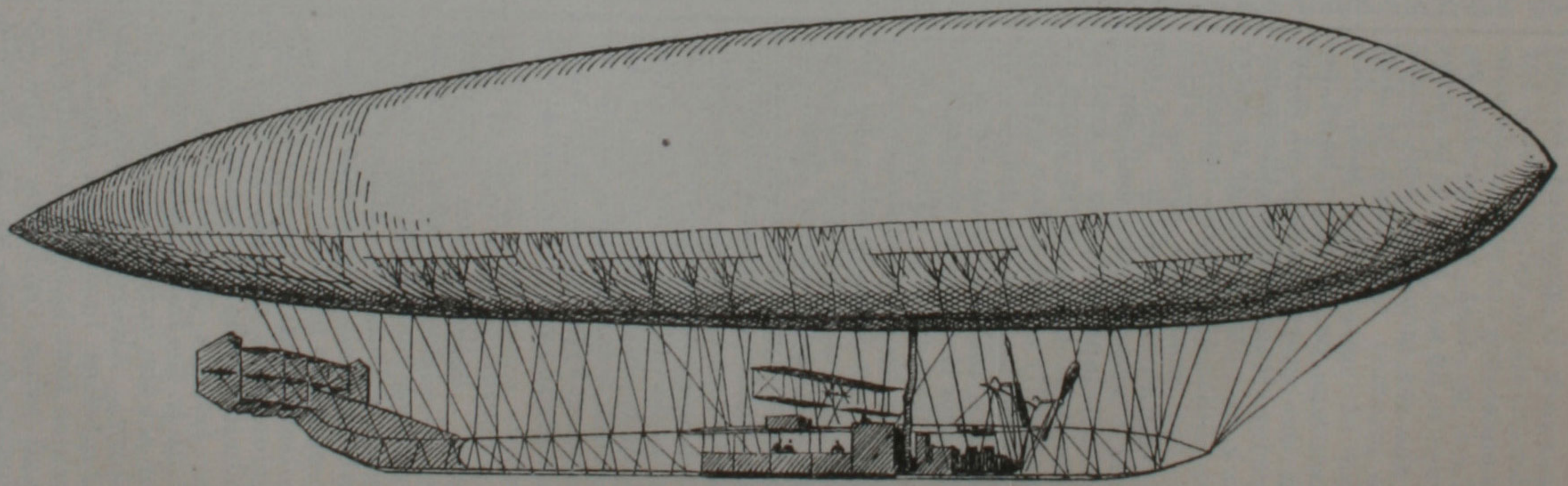

Dirigible Balloons—1. *Semi-rigid (Lebaudy)*; 2. *Non-rigid (Clement-Bayard)*.

framework is provided as the outer envelope, within which the gas envelopes are separately contained, so that the strains referred to do not have to be borne by the gas envelope, and this is the greatest advantage of this type of vessel; the main disadvantage, on the other hand, being the enormous size of outer envelope (consisting of the framework and its covering) to carry the additional weight necessary. In the semi-rigid type, which is well exemplified in the Lebaudy vessels, the balloon or gas envelope rests on a keel of metallic tubing, or is more or less rigidly attached to a metallic framework, as in the case of the German military ship designed by Major Gross or in the design of Herr Ruthenberg. The car and load are then suspended from the tubing or framework. In the non-rigid class the car and load are suspended direct from the balloon or gas envelope by means of suitable netting and suspension cables; and to this class belong such ships as the German *Parseval* and *Clouth* designs, the earlier British ships, and some of the French vessels. Other differences between types are to be found in details too numerous to deal with here.

Theoretically, a form of combined balloon and aeroplane would appear to offer many advantages; but although tried by Santos Dumont, Malecot, and others, these have not so far been realized in practice.

Reverting to most recent developments abroad, it must be admitted that Germany has had by far the greatest experience both in the building and handling of all the various classes of airships. Altogether some nine *Zeppelins* have been built, of which four have been destroyed, and other rigid-type ships are building, such as the *Schutte*, *Trives*, etc. The *Gross* semi-rigid ships have given good results, and *Gross III.* is said to be the fastest ship in Europe, being reported to have done some 38 m. an hour on its trials. It had about 300 horse power, and *Gross IV.*, now building, is to have 400 horse power. *Parseval V.* (non-rigid type) was launched some time ago, and other four *Parseval* vessels are building. Several ships of the *Ruthenberg* (semi-rigid) and *Clouth* (non-rigid) have been built; and other German vessels include, in addition to those already mentioned, the *Siemens-Schuckert* (the largest non-rigid and most powerful ship ever built; launched February 1911), *Rheinish-Westphalien*, *Kiel*, etc., types. In 1910 passenger services were begun by the *Zeppelin* and *Parseval* ships, and although disaster overtook the first *Zeppelin* vessel (which was most luxuriously appointed), the building of these aerial liners will nevertheless proceed. Wireless telegraphy experiments have been extensively carried out, and both the *Zeppelin* and *Gross* latest types now carry regular wireless equipment.

Other countries have not been behind, and airship fleets are to be found in Italy and Russia, while Spain, Belgium, Austria, etc., have also several ships. The Italian vessels have done very well, and one ship in the autumn of 1909 made a noteworthy trip of 190 m. in seven hours, and on another occasion remained aloft for fourteen hours, doing over 290 m. in all, the return part of the journey having to be made against a strong wind. The design has been carefully thought out and presents several interesting features, and the gas envelope is divided into seven compartments. The *Zeppelin* is far ahead of all others in actual performances, but the Italian ship has done

the next best of any dirigible afloat.

In November 1909 the first series of airship trials and manœuvres was carried out in Germany under the military authorities, in which *Zeppelin II.*, *Gross II.*, and *Parseval I.* and *Parseval III.* all took part, with Cologne as the base, when various trials for speed, altitude, endurance, etc., were made, several of the voyages taking place at night.

In America the United States Government took over the *Baldwin* airship in 1908, after some trials. It is 100 ft. long, with a maximum diameter of 16 ft., and the envelope is contained in linen netting, arranged, it is claimed, in such a manner that in the event of collapse of the envelope it would form a parachute and permit of safe descent to earth. The engine is 25 horse power, and the ship's speed is put at over 20 m. an hour. Planes are fitted for controlling the altitude.

On October 16, 1910, the *Clement-Bayard* airship made a record voyage from Paris to London with seven persons on board, doing the 246 m. in six hours, thus maintaining an average of 41 m. per hour. There was a following wind practically all the way, which doubtless helped considerably, and the still-air speed of the ship is given as 35 m. per hour. In shape the vessel resembles the War Office dirigible *Beta*, although over twice the size. The length is 250 ft., with a capacity of 247,000 cub. ft., a noticeable feature being the elevating planes situated near the stern, which have a supporting surface of about 600 sq. ft. There are four propellers, driven by two motors having a total horse power of 250, these being located in front of the car. The latter is roomy enough to accommodate about thirty-nine persons, besides the equipment, ballast, and 230-gallon petrol tanks. The airship has now been purchased for the War Office. The *Lebaudy* ship crossed from Paris to Aldershot (200 m.), on 26th October 1910, in 5 hours 28 minutes, and is now at Aldershot.

On October 15, 1910, Mr. Wellman (who had previously made futile attempts in a former vessel to reach the North Pole from Spitzbergen) started in his airship, the *America*, to cross the Atlantic. The airship consisted of the balloon, under which hangs the car, beneath which was a steel gasolene tank, and a lifeboat suspended below the tank, thus making four stories. Trailing from the car was a long steel trail termed the equilibrator, which consisted of thirty steel cylinders connected by a universal joint and strung by steel cables, which was intended to preserve a proper balance. The balloon was 228 ft. long, with a maximum diameter of 52 ft., and a capacity of 345,000 cub. ft. The car was 150 ft. long, with seven compartments. There were four propellers, driven by two engines of 80 horse power each, and the still-air speed of the vessel was about 20 m. an hour. There was a 10 horse-power service motor, and the ship had electric light, telephones, searchlight, and wireless telegraph equipment. There were other novel features for navigation and safety. Mr. Wellman and five others were on board when the airship left Atlantic City. At first all went well, but before long the winds changed, and increasing in strength, drove the vessel out of its course southwards. The jerking movements of the equilibrator as it dashed from wave to wave, and its dragging effect upon the balloon, threatened disaster. After being at sea for sixty-nine hours and travelling about 1,000 m., wireless communication was established

with a steamer, the *Trent*, which rescued the crew from their lifeboat, into which they had descended. The airship was then cut adrift and disappeared.

General.—All airships or dirigible balloons belong to the class of aerial craft which has been designated *aerostatic machines*, or those which depend for their buoyancy on the use of gases lighter than air. In ordinary balloons gas is generally used; but as 200 cub. ft. weighs 8 lbs. against 1$\frac{1}{8}$ lbs., the weight of the same volume of hydrogen, the latter is always used for dirigibles. In gas envelopes the main qualities required are strength and light weight, combined with ability to retain the hydrogen for the greatest possible length of time. They are now generally made of rubberized cotton of finest quality. These aerial craft can ascend to heights up to about 6,000 feet, or can journey comparatively close to the earth, and at night can steer by compass.

In regard to the three classes of ships mentioned, probably experience alone will determine which is the most serviceable all round, as each possesses its own peculiar advantages. At present the semi-rigid would appear to be most in favour. The chief advantage of the non-rigid is the comparative ease with which it may be deflated and packed up, although this certainly does also apply to some ships of the semi-rigid type, while all ships of both classes have advantages in this respect over the rigid class. Landing in all types always presents difficulties, and it is essential that suitable hangars or garages be available for efficient protection when on the ground.

Much discussion has arisen as to the comparison between airships and aeroplanes for practical purposes, military and otherwise; but until the production of an aeroplane which can hover or remain in the air at will it appears as if the airship must remain, and indeed it is doubtful whether the aerostatic principle will ever disappear entirely, no matter what development in aeroplanes the future may hold.

Ballons-sondes, or sounding balloons, are unmanned balloons carrying self-recording instruments to great heights, to obtain scientific data regarding the condition of the upper air. The ascent of human beings to heights of six miles being attended with conditions of great difficulty and danger, it was proposed as far back as 1809 to employ balloons carrying automatically registering instruments, but no observers, to obtain information about the atmospheric strata lying above that height. This was first tried in 1893 by the French aeronauts Hermite and Besançon, who prepared a balloon having a capacity of 3,960 cub. ft., and composed of gold-beaters' skin. An instrument, the meteorograph, registering variations of pressure and temperature on a revolving drum, driven by clockwork inside, was sent up with the balloon, which weighed 40 lbs., with a lifting capacity of 77 lbs. The trial of this, the first of the so-called 'aerophiles,' took place on March 21, 1893, and next day it was returned from the department of the Yonne, where it had fallen. The highest point reached was 49,000 ft., and at this elevation the temperature was −60° F., both pressure and temperature being the lowest registered in a balloon up to that time. Ballons-sondes are now nearly always made of varnished paper to hold a few thousand cubic feet. Several remarkable journeys have been made by these balloons, notably in July 1894, when one named the *Cirrus* made a journey from Berlin to Bosnia, a distance of

700 m., at a mean velocity of 62 m. an hour, in which a height of 54,000 ft. was attained, and a temperature of − 63° F. recorded. In April 1895 the *Cirrus* rose to the extraordinary elevation of 72,000 ft., or 13½ m., the barometric pressure being reduced to 1¼ in. At the Meteorological Congress held in Paris in 1896, simultaneous international ascents on prearranged dates were agreed upon, and balloons carrying instruments were launched from widely-scattered places over Europe, from which valuable data regarding the meteorology of the upper air have been obtained. See *Sounding the Ocean of Air*, by A. L. Rotch (1900).

Military Ballooning.—The ballooning duties of the British army are carried out by the Royal Engineers. Attached to the Royal Engineers are five balloon sections, which, together with the cadre and the balloon factory, are stationed at Aldershot. On mobilization, a section forms part of the 'corps engineers' of each army corps, and at full strength consists of 3 officers, 51 men, and 42 horses. A section carries several balloons (each of 10,000 cub. ft. gas capacity), one pilot balloon (100 cub. ft.), steel tubes for holding gas, and several hundred feet of steel wire for telephonic communication. The number of tubes required to fill a large balloon varies from 80 to 100.

Captive balloons are generally used, but on occasion they may be sent free for certain specified objects. In the former case they are sent up from the balloon wagon, at the tail of which is fixed a drum of wire rope (2,200 ft.). The end of this rope is attached to the balloon, and by means of brakes and handles the latter is kept under absolute control, and can be hauled down or allowed to ascend at will. The height to which a captive balloon can rise in calm weather is about 1,000 ft.; 1,500 ft. is the extreme limit of the 10,000 cub. ft. balloon, and it is only attainable in a dead calm at very low altitudes, and with a light man in the car. When the wind is blowing over 30 miles an hour, captive balloons are absolutely useless as a means of reconnoitring. They can be used when fairly calm, but on a still day their value in watching the enemy's movements, observing the effects of artillery fire, taking photographs and making rough maps of the country, or acting as signal stations, cannot be overestimated. They are sent up about a mile behind the most advanced line of the army, and the officer who makes the ascent can telephone, either to the party at the foot of the rope or direct to the general, the position of the opposing forces. In a mountainous country, however, the officer in the balloon has but a limited range of observation; for though he may ascend to a height of 1,000 or 1,200 ft., yet the reverse slopes of the hills, especially if steep, effectively conceal the enemy's position. The observer in a balloon is fairly safe from hostile fire. A bullet might pass right through the balloon without doing more than slightly lessening its buoyancy.

The first time balloons were used to any great extent for military purposes was in the wars of the French revolution. At Fleurus, June 17, 1794, General Jourdan's success against the Austrians was mainly due to the valuable information he obtained from a captive balloon. The French again used them in the Italian campaign of 1859, and the Federals employed them with conspicuous success in the American civil war (1860–4). During the siege of Paris the French sent out over sixty free balloons

with dispatches, and pigeons for the return messages; and Gambetta left the city in this manner to organize an army of relief in the south of France. The British army has used them constantly since the Bechuanaland expedition in 1884, and balloon sections were employed in the Boer war (1899-1902), and in the Russo-Japanese war (1903–5).

See Coxwell's *My Life and Balloon Experiences* (1888); *Aeronautical Annual* and *Aeronautical Journal* (London); Proceedings of Aeronautical Society of Great Britain and of Académie d'Aërostation of France; *L'Aerophile*, and *Revue de l'Aëronautique* (Paris); *Zeitschrift für Luftschiffahrt und Physik der Atmosphäre* (Berlin); *Aerial Navigation*, by F. Walker (2nd ed. 1910).

Ballot, or secret voting, is a very old institution, practised both in Greece and in Rome, principally for voting at criminal trials, and for some purposes, such as ostracism, in deliberative assemblies, but also, in Rome, at the election of magistrates and certain other officials. At one time secret voting in Parliament was advocated in England, and it was used in the Parliament of Scotland in 1662; but no one asks for secret voting in Parliament now, and in modern times the agitation for the ballot has been confined to the demand for its use at popular elections of members of Parliament and other representative bodies. For these purposes voting by ballot was advocated by reformers at least as early as 1817: in 1830 O'Connell introduced the first bill on the subject; in 1838 it was the fourth point of the 'People's Charter.' The report of the committee of the Commons in 1869 was strongly in its favour. It was used at the first election of the London School Board, under the Elementary Education Act of 1870. The Ballot Act, 1872, introduced by Mr. Forster, prescribed that the ballot should be employed at all municipal and parliamentary elections, except at parliamentary elections for the universities. This act was temporary, and would have expired on Dec. 31, 1880, but since that time it has been continued by the Expiring Laws Continuance Acts. Special provisions are made for blind and illiterate persons, and for Jews on Saturdays. The officers and agents of candidates have to make declarations of secrecy, and almost every possible kind of tampering with the papers, boxes, etc., is punishable, in the case of officers with two years' imprisonment with or without hard labour, and in the case of others with six months'. Provision is made for a scrutiny on petition where it is alleged that unqualified or bribed persons have voted, by which the judges on the rota for the trial of election petitions can investigate the particular votes in question. Voting by ballot in some form has been introduced into most countries governed in accordance with constitutional methods, but Prussia, for instance, is an exception. For method of marking the ballot paper, see ELECTIONS, and for voting machine, see MACHINES, AUTOMATIC.

Ballot, BUYS (1818–90), chemist, physicist, and meteorologist, studied at Utrecht University, where he afterwards became professor of mathematics, and subsequently of experimental physics—a post which he held till 1887. He was also appointed director of the Royal Meteorological Institute of the Netherlands. He is best known from his observations on the alteration of musical pitch by relative motion, and by the 'law' which defines the relation of the wind to the isobars. It

may be put in this form: Stand with your back to the wind, and the barometer will be higher on your right hand than on your left. This rule applies to the northern hemisphere, but in the southern the reverse obtains. In 1883 an island discovered in 70° 25′ 28″ N. was named after Ballot. See BUYS BALLOT'S LAW.

Ballota. See HOREHOUND.

Ballycastle, mrkt. tn., Co. Antrim, prov. Ulster, Ireland, 15 m. N.E. of Ballymoney, on an open bay opposite Rathlin I.; is a bathing resort. Pop. 1,500.

Ballyclare, mrkt. tn., Co. Antrim, Ireland, 9 m. N. of Belfast; has paper mills and linen bleachgreens. Pop. 2,000.

Ballymena, mrkt. tn., Co. Antrim, prov. Ulster, Ireland, 23 m. N.W. of Belfast, with a flourishing trade in brown linens (yearly average, £1,000,000) and an old linen market (manufacture introduced 1732). The allied industries are extensively carried on in the neighbourhood. In the vicinity is Ballymena Castle. Pop. 11,000.

Ballymoney, par. and mrkt. tn., Co. Antrim, prov. Ulster, Ireland, 8 m. S.E. of Coleraine, on an eminence 3 m. from the Bann; is an important agricultural centre, with linen manufactures. Pop. par. 8,000; tn. 3,000.

Ballymote, mrkt. tn., Co. Sligo, prov. Connaught, Ireland, 15 m. S. by W. of Sligo, with large coach factory, castle founded (1300) by William de Burgo, and the ruins of a small Franciscan monastery (13th century). Pop. 1,000.

Ballymote, THE BOOK OF, a large folio vellum MS. preserved in the Royal Irish Academy, which was so named because it was owned for some generations by the MacDonoughs of Ballymote, County Sligo. It is written in Gaelic, and consists of pieces of various date, some written before 1400 A.D., relating to history, legend, genealogy, and the Brehon Laws, with some translations from Latin romances. In 1887 it was published in photo-lithography (at Dublin), with introduction, notes, and index by Professor R. Atkinson.

Ballynahinch ('the town of the island'), mrkt. tn., Co. Down, prov. Ulster, Ireland, 15 m. S. by E. of Belfast, with a spa (sulphur and chalybeate springs) in a picturesque valley 2½ m. away. Ballynahinch was the scene of a sanguinary encounter between the Irish insurgents and the royal troops in 1798, in which the rebels were defeated. Pop. 1,600.

Ballyshannon, mrkt. tn. and seapt., Co. Donegal, prov. Ulster, Ireland, 25 m. N.W. by W. of Enniskillen, on both sides of the mouth of the Erne, and 3 m. from Lough Erne. The salmon fishery is important, and the harbour is accessible for vessels drawing 10 ft. Pop. 2,400.

Balm. See BALSAM.

Balm of Gilead, or MECCA BALSAM, an aromatic gum or powder with supposed medicinal qualities, which, if not produced in Gilead, was at least a well-known article of commerce in that region. It is generally identified with the resin of *Balsamodendron gileadense.*

Balmaceda, JOSÉ MANUEL (1838–91), president of Chile (1886–91), a powerful speaker and bold statesman. Having lost the confidence of the Assembly, he attempted (Jan. 1, 1891) a *coup d'état*, refused to convene the House, and constituted himself dictator. He was supported by the army; but the navy, having remained faithful to the constitutional government, landed troops at Coquimbo in August, and routed Balmaceda's forces in the battles of Conchon and Placilla. Balmaceda committed suicide on Sept. 18, 1891.

Balmain, populous suburb of Sydney, New South Wales, on the W. shore of Darling harbour. It has several docks (one the largest in the S. hemisphere), chemical works, a large cocoanut-oil factory, sawmills, etc. Pop. 31,000.

Balme, COL DE, famous mountain pass (7,231 ft.) in the Pennine Alps, between the valley of Chamonix and Martigny (Rhone valley), Switzerland, on the dividing line between France and Switzerland; commands superb views.

Balmerino (pron. *Ba'mernie*), par. and vil. on the Firth of Tay, N. Fifeshire, Scotland, 3 m. S.W. of Dundee; salmon fishing station, but the industry is declining. There are ruins of a Cistercian abbey founded 1227. See Campbell's *Balmerino and its Abbey* (1899).

Balmerino, ARTHUR ELPHINSTONE, SIXTH LORD (1688–1746), Jacobite; in 1745 joined the Young Chevalier, and was taken prisoner at Culloden. When tried at Westminster Hall in 1746, he, unlike the Earls of Kilmarnock and Cromarty, declined to admit that he had committed a crime, or to sue for mercy, and on the scaffold he met his fate with undaunted courage. See *State Trials*, vol. xviii.; Jesse's *The Pretenders and their Adherents* (1857).

Balmoral Castle (Gael., 'the majestic dwelling'), royal residence, W. Aberdeenshire, Scotland, on r. bk. of the Dee, near Crathie, 9 m. W. by S. of Ballater; purchased by Queen Victoria in 1848. In 1853 the present gray granite Scottish baronial castle replaced an old one.

Balnaves, HENRY (d. 1579), Scottish reformer, was appointed (1538) a lord of session by James V.; depute-keeper of privy seal (1542–43). He helped largely in getting the Scriptures printed in the Scots vulgar tongue. For his ardent Protestantism he suffered attainder and imprisonment, being transported to Rouen in 1546; but in 1563 his estates and offices were restored. See M'Crie's *Life of John Knox* (new ed. 1889).

Balneology, or BALNEO-THERAPEUTICS. The science of the use of baths in chronic disease as met with at health resorts. The use of heat in baths dates from a very early period. The Greeks appear to have been the first to employ baths of dry heated air, the sweating process being followed by friction and aspersions of warm water. Later, the Romans combined physical training and exercises with the baths, and provided for both in the same building. The Roman baths extended with their conquests, and were often for convenience erected at Bath, in England, in the vicinity of the hot springs. In the 13th century hot air or vapour baths were common in England and in the large cities of Europe, but for a long time subsequently they fell largely into disuse; they appeared in the present form of the Turkish bath about the year 1860. Closely allied to the hot-air bath is the vapour bath, the heat being originally supplied by red-hot stones and shot. The douche bath was introduced by Preissnitz, the father of hydropathy, who utilized a mountain stream discharging from a gutter six feet above the patient's body. Peat and mud baths were also employed by the Romans, the present peat or moor bath (German, *moorbad*) consisting of an earth or mould formed from disintegrated moss and other vegetable matter, with or without various medicinal admixtures. Baths of all kinds are applied either to the entire surface of the body or locally, and in whatever form applied they exert their action solely on the skin—that is to say, they take effect directly on the skin, and through the skin indirectly upon

other parts of the body. The physiology of the skin is therefore at the foundation of balneology. Of special importance is the function of the skin as an organ of excretion, the skin being provided with a vast excretory glandular system. Considerably over one pound weight can be lost in a Turkish bath through free perspiration. This removes certain impurities from the blood. The skin is further the medium by which relation is maintained with the external world, and the number and importance of the nerves in the skin serve to explain the influence of sedative or stimulating cutaneous applications. The main elements which enter into the action of baths are heat, moisture, chemical and mechanical stimulation. The temperature and duration of the bath determine its action, whether sedative or stimulant. In acute diseases baths are most often employed for their power of lowering temperature in high fever; chronic diseases, the various conditions met with in the subjects who frequent health resorts, are the proper field of balneo-therapeutics. The diseases that are most favourably influenced by the baths are, chronic rheumatism, gout, chronic skin diseases, notably acne, eczema, psoriasis, and various nutritional diseases that arise from over-eating and over-drinking. Baths are frequently taken by patients without medical supervision, with the result that the general health is lowered instead of improved. The following simple rules may be laid down as a guide in balneo-therapy. (1.) The state of the cardio-vascular system should be carefully determined before baths of any kind are employed. This gives a clue to the strength and the duration of baths required to avoid undue depression. (2.) Age. Children and elderly people stand extremes of temperature badly; lukewarm temperature is here the most beneficial. (3.) The primæ viæ must be opened; any congestion of the liver or other organs should be removed when necessary by preliminary treatment—*e.g.* a dose of calomel and saline. (4.) A certain recrudescence of symptoms—*e.g.* an acute attack of gout—is often induced in the course of spa treatment. Within certain limits this is a favourable sign. (5.) Special value attaches to a complete hour's rest in the recumbent posture after the bath before dressing; in addition, the amount of physical exercise allowed daily should be carefully regulated. (6.) The local employment of balneary remedies has an important place in spa treatment —*e.g.* local joint affections treated by electric heat baths. Medicinal baths combined with resistance exercises are of special value in the treatment of heart disease. See NAUHEIM TREATMENT, and BATHS AND BATHING.

Balrampur, tn., Gonda dist., Oudh, India, 85 m. N.E. of Lucknow; manufactures cotton cloth, blankets, felt, knives, etc. Pop. 16,800.

Balsa, a raft or surf-boat, made of the extremely light balza-wood of Peru and Brazil.

Balsam, various species of the order Balsamineæ, which is often placed under Geraniaceæ. The principal genus is known as Impatiens, because the ripe capsule bursts spontaneously or when touched. (1.) Noli-me-tangere is the 'touch-me-not,' found wild throughout Britain and Europe. There are over a hundred species of Impatiens, mostly in the shady woods of India, where they form a rich undergrowth with beautiful white and red flowers. They are mostly annuals or biennials; many have been introduced from

the East into Britain for greenhouse cultivation. (2.) Balsamina is a scarlet-flowered species from tropical Asia, hardy in most gardens.—BALSAM BOG is a densely-tufted xerophyte of the Falkland Is., belonging to the order Umbelliferæ. The tufts are often several feet in diameter. A gum-resin exudes from its branches. (See Hooker's *Flora Antarctica*, 1844–60.)—BALSAM TREE of Jamaica is *Clusia flava* of the order Guttiferæ, yielding a gum-resin which is used as pitch in the W. Indies.—BALSAM OF ACOUCHI is obtained from *Icica heterophylla*, a species of the order Burseraceæ, found in Guiana.—BALSAM OF UMIRI is an oleo-resin obtained from *Humirium floribundum*, related to the geraniums, and found in Brazil. Its properties resemble those of copaiba balsam.—CANADA BALSAM, obtained from the Canadian balm of Gilead fir, *Abies balsamea*, is used in microscopic work for the permanent preservation of sections on glass slides.—WEST INDIA BALSAM is obtained from species of *Clusia*.—BALSAM OF COPAIBA is the oleo-resin obtained from the trunks of various species of *Copaifera*, in the valley of the Amazon and the E. and W. Indies. It has very much the appearance of olive oil, but its odour is aromatic, and its taste bitter. Its chief constituent is a crystallizable resin, copaivic acid. Oil of copaiva is got by distillation, and, administered in capsules or as an emulsion, acts in the stomach like other oleo-resins as a stimulant and irritant, and in large doses as an emetic. Its active principles are absorbed, and all secretions smell of it, and are increased by it. It acts as a stimulant and a disinfectant in the genito-urinary tract, and is chiefly used for that purpose, although it has the useful effect of oleo-resins on the lungs and bronchi, and indeed acts better there than do most others, but is avoided on account of its smell. It is diuretic, and by its stimulating action sometimes induces a rash.—BALSAM OF PERU is taken from the trunk of *Myroxylon pereiræ*, after beating, scorching, and removing the bark. Its volatile oil contains cinnamic and benzoic acids, which give its fragrance. It has the general qualities of balsams, and is used chiefly as a disinfectant expectorant.—BALSAM OF TOLU is obtained from New Granada, by incisions in the trunk of *Myroxylon toluifera*. Its most important constituents are benzoic and cinnamic acids. A syrup and a tincture are prepared from it, and it is present in several compound drugs. It is used only as an expectorant.

Balsamo, GIUSEPPE. See CAGLIOSTRO.

Balta, tn., Podolia gov., on branch of the railway Moscow-Kiev-Odessa, 130 m. N.W. of Odessa; has brewing, distilling, and manufactures of soap, candles, bricks, and tobacco, as well as an important trade in cereals and cattle. It has two yearly fairs, the principal in May. Pop. 24,000.

Baltasarini, surnamed BEAUJOYEULX (16th century), Italian musician, was invited by Catherine de' Medici to her court. He was the first to introduce the Italian dances into Paris, and was thus the founder of the modern ballet. His best production was the *Ballet Comique de la Reine* (1582). See Celler's *Les Origines de l'Opera* (1868).

Balthazar, one of the three wise men (Magi) of the Nativity, and one of the fabulous three kings shown in Cologne Cathedral.

Baltic Port, tn. and seapt. Russia, at the entrance of the Gulf of Finland, 250 m. by rail w. of St. Petersburg; important as being the terminus of one of the Baltic railways. Pop. 850.

Baltic Provinces, the region including Esthonia, lying on the

Gulf of Finland and the Baltic; Livonia, on the Gulf of Riga; and Kurland, facing both the Gulf of Riga and the open Baltic, reaching westward to the Prussian frontier. It is inhabited by Esthonian and Lettish races, with a large admixture of Germans, especially in the great towns—*e.g.* Riga. Russia first obtained a permanent footing on the Baltic with the foundation of St. Petersburg (1703). By the peace of Nystadt (1721) Esthonia and Livonia, including the town of Riga, were acquired, and the frontier advanced to the W. Dvina (so-called Düna). Kurland was not added till the third partition of Poland (1795). For several centuries the civilization of these provinces was of German origin; but in 1867–89 this was suppressed by the government, and the people completely Russianized, as well as converted, often under great pressure, to the Greek Church.

Baltic Sea, or EAST SEA, an inland sea of N. Europe, surrounded by Denmark, Germany, Russia, Finland, and Sweden, and communicating with the Atlantic through the Skager Rak and the Kattegat, which leads to the channels of the Sound (Oresund), the Great Belt and the Little Belt, between the Danish islands. It has three large arms—the Gulf of Bothnia, Gulf of Finland, and Gulf of Riga—and several smaller bays, as the Bay of Danzig, Neustädter Bay, and Kiel Bay. The greatest length from S.W. to N.E. is over 900 m., its width 45 to 140 m., and its area 178,000 sq. m. Its S. shores are low and sandy, and in places lined by shallow lagoons (Kurisches Haff, Frisches Haff, and Stettiner Haff). Several islands stud its waters, the principal being Sjælland (Seeland), Fyn (Fünen), Langeland, Laaland, Falster, Möen, Bornholm, and others of the Danish group; Alsen, Fehmarn, Rügen, Usedom, and Wollin, belonging to Prussia; Ösel, Dagö, Mohn, Worms, belonging to Russia; the Finland archipelagoes of Aland and Quarken; the large Swedish islands of Gotland and Oland; and thousands of small rocky skerries (the Skärgård) all along the E. coast of Sweden and along the W. and S. coasts of Finland. The Baltic is generally shallow (20 to 100 fathoms), and is shut off from the Kattegat and the G. of Bothnia by submarine ridges; but between the N. of the island of Gotland and the Stockholm skerries there is a depression in which a depth of 420 fathoms has been sounded. The Baltic is fed by numerous streams, some of them considerable rivers, such as the Neva, Düna, Niemen, Vistula, Oder, Götaelf, Luleå, and Torneå. The fresh water thus poured into its basin in spring sets up a broad, strong outflowing surface current through the Kattegat—a current which increases to a depth of 50 fathoms, and from a salinity of 7 to 8 per cent. in the N.E. to nearly 30 per cent. in the W. But there is a compensating inflow current entering intermittently underneath the first, and having a salinity of 32 per cent. In summer the temperature of the surface water of the Baltic is 62½° to 64½° F. In the broadest basin of the sea, which stretches E. of Gotland, the salinity below 100 fathoms is from 8 to 10 per cent. In winter the smaller bays and creeks, especially in the N. parts of the sea, invariably freeze, and so suspend navigation; and in severe winters the Gulf of Bothnia becomes frozen from side to side. The tides are barely perceptible E. of the Danish islands. The Kaiser Wilhelm or Nord-Ostsee Canal, from Kiel to the mouth of the Elbe, has since 1895 afforded a short cut between the Baltic and the North Sea, and the construction of a Baltic and

Black Sea Ship Canal, utilizing the Dwina and Dnieper rivers, has been decided upon.

Baltimore. (1.) The largest city of Maryland, is finely situated on an arm of Chesapeake Bay, 40 m. N.E. of Washington. A stream called Jones's Falls, spanned by over twenty bridges, divides the city into two parts, that on the W. side containing the most important trade and residential portion, that on the E. being the seat of the main manufacturing industries, and containing the older part of the city. In 'Old Town' evidences of the manner of life in colonial times still exist. Baltimore is one of the most notable and interesting cities in the Union, whether considered in regard to its trade and manufactures, its educational, religious, and philanthropic institutions, or its public buildings and monuments. Its deep, spacious harbour (deepened in 1906 to 35 ft.) gives facilities for an extensive foreign trade, which has reached large proportions, especially in the export of grain and in the import of guano. The annual value of the city's exports is nearly £20,000,000, and its imports nearly £6,000,000. Manufactures are varied, including clothing, boots and shoes, flour, chemicals, machinery, cotton duck, straw hats, etc. Shipbuilding is a leading industry; but the oyster and fruit-canning business is particularly important, having a yearly output of about 50,000,000 cans. Baltimore has direct steamship connections with Liverpool, Middlesbrough, Havre, Bremen, and other important European seaports, as well as with the principal ports of the United States. The water supply, including power for mills, is derived from Lake Roland and the Gunpowder R. Among the principal public buildings are the City Hall, with a dome 260 ft. high, the Court House, Post Office, and Academy of Music. Baltimore is the seat of the Johns Hopkins University, the Women's College of Baltimore, Loyola College, Morgan College, the law and medical departments of the University of Maryland, the splendidly-equipped Johns Hopkins Hospital, the Peabody Institute, the Enoch Pratt Library, with 220,000 volumes, and other libraries, and many charitable institutions and hospitals. It is the see of an Episcopal bishop and of a Roman Catholic archbishop, and here the Methodist Church of the U.S. was founded. There are handsome monuments to Washington and George Peabody, and a Battle Monument commemorating the citizens who fell in defending the city against the British in 1814. In February 1904 a large part of the best business portion of the city was destroyed by fire, causing a loss of over £14,000,000. Within three years this portion was entirely rebuilt. Baltimore was settled in 1729, and incorporated as a city in 1796. Pop. 560,000. See Love's *Baltimore: the Old Town and the Modern City* (1895); Scharf's *History of Baltimore* (1881). (2.) Small seapt. tn. on bay of same name, Co. Cork, Ireland, 7 m. S.W. of Skibbereen, with which it is connected by rail. Its sheltered harbour is the headquarters of a well-equipped fishing fleet. Baltimore owes much of its prosperity to the late Baroness Burdett-Coutts.

Baltimore and Ohio Railroad. This company was incorporated Feb. 28, 1827, and the first section of its line, from Baltimore, Maryland, to Ellicott's Mills, Maryland (about 13 m.), was opened May 22, 1830. The original main line runs from Baltimore, in Maryland, to Wheeling, in W. Virginia (about 380 m.), to which point it was completed

and opened for traffic on April 1, 1853. Its own system of railroads extends from Philadelphia (Pennsylvania), through Baltimore (Maryland) and Washington (District of Columbia) to Chicago (Illinois) by two routes: one *vid* Pittsburg (Penn.) and Akron (Ohio), and the other *vid* Grafton and Wheeling (W. Virginia) and Newark (Ohio); together with a line from Grafton (W. Virginia) to Cincinnati (Ohio) and St. Louis (Missouri), and reaches by its main line and branches Cleveland and Columbus (Ohio), Louisville (Kentucky), and many other important cities of Delaware, Maryland, Pennsylvania, W. Virginia, Ohio, Indiana, and Illinois, the total main track mileage in 1910 being 4,434. It reaches and enters New York City (from Philadelphia, Penn.), over the lines of the Philadelphia and Reading Railroad and Central Railroad of New Jersey, through direct connection and traffic arrangement. The common capital stock of the company is $152,216,829 (there is also $60,000,000 of 4 per cent. preferred stock). The dividend paid on the common stock was for some years at the rate of 4 per cent., then 5 per cent., and is now (1910) 6 per cent.

Baltimore, GEORGE CALVERT, FIRST BARON (?1580–1632), English statesman, born at Kipling, Yorkshire. He entered Parliament (1609), and became secretary of state (1619). The failure of the Spanish marriage scheme made him very unpopular. He resigned office (1624), and at the same time declared himself a Catholic. On his retirement he was created (1625) a baron, and was granted large estates in Co. Longford, Ireland. A settlement in Newfoundland, granted by Baltimore to some colonists in 1621, being in a very unsettled condition, he went over (1627) to restore order. An attempt to settle in Virginia proving a failure, he returned to England to obtain a charter for a new colony (Maryland). He died before the patent had passed the Great Seal, but it was granted in favour of his son. See *Lives* by Neill (1869) and Kennedy (1845).

Baltistan, BULTI, or LITTLE TIBET, mountainous division of Kashmir, India, drained by the Indus in its course between the Himalayas and the Karakoram Mts.; contains many very lofty peaks, especially Mt. Godwin-Austen (K2) (28,250 ft.). Cap. Skardo or Iskardo. Pop. about 50,000. See Adair's *A Summer in High Asia* (1899), and the works of Mr. and Mrs. Bullock-Workman.

Baltjik, or BALCHIK, seapt. on Black Sea coast, 18 m. N.E. of Varna, Bulgaria. Pop. 5,000.

Baluba, large negro tribe in the Belgian Congo, living between the head-waters of the rivers Lomami and Sankuru, in 6° S. lat. and 23°–25° E. long.

Baluchi, Iranian dialect which has largely borrowed from the language of bordering nations. It is divided into two sections, the northern and the southern, the latter being the purer, the former having a superior literature. See Geiger and Kuhn's *Grundriss der Iranischen Philologie* (1898).

Baluchistan, a country of S. Asia, is bounded on the N. by Afghanistan, on the E. by British India, on the S. by the Arabian Sea, and on the W. by Persia. The country has an area of about 132,000 sq. m., and the whole territory (except British Baluchistan) is under native rule.

The smaller portion of the region, lying N.E. of British Baluchistan and the line of the Sind-Pishin Ry. (from Sukkur on the Indus *vid* Quettah to New Chaman), is a mountainous region, ranging over the Sulaiman Mts. and their offshoots. The

larger S.W. portion is for the most part a highland region (Kalat or Khelat), and drains chiefly into the Indian Ocean. The former r g on is inhabited principally by Pathan tribes, and the latter region by Baluchi, Brahui, and Persian tribes. A few of the rivers of the country find their way to the ocean; the others, of which Bolan and the Mulla are the most important, are absorbed in a network of irrigation canals or in swamps. The coast-line stretches E. and W. for 600 m. There are no harbours, but the lofty headlands of Sonmeani Bay, Ormarah, and Gwadur afford safe anchorage for vessels. The climate is subject to the extremes of heat and cold, and the rainfall is uncertain and scanty. Forests are sparse and stunted. The agricultural products include wheat, barley, millet, rice, maize, and potatoes; fruit is grown abundantly. The chief domestic animals are the camel, horse, ox, and donkey; among the wild animals are the markh'or, urial (wild sheep), Sind ibex, ravine deer, bear, and panther. Little is yet known of the mineralogy of the country. Iron and lead are found near Khuzdar; coal is worked at Khost, on the Sind-Pishin railway, and in the Sor Hills, near Quetta. The land traffic with India passes either by railway or by the routes from Khelat and Las Bela to Sind, and through the Loralai district to the Punjab. Good roads connect the more important centres. Khelat, the capital, stands at a height of 6,800 ft. The North-Western Ry. enters the country near Jhatpat and crosses the Kachhi plain to Sibi, from whence it runs by Quetta to Chaman. Baluchistan owes its importance to its position on the British Indian frontier, and its command of the trade routes between Persia, Afghanistan, and India. For administrative purposes it is divided into six agencies—Quetta-Pishin, Sibi, Zhob, Loralai, Bolan Pass, and Chagai. The governor-general's agent, who is also chief commissioner for British Baluchistan, supervises the work of the political officers.

Of the early history of the province we have little authentic information. Up to the 17th century the people of Khelat were Hindus. Threatened by Persia, they invited Kambar, the son of a Brahui Mussulman chief, to be their ruler; and under this chief, from whose patronymic the dynasty is still called Kambarani, the state became Mohammedan. Abdullah Khan, who became the viceroy of the famous Nadir Shah after the latter's conquest of India, was soon afterwards killed in battle. The tyranny and licentiousness of Abdullah's son, Mohammed, led to his deposition and murder by his brother Nasir, who was khan of Khelat from 1755 to 1795. To Nasir is due the formation of the Baluch confederacy.

In 1839 a British force seized Khelat, owing to the supposed treachery of its ruler. In the following year the British garrison was overpowered, and in 1841, under a treaty of friendship, they evacuated the country. Throughout the British disasters in Afghanistan the khan of Khelat remained loyal; and fresh treaties, executed in 1854 and 1876, have drawn Baluchistan into closer and more cordial relationship with the Indian empire. On Nov. 1, 1887, the Assigned Districts—tracts in Pishin, Shorarud, Duki, Sibi, and Shahrig—were formally constituted British Baluchistan. The population does not exceed 920,000. See Floyer's *Unexplored Baluchistan* (1882); Hughes's *The Country of Baluchistan* (1887); MacGregor's *Wanderings in Baluchistan* (1882);

MacMahon and Holdich's 'N.W. Borderlands of Baluchistan,' in *Geog. Jour.*, 1877, pp. 392–416; Holdich's *The Indian Borderland* (1901) and *The Gates of India* (1910); and Vredenburg's *Baluchistan Desert* (1901).

Baluster, a small circular pilaster, of Italian invention, supporting a hand-rail, coping, balcony, or terrace. A row of balusters forms a *balustrade*. A *banister* is an erroneous term for one of the vertical supports or balusters of a hand-rail on a balcony or stairs, and is often applied to the hand-rail itself.

Balwearie Castle, ruined stronghold, Fifeshire, Scotland, 2 m. W. of Kirkcaldy; traditionally claimed as the birthplace of Michael Scott, the wizard.

Balzac, HONORÉ DE (1799–1850), a celebrated French novelist, was a native of Tours. Educated at Vendôme, and at the Sorbonne, Paris, for some years he lived in a state of penury. Success came when, in his thirtieth year, he published, under his own name, *Les Derniers Chouans* (1829), after which he continued to send out an enormous number of novels, some historical, but mainly illustrative of French contemporary life and manners. These he afterwards grouped under the collective title of the *Comédie Humaine*, in which he describes the manifold aspects of human life. Often gross and brutal, Balzac is yet one of the great writers of the world, being the father of the realistic school of fiction, as well as the forerunner of the novelist of character analysis and portrayal. Balzac is one of the closest and shrewdest observers of contemporary life and manners, and one of the keenest analysts of the human heart; and few have excelled him in the power and vividness with which he presents the results of his observations. His death occurred at Paris, on his return from his wedding trip, his marriage with the Polish Countess Hanska having taken place only three months earlier. Of his works, which are very numerous, the best known are *La Peau de Chagrin* (1831); *L'Auberge Rouge* (1831); *La Femme de Trente Ans* (1831); *Eugénie Grandet* (1833); *La Recherche de l'Absolu* (1835); *Le Père Goriot* (1835); and *Les Parents Pauvres* (1849). A collected edition of his works began to appear in 1899, and his *Œuvres Posthumes* were published in 1906. *Les Contes Drôlatiques* (1831–8), although famous, represents the weaker side of Balzac's work. Numerous English translations have appeared, of which the best is the series by Miss Wormeley (1890–3), with a memoir of Balzac. See also Saintsbury's *French Novelists* (1891), and Balzac's *Life*, written by his sister (1858); Lovenjoul's *Histoire des Œuvres de H. de Balzac* (2nd ed. 1886); Théophile Gautier's *H. de Balzac* (1859); *H. de Balzac, his Life and Writings*, by M. F. Sandars (1905); A. Le Breton's *Balzac, l'Homme et l'Œuvre* (1905); F. Brunetière's *H. de Balzac* (Eng. tr. 1907); Sainte-Beuve's *Causeries de Lundi* (vol. ii.) and *Portraits Contemporains* (vol. ii.); Taine's *Nouveaux Essais de Critique et d'Histoire* (1865); Faguet's *Etudes Litteraires sur le XIX^e Siècle* (1887); Helm's *Aspects of Balzac* (1905); and *Balzac* by F. Lawton (1910).

Balzac, JEAN LOUIS GUEZ DE (1594–1654), a French author, whose published *Letters* (1624), written from Rome, brought him the friendship and patronage of Cardinal Richelieu. By the polish of his style, and the exactness of his epithets, he did for French prose what Malherbe did for verse —purified it from the pedantries of the 16th century.

Balzico, ALFONSO (1825), Italian sculptor, born at Cava de'

Tirreni, near Salerno. He executed several works for King Victor Emmanuel—*e.g. Cleopatra*, *The Coquette*, and *Revenge.* Among his other works are *Vincenzo Bellini*, a beautiful statue, now at Naples; *Duke Ferdinand of Genoa*, at Turin; and *Victor Emmanuel* (1897), at Naples.

Bamangwato, or BA-MANGUATO, a native district and people in the Bechuanaland Protectorate, ruled over by the chief Khama. The Bamangwato are a branch of the great Bantu race. The country extends E. as far as the Macloutsie R., and across it to the confluence of the Shashi and Tuli.

Bambara, or BAMBARRA, people of French W. Africa, inhabiting a region drained by head-waters of the Joliba or Niger, and bounded on S. by the Mandingo country. The Bambara, who belong to the Mandingo race, are workers in gold, ivory, and iron, besides being skilful agriculturists. The majority are slaves and heathen, the upper classes being Mohammedans. Their chief towns are Segu, Bammako, and Sansanding. The country was opened up to French trade by treaty in 1881.

Bamberg, tn., Bavaria, dist. Upper Franconia, situated on the Regnitz, 2 m. above its confluence with the Main, beautifully situated at the foot of a range of hills clad with orchards and vineyards, 33 m. N.N.W. of Nuremberg. The chief ornament of the town, which dates from before the 9th century, and contains many noteworthy buildings, is the cathedral (Late Romanesque, founded 1004, but rebuilt in the 13th century, and restored 1828–37), enshrining the tomb and relics of the Emperor Henry II., its founder. Bamberg has recently developed into an industrial town, manufacturing cottons, ropes, beer, tobacco, etc. The independent bishopric of Bamberg (area, 1,482 sq. m.), founded by the Emperor Henry II. in 1007, was secularized in 1801, and in 1802 was transferred to Bavaria. Pop. 45,000.

Bamberger, LUDWIG (1823–99), German economist, statesman, and author; studied law; became a republican leader in the revolution of 1848; was condemned to death, but escaped from the country. Returning to Germany, he entered (1868) the Reichstag as a National Liberal, where he rose to eminence as a financial authority, monometallist, and free trader, and led the secession of 1881 from the National Liberal party against Bismarck's colonial and protective policy. See his own *Erinnerungen* (1899).

Bambino (Ital. 'The Babe'), the wooden figure of the child Jesus in the church of Ara Cœli at Rome. It is credited with miraculous healing powers. On the Epiphany (Jan. 6) occurs the festival of the Bambino, when the image, in swaddling clothes and covered with jewels, is exhibited to the people.

Bamboo, or BAMBUSA, a genus of grasses with woody aerial stems rising from branching rhizomes. They are most plentiful in India, China, and Japan, and are found in Africa and America. *B. vulgaris* is found both in Asia and America, and is widely spread. It reaches a height of over 100 ft., with a diameter of 1 ft. at the base. It flowers only at long intervals, and produces grain which is used as food in India. Bamboos are put to many uses. As they are solid at the nodes and hollow between, vessels and pipes are made of them; they are also used for building purposes, and for furniture, blinds, etc. In the W. Indies the young shoots are eaten like asparagus, and paper is made both in the E. and W. Indies from the young stems. The art of making fine white paper

from the bamboo was known to the Chinese several hundred years ago. but modern experiments have so far failed to discover a satisfactory method of bleaching. Over two hundred species of these graceful gigantic grasses—for the bamboos belong to the order Gramineæ — have been distinguished and described. They have upright perennial woody stems. No bamboo is native to Europe, but many species do well in English gardens, the first to be so grown having been the Himalayan *Thamnocalamus Falconeri*.

Arundinaria japonica (*Bambusa metake*) is one of the hardiest and most vigorous of bamboos, as it is also one of the most commonly grown. It grows to a height of seven or eight feet. *Phyllostachys nigra* is characterized by the colour of its stems, which are olive green during their first year, subsequently changing to black. It is very hardy and vigorous, and attains to a height of upwards of twenty feet. *Phyllostachys Castillonis* combines considerable hardiness with extreme beauty. Both leaves and stems are subtly variegated—green, yellow, white, and pink. *Bambusa palmata* usually grows to a height of about four feet. The leaves are bright green above, pale and slightly hairy below. *Arundinaria Veitchi* is only about two feet in height. It is hardy, and a very vigorous grower. *Bambusa tesselata* (*B. Ragamowski*) is another small-growing species. The plant has a most interesting and graceful manner of growth. *Phyllostachys Henonis*, which grows to a height of about ten feet, is perhaps our most beautiful species. See Freeman-Mitford's *The Bamboo Garden* (1896); Gen. Munro's monograph, Linn. Soc. (1866); Rivière's *Les Bambous* (1878); Routledge's *Bamboo .... its Cultivation and Treatment* (1875); Stewart and Brandis's *Forest Flora of N.W. and Cent. India* (1874.)

Bamborough Castle, on the summit of an almost inaccessible mass of rock (150 ft. above low-water mark) on the coast of Northumberland, England, 5 m. E. of Belford station on the N.E.R. Founded by Ida about the middle of the 6th century, it was seized by William Rufus (1095), and remained a crown possession until the middle of the 15th century, when it was purchased by Lord Crewe, bishop of Durham, and left by him for charitable uses. It was purchased later by the first Baron Armstrong, and is now used as a private residence. Near the castle is Bamborough village, once a Saxon royal borough. In the churchyard is the tomb of Grace Darling. See Bateson's *The Parish of Bamburgh, with the Chapelry of Belford*, published under the direction of the Northumberland County History Committee (1893); Clark's 'Bamburgh Castle,' in *Archæol. Jour.*, June 1889, pp. 93–113; Besant's *Dorothy Foster* (1884).

Bambuk, mountainous region of W. Africa, in the French colony of Senegal, between the Faleme and the Senegal River. Cattle and sheep are reared, and iron, gold, ivory, cereals, palms, and fruits are produced. The inhabitants are Mandingoes.

Bamian, val. and anc. city (alt. 8,350 ft.), 80 m. N.W. of Kabul, Afghanistan, on N. side of the pass leading from that country into Afghan Turkestan, between the Hindu-Kush and Koh-i-baba ranges; peopled by Hazaras, and noteworthy for its five colossal human figures sculptured out of the conglomerate of the valley wall, and described about 630 A.D. by a Chinese Buddhist monk, Hwen Thsang. The two largest figures, said to represent Buddha (173 ft. and 120 ft. high

respectively), are draped, and are probably the work of Buddhist artists from India. The rocks in the vicinity are honeycombed with caves, domed and pictured in a similar style. See article in *Jour. of the Royal Asiatic Soc.*, 1886, by Captains Talbot and Maitland.

Bampton, mrkt. tn. and par., Devonshire, England, on Exe Valley Ry., 7 m. N. of Tiverton. Excellent building stone is quarried in the vicinity. A fair for cattle, sheep, and (especially) Exmoor ponies is held in October. Pop. 1,700.

Bampton, JOHN (1689–1751), founder of the Bampton Lectures (see below), was (1718) a minor canon of Salisbury Cathedral, which position he held till his death. See *The Oxford Ten-year Book* (1882).

Bampton Lectures, a course of eight divinity lecture-sermons provided for by the will of John Bampton. In terms of the will, these lectures are to be given at Oxford on eight Sunday mornings in term between the commencement of the last month in Lent term and the third week in Act term, upon one of the following subjects:—To confirm and establish the Christian faith, and to confute all heretics and schismatics; upon the divine authority of the Holy Scriptures; upon the writings of the primitive fathers; the divinity of the Saviour and of the Holy Spirit; and the Creeds. The lecturer, chosen by the heads of colleges, must be a graduate of Oxford or Cambridge.

Bamra, native state, India, in Bengal. Area, 1,988 sq. m. Pop. 123,000. It was transferred from the Central Provinces in 1905.

Ban. See BANAT.

Banam, tn., Cambodia, 100 m. W.N.W. of Saigon, cap. of prov. of same name. Pop. about 20,000.

Banana, a monocotyledonous plant of the order Musaceæ. Though some have distinguished many species in cultivation, De Candolle (*Origin of Cultivated Plants*, 1884) shows that there is only one, *Musa sapientum* of Robert Brown; even the plantain, or pisang (*M. paradisiaca* of some botanists), is merely a sub-species or variety of *M. sapientum*. The original home of the banana is doubtful, but most evidence is in favour of the E. Indies. It is now cultivated in every tropical and sub-tropical country, where its nutritious fruit, rich in starch, sugar, and nitrogenous matters, forms the principal food of millions. Banana fibre is also used as a substitute for manila hemp. The plant has underground stems or rhizomes from which groups of leaves arise, their aerial petioles forming sheaths which are rolled concentrically around one another so as to form a vertical hollow structure, wrongly called the stem, which grows to a height of 18 ft. From the crown of the leaf-sheaths the blades spread out like palm leaves, each being in one broad piece from 6 to 10 ft. long. A strong midrib runs down the middle of each blade, and from it parallel veins run out at right angles towards the margin. The axis of an inflorescence which grows up the centre of the petiole-sheath arises from the rhizome until it emerges among the blades, when it bends over and produces its flowers on a long spike, which ripen into fruit. The clusters on a single tree sometimes weigh more than four stones. When the whole aerial growth decays to the ground, the rhizome continues growing and sending up new aerial shoots. The banana being a tropical plant, can only be fruited in Britain by the use of the highest stove temperatures. Certain varieties, however, notably *Musa coccinea*, *M.*

superba, *M. assamica*, and *M. ensete*, may be grown for decorative purposes without the application of such great heat. All the plantain-tree species have handsome foliage.

The variety of banana which is most suitable, as it is most frequently grown, for market purposes, is the large yellow Martinique or Jamaica. These, when intended for export, are gathered green, and allowed to ripen on the voyage and after reaching their destination. In the tropics the banana is among the most important articles of food. It contains about five per cent. albumin, twenty per cent. sugar and pectose, and about seventy-four per cent. water. The dried flour of ripe bananas may be used in the manufacture of bread and cakes, and has considerable nutritive value. The consumption of bananas has increased enormously during the last few years. The fruit comes chiefly from the West Indies, Jamaica being the largest producer.

Banana, seapt., N. side of riv. Congo, near mouth, Congo State, W. Africa, 6° 1′ S. and 12° 17′ E.; exports ivory, palm oil, palm nuts, rubber, and gum.

Bananal, or SANTA ANNA. (1.) Large river island, Matto Grosso, Brazil, 13° 27′ to 10° 29′ S., formed by two branches of the Araguay R. It is 250 m. long, 30 m. broad, and is densely wooded. There is a large lake in its centre. (2.) Town (alt. 1,255 ft.) and ry. stn., prov. São Paulo, 72 m. W. by N. of Rio de Janeiro.

Banas, or BUNAS, riv. in E. Rajputana, India; after a course of 300 m. from the Aravalli Mts. it falls into the Chambal.

Banat (Hung. *Bansag*), in its general signification, a frontier province governed by a *ban*, a word cognate with the Slav. *pan*, 'lord.' There were several banats—*e.g.* Croatia, Dalmatia, Slavonia, Bosnia; but when the word is used without qualification, it is generally meant to indicate the Temesvar banat—*i.e.* the region between the Danube, the Tisza, the Maros, and the Carpathians, a region which for more than one hundred and sixty years (1552–1717) groaned under the tyranny of the Turks, from whom it was delivered by Prince Eugene. It was definitively incorporated with the rest of Hungary in 1860. In Roumania the banat of Craiova existed from the 15th century.

Banbridge, mrkt. tn. in Co. Down, Ulster, Ireland, on R. Bann, 16 m. N.E. of Newry by rail; is an important centre of the linen manufacture; in the vicinity are large bleach-greens. Pop. 5,000.

Banbury, munic. bor. and mrkt. tn., Oxfordshire, England, on the Cherwell, 21 m. N. of Oxford, with manufacture of agricultural implements, sacking, ropes, leather, plush, furniture, and malting and brewing industries. The celebrated Banbury cake has had a reputation since 1608. The castle, built 1125, is now represented by a few fragments; and the cross, immortalized in the nursery rhyme, was re-erected about forty years ago. Roman remains have been discovered. Pop. 13,000. See Beesley's *History of Banbury* (1841).

Banc, SITTINGS IN, were held at Westminster before two or more judges of the courts of Common Pleas, King's Bench, and Exchequer. By the Judicature Act, 1873, the jurisdiction of the courts *in banc* is transferred to divisional courts, which consist of two or more judges of the King's Bench or Probate Division of the High Court.

Banca, BANKA, or BANGKA, an isl. of the Dutch E. Indies, separated from the E. coast of Sumatra by the STRAIT OF BANCA;

7 to 16 m. wide. It is long (157 m.) and narrow, hilly (2,300 ft.) in the N. and S., and has a moist climate, with a heavy rainfall—119 in. at Muntok, the capital. Principal productions: tin (about 16,000 tons annually), bananas and other fruits, areca nuts, wax, and drugs. Area, 4,446 sq. m. Pop. 120,000, of whom over 35,000 are Chinese.

Banchory, vil., Kincardineshire, Scotland, on the R. Dee, 15 m. W.S.W. of Aberdeen. Favourite summer resort. Pop. 1,500.

Banco, in finance, equivalent to 'bank value,' or the standard money in which certain European banks, especially those of Hamburg, Genoa, Amsterdam, and Venice, formerly kept their accounts.

Bancroft, GEORGE (1800–91), American historian, statesman, and diplomatist, born at Worcester, Massachusetts, and studied in Germany; he enjoyed the friendship of Goethe, Humboldt, Lappenberg, and Schleiermacher. He returned to America, where he devoted himself to literature and politics, and in 1834 published the first volume of his *History of the United States*. Bancroft was secretary of the navy (1845–6); minister to Great Britain (1846–9), minister to Prussia in 1867; was accredited to the N. German Confederation in 1868, and from 1871 to 1874 to the German empire. Volumes of his *History* had been published at intervals, and in 1876 the tenth volume appeared, completing the work. Two supplementary volumes, however, entitled *History of the Formation of the Constitution of the United States*, were published in 1882. Bancroft also translated Heeren's *Reflections on the Politics of Ancient Greece* (1824). A revised edition of the *Hist. of the United States* appeared in 1884–85. See West's *George Bancroft* (1900) and Rives's *Memorial of George Bancroft* (1892).

Bancroft, HUBERT HOWE (1832), American historian, born at Granville, Ohio; established a book-shop in San Francisco in 1852, and collected as materials for Pacific coast history a library of 60,000 volumes, now in possession of the University of California. His works include *History of the Pacific Coast of N. America* (40 vols. 1882–91); *Native Races of the Pacific States* (5 vols. 1875–6); *Chronicles of the Builders of the Commonwealth* (7 vols. 1891–5); and *Resources and Development of Mexico* (1893).

Bancroft, RICHARD (1544–1610), Archbishop of Canterbury. In 1597 he succeeded Aylmer as bishop of London. He attended the Hampton Court Conference, and in 1604 he was raised to the primacy. See Fuller's *Church Hist.* (new ed. 1868).

Bancrofts, THE. Sir Squire Bancroft (1841), one of the most successful comedians of the Victorian stage, was born in London. In 1861 he made his début at the Theatre Royal, Birmingham. Marie Wilton attracted the notice of Mr. Charles Dillon, the tragedian, who engaged her for the London Lyceum in 1856. Having entered into partnership with Mr. H. J. Byron, she opened the Prince of Wales's Theatre in 1865, Mr. Squire Bancroft being one of her company. Byron's plays having fallen flat, T. W. Robertson's comedy, *Society*, was secured; and by the genius of Robertson the Prince of Wales's soon became one of the most fashionable and best frequented theatres in London. This success was followed by the production of Robertson's *Ours*, *Caste*, *Play*, *School*, and *M.P.*, in each of which Miss Wilton and Mr. Bancroft—who were married at the close of the 1867 season—took leading parts, as they did in the subsequent productions of *Money*, *The School for Scandal*, *Masks and Faces*,

Diplomacy, and *Sweethearts*. In 1879 the Bancrofts acquired the Haymarket Theatre, which they opened in 1880 with *Money*. In 1885 they retired into private life, but Sir Squire since played with Sir Henry Irving and John Hare. Mr. Bancroft was knighted in 1897. See the Bancrofts' autobiography *On and off the Stage* (1888), and *The Bancrofts: Recollections of Sixty Years* (1909).

Band, in architecture, is a flat moulding, smaller than a fascia. The word, however, is applied to narrow members somewhat wider than fillets, and the word *fascia* to broader members. The cinctures sometimes used round the shafts of rusticated columns are called bands, in which case the column is styled a banded column.

Band, or BANDS, the linen appendage to the collar or neck-cloth with ends hanging in front, which forms part of academical, legal, and clerical costume. It is still a recognized feature of legal attire in England; but in Scotland the white tie takes its place, except with King's counsel. It is worn during divine service by the officiating clergyman in the Presbyterian churches of Scotland.

Band. (1.) MILITARY. The band of a British regiment is divided into the 'brass band' and the 'drums and fifes,' and in the Scottish regiments the 'pipers.' In addition to the establishment of trumpeters, buglers, and drummers (two per company or squadron), the regulations authorize the employment of a bandmaster and one sergeant, with, in infantry battalions, one corporal and twenty privates, and in cavalry regiments fifteen privates, as bandsmen. All the bandsmen are on the effective strength of the regiment, and must be able to serve in the ranks. On taking the field, the band is broken up. Bandmasters are trained at the Royal Military School of Music at Kneller Hall, near Twickenham. By Army Order 46, 1904, officers of the cavalry and infantry of the line no longer contribute to the maintenance of the band when serving in the United Kingdom or the colonies. When serving in India, every officer above the rank of lieutenant contributes a sum fixed by the commanding officer, but not exceeding twelve days' pay of his rank. In the artillery, engineers, army service corps, and marines, the bands are supported by contributions throughout the whole corps. The best known of the British military bands are those of the Guards, the Royal Artillery, Royal Engineers, and Royal Marines. (2.) NAVAL. Many large ships in the royal navy possess bands, when the commander is a post-captain or of higher rank. The number of performers ranges from ten to fifteen, consisting of bandmaster, band corporal, and bandsmen, the latter being recruited from the boys' bands in training-ships, and from land bandsmen. In the summer of 1903 it was resolved that all naval bands should be transferred to the Royal Marines, and that a new Royal Naval School of Music should be opened at the Melville Hospital, Chatham. (3.) In addition to the above, volunteer corps, many towns, institutions, and societies have bands more or less resembling military bands. Private venture bands are common. For string bands see ORCHESTRA.

Banda, cap. of dist. of same name, United Provinces, India, situated on the r. bk. of the Ken, 70 m. S. of Cawnpur. Pop. 23,000. Dist.: area, 3,061 sq. m.; pop. 630,000.

Banda. (1.) A group of islands in the Dutch E. Indies, lying some 60 m. S. of the Moluccas, rising independently from a depth of 13,000 ft.; total area, 18 sq. m. All of them are volcanic. Mt.

Gunung Api (2,000 ft.) is an active crater. The chief town and centre of trade is Nassau in Banda Neira. Pop. 8,000. Sago, cocoanuts, nutmegs, and mace are the chief productions. Up to 1873 the islands enjoyed a monopoly in the production of nutmegs, which still form the chief export. (2.) B. Sea, division of the Pacific lying between the Moluccas on the N. and the E. islands of the Java-Timor chain on the S.; depth, over 2,000 fathoms, except between the Kei Is. and the string of islets extending from the E. end of Ceram. Between the Kei and Aru archipelagoes there is a deep trough (5,684 fathoms) connecting the Banda Sea with the Arafura Sea.

Bandage and **Bandaging.** The bandage may be used to fix splints or dressings, to prevent or to lessen swelling, to stop hæmorrhage, to drive the blood from a limb before operation, to support a limb, or to prevent or lessen movement. It is usually made of calico, linen, domett (a plain cloth, with the warp cotton and the weft woollen), or of flannel. When applied to a wound it may be of gauze, medicated with carbolic acid, iodoform, boracic acid, or some other antiseptic. It may be stiffened with starch, plaster of Paris, or other stiffening material, when it is intended to replace a splint. An elastic rubber bandage (Martin's) is sometimes used in cases of varicose veins in the leg. The bandage is wound spirally about the leg before the wearer rises from bed, and is taken off at night. It supports the walls of the diseased veins with an equal pressure, which must not be uncomfortably great. Because of the heat it produces, the Martin's bandage must be kept particularly clean by washing; and the limb on which it is used must be washed nightly, and then dusted with fuller's earth or some such non-irritating powder. Esmarch's rubber bandage is used to drive blood from a limb before any serious cutting operation that involves risk of considerable loss of blood. The patient being laid flat, the arm or leg is raised as high as possible. This of itself helps to empty the limb of blood, and firm stroking towards the trunk helps further still. The Esmarch's bandage is then rolled round the limb, beginning at fingers or toes, and covering the whole with spiral turns. A thick piece of rubber tubing is tied tightly round the limb just where the bandage stops, and return of the blood being thus prevented, the bandage is removed. An amputation may thus be rendered practically bloodless. The ordinary 'roller' bandage is usually 18 ft. long, and from 2½ to 4 in. broad. As a rule, only elastic bandages can be applied with simple spiral turns. Bandaging always proceeds from below upwards, to help the blood onwards, and to lessen the risk of stopping circulation; and the gradually increasing girth of the average arm or leg necessitates *reverses*—i.e. half-turns of the bandage on itself, bringing its inner face outwards. The 'spica' and the 'figure of 8,' whereby the heel or the knee is passed, are more easily explained by diagram than by words; their object is always to make the bandage lie more closely, and therefore more securely. When an arm or a leg is bandaged, the fingers or toes are left uncovered, so that a glance will serve to show whether there is any swelling or discoloration, which means too tight a bandage, and consequent risk of gangrene. A roller bandage, properly put on, lies snug and smooth, with about the upper third of each turn covered by the turn next after it

The lower end is fixed by the first turn or two covering it. The upper end is fastened off with a safety pin; or the bandage is split lengthways for as far as is necessary, the two divisions are knotted together at their base, to prevent the split from lengthening, and then, the split ends being carried in opposite directions around the limb, they are tied together in a reef knot. The finishing off of a bandage must always be of such a form and in such a position that it shall not inconvenience the patient. Ordinary pins must never be used. In bandaging for sprains, and in any case where swelling is to be feared, the four chief points are: (1) to have plenty of elastic pressure, by means of wool padding; (2) to apply that pressure as quickly as possible; (3) to bandage firmly but not tightly; and (4) to examine the bandage without fail in three hours, to see whether it needs slackening.

The roller bandage is the one chiefly used; but the triangular bandage, made by doubling a handkerchief diagonally, is useful for covering the head and for making a sling; while the 'many-tailed' bandage is useful for the trunk or a leg, when dressings need to be frequently changed on the upper surface without change of position. The part lies on an unsplit piece of material, whose long axis is parallel with the long axis of the part. Strips are sewn on either side of this piece, which overlap

Bandaging.

1. Rolling the bandage. 2. Reversing. 3. Figure eight. 4. Divergent spica of knee joint. 5. Many-tailed bandage. 6 *a* and *b*. Triangular handkerchief supporting elbow.

one another when brought across the limb or trunk, where they are pinned over. See Caird and Cathcart's *Surgical Handbook* (1910).

Bandana, an Indian term properly applied to the rich yellow or red silk handkerchief, with diamond spots left white by the great pressure applied to prevent their receiving the dye. It has now come to mean a kind of calico printing in which white or bright-coloured spots are placed upon a Turkey-red or dark ground.

Banda Oriental, former name of URUGUAY.

Bandawe, Livingstonia Mission stn., W. shore of L. Nyasa, Nyasaland Protectorate, Africa, on a sandy promontory at the base of the Angoni Mts.; has an unhealthy climate.

Bandel, ERNST VON (1800–76), German sculptor, born at Ansbach in Bavaria, and studied at Munich, Rome, and Hanover. His *Mars Asleep* (1825) established his reputation. His chief works are his colossal statue of Arminius, near Detmold, and busts of Maximilian of Bavaria and the poet Grabbe. See Schmidt's *Ernst von Bandel* (1892).

Ban-de-la-Roche. See STEINTHAL.

Bandelkhand. See BUNDELKHAND.

Bandello, MATTEO (*c.* 1490–1561), Italian novelist, was born at Castelnuovo (Tortona); entered the Dominican order, and became teacher of Lucrezia Gonzaga, in whose honour he wrote a poem in eleven cantos (1545). Proceeding to France, he was made bishop of Agen by Henri II. (1550). He died at Agen, after a life full of strange loves and adventures. Bandello's *novelle*, written between 1510 and 1560, were published in 1554 (Lucca) and 1573 (Lyons). They are based on the tales of former collections, and on contemporary events. Though in many ways a disciple of Boccaccio, Bandello is devoid of humour. His characterization is excellent, and his narrative direct. The erotic adventures which abound are told with a certain restraint. Several of the tales were used by later dramatists and poets (such as Lope de Vega and Byron); but the *Romeo and Juliet* is derived from the same source as Shakespeare's play—the story of Luigi da Porto. Good editions of the *novelle* are those of London (1740), Milan (1813–14), and Turin (1853). English translations by G. Fenton, 1567 (reprinted in the 'Tudor Translations,' with an introduction by R. L. Douglas, 1898), and by John Payne (for the Villon Society, 1890). The latter version only is complete. See E. Masi, '*M. B., o Vita Italiana*,' in *Un Novelliere del Cinquecento* (1900); Morellini, *M. B., Studj* (1900); and V. Spampanato, *M. B. e le sue Novelle* (1896).

Banderole. (1.) A scroll very common on engravings of the 16th–18th centuries, containing a motto, or title, or description of the picture. (2.) A small banner or flag, carried on the masts of vessels or on military weapons.

Band Fish (*Cepola rubescens*), a slender, compressed, and much-elongated bony fish, remarkable for its minute scales and almost uniform red colour. It is rare in British waters. Other species inhabit the north temperate zone.

Bandicoot, a name applied, alone or in combination, to various small marsupial mammals belonging to the family Peramelidæ, found in the Australian region. They are especially characterized by the structure of the feet—the hind feet resembling those of the kangaroo, while the fore feet have two or three of the middle toes of equal length, with strong, sharp claws, and the other toes rudimentary. All are either

omnivorous or insect-eating. The common bandicoots (*Perameles*) are small ground animals with pointed noses; the rabbit-bandicoot (*Peragale*) is a burrower. The bandicoot rat (*Chœropus*) is the large Indian rat, and is not a marsupial.

Bandiera, ATTILIO (1811–44) and EMILIO (1819–44), Neapolitans, sons of an Austrian admiral, who, after attempting an insurrection in Calabria against the Bourbon tyranny at Naples, were captured and executed at Cosenza (1844). Their letters (from Aug. 15, 1842) to Mazzini, opened in London by the English government, were published by Mazzini, under the title of *Ricordi dei Bandiera* (1844). See Ricciardi, *Storia dei Fratelli, B. e Consorti* (1863).

Bandinelli, BACCIO (?1493–1560), Florentine sculptor, son of a celebrated silversmith; a contemporary of Michael Angelo and Cellini, whom he vainly tried to rival. Among his masterpieces are the figure of *Christ at the Tomb*, the group of *Adam and Eve*, and the bas-reliefs in the Duomo at Florence. See Vasari's *Lives*, vol. iii.

Banditti. See BRIGANDS.

Band of Hope, great children's temperance society, with the official title of The United Kingdom Band of Hope Union, founded in 1855, but started with local unions eight years previously. In 1909 it had 26,080 Bands of Hope, with a membership of 3,255,852. It publishes juvenile temperance literature and the *Band of Hope Chronicle*.

Bandolier, or BANDOLEER, a leather belt worn over the left shoulder, from which, in mediæval times, were suspended a dozen small metal boxes, each containing a charge of powder and shot. The British service bandolier is now fitted with leather pockets, each containing a clip with five cartridges.

Bandoline, a gummy substance, produced from gum tragacanth, quince seeds, Irish moss, or Iceland moss, with perfume added, used by hairdressers to make the hair glossy, or to fix it in position.

Bandon. (1.) Market tn. in Co. Cork, Munster, Ireland, on riv. Bandon, 20 m. S.W. of Cork; industries include brewing, distilling, and manufacture of hosiery. Pop. 2,800. (2.) River, rises in the Carberry Mts., Co. Cork, and flows E. into Kinsale harbour; length about 40 m.

Bandong, or BANDUNG, tn., W. of Java, Dutch E. Indies, 75 m. by rail S.E. of Batavia. Pop. about 21,000.

Bandra, tn., Thana dist., Bombay, India, S.W. end of Salsette I., which is connected with the island of Bombay by a causeway and bridge. Pop. 22,000.

Bandy, hockey played on ice as distinct from hockey on land. It is largely played in the northern United States, where it is known as 'shinney' or 'shinty.' The rules are very similar to those of hockey. A bandy team consists of eleven players; the ground is a right-angled parallelogram, the best size for play being 150 yds. by 100 yds., and the recognized minimum 100 yds. by 50 yds. The bandy, or club, is of wood, not exceeding 2 in. in width in any part, or 4 ft. in length as measured along the handle and round the curve, and it must not have metal fittings or sharp edges. The ball is of solid india-rubber, not less than 2¼ in. nor more than 2¾ in. in diameter. The goals are in the centre of the short sides of the ground. They consist of two goal-posts 12 ft. apart, connected by a horizontal tape or lath 7 ft. from the ice. A goal is scored when the ball has passed between the goal-posts and under the tape or lath. The recognized time for play is 1½ hours, choice of goals being tossed for, and ends changed at

'half-time.' Play is started by the referee or one of the umpires (of whom there should be two) throwing the ball vertically into the air. When the ball reaches the ice it is in play. While it is in play, and when a player strikes at the ball, the bandy may not, during any part of the stroke, rise above the player's shoulders.

Baneberry (*Actæa spicata*), a plant, also known as HERB CHRISTOPHER, belongs to the Ranunculaceæ; has compound divided leaves, upright racemes of small white flowers ripening into purplish-black poisonous berries, which, combined with alum, yield a black dye. The roots are antispasmodic, expectorant, and astringent.

Banér, JOHAN (1596–1641), Swedish general, born at Djursholm, near Stockholm; fought with distinction in the Russian and Polish campaigns of 1626–9, and accompanied Gustavus Adolphus to Germany in 1630, commanding the right wing at the battle of Breitenfeld. On the death of Gustavus he was made commander-in-chief of the Swedish forces in Germany, and gained a brilliant victory at Wittstock in 1636, defeated the Imperial troops near Chemnitz in 1639, and occupied Bohemia for a whole year. He was a born strategist, and it was primarily to him that Sweden owed her success in the Thirty Years' war.

Banff. (1.) Royal and parl. bur., seapt., and mrkt. tn., Banffshire, Scotland, on Moray Firth, at mouth of R. Deveron; birthplace of Archbishop Sharp; fishing centre. The Duke of Fife's seat, Duff House, in the neighbourhood, was presented by him to Banff and the adjacent tn. of Macduff in 1906. Pop. 3,700. See Imlach's *History of Banff* (1868), and Cramond's *Annals of Banff* (New Spalding Club). (2.) Town, Alberta, Canada, 80 m. W. of Calgary, on C.P.R., at the base of the Rocky Mts. It is included in a national park, 26 m. long by 10 m. wide, embracing parts of the valleys of the Bow, Spray, and Cascade Rivers, and several mountain ranges. The scenery here is unusually grand, and fishing and hunting attract many sportsmen. There are hot sulphur springs and coal mines near.

Banffshire, maritime co. of N.E. Scotland, bounded on the N. by the Moray Firth, E. and S. by Aberdeenshire, W. by Inverness and Elgin shires. Area, 630 sq. m., or 403,364 ac.; greatest length, 59 m.; greatest breadth, 32 m.; average breadth not exceeding 12 m. Pop. 62,000. The county town is Banff. In the N. the land is low-lying and fertile; in the S. mountainous. The climate is dry and mild in the N., wet and cold in the S. The highest peaks are Cairngorm (4,090 ft.), and Ben Avon (3,843 ft.). There are quarries of slate, marble, granite, gneiss, mica-slate, old red sandstone, and limestone. Other minerals are topazes and rock crystals (cairngorms). Agriculture is extensively carried on, cattle are reared, and many of the inhabitants are engaged in the fishery industry. There are several distilleries, including 'the Glenlivet.' One of the chief historic events connected with the county is the battle of Glenlivet (1594), between the forces of Huntly and Argyll. Ruins of mediæval castles exist at Balvenie, Auchindoun, Findlater, Boharm, and Keith, and of old ecclesiastical buildings at Mortlach and Gamrie. See Watt's *Aberdeen and Banff* (1900).

Banffy, DESIDERIUS, COUNT (1843), Hungarian statesman, born at Klausenburg, Transylvania. In 1892 he became president of the Hungarian Chamber of Deputies, and in 1895 prime minister of Hungary. In this capacity he completed the passing of the

ecclesiastical and educational law, but failed to obtain Parliament's sanction to the compromise (*Ausgleich*) with Austria, and resigned in February 1899. In 1902 he published a new national programme for Hungary.

Bang, HERMANN JOACHIM (1858), Danish novelist and journalist, has written the critical works, *Kritiske Studier* (1879–80) and *Realisme og Realister* (1879); and the novels, *Haablöse Slægter* (1880), *Stuk* (1887), *Stille Existenser* (1886), *Det Hvide Hus* (1898), *Liv og Död* (1899), *Sommerglæder* (1902), and *Mikaël* (1902).

Bangalore, cap. of native state, Mysore, India, lies about 150 m. due W. of Madras, with which it is connected by rail. A salubrious climate, a fertile soil, and an excellent water supply have attracted a colony of European settlers. Situated over 3,000 ft. above sea-level, Bangalore commands the province of Mysore, and is an important military station. The fort was stormed by the British under Lord Cornwallis in 1791. Pop. 160,000.

Banganapilly, or BANAGANAPALLI, tn., Madras, India, and capital of small native state, 70 m. S.S.E. of Adoni. Pop. 32,000.

Bangar, tn., La Union prov., Luzon, Philippine Is., 19 m. N. of San Fernando. It produces alluvial gold and has trade in tobacco, rice, cotton, sugar, and live stock. Pop. 10,000.

Bange, CHARLES RAGON DE (1833), French colonel, born at Balignicourt (Aube dep.); organized the artillery system of the French army in 1873, reconstructing both light and heavy field-pieces then in use. The models he proposed in 1876 were adopted in 1879. He established ordnance works at Grenelle, Denain, and Douai, and competed successfully against Krupp in 1884 in securing the contract for field guns for the Servian army. See Hennebert's *L'Artillerie Krupp et l'Artillerie de Bange* (1887).

Bangka, E. Indies. See BANCA.

Bangkok, the cap. of Siam, on both banks of the Menam, 20 m. from the Gulf of Siam, consists of a succession of towns. The first is the commercial town, with shipping, sawmills for teak, and rice mills; next the town of the Asiatics (Malays, etc.), mostly built on bamboo rafts on the river; then the consular district, with verandahed houses and flowering trees; and lastly, the 'malodorous and ill-mannered' Chinese Bangkok and the native Siamese town, dominated by the royal palace. Steel bridges are taking the place of old wooden ones; tramways traverse the streets, some of which are lighted by electricity. Bangkok is the principal port of the kingdom, its trade being chiefly with Hongkong, Singapore, Bombay, and Great Britain. Bangkok is the centre of a very large agricultural region, of which the chief product is rice. The principal industries are rice-milling, teak sawmilling, ship and boat building, and engineering. The chief exports are rice, fish, *bêche de mer*, cattle, and pepper; the chief imports are textiles, bullion, machinery, opium, and sugar. The imports amount to about £6,000,000, and the exports to about £8,000,000 yearly. Pop. (1909) 628,675 (one-third Chinese).

Bangor. (1.) City, munic. bor., and seapt. tn., Carnarvonshire, N. Wales, 9 m. N.E. of Carnarvon, on Chester and Holyhead Ry.; exports slate from the Bethesda quarries, and contains a cathedral (dedicated to St. Deiniol, founded 525 A.D., and restored 1881), a constituent college of the University of Wales, and a normal school. Daily steamers ply between Liverpool and Bangor in summer. Pop. 12,000. (2.) B.-ISCOED ('below the wood'), charming Welsh

village on the r. bk. of the Dee, in outlying portion of Flintshire, 5 m. S.E. of Wrexham; was the site of an ancient monastery. (3.) Seaport tn. and par. (17,015 ac.), Co. Down, Ulster, Ireland, on S.E. side of Belfast L., with terminal station on railway, 12 m. N.E. by E. of Belfast. Muslin embroidery is the principal industry. Clandeboye, the seat of the Marquis of Dufferin, is about 2 m. away. Pop., par. 10,000; tn. 6,000. (4.) City, Maine, U.S.A., the co. seat of Penobscot co., situated on the Penobscot R., 60 m. from its mouth, at the head of navigation. Here is the Bangor Theological Seminary (1816). The output of lumber, boots and shoes, and clothing is large, and there are factories, foundries, and machine shops. Pop. 22,000.

Bangorian Controversy arose (1717) from a sermon by Bishop Hoadly, in which he denied that the church possessed authority over the individual conscience. This led to a many-sided controversy. Hoadly's principal opponents were Bishop Sherlock and William Law. See Leslie Stephen's *English Thought in the 18th Century* (3rd ed. 1902).

Bangued, tn. on Abra R., cap. of Abra prov., N.W. part of Luzon, Philippine Is. Pop. 13,000.

Bangweolo, or BEMBA, LAKE, in N.E. of Rhodesia, 3,765 ft. above the level of the sea, lying in long. 30° E., not far from S.E. corner of the Congo Free State. Area, 1,600 to 1,700 sq. m., but variable. Its waters find an outlet, at the S. corner, to Lake Mweru and the Luapula, a tributary of the Congo. Discovered by Livingstone in 1868.

Bania (Banian), a Hindu caste of traders (Vishnuites) who abstain from eating flesh. They are found in all the towns of W. India, dealing in grain, cotton, and dry goods, and are distinguished by thrift and commercial acumen, especially as bankers and moneylenders at a high rate per cent. They carry on trade with the interior of Asia by caravans, and with Africa by ships; many have settled on the east coast of Africa.

Banian Days, in allusion to the ascetic habits of the Hindu Banians, or derived from banyan, the E. Indian fig. A sailor's phrase for the days (originally two, afterwards one, per week) on which no flesh meat was served in the British navy; now applied to any period of poor feeding.

Banian Tree. See BANYAN.

Banim, JOHN (1798–1842), Irish novelist, was the younger of the two brothers who wrote *Tales of the O'Hara Family* (1825–9). Born at Kilkenny, he began life as a drawing-master; but ill-health caused him to give up first art, then dramatic literature, although his play, *Damon and Pythias*, had been acted with success at Drury Lane Theatre, London. Of the *O'Hara Tales* John Banim wrote 'The Peep o' Day,' 'The Fetches,' 'The Smuggler,' 'Peter of the Castle,' 'The Nowlans,' 'The Last Baron of Crana,' and 'The Disowned.' His chief separate novels were *The Denounced* (1830), *The Sergeant's Wife* (1850), *The Smuggler* (1833), *The Celt's Paradise* (1821), *The Bit o' Writin'* (new ed. 1865), *The Boyne Water* (1865), *The Mayor of Windgap* (new ed. 1865), *The Peep o' Day* (new ed. 1865), *Peter of the Castle* (new ed. 1866); though to many of these his brother Michael wrote notes, if not more. See P. J. Murray's *Life of Banim* (1857) and Miss Mitford's *Recollections of a Literary Life* (1859).

Banim, MICHAEL (1796–1874), elder brother of the above, besides joining in the *O'Hara Tales*—e.g. 'Crohoore of the Bill Hook'—wrote, with his brother, *Father Connell*, which has for its hero a kind of Roman Catholic Vicar of Wakefield, and alone, *The Croppy* (1828), *The Ghost Hunter* (1863),

Joe Wilson's Ghost (1870), and *The Town of the Cascades* (1864). *The Chaunt of the Cholera* (1831) was probably written by both brothers.

Banishment (O.E. *ban*, 'proclamation' or 'decree'), originally exclusion of a person from the protection of the law and the society of his fellows, usually for crime or refusal to submit to a tribunal or its decrees. (See OUTLAWRY.) In more advanced societies it implies forcible exclusion from a country with or without confiscation of goods. The punishment was frequently enforced in England even down to the 18th century, despite the clause of Magna Charta which enacts that no freeman shall be banished except by the judgment of his peers or by the law of the land. But one who abjures the realm might lose the right to return. (See ABJURATION.) Rogues could be banished under an Act of 1597, and unregistered Jesuits and members of other Roman Catholic orders may still be banished under the Catholic Emancipation Act, 1829. (See TRANSPORTATION.) Some modern states, such as Russia, Turkey, etc., still practise banishment for political offences.

Banjaluka, pleasant tn. of Bosnia, in the Balkan Peninsula, on the l. bk. of the Vrbas, 87 m. N.W. of Sarajevo; has warm baths. Pop. 15,000.

Banjermassing, or BANJERMASIN, cap. of Dutch Borneo, in the E. Indies; stands near the S. coast, on the Martapura, a few miles from the Barito R., and carries on a brisk trade in spices, gold, canes, wax, drugs, diamonds, etc. (exported), and in cottons, iron goods, salt, rice, etc. (imported). Pop. 50,000. From the middle ages down to 1857 there existed an independent Malay state of the same name, its cap. being Martapura.

Banjo, a musical stringed instrument originated by the negroes of America. It consists of a hoop of wood or metal, with a long neck containing the tuning pegs in its upper part, and a vellum drumhead body. The strings, from five to nine in number, rest upon a bridge, and are stopped with the fingers of the left hand and plucked with those of the right. The banjo is played from the G clef, but its sounds are an octave lower than the written notes.

Bank, an institution for keeping other people's money both safe and readily available, and for making a profit by putting it out at interest.

Practice.—Banks receive money on current account, or on deposit account. Money received by a bank on current or drawing account is paid in by the bank's customer on the understanding that he can at any time, within certain fixed hours of business, demand the repayment of the money he has deposited, in whole or in part, by means of a written order to pay, signed by himself, and called a 'cheque.' Cheques may be made payable to the bank's customer himself, or to some person named by him. Money received by a bank on deposit account is paid in by the customer on the understanding that he can demand its return only at the expiration of an agreed term of notice of withdrawal, such as a fortnight, one month, three months, twelve months, etc. Some banks, in order to attract custom, allow interest on all moneys deposited with them; but, as a rule, except in the case of very big customers, such as wealthy corporations maintaining enormous daily balances to their credit, banks do not allow interest on money deposited on current account. On the other hand, except in the case of very small accounts with a very small average credit balance, they make no charge—in no case is the charge other than

nominal—for the work involved in keeping a customer's account. With regard to money received on deposit account, all banks allow interest varying directly with the length of notice necessary to the withdrawal of the deposit. The lowest rate is allowed when the deposit is withdrawable without notice.

Now, the theory of modern banking, upon which the solvency of every bank entirely depends, is that on any given day comparatively few depositors will draw out the whole or even a large part of the money standing to their credit. This applies to the current accounts; of course, with regard to the money on deposit accounts, the bank knows from day to day exactly how much is under its control, and for how long. Thus, within certain limits determined by experience, there is always in a bank a large floating balance of depositors' money which is not likely to be called for, and which may be safely employed in the money market by the bank for its own profit. As a matter of fact, a dozen of the great London banks, with customers' deposits aggregating nearly £330,000,000, had, at a recent date, just under £50,000,000 in cash for meeting all likely demands. This represented about £15 out of every £100 deposited with them; the other £85 were invested partly in government securities and other high-class stocks, and partly in loans to individuals, corporations or public authorities, advances on mortgage, etc. The proportion of deposits which it is desirable for a bank to keep in hand varies from a multiplicity of causes which are quite normal, such as the business of its principal customers, the due dates of dividends or of taxes, quarter days, harvesting (principally affecting country banks), Christmas, bank holidays, etc.; and also, from time to time, from other abnormal causes, such as trade depression, speculative activity, or commercial panic. Thus, the bankers to the British government (the Bank of England) must be ready on consol pay days (Jan. 5, Apr. 5, July 5, and Oct. 5) to pay out a large proportion of their largest customer's deposits; on the other hand, during the three months January to March the heavy receipts from income tax place, in normal times, a large floating balance at the safe disposal of the bank.

In times of panic the banks are in hourly danger of sudden demands by a large number of customers for a return of their money. This is called a 'run' on the bank. Suppose that out of every £100 deposited with it, a bank has £15 in cash either behind its counter or in reserve (say at the Bank of England), £15 invested in gilt-edged securities (such as consols, railway debentures, etc.), £10 on loan at call or short notice, and the remaining £60 locked up in loans for periods varying from one to twelve months, in mortgages, or in various undertakings: suppose that a great commercial failure takes place, and a panic develops in a week, and that, as a result, in the course of a few days the bank is called upon to return to its customers £50 in every £100 deposited by them: what happens? The 15 per cent. of cash is soon swallowed up; the 15 per cent. of consols might, on forced sales in a falling market, sink to 13 per cent. in realized cash—that also is eaten up; next the 10 per cent. on loan at call or short notice may, with shaken credit and general loss, possibly only produce 7 per cent. of cash—this also goes. Thus, by hook or by crook, the bank managers may be able to get in £35 to meet a demand for £50—a deficit of £15 in every £100. It is true that against this they hold

securities of one kind or another representing £60; but the immediate need is for cash, not securities. Then, unless the securities are unexceptionable, and the bank can persuade some other bank or banks to come to the rescue with advances of cash to tide it over the difficulty, it must suspend payment. But the suspension of payment, apart from the heavy losses on forced realizations at a time of panic, is absolutely destructive of the bank's credit, and so there is an end of it.

A banker, like any other trader, requires capital in the first instance, partly to erect suitable premises, but chiefly as a guarantee to those who are invited to trust their money to him. This capital, however, in a successful bank, bears but a small proportion to the customers' deposits; hence the high dividends which banks often return to their proprietors or shareholders. This comparatively small capital is the only fund from which bad debts incurred by loans to persons who fail to repay them can be made good; hence the imperative necessity under which all prudent banks lie of taking ample security before lending their customers' money. There would be few insolvencies if time could be had, and time would generally be given to an embarrassed banker if his credit were good; and once his cash is exhausted, his credit must depend on the nature of the security upon which he has conducted his transactions. In 1866 the Bank of England refused to lend Overend, Gurney, and Co. £400,000 in a time of crisis because they could not offer satisfactory security for the advance, and the company failed for £19,000,000, bringing about probably the greatest financial disaster in the history of the City of London. On the other hand, a similar or even greater disaster was averted in 1891, when the Bank of England (borrowing for the purpose £3,000,000 from the Bank of France), backed up by a guarantee fund of £15,000,000 underwritten by the leading London banks, came to the rescue of Baring Brothers. The firm's aggregate liabilities were about £28,000,000, but the slow liquidation of their assets, rendered possible by this timely support, averted wholesale ruin.

Besides making profits by lending their customers' money, banks borrow money on their own credit by issuing promissory notes, which pass as money among their customers or wherever their credit is good. Such banks are called 'banks of issue.' The theory of this practice may be expressed as follows:—A banker issues, say, £2,000 worth of notes against a reserve of, say, £1,000, arguing that, so long as the notes circulate freely as money, a large proportion of them will be always out. By using this £2,000 worth of notes in his business as if it were £2,000 cash, while keeping only £1,000 real cash in hand, he is practically getting the benefit of £1,000 of fictitious capital, the interest on which is so much additional profit. So long as things go well, no harm can befall him; but if his debtors begin to fail him, and the holders of his notes, losing confidence in their value, begin to press for the cash they represent, he may find himself in difficulties. In the United Kingdom, as will be seen below, stringent legislation has been passed regulating the issue of bank notes.

Clearing House. — The most striking development of the banking system is afforded by bankers' clearing-houses of which the London Clearing-house is the most famous. Prior to the year 1775 each banker had to send a clerk to every other banker in London, to collect the sums payable by

them to him. In 1775 a common centre of exchange was agreed upon — the 'clearing-house' — where the clerks employed in this business ('clearers') met daily for the exchange of bills and cheques and the settlement of differences. An analysis of the clearing-house returns made in 1856 showed that the amount of cash necessary to pay the balances due between the different banks was often less than 4 per cent. of the total sum cleared. Subsequently the clearing-house, as well as each bank using it, opened an account at the Bank of England, and now the balances due at the close of each day's transactions are settled by transfers from one account to another in the books of the Bank of England. The country banks are represented by the London bank which is their correspondent, as every bank in the United Kingdom has an agent in London. The larger provincial towns have also clearing-houses of their own. The immense utility of these institutions can be inferred from the fact that the total of the cheques passing through the London Clearing-house is about £13,000,000,000 a year.

Banker and Customer.—The ordinary relation between a banker and his customer is that of debtor and creditor. When a person opens an account at a bank, the banker becomes liable for the amount paid in, and to honour or cash cheques by that person if presented within banking hours, and if sufficient money to meet them is standing to his credit. Sometimes the banker allows a customer to overdraw his account, taking security for the overdraft, or the guaranty of a third person. In this case the customer is, of course, the debtor of the banker to the extent of the overdraft. The duty of a banker to honour the cheques of his customer is owed solely to the customer, and therefore he alone can sue if his cheque is dishonoured. A banker is entitled to refuse payment of a cheque if presented at any of the bank's branches other than the branch at which the customer's account is kept. On the other hand, he is not bound to honour a cheque presented at one of the bank's branches where there is a balance standing to the credit of the drawer, if the latter has overdrawn his account at another branch to a greater amount than such balance. A banker is not justified in disclosing the state of a customer's account unless authorized to do so, or under legal compulsion; nor may he close an account without reasonable notice, if the customer has a balance standing to his credit and there are cheques of his outstanding. Bankers often receive plate and other valuables belonging to their customers for safe custody. When they do this gratuitously they are only bound to take the ordinary care that a reasonably prudent man would take of his own property of a like nature. Unless there is a contract to the contrary, bankers have a general lien on all securities deposited with them as bankers by their customers. This lien does not extend to plate and other property deposited for safe custody. Bankers frequently issue letters of credit for the transmission of money, either within the United Kingdom or abroad. A letter of credit is 'an authority from the banker who signs it to the banker or other person to whom it is addressed, upon advice, to honour the drafts of the person named in it, and who produces the letter.' He alone is entitled to draw the drafts or to receive payment, and a letter of credit is not a negotiable instrument. See also Bill of Exchange, Cheque, and Negotiable Instrument.

General History.—Banking in many of its forms was known to the ancients, notably the Greeks and Romans. Roman banks received money on current account, paying it out to their customers' written order; or on deposit account, repayable at stipulated times. Like their modern successors, they made their profit by lending their customers' money at a higher rate of interest than they allowed them, where they allowed any at all. They do not appear to have issued notes. In the dark and middle ages, the Jews in Europe, as the world's money-lenders, performed some of the functions of bankers. The Lombardy Jews are said to have established a bank in Italy as early as 808 A.D. Be this as it may, Lombard Street, the home of bankers in the City of London, undoubtedly takes its name from descendants of those who settled in London many centuries later.

The Bank of Venice, formed in 1157, is generally given as the first bank. In 1156, the Venetian government, being in sore need of cash, made a forced loan from the wealthier citizens, promising, in return, the punctual payment of interest on the money thus requisitioned. In course of time, as the interest was always punctually paid, every claim against the government registered in the books of the 'bank' would come to be regarded as dividend-earning capital passing from hand to hand by death or deed of gift. Gradually holders of these annuities would see that payments could be made by an order on the bank to transfer portions of their holdings to certain specified persons, and so bank-money came into existence. In fact, the government of Venice created perpetual annuities, and the so-called Bank of Venice was, in the first instance, merely a transfer office of a national debt. It was not until after an experience of several centuries; and subsequently to the loans of 1480 and 1510 A.D., levied in the same manner as that of 1156, that the Bank of Venice became entitled to be called a bank in the modern sense. This bank was destroyed by the French invasion in 1797.

According to Macleod, the origin of modern banking is more properly attributable to the money-lenders of Florence, who, in the middle of the 14th century, were famous throughout Europe, especially the houses of the Acciajuoli, Bardi, Peruzzi, Pitti, and Medici. Thus, in 1345, the Bardi and Peruzzi of Florence failed for large sums. Edward III. of England owed them 1,500,000 gold florins, which he could not repay. Again, between 1430 and 1433, seventy-six bankers at Florence are said to have advanced to different persons nearly 5,000,000 gold florins. But the principal function of a modern bank—that of keeping depositors' money safe but accessible—was perhaps first undertaken on a large scale by the Bank of Amsterdam, founded in 1609. Even in this case the motives of the founders were mixed. Amsterdam was at that time the world's central exchange and mart, with the coins of all nations—some clipped, some debased, and all varying in intrinsic value from time to time—passing through its counting-houses. Partly, then, to steady the exchanges, as well as for security of their cash, the merchants of Amsterdam established a bank to receive all currency at its intrinsic value, and issue therefor standard coin of the country in which it gave credit to depositors in its books.

The history of banking in England is coextensive with that of the Bank of England (see below), but its early origin may be traced to the practice of the London

goldsmiths, who throughout the 17th century were in the habit of receiving deposits of money and valuables, against which they issued receipts; these 'goldsmiths' notes,' as they were called, passed readily from hand to hand. Scott, in the *Fortunes of Nigel*, has introduced us to the goldsmith, 'Jingling Geordie,' banker to James I. Since 1694, the year of the charter of the 'Old Lady of Threadneedle Street,' as the Bank of England is popularly called, that bank has gradually established a practical monopoly of the right to issue bank notes, and—in spite of the early competition of the great private banks, and the rapid growth during the last half of the 19th century of the joint-stock banks to a position, collectively, of overshadowing importance—has gradually built up, by the gravitation of financial interests to London, operating through the device of the clearing-house, a highly-centralized system of credit, founded on the narrow basis of one great institution—cash reserve. In Scotland and Ireland, on the other hand, the issuing of bank notes was never made subject to the same stringent regulations as in England.

The following comparison between 1844—the year of Sir Robert Peel's famous Bank Act, designed to regulate the issue of bank notes—and 1904 is instructive:—

	Notes in Circulation, 1844.	Average Notes in Circulation, 1904.
Bank of England	£21,030,000	£28,067,000
Private Banks	4,880,000	167,900
Joint-Stock Banks	3,483,000	478,840
Total, England	£29,393,000	£28,713,740
Scotland	3,026,000	7,608,100
Ireland	5,728,000	6,618,060
Total, United Kingdom	£38,147,000	£42,939,900

Many competent authorities hold that the artificial regulation of note issue imposed upon English banking by legislation, designed to establish and maintain the Bank of England's monopoly thereof, is a mistake; it being contended that if no legislation is needed to restrict a banker from receiving deposits, neither is it necessary to prevent him from incurring liabilities to the public by issuing his promissory notes. Since the public may be trusted not to deposit money with a bank unless its credit is good, why, it is asked, cannot they be equally trusted not to accept its notes or keep them in circulation, except under the same conditions? Moreover, it is urged that a bank's note issue and the character of its circulation form a natural barometer of a bank's credit, the indications of which may be most helpful to a prudent banker. The fear is of an over-issue. But the natural check to that is the prompt return to the bank of its redundant notes.

BANK OF ENGLAND.—To William Paterson (a Scotsman) is due the credit of devising and founding the Bank of England in 1694. Previous to this, for some forty years, the goldsmiths of London (a wealthy and influential body) were in the habit of changing foreign money and lending on interest. King Charles I. in his

necessity applied to them, and got a loan on the security of the taxes. But many private individuals who had money brought it to the goldsmiths for safety, and the receipts issued by the latter for these deposits circulated from hand to hand, and were known as the 'goldsmiths' notes.' These may be considered as the first kind of bank notes issued in England. The goldsmiths, however, lost heavily in the troublous times of Charles I. and Charles II. Their loans to these kings were not repaid, and even their bullion, lodged in the Tower for safety, was used to meet the cost of the civil wars. Public credit was bad, and there was little confidence in private integrity. The trade of the country was poor, and could not be developed; for money was scarce, and the means of communication between different parts of the kingdom were lamentably deficient. 'Scotland,' we are told, 'was swarming with beggars,' and had practically neither trade nor commerce, and its agricultural condition was of the poorest. In these unfavourable conditions the Bank of England, in 1694, and the Bank of Scotland, in 1695, were founded, to meet the monetary wants of the time. The Bank of Ireland was not founded until nearly a century later—viz. 1783. The Bank of England charter, issued on July 27 by authority of an Act of Parliament, authorized the formation of a corporation to be styled 'the Governor and Company of the Bank of England,' with a subscribed capital of £1,200,000. It was stipulated that the whole of this capital was to be lent to the government at 8 per cent., with an allowance of £4,000 for management, being £100,000 per annum in all. The corporation were not to trade in goods, but they were allowed to make advances upon, and to deal in, bills of exchange, and to issue 'bills payable in coin on demand,' and transferable 'to bearer on demand.' The privilege thus secured of issuing notes was also secured in the following year by the Bank of Scotland, and marks the beginning of the bank-note system of the country. In this respect the Bank of England and the Bank of Scotland were distinguished from the continental banks, none of which had hitherto ventured to issue paper on their own credit. These promissory notes were simply a kind of stereotyped bills of exchange, with this difference, that the notes were payable to 'A B,' or 'B C,' or 'bearer,' 'on demand.' At first they were only transferable by endorsement. Mercantile custom, however, soon ignored the statutory requirement, and in 1704 English promissory notes were accorded the same rights as bills of exchange, and from that time onward the banks in England and Scotland have issued notes for various amounts, the minimum in England being now £5, and in Scotland £1.

The Bank of England's charter has, since the days of William and Mary, been frequently renewed, the last renewal being in 1844, by the well-known act of Sir Robert Peel's government. By this act the authorized note circulation of every issuing bank in the three kingdoms was fixed at a certain sum, and while the Scottish and Irish banks might exceed this, provided they held an equivalent amount in gold for every note so issued, the English provincial banks were restricted to their authorized limit under a penalty. The Bank of England's absolute monopoly of issuing notes in London and for sixty-five miles round, conferred upon it in 1826, was left untouched by the Act of 1844, and remains to this day. The result has been that many

of the provincial banks which now have offices in London have been obliged to give up their note circulation altogether. By the same act the Bank of England was divided into two separate departments—the issue and the banking department.

The *Issue Department* has only to do with the note circulation, and is quite apart from the ordinary banking business, the directors merely acting as trustees to provide the required securities for the notes issued to the public. By the Act of 1844 the authorized limit was fixed at £14,000,000, upon the security of £11,015,000 lent to the government, and other securities; and any excess, averaging at that time £20,000,000, had to be covered by gold. Since 1844, under the provisions of the Bank Act, which enabled the bank to increase its fiduciary note issue (*i.e.* the amount issued against securities) to the extent of two-thirds of any lapsed issues of the English provincial banks, the total secured issue of the bank's notes has gradually grown to £18,450,000 (Dec. 1909); for every note above this which the issue department may issue, an equal amount of coin or bullion must be paid into its coffers, and the profit upon this excess is claimed by government. The actual circulation now averages about £30,000,000 (*i.e.* is in the hands of the public), but the department has frequently issued as much as £60,000,000 in notes—a large portion of this, however, being held in hand by the banking department. The notes are issued about two-thirds from London and one-third from eleven branches in the principal cities of England. Notes may be demanded from the issue department in exchange for gold at the rate of 77s. 9d. per oz., and they are payable in coin at the mint rate of 77s. 10½d. per oz. Bank of England notes are legal tender, except in Scotland and Ireland; but, as a matter of fact, they are in considerable circulation there and on the Continent.

The *Banking Department* does not differ materially from that of any other banking concern, except that it has the privilege of managing the public debt, and of paying the dividends upon it. It also holds the government deposits, and assists in the collection of the revenue. The bank is recognized as the bank of the other banks of the country for the final settlement of the exchanges and the clearing-house.

The Bank of England publishes a weekly return, furnishing in a short statement the figures applicable to these two departments. That for the week ending Dec. 31, 1909, is given here in round figures by way of illustration, and shows

Issue Department.

Notes issued	£50,286,000	Securities	£18,450,000
		Gold, coin, and bullion	31,836,000
	£50,286,000		£50,286,000

Banking Department.

Capital and "Rest"	£17,692,000	Securities	£56,481,000
Deposits and Post Bills	61,009,000	Notes unemployed	21,428,000
		Coin	792,000
	£78,701,000		£78,701,000

at a glance the bank's position at that date.

The *bank rate* (*i.e.* rate of discount) for bills and other advances is fixed from time to time by the court of directors of the Bank of England, and is determined by the conditions of trade and the demand for money. Formerly their decision regulated the rates of interest allowed and charged by the various banks in England, Scotland, and Ireland, but nowadays this is only so when the open market is short of cash. The Bank of England allows no interest upon private deposits.

Suspending the Bank Act.—In times of financial panic the Bank of England, like other banks, is liable to be depleted of cash, more especially as a large part of its deposits consists of the reserves of other banks, very liable to be drawn out at such crises. Then, unless the bank could issue notes temporarily in excess of the statutory limit without being under the obligation of having an equivalent amount of gold in the 'issue department,' it would be forced to stop payment, with disastrous results to the whole English banking system. Permission to do this (*i.e.* to ignore the Act of 1844 in this particular) is called 'suspending the Bank Act,' and has been given by the government of the day on three occasions—during the financial crises of 1847, 1857, and 1866. On only one occasion, however—in 1857—was it actually necessary to take advantage of the permission.

BANKING IN SCOTLAND.—The first Scottish bank was established by an Act of the Scottish Parliament in 1695, shortly after the establishment of the Bank of England. This is the present Bank of Scotland, the only Scottish bank established by an Act of Parliament. From its start it issued notes varying in value from £100 to £5, and in 1704 issued the first £1 notes. In 1727 the Royal Bank of Scotland was established by a charter of incorporation. The British Linen Company, incorporated in 1746 for the manufacture of linen, had, by 1763, begun to confine its operations to banking. Private banking had never much vogue in Scotland. In 1819 eight private banks existed; but all had disappeared by 1844. In 1910 there were eight banks of issue in Scotland, with 1,200 branches. The Bank Act of 1844–5 limited note issue to banks which possessed that power at that date. Notes are far more largely employed in ordinary business in Scotland than in England, and the note issue power is essential to the prosperity of a bank. Much of the prosperity of Scotland is undoubtedly due to its large

	Instituted	Capital.		Authorized Circulation.	Average Circulation 1909–10.
		Subscribed.	Paid up.		
		£	£	£	£
Bank of Scotland . . .	1695	1,987,500	1,325,000	396,852	1,186,184
Royal Bank	1727	2,000,000	2,000,000	216,451	971,482
British Linen Bank . .	1746	1,250,000	1,250,000	438,024	790,098
Commercial Bank . . .	1810	5,000,000	1,000,000	374,880	925,654
National Bank	1825	5,000,000	1,000,000	297,024	769,807
Union Bank	1830	5,000,000	1,000,000	454,346	902,946
North of Scotland and Town & County Bank	1836	3,260,000	652,000	224,452	736,806
Clydesdale Bank . . .	1838	5,000,000	1,000,000	274,321	742,484

banking facilities, which have induced people of the most moderate means to deposit their money, and so economized capital; while the practice of making advances on 'cash credit' has helped greatly to develop the industries of the country. See Kerr's *Scottish Banking* (1898), and *History of Banking* (1884). The figures relating to the Scottish banks are given on the previous page.

BANKING IN IRELAND.—In Ireland the first public bank, the Bank of Ireland, was established in 1783 by Act of Parliament. At first this bank had a virtual monopoly, but in 1821 banking companies, not exceeding six in number, were allowed to exist beyond the fifty-mile limit from Dublin. This restriction was removed in 1845. At the time of Peel's Act six banks had the privilege of note issue, viz.—

	Founded.	Authorized Circulation.
Bank of Ireland	1783	£3,738,428
Provincial Bank.....	1825	927,667
Northern Banking Co...	1825	243,440
Belfast Banking Co.	1827	281,611
National Bank.....	1835	852,269
Ulster Banking Co.	1836	311,079

The other banks now carrying on business which have not the privilege of note-issue are the Hibernian Bank (founded 1824), the Royal Bank (founded 1836), and the Munster Bank, Ltd. (founded 1864). See Dillon's *History and Development of Banking in Ireland* (1889).

BANKING IN FRANCE.—The first bank of issue established in France was founded in 1716, by the Scotsman John Law. The bank only survived five years, and banking met with little encouragement in France until the 19th century. In 1800–6 was founded the Bank of France, which has become, after the Bank of England, the most powerful bank in the world. Since 1848 this bank has had the exclusive right of note issue in France. During the last half of the 19th century its note issue grew from £14,000,000 to over £160,000,000. Against this gigantic issue it holds an enormous reserve in specie. At the beginning of 1910 the Bank of France had in its vaults £139,500,000 in gold and £35,000,000 in silver. In striking contrast to the Bank of England with its eleven branches, the Bank of France has some four hundred branches through the length and breadth of the land. The other principal banks in the country are the Crédit Lyonnais, the Comptoir National d'Escompte de Paris, and the Société Générale du Commerce. About the smaller country banks little is known.

BANKING IN GERMANY.—The oldest bank in Germany is the Bank of Hamburg (1619), modelled on the Bank of Amsterdam. Eight banks have the right of note issue in Germany (*Notenbanken*), of which by far the most important is the Reichsbank (1875), or Imperial Bank. This, which is under the control of the government, exerts great influence on business by means of its note circulation of about £70,000,000 (against between £12,000,000 and £13,000,000 of the other *Notenbanken*), and the clearing system (*Giro-Verkehr*) which it has developed by means of its three hundred branches. By this clearing system money can be remitted from one end of the empire to the other by the simple expedient of paying in money at one branch to the credit of the payee at another branch, after the manner of our post-office money orders, but without charge either to the sender or the receiver. The note issue is regulated very much as in England under Peel's Act—a limited note issue against securities, supplemented by a further issue against specie or coin; but at least one-third of

the notes in circulation must be covered by bullion, coin, or notes of the imperial treasury. But when the bank is forced by the conditions of the money market to issue uncovered notes beyond the legal limit, it can do so on payment to the government of ½ per cent. on the surplus issue. This automatic provision takes the place of the 'suspension of the Bank Act' with us. Of late years the excess of issue has become chronic, and this provision of the German law would seem rather to favour speculation. Besides the note-issuing banks there are some 140 banks in Germany, among which the most important are the Deutsche Bank, the Disconto-Gesellschaft, and the Dresdner Bank.

BANKING IN THE U.S.A.—The mainstay of the banking system of the United States is the national banks. These banks are regulated by the National Bank Act of 1864, as amended from time to time. The notes issued by these banks are secured by a deposit at Washington of United States bonds; and their customers' deposits are protected by a compulsory cash reserve for each national bank of 25 per cent. of the amount of its deposits in the larger cities, and of 15 per cent. in the smaller cities.

Statistics.—The following banking statistics for the United Kingdom and the United States are not necessarily comparable:—

1. UNITED KINGDOM—JOINT-STOCK BANKS (June 1909).
(*From the 'Stateman's Year Book,' 1910.*)

	English.	Scottish.	Irish.	Colonial.	Foreign.
	Mill. £	Mill. £	Mill. £	Mill. £	Mill. £
Subscribed capital	242·6	28·5	26·3	60·2	92·4
Paid-up capital	63·6	9·2	7·3	38·1	85·7
Market value of capital	185·9	34·5	20·6	61·9	148·6
Deposit and current accounts	736·9	105·8	60·5	268·0	386·1
Notes in circulation	30·3	7·1	6·3	12·1	3·5
Reserve and dividends	38·8	9·2	4·6	20·3	44·2
Total liabilities[1]	910·4	137·5	79·3	371·6	648·6
Cash in hand and at call	240·1	25·6	12·2	103·8	80·4
Investments	173·9	33·4	22·6	28·5	42·0
Discounts, advances, etc.	455·8	69·4	43·1	223·3	497·3
Total Assets[2]	910·4	137·5	79·3	371·6	648·6

[1] Including other items. [2] Including exchange operations.

In Table 1 the figures include the totals for the banks of England, Scotland, and Ireland. The total liabilities include the paid-up capital at its face value, the deposit and current accounts, the notes in circulation, the reserves, and other items not here shown. The total assets balance at the same figure. In addition to the above, ten private banks in England and Wales, making returns, had £24,009,000 of deposits, with £6,895,000 of cash in hand or at call. Their total assets and liabilities balanced at £34,377,000.

In Table 2, dollars have been converted into pounds at the rate of $5 = £1. The total liabilities, in comparison with those of the

English banks, are swollen by the inclusion of large sums due to other banks; these sums are offset in the assets by sums due *from* other banks. This should be taken into account in considering the proportion of cash on hand to total liabilities. The larger proportions of the sums due to and from other banks in the United States is due to the fact that over so wide an area there cannot be, as there is in the United Kingdom, one central clearing-house. Cash on hand includes specie and legal tender notes. There were in the United States, at the end of 1909, 6,977 national banks, 11,319 state banks, and 1,497 private banks.

Bolles's *Money, Banking, and F nance* (1903); Clare's *Money Ma ket Primer* (1906); Conant's *Pri ciples of Banking* (1906); Hull *Practical Problems of Banking* (1907); Palgrave's *Bank Ra* (1903); Shield Nicholson's *Banker Money* (1902); Scott's *Money an Banking* (1908); Withers's *Mea ing of Money* (1909). For th history of banking see Andréadès *Bank of England* (1909); Brecken ridge's *Canadian Banking Syste* 1885); Conant's *History of Mod ern Banks* (1909); Easton's *Histor* (1904); Gilbart's *History* (190 and Kerr's *Banking in Scotlan* (1908). See also PEOPLE'S BANK SAVINGS BANKS; TRUST CO PANIES.

2. UNITED STATES (Sept. 1, 1909).
(*From the 'Statesman's Year Book,' 1910.*)

	National Banks.	State Banks.	Private Banks.
	Mill. £.	Mill. £.	Mill. £.
Capital stock	188·9	83·2	5·5
Deposits	1011·7	493·4	38·6
Notes in circulation	131·6	..	..
Surplus fund	160·3	48·7	3·1
Total liabilities[1]	1914·7	667·7	49·2

[1] Including other items.

Of joint-stock banks making returns there were in June 1909:—In England and Wales, 50 joint-stock banks, with 4,982 branches; in Scotland, 10 joint-stock banks, with 1,205 branches; in Ireland, 9 joint-stock banks, with 676 branches; in London, 32 offices of colonial banks, with 2,614 branches, and 28 foreign banks with 1,427 branches.

See *Elements of Banking*, *Lectures on Credit and Banking*, *Theory and Practice of Banking* (2 vols.), all by H. D. MacLeod; *The Country Banker*, by G. Rae; *Lombard Street*, by W. Bagehot; *Money and the Mechanism of Exchange*, by Professor W. S. Jevons;

Banka, or MENGKA, tn., N Formosa, on Tamsui R., a few miles above the port of Tamsui in a tea and camphor producing district. Pop. est. at 50,000.

Banka, E. Indies. See BANCA

Bankalan, tn., on W. coast of Madura I., Java, Dutch E. Indies 20 m. N. of Surabaya. Pop. 14,500

Bankers, INSTITUTE OF, founded at London in 1879, for the consideration and discussion of matters of interest to the profession, and, where advisable, taking measures to further the decisions arrived at. It has members (over 5,600) in all parts of the empire, and conducts annual examinations in banking subjects.

Banket (from a Dutch word meaning almond candy). S. African mining term to describe the gold-bearing formation of which the Rand is the chief instance.

Bank Holidays, certain days fixed by Act of Parliament (1871, 1875, and 1903) as holidays for all banks and customs and inland revenue offices: in England and Ireland — Easter Monday, Monday in Whitsun-week, first Monday in August, and December 26 (or, if Sunday, 27); in Scotland—New Year's day, Good Friday, first Mondays in May and August, and Christmas day. Bills, etc., due on such dates are not payable until the following day, except in the case of Good Friday and Christmas day, when they are payable on the preceding day. Banks in England and Ireland are also closed on Good Friday and Christmas day, and March 17 is a special bank holiday for Ireland.

Bank Note, a promissory note by an authorized bank of issue, payable on demand. In England the lowest note is that for £5, in Scotland and Ireland that for £1. Bank of England notes are legal tender, but no others. See BANK.

Bank of Issue, a bank authorized by government to issue notes of its own, payable on demand. In and for sixty-five miles round London this privilege is confined to the Bank of England and such private banks as were lawfully issuing notes before 1844, and do not consist of more than six persons. Any issue in excess of the authorized circulation must be covered by gold reserves at the bank.

Bank Post Bills, bills issued without charge by the Bank of England, payable to 'order,' at seven or sixty days after sight, on payment of the sum for which the bills are required. They are payable on the date due, have no days of grace, and provide a safe means of transmitting money.

Bank Rate, a term used to denote the rate of discount charged in the chief financial centres by the state bank, or the leading bank, as opposed to the rate in the open market. The rise and fall of the bank rate is therefore an indication of the comparative scarcity or abundance of money at any particular period. In England the rate is fixed by the Bank of England. In recent years the changes have been very frequent, since the demands on the English money market are greater and more continuous than on any other. In the thirty years from 1876 to 1906 the bank rate changed in England 183 times, in Germany 110 times, in Belgium 77 times, in Holland 55 times, and in France 27 times.

Bankruptcy. Bankruptcy legislation in England dates from the time of Henry VIII. In the statute passed in his reign, and in many later acts, the bankrupt's position resembles that of a criminal rather than that of an unfortunate debtor. This characteristic of severity clung to bankruptcy legislation till a comparatively recent date. A second feature of the older bankruptcy law was that only traders were entitled to its benefits. This lasted till 1861. The present law is contained in the Bankruptcy Act, 1883, as amended by the Bankruptcy Act, 1890. Under these statutes the foundation of bankruptcy proceedings is the commission by a debtor of an act of bankruptcy. This may take various forms, each indicating either an inability by the debtor to meet his engagements, or a dishonest attempt to alienate his property either for his own ultimate benefit or for that of some particular creditor. When an act of bankruptcy has been committed a bankruptcy petition may be pre-

sented, either by the debtor himself, or by a creditor or creditors to the amount of £50; upon this a receiving order is made, which has the effect of vesting the administration of the debtor's property in an official receiver, an officer of the Board of Trade, who is subject to the directions of the court. The debtor makes a statement of his affairs, within seven days, on oath, and is publicly examined, and the creditors hold a meeting. He may make a composition with his creditors, which, if approved by a majority in number and three-fourths in value of the creditors, may receive the sanction of the court. The court, however, can withhold its sanction, on grounds entitling it to refuse a discharge, unless under the composition 7s. 6d. in the £ is paid on all debts. In default of a composition the court may adjudge the debtor bankrupt, either upon a resolution of the creditors or not, and the creditors appoint a trustee of the estate, and a committee of inspection to supervise his work. The trustee can in certain cases disclaim onerous contracts; he administers the estate, decides on proofs of debts, inquires into the validity of suspicious transactions, realizes the assets, and pays dividends thereout. The bankrupt must give the trustee all information, and he may be committed to prison if he appears likely to abscond or tries to conceal his goods from the trustee. At any time after adjudication the bankrupt may apply for his discharge; but it may be refused, or suspended for not less than two years, or granted subject to conditions, if (1) his assets do not realize 10s. in the £, (2) he has not kept proper books, (3) has traded with knowledge of insolvency, (4) has failed to account for losses, (5) has speculated rashly or lived extravagantly, (6) has given undue preference to creditors, (7) has previous been bankrupt, (8) has been frau ulent. It is a misdemeanour f an undischarged bankrupt to co tract debts of £20 without reve ing his condition. A bankru cannot sit in Parliament or ho any public office unless he is di charged and obtains a certifica that his bankruptcy is due to mi fortune. In bankruptcy, rate taxes, and wages are paid i full before other debts. Volu tary post-nuptial settlemen made within two years befo the date of bankruptcy an and within ten years before a liable to be, rendered void b bankruptcy, unless in the lat case the bankrupt can show th he was solvent at the time. Pa ments made in contemplation bankruptcy and with a view t prefer certain creditors, may b avoided as fraudulent pref ences. An allowance may b made to a bankrupt, and he entitled to any surplus aft the debts and costs have be paid. Bankruptcy business assigned to a judge of the Hi Court. The proceedings are sim plified where the debtor's pro erty is less than £300, and th county court can deal with ca where the debts are less than £ The court may order a bankru to be prosecuted. A marri woman can, since 1882, be ma bankrupt, but only if she is tra ing separately. A lunatic c commit an act of bankruptcy a lucid interval. Bankruptcy Ireland is governed by the Debto Act, 1872; the Bankruptcy Amen ment Act, 1872; the Local Ban ruptcy Act, 1888; and the Dee of Arrangement Act, 1872. F Scots law, see INSOLVENCY. the main the colonial bankrupt laws follow the principles English law. See *Annual R ports of Board of Trade*, whi contain summaries of the variou acts obtaining in India and th

colonies. See Williams's *Law and Practice of Bankruptcy* (7th ed. 1898).

Banks. (1.) LAND, isl., Arctic Ocean, Dom. of Canada, separated from Melville I. by MacClure or Banks Strait; named after Sir Joseph Banks. (2.) B. PENINSULA, E. coast of South I., New Zealand; a high table-land with extinct volcanoes; 50 m. long and 25 wide. (3.) B. ISLANDS, group, S. Pacific, 14° S., 167° 30′ E. The chief are Vanua Lava and Gawa (Santa Maria).

Banks, AGRICULTURAL. See PEOPLE'S BANKS.

Banks, SIR JOSEPH (1743–1820), president of the Royal Society, was born in London; made a voyage to Newfoundland in 1766, collecting plants; and fitted out a vessel at his own expense in which he accompanied Captain Cook in his voyage round the world (1768–71), after which he visited (1772) the Hebrides and Iceland. He was the first, as the result of this voyage, to make Staffa known to the world. He was elected president of the Royal Society in 1778, an office which he held for forty-one years. Banks had much to do with the formation of the colony of Botany Bay. He introduced into the West Indies the mango from Bengal, the bread-fruit tree from Tahiti, and various other fruits from Asia. He rendered great service to Mungo Park, Burckhardt, and other travellers. Banks wrote *Journal during Captain Cook's First Voyage* (1768–1771), ed. by J. D. Hooker (1896). See Home's *Life of Sir Joseph Banks* (Hunterian Oration, 1822), Cuvier's *Eloge* (1821), A. Duncan's *Short Life of Sir Joseph Banks* (1821), and J. H. Marden's *Sir Joseph Banks, the Father of Australia* (1909).

Banks, LAND. See PEOPLE'S BANKS.

Banks, NATHANIEL PRENTISS (1816–94), American general and politician, native of Massachusetts. In 1853 he entered Congress, where he became Speaker. From 1857–9 he was governor of Massachusetts, and in 1861 resigned the presidency of the Illinois Central Railroad to serve on the side of the North in the civil war. He held commands on the Upper Potomac, in the Shenandoah Valley, and at Washington; led the New Orleans expedition of December 1862, and in 1863 took Port Hudson. Re-entering Congress in 1864, he held a seat almost continuously until 1877. He was for several years chairman of the Committee on Foreign Affairs, and finally retired from Congress in 1891.

Banks, THOMAS (1735–1805), an English sculptor of ideal subjects, born at Lambeth. He entered the Royal Academy schools, and, having gained the gold medal (1770), spent some years (1772–9) in Italy. Proceeding to Russia (1781), he was patronized by Catherine II., who bought his *Cupid Catching a Butterfly* and *Caractacus before Claudius*. The British Institute possesses his *Achilles Mourning for Briseis*. He was elected a Royal Academician in 1785. See Leader Scott's *Sculpture—Renaissance and Modern* (1886).

Banksia, in botany a genus of the order Proteaceæ (named by Linnæus after Sir Joseph Banks), confined to Australia, where the species are called 'honeysuckle trees,' from the abundance of nectar. Some reach a height of fifty feet; the umbellate flowers are mostly yellow, but some are red and others white. The hard and evergreen leaves have a pale under-surface.

Banksian Cockatoo, an Australian cockatoo; plumage black or brown, flecked with red or orange.

Bankura, chief tn., Bankura dist., Bengal, India, 90 m. N.W.

of Calcutta. Bishnupur, farther s., was the ancient capital. Manufactures silk and cotton. Pop. 21,000. District: area, 2,621 sq. m.; pop. 1,120,000.

Bann, riv., prov. Ulster, Ireland, consisting of the Upper and Lower Bann—the former (25 m. long) rising (1,467 ft.) in the Mourne Mts. (Co. Down) and flowing past Bainbridge to Lough Neagh; the latter (33 m.) issuing from the N.W. corner of the lough and flowing N.W. to the Atlantic, between the counties of Antrim and Londonderry. The river is navigable to Coleraine.

Bannatyne Club, a literary society named after George Bannatyne (1545–1609), the collector of ancient Scottish poetry, was founded in Edinburgh in 1823 by Sir Walter Scott. David Laing was its first and only secretary (1823–61). The object of the club was the printing of rare works connected with the history, literature, and antiquities of Scotland. Accounts of the origin and early progress of the club may be read in Lockhart's *Life of Scott*, and in Scott's review of Pitcairn's *Criminal Trials*. The Bannatyne MS. has been published by the Hunterian Club of Glasgow (1873).

Banneret, a higher grade of British knighthood bestowed on the field of battle by the sovereign in person for distinguished courage. The last instance of its bestowal was by Charles I. on Sir John Smith at Edgehill (1642).

Bannock (Gael. *bannach*), a flat, round cake made of oat or barley meal, or a mixture of these, moistened with water and toasted upon a girdle; usually thicker than the common Scotch oatcake.

Bannockburn, tn., Scotland, in co. of and 1½ m. S. of Stirling. Within a century it has grown from an insignificant village into a manufacturing town noted for tweeds, tartans, and carpets, tanning and coal-mining. The battle of Bannockburn, in which the forces of Edward II. were defeated by the Scots, led by Robert Bruce, was fought near the site of the town on June 24, 1314. On Brock's Brae, now marked by a tall flagstaff, is a huge sunken granite mass, the Bore Stone, the legendary spot where Bruce's standard was fixed. Tn. pop. 2,500. See White's *History of the Battle of Bannockburn* (1871).

Banns. See MARRIAGE.

Bannu, or BUNNU, dist., Punjab, India; area, 1,680 sq. m.; traversed by the Indus. Wheat, barley, Indian corn, and sugarcane are its agricultural products. The chief town is Edwardesabad. Pop. 230,000.

Banquette. See FORTIFICATION.

Banshee, a female fairy, believed in certain parts of Ireland and Scotland to attach herself to some particular aristocratic family, and sing a mournful wail near the house when an inmate is about to die.

Banswara, state in Rajputana, India. Area, 1,973 sq. m. Chief town, Banswara, 108 m. N.W. of Indore. Pop. of tn. 7,500; of state, 165,000.

Bant, tn., Oldenburg, Germany, to the W. of Wilhelmshaven. Pop. 22,500.

Bantam, residency of Java, E. Indies, W. extremity of the island. Area, 3,053 sq. m. Pop. 710,000, principally Sundanese. The town of Bantam, on bay of same name, is 50 m. W. of Batavia. It was once the chief centre of the Dutch in the East, but is now a small place.

Bantam Fowl. See POULTRY-FARMING.

Bantayan, tn., on isl. of same name, prov. of Cuba, Visayas group, Philippines, on S.W. coast, 60 m. N. of tn. of Cebu; has pearl fisheries. There is a leper settlement on a small island off the coast. Pop. 13,500.