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THE ENCYCLOPÆDIA BRITANNICA

A DICTIONARY OF ARTS, SCIENCES, LITERATURE AND GENERAL INFORMATION

ELEVENTH EDITION

VOLUME XII SLICE VIII

Haller, Albrecht to Harmonium

Articles in This Slice

HALLER, ALBRECHT VON (1708-1777), Swiss anatomist and physiologist, was born of an

old Swiss family at Bern, on the 16th of October 1708. Prevented by long-continued ill-health from taking part in boyish sports, he had the more opportunity for the development of his precocious mind. At the age of four, it is said, he used to read and expound the Bible to his father's servants; before he was ten he had sketched a Chaldee grammar, prepared a Greek and a Hebrew vocabulary, compiled a collection of two thousand biographies of famous men and women on the model of the great works of Bayle and Moreri, and written in Latin verse a satire on his tutor, who had warned him against a too great excursiveness. When still hardly fifteen he was already the author of numerous metrical translations from Ovid, Horace and Virgil, as well as of original lyrics, dramas, and an epic of four thousand lines on the origin of the Swiss confederations, writings which he is said on one occasion to have rescued from a fire at the risk of his life, only, however, to burn them a little later (1729) with his own hand. Haller's attention had been directed to the profession of medicine while he was residing in the house of a physician at Biel after his father's death in 1721; and, following the choice then made, he while still a sickly and excessively shy youth went in his sixteenth year to the university of Tübingen (December 1723), where he studied under Camerarius and Duvernoy. Dissatisfied with his progress, he in 1725 exchanged Tübingen for Leiden, where Boerhaave was in the zenith of his fame, and where Albinus had already begun to lecture in anatomy. At that university he graduated in May 1727, undertaking successfully in his thesis to prove that the so-called salivary duct, claimed as a recent discovery by Coschwitz, was nothing more than a blood-vessel. Haller then visited London, making the acquaintance of Sir Hans Sloane, Cheselden, Pringle, Douglas and other scientific men; next, after a short stay in Oxford, he visited Paris, where he studied under Ledran and Winslöw; and in 1728 he proceeded to Basel, where he devoted himself to the study of the higher mathematics under John Bernoulli. It was during his stay there also that his first great interest in botany was awakened; and, in the course of a tour (July-August, 1828), through Savoy, Baden and several of the Swiss cantons, he began a collection of plants which was afterwards the basis of his great work on the flora of Switzerland. From a literary point of view the main result of this, the first of his many journeys through the Alps, was his poem entitled *Die Alpen*, which was finished in March 1729, and appeared in the first edition (1732) of his *Gedichte*. This poem of 490 hexameters is historically important as one of the earliest signs of the awakening appreciation of the mountains (hitherto generally regarded as horrible monstrosities), though it is chiefly designed to contrast the simple and idyllic life of the inhabitants of the Alps with the corrupt and decadent existence of the dwellers in the plains.

In 1729 he returned to Bern and began to practise as a physician; his best energies, however, were devoted to the botanical and anatomical researches which rapidly gave him a European reputation, and procured for him from George II. in 1736 a call to the chair of medicine, anatomy, botany and surgery in the newly founded university of Göttingen. He became F.R.S. in 1743, and was ennobled in 1749. The quantity of work achieved by Haller in the seventeen years during which he occupied his Göttingen professorship was immense. Apart from the ordinary work of his classes, which entailed upon him the task of newly organizing a botanical garden, an anatomical theatre and museum, an obstetrical school, and similar institutions, he carried on without interruption those original investigations in botany and physiology, the results of which are preserved in the numerous works associated with his name; he continued also to persevere in his youthful habit of poetical composition, while at the same time he conducted a monthly journal (the *Göttingische gelehrte Anzeigen*), to which he is said to have contributed twelve thousand articles relating to almost every branch of human knowledge. He also warmly interested himself in most of the religious questions, both ephemeral and permanent, of his day; and the erection of the Reformed church in Göttingen was mainly due to his unwearied energy. Notwithstanding all this variety of absorbing interests he never felt at home in Göttingen; his untravelled heart kept ever turning towards his native Bern (where he had been elected a member of the great council in 1745), and in 1753 he resolved to resign his chair and return to Switzerland.

The twenty-one years of his life which followed were largely occupied in the discharge of his duties in the minor political post of a *Rathhausammann* which he had obtained by lot, and in the preparation of his *Bibliotheca medica*, the botanical, surgical and anatomical parts of which he lived to complete; but he also found time to write the three philosophical romances—*Usong* (1771), *Alfred* (1773) and *Fabius and Cato* (1774),—in which his views as to the respective merits of despotism, of limited monarchy and of aristocratic republican government are fully set forth. About 1773 the state of his health rendered necessary his entire withdrawal from public business; for some time he supported his failing strength by means of opium, on the use of which he communicated a paper to the *Proceedings* of the Göttingen Royal Society in 1776; the excessive use of the drug is believed, however, to have hastened his death, which occurred on the 17th of December 1777. Haller, who had been three times married, left eight children, the eldest of whom, Gottlieb Emanuel, attained to some distinction as a botanist and as a writer on Swiss historical bibliography (1785-1788, 7 vols.).

Subjoined is a classified but by no means an exhaustive list of his very numerous works in various branches of science and literature (a complete list, up to 1775, numbering 576 items,

including various editions, was published by Haller himself, in 1775, at the end of vol. 6 of the correspondence addressed to him by various learned friends):—(1) Anatomical:—*Icones anatomicae* (1743-1754); *Disputationes anatomicae selectiores* (1746-1752); and *Opera acad. minora anatomici argumenti* (1762-1768). (2) Physiological:—*De respiratione experimenta anatomica* (1747); *Primae lineae physiologiae* (1747); and *Elementa physiologiae corporis humani* (1757-1760). (3) Pathological and surgical:—*Opuscula pathologica* (1754); *Disputationum chirurg. collectio* (1777); also careful editions of Boerhaave's *Praelectiones academicae in suas institutiones rei medicae* (1739), and of the *Artis medicae principia* of the same author (1769-1774). (4) Botanical:—*Enumeratio methodica stirpium Helveticarum* (1742); *Opuscula botanica* (1749); *Bibliotheca botanica* (1771). (5) Theological:—*Briefe über die wichtigsten Wahrheiten der Offenbarung* (1772); and *Briefe zur Vertheidigung der Offenbarung* (1775-1777). (6) Poetical:—*Gedichte* (1732, 12th ed., 1777). His three romances have been already mentioned. Several volumes of lectures and "Tagebücher" or journals were published posthumously.

See J. G. Zimmermann, *Das Leben des Herrn von Haller* (1755), and the articles by Förster and Seiler in Ersch and Gruber's *Encyklopädie*, and particularly the detailed biography (over 500 pages) by L. Hirzel, printed at the head of his elaborate edition (Frauenfeld, 1882) of Haller's *Gedichte*.

HALLER, BERTHOLD (1492-1536), Swiss reformer, was born at Aldingen in Württemberg, and after studying at Pforzheim, where he met Melanchthon, and at Cologne, taught in the gymnasium at Bern. He was appointed assistant preacher at the church of St Vincent in 1515 and people's priest in 1520. Even before his acquaintance with Zwingli in 1521 he had begun to preach the Reformation, his sympathetic character and his eloquence making him a great force. In 1526 he was at the abortive conference of Baden, and in January 1528 drafted and defended the ten theses for the conference of Bern which established the new religion in that city. He left no writings except a few letters which are preserved in Zwingli's works. He died on the 25th of February 1536.

Life by Pestalozzi (Elberfeld, 1861).

HALLEY, EDMUND (1656-1742), English astronomer, was born at Haggerston, London, on the 29th of October 1656. His father, a wealthy soapboiler, placed him at St Paul's school, where he was equally distinguished for classical and mathematical ability. Before leaving it for Queen's College, Oxford, in 1673, he had observed the change in the variation of the compass, and at the age of nineteen, he supplied a new and improved method of determining the elements of the planetary orbits (*Phil. Trans.* xi. 683). His detection of considerable errors in the tables then in use led him to the conclusion that a more accurate ascertainment of the places of the fixed stars was indispensable to the progress of astronomy; and, finding that Flamsteed and Hevelius had already undertaken to catalogue those visible in northern latitudes, he assumed to himself the task of making observations in the southern hemisphere. A recommendation from Charles II. to the East India Company procured for him an apparently suitable, though, as it proved, ill-chosen station, and in November 1676 he embarked for St Helena. On the voyage he noticed the retardation of the pendulum in approaching the equator; and during his stay on the island he observed, on the 7th of November 1677, a transit of Mercury, which suggested to him the important idea of employing similar phenomena for determining the sun's distance. He returned to England in November 1678, having by the registration of 341 stars won the title of the "Southern Tycho," and by the translation to the heavens of the "Royal Oak," earned a degree of master of arts, conferred at Oxford by the king's command on the 3rd of December 1678, almost simultaneously with his election as fellow of the Royal Society. Six months later, the indefatigable astronomer started for Danzig to set at rest a dispute of long standing between Hooke and Hevelius as to the respective merits of plain or telescopic sights; and towards the end of 1680 he proceeded on a continental tour. In Paris he observed, with G. D. Cassini, the great comet of 1680 after its perihelion passage; and having returned to England, he married in 1682 Mary, daughter of Mr Tooke, auditor of the exchequer, with whom he lived harmoniously for fifty-five years. He now fixed his residence at Islington, engaged chiefly upon lunar observations, with a view to the great desideratum of a method of finding the longitude at sea. His mind, however, was also busy with the momentous problem of gravity. Having reached so far as to

perceive that the central force of the solar system must decrease inversely as the square of the distance, and applied vainly to Wren and Hooke for further elucidation, he made in August 1684 that journey to Cambridge for the purpose of consulting Newton, which resulted in the publication of the *Principia*. The labour and expense of passing this great work through the press devolved upon Halley, who also wrote the prefixed hexameters ending with the well-known line—

Nec fas est propius mortali attingere divos.

In 1696 he was, although a zealous Tory, appointed deputy comptroller of the mint at Chester, and (August 19, 1698) he received a commission as captain of the "Paramour Pink" for the purpose of making extensive observations on the conditions of terrestrial magnetism. This task he accomplished in a voyage which lasted two years, and extended to the 52nd degree of S. latitude. The results were published in a *General Chart of the Variation of the Compass* in 1701; and immediately afterwards he executed by royal command a careful survey of the tides and coasts of the British Channel, an elaborate map of which he produced in 1702. On his return from a journey to Dalmatia, for the purpose of selecting and fortifying the port of Trieste, he was nominated, November 1703, Savilian professor of geometry at Oxford, and received an honorary degree of doctor of laws in 1710. Between 1713 and 1721 he acted as secretary to the Royal Society, and early in 1720 he succeeded Flamsteed as astronomer-royal. Although in his sixty-fourth year, he undertook to observe the moon through an entire revolution of her nodes (eighteen years), and actually carried out his purpose. He died on the 14th of January 1742. His tomb is in the old graveyard of St Margaret's church, Lee, Kent.

Halley's most notable scientific achievements were—his detection of the "long inequality" of Jupiter and Saturn, and of the acceleration of the moon's mean motion (1693), his discovery of the proper motions of the fixed stars (1718), his theory of variation (1683), including the hypothesis of four magnetic poles, revived by C. Hansteen in 1819, and his suggestion of the magnetic origin of the aurora borealis; his calculation of the orbit of the 1682 comet (the first ever attempted), coupled with a prediction of its return, strikingly verified in 1759; and his indication (first in 1679, and again in 1716, Phil. Trans., No. 348) of a method extensively used in the 18th and 19th centuries for determining the solar parallax by means of the transits of Venus.

His principal works are *Catalogus stellarum australium* (London, 1679), the substance of which was embodied in vol. iii. of Flamsteed's *Historia coelestis* (1725); *Synopsis astronomiae cometicae* (Oxford, 1705); *Astronomical Tables* (London, 1752); also eighty-one miscellaneous papers of considerable interest, scattered through the *Philosophical Transactions*. To these should be added his version from the Arabic (which language he acquired for the purpose) of the treatise of Apollonius *De sectione rationis*, with a restoration of his two lost books *De sectione spatii*, both published at Oxford in 1706; also his fine edition of the *Conics* of Apollonius, with the treatise by Serenus *De sectione cylindri et coni* (Oxford, 1710, folio). His edition of the *Spherics* of Menelaus was published by his friend Dr Costard in 1758. See also *Biographia Britannica*, vol. iv. (1757); *Gent. Mag.* xvii. 455, 503; A. Wood, *Athenae Oxon.* (Bliss), iv. 536; J. Aubrey, *Lives*, ii. 365; F. Baily, *Account of Flamsteed*; Sir D. Brewster, *Life of Newton*; R. Grant, *History of Astronomy*, p. 477 and *passim*; A. J. Rudolph, *Bulletin of Bibliography*, No. 14 (Boston, 1904); E. F. McPike, "Bibliography of Halley's Comet," *Smithsonian Misc. Collections*, vol. xlviii. pt. i. (1905); *Notes and Queries*, 9th series, vols. x. xi. xii., 10th series, vol. ii. (E. F. McPike). A collection of manuscripts regarding Halley is preserved among the Rigaud papers in the Bodleian library, Oxford; and many of his unpublished letters exist at the Record Office and in the library of the Royal Society.

(A. M. C.)

HALLGRÍMSSON, JÓNAS (1807-1844), the chief lyrical poet of Iceland, was born in 1807 at Steinsstaðir in Eyjafjarðarsýsla in the north of that island, and educated at the famous school of Bessastaðr. In 1832 he went to the university of Copenhagen, and shortly afterwards turned his attention to the natural sciences, especially geology. Having obtained pecuniary assistance from the Danish government, he travelled through all Iceland for scientific purposes in the years 1837-1842, and made many interesting geological observations. Most of his writings on geology are in Danish. His renown was, however, not acquired by his writings in that language, but by his Icelandic poems and short stories. He was well read in German literature, Heine and Schiller being his favourites, and the study of the German masters and the old classical writers of Iceland opened his eyes to the corrupt state of Icelandic poetry and showed him the way to make it better. The misuse of the Eddic metaphors made the lyrical and epical poetry of the day hardly intelligible, and, to make matters worse, the language of the poets was mixed up with

words of German and Danish origin. The great Danish philologist and friend of Iceland, Rasmus Rask, and the poet Bjarni Thórarensen had done much to purify the language, but Jónas Hallgrímsson completed their work by his poems and tales, in a purer language than ever had been written in Iceland since the days of Snorri Sturlason. The excesses of Icelandic poetry were specially seen in the so-called *rímur*, ballads of heroes, &c., which were fiercely attacked by Jónas Hallgrímsson, who at last succeeded in converting the educated to his view. Most of the principal poems, tales and essays of Jónas Hallgrímsson appeared in the periodical *Fjölnir*, which he began publishing at Copenhagen in 1835, together with Konráð Gíslason, a well-known philologist, and the patriotic Thómas Saemundsson. *Fjölnir* had in the beginning a hard struggle against old prejudices, but as the years went by its influence became enormous; and when it at last ceased, its programme and spirit still lived in *Ný Félagsrit* and other patriotic periodicals which took its place. Jónas Hallgrímsson, who died in 1844, is the father of a separate school in Icelandic lyric poetry. He introduced foreign thoughts and metres, but at the same time revived the metres of the Icelandic classical poets. Although his poetical works are all comprised in one small volume, he strikes every string of the old harp of Iceland.

(S. Bl.)

HALLIDAY, ANDREW [Andrew Halliday Duff] (1830-1877), British journalist and dramatist, was born at Marnoch, Banffshire, in 1830. He was educated at Marischal College, Aberdeen, and in 1849 he came to London, and discarding the name of Duff, devoted himself to literature. His first engagement was with the daily papers, and his work having attracted the notice of Thackeray, he was invited to write for the *Cornhill Magazine*. From 1861 he contributed largely to *All the Year Round*, and many of his articles were republished in collected form. He was also the author, alone and with others, of a great number of farces, burlesques and melodramas and a peculiarly successful adapter of popular novels for the stage. Of these *Little Em'ly* (1869), his adaptation of *David Copperfield*, was warmly approved by Dickens himself, and enjoyed a long run at Drury Lane. Halliday died in London on the 10th of April 1877.

HALLIWELL-PHILLIPPS, JAMES ORCHARD (1820-1889), English Shakespearian scholar, son of Thomas Halliwell, was born in London, on the 21st of June 1820. He was educated privately and at Jesus College, Cambridge. He devoted himself to antiquarian research, particularly in early English literature. In 1839 he edited Sir John Mandeville's *Travels*; in 1842 published an *Account of the European MSS. in the Chetham Library*, besides a newly discovered metrical romance of the 15th century (*Torrent of Portugal*). He became best known, however, as a Shakespearian editor and collector. In 1848 he brought out his *Life of Shakespeare*, which passed through several editions; in 1853-1865 a sumptuous edition, limited to 150 copies, of Shakespeare in folio, with full critical notes; in 1863 a *Calendar of the Records at Stratford-on-Avon*; in 1864 a *History of New Place*. After 1870 he entirely gave up textual criticism, and devoted his attention to elucidating the particulars of Shakespeare's life. He collated all the available facts and documents in relation to it, and exhausted the information to be found in local records in his *Outlines of the Life of Shakespeare*. He was mainly instrumental in the purchase of New Place for the corporation of Stratford-on-Avon, and in the formation there of the Shakespeare museum. His publications in all numbered more than sixty volumes. He assumed the name of Phillipps in 1872, under the will of the grandfather of his first wife, a daughter of Sir Thomas Phillipps the antiquary. He took an active interest in the Camden Society, the Percy Society and the Shakespeare Society, for which he edited many early English and Elizabethan works. From 1845 Halliwell was excluded from the library of the British Museum on account of the suspicion attaching to his possession of some manuscripts which had been removed from the library of Trinity College, Cambridge. He published privately an explanation of the matter in 1845. His house, Hollingbury Copse, near Brighton, was full of rare and curious works, and he generously gave many of them to the Chetham library, Manchester, to the town library of Penzance, to the Smithsonian Institute, Washington, and to the library of Edinburgh university. He died on the 3rd of January 1889.

HALLOWE'EN, or ALL HALLOWS EVE, the name given to the 31st of October as the vigil of Hallowmas or All Saints' Day. Though now known as little else but the eve of the Christian festival, Hallowe'en and its formerly attendant ceremonies long antedate Christianity. The two chief characteristics of ancient Hallowe'en were the lighting of bonfires and the belief that of all nights in the year this is the one during which ghosts and witches are most likely to wander abroad. Now on or about the 1st of November the Druids held their great autumn festival and lighted fires in honour of the Sun-god in thanksgiving for the harvest. Further, it was a Druidic belief that on the eve of this festival Saman, lord of death, called together the wicked souls that within the past twelve months had been condemned to inhabit the bodies of animals. Thus it is clear that the main celebrations of Hallowe'en were purely Druidical, and this is further proved by the fact that in parts of Ireland the 31st of October was, and even still is, known as *Oidhche Shamhna*, "Vigil of Saman." On the Druidic ceremonies were grafted some of the characteristics of the Roman festival in honour of Pomona held about the 1st of November, in which nuts and apples, as representing the winter store of fruits, played an important part. Thus the roasting of nuts and the sport known as "apple-ducking"—attempting to seize with the teeth an apple floating in a tub of water,—were once the universal occupation of the young folk in medieval England on the 31st of October. The custom of lighting Hallowe'en fires survived until recent years in the highlands of Scotland and Wales. In the dying embers it was usual to place as many small stones as there were persons around, and next morning a search was made. If any of the pebbles were displaced it was regarded as certain that the person represented would die within the twelve months.

For details of the Hallowe'en games and bonfires see Brand's *Antiquities of Great Britain*; Chambers's *Book of Days*; Grimm's *Deutsche Mythologie*, ch. xx. (*Elemente*) and ch. xxxiv. (*Aberglaube*); and J. G. Frazer's *Golden Bough*, vol. iii. Compare also BELTANE and BONFIRE.

HALLSTATT, a market-place of Austria, in Upper Austria, 67 m. S.S.W. of Linz by rail. Pop. (1900) 737. It is situated on the shore of the Hallstatter-see and at the foot of the Hallstatter Salzberg, and is built in amphitheatre with its houses clinging to the mountain side. The salt mine of Hallstatt, which is one of the oldest in existence, was rediscovered in the 14th century. In the neighbourhood is the celebrated Celtic burial ground, where a great number of very interesting antiquities have been found. Most of these have been removed to the museums at Vienna and Linz, but some are kept in the local museum.

The excavations (1847-1864) revealed a form of culture hitherto unknown, and accordingly the name Hallstatt has been applied to objects of like form and decoration since found in Styria, Carniola, Bosnia (at Glasinatz and Jezerin), Epirus, north Italy, France, Spain and Britain (see CELT). Everywhere else the change from iron weapons to bronze is immediate, but at Hallstatt iron is seen gradually superseding bronze, first for ornament, then for edging cutting instruments, then replacing fully the old bronze types, and finally taking new forms of its own. There can be no doubt that the use of iron first developed in the Hallstatt area, and that thence it spread southwards into Italy, Greece, the Aegean, Egypt and Asia, and northwards and westwards in Europe. At Noreia, which gave its name to Noricum (*q.v.*) less than 40 m. from Hallstatt, were the most famous iron mines of antiquity, which produced the Noric iron and Noric swords so prized and dreaded by the Romans (Pliny, *Hist. Nat.* xxxiv. 145; Horace, *Epod.* 17. 71). This iron needed no tempering, and the Celts had probably found it ready smelted by nature, just as the Eskimo had learned of themselves to use telluric iron embedded in basalt. The graves at Hallstatt were partly inhumation partly cremation; they contained swords, daggers, spears, javelins, axes, helmets, bosses and plates of shields and hauberks, brooches, various forms of jewelry, amber and glass beads, many of the objects being decorated with animals and geometrical designs. Silver was practically unknown. The weapons and axes are mostly iron, a few being bronze. The swords are leaf-shaped, with blunt points intended for cutting, not for thrusting; the hilts differ essentially from those of the Bronze Age, being shaped like a crescent to grasp the blade, with large pommels, or sometimes with antennae (the latter found also in Bavaria, Württemberg, Baden, Switzerland, the Pyrenees, Spain, north Italy): only six arrowheads (bronze) were found. Both flanged and socketed celts occurred, the iron being much more numerous than the bronze. The flat axes are distinguished by the side stops and in some cases the transition from palstave to socketed axe can be seen. The shields were round as in the early Iron Age of north Italy (see VILLANOVA). Greaves were found at Glasinatz and Jezerin, though not at Hallstatt; two helmets were found at Hallstatt and others in Bosnia; broad bronze belts were numerous, adorned in *repoussé* with beast and geometric ornament. Brooches are found in great numbers, both those derived from the primitive safety-pin ("Peschiera" type) and the "spectacle" or "Hallstatt" type found all down the Balkans and in Greece. The latter are

formed of two spirals of wire, sometimes four such spirals being used, whilst there were also brooches in animal forms, one of the latter being found with a bronze sword. The Hallstatt culture is that of the Homeric Achaeans (see ACHAEANS), but as the brooch (along with iron, cremation of the dead, the round shield and the geometric ornament) passed down into Greece from central Europe, and as brooches are found in the lower town at Mycenae, 1350 B.C., they must have been invented long before that date in central Europe. But as they are found in the late Bronze Age and early Iron Age, the early iron culture of Hallstatt must have originated long before 1350 B.C., a conclusion in accord with the absence of silver at Hallstatt itself.

See Baron von Sacken, *Das Grabfeld von Hallstatt*; Bertrand and S. Reinach, *Les Celtes dans les vallées du Pô et du Danube*; W. Ridgeway, *Early Age of Greece*; ARCHAEOLOGY (plate).

(W. RI.)

HALLUCINATION (from Lat. *alucinari* or *allucinari*, to wander in mind, Gr. ἀλύσσειν or ἀλύειν, from ἄλη, wandering), a psychological term which has been the subject of much controversy, and to which, although there is now fair agreement as to its denotation, it is still impossible to give a precise and entirely satisfactory definition. Hallucinations constitute one of the two great classes of all false sense-perceptions, the other class consisting of the "illusions," and the difficulty of definition is clearly to mark the boundary between the two classes. *Illusion* may be defined as the misinterpretation of sense-impression, while *hallucination*, in its typical instances, is the experiencing of a sensory presentation, *i.e.* a presentation having the sensory vividness that distinguishes perceptions from representative imagery, at a time when no stimulus is acting on the corresponding sense-organ. There is, however, good reason to think that in many cases, possibly in all cases, some stimulation of the sense-organ, coming either from without or from within the body, plays a part in the genesis of the hallucination. This being so, we must be content to leave the boundary between illusions and hallucinations ill-defined, and to regard as illusions *those false perceptions in which impressions made on the sense-organ play a leading part in determining the character of the percept*, and as hallucinations *those in which any such impression is lacking, or plays but a subsidiary part and bears no obvious relation to the character of the false percept*.

As in the case of illusion, hallucination may or may not involve delusion, or belief in the reality of the object falsely perceived. Among the sane the hallucinatory object is frequently recognized at once as unreal or at least as but quasi-real; and it is only the insane, or persons in abnormal states, such as hypnosis, who, when an hallucination persists or recurs, fail to recognize that it corresponds to no physical impression from, or object in, the outer world. Hallucinations of all the senses occur, but the most commonly reported are the auditory and the visual, while those of the other senses seem to be comparatively rare. This apparent difference of frequency is no doubt largely due to the more striking character of visual and auditory hallucinations, and to the relative difficulty of ascertaining, in the case of perceptions of the lower senses, *e.g.* of taste and smell, that no impression adequate to the genesis of the percept has been made upon the sense-organ; but, in so far as it is real, it is probably due in part to the more constant use of the higher senses and the greater strain consequently thrown upon them, in part also to their more intimate connexion with the life of ideas.

The hallucinatory perception may involve two or more senses, *e.g.*, the subject may seem to see a human being, to hear his voice and to feel the touch of his hand. This is rarely the case in spontaneous hallucination, but in hypnotic hallucination the subject is apt to develop the object suggested to him, as present to one of his senses, and to perceive it also through other senses.

Among visual hallucinations the human figure, and among auditory hallucinations human voices, are the objects most commonly perceived. The figure seen always appears localized more or less definitely in the outer world. In many cases it appears related to the objects truly seen in just the same way as a real object; *e.g.* it is no longer seen if the eyes are closed or turned away, it does not move with the movements of the eyes, and it may hide objects lying behind it, or be hidden by objects coming between the place that it appears to occupy and the eye of the percipient. Visual hallucinations are most often experienced when the eyes are open and the surrounding space is well or even brightly illuminated. Less frequently the visual hallucination takes the form of a self-luminous figure in a dark place or appears in a luminous globe or mist which shuts out from view the real objects of the part of the field of view in which it appears.

Auditory hallucinations, especially voices, seem to fall into two distinct classes—(1) those which are heard as coming from without, and are more or less definitely localized in outer space, (2) those which seem to be within the head or, in some cases, within the chest, and to have less definite auditory quality. It seems probable that the latter are hallucinations involving

principally kinaesthetic sensations, sensations of movement of the organs of speech.

Hallucinations occur under a great variety of bodily and mental conditions, which may conveniently be classified as follows.

I. *Conditions which imply normal waking Consciousness and no distinct Departure from bodily and mental Sanity.*

a. It would seem that a considerable number of perfectly healthy persons occasionally experience, while in a fully waking state, hallucinations for which no cause can be assigned. The census of hallucinations conducted by the Society for Psychical Research showed that about 10% of all sane persons can remember having experienced at least one hallucination while they believed themselves to be fully awake and in normal health. These sporadic hallucinations of waking healthy persons are far more frequently visual than auditory, and they usually take the form of some familiar person in ordinary attire. The figure in many cases is seen, on turning the gaze in some new direction, fully developed and lifelike, and its hallucinatory character may be revealed only by its noiseless movements, or by its fading away *in situ*. A special interest attaches to hallucinations of this type, owing to the occasional coincidence of the death of the person with his hallucinatory appearance. The question raised by these coincidences will be discussed in a separate paragraph below.

b. A few persons, otherwise normal in mind and body, seem to experience repeatedly some particular kind of hallucination. The voice (δαιμόνιον) so frequently heard by Socrates, warning or advising him, is the most celebrated example of this type.

II. *Conditions more or less unusual or abnormal but not implying distinct Departure from Health.*

a. A kind of hallucination to which perhaps every normal person is liable is that known technically as “recurrent sensation.” This kind is experienced only when some sense-organ has been continuously or repeatedly subjected to some one kind of impression or stimulation for a considerable period; *e.g.* the microscopist, after examining for some hours one particular kind of object or structure, may suddenly perceive the object faithfully reproduced in form and colour, and lying, as it were, upon any surface to which his gaze is directed. Perhaps the commonest experience of this type is the recurrence of the sensations of movement at intervals in the period following a sea voyage or long railway journey.

b. A considerable proportion of healthy sane persons can induce hallucinations of vision by gazing fixedly at a polished surface or into some dark translucent mass; or of hearing, by applying a large shell or similar object to the ear. These methods of inducing hallucinations, especially the former, have long been practised in many countries as modes of divination, various objects being used, *e.g.* a drop of ink in the palm of the hand, or a polished finger-nail. The object now most commonly used is a polished sphere of clear glass or crystal (see Crystal-Gazing). Hence such hallucinations go by the name of *crystal visions*. The crystal vision often appears as a picture of some distant or unknown scene lying, as it were, in the crystal; and in the picture figures may come and go, and move to and fro, in a perfectly natural manner. In other cases, written or printed words or sentences appear. The percipient, seer or scryer, commonly seems to be in a fully waking state as he observes the objects thus presented. He is usually able to describe and discuss the appearances, successively discriminating details by attentive observation, just as when observing an objective scene; and he usually has no power of controlling them, and no sense of having produced them by his own activity. In some cases these visions have brought back to the mind of the scryer facts or incidents which he could not voluntarily recollect. In other cases they are asserted by credible witnesses to have given to the scryer information, about events distant in time or place, that had not come to his knowledge by normal means. These cases have been claimed as evidence of telepathic communication or even of clairvoyance. But at present the number of well-attested cases of this sort is too small to justify acceptance of this conclusion by those who have only secondhand knowledge of them.

c. Prolonged deprivation of food predisposes to hallucinations, and it would seem that, under this condition, a large proportion of otherwise healthy persons become liable to them, especially to auditory hallucinations.

d. Certain drugs, notably opium, Indian hemp, and mescal predispose to hallucinations, each tending to produce a peculiar type. Thus Indian hemp and mescal, especially the latter, produce in many cases visual hallucinations in the form of a brilliant play of colours, sometimes a mere succession of patches of brilliant colour, sometimes in architectural or other definite spatial arrangement.

e. The states of transition from sleep to waking, and from waking to sleep, seem to be peculiarly favourable to the appearance of hallucinations. The recurrent sensations mentioned

above are especially prone to appear at such times, and a considerable proportion of the sporadic hallucinations of persons in good health are reported to have been experienced under these conditions. The name "hypnagogic" hallucinations, first applied by Alfred Maury, is commonly given to those experienced in these transition states.

f. The presentations, predominantly visual, that constitute the principal content of most dreams, are generally described as hallucinatory, but the propriety of so classing them is very questionable. The present writer is confident that his own dream-presentations lack the sensory vividness which is the essential mark of the percept, whether normal or hallucinatory, and which is the principal, though not the only, character in which it differs from the representation or memory-image. It is true that the dream-presentation, like the percept, differs from the representative imagery of waking life in that it is relatively independent of volition; but that seems to be merely because the will is in abeyance or very ineffective during sleep. The wide currency of the doctrine that classes dream-images with hallucinations seems to be due to this independence of volitional control, and to the fact that during sleep the representative imagery appears without that rich setting of undiscriminated or marginal sensation which always accompanies waking imagery, and which by contrast accentuates for introspective reflection the lack of sensory vividness of such imagery.

g. Many of the subjects who pass into the deeper stages of hypnosis (see HYPNOTISM) show themselves, while in that condition, extremely liable to hallucination, perceiving whatever object is suggested to them as present, and failing to perceive any object of which it is asserted by the operator that it is no longer present. The reality of these positive and negative hallucinations of the hypnotized subject has been recently questioned, it being maintained that the subject merely gives verbal assent to the suggestions of the operator. But that the hypnotized subject does really experience hallucinations seems to be proved by the cases in which it is possible to make the hallucination, positive or negative, persist for some time after the termination of hypnosis, and by the fact that in some of these cases the subject, who in the post-hypnotic state seems in every other respect normal and wide awake, may find it difficult to distinguish between the hallucinatory and real objects. Further proof is afforded by experiments such as those by which Alfred Binet showed that a visual hallucination may behave for its percipient in many respects like a real object, *e.g.* that it may appear reflected in a mirror, displaced by a prism and coloured when a coloured glass is placed before the patient's eyes. It was by means of experiments of this kind that Binet showed that hypnotic hallucinations may approximate to the type of the illusion, *i.e.* that some real object affecting the sense-organ (in the case of a visual hallucination some detail of the surface upon which it is projected) may provide a nucleus of peripherally excited sensation around which the false percept is built up. An object playing a part of this sort in the genesis of an hallucination is known as a "*point de repère*." It has been maintained that all hallucinations involve some such *point de repère* or objective nucleus; but there are good reasons for rejecting this view.

h. In states of ecstasy, or intense emotional concentration of attention upon some one ideal object, the object contemplated seems at times to take on sensory vividness, and so to acquire the character of an hallucination. In these cases the state of mind of the subject is probably similar in many respects to that of the deeply hypnotized subject, and these two classes of hallucination may be regarded as very closely allied.

III. *Hallucinations which occur as symptoms of both bodily and mental diseases.*

a. Dr H. Head has the credit of having shown for the first time, in the year 1901, that many patients, suffering from more or less painful visceral diseases, disorders of heart, lungs, abdominal viscera, &c., are liable to experience hallucinations of a peculiar kind. These "visceral" hallucinations, which are constantly accompanied by headache of the reflected visceral type, are most commonly visual, more rarely auditory. In all Dr Head's cases the visual hallucination took the form of a shrouded human figure, colourless and vague, often incomplete, generally seen by the patient standing by his bed when he wakes in a dimly lit room. The auditory "visceral" hallucination was in no instance vocal, but took such forms as sounds of tapping, scratching or rumbling, and were heard only in the absence of objective noises. In a few cases the "visceral" hallucination was bisensory, *i.e.* both auditory and visual.

In all these respects the "visceral" hallucination differs markedly from the commoner types of the sporadic hallucination of healthy persons.

b. Hallucinations are constant symptoms of certain general disorders in which the nervous system is involved, notably of the *delirium tremens*, which results from chronic alcohol poisoning, and of the delirium of the acute specific fevers. The hallucinations of these states are generally of a distressing or even terrifying character. Especially is this the rule with those of *delirium tremens*, and in the hallucinations of this disease certain kinds of objects, *e.g.* rats and snakes, occur with curious frequency.

c. Hallucinations occasionally occur as symptoms of certain nervous diseases that are not usually classed with the insanities, notably in cases of epilepsy and severe forms of hysteria. In the former disorder, the sensory aura that so often precedes the epileptic convulsion may take the form of an hallucinatory object, which in some cases is very constant in character. Unilateral hallucinations, an especially interesting class, occur in severe cases of hysteria, and are usually accompanied by hemi-anaesthesia of the body on the side on which the hallucinatory object is perceived.

d. Hallucinations occur in a large, but not accurately definable, proportion of all cases of mental disease proper. Two classes are recognized: (1) those that are intimately connected with the dominant emotional state or with some dominant delusion; (2) those that occur sporadically and have no such obvious relation to the other symptoms of disease. Hallucinations of the former class tend to accentuate, and in turn to be confirmed by, the congruent emotional or delusional state; but whether these are to be regarded as primary symptoms and as the cause of the hallucinations, or *vice versa*, it is generally impossible to say. Patients who suffer delusions of persecution are very apt to develop later in the course of their disease hallucinations of the voices of their persecutors; while in other cases hallucinatory voices, which are at first recognized as such, come to be regarded as real and in these cases seem to be factors of primary importance in the genesis of further delusions. Hallucinations occur in almost every variety of mental disease, but are commonest in the forms characterized by a cloudy dream-like condition of consciousness, and in extreme cases of this sort the patient (as in the delirium of chronic alcohol-poisoning) seems to move waking through a world consisting largely of the images of his own creation, set upon a background of real objects.

In some cases hallucinations are frequently experienced for long periods in the absence of any other symptom of mental disorder, but these no doubt usually imply some morbid condition of the brain.

Physiology of Hallucination.—There has been much discussion as to the nature of the neural process in hallucination. It is generally and rightly assumed that the hallucinatory perception of any object has for its immediate neural correlate a state of excitement which, as regards its characters and its distribution in the elements of the brain, is entirely similar to the neural correlate of the normal perception of the same object. The hallucination is a perception, though a false perception. In the perception of an object and in the representation of it, introspective analysis discovers a number of presentative elements. In the case of the representation these elements are memory images only (except perhaps in so far as actual kinaesthetic sensations enter into its composition); whereas, in the case of the percept, some of these elements are sensations, sensations which differ from images in having the attribute of sensory vividness; and the sensory vividness of these elements lends to the whole complex the sensory vividness or reality, the possession of which character by the percept constitutes its principal difference from the representation. Normally, sensory vividness attaches only to those presentative elements which are excited through stimulations of the sense-organs. The normal percept, then, owes its character of sensory reality to the fact that a certain number of its presentative elements are sensations peripherally excited by impressions made upon a sense-organ. The problem is, then, to account for the fact that the hallucination contains presentative elements that have sensory vividness, that are sensations, although they are not excited by impressions from the external world falling upon a sense-organ. Most of the discussions of this subject suffer from the neglect of this preliminary definition of the problem. Many authors, notably W. Wundt and his disciples, have been content to assume that the sensation differs from the memory-image only in having a higher degree of intensity; from which they infer that its neural correlate in the brain cortex also differs from that of the image only in having a higher degree of intensity. For them an hallucination is therefore merely a representation whose neural correlate involves an intensity of excitement of certain brain-elements such as is normally produced only by peripheral stimulation of sensory nerves in the sense-organs. But this view, so attractively simple, ignores an insuperable objection. Sensory vividness is not to be identified with superior intensity; for while the least intense sensation has it, the memory image of the most intense sensation lacks it completely. And, since intensity of sensation is a function of the intensity of the underlying neural excitement, we may not assume that sensory vividness is also the expression in consciousness of that intensity of excitement. If Wundt's view were true a progressive diminution of the intensity of a sensory stimulus should bring the sensation to a point in the scale of diminishing intensity at which it ceases to be sensation, ceases to have sensory vividness and becomes an image merely. But this is not the case; with diminishing intensity of stimulation, the sensation declines to a minimal intensity and then disappears from consciousness. This objection applies not only to Wundt's view of hallucinations, but also to H. Taine's explanation of them by the aid of his doctrine of "reductives," for this too identifies sensory vividness with intensity. (H. Taine, *De l'intelligence*, tome i. p. 108.)

Another widely current explanation is based on the view that the representation and the percept have their anatomical bases in different element-groups or "centres" of the brain, the

“centre” of the representation being assigned to a higher level of the brain than that of the percept (the latter being sometimes assigned to the basal ganglia of the brain, the former to the cortex). It is then assumed that while the lower perceptual centre is normally excited only through the sense-organ, it may occasionally be excited by impulses playing down upon it from the corresponding centre of representation, when hallucination results.

This view also is far from satisfactory, because the great additions recently made to our knowledge of the brain tend very strongly to show that both sensations and memory-images have their anatomical bases in the same sensory areas of the cerebral cortex; and many considerations converge to show that their anatomical bases must be, in part at least, identical.

The views based on the assumptions of complete identity, and of complete separateness, of the anatomical bases of the percept and of the representation are then alike untenable; and the alternative—that their anatomical bases are in part identical, in part different, which is indicated by this conclusion—renders possible a far more satisfactory doctrine. We have good reason to believe that the neural correlate of sensation is the transmission of the nervous impulse through a sensori-motor arc of the cortex, made up of a chain of neurones; and the view suggests itself that the neural correlate of the corresponding memory-image is the transmission of the impulse through a part only of this chain of cortical elements, either the efferent motor part of this chain or the afferent sensory part of it. Professor W. James’s theory of hallucinations is based on the latter assumption. He suggests that the sensory vividness of sensation and of the percept is due to the discharge of the excitement of the chain of elements in the forward or motor direction; and that, in the case of the image and of the representation, the discharge takes place, not in this direction through the efferent channel of the centre, but laterally into other centres of the cortex. Hallucination may then be conceived as caused by obstruction, or abnormally increased resistance, of the paths connecting such a cortical centre with others, so that, when it becomes excited in any way, the tension or potential of its charge rises, until discharge takes place in the motor direction through the efferent limbs of the sensori-motor arcs which constitute the centre.

It is a serious objection to this view that, as James himself, in common with most modern authors, maintains, every idea has its motor tendency which commonly, perhaps always, finds expression in some change of tension of muscles, and in many cases issues in actual movements. Now if we accept James’s theory of hallucination, we should expect to find that whenever a representation issues in bodily action it should assume the sensory vividness of an hallucination; and this, of course, is not the case.

The alternative form of the view that assumes partial identity of the anatomical bases of the percept and the representation of an object, would regard the neural correlate of the sensation as the transmission of the nervous impulse throughout the length of the sensori-motor arc of the cortex, from sensory inlet to motor outlet; and that of the image as its transmission through the efferent part of this arc only; that is to say, in the case of the image, it would regard the excitement of the arc as being initiated at some point between its afferent inlet and its motor outlet, and as spreading, in accordance with the law of forward conduction, towards the motor outlet only, so that only the part of the arc distal or efferent to this point becomes excited.

This view of the neural basis of sensory vividness, which correlates the difference between the sensation and the image with the only known difference between their physiological conditions, namely the peripheral initiation of the one and the central initiation of the other, enables us to formulate a satisfactory theory of the physiology of hallucinations.

The anatomical basis of the perception and of the representation of any object is a functional system of nervous elements, comprising a number of sensori-motor arcs, whose excitement by impulses ascending to them by the sensory paths from the sense-organs determines sensations, and whose excitement in their efferent parts only determines the corresponding images. In the case of perception, some of these arcs are excited by impulses ascending from the sense-organs, others only by the spread of the excitement through the system from these peripherally excited arcs; while, in the case of the representation, all alike are excited by impulses that reach the system from other parts of the cortex and spread throughout its efferent parts only to its motor outlets.

If then impulses enter this system by any of the afferent limbs of its sensori-motor arcs, the presentation that accompanies its excitement will have sensory vividness and will be a true perception, an illusion, or an hallucination, according as these impulses have followed the normal course from the sense-organ, or have been diverted, to a lesser or greater degree, from their normal paths. If any such neural system becomes abnormally excitable, or becomes excited in any way with abnormal intensity, it is thereby rendered a path of exceptionally low-resistance capable of diverting to itself, from their normal path, any streams of impulses ascending from the sense-organ; which ascending impulses, entering the system by its afferent inlets, excite sensations that impart to the presentation the character of sensory vividness; the presentation thus acquires the character of a percept in spite of the absence of the appropriate impression on

the sense-organ, and we call it an hallucination.

This view renders intelligible the *modus operandi* of many of the predisposing causes of hallucination; *e.g.* the pre-occupation with certain representations of the ecstatic, or of the sufferer from delusions of persecution; the intense expectation of a particular sense impression, the generally increased excitability of the cortex in states of delirium; in all these conditions the abnormally intense excitement of the cortical systems may be supposed to give them an undue directive and attractive influence upon the streams of impulses ascending from the sense-organs, so that sensory impulses may be diverted from their normal paths. Again, it renders intelligible the part played by chronic irritation of a sense-organ, as when chronic irritation of the internal ear leads on to hallucinations of hearing; perhaps also the chronic irritation of sensory nerves that must accompany the states of visceral disease, shown by Head to be so frequently accompanied by a liability to hallucinations; for any such chronic irritation supplies a stream of disorderly impulses rising constantly from the sense-organ, for the reception of which the brain has no appropriate system, and which, therefore, readily enters any organized cortical system that at any moment constitutes a path of low-resistance. A similar explanation applies to the influence of fixed gazing upon a crystal, or the placing of a shell over the ear, in inducing visual and auditory hallucinations. The "recurrent sensations" experienced after prolonged occupation with some one kind of sensory object may be regarded as due to an abnormal excitability of the cortical system concerned, resulting from its unduly prolonged exercise. The hypothesis renders intelligible also the liability to hallucination of persons in the hysterical and hypnotic states, in whose brains the cortical neural systems are in a state of partial dissociation, which renders possible an unduly intense and prolonged excitement of some one system at the expense of all other systems (cf. Hypnotism).

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Coincidental Hallucinations.—It would seem that, in well-nigh all countries and in all ages, apparitions of persons known to be in distant places have been occasionally observed. Such appearances have usually been regarded as due to the presence, before the bodily eye of the seer, of the ghost, wraith, double or soul of the person who thus appears; and, since the soul has been very commonly supposed to leave the body, permanently at death and temporarily during sleep, trance or any period of unconsciousness, however induced, it was natural to regard such an appearance as evidence that the person whose wraith was thus seen was in some such condition. Such apparitions have probably played a part, second only to that of dreams, in generating the almost universal belief in the separability of soul and body.

In many parts of the world traditional belief has connected such apparitions more especially with the death of the person so appearing, the apparition being regarded as an indication that the person so appearing has recently died, is dying or is about to die. Since death is so much less common an event than sleep, trance, or other form of temporary unconsciousness, the wide extension of this belief suggests that such apparitions may coincide in time with death, with disproportionate frequency. The belief in the significance of such apparitions still survives in civilized communities, and stories of apparitions coinciding with the death of the person appearing are occasionally reported in the newspapers, or related as having recently occurred. The Society for Psychical Research has sought to find grounds for an answer to the question "Is there any sufficient justification for the belief in a causal relation between the apparition of a person at a place distant from his body and his death or other exceptional and momentous event in his experience?" The problem was attacked in a thoroughly scientific spirit, an extensive inquiry was made, and the results were presented and fully discussed in two large volumes, *Phantasms of the Living*, published in the year 1886, bearing on the title-page the names of Edmund Gurney, F. W. H. Myers and F. Podmore. Of the three collaborators Gurney took the largest share in the planning of the work, in the collection of evidence, and in the elaboration and discussion of it.

Gurney set out with the presumption that apparitions, whether coincidental or not, are hallucinations in the sense defined above; that *they are false perceptions* and are not excited by any object or process of the external world acting upon the sense-organs of the percipient in normal fashion; that they do not imply the presence, in the place apparently occupied by them, of any wraith or any form of existence emanating from, or specially connected with, the person whose phantasm appears. This initial assumption was abundantly justified by an examination of a large number of cases for it, which showed that, in all important respects, most of these apparitions of persons at a distance, whether coincidental or not, were similar to other forms of hallucination.

The acceptance of this conclusion does not, however, imply a negative answer to the question formulated above. The Society for Psychical Research had accumulated an impressive and, to almost all those who had first-hand acquaintance with it, a convincing mass of experimental evidence of the reality of telepathy (*q.v.*), the influence of mind on mind otherwise than through the recognized channels of sense. The successful experiments had for the most part been made between persons in close proximity, in the same room or in adjoining rooms; but they seemed to

show that the state of consciousness of one person may induce directly (*i.e.* without the mediation of the organs of expression and sense-perception) a similar state of consciousness in another person, especially if the former, usually called the "agent," strongly desired or "willed" that this effect should be produced on the other person, the "percipient."

The question formulated above thus resolved itself for Gurney into the more definite form, "Can we find any good reason for believing that coincidental hallucinations are sometimes veridical, that the state of mind of a person at some great crisis of his experience may telepathically induce in the mind of some distant relative or friend an hallucinatory perception of himself?" It was at once obvious that, if coincidental apparitions can be proved to occur, this question can only be answered by a statistical inquiry; for each such coincidental hallucination, considered alone, may always be regarded as most educated persons of the present time have regarded them, namely, as merely accidental coincidences. That the coincidences are not merely accidental can only be proved by showing that they occur more frequently than the doctrine of chances would justify us in expecting. Now, the death of any person is a unique event, and the probability of its occurrence upon any particular day may be very simply calculated from the mortality statistics, if we assume that nothing is known of the individual's vitality. On the other hand, hallucinatory perceptions of persons, occurring to sane and healthy individuals in the fully waking state, are comparatively rare occurrences, whose frequency we may hope to determine by a statistical inquiry. If, then, we can obtain figures expressing the frequency of such hallucinations, we can deduce, by the help of the laws of chance, the proportion of such hallucinations that may be expected to coincide with (or, for the purposes of the inquiry, to fall within twelve hours of) the death of the person whose apparition appears, if no causal relation obtains between the coinciding events. If, then, it appears that the proportion of such coincidental hallucinations is greater than the laws of probability will account for, a certain presumption of a causal relation between the coinciding events is thereby established; and the greater the excess of such coincidences, the stronger does this presumption become. Gurney attempted a census of hallucinations in order to obtain data for this statistical treatment, and the results of it, embodied in *Phantasms of the Living*, were considered by the authors of that work to justify the belief that some coincidental hallucinations are veridical. In the year 1889 the Society for Psychical Research appointed a committee, under the chairmanship of the late Henry Sidgwick, to make a second census of hallucinations on a more extensive and systematic plan than the first, in order that the important conclusion reached by the authors of *Phantasms of the Living* might be put to the severer test rendered possible by a larger and more carefully collected mass of data. Seventeen thousand adults returned answers to the question, "Have you ever, when believing yourself to be completely awake, had a vivid impression of seeing or being touched by a living being or inanimate object, or of hearing a voice; which impression, so far as you could discover, was not due to any external physical cause?" Rather more than two thousand persons answered affirmatively, and to each of these were addressed careful inquiries concerning their hallucinatory experiences. In this way it was found that of the total number, 381 apparitions of persons living at the moment (or not more than twelve hours dead) had been recognized by the percipients, and that, of these, 80 were alleged to have been experienced within twelve hours of the death of the person whose apparition had appeared. A careful review of all the facts, conditions and probabilities, led the committee to estimate that the former number should be enlarged to 1300 in order to make ample allowance for forgetfulness and for all other causes that might have tended to prevent the registration of apparitions of this class. On the other hand, a severe criticism of the alleged death-coincidences led them to reduce the number, admitted by them for the purposes of their calculation, to 30. The making of these adjustments gives us about 1 in 43 as the proportion of coincidental death-apparitions to the total number of recognized apparitions among the 17,000 persons reached by the census. Now the death-rate being just over 19 per thousand, the probability that any person taken at random will die on a given day is about 1 in 19,000; or, more strictly speaking, the average probability that any person will die within any given period of twenty-four hours duration is about 1 in 19,000. Hence the probability that any other particular event, having no causal relation to his death, but occurring during his lifetime (or not later than twelve hours after his death) will fall within the same twenty-four hours as his death is 1 in 19,000; *i.e.* if an apparition of any individual is seen and recognized by any other person, the probability of its being experienced within twelve hours of that individual's death is 1 in 19,000, if no causal relation obtains between the two events. Therefore, of all recognized apparitions of living persons, 1 only in 19,000 may be expected to be a death-coincidence of this sort. But the census shows that of 1300 recognized apparitions of living persons 30 are death-coincidences and that is equivalent to 440 in 19,000. Hence, of recognized hallucinations, those coinciding with death are 440 times more numerous than we should expect, if no causal relation obtained; therefore, if neither the data nor the reasoning can be destructively criticized, we are compelled to believe that some causal relation obtains; and, since good evidence of telepathic communication has been experimentally obtained, the least improbable explanation of these death-apparitions is that the dying person exerts upon his distant friend some telepathic influence which generates an hallucinatory perception of himself.

These death-coincidences constitute the main feature of the argument in favour of telepathic communication between distant persons, but the census of hallucinations afforded other data from which a variety of arguments, tending to support this conclusion, were drawn by the committee; of these the most important are the cases in which the hallucinatory percept embodied details that were connected with the person perceived and which could not have become known to the percipient by any normal means. The committee could not find in the results of the census any evidence sufficient to justify a belief that hallucinations may be due to telepathic influence exerted by personalities surviving the death of the body.

The critical handling of the cases by the committee seems to be above reproach. Those who do not accept their conclusion based on the death-coincidences must direct their criticism to the question of the reliability of the reports of these cases. It is to be noted that, although only those cases are reckoned in which the percipient had no cause to expect the death of the person whose apparition he experienced, and although, in nearly all the accepted cases, some record or communication of the hallucination was made before hearing of the death, yet in very few cases was any contemporary written record of the event forthcoming for the inspection of the committee.

(W. McD.)

HALLUIN, a frontier town of northern France, in the department of Nord, near the right bank of the Lys, 14 m. N. by E. of Lille by rail. Pop. (1906) town, 11,670; commune, 16,158. Its church is of Gothic architecture. The manufactures comprise linen and cotton goods, chairs and rubber goods, and brewing and tanning are carried on; there is a board of trade arbitration. The family of Halluin is mentioned as early as the 13th century. In 1587 the title of duke and peer of the realm was granted to it, but in the succeeding century it became extinct.

HALM, CARL FELIX (1809-1882), German classical scholar and critic, was born at Munich on the 5th of April 1809. In 1849, after having held appointments at Spires and Hadamar, he became rector of the newly founded Maximiliansgymnasium at Munich, and in 1856 director of the royal library and professor in the university. These posts he held till his death on the 5th of October 1882. It is chiefly as the editor of Cicero and other Latin prose authors that Halm is known, although in early years he also devoted considerable attention to Greek. After the death of J. C. Orelli, he joined J. G. Baiter in the preparation of a revised critical edition of the rhetorical and philosophical writings of Cicero (1854-1862). His school editions of some of the speeches of Cicero in the Haupt and Sauppe series, with notes and introductions, were very successful. He also edited a number of classical texts for the Teubner series, the most important of which are Tacitus (4th ed., 1883); *Rhetores Latini minores* (1863); Quintilian (1868); Sulpicius Severus (1866); Minucius Felix together with Firmicus Maternus *De errore* (1867); Salvianus (1877) and Victor Vitensis's *Historia persecutionis Africanae provinciae* (1878). He was also an enthusiastic collector of autographs.

See articles by W. Christ and G. Laubmann in *Allgemeine deutsche Biographie* and by C. Bursian in *Biographisches Jahrbuch*; and J. E. Sandys, *Hist. of Classical Scholarship*, iii. 195 (1908).

HALMA (Greek for "jump"), a table game, a form of which was known to the ancient Greeks, played on a board divided into 256 squares with wooden *men*, resembling chess pawns. In the two-handed game 19 men are employed on each side, coloured respectively black and white; in the four-handed each player has 13, the men being coloured white, black, red and green. At the beginning of the game the men are drawn up in triangular formation in the enclosures, or *yards*, diagonally opposite each other in the corners of the board. The object of each player is to get all his men into his enemy's yard, the player winning who first accomplishes this. The moves are made alternately, the mode of progression being by a *step*, from one square to another

immediately adjacent, or by a jump (whence the name), which is the jumping of a man from a square in front of it into an empty square on the other side of it. This corresponds to jumping in draughts, except that, in halma, the hop may be in any direction, over friendly as well as hostile men, and the men jumped over are not taken but remain on the board.

In the four-handed game either each player plays for himself, or two adjacent players play against the other two.

See *Card and Table Games*, by Professor Hoffmann (London, 1903).

HALMAHERA [“great land”; also Jilolo or Gilolo], an island of the Dutch East Indies, belonging to the residency of Ternate, lying under the equator and about 128° E. Its shape is extremely irregular, resembling that of the island of Celebes. It consists of four peninsulas so arranged as to enclose three great bays (Kayu, Bicholi, Weda), all opening towards the east, the northern peninsula being connected with the others by an isthmus only 5 m. wide. On the western side of the isthmus lies another bay, that of Dodinga, in the mouth of which are situated the two islands Ternate and Tidore, whose political importance exceeds that of the larger island (see these articles). Of the four peninsulas of Halmahera the northern and the southern are reckoned to the sultanate of Ternate, the north-eastern and south-eastern to that of Tidore; the former having eleven, the latter three districts. The distance between the extremities of the northern and southern peninsulas, measured along the curve of the west coast, is about 240 m.; and the total area of the island is 6700 sq. m. Knowledge of the island is very incomplete. It appears that the four peninsulas are traversed in the direction of their longitudinal axis by mountain chains 3000 to 4000 ft. high, covered with forest, without a central chain at the nucleus of the island whence the peninsulas diverge. The mountain chains are frequently interrupted by plains, such as those of Weda and Kobi. The northern part of the mountain chain of the northern peninsula is volcanic, its volcanoes continuing the line of those of Makian, Ternate and Tidore. Coral formations on heights in the interior would indicate oscillations of the land in several periods, but a detailed geology of the island is wanting. To the north-east of the northern peninsula is the considerable island of Morotai (635 sq. m.), and to the west of the southern peninsula the more important island of Bachian (*q.v.*) among others. Galela is a considerable settlement, situated on a bay of the same name on the north-east coast, in a well cultivated plain which extends southward and inland. Vegetation is prolific. Rice is grown by the natives, but the sago tree is of far greater importance to them. Dammar and coco-nuts are also grown. The sea yields trepang and pearl shells. A little trade is carried on by the Chinese and Macassars of Ternate, who, crossing the narrow isthmus of Dodinga, enter the bay of Kayu on the east coast. The total population is estimated at 100,000.

The inhabitants are mostly of immigrant Malayan stock. In the northern peninsula are found people of Papuan type, probably representing the aborigines, and a tribe around Galela, who are 864
Polynesian in physique, possibly remnants, much mixed by subsequent crossings with the Papuan indigenes, of the Caucasian hordes emigrating in prehistoric times across the Pacific. M. Achille Raffray gives a description of them in *Tour du monde* (1879) where photographs will be found. “They are as unlike the Malays as we are, excelling them in tallness of stature and elegance of shape, and being perfectly distinguished by their oval face, with a fairly high and open brow, their aquiline nose and their horizontally placed eyes. Their beards are sometimes thick; their limbs are muscular; the colour of their skins is cinnamon brown. Spears of iron-wood, abundantly barbed, and small bows and bamboo arrows free from poison are their principal weapons.” They are further described as having temples (*sabuas*) in which they suspend images of serpents and other monsters as well as the trophies procured by war. They believe in a better life hereafter, but have no idea of a hell or a devil, their evil spirits only tormenting them in the present state.

The Portuguese and Spaniards were better acquainted with Halmahera than with many other parts of the archipelago; they called it sometimes Batu China and sometimes Moro. It was circumnavigated by one of their vessels in 1525, and the general outline of the coasts is correctly given in their maps at a time when separate portions of Celebes, such as Macassar and Menado, are represented as distinct islands. The name (Jilolo) was really that of a native state, the sultan of which had the chief rank among the princes of the Moluccas before he was supplanted by the sultan of Ternate about 1380. His capital, Jilolo, lay on the west coast on the first bay to the north of that of Dodinga. In 1876 Danu Hassan, a descendant of the sultans of Jilolo, raised an insurrection in the island for the purpose of throwing off the authority of the sultans of Tidore and Ternate; and his efforts would probably have been successful but for the intervention of the Dutch. In 1878 a Dutch expedition was directed against the pirates of

Tobalai, and they were virtually extirpated. Slavery remains in the interior. Missionary work, carried on in the northern peninsula of Halmahera since 1866, has been fairly successful among the heathen natives, but less so among the Mahommedans, who have often incited the others against the missionaries and their converts.

HALMSTAD, a seaport of Sweden, chief town of the district (*län*) of Halland, on the E. shore of the Cattegat, 76 m. S.S.E. of Gothenburg by the railway to Helsingborg. Pop. (1900), 15,362. It lies at the mouth of the river Nissa, having an inner harbour (15 ft. depth), an outer harbour, and roads giving anchorage (24 to 36 ft.) exposed to S. and N.W. winds. In the neighbourhood there are quarries of granite, which is exported chiefly to Germany. Other industries are engineering, shipbuilding and brewing, and there are cloth, jute, hat, wood-pulp and paper factories. The principal exports are granite, timber and hats; and butter through Helsingborg and Gothenburg. The imports are coal, machinery and grain. Potatoes are largely grown in the district, and the salmon fisheries are valuable. The castle is the residence of the governor of the province. There are both mineral and sea-water baths in the neighbourhood.

Mention of the church of Halmstad occurs as early as 1462, and the fortifications are mentioned first in 1225. The latter were demolished in 1734. There were formerly Dominican and Franciscan monasteries in the town. The oldest town-privileges date from 1307. During the revolt of the miner Engelbrekt, it twice fell into the hands of the rebels—in 1434 and 1436. The town appears to have been frequently chosen as the meeting-place of the rulers and delegates of the three northern kingdoms; and under the union of Kalmar it was appointed to be the place for the election of a new Scandinavian monarch whenever necessary. The *län* of Halland formed part of the territory of Denmark in Sweden, and accordingly, in 1534, during his war with the Danes, Gustavus Vasa assaulted and took its chief town. In 1660, by the treaty of Copenhagen, the whole district was ceded to Sweden. In 1676 Charles XII. defeated near Halmstad a Danish army which was attempting to retake the district, and since that time Halland has formed part of Sweden.

HALO, a word derived from the Gr. ἅλως, a threshing-floor, and afterwards applied to denote the disk of the sun or moon, probably on account of the circular path traced out by the oxen threshing the corn. It was thence applied to denote any luminous ring, such as that viewed around the sun or moon, or portrayed about the heads of saints.

In physical science, a halo is a luminous circle, surrounding the sun or moon, with various auxiliary phenomena, and formed by the reflection and refraction of light by ice-crystals suspended in the atmosphere. The optical phenomena produced by atmospheric water and ice may be divided into two classes, according to the relative position of the luminous ring and the source of light. In the first class we have *halos*, and *coronae*, or “glories,” which encircle the luminary; the second class includes *rainbows*, *fog-bows*, *mist-halos*, *anthelia* and *mountain-spectres*, whose centres are at the anti-solar point. Here it is only necessary to distinguish halos from coronae. Halos are at definite distances (22° and 46°) from the sun, and are coloured red on the *inside*, being due to refraction; coronae closely surround the sun at variable distances, and are coloured red on the *outside*, being due to diffraction.

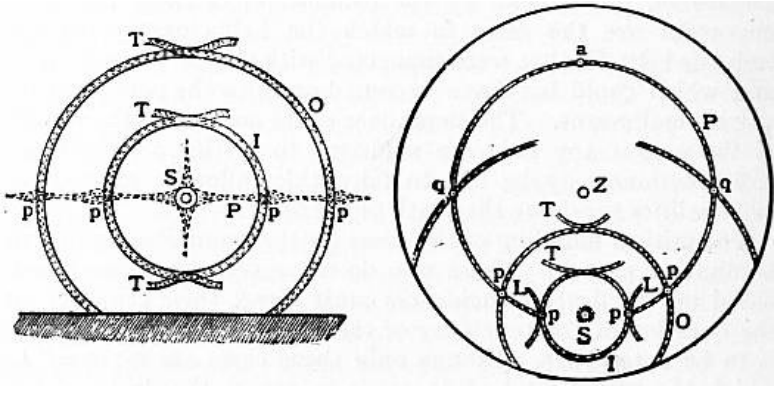


Fig. 1. Fig. 2.

The phenomenon of a solar (or lunar) halo as seen from the earth is represented in fig. 1; fig. 2 is a diagrammatic sketch showing the appearance as viewed from the zenith; but it is only in exceptional circumstances that all the parts are seen. Encircling the sun or moon (S), there are two circles, known as the inner halo I, and the outer halo O, having radii of about 22° and 46°, and exhibiting the colours of the spectrum in a confused manner, the only decided tint being the red on the inside. Passing through the luminary and parallel to the horizon, there is a white luminous circle, the *parhelic circle* (P), on which a number of images of the luminary appear. The most brilliant are situated at the intersections of the inner halo and the parhelic circle; these are known as *parhelia* (denoted by the letter *p* in the figures) (from the Gr. παρά, beside, and ἥλιος, the sun) or "mock-suns," in the case of the sun, and as *paraselenae* (from παρά and σελήνη, the moon) or "mock-moons," in the case of the moon. Less brilliant are the parhelia of the outer halo. The parhelia are most brilliant when the sun is near the horizon. As the sun rises, they pass a little beyond the halo and exhibit flaming tails. The other images on the parhelic circle are the *paranthelia* (*q*) and the *anthelion* (*a*) (from the Greek ἀντί, opposite, and ἥλιος, the sun). The former are situated at from 90° to 140° from the sun; the latter is a white patch of light situated at the anti-solar point and often exceeding in size the apparent diameter of the luminary. A vertical circle passing through the sun may also be seen. From the parhelia of the inner halo two oblique curves (L) proceed. These are known as the "arcs of Lowitz," having been first described in 1794 by Johann Tobias Lowitz (1757-1804). Luminous arcs (T), tangential to the upper and lower parts of each halo, also occur, and in the case of the inner halo, the arcs may be prolonged to form a quasi-elliptic halo.

The physical explanation of halos originated with René Descartes, who ascribed their formation to the presence of ice-crystals in the atmosphere. This theory was adopted by Edmé Mariotte, Sir Isaac Newton and Thomas Young; and, although certain of their assumptions were somewhat arbitrary, yet the general validity of the theory has been demonstrated by the researches of J. G. Galle and A. Bravais. The memoir of the last-named, published in the *Journal de l'École royale polytechnique* for 1847 (xviii., 1-270), ranks as a classic on the subject; it is replete with examples and illustrations, and discusses the various phenomena in minute detail.

The usual form of ice-crystals in clouds is a right hexagonal prism, which may be elongated as a needle or foreshortened like a thin plate. There are three refracting angles possible, one of 120° between two adjacent prism faces, one of 60° between two alternate prism faces, and one of 90° between a prism face and the base. If innumerable numbers of such crystals fall in any manner between the observer and the sun, light falling upon these crystals will be refracted, and the refracted rays will be crowded together in the position of minimum deviation (see Refraction of Light). Mariotte explained the inner halo as being due to refraction through a pair of alternate faces, since the minimum deviation of an ice-prism whose refracting angle is 60° is about 22°. Since the minimum deviation is least for the least refrangible rays, it follows that the red rays will be the least refracted, and the violet the more refracted, and therefore the halo will be coloured red on the inside. Similarly, as explained by Henry Cavendish, the halo of 46° is due to refraction by faces inclined at 90°. The impurity of the colours (due partly to the sun's diameter, but still more to oblique refraction) is more marked in halos than in rainbows; in fact, only the red is at all pure, and as a rule, only a mere trace of green or blue is seen, the external portion of each halo being nearly white.

The two halos are the only phenomena which admit of explanation without assigning any particular distribution to the ice-crystals. But it is obvious that certain distributions will predominate, for the crystals will tend to fall so as to offer the least resistance to their motion; a needle-shaped crystal tending to keep its axis vertical, a plate-shaped crystal to keep its axis horizontal. Thomas Young explained the parhelic circle (P) as due to reflection from the vertical faces of the long prisms and the bases of the short ones. If these vertical faces become very numerous, the eye will perceive a colourless horizontal circle. Reflection from an excess of horizontal prisms gives rise to a vertical circle passing through the sun.

The parhelia (*p*) were explained by Mariotte as due to refraction through a pair of alternate faces of a vertical prism. When the sun is near the horizon the rays fall upon the principal section of the prisms; the minimum deviation for such rays is 22°, and consequently the parhelia are not only on the inner halo, but also on the parhelic circle. As the sun rises, the rays enter the prisms more and more obliquely, and the angle of minimum deviation increases; but since the emergent ray makes the same angle with the refracting edge as the incident ray, it follows that the parhelia will remain on the parhelic circle, while receding from the inner halo. The different values of the angle of minimum deviation for rays of different refrangibilities give rise to spectral colours, the red being nearest the sun, while farther away the overlapping of the spectra forms a flaming colourless tail sometimes extending over as much as 10° to 20°. The "arcs of Lowitz" (L) are probably due to small oscillations of the vertical prisms.

The “tangential arcs” (T) were explained by Young as being caused by the thin plates with their axes horizontal, refraction taking place through alternate faces. The axes will take up any position, and consequently give rise to a continuous series of parhelia which touch externally the inner halo, both above and below, and under certain conditions (such as the requisite altitude of the sun) form two closed elliptical curves; generally, however, only the upper and lower portions are seen. Similarly, the tangential arcs to the halo of 46° are due to refraction through faces inclined at 90°.

The paranthelia (*q*) may be due to two internal or two external reflections. A pair of triangular prisms having a common face, or a stellate crystal formed by the symmetrical interpenetration of two triangular prisms admits of two internal reflections by faces inclined at 120°, and so give rise to two colourless images each at an angular distance of 120° from the sun. Double internal reflection by a triangular prism would form a single coloured image on the parhelic circle at about 98° from the sun. These angular distances are attained only when the sun is on the horizon, and they increase as it rises.

The anthelion (*a*) may be explained as caused by two internal reflections of the solar rays by a hexagonal lamellar crystal, having its axis horizontal and one of the diagonals of its base vertical. The emerging rays are parallel to their original direction and form a colourless image on the parhelic circle opposite the sun.

REFERENCES.—Auguste Bravais’s celebrated memoir, “Sur les halos et les phénomènes optiques qui les accompagnent” (*Journ. École poly.* vol. xviii., 1847), contains a full account of the geometrical theory. See also E. Mascart, *Traité d’optique*; J. Pernter, *Meteorologische Optik* (1902-1905); and R. S. Heath, *Geometrical Optics*.

HALOGENS. The word halogen is derived from the Greek ἅλς (sea-salt) and γεννᾶν (to produce), and consequently means the sea-salt producer. The term is applied to the four elements fluorine, chlorine, bromine and iodine, on account of the great similarity of their sodium salts to ordinary sea-salt. These four elements show a great resemblance to one another in their general chemical behaviour, and in that of their compounds, whilst their physical properties show a gradual transition. Thus, as the atomic weight increases, the state of aggregation changes from that of a gas in the case of fluorine and chlorine, to that of a liquid (bromine) and finally to that of the solid (iodine); at the same time the melting and boiling points rise with increasing atomic weights. The halogen of lower atomic weight can displace one of higher atomic weight from its hydrogen compound, or from the salt derived from such hydrogen compound, while, on the other hand, the halogen of higher atomic weight can displace that of lower atomic weight, from the halogen oxy-acids and their salts; thus iodine will liberate chlorine from potassium chlorate and also from perchloric acid. All four of the halogens unite with hydrogen, but the affinity for hydrogen decreases as the atomic weight increases, hydrogen and fluorine uniting explosively at very low temperatures and in the dark, whilst hydrogen and iodine unite only at high temperatures, and even then the resulting compound is very readily decomposed by heat. The hydrides of the halogens are all colourless, strongly fuming gases, readily soluble in water and possessing a strong acid reaction; they react readily with basic oxides, forming in most cases well defined crystalline salts which resemble one another very strongly. On the other hand the stability of the known oxygen compounds increases with the atomic weight, thus iodine pentoxide is, at ordinary temperatures, a well-defined crystalline solid, which is only decomposed on heating strongly, whilst chlorine monoxide, chlorine peroxide, and chlorine heptoxide are very unstable, even at ordinary temperatures, decomposing at the slightest shock. Compounds of fluorine and oxygen, and of bromine and oxygen, have not yet been isolated. In some respects there is a very marked difference between fluorine and the other members of the group, for, whilst sodium chloride, bromide and iodide are readily soluble in water, sodium fluoride is much less soluble; again, silver chloride, bromide and iodide are practically insoluble in water, whilst, on the other hand, silver fluoride is appreciably soluble in water. Again, fluorine shows a great tendency to form double salts, which have no counterpart among the compounds formed by the other members of the family.

HALS, FRANS (1580?-1666), Dutch painter, was born at Antwerp according to the most recent authorities in 1580 or 1581, and died at Haarlem in 1666. As a portrait painter second

only to Rembrandt in Holland, he displayed extraordinary talent and quickness in the exercise of his art coupled with improvidence in the use of the means which that art secured to him. At a time when the Dutch nation fought for independence and won it, Hals appears in the ranks of its military gilds. He was also a member of the Chamber of Rhetoric, and (1644) chairman of the Painters' Corporation at Haarlem. But as a man he had failings. He so ill-treated his first wife, Anneke Hermansz, that she died prematurely in 1616; and he barely saved the character of his second, Lysbeth Reyniers, by marrying her in 1617. Another defect was partiality to drink, which led him into low company. Still he brought up and supported a family of ten children with success till 1652, when the forced sale of his pictures and furniture, at the suit of a baker to whom he was indebted for bread and money, brought him to absolute penury. The inventory of the property seized on this occasion only mentions three mattresses and bolsters, an armoire, a table and five pictures. This humble list represents all his worldly possessions at the time of his bankruptcy. Subsequently to this he was reduced to still greater straits, and his rent and firing were paid by the municipality, which afterwards gave him (1664) an annuity of 200 florins. We may admire the spirit which enabled him to produce some of his most striking works in his unhappy circumstances: we find his widow seeking outdoor relief from the guardians of the poor, and dying obscurely in a hospital.

Hals's pictures illustrate the various strata of society into which his misfortunes led him. His banquets or meetings of officers, of sharpshooters, and gildsmen are the most interesting of his works. But they are not more characteristic than his low-life pictures of itinerant players and singers. His portraits of gentlefolk are true and noble, but hardly so expressive as those of fishwives and tavern heroes.

His first master at Antwerp was probably van Noort, as has been suggested by M. G. S. Davies, but on his removal to Haarlem Frans Hals entered the atelier of van Mander, the painter and historian, of whom he possessed some pictures which went to pay the debt of the baker already alluded to. But he soon improved upon the practice of the time, illustrated by J. van Schoreel and Antonio Moro, and, emancipating himself gradually from tradition, produced pictures remarkable for truth and dexterity of hand. We prize in Rembrandt the golden glow of effects based upon artificial contrasts of low light in immeasurable gloom. Hals was fond of daylight of silvery sheen. Both men were painters of touch, but of touch on different keys—Rembrandt was the bass, Hals the treble. The latter is perhaps more expressive than the former. He seizes with rare intuition a moment in the life of his sitters. What nature displays in that moment he reproduces thoroughly in a very delicate scale of colour, and with a perfect mastery over every form of expression. He becomes so clever at last that exact tone, light and shade, and modelling are all obtained with a few marked and fluid strokes of the brush.

In every form of his art we can distinguish his earlier style from that of later years. It is curious that we have no record of any work produced by him in the first decade of his independent activity, save an engraving by Jan van de Velde after a lost portrait of "The Minister Johannes Bogardus," who died in 1614. The earliest works by Frans Hals that have come down to us, "Two Boys Playing and Singing" in the gallery of Cassel, and a "Banquet of the officers of the 'St Joris Doele'" or Arquebusiers of St George (1616) in the museum of Haarlem, exhibit him as a careful draughtsman capable of great finish, yet spirited withal. His flesh, less clear than it afterwards becomes, is pastose and burnished. Later he becomes more effective, displays more freedom of hand, and a greater command of effect. At this period we note the beautiful full-length of "Madame van Beresteyn" at the Louvre in Paris, and a splendid full-length portrait of "Willem van Heythuysen" leaning on a sword in the Liechtenstein collection at Vienna. Both these pictures are equalled by the other "Banquet of the officers, of the Arquebusiers of St George" (with different portraits) and the "Banquet of the officers of the 'Cloveniers Doelen'" or Arquebusiers of St Andrew of 1627 and an "Assembly of the officers of the Arquebusiers of St Andrew" of 1633 in the Haarlem Museum. A picture of the same kind in the town hall of Amsterdam, with the date of 1637, suggests some study of the masterpieces of Rembrandt, and a similar influence is apparent in a picture of 1641 at Haarlem, representing the "Regents of the Company of St Elizabeth" and in the portrait of "Maria Voogt" at Amsterdam. But Rembrandt's example did not create a lasting impression on Hals. He gradually dropped more and more into grey and silvery harmonies of tone; and two of his canvases, executed in 1664, "The Regents and Regentesses of the Oudemannenhuis" at Haarlem, are masterpieces of colour, though in substance all but monochromes. In fact, ever since 1641 Hals had shown a tendency to restrict the gamut of his palette, and to suggest colour rather than express it. This is particularly noticeable in his flesh tints which from year to year became more grey, until finally the shadows were painted in almost absolute black, as in the "Tymane Oosdorp," of the Berlin Gallery. As this tendency coincides with the period of his poverty, it has been suggested that one of the reasons, if not the only reason, of his predilection for black and white pigment was the cheapness of these colours as compared with the costly lakes and carmines.

As a portrait painter Frans Hals had scarcely the psychological insight of a Rembrandt or Velazquez, though in a few works, like the "Admiral de Ruyter," in Earl Spencer's collection, the

"Jacob Olycan" at the Hague Gallery, and the "Albert van der Meer" at Haarlem town hall, he reveals a searching analysis of character which has little in common with the instantaneous expression of his so-called "character" portraits. In these he generally sets upon the canvas the fleeting aspect of the various stages of merriment, from the subtle, half ironic smile that quivers round the lips of the curiously misnamed "Laughing Cavalier" in the Wallace Collection to the imbecile grin of the "Hille Bobbe" in the Berlin Museum. To this group of pictures belong Baron Gustav Rothschild's "Jester," the "*Bohémienne*" at the Louvre, and the "Fisher Boy" at Antwerp, whilst the "Portrait of the Artist with his second Wife" at the Ryks Museum in Amsterdam, and the somewhat confused group of the "Beresteyn Family" at the Louvre show a similar tendency. Far less scattered in arrangement than this Beresteyn group, and in every respect one of the most masterly of Frans Hals's achievements is the group called "The Painter and his Family" in the possession of Colonel Warde, which was almost unknown until it appeared at the winter exhibition at the Royal Academy in 1906.

Though a visit to Haarlem town hall, which contains the five enormous Doelen groups and the two Regenten pictures, is as necessary for the student of Hals's art as a visit to the Prado in Madrid is for the student of Velazquez, good examples of the Dutch master have found their way into most of the leading public and private collections. In the British Isles, besides the works already mentioned, portraits from his brush are to be found at the National Gallery, the Edinburgh Gallery, the Glasgow Corporation Gallery, Hampton Court, Buckingham Palace, Devonshire House, and the collections of Lord Northbrooke, Lord Ellesmere, Lord Iveagh and Lord Spencer.

At Amsterdam is the celebrated "Flute Player," once in the Dupper collection at Dort; at Brussels, the patrician "Heythuysen"; at the Louvre, "Descartes"; at Dresden, the painter "Van der Vinne." Hals's sitters were taken from every class of society—admirals, generals and burgomasters pairing with merchants, lawyers, clerks. To register all that we find in public galleries would involve much space. There are eight portraits at Berlin, six at Cassel, five at St Petersburg, six at the Louvre, two at Brussels, five at Dresden, two at Gotha. In private collections, chiefly in Paris, Haarlem and Vienna, we find an equally important number. Amongst the painter's most successful representations of fishwives and termagants we should distinguish the "Hille Bobbe" of the Berlin Museum, and the "Hille Bobbe with her Son" in the Dresden Gallery. Itinerant players are best illustrated in the Neville-Goldsmith collection at the Hague, and the Six collection at Amsterdam. Boys and girls singing, playing or laughing, or men drinking, are to be found in the gallery of Schwerin, in the Arenberg collection, and in the royal palace at Brussels.

For two centuries after his death Frans Hals was held in such poor esteem that some of his paintings, which are now among the proudest possessions of public galleries, were sold at auction for a few pounds or even shillings. The portrait of "Johannes Acronius," now at the Berlin Museum, realized five shillings at the Enschede sale in 1786. The splendid portrait of the man with the sword at the Liechtenstein gallery was sold in 1800 for £4, 5s. With his rehabilitation in public esteem came the enormous rise in values, and, at the Secretan sale in 1889, the portrait of "Pieter van de Broecke d'Anvers" was bid up to £4420, while in 1908 the National Gallery paid £25,000 for the large group from the collection of Lord Talbot de Malahide.

Of the master's numerous family none has left a name except Frans Hals the Younger, born about 1622, who died in 1669. His pictures represent cottages and poultry; and the "Vanitas" at Berlin, a table laden with gold and silver dishes, cups, glasses and books, is one of his finest works and deserving of a passing glance.

Quite in another form, and with much of the freedom of the elder Hals, Dirk Hals, his brother (born at Haarlem, died 1656), is a painter of festivals and ball-rooms. But Dirk had too much of the freedom and too little of the skill in drawing which characterized his brother. He remains second on his own ground to Palamedes. A fair specimen of his art is a "Lady playing a Harpsichord to a Young Girl and her Lover" in the van der Hoop collection at Amsterdam, now in the Ryks Museum. More characteristic, but not better, is a large company of gentle-folk rising from dinner, in the Academy at Vienna.

Literature.—See W. Bode, *Frans Hals und seine Schule* (Leipzig, 1871); W. Unger and W. Vosmaer, *Etchings after Frans Hals* (Leyden, 1873); Percy Rendell Head, *Sir Anthony Van Dyck and Frans Hals* (London, 1879); D. Knackfuss, *Frans Hals* (Leipzig, 1896); G. S. Davies, *Frans Hals* (London, 1902).

(P. G. K.)

HALSBURY, HARDINGE STANLEY GIFFARD, 1ST EARL OF (1825-), English lord chancellor, son of Stanley Lees Giffard, LL.D., was born in London on the 3rd of September 1825. He was educated at Merton College, Oxford, and was called to the bar at the Inner Temple in 1850, joining the North Wales and Chester circuit. Afterwards he had a large practice at the central criminal court and the Middlesex sessions, and he was for several years junior prosecuting counsel to the treasury. He was engaged in most of the celebrated trials of his time, including the Overend and Gurney and the Tichborne cases. He became queen's counsel in 1865, and a bencher of the Inner Temple. Mr Giffard twice contested Cardiff in the Conservative interest, in 1868 and 1874, but he was still without a seat in the House of Commons when he was appointed solicitor-general by Disraeli in 1875 and received the honour of knighthood. In 1877 he succeeded in obtaining a seat, when he was returned for Launceston, which borough he continued to represent until his elevation to the peerage in 1885. He was then created Baron Halsbury and appointed lord chancellor, thus forming a remarkable exception to the rule that no criminal lawyer ever reaches the woolsack. Lord Halsbury resumed the position in 1886 and held it until 1892 and again from 1895 to 1905, his tenure of the office, broken only by the brief Liberal ministries of 1886 and 1892-1895, being longer than that of any lord chancellor since Lord Eldon. In 1898 he was created earl of Halsbury and Viscount Tiverton. Among Conservative lord chancellors Lord Halsbury must always hold a high place, his grasp of legal principles and mastery in applying them being pre-eminent among the judges of his day.

HALSTEAD, a market-town in the Maldon parliamentary division of Essex, England, on the Colne, 17 m. N.N.E. from Chelmsford; served by the Colne Valley railway from Chappel Junction on the Great Eastern railway. Pop. of urban district (1901), 6073. It lies on a hill in a pleasant wooded district. The church of St Andrew is mainly Perpendicular. It contains a monument supposed to commemorate Sir Robert Bourchier (d. 1349), lord chancellor to Edward III. The Lady Mary Ramsay grammar school dates from 1594. There are large silk and crape works. Two miles N. of Halstead is Little Maplestead, where the church is the latest in date of the four churches with round naves extant in England, being perhaps of 12th-century foundation, but showing early Decorated work in the main. The chancel, which is without aisles, terminates in an apse. Three miles N.W. from Halstead are the large villages of Sible Hedingham (pop. 1701) and Castle Hedingham (pop. 1097). At the second is the Norman keep of the de Veres, of whom Aubrey de Vere held the lordship from William I. The keep dates from the end of the 11th century, and exhibits much fine Norman work. The church of St Nicholas, Castle Hedingham, has fine Norman, Transitional and Early English details, and there is a black marble tomb of John de Vere, 15th earl of Oxford (d. 1540), with his countess.

There are signs of settlement at Halstead (Halsteda, Halgusted, Halsted) in the Bronze Age; but there is no evidence of the causes of its growth in historic times. Probably its situation on the river Colne made it to some extent a local centre. Throughout the middle ages Halstead was unimportant, and never rose to the rank of a borough.

HALT. (1) An adjective common to Teutonic languages and still appearing in Swedish and Danish, meaning lame, crippled. It is also used as a verb, meaning to limp, and as a substantive, especially in the term "string-halt" or "spring-halt," a nervous disorder affecting the muscles of the hind legs of horses. (2) A pause or stoppage made on a march or a journey. The word came into English in the form "to make alto" or "alt," and was taken from the French *faire alte* or Italian *far alto*. The origin is a German military term, *Halt machen*, *Halt* meaning "hold."

HALUNTIUM (Gr. Ἁλόντιον, mod. S. Marco d'Alunzio), an ancient city of Sicily, 6 m. from the north coast and 25 m. E.N.E. of Halaesa. It was probably of Sicel origin, though its foundation was ascribed to some of the companions of Aeneas. It appears first in Roman times as a place of some importance, and suffered considerably at the hands of Verres. The abandoned church of S.

Mark, just outside the modern town, is built into the cella of an ancient Greek temple, which measures 62 ft. by 18. A number of ancient inscriptions have been found there.

HALYBURTON, JAMES (1518-1589), Scottish reformer, was born in 1518, and was educated at St Andrews, where he graduated M.A. in 1538. From 1553 to 1586 he was provost of St Andrews and a prominent figure in the national life. He was chosen as one of the lords of the congregation in 1557, and commanded the contingents sent by Forfar and Fife against the queen regent in 1559. He took part in the defence of Edinburgh, and in the battles of Langside (1568) and Restalrig (1571). He had stoutly opposed the marriage of Mary with Darnley, and when, after Restalrig, he was captured by the queen's troops, he narrowly escaped execution. He represented Morton at the conference of 1578, and was one of the royal commissioners to the General Assembly in 1582 and again in 1588. He died in February 1589.

HALYBURTON, THOMAS (1674-1712), Scottish divine, was born at Dupplin, near Perth, on the 25th of December 1674. His father, one of the ejected ministers, having died in 1682, he was taken by his mother in 1685 to Rotterdam to escape persecution, where he for some time attended the school founded by Erasmus. On his return to his native country in 1687 he completed his elementary education at Perth and Edinburgh, and in 1696 graduated at the university of St Andrews. In 1700 he was ordained minister of the parish of Ceres, and in 1710 he was recommended by the synod of Fife for the chair of theology in St Leonard's College, St Andrews, to which accordingly he was appointed by Queen Anne. After a brief term of active professorial life he died from the effects of overwork in 1712.

The works by which he continues to be known were all of them published after his death. Wesley and Whitefield were accustomed to commend them to their followers. They were published as follows: *Natural Religion Insufficient, and Revealed Religion Necessary, to Man's Happiness in his Present State* (1714), an able statement of the orthodox Calvinistic criticism of the deism of Lord Herbert of Cherbury and Charles Blount; *Memoirs of the Life of Mr Thomas Halyburton* (1715), three parts by his own hand, the fourth from his diary by another hand; *The Great Concern of Salvation* (1721), with a word of commendation by I. Watts; *Ten Sermons Preached Before and After the Lord's Supper* (1722); *The Unpardonable Sin Against the Holy Ghost* (1784). See Halyburton's *Memoirs* (1714).

HAM, in the Bible. (1) חם, *Ḥām*, in Gen. v. 32, vi. 10, vii. 13, ix. 18, x. 5, 1 Chron. i. 4, the *second* son of Noah; in Gen. ix. 24, the *youngest* son (but cf. below); and in Gen. x. 6, 1 Chron. i. 8, the father of Cush (Ethiopia), Mizraim (Egypt), Phut and Canaan. Genesis x. exhibits in the form of genealogies the political, racial and geographical relations of the peoples known to Israel; as it was compiled from various sources and has been more than once edited, it does not exactly represent the situation at any given date,[1] but Ham seems to stand roughly for the south-western division of the world as known to Israel, which division was regarded as the natural sphere of influence of Egypt. Ham is held to be the Egyptian word *Khem* (black) which was the native name of Egypt; thus in Pss. lxxviii. 51, cv. 23, 27, cvi. 22, Ham = Egypt. In Gen. ix. 20-26 Canaan was originally the third son of Noah and the villain of the story. Ham is a later addition to harmonize with other passages.

(2) חם, *Ḥām*, 1 Chron. iv. 40, apparently the name of a place or tribe. It can hardly be identical with (1); nothing else is known of this second Ham, which may be a scribe's error; the Syriac version rejects the name.

(3) חם, *Ḥam*, Gen. xiv. 5; the place where Chedorlaomer defeated the Zuzim, apparently in eastern Palestine. The place is unknown, and the name may be a scribe's error, perhaps for Ammon.

(W. H. Be.)

1 A. Jeremias, *Das A.T. im Lichte des alten Orients*, p. 145, holds that it represents the situation in the 8th century B.C.

HAM, a small town of northern France, in the department of Somme, 36 m. E.S.E. of Amiens on the Northern railway between that city and Laon. Pop. (1906), 2957. It stands on the Somme in a marshy district where market-gardening is carried on. From the 9th century onwards it appears as the seat of a lordship which, after the extinction of its hereditary line, passed in succession to the houses of Coucy, Enghien, Luxembourg, Rohan, Vendôme and Navarre, and was finally united to the French crown on the accession of Henry IV. Notre-Dame, the church of an abbey of canons regular of St Augustin, dates from the 12th and 13th centuries, but in 1760 all the inflammable portions of the building were destroyed by a conflagration caused by lightning, and a process of restoration was subsequently carried out. Of special note are the bas-reliefs of the nave and choir, executed in the 17th and 18th centuries, and the crypt of the 12th century, which contains the sepulchral effigies of Odo IV. of Ham and his wife Isabella of Béthencourt. The castle, founded before the 10th century, was rebuilt early in the 13th, and extended in the 14th; its present appearance is mainly due to the constable Louis of Luxembourg, count of St Pol, who between 1436 and 1470 not only furnished it with outworks, but gave such a thickness to the towers and curtains, and more especially to the great tower or donjon which still bears his motto *Mon Myeulx*, that the great engineer and architect Viollet-le-Duc considered them, even in the 19th century, capable of resisting artillery. It forms a rectangle 395 ft. long by 263 ft. broad, with a round tower at each angle and two square towers protecting the curtains. The eastern and western sides are each defended by a demi-lune. The Constable's Tower, for so the great tower is usually called in memory of St Pol, has a height of about 100 ft., and the thickness of the walls is 36 ft.; the interior is occupied by three large hexagonal chambers in as many stories. The castle of Ham, which now serves as barracks, has frequently been used as a state prison both in ancient and modern times, and the list of those who have sojourned there is an interesting one, including as it does Joan of Arc, Louis of Bourbon, the ministers of Charles X., Louis Napoleon, and Generals Cavaignac and Lamoricière. Louis Napoleon was there for six years, and at last effected his escape in the disguise of a workman. During 1870-1871 Ham was several times captured and recaptured by the belligerents. A statue commemorates the birth in the town of General Foy (1775-1825).

See J. G. Cappot, *Le Château de Ham* (Paris, 1842); and Ch. Gomart, *Ham, son château et ses prisonniers* (Ham, 1864).

HAMADĀN, a province and town of Persia. The province is bounded N. by Gerrūs and Khamseh, W. by Kermanshah, S. by Malāyir and Irāk, E. by Savah and Kazvin. It has many well-watered, fertile plains and more than four hundred flourishing villages producing much grain, and its population, estimated at 350,000—more than half being Turks of the Karaguzlu (black-eyed) and Shāmlu (Syrian) tribes—supplies several battalions of infantry to the army, and pays, besides, a yearly revenue of about £18,000.

Hamadān, the capital of the province, is situated 188 m. W.S.W. of Teheran, at an elevation of 5930 ft., near the foot of Mount Elvend (old Persian *Arvand*, Gr. *Orontes*), whose granite peak rises W. of it to an altitude of 11,900 ft. It is a busy trade centre with about 40,000 inhabitants (comprising 4000 Jews and 300 Armenians), has extensive and well-stocked bazaars and fourteen large and many small caravanserais. The principal industries are tanning leather and the manufacture of saddles, harnesses, trunks, and other leather goods, felts and copper utensils. The leather of Hamadān is much esteemed throughout the country and exported to other provinces in great quantities. The streets are narrow, and by a system called Kūcheh-bandi (street-closing) established long ago for impeding the circulation of crowds and increasing general security, every quarter of the town, or block of buildings, is shut off from its neighbours by gates which are closed during local disorders and regularly at night. Hamadān has post and telegraph offices and two churches, one Armenian, the other Protestant (of the American Presbyterian Mission).

Among objects of interest are the alleged tombs of Esther and Mordecai in an insignificant domed building in the centre of the town. There are two wooden sarcophagi carved all over with Hebrew inscriptions. That ascribed to Mordecai has the verses Isaiah lix. 8; Esther ii. 5; Ps. xvi.

9, 10, 11, and the date of its erection A.M. 4318 (A.D. 557). The inscriptions on the other sarcophagus consist of the verses Esther ix. 29, 32, x. 1; and the statement that it was placed there A.M. 4602 (A.D. 841) by "the pious and righteous woman Gemal Setan." A tablet let into the wall states that the building was repaired A.M. 4474 (A.D. 713). Hamadān also has the grave of the celebrated physician and philosopher Abu Ali ibn Sina, better known as Avicenna (d. 1036). It is now generally admitted that Hamadān is the Hagmatana (of the inscriptions), Agbatana or Ecbatana (*q.v.*, of the Greek writers), the "treasure city" of the Achaemenian kings which was taken and plundered by Alexander the Great, but very few ancient remains have been discovered. A rudely carved stone lion, which lies on the roadside close to the southern extremity of the city, and by some is supposed to have formed part of a building of the ancient city, is locally regarded as a talisman against famine, plague, cold, &c., placed there by Pliny, who is popularly known as the sorcerer Balinās (a corruption of Plinius).

Five miles S.W. from the city in a mountain gorge of Mount Elvend is the so-called Ganjnāma (treasure-deed), which consists of two tablets with trilingual cuneiform inscriptions cut into the rock and relating the names and titles of Darius I. (521-485 B.C.) and his son Xerxes I. (485-465 B.C.).

(A. H. S.)

HAMADHĀNĪ, in full Abū-l Faḍl Aḥmad ibn ul-Ḥusain ul-Hamadhānī (967-1007), Arabian writer, known as Badi' uz-Zamān (the wonder of the age), was born and educated at Hamadbān. In 990 be went to Jorjān, where he remained two years; then passing to Nīshapūr, where he rivalled and surpassed the learned Khwārizmī. After journeying through Khorasan and Sijistān, he finally settled in Herāt under the protection of the vizir of Mahmūd, the Ghaznevid sultan. There he died at the age of forty. He was renowned for a remarkable memory and for fluency of speech, as well as for the purity of his language. He was one of the first to renew the use of rhymed prose both in letters and *maqāmas* (see Arabia: *Literature*, section "Belles Lettres").

His letters were published at Constantinople (1881), and with commentary at Beirut (1890); his *maqāmas* at Constantinople (1881), and with commentary at Beirut (1889). A good idea of the latter may be obtained from S. de Sacy's edition of six of the *maqāmas* with French translation and notes in his *Chrestomathie arabe*, vol. iii. (2nd ed., Paris, 1827). A specimen of the letters is translated into German in A. von Kremer's *Culturgeschichte des Orients*, ii. 470 sqq. (Vienna, 1877).

(G. W. T.)

HAMAH, the Hamath of the Bible, a Hittite royal city, situated in the narrow valley of the Orontes, 110 English miles N. (by E.) of Damascus. It finds a place in the northern boundaries of Israel under David, Solomon and Jeroboam II. (2 Sam. viii. 9; 1 Kings viii. 65; 2 Kings xiv. 25). The Orontes flows winding past the city and is spanned by four bridges. On the south-east the houses rise 150 ft. above the river, and there are four other hills, that of the *Kalah* or castle being to the north 100 ft. high. Twenty-four minarets rise from the various mosques. The houses are principally of mud, and the town stands amid poplar gardens with a fertile plain to the west. The castle is ruined, the streets are narrow and dirty, but the bazaars are good, and the trade with the Bedouins considerable. The numerous water-wheels (*naūrah*,) of enormous dimension, raising water from the Orontes are the most remarkable features of the view. Silk, woollen and cotton goods are manufactured. The population is about 40,000.

In the year 854 B.C. Hamath was taken by Shalmaneser II., king of Assyria, who defeated a large army of allied Hamathites, Syrians and Israelites at Karkor and slew 14,000 of them. In 738 B.C. Tiglath Pileser III. reduced the city to tribute, and another rebellion was crushed by Sargon in 720 B.C. The downfall of so ancient a state made a great impression at Jerusalem (Isa. x. 9). According to 2 Kings xvii. 24, 30, some of its people were transported to the land of N. Israel, where they made images of Ashima or Eshmun (probably Ishtar). After the Macedonian conquest of Syria Hamath was called Epiphania by the Greeks in honour of Antiochus IV., Epiphanes, and in the early Byzantine period it was known by both its Hebrew and its Greek name. In A.D. 639 the town surrendered to Abu 'Obeida, one of Omar's generals, and the church was turned into a mosque. In A.D. 1108 Tancred captured the city and massacred the Ism'aileh defenders. In 1115 it was retaken by the Moslems, and in 1178 was occupied by Saladin.

Abulfeda, prince of Hamah in the early part of the 14th century, is well known as an authority on Arab geography.

HAMANN, JOHANN GEORG (1730-1788), German writer on philosophical and theological subjects, was born at Königsberg in Prussia on the 27th of August 1730. His parents were of humble rank and small means. The education he received was comprehensive but unsystematic, and the want of definiteness in this early training doubtless tended to aggravate the peculiar instability of character which troubled Hamann's after life. In 1746 be began theological studies, but speedily deserted them and turned his attention to law. That too was taken up in a desultory fashion and quickly relinquished. Hamann seems at this time to have thought that any strenuous devotion to "bread-and-butter" studies was lowering, and accordingly gave himself entirely to reading, criticism and philological inquiries. Such studies, however, were pursued without any definite aim or systematic arrangement, and consequently were productive of nothing. In 1752, constrained to secure some position in the world, he accepted a tutorship in a family resident in Livonia, but only retained it a few months. A similar situation in Courland he also resigned after about a year. In both cases apparently the rupture might be traced to the curious and unsatisfactory character of Hamann himself. After leaving his second post he was received into the house of a merchant at Riga named Johann Christoph Behrens, who contracted a great friendship for him and selected him as his companion for a tour through Danzig, Berlin, Hamburg, Amsterdam and London. Hamann, however, was quite unfitted for business, and when left in London, gave himself up entirely to his fancies, and was quickly reduced to a state of extreme poverty and want. It was at this period of his life, when his inner troubles of spirit harmonized with the unhappy external conditions of his lot, that he began an earnest and prolonged study of the Bible; and from this time dates the tone of extreme pietism which is characteristic of his writings, and which undoubtedly alienated many of his friends. He returned to Riga, and was well received by the Behrens family, in whose house he resided for some time. A quarrel, the precise nature of which is not very clear though the occasion is evident, led to an entire separation from these friends. In 1759 Hamann returned to Königsberg, and lived for several years with his father, filling occasional posts in Königsberg and Mitau. In 1767 he obtained a situation as translator in the excise office, and ten years later a post as storekeeper in a mercantile house. During this period of comparative rest Hamann was able to indulge in the long correspondence with learned friends which seems to have been his greatest pleasure. In 1784 the failure of some commercial speculations greatly reduced his means, and about the same time he was dismissed with a small pension from his situation. The kindness of friends, however, supplied provision for his children, and enabled him to carry out the long-cherished wish of visiting some of his philosophical allies. He spent some time with Jacobi at Pempelfort and with Buchholz at Walbergen. At the latter place he was seized with illness, and died on the 21st of June 1788.

> Hamann's works resemble his life and character. They are entirely unsystematic so far as matter is concerned, chaotic and disjointed in style. To a reader not acquainted with the peculiar nature of the man, which led him to regard what commended itself to him as therefore objectively true, they must be, moreover, entirely unintelligible and, from their peculiar, pietistic tone and scriptural jargon, probably offensive. A place in the history of philosophy can be yielded to Hamann only because he expresses in uncouth, barbarous fashion an idea to which other writers have given more effective shape. The fundamental thought is with him the unsatisfactoriness of abstraction or one-sidedness. The *Aufklärung*, with its rational theology, was to him the type of abstraction. Even Epicureanism, which might appear concrete, was by him rightly designated abstract. Quite naturally, then, Hamann is led to object strongly to much of the Kantian philosophy. The separation of sense and understanding is for him unjustifiable, and only paralleled by the extraordinary blunder of severing matter and form. Concreteness, therefore, is the one demand which Hamann expresses, and as representing his own thought he used to refer to Giordano Bruno's conception (previously held by Nicolaus Curanus) of the identity of contraries. The demand, however, remains but a demand. Nothing that Hamann has given can be regarded as in the slightest degree a response to it. His hatred of system, incapacity for abstract thinking, and intense personality rendered it impossible for him to do more than utter the disjointed, oracular, obscure dicta which gained for him among his friends the name of "Magus of the North." Two results only appear throughout his writings—first, the accentuation of belief; and secondly, the transference of many philosophical difficulties to language. Belief is, according to Hamann, the groundwork of knowledge, and he accepts in all sincerity Hume's analysis of experience as being most helpful in constructing a theological view. In language, which he appears to regard as somehow acquired, he finds a solution for the problems of reason which Kant had discussed in the *Kritik der reinen Vernunft*. On the application of these thoughts to the Christian theology one need not enter.

None of Hamann's writings is of great bulk; most are mere pamphlets of some thirty or forty pages. A complete collection has been published by F. Roth (*Schriften*, 8vo, 1821-1842), and by C. H. Gildemeister (*Leben und Schriften*, 6 vols., 1851-1873). See also M. Petri, *Hamanns Schriften u. Briefe*, (4 vols., 1872-1873); J. Poel, *Hamann, der Magus im Norden, sein Leben u. Mitteilungen aus seinen Schriften* (2 vols., 1874-1876); J. Claassen, *Hamanns Leben und Werke* (1885). Also H. Weber, *Neue Hamanniana* (1905). A very comprehensive essay on Hamann is to be found in Hegel's *Vermischte Schriften*, ii. (Werke, Bd. xvii.). On Hamann's influence on German literature, see J. Minor, *J. G. Hamann in seiner Bedeutung für die Sturm- und Drang-Periode* (1881).

HAMAR, or Storehammer (Great Hamar), a town of Norway in Hedemarken *amt* (county), 78 m. by rail N. of Christiania. Pop. (1900), 6003. It is pleasantly situated between two bays of the great Lake Mjösen, and is the junction of the railways to Trondhjem (N.) and to Otta in Gudbrandsdal (N.W.). The existing town was laid out in 1849, and made a bishop's see in 1864. Near the same site there stood an older town, which, together with a bishop's see, was founded in 1152 by the Englishman Nicholas Breakspeare (afterwards Pope Adrian IV.); but both town and cathedral were destroyed by the Swedes in 1567. Remains of the latter include a nave-arcade with rounded arches. The town is a centre for the local agricultural and timber trade.

ḤAMĀSA (Ḥamāsah), the name of a famous Arabian anthology compiled by Ḥabīb ibn Aus aṭ-Ṭā'ī, surnamed Abū Tammām (see Abū Tammām). The collection is so called from the title of its first book, containing poems descriptive of constancy and valour in battle, patient endurance of calamity, steadfastness in seeking vengeance, manfulness under reproach and temptation, all which qualities make up the attribute called by the Arabs *ḥamāsah* (briefly paraphrased by at-Tibrīzī as *ash-shiddah fi-l-amr*). It consists of ten books or parts, containing in all 884 poems or fragments of poems, and named respectively—(1) *al-Ḥamāsa*, 261 pieces; (2) *al-Marāthī*, "Dirges," 169 pieces; (3) *al-Adab*, "Manners," 54 pieces; (4) *an-Nasīb*, "The Beauty and Love of Women," 139 pieces; (5) *al-Hijā*, "Satires," 80 pieces; (6) *al-Aḍyāf wa-l-Madīḥ*, "Hospitality and Panegyric," 143 pieces; (7) *aṣ-Ṣifāt*, "Miscellaneous Descriptions," 3 pieces; (8) *as-Sair wa-n-Nu'ās*, "Journeying and Drowsiness," 9 pieces; (9) *al-Mulaḥ*, "Pleasantries," 38 pieces; and (10) *Madhammat-an-nisā*, "Dispraise of Women," 18 pieces. Of these books the first is by far the longest, both in the number and extent of its poems, and the first two together make up more than half the bulk of the work. The poems are for the most part fragments selected from longer compositions, though a considerable number are probably entire. They are taken from the works of Arab poets of all periods down to that of Abū Tammām himself (the latest ascertainable date being A.D. 832), but chiefly of the poets of the Ante-Islamic time (*Jāhiliyyūn*), those of the early days of Al-Islām (*Mukhaḍrimūn*), and those who flourished during the reigns of the Omayyad caliphs, A.D. 660-749 (*Islāmiyyūn*). Perhaps the oldest in the collection are those relating to the war of Basūs, a famous legendary strife which arose out of the murder of Kulaib, chief of the combined clans of Bakr and Taghlib, and lasted for forty years, ending with the peace of Dhu-l-Majāz, about A.D. 534. Of the period of the Abbasid caliphs, under whom Abū Tammām himself lived, there are probably not more than sixteen fragments.

Most of the poems belong to the class of extempore or occasional utterances, as distinguished from *qaṣīdas*, or elaborately finished odes. While the latter abound with comparisons and long descriptions, in which the skill of the poet is exhibited with much art and ingenuity, the poems of the *Ḥamāsa* are short, direct and for the most part free from comparisons; the transitions are easy, the metaphors simple, and the purpose of the poem clearly indicated. It is due probably to the fact that this style of composition was chiefly sought by Abū Tammām in compiling his collection that he has chosen hardly anything from the works of the most famous poets of antiquity. Not a single piece from Imra 'al-Qais (Amru-ul-Qais) occurs in the *Ḥamāsa*, nor are there any from 'Alqama, Zuhair or A'shā; Nābigha is represented only by two pieces (pp. 408 and 742 of Freytag's edition) of four and three verses respectively; 'Antara by two pieces of four verses each (*id.* pp. 206, 209); Ṭarafa by one piece of five verses (*id.* p. 632); Labīd by one piece of three verses (*id.* p. 468); and 'Amr ibn Kulthūm by one piece of four verses (*id.* p. 236). The compilation is thus essentially an anthology of minor poets, and exhibits (so far at least as the more ancient poems are concerned) the general average of poetic utterance at a time when to speak in verse was the daily habit of every warrior of the desert.

To this description, however, there is an important exception in the book entitled *an-Nasīb*, containing verses relating to women and love. In the classical age of Arab poetry it was the established rule that all *qaṣīdas*, or finished odes, whatever their purpose, must begin with the mention of women and their charms (*tashbīb*), in order, as the old critics said, that the hearts of the hearers might be softened and inclined to regard kindly the theme which the poet proposed to unfold. The fragments included in this part of the work are therefore generally taken from the opening verses of *qaṣīdas*; where this is not the case, they are chiefly compositions of the early Islamic period, when the school of exclusively erotic poetry (of which the greatest representative was ‘Omar ibn Abī Rabi‘a) arose.

The compiler was himself a distinguished poet in the style of his day, and wandered through many provinces of the Moslem empire earning money and fame by his skill in panegyric. About 220 A.H. he betook himself to Khorasan, then ruled by ‘Abdallah ibn Ṭāhir, whom he praised and by whom he was rewarded; on his journey home to ‘Irāk he passed through Hamadhān, and was there detained for many months a guest of Abu-l-Wafā, son of Salama, the road onward being blocked by heavy falls of snow. During his residence at Hamadhān, Abū Tammām is said to have compiled or composed, from the materials which he found in Abu-l-Wafā’s library, five poetical works, of which one was the *Ḥamāsa*. This collection remained as a precious heirloom in the family of Abu-l-Wafā until their fortunes decayed, when it fell into the hands of a man of Dīnawar named Abu-l-‘Awādhil, who carried it to Iṣfahān and made it known to the learned of that city.

The worth of the *Ḥamāsa* as a store-house of ancient legend, of faithful detail regarding the usages of the pagan time and early simplicity of the Arab race, can hardly be exaggerated. The high level of excellence which is found in its selections, both as to form and matter, is remarkable, and caused it to be said that Abū Tammām displayed higher qualities as a poet in his choice of extracts from the ancients than in his own compositions. What strikes us chiefly in the class of poetry of which the *Ḥamāsa* is a specimen, is its exceeding truth and reality, its freedom from artificiality and hearsay, the evident first-hand experience which the singers possessed of all of which they sang. For historical purposes the value of the collection is not small; but most of all there shines forth from it a complete portraiture of the hardy and manful nature, the strenuous life of passion and battle, the lofty contempt of cowardice, niggardliness and servility, which marked the valiant stock who bore Islām abroad in a flood of new life over the outworn civilizations of Persia, Egypt and Byzantium. It has the true stamp of the heroic time, of its cruelty and wantonness as of its strength and beauty.

No fewer than twenty commentaries are enumerated by Ḥājjī Khalīfa. Of these the earliest was by Abū Riyāsh (otherwise ar-Riyāshī), who died in 257 A.H.; excerpts from it, chiefly in elucidation of the circumstances in which the poems were composed, are frequently given by at-Tibrīzī (Tabrīzī). He was followed by the famous grammarian Abu-l-Fatḥ ibn al-Jinnī (d. 392 A.H.), and later by Shihāb ad-Din Aḥmad al-Marzūqī of Iṣfahān (d. 421 A.H.). Upon al-Marzūqī’s commentary is chiefly founded that of Abu Zakarīyā Yaḥyā at-Tibrīzī (b. 421 A.H., d. 502), which has been published by the late Professor G. W. Freytag of Bonn, together with a Latin translation and notes (1828-1851). This monumental work, the labour of a life, is a treasure of information regarding the classical age of Arab literature which has not perhaps its equal for extent, accuracy, and minuteness of detail in Europe. No other complete edition of the *Ḥamāsa* has been printed in the West; but in 1856 one appeared at Calcutta under the names of Maulavī Ghulām Rabbānī and Kabīru-d-dīn Aḥmad. Though no acknowledgment of the fact is contained in this edition, it is a simple reprint of Professor Freytag’s text (without at-Tibrīzī’s commentary), and follows its original even in the misprints (corrected by Freytag at the end of the second volume, which being in Latin the Calcutta editors do not seem to have consulted). It contains in an appendix of 12 pages a collection of verses (and some entire fragments) not found in at-Tibrīzī’s recension, but stated to exist in some copies consulted by the editors; these are, however, very carelessly edited and printed, and in many places unintelligible. Freytag’s text, with at-Tibrīzī’s commentary, has been reprinted at Būlāq (1870). In 1882 an edition of the text, with a marginal commentary by Munshi ‘Abdul-Qādir ibn Shaikh Luqmān, was published at Bombay.

The *Ḥamāsa* has been rendered with remarkable skill and spirit into German verse by the illustrious Friedrich Rückert (Stuttgart, 1846), who has not only given translations of almost all the poems proper to the work, but has added numerous fragments drawn from other sources, especially those occurring in the *scholia* of at-Tibrīzī, as well as the Mu‘allaqas of Zuhair and ‘Antara, the *Lāmiyya* of Ash-Shanfarà, and the Bānat Su‘ād of Ka‘b, son of Zuhair. A small collection of translations, chiefly in metres imitating those of the original, was published in London by Sir Charles Lyall in 1885.

When the *Ḥamāsa* is spoken of, that of Abū Tammām, as the first and most famous of the name, is meant; but several collections of a similar kind, also called *Ḥamāsa*, exist. The best-known and earliest of these is the *Ḥamāsa* of Buhturi (d. 284 A.H.), of which the unique MS. now in the Leiden University Library, has been reproduced by photo-lithography (1909); a critical edition has been prepared by Professor Chlikho at Beyreuth. Four other works of the same name, formed on the model of Abū Tammām’s compilation, are mentioned by Hājjī Khalīfa. Besides these, a work entitled *Ḥamasat ar-Rāh* (“the Ḥamāsa of wine”) was composed of Abu-

l-ʻAlāal-Maʻarrī (d. 429 A.H.).

(C. J. L.)

HAMBURG, a state of the German empire, on the lower Elbe, bounded by the Prussian provinces of Schleswig-Holstein and Hanover. The whole territory has an area of 160 sq. m., and consists of the city of Hamburg with its incorporated suburbs and the surrounding district, including several islands in the Elbe, five small enclaves in Holstein; the communes of Moorburg in the Lüneburg district of the Prussian province of Hanover and Cuxhaven-Ritzebüttel at the mouth of the Elbe, the island of Neuwerk about 5 m. from the coast, and the bailiwick (*amt*) of Bergedorf, which down to 1867 was held in common by Lübeck and Hamburg. Administratively the state is divided into the city, or metropolitan district, and four rural domains (or *Landherrenschaften*), each under a senator as *praeses*, viz. the domain of the Geestlande, of the Marschlande, of Bergedorf and of Ritzebüttel with Cuxhaven. Cuxhaven-Ritzebüttel and Bergedorf are the only towns besides the capital. The Geestlande comprise the suburban districts encircling the city on the north and west; the Marschlande includes various islands in the Elbe and the fertile tract of land lying between the northern and southern arms of the Elbe, and with its pastures and market gardens supplying Hamburg with large quantities of country produce. In the Bergedorf district lies the Vierlande, or Four Districts (Neuengamme, Kirchwärder, Altengamme and Curslack), celebrated for its fruit gardens and the picturesque dress of the inhabitants. Ritzebüttel with Cuxhaven, also a watering-place, have mostly a seafaring population. Two rivers, the Alster and the Bille, flow through the city of Hamburg into the Elbe, the mouth of which, at Cuxhaven, is 75 m. below the city.

Government.—As a state of the empire, Hamburg is represented in the federal council (*Bundesrat*) by one plenipotentiary, and in the imperial diet (*Reichstag*) by three deputies. Its present constitution came into force on the 1st of January 1861, and was revised in 1879 and again in 1906. According to this Hamburg is a republic, the government (*Staatsgewalt*) residing in two chambers, the Senate and the House of Burgesses. The Senate, which exercises the greater part of the executive power, is composed of eighteen members, one half of whom must have studied law or finance, while at least seven of the remainder must belong to the class of merchants. The members of the Senate are elected for life by the House of Burgesses; but a senator is free to retire from office at the expiry of six years. A chief (*ober-*) and second (*zweiter-*) burgomaster, the first of whom bears the title of “Magnificence,” chosen annually in secret ballot, preside over the meetings of the Senate, and are usually jurists. No burgomaster can be in office for longer than two years consecutively, and no member of the Senate may hold any other public office. The House of Burgesses consists of 160 members, of whom 80 are elected in secret ballot by the direct suffrages of all tax-paying citizens, 40 by the owners of house-property within the city (also by ballot), and the remaining 40, by ballot also, by the so-called “notables,” *i.e.* active and former members of the law courts and administrative boards. They are elected for a period of six years, but as half of each class retire at the end of three years, new elections for one half the number take place at the end of that time. The House of Burgesses is represented by a *Bürgerausschuss* (committee of the house) of twenty deputies whose duty it is to watch over the proceedings of the Senate and the constitution generally. The Senate can interpose a veto in all matters of legislation, saving taxation, and where there is a collision between the two bodies, provision is made for reference to a court of arbitration, consisting of members of both houses in equal numbers, and also to the supreme court of the empire (*Reichsgericht*) sitting at Leipzig. The law administered is that of the civil and penal codes of the German empire, and the court of appeal for all three Hanse towns is the common *Oberlandesgericht*, which has its seat in Hamburg. There is also a special court of arbitration in commercial disputes and another for such as arise under accident insurance.

Religion.—The church in Hamburg is completely separated from the state and manages its affairs independently. The ecclesiastical arrangements of Hamburg have undergone great modifications since the general constitution of 1860. From the Reformation to the French occupation in the beginning of the 19th century, Hamburg was a purely Lutheran state; according to the “Recess” of 1529, re-enacted in 1603, non-Lutherans were subject to legal punishment and expulsion from the country. Exceptions were gradually made in favour of foreign residents; but it was not till 1785 that regular inhabitants were allowed to exercise the religious rites of other denominations, and it was not till after the war of freedom that they were allowed to have buildings in the style of churches. In 1860 full religious liberty was guaranteed, and the identification of church and state abolished. By the new constitution of the Lutheran Church, published at first in 1870 for the city only, but in 1876 extended to the rest of the Hamburg territory, the parishes or communes are divided into three church-districts, and the

general affairs of the whole community are entrusted to a synod of 53 members and to an ecclesiastical council of 9 members which acts as an executive. Since 1887 a church rate has been levied on the Evangelical-Lutheran communities, and since 1904 upon the Roman Catholics also. The German Reformed Church, the French Reformed, the English Episcopal, the English Reformed, the Roman Catholic, and the Baptist are all recognized by the state. Civil marriages have been permissible in Hamburg since 1866, and since the introduction of the imperial law in January 1876 the number of such marriages has greatly increased.

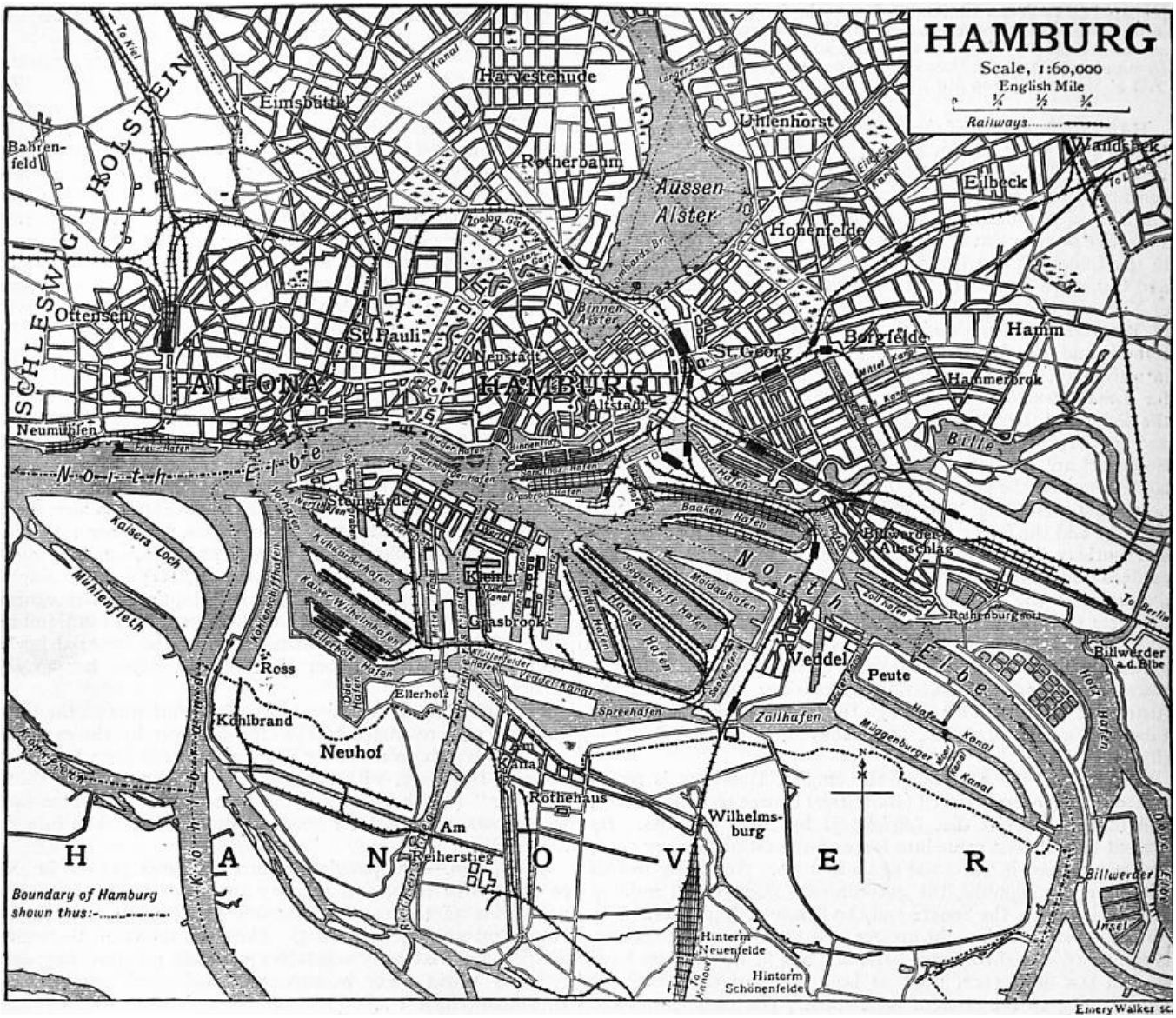
Finance.—The jurisdiction of the Free Port was on the 1st of January 1882 restricted to the city and port by the extension of the Zollverein to the lower Elbe, and in 1888 the whole of the state of Hamburg, with the exception of the so-called "Free Harbour" (which comprises the port proper and some large warehouses, set apart for goods in bond), was taken into the Zollverein.

Population.—The population increased from 453,000 in 1880 to 622,530 in 1890, and in 1905 amounted to 874,878. The population of the country districts (exclusive of the city of Hamburg) was 72,085 in 1905. The crops raised in the country districts are principally vegetables and fruit, potatoes, hay, oats, rye and wheat. For manufactures and trade statistics see HAMBURG (city).

The military organization of Hamburg was arranged by convention with Prussia. The state furnishes three battalions of the 2nd Hanseatic regiment, under Prussian officers. The soldiers swear the oath of allegiance to the senate.

HAMBURG, a seaport of Germany, capital of the free state of Hamburg, on the right bank of the northern arm of the Elbe, 75 m. from its mouth at Cuxhaven and 178 m. N.W. from Berlin by rail. It is the largest and most important seaport on the continent of Europe and (after London and New York) the third largest in the world. Were it not for political and municipal boundaries Hamburg might be considered as forming with Altona and Ottensen (which lie within Prussian territory) one town. The view of the three from the south, presenting a continuous river frontage of six miles, the river crowded with shipping and the densely packed houses surmounted by church towers—of which three are higher than the dome of St Paul's in London—is one of great magnificence.

The city proper lies on both sides of the little river Alster, which, dammed up a short distance from its mouth, forms a lake, of which the southern portion within the line of the former fortifications bears the name of the Inner Alster (*Binnen Alster*), and the other and larger portion (2500 yards long and 1300 yards at the widest) that of the Outer Alster (*Aussen Alster*). The fortifications as such were removed in 1815, but they have left their trace in a fine girdle of green round the city, though too many inroads on its completeness have been made by railways and roadways. The oldest portion of the city is that which lies to the east of the Alster; but, though it still retains the name of Altstadt, nearly all trace of its antiquity has disappeared, as it was rebuilt after the great fire of 1842. To the west lies the new town (Neustadt), incorporated in 1678; beyond this and contiguous to Altona is the former suburb of St Pauli, incorporated in 1876, and towards the north-east that of St Georg, which arose in the 13th century but was not incorporated till 1868.



The old town lies low, and it is traversed by a great number of narrow canals or “fleets” (*Fleeten*)—for the same word which has left its trace in London nomenclature is used in the Low German city—which add considerably to the picturesqueness of the meaner quarters, and serve as convenient channels for the transport of goods. They generally form what may be called the back streets, and they are bordered by warehouses, cellars and the lower class of dwelling-houses. As they are subject to the ebb and flow of the Elbe, at certain times they run almost dry. As soon as the telegram at Cuxhaven announces high tide three shots are fired from the harbour to warn the inhabitants of the “fleets”; and if the progress of the tide up the river gives indication of danger, another three shots follow. The “fleets” with their quaint medieval warehouses, which come sheer down to the water, and are navigated by barges, have gained for Hamburg the name of “Northern Venice.” They are, however, though antique and interesting, somewhat dismal and unsavoury. In fine contrast to them is the bright appearance of the Binnen Alster, which is enclosed on three sides by handsome rows of buildings, the Alsterdamm in the east, the Alter Jungfernstieg in the south, and the Neuer Jungfernstieg in the west, while it is separated from the Aussen Alster by part of the rampart gardens traversed by the railway uniting Hamburg with Altona and crossing the lakes by a beautiful bridge—the Lombards-Brücke. Around the outer lake are grouped the suburbs Harvestehude and Pösseldorf on the western shore, and Uhlenhorst on the eastern, with park-like promenades and villas surrounded by well-kept gardens. Along the southern end of the Binnen Alster runs the Jungfernstieg with fine shops, hotels and restaurants facing the water. A fleet of shallow-draught screw steamers provides a favourite means of communication between the business centre of the city and the outlying colonies of villas.

The streets enclosing the Binnen Alster are fashionable promenades, and leading directly from this quarter are the main business thoroughfares, the Neuer-Wall, the Grosse Bleichen and the Hermannstrasse. The largest of the public squares in Hamburg is the Hopfenmarkt, which contains the church of St Nicholas (Nikolaikirche) and is the principal market for vegetables and fruit. Others of importance are the Gänsemarkt, the Zeughausmarkt and the Grossneumarkt. Of

the thirty-five churches existing in Hamburg (the old cathedral had to be taken down in 1805), the St Petrikirche, Nikolaikirche, St Katharinenkirche, St Jakobikirche and St Michaeliskirche are those that give their names to the five old city parishes. The Nikolaikirche is especially remarkable for its spire, which is 473 ft. high and ranks, after those of Ulm and Cologne, as the third highest ecclesiastical edifice in the world. The old church was destroyed in the great fire of 1842, and the new building, designed by Sir George Gilbert Scott in 13th century Gothic, was erected 1845-1874. The exterior and interior are elaborately adorned with sculptures. Sandstone from Osterwald near Hildesheim was used for the outside, and for the inner work a softer variety from Postelwitz near Dresden. The Michaeliskirche, which is built on the highest point in the city and has a tower 428 ft. high, was erected (1750-1762) by Ernst G. Sonnin on the site of the older building of the 17th century destroyed by lightning; the interior, which can contain 3000 people, is remarkable for its bold construction, there being no pillars. The St Petrikirche, originally consecrated in the 12th century and rebuilt in the 14th, was the oldest church in Hamburg; it was burnt in 1842 and rebuilt in its old form in 1844-1849. It has a graceful tapering spire 402 ft. in height (completed 1878); the granite columns from the old cathedral, the stained glass windows by Kellner of Nuremberg, and H. Schubert's fine relief of the entombment of Christ are worthy of notice. The St Katharinenkirche and the St Jakobikirche are the only surviving medieval churches, but neither is of special interest. Of the numerous other churches, Evangelical, Roman Catholic and Anglican, none are of special interest. The new synagogue was built by Rosengarten between 1857 and 1859, and to the same architect is due the sepulchral chapel built for the Hamburg merchant prince Johann Heinrich, Freiherr von Schröder (1784-1883), in the churchyard of the Petrikirche. The beautiful chapel of St Gertrude was unfortunately destroyed in 1842.

Hamburg has comparatively few secular buildings of great architectural interest, but first among them is the new Rathaus, a huge German Renaissance building, constructed of sandstone in 1886-1897, richly adorned with sculptures and with a spire 330 ft. in height. It is the place of meeting of the municipal council and of the senate and contains the city archives. Immediately adjoining it and connected with it by two wings is the exchange. It was erected in 1836-1841 on the site of the convent of St Mary Magdalen and escaped the conflagration of 1842. It was restored and enlarged in 1904, and shelters the commercial library of nearly 100,000 vols. During the business hours (1-3 P.M.) the exchange is crowded by some 5000 merchants and brokers. In the same neighbourhood is the Johanneum, erected in 1834 and in which are preserved the town library of about 600,000 printed books and 5000 MSS. and the collection of Hamburg antiquities. In the courtyard is a statue (1885) of the reformer Johann Bugenhagen. In the Fischmarkt, immediately south of the Johanneum, a handsome fountain was erected in 1890. Directly west of the town hall is the new Stadthaus, the chief police station of the town, in front of which is a bronze statue of the burgomaster Karl Friedrich Petersen (1809-1892), erected in 1897. A little farther away are the headquarters of the Patriotic Society (*Patriotische Gesellschaft*), founded in 1765, with fine rooms for the meetings of artistic and learned societies. Several new public buildings have been erected along the circuit of the former walls. Near the west extremity, abutting upon the Elbe, the moat was filled in in 1894-1897, and some good streets were built along the site, while the Kersten Miles-Brücke, adorned with statues of four Hamburg heroes, was thrown across the Helgoländer Allee. Farther north, along the line of the former town wall, are the criminal law courts (1879-1882, enlarged 1893) and the civil law courts (finished in 1901). Close to the latter stand the new supreme court, the old age and accident state insurance offices, the chief custom house, and the concert hall, founded by Karl Laeisz, a former Hamburg wharfinger. Farther on are the chemical and the physical laboratories and the Hygienic Institute. Facing the botanical gardens a new central post-office, in the Renaissance style, was built in 1887. At the west end of the Lombards-Brücke there is a monument by Schilling, commemorating the war of 1870-71. A few streets south of that is a monument to Lessing (1881); while occupying a commanding site on the promenades towards Altona is the gigantic statue of Bismarck which was unveiled in June 1906. The Kunst-Halle (the picture gallery), containing some good works by modern masters, faces the east end of Lombards-Brücke. The new Natural History Museum, completed in 1891, stands a little distance farther south. To the east of it comes the Museum for Art and Industry, founded in 1878, now one of the most important institutions of the kind in Germany, with which is connected a trades school. Close by is the Hansa-fountain (65 ft. high), erected in 1878. On the north-east side of the suburb of St Georg a botanical museum and laboratory have been established. There is a new general hospital at Eppendorf, outside the town on the north, built on the pavilion principle, and one of the finest structures of the kind in Europe; and at Ohlsdorf, in the same direction, a crematorium was built in 1891 in conjunction with the town cemeteries (370 acres). There must also be mentioned the fine public zoological gardens, Hagenbeck's private zoological gardens in the vicinity, the schools of music and navigation, and the school of commerce. In 1900 a high school for shipbuilding was founded, and in 1901 an institute for seamen's and tropical diseases, with a laboratory for their physiological study, was opened, and also the first public free library in the city. The river is spanned just above the Frei Hafen by a triple-arched railway bridge, 1339 ft. long, erected in 1868-1873 and doubled in width in 1894. Some 270 yds. higher up is a

magnificent iron bridge (1888) for vehicles and foot passengers. The southern arm of the Elbe, on the south side of the island of Wilhelmsburg, is crossed by another railway bridge of four arches and 2050 ft. in length.

Railways.—The through railway traffic of Hamburg is practically confined to that proceeding northwards—to Kiel and Jutland—and for the accommodation of such trains the central (terminus) station at Altona is the chief gathering point. The Hamburg stations, connected with the other by the Verbindungs-Bahn (or metropolitan railway) crossing the Lombards-Brücke, are those of the Venloer (or Hanoverian, as it is often called) Bahnhof on the south-east, in close proximity to the harbour, into which converge the lines from Cologne and Bremen, Hanover and Frankfort-on-Main, and from Berlin, via Nelzen; the Klostertor-Bahnhof (on the metropolitan line) which temporarily superseded the old Berlin station, and the Lübeck station a little to the north-east, during the erection of the new central station, which occupies a site between the Klostertor-Bahnhof and the Lombards-Brücke. Between this central station and Altona terminus runs the metropolitan railway, which has been raised several feet so as to bridge over the streets, and on which lie the important stations Dammtor and Sternschanze. An excellent service of electric trams interconnect the towns of Hamburg, Altona and the adjacent suburbs, and steamboats provide communication on the Elbe with the riparian towns and villages; and so with Blankenese and Harburg, with Stade, Glückstadt and Cuxhaven.

Trade and Shipping.—Probably there is no place which during the last thirty years of the 19th century grew faster commercially than Hamburg. Its commerce is, however, almost entirely of the nature of transit trade, for it is not only the chief distributing centre for the middle of Europe of the products of all other parts of the world, but is also the chief outlet for German, Austrian, and even to some extent Russian (Polish) raw products and manufactures. Its principal imports are coffee (of which it is the greatest continental market), tea, sugar, spices, rice, wine (especially from Bordeaux), lard (from Chicago), cereals, sago, dried fruits, herrings, wax (from Morocco and Mozambique), tobacco, hemp, cotton (which of late years shows a large increase), wool, skins, leather, oils, dyewoods, indigo, nitrates, phosphates and coal. Of the total importations of all kinds of coal to Hamburg, that of British coal, particularly from Northumberland and Durham, occupies the first place, and despite some falling off in late years, owing to the competition made by Westphalian coal, amounts to more than half the total import. The increase of the trade of Hamburg is most strikingly shown by that of the shipping belonging to the port. Between 1876 and 1880 there were 475 sailing vessels with a tonnage of 230,691, and 110 steam-ships with a tonnage of 87,050. In 1907 there were (exclusive of fishing vessels) 470 sailing ships with a tonnage of 271,661, and 610 steamers with a tonnage of 1,256,449. In 1870 the crews numbered 6900 men, in 1907 they numbered 29,536.

Industries.—The development of manufacturing industries at Hamburg and its immediate vicinity since 1880, though not so rapid as that of its trade and shipping, has been very remarkable, and more especially has this been the case since the year 1888, when Hamburg joined the German customs union, and the barriers which prevented goods manufactured at Hamburg from entering into other parts of Germany were removed. Among the chief industries are those for the production of articles of food and drink. The import trade of various cereals by sea to Hamburg is very large, and a considerable portion of this corn is converted into flour at Hamburg itself. There are also, in this connexion, numerous bakeries for biscuit, rice-peeling mills and spice mills. Besides the foregoing there are cocoa, chocolate, confectionery and baking-powder factories, coffee-roasting and ham-curing and smoking establishments, lard refineries, margarine manufactories and fish-curing, preserving and packing factories. There are numerous breweries, producing annually about 24,000,000 gallons of beer, spirit distilleries and factories of artificial waters. Yarns, textile goods and weaving industries generally have not attained any great dimensions, but there are large jute-spinning mills and factories for cotton-wool and cotton driving-belts. Among other important articles of domestic industry are tobacco and cigars (manufactured mainly in bond, within the free harbour precincts), hydraulic machinery, electro-technical machinery, chemical products (including artificial manures), oils, soaps, india-rubber, ivory and celluloid articles and the manufacture of leather.

Shipbuilding has made very important progress, and there are at present in Hamburg eleven large shipbuilding yards, employing nearly 10,000 hands. Of these, however, only three are of any great extent, and one, where the largest class of ocean-going steamers and of war vessels for the German navy are built, employs about 5000 persons. There are also two yards for the building of pleasure yachts and rowing-boats (in both which branches of sport Hamburg takes a leading place in Germany). Art industries, particularly those which appeal to the luxurious taste of the inhabitants in fitting their houses, such as wall-papers and furniture, and those which are included in the equipment of ocean-going steamers, have of late years made rapid strides and are among the best productions of this character of any German city.

Harbour.—It was the accession of Hamburg to the customs union in 1888 which gave such a vigorous impulse to her more recent commercial development. At the same time a portion of the port was set apart as a free harbour, altogether an area of 750 acres of water and 1750 acres of

dry land. In anticipation of this event a gigantic system of docks, basins and quays was constructed, at a total cost of some £7,000,000 (of which the imperial treasury contributed £2,000,000), between the confluence of the Alster and the railway bridge (1868-1873), an entire quarter of the town inhabited by some 24,000 people being cleared away to make room for these accessories of a great port. On the north side of the Elbe there are the Sandtor basin (3380 ft. long, 295 to 427 ft. wide), in which British and Dutch steamboats and steamboats of the Sloman (Mediterranean) line anchor. South of this lies the Grasbrook basin (quayage of 2100 ft. and 1693 ft. alongside), which is used by French, Swedish and transatlantic steamers. At the quay point between these two basins there are vast state granaries. On the outer (*i.e.* river) side of the Grasbrook dock is the quay at which the emigrants for South America embark, and from which the mail boats for East Africa, the boats of the Woermann (West Africa) line, and the Norwegian tourist boats depart. To the east of these two is the small Magdeburg basin, penetrating north, and the Baaken basin, penetrating east, *i.e.* parallel to the river. The latter affords accommodation to the transatlantic steamers, including the emigrant ships of the Hamburg-America line, though their "ocean mail boats" generally load and unload at Cuxhaven. On the south bank of the stream there follow in succession, going from east to west, the Moldau dock for river craft, the sailing vessel dock (Segelschiff Hafen, 3937 ft. long, 459 to 886 ft. wide, 26¼ ft. deep), the Hansa dock, India dock, petroleum dock, several swimming and dry docks; and in the west of the free port area three other large docks, one of 77 acres for river craft, the others each 56 acres in extent, and one 23¾ ft. deep, the other 26¼ ft. deep, at low water, constructed in 1900-1901. In 1897 Hamburg was provided with a huge floating dock, 558 ft. long and 84 ft. in maximum breadth, capable of holding a vessel of 17,500 tons and draught not exceeding 29 ft., so constructed and equipped that in time of need (war) it could be floated down to Cuxhaven. During the last 25 years of the 19th century the channel of the Elbe was greatly improved and deepened, and during the last two years of the 19th century some £360,000 was spent by Hamburg alone in regulating and correcting this lower course of the river. The new Kuhwärder-basin, on the left bank of the river, as well as two other large dock basins (now leased to the Hamburg-American Company), raise the number of basins to twelve in all.

Emigration.—Hamburg is one of the principal continental ports for the embarkation of emigrants. In 1881-1890, on an average they numbered 90,000 a year (of whom 60,000 proceeded to the United States). In 1900 the number was 87,153 (and to the United States 64,137). The number of emigrant Germans has enormously decreased of late years, Russia and Austria-Hungary now being most largely represented. For the accommodation of such passengers large and convenient emigrant shelters have been recently erected close to the wharf of embarkation.

Health and Population.—The health of the city of Hamburg and the adjoining district may be described as generally good, no epidemic diseases having recently appeared to any serious degree. The malady causing the greatest number of deaths is that of pulmonary consumption; but better housing accommodation has of late years reduced the mortality from this disease very considerably. The results of the census of 1905 showed the population of the city (not including the rural districts belonging to the state of Hamburg) to be 802,793.

Hamburg is well supplied with places of amusement, especially of the more popular kind. Its Stadt-Theater, rebuilt in 1874, has room for 1750 spectators and is particularly devoted to operatic performances; the Thalia-Theater dates from 1841, and holds 1700 to 1800 people, and the Schauspielhaus (for drama) from 1900 people, and there are some seven or eight minor establishments. Theatrical performances were introduced into the city in the 17th century, and 1678 is the date of the first opera, which was played in a house in the Gänsemarkt. Under Schröder and Lessing the Hamburg stage rose into importance. Though contributing few names of the highest rank to German literature, the city has been intimately associated with the literary movement. The historian Lappenberg and Friedrich von Hagedorn were born in Hamburg; and not only Lessing, but Heine and Klopstock lived there for some time.

History.—Hamburg probably had its origin in a fortress erected in 808 by Charlemagne, on an elevation between the Elbe and Alster, as a defence against the Slavs, and called Hammaburg because of the surrounding forest (*Hamme*). In 811 Charlemagne founded a church here, perhaps on the site of a Saxon place of sacrifice, and this became a great centre for the evangelization of the north of Europe, missionaries from Hamburg introducing Christianity into Jutland and the Danish islands and even into Sweden and Norway. In 834 Hamburg became an archbishopric, St Ansgar, a monk of Corbie and known as the apostle of the North, being the first metropolitan. In 845 church, monastery and town were burnt down by the Norsemen, and two years later the see of Hamburg was united with that of Bremen and its seat transferred to the latter city. The town, rebuilt after this disaster, was again more than once devastated by invading Danes and Slavs. Archbishop Unwan of Hamburg-Bremen (1013-1029) substituted a chapter of canons for the monastery, and in 1037 Archbishop Bezelin (or Alebrand) built a stone cathedral and a palace on the Elbe. In 1110 Hamburg, with Holstein, passed into the hands of Adolph I., count of Schauenburg, and it is with the building of the Neustadt (the present parish of St Nicholas) by his grandson, Adolph III. of Holstein, that the history of the commercial city actually begins. In return for a contribution to the costs of a crusade, he obtained from the

emperor Frederick I. in 1189 a charter granting Hamburg considerable franchises, including exemption from tolls, a separate court and jurisdiction, and the rights of fishery on the Elbe from the city to the sea. The city council (*Rath*), first mentioned in 1190, had jurisdiction over both the episcopal and the new town. Craft gilds were already in existence, but these had no share in the government; for, though the Lübeck rule excluding craftsmen from the *Rath* did not obtain, they were excluded in practice. The counts, of course, as over-lords, had their *Vogt* (*advocatus*) in the town, but this official, as the city grew in power, became subordinate to the *Rath*, as at Lübeck.

The wealth of the town was increased in 1189 by the destruction of the flourishing trading centre of Bardowieck by Henry the Lion; from this time it began to be much frequented by Flemish merchants. In 1201 the city submitted to Valdemar of Schleswig, after his victory over the count of Holstein, but in 1225, owing to the capture of King Valdemar II. of Denmark by Henry of Schwerin, it once more exchanged the Danish over-lordship for that of the counts of Schauenburg, who established themselves here and in 1231 built a strong castle to hold it in check. The defensive alliance of the city with Lübeck in 1241, extended for other purpose by the treaty of 1255, practically laid the foundations of the Hanseatic League (*q.v.*), of which Hamburg continued to be one of the principal members. The internal organization of the city, too, was rendered more stable by the new constitution of 1270, and the recognition in 1292 of the complete internal autonomy of the city by the count of Schauenburg. The exclusion of the handicraftsmen from the *Rath* led, early in the 15th century, to a rising of the craft gilds against the patrician merchants, and in 1410 they forced the latter to recognize the authority of a committee of 48 burghers, which concluded with the senate the so-called First Recess; there were, however, fresh outbursts in 1458 and 1483, which were settled by further compromises. In 1461 Hamburg did homage to Christian I. of Denmark, as heir of the Schauenburg counts; but the suzerainty of Denmark was merely nominal and soon repudiated altogether; in 1510 Hamburg was made a free imperial city by the emperor Maximilian I.

In 1529 the Reformation was definitively established in Hamburg by the Great Recess of the 19th of February, which at the same time vested the government of the city in the *Rath*, together with the three colleges of the *Oberalten*, the Forty-eight (increased to 60 in 1685) and the Hundred and Forty-four (increased to 180). The ordinary burgesses consisted of the freeholders and the master-workmen of the gilds. In 1536 Hamburg joined the league of Schmalkalden, for which error it had to pay a heavy fine in 1547 when the league had been defeated. During the same period the Lutheran zeal of the citizens led to the expulsion of the Mennonites and other Protestant sects, who founded Altona. The loss this brought to the city was, however, compensated for by the immigration of Protestant refugees from the Low Countries and Jews from Spain and Portugal. In 1549, too, the English merchant adventurers removed their staple from Antwerp to Hamburg.

The 17th century saw notable developments. Hamburg had established, so early as the 16th century, a regular postal service with certain cities in the interior of Germany, *e.g.* Leipzig and Breslau; in 1615 it was included in the postal system of Turn and Taxis. In 1603 Hamburg received a code of laws regulating exchange, and in 1619 the bank was established. In 1615 the Neustadt was included within the city walls. During the Thirty Years' War the city received no direct harm; but the ruin of Germany reacted upon its prosperity, and the misery of the lower orders led to an agitation against the *Rath*. In 1685, at the invitation of the popular leaders, the Danes appeared before Hamburg demanding the traditional homage; they were repulsed, but the internal troubles continued, culminating in 1708 in the victory of the democratic factions. The imperial government, however, intervened, and in 1712 the "Great Recess" established durable good relations between the *Rath* and the commonalty. Frederick IV. of Denmark, who had seized the opportunity to threaten the city (1712), was bought off with a ransom of 246,000 *Reichsthaler*. Denmark, however, only finally renounced her claims by the treaty of Gottorp in 1768, and in 1770 Hamburg was admitted for the first time to a representation in the diet of the empire.

The trade of Hamburg received its first great impulse in 1783, when the United States, by the treaty of Paris, became an independent power. From this time dates its first direct maritime communication with America. Its commerce was further extended and developed by the French occupation of Holland in 1795, when the Dutch trade was largely directed to its port. The French Revolution and the insecurity of the political situation, however, exercised a depressing and retarding effect. The wars which ensued, the closing of continental ports against English trade, the occupation of the city after the disastrous battle of Jena, and pestilence within its walls brought about a severe commercial crisis and caused a serious decline in its prosperity. Moreover, the great contributions levied by Napoleon on the city, the plundering of its bank by Davoust, and the burning of its prosperous suburbs inflicted wounds from which the city but slowly recovered. Under the long peace which followed the close of the Napoleonic wars, its trade gradually revived, fostered by the declaration of independence of South and Central America, with both of which it energetically opened close commercial relations, and by the

introduction of steam navigation. The first steamboat was seen on the Elbe on the 17th of June 1816; in 1826 a regular steam communication was opened with London; and in 1856 the first direct steamship line linked the port with the United States. The great fire of 1842 (5th-8th of May) laid in waste the greatest part of the business quarter of the city and caused a temporary interruption of its commerce. The city, however, soon rose from its ashes, the churches were rebuilt and new streets laid out on a scale of considerable magnificence. In 1866 Hamburg joined the North German Confederation, and in 1871, while remaining outside the Zollverein, became a constituent state of the German empire. In 1883-1888 the works for the Free Harbour were completed, and on the 18th of October 1888 Hamburg joined the Customs Union (Zollverein). In 1892 the cholera raged within its walls, carried off 8500 of its inhabitants, and caused considerable losses to its commerce and industry; but the visitation was not without its salutary fruits, for an improved drainage system, better hospital accommodation, and a purer water-supply have since combined to make it one of the healthiest commercial cities of Europe.

Further details about Hamburg will be found in the following works: O. C. Gaedechens, *Historische Topographie der Freien und Hansestadt Hamburg* (1880); E. H. Wichmann, *Heimatskunde von Hamburg* (1863); W. Melhop, *Historische Topographie der Freien und Hansestadt Hamburg von 1880-1895* (1896); Wulff, *Hamburgische Gesetze und Verordnungen* (1889-1896); and W. von Melle, *Das hamburgische Staatsrecht* (1891). There are many valuable official publications which may be consulted, among these being: *Statistik des hamburgischen Staates* (1867-1904); *Hamburgs Handel und Schiffahrt* (1847-1903); the yearly *Hamburgischer Staatskalender*; and *Jahrbuch der Hamburger wissenschaftlichen Anstalten*. See also *Hamburg und seine Bauten* (1890); H. Benrath, *Lokalführer durch Hamburg und Umgebungen* (1904); and the consular reports by Sir William Ward, H.B.M.'s consul-general at Hamburg, to whom the author is indebted for great assistance in compiling this article.

For the history of Hamburg see the *Zeitschrift des Vereins für hamburgische Geschichte* (1841, fol.); G. Dehio, *Geschichte des Erzbistums Hamburg-Bremen* (Berlin, 1877); the *Hamburgisches Urkundenbuch* (1842), the *Hamburgische Chroniken* (1852-1861), and the *Chronica der Stadt Hamburg bis 1557* of Adam Tratziger (1865), all three edited by J. M. Lappenberg; the *Briefsammlung des hamburgischen Superintendenten Joachim Westphal 1530-1575*, edited by C. H. W. Sillem (1903); Gallois, *Geschichte der Stadt Hamburg* (1853-1856); K. Koppmann, *Aus Hamburgs Vergangenheit* (1885), and *Kammereirechnungen der Stadt Hamburg* (1869-1894); H. W. C. Hubbe, *Beiträge zur Geschichte der Stadt Hamburg* (1897); C. Mönckeberg, *Geschichte der Freien und Hansestadt Hamburg* (1885); E. H. Wichmann, *Hamburgische Geschichte in Darstellungen aus alter und neuer Zeit* (1889); and R. Bollheimer, *Zeittafeln der hamburgischen Geschichte* (1895).

HAMDĀNĪ, in full Abū Maḥommed ul-Ḥasan ibn Aḥmad ibn Ya'qūb ul-Hamdānī (d. 945), Arabian geographer, also known as Ibn ul-Ḥā'ik. Little is known of him except that he belonged to a family of Yemen, was held in repute as a grammarian in his own country, wrote much poetry, compiled astronomical tables, devoted most of his life to the study of the ancient history and geography of Arabia, and died in prison at San'a in 945. His *Geography of the Arabian Peninsula* (*Kitāb Jazīrat ul-'Arab*) is by far the most important work on the subject. After being used in manuscript by A. Sprenger in his *Post- und Reiserouten des Orients* (Leipzig, 1864) and further in his *Alte Geographie Arabiens* (Bern, 1875), it was edited by D. H. Müller (Leiden, 1884; cf. A. Sprenger's criticism in *Zeitschrift der deutschen morgenländischen Gesellschaft*, vol. 45, pp. 361-394). Much has also been written on this work by E. Glaser in his various publications on ancient Arabia. The other great work of Hamdānī is the *Iklīl* (Crown) concerning the genealogies of the Himyarites and the wars of their kings in ten volumes. Of this, part 8, on the citadels and castles of south Arabia, has been edited and annotated by D. H. Müller in *Die Burgen und Schlösser Südarabiens* (Vienna, 1879-1881).

For other works said to have been written by Hamdānī cf. G. Flügel's *Die grammatischen Schulen der Araber* (Leipzig, 1862), pp. 220-221.

(G. W. T.)

HAMELIN, FRANÇOIS ALPHONSE (1796-1864), French admiral, was born at Pont l'Évêque on the 2nd of September 1796. He went to sea with his uncle, J. F. E. Hamelin, in the "Vénus" frigate in 1806 as cabin boy. The "Vénus" was part of the French squadron in the Indian Ocean,

and young Hamelin had an opportunity of seeing much active service. She, in company with another and a smaller vessel, captured the English frigate “Ceylon” in 1810, but was immediately afterwards captured herself by the “Boadicéa,” under Commodore Rowley (1765-1842). Young Hamelin was a prisoner of war for a short time. He returned to France in 1811. On the fall of the Empire he had better fortune than most of the Napoleonic officers who were turned ashore. In 1821 he became lieutenant, and in 1823 took part in the French expedition under the duke of Angoulême into Spain. In 1828 he was appointed captain of the “Actéon,” and was engaged till 1831 on the coast of Algiers and in the conquest of the town and country. His first command as flag officer was in the Pacific, where he showed much tact during the dispute over the Marquesas Islands with England in 1844. He was promoted vice-admiral in 1848. During the Crimean War he commanded in the Black Sea, and co-operated with Admiral Dundas in the bombardment of Sevastopol 17th of October 1854. His relations with his English colleague were not very cordial. On the 7th of December 1854 he was promoted admiral. Shortly afterwards he was recalled to France, and was named minister of marine. His administration lasted till 1860, and was remarkable for the expeditions to Italy and China organized under his directions; but it was even more notable for the energy shown in adopting and developing the use of armour. The launch of the “Gloire” in 1859 set the example of constructing sea-going iron-clads. The first English iron-clad, the “Warrior,” was designed as an answer to the “Gloire.” When Napoleon III. made his first concession to Liberal opposition, Admiral Hamelin was one of the ministers sacrificed. He held no further command, and died on the 10th of January 1864.

HAMELN, a town of Germany, in the Prussian province of Hanover, at the confluence of the Weser and Hamel, 33 m. S.W. of Hanover, on the line to Altenbeken, which here effects a junction with railways to Löhne and Brunswick. Pop. (1905) 20,736. It has a venerable appearance and has many interesting and picturesque houses. The chief public buildings of interest are the minster, dedicated to St Boniface and restored in 1870-1875; the town hall; the so-called Rattenfängerhaus (rat-catcher’s house) with mural frescoes illustrating the legend (see below); and the Hochzeitshaus (wedding house) with beautiful gables. There are classical, modern and commercial schools. The principal industries are the manufacture of paper, leather, chemicals and tobacco, sugar refining, shipbuilding and salmon fishing. By the steamboats on the Weser there is communication with Karlshafen and Minden. In order to avoid the dangerous part of the river near the town a channel was cut in 1734, the repairing and deepening of which, begun in 1868, was completed in 1873. The Weser is here crossed by an iron suspension bridge 830 ft. in length, supported by a pier erected on an island in the middle of the river.

The older name of Hameln was Hameloa or Hamelowe, and the town owes its origin to an abbey. It existed as a town as early as the 11th century, and in 1259 it was sold by the abbot of Fulda to the bishop of Minden, afterwards passing under the protection of the dukes of Brunswick. About 1540 the Reformation gained an entrance into the town, which was taken by both parties during the Thirty Years’ War. In 1757 it capitulated to the French, who, however, vacated it in the following year. Its fortifications were strengthened in 1766 by the erection of Fort George, on an eminence to the west of the town, across the river. On the capitulation of the Hanoverian army in 1803 Hameln fell into the hands of the French; it was retaken by the Prussians in 1806, but, after the battle of Jena, again passed to the French, who dismantled the fortifications and incorporated the town in the kingdom of Westphalia. In 1814 it again became Hanoverian, but in 1866 fell with that kingdom to Prussia.

Legend of the Pied Piper.—Hameln is famed as the scene of the myth of the piper of Hameln. According to the legend, the town in the year 1284 was infested by a terrible plague of rats. One day there appeared upon the scene a piper clad in a fantastic suit, who offered for a certain sum of money to charm all the vermin into the Weser. His conditions were agreed to, but after he had fulfilled his promise the inhabitants, on the ground that he was a sorcerer, declined to fulfil their part of the bargain, whereupon on the 26th of June he reappeared in the streets of the town, and putting his pipe to his lips began a soft and curious strain. This drew all the children after him and he led them out of the town to the Koppelberg hill, in the side of which a door suddenly opened, by which he entered and the children after him, all but one who was lame and could not follow fast enough to reach the door before it shut again. Some trace the origin of the legend to the Children’s Crusade of 1211; others to an abduction of children; and others to a dancing mania which seized upon some of the young people of Hameln who left the town on a mad pilgrimage from which they never returned. For a considerable time the town dated its public documents from the event. The story is the subject of a poem by Robert Browning, and also of one by Julius Wolff. Curious evidence that the story rests on a basis of truth is given by the fact that the Koppelberg is not one of the imposing hills by which Hameln is surrounded, but no more

than a slight elevation of the ground, barely high enough to hide the children from view as they left the town.

See C. Langlotz, *Geschichte der Stadt Hameln* (Hameln, 1888 fol.); Sprenger, *Geschichte der Stadt Hameln* (1861); O. Meinardus, *Der historische Kern der Rattenfängersage* (Hameln, 1882); Jostes, *Der Rattenfänger von Hameln* (Bonn, 1885); and S. Baring-Gould, *Curious Myths of the Middle Ages* (1868).

HAMERLING, ROBERT (1830-1889), Austrian poet, was born at Kirchenberg-am-Walde in Lower Austria, on the 24th of March 1830, of humble parentage. He early displayed a genius for poetry and his youthful attempts at drama excited the interest and admiration of some influential persons. Owing to their assistance young Hamerling was enabled to attend the gymnasium in Vienna and subsequently the university. In 1848 he joined the student's legion, which played so conspicuous a part in the revolutions of the capital, and in 1849 shared in the defence of Vienna against the imperialist troops of Prince Windischgrätz, and after the collapse of the revolutionary movement he was obliged to hide for a long time to escape arrest. For the next few years he diligently pursued his studies in natural science and philosophy, and in 1855 was appointed master at the gymnasium at Trieste. For many years he battled with ill-health, and in 1866 retired on a pension, which in acknowledgment of his literary labours was increased by the government to a sum sufficient to enable him to live without care until his death at his villa in Stiftingstal near Graz, on the 13th of July 1889. Hamerling was one of the most remarkable of the poets of the modern Austrian school; his imagination was rich and his poems are full of life and colour. His most popular poem, *Ahasver in Rom* (1866), of which the emperor Nero is the central figure, shows at its best the author's brilliant talent for description. Among his other works may be mentioned *Venus im Exil* (1858); *Der König von Sion* (1869), which is generally regarded as his masterpiece; *Die sieben Todsünden* (1872); *Blätter im Winde* (1887); *Homunculus* (1888); *Amor und Psyche* (1882). His novel, *Aspasia* (1876) gives a finely-drawn description of the Periclean age, but like his tragedy *Danton und Robespierre* (1870), is somewhat stilted, showing that Hamerling's genius, though rich in imagination, was ill-suited for the realistic presentation of character.

A popular edition of Hamerling's works in four volumes was published by M. M. Rabenlechner (Hamburg, 1900). For the poet's life, see his autobiographical writings, *Stationen meiner Lebenspilgerschaft* (1889) and *Lehrjahre der Liebe* (1890); also M. M. Rabenlechner, *Hamerling, sein Leben und seine Werke*, i. (Hamburg, 1896); a short biography by the same (Dresden, 1901); R. H. Kleinert, *R. Hamerling, ein Dichter der Schönheit* (Hamburg, 1889); A. Polzer, *Hamerling, sein Wesen und Wirken* (Hamburg, 1890).

HAMERTON, PHILIP GILBERT (1834-1894), English artist and author, was born at Laneside, near Shaw, close to Oldham, on the 10th of September 1834. His mother died at his birth, and having lost his father ten years afterwards, he was educated privately under the direction of his guardians. His first literary attempt, a volume of poems, proving unsuccessful, he devoted himself for a time entirely to landscape painting, encamping out of doors in the Highlands, where he eventually rented the island of Innistrynych, upon which he settled with his wife, a French lady, in 1858. Discovering after a time that his qualifications were rather those of an art critic than of a painter he removed to the neighbourhood of his wife's relatives in France, where he produced his *Painter's Camp in the Highlands* (1863), which obtained a great success and prepared the way for his standard work on *Etching and Etchers* (1866). In the following year he published a book, entitled *Contemporary French Painters*, and in 1868 a continuation, *Painting in France after the Decline of Classicism*. He had meanwhile become art critic to the *Saturday Review*, a position which, from the burden it laid upon him of frequent visits to England, he did not long retain. He proceeded (1870) to establish an art journal of his own, *The Portfolio*, a monthly periodical, each number of which consisted of a monograph upon some artist or group of artists, frequently written and always edited by him. The discontinuance of his active work as a painter gave him time for more general literary composition, and he successively produced *The Intellectual Life* (1873), perhaps the best known and most valuable of his writings; *Round my House* (1876), notes on French society by a resident; and *Modern Frenchmen* (1879), admirable short biographies. He also wrote two novels, *Wenderholme* (1870)

and *Marmorne* (1878). In 1884 *Human Intercourse*, another valuable volume of essays, was published, and shortly afterwards Hamerton began to write his autobiography, which he brought down to 1858. In 1882 he issued a finely illustrated work on the technique of the great masters of various arts, under the title of The *Graphic Arts*, and three years later another splendidly illustrated volume, *Landscape*, which traces the influence of landscape upon the mind of man. His last books were: *Portfolio Papers* (1889) and *French and English* (1889). In 1891 he removed to the neighbourhood of Paris, and died suddenly on the 4th of November 1894, occupied to the last with his labours on *The Portfolio* and other writings on art.

In 1896 was published *Philip Gilbert Hamerton: an Autobiography*, 1834-1858; and a *Memoir by his Wife*, 1858-1894.

HAMI, a town in Chinese Turkestan, otherwise called KAMIL, KOMUL or KAMUL, situated on the southern slopes of the Tian-Shan mountains, and on the northern verge of the Great Gobi desert, in 42° 48′ N., 93° 28′ E., at a height above sea-level of 3150 ft. The town is first mentioned in Chinese history in the 1st century, under the name I-wu-lu, and said to be situated 1000 lis north of the fortress Yü-men-kuan, and to be the key to the western countries. This evidently referred to its advantageous position, lying as it did in a fertile tract, at the point of convergence of two main routes running north and south of the Tian-Shan and connecting China with the west. It was taken by the Chinese in A.D. 73 from the Hiungnu (the ancient inhabitants of Mongolia), and made a military station. It next fell into the bands of the Uighurs or Eastern Turks, who made it one of their chief towns and held it for several centuries, and whose descendants are said to live there now. From the 7th to the 11th century I-wu-lu is said to have borne the name of Igu or I-chu, under the former of which names it is spoken of by the Chinese pilgrim, Hsüan tsang, who passed through it in the 7th century. The name Hami is first met in the Chinese *Yüan-shi* or "History of the Mongol Dynasty," but the name more generally used there is Homi-li or Komi-li. Marco Polo, describing it apparently from hearsay, calls it Camul, and speaks of it as a fruitful place inhabited by a Buddhist people of idolatrous and wanton habits. It was visited in 1341 by Giovanni de Marignolli, who baptized a number of both sexes there, and by the envoys of Shah Rukh (1420), who found a magnificent mosque and a convent of dervishes, in juxtaposition with a fine Buddhist temple. Hadji Mahommed (Ramusio's friend) speaks of Kamul as being in his time (*c.* 1550) the first Mahommedan city met with in travelling from China. When Benedict Goes travelled through the country at the beginning of the 17th century, the power of the king Mahommed Khan of Kashgar extended over nearly the whole country at the base of the Tian-Shan to the Chinese frontier, including Kamil. It fell under the sway of the Chinese in 1720, was lost to them in 1865 during the great Mahommedan rebellion, and the trade route through it was consequently closed, but was regained in 1873. Owing to its commanding position on the principal route to the west, and its exceptional fertility, it has very frequently changed hands in the wars between China and her western neighbours. Hami is now a small town of about 6000 inhabitants, and is a busy trading centre. The Mahommedan population consists of immigrants from Kashgaria, Bokhara and Samarkand, and of descendants of the Uighurs.

HAMILCAR BARCA, or BARCAS (Heb. *barak* "lightning"), Carthaginian general and statesman, father of Hannibal, was born soon after 270 B.C. He distinguished himself during the First Punic War in 247, when he took over the chief command in Sicily, which at this time was almost entirely in the hands of the Romans. Landing suddenly on the north-west of the island with a small mercenary force he seized a strong position on Mt. Ercte (Monte Pellegrino, near Palermo), and not only maintained himself against all attacks, but carried his raids as far as the coast of south Italy. In 244 he transferred his army to a similar position on the slopes of Mt. Eryx (Monte San Giuliano), from which he was able to lend support to the besieged garrison in the neighbouring town of Drepanum (Trapani). By a provision of the peace of 241 Hamilcar's unbeaten force was allowed to depart from Sicily without any token of submission. On returning to Africa his troops, which had been kept together only by his personal authority and by the promise of good pay, broke out into open mutiny when their rewards were withheld by Hamilcar's opponents among the governing aristocracy. The serious danger into which Carthage was brought by the failure of the aristocratic generals was averted by Hamilcar, whom the government in this crisis could not but reinstate. By the power of his personal influence among the mercenaries and the surrounding African peoples, and by superior strategy, he speedily

crushed the revolt (237). After this success Hamilcar enjoyed such influence among the popular and patriotic party that his opponents could not prevent him being raised to a virtual dictatorship. After recruiting and training a new army in some Numidian forays he led on his own responsibility an expedition into Spain, where he hoped to gain a new empire to compensate Carthage for the loss of Sicily and Sardinia, and to serve as a basis for a campaign of vengeance against the Romans (236). In eight years by force of arms and diplomacy he secured an extensive territory in Spain, but his premature death in battle (228) prevented him from completing the conquest. Hamilcar stood out far above the Carthaginians of his age in military and diplomatic skill and in strength of patriotism; in these qualities he was surpassed only by his son Hannibal, whom he had imbued with his own deep hatred of Rome and trained to be his successor in the conflict.

This Hamilcar has been confused with another general who succeeded to the command of the Carthaginians in the First Punic War, and after successes at Therma and Drepanum was defeated at Ecnomus (256 B.C.). Subsequently, apart from unskilful operations against Regulus, nothing is certainly known of him. For others of the name see CARTHAGE, SICILY, Smith's *Classical Dictionary*. So far as the name itself is concerned, *Milcar* is perhaps the same as *Melkarth*, the Tyrian god.

See Polybius i.-iii.; Cornelius Nepos, *Vita Hamilcaris*; Appian, *Res Hispanicae*, chs. 4, 5, Diodorus, *Excerpta*, xxiv., xxv.; O. Meitzer, *Geschichte der Karthager* (Berlin, 1877), ii. also PUNIC WARS.

(M. O. B. C.)

HAMILTON, the name of a famous Scottish family. Chief among the legends still clinging to this important family is that which gives a descent from the house of Beaumont, a branch of which is stated to have held the manor of Hamilton in Leicestershire; and it is argued that the three cinquefoils of the Hamilton shield bear some resemblance to the single cinquefoil of the Beaumonts. In face of this it has been recently shown that the single cinquefoil was also borne by the Umfravilles of Northumberland, who appear to have owned a place called Hamilton in that county. It may be pointed out that Simon de Montfort, the great earl of Leicester, in whose veins flowed the blood of the Beaumonts, obtained about 1245 the wardship of Gilbert de Umfraville, second earl of Angus, and it is conceivable that this name Gilbert may somehow be responsible for the legend of the Beaumont descent, seeing that the first authentic ancestor of the Hamiltons is one Walter FitzGilbert. He first appears in 1294-1295 as one of the witnesses to a charter by James, the high steward of Scotland, to the monks of Paisley; and in 1296 his name appears in the Homage Roll as Walter FitzGilbert of "Hameldone." Who this Gilbert of "Hameldone" may have been is uncertain, "but the fact must be faced," Mr John Anderson points out (*Scots Peerage*, iv. 340) "that in a charter of the 12th of December 1272 by Thomas of Cragyn or Craigie to the monks of Paisley of his church of Craigie in Kyle, there appears as witness a certain 'Gilbert de Hameldun *clericus*,' whose name occurs along with the local clergy of Inverkip, Blackhall, Paisley and Dunoon. He was therefore probably also a cleric of the same neighbourhood, and it is significant that 'Walter FitzGilbert' appears first in that district in 1294 and in 1296 is described as son of Gilbert de Hameldone...." Walter FitzGilbert took some part in the affairs of his time. At first he joined the English party but after Bannockburn went over to Bruce, was knighted and subsequently received the barony of Cadzow. His younger son John was father of Alexander Hamilton who acquired the lands of Innerwick by marriage, and from him descended a certain Thomas Hamilton, who acquired the lands of Priestfield early in the 16th century. Another Thomas, grandson of this last, who had with others of his house followed Queen Mary and with them had been restored to royal favour, became a lord of session as Lord Priestfield. Two of his younger sons enjoyed also this legal distinction, while the eldest, Thomas, was made an ordinary lord of session as early as 1592 and was eventually created earl of Haddington (*q.v.*). It is interesting to note that the 5th earl of Haddington by his marriage with Lady Margaret Leslie brought for a time the earldom of Rothes to the Hamiltons to be added to their already numerous titles.

Sir "David FitzWalter FitzGilbert," who carried on the main line of the Hamiltons, was taken prisoner at the battle of Neville's Cross (1346) and treated as of great importance, being ransomed, it is stated, for a large sum of money; in 1371 and 1373 he was one of the barons in the parliament. Of the four sons attributed to him David succeeded in the representation of the family, Sir John Hamilton of Fingaltoun was ancestor of the Hamiltons of Preston, and Walter is stated to have been progenitor of the Hamiltons of Cambuskeith and Sanquhar in Ayrshire.

David Hamilton, the first apparently to describe himself as lord of Cadzow, died before 1392, leaving four or five sons, from whom descended the Hamiltons of Bathgate and of Bardowie, and

perhaps also of Udstown, to which last belong the lords Belhaven.

Sir John Hamilton of Cadzow, the eldest son, was twice a prisoner in England, but beyond this little is known of him; even the date of his death is uncertain. His two younger sons are stated to have been founders of the houses of Dalserf and Raploch. His eldest son, James Hamilton of Cadzow, like his father and great-grandfather, visited England as a prisoner, being one of the hostages for the king's ransom. From him the Hamiltons of Silvertonhill and the lords Hamilton of Dalzell claim descent, among the more distinguished members of the former branch being General Sir Ian Hamilton, K.C.B. James Hamilton was succeeded by his eldest son Sir James Hamilton of Cadzow, who was created in 1445 an hereditary lord of parliament, and was thereafter known as Lord Hamilton. He had allied himself some years before with the great house of Douglas by marriage with Euphemia, widow of the 5th earl of Douglas, and was at first one of its most powerful supporters in the struggle with James II. Later, however, he obtained the royal favour and married about 1474 Mary, sister of James III. and widow of Thomas Boyd, earl of Arran. Of this marriage was born James, second Lord Hamilton, who as a near relative took an active part in the arrangements at the marriage of James IV. with Margaret Tudor; being rewarded on the same day (the 8th of August 1503) with the earldom of Arran. A champion in the lists he was scarcely so successful as a leader of men, his struggle with the Douglases being destitute of any great martial achievement. Of his many illegitimate children Sir James Hamilton of Finnart, beheaded in 1540, was ancestor of the Hamiltons of Gilkerscleugh; and John, archbishop of St Andrews, hanged by his Protestant enemies, was ancestor of the Hamiltons of Blair, and is said also to have been ancestor of Hamilton of London, baronet. James, second earl of Arran, son of the first earl by his second wife Janet Beaton, was chosen governor to the little Queen Mary, being nearest of kin to the throne through his grandmother, though the question of the validity of his mother's marriage was by no means settled. He held the governorship till 1554, having in 1549 been granted the duchy of Châtellerault in France. In his policy he was vacillating and eventually he retired to France, being absent during the three momentous years prior to the deposition of Mary. On his return he headed the queen's party, his property suffering in consequence. He was succeeded in the title in 1579 by his eldest son James, whose qualities were such that he was even proposed as a husband for Queen Elizabeth, but unfortunately he soon after became insane, his brother John, afterwards first marquess of Hamilton, administering the estates. From the third son, Claud, descends the duke of Abercorn, heir male of the house of Hamilton.

The first marquess of Hamilton had a natural son, Sir John Hamilton of Lettrick, who was legitimated in 1600 and was ancestor of the lords Bargany. His two legitimate sons were James, 3rd marquess and first duke of Hamilton, and William, who succeeded his brother as 2nd duke and was in turn succeeded under the special remainder contained in the patent of dukedom, by his niece Anne, duchess of Hamilton, who was married in 1656 to William Douglas, earl of Selkirk. The history of the descendants of this marriage belongs to the great house of Douglas, the 7th duke of Hamilton becoming the male representative and chief of the house of Douglas, earls of Angus.

The above mentioned Claud Hamilton, who with his brother, the first marquess, had taken so large a part in the cause of Queen Mary, was created a lord of parliament as Lord Paisley in 1587. He had five sons, of whom three settled in Ireland, Sir Claud being ancestor of the Hamiltons of Beltrim and Sir Frederick, distinguished in early life in the Swedish wars, being ancestor of the viscounts Boyne.

James, the eldest son of Lord Paisley, found favour with James VI. and was created in 1603 Lord of Abercorn, and three years later was advanced in the peerage as earl of Abercorn and lord of Paisley, Hamilton, Mountcastell and Kilpatrick. His eldest son James, 2nd earl of Abercorn, eventually heir male of the house of Hamilton and successor to the dukedom of Châtellerault, was created in his father's lifetime lord of Strabane in Ireland, but he resigned this title in 1633 in favour of his brother Claud, whose grandson, Claud, 5th Lord Strabane, succeeded eventually as 4th earl of Abercorn. This earl, taking the side of James II., was with him in Ireland, his estate and title being afterwards forfeited, while his kinsman Gustavus Hamilton, afterwards first Lord Boyne, raised several regiments for William III., and greatly distinguished himself in the service of that monarch. His brother Charles, 5th earl of Abercorn, who obtained a reversal of the attainder, died without issue surviving in 1701 when the titles passed to his kinsman James Hamilton, grandson of Sir George Hamilton of Donalong in Ireland and great-grandson of the first earl. This branch, most faithful to the house of Stuart, counted among its many members distinguished in military annals Count Anthony Hamilton, author of the *Mémoires du comte de Gramont* and brother of "la belle Hamilton." James, 6th earl of Abercorn (whose brother William was ancestor of Hamilton of the Mount, baronet), was a partizan of William III., and obtained in 1701 the additional Irish titles of lord of Mountcastle and viscount of Strabane.

The 8th earl of Abercorn, who was summoned to the Irish house of peers in his father's

lifetime as Lord Mountcastle, was created a peer of Great Britain in 1786 as Viscount Hamilton of Hamilton in Leicestershire, and renewed the family's connexion with Scotland by repurchasing the barony of Duddingston and later the lordship of Paisley. His nephew and successor was created marquess of Abercorn in 1790, and was father of James, 1st duke of Abercorn.

See the article Hamilton and other articles on the different branches of the family (*e.g.* Haddington and Belhaven) in Sir J. B. Paul's edition of Sir R. Douglas's *Peerage of Scotland*; and also G. Marshall, *Guide to Heraldry and Genealogy*.

HAMILTON, MARQUESSES AND DUKES OF. The holders of these titles descended from Sir James Hamilton of Cadzow, who was made an hereditary lord of parliament in 1445, his lands and baronies at the same time being erected into the "lordship" of Hamilton. His first wife Euphemia, widow of the 5th earl of Douglas, died in 1468, and probably early in 1474 he married Mary, daughter of King James II. and widow of Thomas Boyd, earl of Arran; the consequent nearness of the Hamiltons to the Scottish crown gave them very great weight in Scottish affairs. The first Lord Hamilton has been frequently confused with his father, James Hamilton of Cadzow, who was one of the hostages in England for the payment of James I.'s ransom, and is sometimes represented as surviving until 1451 or even 1479, whereas he certainly died, according to evidence brought forward by J. Anderson in *The Scots Peerage*, before May 1441. James, 2nd Lord Hamilton, son of the 1st lord and Princess Mary, was created earl of Arran in 1503; and his son James, who was regent of Scotland from 1542 to 1554, received in February 1549 a grant of the duchy of Châtellerault in Poitou.

JOHN, 1st marquess of Hamilton (*c.* 1542-1604), third son of James Hamilton, 2nd earl of Arran (*q.v.*) and duke of Châtellerault, was given the abbey of Arbroath in 1551. In politics he was largely under the influence of his energetic and unscrupulous younger brother Claud, afterwards Baron Paisley (*c.* 1543-1622), ancestor of the dukes of Abercorn. The brothers were the real heads of the house of Hamilton, their elder brother Arran being insane. At first hostile to Mary, they later became her devoted partisans. Their uncle, John Hamilton, archbishop of St Andrews, natural son of the 1st earl of Arran, was restored to his consistorial jurisdiction by Mary in 1566, and in May of the next year he divorced Bothwell from his wife. Lord Claud met Mary on her escape from Lochleven and escorted her to Hamilton palace. John appears to have been in France in 1568 when the battle of Langside was fought, and it was probably Claud who commanded Mary's vanguard in the battle. With others of the queen's party they were forfeited by the parliament and sought their revenge on the regent Murray. Although the Hamiltons disavowed all connexion with Murray's murderer, James Hamilton of Bothwellhaugh, he had been provided with horse and weapons by the abbot of Arbroath, and it was at Hamilton that he sought refuge after the deed. Archbishop Hamilton was hanged at Stirling in 1571 for alleged complicity in the murder of Darnley, and is said to have admitted that he was a party to the murder of Murray. At the pacification of Perth in 1573 the Hamiltons abandoned Mary's cause, and a reconciliation with the Douglases was sealed by Lord John's marriage with Margaret, daughter of the 7th Lord Glamis, a cousin of the regent Morton. Sir William Douglas of Lochleven, however, persistently sought his life in revenge for the murder of Murray until, on his refusal to keep the peace, he was imprisoned. On the uncertain evidence extracted from the assassin by torture, the Hamiltons had been credited with a share in the murder of the regent Lennox in 1571. In 1579 proceedings against them for these two crimes were resumed, and when they escaped to England their lands and titles were seized by their political enemies, James Stewart becoming earl of Arran. John Hamilton presently dissociated himself from the policy of his brother Claud, who continued to plot for Spanish intervention on behalf of Mary; and Catholic plotters are even said to have suggested his murder to procure the succession of his brother. Hamilton had at one time been credited with the hope of marrying Mary; his desires now centred on the peaceful enjoyment of his estates. With other Scottish exiles he crossed the border in 1585 and marched on Stirling; he was admitted on the 4th of November and formally reconciled with James VI., with whom he was thenceforward on the friendliest terms. Claud returned to Scotland in 1586, and the abbey of Paisley was erected into a temporal barony in his favour in 1587. Much of his later years was spent in strict retirement, his son being authorized to act for him in 1598. John was created marquess of Hamilton and Lord Evan in 1599, and died on the 6th of April 1604.

His eldest surviving son JAMES, 2nd marquess of Hamilton (*c.* 1589-1625), was created baron of Innerdale and earl of Cambridge in the peerage of England in 1619, and these honours descended to his son James, who in 1643 was created duke of Hamilton (*q.v.*). William, 2nd duke of Hamilton (1616-1651), succeeded to the dukedom on his brother's execution in 1649. He was

created earl of Lanark in 1639, and in the next year became secretary of state in Scotland. Arrested at Oxford by the king's orders in 1643 for "concurrence" with Hamilton, he effected his escape and was temporarily reconciled with the Presbyterian party. He was sent by the Scottish committee of estates to treat with Charles I. at Newcastle in 1646, when he sought in vain to persuade the king to consent to the establishment of Presbyterianism in England. On the 26th of September 1647 he signed on behalf of the Scots the treaty with Charles known as the "Engagement" at Carisbrooke Castle, and helped to organize the second Civil War. In 1648 he fled to Holland, his succession in the next year to his brother's dukedom making him an important personage among the Royalist exiles. He returned to Scotland with Prince Charles in 1650, but, finding a reconciliation with Argyll impossible, he refused to prejudice Charles's cause by pushing his claims, and lived in retirement chiefly until the Scottish invasion of England, when he acted as colonel of a body of his dependants. He died on the 12th of September 1651 from the effects of wounds received at Worcester. He left no male heirs, and the title devolved on the 1st duke's eldest surviving daughter Anne, duchess of Hamilton in her own right.

Anne married in 1656 William Douglas, earl of Selkirk (1635-1694), who was created duke of Hamilton in 1660 on his wife's petition, receiving also several of the other Hamilton peerages, but for his life only. The Hamilton estates had been declared forfeit by Cromwell, and he himself had been fined £1000. He supported Lauderdale in the early stages of his Scottish policy, in which he adopted a moderate attitude towards the Presbyterians, but the two were soon alienated, through the influence of the countess of Dysart, according to Gilbert Burnet, who spent much time at Hamilton Palace in arranging the Hamilton papers. With other Scottish noblemen who resisted Lauderdale's measures Hamilton was twice summoned to London to present his case at court, but without obtaining any result. He was dismissed from the privy council in 1676, and on a subsequent visit to London Charles refused to receive him. On the accession of James II. he received numerous honours, but he was one of the first to enter into communication with the prince of Orange. He presided over the convention of Edinburgh, summoned at his request, which offered the Scottish crown to William and Mary in March 1689. His death took place at Holyrood on the 18th of April 1694. His wife survived until 1716.

James Douglas, 4th duke of Hamilton (1658-1712), eldest son of the preceding and of Duchess Anne, succeeded his mother, who resigned the dukedom to him in 1698, and at the accession of Queen Anne he was regarded as leader of the Scottish national party. He was an opponent of the union with England, but his lack of decision rendered his political conduct ineffective. He was created duke of Brandon in the peerage of Great Britain in 1711; and on the 15th of November in the following year he fought the celebrated duel with Charles Lord Mohun, narrated in Thackeray's *Esmond*, in which both the principals were killed. His son, James (1703-1743), became 5th duke, and his grandson James, 6th duke of Hamilton and Brandon (1724-1758), married the famous beauty, Elizabeth Gunning, afterwards duchess of Argyll. James George, 7th duke (1755-1769), became head of the house of Douglas on the death in 1761 of Archibald, duke of Douglas, whose titles but not his estates then devolved on the duke of Hamilton as heir-male. Archibald's brother Douglas (1756-1799) was the 8th duke, and when he died childless the titles passed to his uncle Archibald (1740-1819). His son Alexander, 10th duke (1767-1852), who as marquess of Douglas was a great collector and connoisseur of books and pictures (his collections realized £397,562 in 1882), was ambassador at St Petersburg in 1806-1807. His sister, Lady Anne Hamilton, was lady-in-waiting and a faithful friend to Queen Caroline, wife of George IV.; she did not write the *Secret History of the Court of England ...* (1832) to which her name was attached. William Alexander, 11th duke of Hamilton (1811-1863), married Princess Marie Amélie, daughter of Charles, grand-duke of Baden, and, on her mother's side, a cousin of Napoleon III. The title of duke of Châtellerault, granted to his remote ancestor in 1548, and claimed at different times by various branches of the Hamilton family, was conferred on the 11th duke's son, William Alexander, 12th duke of Hamilton (1845-1895), by the emperor of the French in 1864. His sister, Lady Mary Douglas-Hamilton, married in 1869 Albert, prince of Monaco, but their marriage was declared invalid in 1880. She subsequently married Count Tassilo Festetics, a Hungarian noble. The 12th duke left no male issue and was succeeded in 1895 by his kinsman, Alfred Douglas, a descendant of the 4th duke. Claud Hamilton, 1st Baron Paisley, brother of the 1st marquess of Hamilton, was, as mentioned above, ancestor of the Abercorn branch of the Hamiltons. His son, who became earl of Abercorn in 1606, received among a number of other titles that of Lord Hamilton. This title, and also that of Viscount Hamilton, in the peerage of Great Britain, conferred on the 8th earl of Abercorn in 1786, are borne by the dukes of Abercorn, whose eldest son is usually styled by courtesy marquess of Hamilton, a title which was added to the other family honours when the 2nd marquess of Abercorn was raised to the dukedom in 1868.

See John Anderson, *The House of Hamilton* (1825); *Hamilton Papers*, ed. J. Bain (2 vols., Edinburgh, 1890-1892); Gilbert Burnet, *Lives of James and William, dukes of Hamilton* (1677); *The Hamilton Papers relative to 1638-1650*, ed. S. R. Gardiner for the Camden Society (1880); G. E. C[okayne], *Complete Peerage* (1887-1898); an article by the Rev. J. Anderson in Sir J. B.

Paul's edition of the *Scots Peerage*, vol. iv. (1907).

HAMILTON, ALEXANDER (1757-1804), American statesman and economist, was born, as a British subject, on the island of Nevis in the West Indies on the 11th of January 1757. He came of good family on both sides. His father, James Hamilton, a Scottish merchant of St Christopher, was a younger son of Alexander Hamilton of Grange, Lanarkshire, by Elizabeth, daughter of Sir R. Pollock. His mother, Rachael Fawcett (Faucette), of French Huguenot descent, married when very young a Danish proprietor of St Croix, John Michael Levine, with whom she lived unhappily and whom she soon left, subsequently living with James Hamilton; her husband procured a divorce in 1759, but the court forbade her remarriage.[1] Such unions as hers with James Hamilton were long not uncommon in the West Indies. By her James Hamilton had two sons, Alexander and James. Business misfortunes having caused his father's bankruptcy, and his mother dying in 1768, young Hamilton was thrown upon the care of maternal relatives at St Croix, where, in his twelfth year, he entered the counting-house of Nicholas Cruger. Shortly afterward Mr Cruger, going abroad, left the boy in charge of the business. The extraordinary specimens we possess of his mercantile correspondence and friendly letters, written at this time, attest an astonishing poise and maturity of mind, and self-conscious ambition. His opportunities for regular schooling must have been very scant; but he had cultivated friends who discerned his talents and encouraged their development, and he early formed the habits of wide reading and industrious study that were to persist through his life. An accomplishment later of great service to Hamilton, common enough in the Antilles, but very rare in the English continental colonies, was a familiar command of French. In 1772 some friends, impressed by a description by him of the terrible West Indian hurricane in that year, made it possible for him to go to New York to complete his education. Arriving in the autumn of 1772, he prepared for college at Elizabethtown, N.J., and in 1774 entered King's College (now Columbia University) in New York City. His studies, however, were interrupted by the War of American Independence.

A visit to Boston seems to have thoroughly confirmed the conclusion, to which reason had already led him, that he should cast in his fortunes with the colonists. Into their cause he threw himself with ardour. In 1774-1775 he wrote two influential anonymous pamphlets, which were attributed to John Jay; they show remarkable maturity and controversial ability, and rank high among the political arguments of the time.[2] He organized an artillery company, was awarded its captaincy on examination, won the interest of Nathanael Greene and Washington by the proficiency and bravery he displayed in the campaign of 1776 around New York City, joined Washington's staff in March 1777 with the rank of lieutenant-colonel, and during four years served as his private secretary and confidential aide. The important duties with which he was entrusted attest Washington's entire confidence in his abilities and character; then and afterwards, indeed, reciprocal confidence and respect took the place, in their relations, of personal attachment.[3] But Hamilton was ambitious for military glory—it was an ambition he never lost; he became impatient of detention in what he regarded as a position of unpleasant dependence, and (Feb. 1781) he seized a slight reprimand administered by Washington as an excuse for abandoning his staff position.[4] Later he secured a field command, through Washington, and won laurels at Yorktown, where he led the American column in the final assault on the British works. In 1780 he married Elizabeth, daughter of General Philip Schuyler, and thus became allied with one of the most distinguished families in New York.

Meanwhile, he had begun the political efforts upon which his fame principally rests. In letters of 1779-1780[5] he correctly diagnoses the ills of the Confederation, and suggests with admirable prescience the necessity of centralization in its governmental powers; he was, indeed, one of the first, if not to conceive, at least to suggest adequate checks on the anarchic tendencies of the time. After a year's service in Congress in 1782-1783, in which he experienced the futility of endeavouring to attain through that decrepit body the ends he sought, he settled down to legal practice in New York.[6] The call for the Annapolis Convention (1786) was Hamilton's opportunity. A delegate from New York, he supported Madison in inducing the Convention to exceed its delegated powers and summon the Federal Convention of 1787 at Philadelphia (himself drafting the call); he secured a place on the New York delegation; and, when his anti-Federal colleagues withdrew from the Convention, he signed the Constitution for his state. So long as his colleagues were present his own vote was useless, and he absented himself for some time from the debates after making one remarkable speech (June 18th, 1787). In this he held up the British government as the best model in the world.[7] Though fully conscious that monarchy in America was impossible, he wished to obtain the next best solution in an aristocratic, strongly centralized, coercive, but representative union, with devices to give weight to the influence of class and property.[8] His plan had no chance of success; but though unable to obtain what he

wished, he used his great talents to secure the adoption of the Constitution.

To this struggle was due the greatest of his writings, and the greatest individual contribution to the adoption of the new government, *The Federalist*, which remains a classic commentary on American constitutional law and the principles of government, and of which Guizot said that "in the application of elementary principles of government to practical administration" it was the greatest work known to him. Its inception, and much more than half its contents were Hamilton's (the rest Madison's and Jay's).[9] Sheer will and reasoning could hardly be more brilliantly and effectively exhibited than they were by Hamilton in the New York convention of 1788, whose vote he won, against the greatest odds, for the ratification of the Constitution. It was the judgment of Chancellor James Kent, the justice of which can hardly be disputed, that "all the documentary proof and the current observation of the time lead us to the conclusion that he surpassed all his contemporaries in his exertions to create, recommend, adopt and defend the Constitution of the United States."

When the new government was inaugurated, Hamilton became secretary of the treasury in Washington's cabinet.[10] Congress immediately referred to him a press of queries and problems, and there came from his pen a succession of papers that have left the strongest imprint on the administrative organization of the national government—two reports on public credit, upholding an ideal of national honour higher than the prevalent popular principles; a report on manufactures, advocating their encouragement (*e.g.* by bounties paid from surplus revenues amassed by tariff duties)—a famous report that has served ever since as a storehouse of arguments for a national protective policy;[11] a report favouring the establishment of a national bank, the argument being based on the doctrine of "implied powers" in the Constitution, and on the application that Congress may do anything that can be made, through the medium of money, to subserve the "general welfare" of the United States—doctrines that, through judicial interpretation, have revolutionized the Constitution; and, finally, a vast mass of detailed work by which order and efficiency were given to the national finances. In 1793 he put to confusion his opponents who had brought about a congressional investigation of his official accounts. The success of his financial measures was immediate and remarkable. They did not, as is often but loosely said, create economic prosperity; but they did prop it, in an all-important field, with order, hope and confidence. His ultimate purpose was always the strengthening of the union; but before particularizing his political theories, and the political import of his financial measures, the remaining events of his life may be traced.

His activity in the cabinet was by no means confined to the finances. He regarded himself, apparently, as premier, and sometimes overstepped the limits of his office in interfering with other departments. The heterogeneous character of the duties placed upon his department by Congress seemed in fact to reflect the English idea of its primacy. Hamilton's influence was in fact predominant with Washington (so far as any man could have predominant influence). Thus it happens that in foreign affairs, whatever credit properly belongs to the Federalists as a party (see also the article Federalist Party) for the adoption of that principle of neutrality which became the traditional policy of the United States must be regarded as largely due to Hamilton. But allowance must be made for the mere advantage of initiative which belonged to any party that organized the government—the differences between Hamilton and Jefferson, in this question of neutrality, being almost purely factitious.[12] On domestic policy their differences were vital, and in their conflicts over Hamilton's financial measures they organized, on the basis of varying tenets and ideals which have never ceased to conflict in American politics, the two great parties of Federalists and Democrats (or Democratic-Republicans). On the 31st of January 1795 Hamilton resigned his position as secretary of the treasury and returned to the practice of law in New York, leaving it for public service only in 1798-1800, when he was the active head, under Washington (who insisted that Hamilton should be second only to himself), of the army organized for war against France. But though in private life he remained the continual and chief adviser of Washington—notably in the serious crisis of the Jay Treaty, of which Hamilton approved. Washington's *Farewell Address* (1796) was written for him by Hamilton.

After Washington's death the Federalist leadership was divided (and disputed) between John Adams, who had the prestige of a varied and great career, and greater strength than any other Federalist with the people, and Hamilton, who controlled practically all the leaders of lesser rank, including much the greater part of the most distinguished men of the country, so that it has been very justly said that "the roll of his followers is enough of itself to establish his position in American history" (Lodge). But Hamilton was not essentially a popular leader. When his passions were not involved, or when they were repressed by a crisis, he was far-sighted, and his judgment of men was excellent.[13] But as Hamilton himself once said, his heart was ever the master of his judgment. He was, indeed, not above intrigue,[14] but he was unsuccessful in it. He was a fighter through and through, and his courage was superb; but he was indiscreet in utterance, impolitic in management, opinionated, self-confident, and uncompromising in nature and methods. His faults are nowhere better shown than in his quarrel with John Adams. Three times, in order to accomplish ends deemed by him, personally, to be desirable, Hamilton used

the political fortunes of John Adams, in presidential elections, as a mere hazard in his manœuvres; moreover, after Adams became president, and so the official head of the party, Hamilton constantly advised the members of the president's cabinet, and through them endeavoured to control Adams's policy; and finally, on the eve of the crucial election of 1800, he wrote a bitter personal attack on the president (containing much confidential cabinet information), which was intended for private circulation, but which was secured and published by Aaron Burr, his legal and political rival.

The mention of Burr leads us to the fatal end of another great political antipathy of Hamilton's life. He read Burr's character correctly from the beginning; deemed it a patriotic duty to thwart him in his ambitions; defeated his hopes successively of a foreign mission, the presidency, and the governorship of New York; and in his conversations and letters repeatedly and unsparingly denounced him. If these denunciations were known to Burr they were ignored by him until his last defeat. After that he forced a quarrel on a trivial bit of hearsay (that Hamilton had said he had a "despicable" opinion of Burr); and Hamilton, believing as he explained in a letter he left before going to his death—that a compliance with the duelling prejudices of the time was inseparable from the ability to be in future useful in public affairs, accepted a challenge from him. The duel was fought at Weehawken on the Jersey shore of the Hudson opposite the City of New York. At the first fire Hamilton fell, mortally wounded, and he died on the following day, the 12th of July 1804. Hamilton himself did not intend to fire, but his pistol went off as he fell. The tragic close of his career appeased for the moment the fierce hatred of politics, and his death was very generally deplored as a national calamity.[15]

No emphasis, however strong, upon the mere consecutive personal successes of Hamilton's life is sufficient to show the measure of his importance in American history. That importance lies, to a large extent, in the political ideas for which he stood. His mind was eminently "legal." He was the unrivalled controversialist of the time. His writings, which are distinguished by clarity, vigour and rigid reasoning, rather than by any show of scholarship—in the extent of which, however solid in character Hamilton's might have been, he was surpassed by several of his contemporaries—are in general strikingly empirical in basis. He drew his theories from his experiences of the Revolutionary period, and he modified them hardly at all through life. In his earliest pamphlets (1774-1775) he started out with the ordinary pre-Revolutionary Whig doctrines of natural rights and liberty; but the first experience of semi-anarchic states'-rights and individualism ended his fervour for ideas so essentially alien to his practical, logical mind, and they have no place in his later writings. The feeble inadequacy of conception, infirmity of power, factional jealousy, disintegrating particularism, and vicious finance of the Confederation were realized by many others; but none other saw so clearly the concrete nationalistic remedies for these concrete ills, or pursued remedial ends so constantly, so ably, and so consistently. An immigrant, Hamilton had no particularistic ties; he was by instinct a "continentalist" or federalist. He wanted a strong union and energetic government that should "rest as much as possible on the shoulders of the people and as little as possible on those of the state legislatures"; that should have the support of wealth and class; and that should curb the states to such an "entire subordination" as nowise to be hindered by those bodies. At these ends he aimed with extraordinary skill in all his financial measures. As early as 1776 he urged the direct collection of federal taxes by federal agents. From 1779 onward we trace the idea of supporting government by the interest of the propertied classes; from 1781 onward the idea that a not-excessive public debt would be a blessing[16] in giving cohesiveness to the union: hence his device by which the federal government, assuming the war debts of the states, secured greater resources, based itself on a high ideal of nationalism, strengthened its hold on the individual citizen, and gained the support of property. In his report on manufactures his chief avowed motive was to strengthen the union. To the same end he conceived the constitutional doctrines of liberal construction, "implied powers," and the "general welfare," which were later embodied in the decisions of John Marshall. The idea of nationalism pervaded and quickened all his life and works. With one great exception, the dictum of Guizot is hardly an exaggeration, that "there is not in the Constitution of the United States an element of order, of force, of duration, which he did not powerfully contribute to introduce into it and to cause to predominate."

The exception, as American history showed, was American democracy. The loose and barren rule of the Confederation seemed to conservative minds such as Hamilton's to presage, in its strengthening of individualism, a fatal looseness of social restraints, and led him on to a dread of democracy that he never overcame. Liberty, he reminded his fellows, in the New York Convention of 1788, seemed to be alone considered in government, but there was another thing equally important: "a principle of strength and stability in the organization ... and of vigour in its operation." But Hamilton's governmental system was in fact repressive.[17] He wanted a system strong enough, he would have said, to overcome the anarchic tendencies loosed by war, and represented by those notions of natural rights which he had himself once championed; strong enough to overbear all local, state and sectional prejudices, powers or influence, and to control —not, as Jefferson would have it, to be controlled by—the people. Confidence in the integrity,

the self-control, and the good judgment of the people, which was the content of Jefferson's political faith, had almost no place in Hamilton's theories. "Men," said he, "are reasoning rather than reasonable animals." The charge that he laboured to introduce monarchy by intrigue is an under-estimate of his good sense.[18] Hamilton's thinking, however, did carry him foul of current democratic philosophy; as he said, he presented his plan in 1787 "not as attainable, but as a model to which we ought to approach as far as possible"; moreover, he held through life his belief in its principles, and in its superiority over the government actually created; and though its inconsistency with American tendencies was yearly more apparent, he never ceased to avow on all occasions his aristocratic-monarchical partialities. Moreover, his preferences for at least an aristocratic republic were shared by many other men of talent. When it is added that Jefferson's assertions, alike as regards Hamilton's talk[19] and the intent and tendency of his political measures, were, to the extent of the underlying basic fact—but discounting Jefferson's somewhat intemperate interpretations—unquestionably true,[20] it cannot be accounted strange that Hamilton's Democratic opponents mistook his theoretic predilections for positive designs. Nor would it be a strained inference from much that be said, to believe that he hoped and expected that in the "crisis" he foresaw, when democracy should have caused the ruin of the country, a new government might be formed that should approximate to his own ideals.[21] From the beginning of the excesses of the French Revolution he was possessed by the persuasion that American democracy, likewise, might at any moment crush the restraints of the Constitution to enter on a career of licence and anarchy. To this obsession he sacrificed his life.[22] After the Democratic victory of 1800, his letters, full of retrospective judgments and interesting outlooks, are but rarely relieved in their sombre pessimism by flashes of hope and courage. His last letter on politics, written two days before his death, illustrates the two sides of his thinking already emphasized: in this letter he warns his New England friends against dismemberment of the union as "a clear sacrifice of great positive advantages, without any counterbalancing good; administering no relief to our real disease, which is democracy, the poison of which, by a subdivision, will only be more concentrated in each part, and consequently the more virulent." To the end he never lost his fear of the states, nor gained faith in the future of the country. He laboured still, in mingled hope and apprehension, "to prop the frail and worthless fabric,"[23] but for its spiritual content of democracy he had no understanding, and even in its nationalism he had little hope. Yet probably to no one man, except perhaps to Washington, does American nationalism owe so much as to Hamilton.

In the development of the United States the influence of Hamiltonian nationalism and Jeffersonian democracy has been a reactive union; but changed conditions since Hamilton's time, and particularly since the Civil War, are likely to create misconceptions as to Hamilton's position in his own day. Great constructive statesman as he was, he was also, from the American point of view, essentially a reactionary. He was the leader of reactionary forces—constructive forces, as it happened—in the critical period after the War of American Independence, and in the period of Federalist supremacy. He was in sympathy with the dominant forces of public life only while they took, during the war, the predominant impress of an imperfect nationalism.[24] Jeffersonian democracy came into power in 1800 in direct line with colonial development; Hamiltonian Federalism was a break in that development; and this alone can explain how Jefferson could organize the Democratic Party in face of the brilliant success of the Federalists in constructing the government. Hamilton stigmatized his great opponent as a political fanatic; but actualist as he claimed to be,[25] Hamilton could not see, or would not concede, the predominating forces in American life, and would uncompromisingly have minimized the two great political conquests of the colonial period—local self-government and democracy.

Few Americans have received higher tributes from foreign authorities. Talleyrand, personally impressed when in America with Hamilton's brilliant qualities, declared that he had the power of divining without reasoning, and compared him to Fox and Napoleon because he had "deviné l'Europe." Of the judgments rendered by his countrymen, Washington's confidence in his ability and integrity is perhaps the most significant. Chancellor James Kent, and others only less competent, paid remarkable testimony to his legal abilities. Chief-justice Marshall ranked him second to Washington alone. No judgment is more justly measured than Madison's (in 1831): "That he possessed intellectual powers of the first order, and the moral qualities of integrity and honour in a captivating degree, has been awarded him by a suffrage now universal. If his theory of government deviated from the republican standard he had the candour to avow it, and the greater merit of co-operating faithfully in maturing and supporting a system which was not his choice."

In person Hamilton was rather short and slender; in carriage, erect, dignified and graceful. Deep-set, changeable, dark eyes vivified his mobile features, and set off his light hair and fair, ruddy complexion. His head in the famous Trumbull portrait is boldly poised and very striking. The captivating charm of his manners and conversation is attested by all who knew him, and in familiar life he was artlessly simple. Friends he won readily, and he held them in devoted attachment by the solid worth of a frank, ardent, generous, warm-hearted and high-minded

character. Versatile as were his intellectual powers, his nature seems comparatively simple. A firm will, tireless energy, aggressive courage and bold self-confidence were its leading qualities; the word "intensity" perhaps best sums up his character. His Scotch and Gallic strains of ancestry are evident; his countenance was decidedly Scotch; his nervous speech and bearing and vehement temperament rather French; in his mind, agility, clarity and penetration were matched with logical solidity. The remarkable quality of his mind lay in the rare combination of acute analysis and grasp of detail with great comprehensiveness of thought. So far as his writings show, he was almost wholly lacking in humour, and in imagination little less so. He certainly had wit, but it is hard to believe he could have had any touch of fancy. In public speaking he often combined a rhetorical effectiveness and emotional intensity that might take the place of imagination, and enabled him, on the coldest theme, to move deeply the feelings of his auditors.

BIBLIOGRAPHY.—Hamilton's *Works* have been edited by H. C. Lodge (New York, 9 vols., 1885-1886, and 12 vols., 1904); all references above are first to the latter edition, secondly (in brackets) to the former. There are various additional editions of *The Federalist*, notably those of H. B. Dawson (1863), H. C. Lodge (1888), and—the most scholarly—P. L. Ford (1898); cf. *American Historical Review*, ii. 413, 675. See also James Bryce, "Predictions of Hamilton and de Tocqueville," in *Johns Hopkins University Studies*, vol. 5 (Baltimore, 1887); and the capital essay of Anson D. Morse in the *Political Science Quarterly*, v. (1890), pp. 1-23. For a bibliography of the period see the *Cambridge Modern History*, vol. vii. pp. 780-810. The unfinished *Life of Alexander Hamilton, by his Son*, J. C. Hamilton, going only to 1787 (New York, 2 vols., 1834-1840), was superseded by the same author's valuable, but partisan and uncritical *History of the Republic ... as traced in the Writings of Alexander Hamilton* (New York, 7 vols., 1857-1864; 4th ed., Boston, 1879). Professor W. G. Sumner's *Alexander Hamilton* (Makers of America series, New York, 1890) is appreciative, and important for its criticism from the point of view of an American free-trader; see also, on Hamilton's finance and economic views, Prof. C. F. Dunbar, *Quarterly Journal of Economics*, iii. (1889), p. 32; E. G. Bourne in ibid. x. (1894), p. 328; E. C. Lunt in *Journal of Political Economy*, iii. (1895), p. 289. Among modern studies must also be mentioned J. T. Morse's able *Life* (1876); H. C. Lodge's (in the American Statesmen series, 1882); and G. Shea's two books, his *Historical Study* (1877) and *Life and Epoch* (1879). C. J. Riethmüller's *Hamilton and his Contemporaries* (1864), written during the Civil War, is sympathetic, but rather speculative. The most vivid account of Hamilton is in Mrs Gertrude Atherton's historical romance, *The Conqueror* (New York, 1902), for the writing of which the author made new investigations into the biographical details, and elucidated some points previously obscure; see also her *A Few of Hamilton's Letters* (1903). F. S. Oliver's brilliant *Alexander Hamilton: An Essay on American Union* (London, 1906), which uses its subject to illustrate the necessity of British imperial federation, is strongly anti-Jeffersonian, but no other work by a non-American author brings out so well the wider issues involved in Hamilton's economic policy.

(F. S. P.; H. CH.)

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1 These facts were first definitely determined by Mrs Gertrude Atherton from the Danish Archives in Denmark and the West Indies; see article in *North American Review*, Aug. 1902, vol. 175, p. 229; and preface to her *A Few of Hamilton's Letters* (New York, 1903).

2 These were written in answer to the widely read pamphlets published over the *nom de plume* of "A Westchester Farmer," and now known to have been written by Samuel Seabury (*q.v.*). Hamilton's pamphlets were entitled "A Full Vindication of the Measures of the Congress from the Calumnies of their Enemies," and "The Farmer Refuted." Concerning them George Ticknor Curtis (*Constitutional History of the United States*, i. 274) has said, "There are displayed in these papers a power of reasoning and sarcasm, a knowledge of the principles of government and of the English constitution, and a grasp of the merits of the whole controversy, that would have done honour to any man at any age. To say that they evince precocity of intellect gives no idea of their main characteristics. They show great maturity—a more remarkable maturity than has ever been exhibited by any other person, at so early an age, in the same department of thought."

3 George Bancroft was the first to point out that there is small evidence that Hamilton ever really appreciated Washington's great qualities; but on the score of personal and Federalist indebtedness he left explicit recognition.

4 For Hamilton's letter to General Schuyler on this episode—one of the most important letters, in some ways, that he ever wrote—see the *Works*, ix. 232 (8: 35).

5 Especially the letter of September 1780 to James Duane, *Works*, i. 213 (1: 203); also the "Continentalist" papers of 1781.

6 His most famous case at this time (*Rutgers* v. *Waddington*) was one that well illustrated his moral courage. Under a "Trespass Law" of New York, Elizabeth Rutgers, a widow, brought suit against one Joshua Waddington, a Loyalist, who during the war of American Independence, while New York was occupied by the British, had made use of some of her property. In face of popular clamour, Hamilton, who advocated a conciliatory treatment of the Loyalists, represented Waddington, who won the case, decided in 1784.

7 As Mr Oliver points out (*Alexander Hamilton*, p. 156), Hamilton's idea of the British constitution was not a correct picture of the British constitution in 1787, and still less of that of the 20th century. "What he had in mind was the British constitution as George III. had tried to make it." Hamilton's ideal was an elective monarchy, and his guiding principle a proper balance of authority.

8 Briefly, he proposed a governor and two chambers—an Assembly elected by the people for three years, and a Senate—the governor and senate holding office for life or during good behaviour, and chosen, through electors, by voters qualified by property; the governor to have an unqualified veto on federal legislation; state governors to have a similar veto on state legislation, and to be appointed by the federal government; the federal government to control all militia. See *Works*, i. 347 (1: 331); and cf. his correspondence, which is scanty, *passim* in later years, notably x. 446, 431, 329 (8: 606, 596, 517), and references below.

9 Nearly all the papers in *The Federalist* first appeared (between October 1787 and April 1788) in New York journals, over the signature "Publius." Jay wrote only five. The authorship of twelve of them is uncertain, and has been the subject of much controversy between partisans of Hamilton and Madison. Concerning *The Federalist* Chancellor James Kent (*Commentaries*, i. 241) said: "There is no work on the subject of the Constitution, and on republican and federal government generally, that deserves to be more thoroughly studied. I know not indeed of any work on the principles of free government that is to be compared, in instruction and intrinsic value, to this small and unpretending volume.... It is equally admirable in the depth of its wisdom, the comprehensiveness of its views, the sagacity of its reflections, and the fearlessness, patriotism, candour, simplicity, and elegance, with which its truths are uttered and recommended."

10 The position was offered first to Robert Morris, who declined it, expressing the opinion that Hamilton was the man best fitted to meet its problems.

11 Hamilton's *Report on Manufactures* (1791) by itself entitles him to the place of an epoch-maker in economics. It was the first great revolt from Adam Smith, on whose *Wealth of Nations* (1776) he is said to have already written a commentary which is lost. In his criticism on Adam Smith, and his arguments for a system of moderate protective duties associated with the deliberate policy of promoting national interests, his work was the inspiration of Friedrich List, and so the foundation of the economic system of Germany in a later day, and again, still later, of the policy of Tariff Reform and Colonial Preference in England, as advocated by Mr Chamberlain and his supporters. See the detailed account given in the article PROTECTION.

12 That is, while Jefferson hated British aristocracy and sympathized with French democracy, Hamilton hated French democracy and sympathized with British aristocracy and order; but neither wanted war; and indeed Jefferson, throughout life, was the more peaceful of the two. Neutrality was in the line of commonplace American thinking of that time, as may be seen in the writings of all the leading men of the day. The cry of "British Hamilton" had no good excuse whatever.

13 *e.g.* his prediction in 1789 of the course of the French Revolution; his judgments of Burr from 1792 onward, and of Burr and Jefferson in 1800.

14 After the Democrats won New York in 1799, Hamilton proposed to Governor John Jay to call together the out-going Federalist legislature, in order to choose Federalist presidential electors, a suggestion which Jay simply endorsed: "Proposing a measure for party purposes which it would not become me to adopt."—*Works*, x. 371 (8: 549). Compare also with later developments of ward politics in New York City, Hamilton's curious suggestions as to Federalist charities, &c., in connexion with the Christian Constitutional Society proposed by him in 1802 to combat irreligion and democracy (*Works*, x. 432 (8 : 596).

15 Hamilton's widow, who survived him for half a century, dying at the age of ninety-seven, was left with four sons and four daughters. He had been an affectionate husband and father, though his devotion to his wife had been consistent with occasional lapses from strict marital fidelity. One intrigue into which he drifted in 1791, with a Mrs Reynolds, led to the blackmailing of Hamilton by her husband; and when this rascal, shortly afterwards, got into trouble for fraud, his relations with Hamilton were unscrupulously misrepresented for political purposes by some of Hamilton's opponents. But Hamilton faced the necessity of revealing the true state of things with conspicuous courage, and the scandal only reacted on his accusers. One of them was Monroe, whose reputation comes very badly out of this unsavoury affair.

16 In later years he said no debt should be incurred without providing simultaneously for its payment.

17 He warmly supported the Alien and Sedition Laws of 1798 (in their final form).

18 The idea, he wrote to Washington, was "one of those visionary things none but madmen could undertake, and that no wise man will believe" (1792). And see his comments on Burr's ambitions, *Works*, x. 417, 450 (8: 585, 610). We may accept as just, and applicable to his entire career, the statement made by himself in 1803 of his principles in 1787: "(1) That the political powers of the people of this continent would endure nothing but a representative form of government. (2) That, in the actual situation of the country, it was itself right and proper that the representative system should have a full and fair trial. (3) That to such a trial it was essential that the government should be so constructed as to give it all the energy and the stability reconcilable with the principles of that theory."

19 Cf. Gouverneur Morris, *Diary and Letters*, ii. 455, 526, 531.

20 Cf. even Mr Lodge's judgments, pp. 90-92, 115-116, 122, 130, 140. When he says (p. 140) that "In

Hamilton's successful policy there were certainly germs of an aristocratic republic, there were certainly limitations and possibly dangers to pure democracy," this is practically Jefferson's assertion (1792) that "His system flowed from principles adverse to liberty"; but Jefferson goes on to add: "and was calculated to undermine and demolish the republic." As to the intent of Hamilton to secure through his financial measures the political support of property, his own words are honest and clear; and in fact he succeeded. Jefferson merely had exaggerated fears of a moneyed political engine, and seeing that Hamilton's measures of funding and assumption did make the national debt politically useful to the Federalists in the beginning he concluded that they would seek to fasten the debt on the country for ever.

21 Cf. Gouv. Morris, *op. cit.* ii. 474.

22 He dreamed of saving the country with an army in this crisis of blood and iron, and wished to preserve unweakened the public confidence in his personal bravery.

23 His own words in 1802. In justification of the above statements see the correspondence of 1800-1804 *passim*—*Works*, vol. ix.-x. (or 7-8); especially x. 363, 425, 434, 440, 445 (or 8: 543, 591, 596, 602, 605).

24 Cf. Anson D. Morse, article cited below, pp. 4, 18-21.

25 Chancellor Kent tells us (*Memoirs and Letters*, p. 32) that in 1804 Hamilton was planning a co-operative Federalist work on the history and science of government on an inductive basis. Kent always speaks of Hamilton's legal thinking as deductive, however (ibid. p. 290, 329), and such seems to have been in fact all his political reasoning: *i.e.* underlying them were such maxims as that of Hume, that in erecting a stable government every citizen must be assumed a knave, and be bound by self-interest to co-operation for the public good. Hamilton always seems to be reasoning deductively from such principles. He went too far and fast for even such a Federalist disbeliever in democracy as Gouverneur Morris; who, to Hamilton's assertion that democracy must be cast out to save the country, replied that "such necessity cannot be shown by a political ratiocination. Luckily, or, to speak with a reverence proper to the occasion, providentially, mankind are not disposed to embark the blessings they enjoy on a voyage of syllogistic adventure to obtain something more beautiful in exchange. They must feel before they will act" (*op. cit.* ii. 531).

HAMILTON, ANTHONY, or ANTOINE (1646-1720), French classical author, was born about 1646. He is especially noteworthy from the fact that, though by birth he was a foreigner, his literary characteristics are more decidedly French than those of many of the most indubitable Frenchmen. His father was George Hamilton, younger brother of James, 2nd earl of Abercorn, and head of the family of Hamilton in the peerage of Scotland, and 6th duke of Châtellerault in the peerage of France; and his mother was Mary Butler, sister of the 1st duke of Ormonde. According to some authorities he was born at Drogheda, but according to the London edition of his works in 1811 his birthplace was Roscrea, Tipperary. From the age of four till he was fourteen the boy was brought up in France, whither his family had removed after the execution of Charles I. The fact that, like his father, he was a Roman Catholic, prevented his receiving the political promotion he might otherwise have expected on the Restoration, but he became a distinguished member of that brilliant band of courtiers whose chronicler he was to become. He took service in the French army, and the marriage of his sister Elizabeth, "la belle Hamilton," to Philibert, comte de Gramont (*q.v.*) rendered his connexion with France more intimate, if possible, than before. On the accession of James II. he obtained an infantry regiment in Ireland, and was appointed governor of Limerick and a member of the privy council. But the battle of the Boyne, at which he was present, brought disaster on all who were attached to the cause of the Stuarts, and before long he was again in France—an exile, but at home. The rest of his life was spent for the most part at the court of St Germain and in the *châteaux* of his friends. With Ludovise, duchesse du Maine, he became an especial favourite, and it was at her seat at Sceaux that he wrote the *Mémoires* that made him famous. He died at St Germain-en-Laye on the 21st of April 1720.

It is mainly by the *Mémoires ducomte de Gramont* that Hamilton takes rank with the most classical writers of France. It was said to have been written at Gramont's dictation, but it is very evident that Hamilton's share is the most considerable. The work was first published anonymously in 1713 under the rubric of Cologne, but it was really printed in Holland, at that time the great patroness of all questionable authors. An English translation by Boyer appeared in 1714. Upwards of thirty editions have since appeared, the best of the French being Renouard's (1812), forming part of a collected edition of Hamilton's works, and Gustave Brunet's (1859), and the best of the English, Edwards's (1793), with 78 engravings from portraits in the royal collections at Windsor and elsewhere, A. F. Bertrand de Moleville's (2 vols., 1811), with 64 portraits by E. Scriven and others, and Gordon Goodwin's (2 vols., 1903). The original edition was reprinted by Benjamin Pifteau in 1876. In imitation and satiric parody of the

romantic tales which Antoine Galland's translation of *The Thousand and One Nights* had brought into favour in France, Hamilton wrote, partly for the amusement of Henrietta Bulkley, sister of the duchess of Berwick, to whom he was much attached, four ironical and extravagant *contes*, *Le Bélier*, *Fleur d'épine*, *Zénéyde* and *Les Quatre Facardins*. The saying in *Le Bélier*' "Bélier, mon ami, tu me ferais plaisir si tu voulais commencer par le commencement," has passed into a proverb. These tales were circulated privately during Hamilton's lifetime, and the first three appeared in Paris in 1730, ten years after the death of the author; a collection of his *Œuvres diverses* in 1731 contained the unfinished *Zénéyde*. Hamilton was also the author of some songs as exquisite in their way as his prose, and interchanged amusing verses with the duke of Berwick. In the name of his niece, the countess of Stafford, Hamilton maintained a witty correspondence with Lady Mary Wortley Montagu.

See notices of Hamilton in Lescure's edition (1873) of the *Contes*, Sainte-Beuve's *Causeries du lundi*, tome i., Sayou's *Histoire de la littérature française à l'étranger* (1853), and by L. S. Auger in the *Œuvres complètes* (1804).

HAMILTON, ELIZABETH (1758-1816), British author, was born at Belfast, of Scottish extraction, on the 21st of July 1758. Her father's death in 1759 left his wife so embarrassed that Elizabeth was adopted in 1762 by her paternal aunt, Mrs Marshall, who lived in Scotland, near Stirling. In 1788 Miss Hamilton went to live with her brother Captain Charles Hamilton (1753-1792), who was engaged on his translation of the *Hedaya*. Prompted by her brother's associations, she produced her *Letters of a Hindoo Rajah* in 1796. Soon after, with her sister Mrs Blake, she settled at Bath, where she published in 1800 the *Memoirs of Modern Philosophers*, a satire on the admirers of the French Revolution. In 1801-1802 appeared her *Letters on Education*. After travelling through Wales and Scotland for nearly two years, the sisters took up their abode in 1803 at Edinburgh. In 1804 Mrs Hamilton, as she then preferred to be called, published her *Life of Agrippina, wife of Germanicus*; and in the same year she received a pension from government. *The Cottagers of Glenburnie* (1808), which is her best-known work, was described by Sir Walter Scott as "a picture of the rural habits of Scotland, of striking and impressive fidelity." She also published *Popular Essays on the Elementary Principles of the Human Mind* (1812), and *Hints addressed to the Patrons and Directors of Public Schools* (1815). She died at Harrogate on the 23rd of July 1816.

Memoirs of Mrs Elizabeth Hamilton, by Miss Benger, were published in 1818.

HAMILTON, EMMA, Lady (*c.* 1765-1815), wife of Sir William Hamilton (*q.v.*), the British envoy at Naples, and famous as the mistress of Nelson, was the daughter of Henry Lyon, a blacksmith of Great Neston in Cheshire. The date of her birth cannot be fixed with certainty, but she was baptized at Great Neston on the 12th of May 1765, and it is not improbable that she was born in that year. Her baptismal name was Emily. As her father died soon after her birth, the mother, who was dependent on parish relief, had to remove to her native village, Hawarden in Flintshire. Emma's early life is very obscure. She was certainly illiterate, and it appears that she had a child in 1780, a fact which has led some of her biographers to place her birth before 1765. It has been said that she was first the mistress of Captain Willet Payne, an officer in the navy, and that she was employed in some doubtful capacity by a notorious quack of the time, Dr Graham. In 1781 she was the mistress of a country gentleman, Sir Harry Featherstonhaugh, who turned her out in December of that year. She was then pregnant, and in her distress she applied to the Hon. Charles Greville, to whom she was already known. At this time she called herself Emily Hart. Greville, a gentleman of artistic tastes and well known in society, entertained her as his mistress, her mother, known as Mrs Cadogan, acting as housekeeper and partly as servant. Under the protection of Greville, whose means were narrowed by debt, she acquired some education, and was taught to sing, dance and act with professional skill. In 1782 he introduced her to his friend Romney the portrait painter, who had been established for several years in London, and who admired her beauty with enthusiasm. The numerous famous portraits of her from his brush may have somewhat idealised her apparently robust and brilliantly coloured beauty, but her vivacity and powers of fascination cannot be doubted. She had the temperament of an artist, and seems to have been sincerely attached to Greville. In 1784 she was seen by his uncle, Sir William Hamilton, who admired her greatly. Two years later she was sent on a visit to

him at Naples, as the result of an understanding between Hamilton and Greville—the uncle paying his nephew's debts and the nephew ceding his mistress. Emma at first resented, but then submitted to the arrangement. Her beauty, her artistic capacity, and her high spirits soon made her a great favourite in the easy-going society of Naples, and Queen Maria Carolina became closely attached to her. She became famous for her "attitudes," a series of *poses plastiques* in which she represented classical and other figures. On the 6th of September 1791, during a visit to England, she was married to Sir W. Hamilton. The ceremony was required in order to justify her public reception at the court of Naples, where Lady Hamilton played an important part as the agent through whom the queen communicated with the British minister—sometimes in opposition to the will and the policy of the king. The revolutionary wars and disturbances which began after 1792 made the services of Lady Hamilton always useful and sometimes necessary to the British government. It was claimed by her, and on her behalf, that she secured valuable information in 1796, and was of essential service to the British fleet in 1798 during the Nile campaign, by enabling it to obtain stores and water in Sicily. These claims have been denied on the rather irrelevant ground that they are wanting in official confirmation, which was only to be expected since they were *ex hypothesi* unofficial and secret, but it is not improbable that they were considerably exaggerated, and it is certain that her stories cannot always be reconciled with one another or with the accepted facts. When Nelson returned from the Nile in September 1798 Lady Hamilton made him her hero, and he became entirely devoted to her. Her influence over him indeed became notorious, and brought him much official displeasure. Lady Hamilton undoubtedly used her influence to draw Nelson into a most unhappy participation in the domestic troubles of Naples, and when Sir W. Hamilton was recalled in 1800 she travelled with him and Nelson ostentatiously across Europe. In England Lady Hamilton insisted on making a parade of her hold over Nelson. Their child, Horatia Nelson Thompson, was born on the 30th of January 1801. The profuse habits which Emma Hamilton had contracted in Naples, together with a passion for gambling which grew on her, led her into debt, and also into extravagant ways of living, against which her husband feebly protested. On his death in 1803 she received by his will a life rent of £800, and the furniture of his house in Piccadilly. She then lived openly with Nelson at his house at Merton. Nelson tried repeatedly to secure her a pension for the services rendered at Naples, but did not succeed. On his death she received Merton, and an annuity of £500, as well as the control of the interest of the £4000 he left to his daughter. But gambling and extravagance kept her poor. In 1808 her friends endeavoured to arrange her affairs, but in 1813 she was put in prison for debt and remained there for a year. A certain Alderman Smith having aided her to get out, she went over to Calais for refuge from her creditors, and she died there in distress if not in want on the 15th of January 1815.

AUTHORITIES.—*The Memoirs of Lady Hamilton* (London, 1815) were the work of an ill-disposed but well-informed and shrewd observer whose name is not given. *Lady Hamilton and Lord Nelson*, by J. C. Jefferson (London, 1888) is based on authentic papers. It is corrected in some particulars by the detailed recent life written by Walter Sichel, *Emma, Lady Hamilton* (London, 1905). See also the authorities given in the article NELSON.

(D. H.)

HAMILTON, JAMES (1769-1831), English educationist, and author of the Hamiltonian system of teaching languages, was born in 1769. The first part of his life was spent in mercantile pursuits. Having settled in Hamburg and become free of the city, he was anxious to become acquainted with German and accepted the tuition of a French emigré, General d'Angelis. In twelve lessons he found himself able to read an easy German book, his master having discarded the use of a grammar and translated to him short stories word for word into French. As a citizen of Hamburg Hamilton started a business in Paris, and during the peace of Amiens maintained a lucrative trade with England; but at the rupture of the treaty he was made a prisoner of war, and though the protection of Hamburg was enough to get the words *effacé de la liste des prisonniers de guerre* inscribed upon his passport, he was detained in custody till the close of hostilities. His business being thus ruined, he went in 1814 to America, intending to become a farmer and manufacturer of potash; but, changing his plan before he reached his "location," he started as a teacher in New York. Adopting his old tutor's method, he attained remarkable success in New York, Baltimore, Washington, Boston, Montreal and Quebec. Returning to England in July 1823, he was equally fortunate in Manchester and elsewhere. The two master principles of his method were that the language should be presented to the scholar as a living organism, and that its laws should be learned from observation and not by rules. His system attracted general attention, and was vigorously attacked and defended. In 1826 Sydney Smith devoted an article to its elucidation in the *Edinburgh Review*. As text-books for his pupils Hamilton printed interlinear translations of the Gospel of John, of an *Epitome historiae sacrae*,

of Aesop's *Fables*, Eutropius, Aurelius Victor, Phaedrus, &c., and many books were issued as Hamiltonian with which he had nothing personally to do. He died on the 31st of October 1831.

See Hamilton's own account, *The History, Principles, Practice and Results of the Hamiltonian System* (Manchester, 1829; new ed., 1831); Alberte, *Über die Hamilton'sche Methode*; C. F. Wurm, *Hamilton und Jacotot* (1831).

HAMILTON, JAMES HAMILTON, 1ST DUKE OF (1606-1649), Scottish nobleman, son of James, 2nd marquess of Hamilton, and of the Lady Anne Cunningham, daughter of the earl of Glencairn, was born on the 19th of June 1606. As the descendant and representative of James Hamilton, 1st earl of Arran, he was the heir to the throne of Scotland after the descendants of James VI.[1] He married in his fourteenth year May Feilding, aged seven, daughter of Lord Feilding, afterwards 1st earl of Denbigh, and was educated at Exeter College, Oxford, where he matriculated on the 14th of December 1621. He succeeded to his father's titles on the latter's death in 1625. In 1628 he was made master of the horse and was also appointed gentleman of the bedchamber and a privy councillor. In 1631 Hamilton took over a force of 6000 men to assist Gustavus Adolphus in Germany. He guarded the fortresses on the Oder while Gustavus fought Tilly at Breitenfeld, and afterwards occupied Magdeburg, but his army was destroyed by disease and starvation, and after the complete failure of the expedition Hamilton returned to England in September 1634. He now became Charles I.'s chief adviser in Scottish affairs. In May 1638, after the outbreak of the revolt against the English Prayer-Book, he was appointed commissioner for Scotland to appease the discontents. He described the Scots as being "possessed by the devil," and instead of doing his utmost to support the king's interests was easily intimidated by the covenanting leaders and persuaded of the impossibility of resisting their demands, finally returning to Charles to urge him to give way. It is said that he so far forgot his trust as to encourage the Scottish leaders in their resistance in order to gain their favour.[2] On the 27th of July Charles sent him back with new proposals for the election of an assembly and a parliament, episcopacy being safeguarded but bishops being made responsible to future assemblies. After a wrangle concerning the mode of election he again returned to Charles. Having been sent back to Edinburgh on the 17th of September, he brought with him a revocation of the prayer-book and canons and another covenant to be substituted for the national covenant. On the 21st of November Hamilton presided over the first meeting of the assembly in Glasgow cathedral, but dissolved it on the 28th on its declaring the bishops responsible to its authority. The assembly, however, continued to sit notwithstanding, and Hamilton returned to England to give an account of his failure, leaving the enemy triumphant and in possession. War was now decided upon, and Hamilton was chosen to command an expedition to the Forth to menace the rear of the Scots. On arrival on the 1st of May 1639 he found the plan impossible, despaired of success, and was recalled in June. On the 8th of July, after a hostile reception at Edinburgh, he resigned his commissionership. He supported Strafford's proposal to call the Short Parliament, but otherwise opposed him as strongly as he could, as the chief adversary of the Scots; and he aided the elder Vane, it was believed, in accomplishing Strafford's destruction by sending for him to the Long Parliament. Hamilton now supported the parliamentary party, desired an alliance with his nation, and persuaded Charles in February 1641 to admit some of their leaders into the council. On the death of Strafford Hamilton was confronted by a new antagonist in Montrose, who detested both his character and policy and repudiated his supremacy in Scotland. On the 10th of August 1641 he accompanied Charles on his last visit to Scotland. His aim now was to effect an alliance between the king and Argyll, the former accepting Presbyterianism and receiving the help of the Scots against the English parliament, and when this failed he abandoned Charles and adhered to Argyll. In consequence he received a challenge from Lord Ker, of which he gave the king information, and obtained from Ker an apology. Montrose wrote to Charles declaring he could prove Hamilton to be a traitor. The king himself spoke of him as being "very active in his own preservation." Shortly afterwards the plot—known as the "Incident"—to seize Argyll, Hamilton and the latter's brother, the earl of Lanark, was discovered, and on the 12th of October they fled from Edinburgh. Hamilton returned not long afterwards, and notwithstanding all that had occurred still retained Charles's favour and confidence. He returned with him to London and accompanied him on the 5th of January 1642 when he went to the city after the failure to secure the five members. In July Hamilton went to Scotland on a hopeless mission to prevent the intervention of the Scots in the war, and a breach then took place between him and Argyll. When in February 1643 proposals of mediation between Charles and the parliament came from Scotland, Hamilton instigated the "cross petition" which demanded from Charles the surrender of the annuities of tithes in order to embarrass Loudoun, the chief promoter of the project, to whom they had already been granted. This failing, he promoted a scheme for overwhelming the influence and votes of Argyll and his party by sending to Scotland all the

Scottish peers then with the king, thereby preventing any assistance to the parliament coming from that quarter, while Charles was to guarantee the establishment of Presbyterianism in Scotland only. This foolish intrigue was strongly opposed by Montrose, who was eager to strike a sudden blow and anticipate and annihilate the plans of the Covenanters. Hamilton, however, gained over the queen for his project, and in September was made a duke, while Montrose was condemned to inaction. Hamilton's scheme, however, completely failed. He had no control over the parliament. He was unable to hinder the meeting of the convention of the estates which assembled without the king's authority, and his supporters found themselves in a minority. Finally, on refusing to take the Covenant, Hamilton and Lanark were obliged to leave Scotland. They arrived at Oxford on the 16th of December. Hamilton's conduct had at last incurred Charles's resentment and he was sent, in January 1644, a prisoner to Pendennis Castle, in 1645 being removed to St Michael's Mount, where he was liberated by Fairfax's troops on the 23rd of April 1646. Subsequently he showed great activity in the futile negotiations between the Scots and Charles at Newcastle. In 1648, in consequence of the seizure of Charles by the army in 1647, Hamilton obtained a temporary influence and authority in the Scottish parliament over Argyll, and led a large force into England in support of the king on the 8th of July. He showed complete incapacity in military command; was kept in check for some time by Lambert; and though outnumbering the enemy by 24,000 to about 9000 men, allowed his troops to disperse over the country and to be defeated in detail by Cromwell during the three days August 17th-19th at the so-called battle of Preston, being himself taken prisoner on the 25th. He was tried on the 6th of February 1649, condemned to death on the 6th of March and executed on the 9th.

Hamilton, during his unfortunate career, had often been suspected of betraying the king's cause, and, as an heir to the Scottish throne, of intentionally playing into the hands of the Covenanters with a view of procuring the crown for himself. The charge was brought against him as early as 1631 when he was levying men in Scotland for the German expedition, but 887
Charles gave no credence to it and showed his trust in Hamilton by causing him to share his own room. The charge, however, always clung to him, and his intriguing character and hopeless management of the king's affairs in Scotland gave colour to the accusation. There seems, however, to be no real foundation for it. His career is sufficiently explained by his thoroughly weak and egotistical character. He took no interest whatever in the great questions at issue, was neither loyal nor patriotic, and only desired peace and compromise to avoid personal losses. "He was devoid of intellectual or moral strength, and was therefore easily brought to fancy all future tasks easy and all present obstacles insuperable."[3] A worse choice than Hamilton could not possibly have been made in such a crisis, and his want of principle, of firmness and resolution, brought irretrievable ruin upon the royal cause.

Hamilton's three sons died young, and the dukedom passed by special remainder to his brother William, earl of Lanark. On the latter's death in 1651 the Scottish titles reverted to the 1st duke's daughter, Anne, whose husband, William Douglas, was created (third) duke of Hamilton.

BIBLIOGRAPHY.—Article in the *Dict. of Nat. Biog.* by S. R. Gardiner; *History of England and of the Civil War*, by the same author; *Memoirs of the Dukes of Hamilton*, by G. Burnet; *Lauderdale Papers* (Camden Society, 1884-1885); *The Hamilton Papers*, ed. by S. R. Gardiner (Camden Society, 1880) and *addenda* (Camden Miscellany, vol. ix., 1895); *Thomason Tracts* in the British Museum, 550 (6), 1948 (30) (account of his supposed treachery), and 546 (21) (speech on the scaffold).

(P. C. Y.)

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1 James, Lord Hamilton (d. 1479). = Princess Mary Stuart, daughter of James II.
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James, Lord Hamilton and 1st earl of Arran (d. *c.* 1529).
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James, duke of Chatelherault, and 2nd earl of Arran (d. 1575).
|
James, 3rd earl of Arran (d. 1609).
|
John, 1st marquess of Hamilton (d. 1604).
|
James, 2nd marquess of Hamilton (d. 1625).
|
James, 3rd marquess and 1st duke of Hamilton.

2 See S. R. Gardiner in the *Dict. of Nat. Biography*.

3 See S. R. Gardiner in the *Dict. of Nat. Biography*.

HAMILTON, JOHN (*c.* 1511-1571), Scottish prelate and politician, was a natural son of James Hamilton, 1st earl of Arran. At a very early age he became a monk and abbot of Paisley, and after studying in Paris he returned to Scotland, where he soon rose to a position of power and influence under his half-brother, the regent Arran. He was made keeper of the privy seal in 1543 and bishop of Dunkeld two years later; in 1546 he followed David Beaton as archbishop of St Andrews, and about the same time he became treasurer of the kingdom. He made vigorous efforts to stay the growth of Protestantism, but with one or two exceptions "persecution was not the policy of Archbishop Hamilton," and in the interests of the Roman Catholic religion a catechism called *Hamilton's Catechism* (published with an introduction by T. G. Law in 1884) was drawn up and printed, possibly at his instigation. Having incurred the displeasure of the Protestants, now the dominant party in Scotland, the archbishop was imprisoned in 1563. After his release he was an active partisan of Mary queen of Scots; he baptized the infant James, afterwards King James VI., and pronounced the divorce of the queen from Bothwell. He was present at the battle of Langside, and some time later took refuge in Dumbarton Castle. Here he was seized, and on the charge of being concerned in the murders of Lord Darnley and the regent Murray he was tried, and hanged on the 6th of April 1571. The archbishop had three children by his mistress, Grizzel Sempill.

HAMILTON, PATRICK (1504-1528), Scottish divine, second son of Sir Patrick Hamilton, well known in Scottish chivalry, and of Catherine Stewart, daughter of Alexander, duke of Albany, second son of James II. of Scotland, was born in the diocese of Glasgow, probably at bis father's estate of Stanehouse in Lanarkshire. He was educated probably at Linlithgow. In 1517 he was appointed titular abbot of Ferne, Ross-shire; and it was probably about the same year that he went to study at Paris, for his name is found in an ancient list of those who graduated there in 1520. It was doubtless in Paris, where Luther's writings were already exciting much discussion, that he received the germs of the doctrines he was afterwards to uphold. From Alexander Ales we learn that Hamilton subsequently went to Louvain, attracted probably by the fame of Erasmus, who in 1521 had his headquarters there. Returning to Scotland, the young scholar naturally selected St Andrews, the capital of the church and of learning, as his residence. On the 9th of June 1523 he became a member of the university of St Andrews, and on the 3rd of October 1524 he was admitted to its faculty of arts. There Hamilton attained such influence that he was permitted to conduct as precentor a musical mass of his own composition in the cathedral. But the reformed doctrines had now obtained a firm hold on the young abbot, and he was eager to communicate them to his fellow-countrymen. Early in 1527 the attention of James Beaton, archbishop of St Andrews, was directed to the heretical preaching of the young priest, whereupon he ordered that Hamilton should be formally summoned and accused. Hamilton fled to Germany, first visiting Luther at Wittenberg, and afterwards enrolling himself as a student, under Franz Lambert of Avignon, in the new university of Marburg, opened on the 30th of May 1527 by Philip, landgrave of Hesse. Hermann von dem Busche, one of the contributors to the *Epistolae obscurorum virorum*, John Frith and Tyndale were among those whom he met there. Late in the autumn of 1527 Hamilton returned to Scotland, bold in the conviction of the truth of his principles. He went first to his brother's house at Kincavel, near Linlithgow, in which town he preached frequently, and soon afterwards he married a young lady of noble rank, whose name has not come down to us. Beaton, avoiding open violence through fear of Hamilton's high connexions, invited him to a conference at St Andrews. The reformer, predicting that he was going to confirm the pious in the true doctrine by his death, resolutely accepted the invitation, and for nearly a month was permitted to preach and dispute, perhaps in order to provide material for accusation. At length, however, he was summoned before a council of bishops and clergy presided over by the archbishop; there were thirteen charges, seven of which were based on the doctrines affirmed in the *Loci communes*. On examination Hamilton maintained that these were undoubtedly true. The council condemned him as a heretic on the whole thirteen charges. Hamilton was seized, and, it is said, surrendered to the soldiery on an assurance that he would be restored to his friends without injury. The council convicted him, after a sham disputation with Friar Campbell, and handed him over to the secular power. The sentence was carried out on the same day (February 29, 1528) lest he should be rescued by his friends, and he

was burned at the stake as a heretic. His courageous bearing attracted more attention than ever to the doctrines for which he suffered, and greatly helped to spread the Reformation in Scotland. The “reek of Patrick Hamilton infected all it blew on.” His martyrdom is singular in this respect, that he represented in Scotland almost alone the Lutheran stage of the Reformation. His only book was entitled *Loci communes*, known as “Patrick’s Places.” It set forth the doctrine of justification by faith and the contrast between the gospel and the law in a series of clear-cut propositions. It is to be found in Foxs’s *Acts and Monuments*.

HAMILTON, ROBERT (1743-1829), Scottish economist and mathematician, was born at Pilrig, Edinburgh, on the 11th of June 1743. His grandfather, William Hamilton, principal of Edinburgh University, had been a professor of divinity. Having completed his education at the university of Edinburgh, where he was distinguished in mathematics, Robert was induced to enter a banking-house in order to acquire a practical knowledge of business, but his ambition was really academic. In 1769 he gave up business pursuits and accepted the rectorship of Perth academy. In 1779 he was presented to the chair of natural philosophy at Aberdeen University. For many years, however, by private arrangement with his colleague Professor Copland, Hamilton taught the class of mathematics. In 1817 he was presented to the latter chair.

> Hamilton’s most important work is the *Essay on the National Debt*, which appeared in 1813 and was undoubtedly the first to expose the economic fallacies involved in Pitt’s policy of a sinking fund. It is still of value. A posthumous volume published in 1830, *The Progress of Society*, is also of great ability, and is a very effective treatment of economical principles by tracing their natural origin and position in the development of social life. Some minor works of a practical character (*Introduction to Merchandise*, 1777; *Essay on War and Peace*, 1790) are now forgotten.

HAMILTON, THOMAS (1789-1842), Scottish writer, younger brother of the philosopher, Sir William Hamilton, Bart., was born in 1789. He was educated at Glasgow University, where he made a close friend of Michael Scott, the author of *Tom Cringle’s Log*. He entered the army in 1810, and served throughout the Peninsular and American campaigns, but continued to cultivate his literary tastes. On the conclusion of peace he withdrew, with the rank of captain, from active service. He contributed both prose and verse to *Blackwood’s Magazine*, in which appeared his vigorous and popular military novel, *Cyril Thornton* (1827). His *Annals of the Peninsular Campaign*, published originally in 1829, and republished in 1849 with additions by Frederick Hardman, is written with great clearness and impartiality. His only other work, *Men and Manners in America*, published originally in 1833, is somewhat coloured by British prejudice, and by the author’s aristocratic dislike of a democracy. Hamilton died at Pisa on the 7th of December 1842.

HAMILTON, WILLIAM (1704-1754), Scottish poet, the author of “The Braes of Yarrow,” was born in 1704 at Bangour in Linlithgowshire, the son of James Hamilton of Bangour, a member of the Scottish bar. As early as 1724 we find him contributing to Allan Ramsay’s *Tea Table Miscellany*. In 1745 Hamilton joined the cause of Prince Charles, and though it is doubtful whether he actually bore arms, he celebrated the battle of Prestonpans in verse. After the disaster of Culloden he lurked for several months in the Highlands and escaped to France; but in 1749 the influence of his friends procured him permission to return to Scotland, and in the following year he obtained possession of the family estate of Bangour. The state of his health compelled him, however, to live abroad, and he died at Lyons on the 25th of March 1754. He was buried in the Abbey Church of Holyroodhouse, Edinburgh. He was twice married—“into families of distinction” says the preface of the authorized edition of his poems.

Hamilton left behind him a considerable number of poems, none of them except “The Braes of Yarrow” of striking originality. The collection is composed of odes, epitaphs, short pieces of

translation, songs, and occasional verses. The longest is “Contemplation, or the Triumph of Love” (about 500 lines). The first edition was published without his permission by Foulis (Glasgow, 1748), and introduced by a preface from the pen of Adam Smith. Another edition with corrections by himself was brought out by his friends in 1760, and to this was prefixed a portrait engraved by Robert Strange.

In 1850 James Paterson edited *The Poems and Songs of William Hamilton*. This volume contains several poems till then unpublished, and gives a life of the author.

HAMILTON, SIR WILLIAM (1730-1803), British diplomatist and archaeologist, son of Lord Archibald Hamilton, governor of Greenwich hospital and of Jamaica, was born in Scotland on the 13th of December 1730, and served in the 3rd Regiment of Foot Guards from 1747 to 1758. He left the army after his marriage with Miss Barlow, a Welsh heiress from whom he inherited an estate near Swansea upon her death in 1782. Their only child, a daughter, died in 1775. From 1761 to 1764 he was member of parliament for Midhurst, but in the latter year he was appointed envoy to the court of Naples, a post which he held for thirty-six years—until his recall in 1800. During the greater part of this time the official duties of the minister were of small importance. It was enough that the representative of the British crown should be a man of the world whose means enabled him to entertain on a handsome scale. Hamilton was admirably qualified for these duties, being an amiable and accomplished man, who took an intelligent interest in science and art. In 1766 he became a member of the Royal Society, and between that year and 1780 he contributed to its Philosophical Transactions a series of observations on the action of volcanoes, which he had made, or caused to be made, at Vesuvius and Etna. He employed a draftsman named Fabris to make studies of the eruption of 1775 and 1776, and a Dominican, Resina, to make observations at a later period. He published several treatises on earthquakes and volcanoes between 1776 and 1783. He was a fellow of the Society of Antiquaries and of the Dilettanti, and a notable collector. Many of his treasures went to enrich the British Museum. In 1772 he was made a knight of the Bath. The last ten years of his life presented a curious contrast to the elegant peace of those which had preceded them. In 1791 he married Emma Lyon (see the separate article on Lady Hamilton). The outbreak of the French Revolution and the rapid extension of the revolutionary movement in Western Europe soon overwhelmed Naples. It was a misfortune for Sir William that he was left to meet the very trying political and diplomatic conditions which arose after 1793. His health had begun to break down, and he suffered from bilious fevers. Sir William was in fact in a state approaching dotage before his recall, a fact which, combined with his senile devotion to Lady Hamilton, has to be considered in accounting for his extraordinary complaisance in her relations with Nelson. He died on the 6th of April 1803.

See E. Edwards, *Lives of the Founders of the British Museum* (London, 1870); and the authorities given in the article on Emma, Lady Hamilton.

HAMILTON, SIR WILLIAM, Bart. (1788-1856), Scottish metaphysician, was born in Glasgow on the 8th of March 1788. His father, Dr William Hamilton, had in 1781, on the strong recommendation of the celebrated William Hunter, been appointed to succeed *his* father, Dr Thomas Hamilton, as professor of anatomy in the university of Glasgow; and when he died in 1790, in his thirty-second year, he had already gained a great reputation. William Hamilton and a younger brother (afterwards Captain Thomas Hamilton, *q.v.*) were thus brought up under the sole care of their mother. William received his early education in Scotland, except during two years which he spent in a private school near London, and went in 1807, as a Snell exhibitioner, to Balliol College, Oxford. He obtained a first-class *in literis humanioribus* and took the degree of B.A. in 1811, M.A. in 1814. He had been intended for the medical profession, but soon after leaving Oxford he gave up this idea, and in 1813 became a member of the Scottish bar. His life, however, was mainly that of a student; and the following years, marked by little of outward incident, were filled by researches of all kinds, through which he daily added to his stores of learning, while at the same time he was gradually forming his philosophic system. Investigation enabled him to make good his claim to represent the ancient family of Hamilton of Preston, and in 1816 he took up the baronetcy, which had been in abeyance since the death of Sir Robert Hamilton of Preston (1650-1701), well known in his day as a Covenanting leader.

Two visits to Germany in 1817 and 1820 led to his taking up the study of German and later on that of contemporary German philosophy, which was then almost entirely neglected in the British universities. In 1820 he was a candidate for the chair of moral philosophy in the university of Edinburgh, which had fallen vacant on the death of Thomas Brown, colleague of Dugald Stewart, and the latter's consequent resignation, but was defeated on political grounds by John Wilson (1785-1854), the "Christopher North" of *Blackwood's Magazine*. Soon afterwards (1821) he was appointed professor of civil history, and as such delivered several courses of lectures on the history of modern Europe and the history of literature. The salary was £100 a year, derived from a local beer tax, and was discontinued after a time. No pupils were compelled to attend, the class dwindled, and Hamilton gave it up when the salary ceased. In January 1827 he suffered a severe loss in the death of his mother, to whom he had been a devoted son. In March 1828 he married his cousin Janet Marshall.

In 1829 his career of authorship began with the appearance of the well-known essay on the "Philosophy of the Unconditioned" (a critique of Comte's *Cours de philosophie*)—the first of a series of articles contributed by him to the *Edinburgh Review*. He was elected in 1836 to the Edinburgh chair of logic and metaphysics, and from this time dates the influence which, during the next twenty years, he exerted over the thought of the younger generation in Scotland. Much about the same time he began the preparation of an annotated edition of Reid's works, intending to annex to it a number of dissertations. Before, however, this design had been carried out, he was struck (1844) with paralysis of the right side, which seriously crippled his bodily powers, though it left his mind wholly unimpaired. The edition of Reid appeared in 1846, but with only seven of the intended dissertations—the last, too, unfinished. It was his distinct purpose to complete the work, but this purpose remained at his death unfulfilled, and all that could be done afterwards was to print such materials for the remainder, or such notes on the subjects to be discussed, as were found among his MSS. Considerably before this time he had formed his theory of logic, the leading principles of which were indicated in the prospectus of "an essay on a new analytic of logical forms" prefixed to his edition of Reid. But the elaboration of the scheme in its details and applications continued during the next few years to occupy much of his leisure. Out of this arose a sharp controversy with Augustus de Morgan. The essay did not appear, but the results of the labour gone through are contained in the appendices to his *Lectures on Logic*. Another occupation of these years was the preparation of extensive materials for a publication which he designed on the personal history, influence and opinions of Luther. Here he advanced so far as to have planned and partly carried out the arrangement of the work; but it did not go further, and still remains in MS. In 1852-1853 appeared the first and second editions of his *Discussions in Philosophy, Literature and Education*, a reprint, with large additions, of his contributions to the *Edinburgh Review*. Soon after, his general health began to fail. Still, however, aided now as ever by his devoted wife, he persevered in literary labour; and during 1854-1855 he brought out nine volumes of a new edition of Stewart's works. The only remaining volume was to have contained a memoir of Stewart, but this he did not live to write. He taught his class for the last time in the winter of 1855-1856. Shortly after the close of the session he was taken ill, and on the 6th of May 1856 he died in Edinburgh.

Hamilton's positive contribution to the progress of thought is comparatively slight, and his writings, even where reinforced by the copious lecture notes taken by his pupils, cannot be said to present a comprehensive philosophic system. None the less he did considerable service by stimulating a spirit of criticism in his pupils, by insisting on the great importance of psychology as opposed to the older metaphysical method, and not least by his recognition of the importance of German philosophy, especially that of Kant. By far his most important work was his "Philosophy of the Unconditioned," the development of the principle that for the human finite mind there can be no knowledge of the Infinite. The basis of his whole argument is the thesis, "To think is to condition." Deeply impressed with Kant's antithesis between subject and object, the knowing and the known, Hamilton laid down the principle that every object is known only in virtue of its relations to other objects (see Relativity of Knowledge). From this it follows limitless time, space, power and so forth are humanly speaking inconceivable. The fact, however, that all thought seems to demand the idea of the infinite or absolute provides a sphere for faith, which is thus the specific faculty of theology. It is a weakness characteristic of the human mind that it cannot conceive any phenomenon without a beginning: hence the conception of the causal relation, according to which every phenomenon has its cause in preceding phenomena, and its effect in subsequent phenomena. The causal concept is, therefore, only one of the ordinary necessary forms of the cognitive consciousness limited, as we have seen, by being confined to that which is relative or conditioned. As regards the problem of the nature of objectivity, Hamilton simply accepts the evidence of consciousness as to the separate existence of the object: "the root of our nature cannot be a lie." In virtue of this assumption Hamilton's philosophy becomes a "natural realism." In fact his whole position is a strange compound of Kant and Reid. Its chief practical corollary is the denial of philosophy as a method of attaining absolute knowledge and its relegation to the academic sphere of mental training. The transition from philosophy to theology, *i.e.* to the sphere of faith, is presented by Hamilton under the analogous relation between the mind and the body. As the mind is to the body, so is the

unconditioned Absolute or God to the world of the conditioned. Consciousness, itself a conditioned phenomenon, must derive from or depend on some different thing prior to or behind material phenomena. Curiously enough, however, Hamilton does not explain how it comes about that God, who in the terms of the analogy bears to the conditioned mind the relation which the conditioned mind bears to its objects, can Himself be unconditioned. He can be regarded only as related to consciousness, and in so far is, therefore, not absolute or unconditioned. Thus the very principles of Hamilton's philosophy are apparently violated in his theological argument.

Hamilton regarded logic as a purely formal science; it seemed to him an unscientific mixing together of heterogeneous elements to treat as parts of the same science the formal and the material conditions of knowledge. He was quite ready to allow that on this view logic cannot be used as a means of discovering or guaranteeing facts, even the most general, and expressly asserted that it has to do, not with the objective validity, but only with the mutual relations, of judgments. He further held that induction and deduction are correlative processes of formal logic, each resting on the necessities of thought and deriving thence its several laws. The only logical laws which he recognized were the three axioms of identity, non-contradiction, and excluded middle, which he regarded as severally phases of one general condition of the possibility of existence and, therefore, of thought. The law of reason and consequent he considered not as different, but merely as expressing metaphysically what these express logically. He added as a postulate—which in his theory was of importance—"that logic be allowed to state explicitly what is thought implicitly."

In logic, Hamilton is known chiefly as the inventor of the doctrine of the "quantification of the predicate," *i.e.* that the judgment "All A is B" should really mean "All A is *all* B," whereas the ordinary universal proposition should be stated "All A is *some* B." This view, which was supported by Stanley Jevons, is fundamentally at fault since it implies that the predicate is thought of in its extension; in point of fact when a judgment is made, *e.g.* about men, that they are mortal ("All men are mortal"), the intention is to *attribute a quality* (*i.e.* the predicate is used in connotation). In other words, we are not considering the question "what kind are men among the various things which must die?" (as is implied in the form "all men are some mortals") but "what is the fact about men?" We are not stating a mere identity (see further, *e.g.*, H. W. B. Joseph, *Introduction to Logic*, 1906, pp. 198 foll.).

The philosopher to whom above all others Hamilton professed allegiance was Aristotle. His works were the object of his profound and constant study, and supplied in fact the mould in which his whole philosophy was cast. With the commentators on the Aristotelian writings, ancient, medieval and modern, he was also familiar; and the scholastic philosophy he studied with care and appreciation at a time when it had hardly yet begun to attract attention in his country. His wide reading enabled him to trace many a doctrine to the writings of forgotten thinkers; and nothing gave him greater pleasure than to draw forth such from their obscurity, and to give due acknowledgment, even if it chanced to be of the prior possession of a view or argument that he had thought out for himself. Of modern German philosophy he was a diligent, if not always a sympathetic, student. How profoundly his thinking was modified by that of Kant is evident from the tenor of his speculations; nor was this less the case because, on fundamental points, he came to widely different conclusions.

Any account of Hamilton would be incomplete which regarded him only as a philosopher, for his knowledge and his interests embraced all subjects related to that of the human mind. Physical and mathematical science had, indeed, no attraction for him; but his study of anatomy and physiology was minute and experimental. In literature alike ancient and modern he was widely and deeply read; and, from his unusual powers of memory, the stores which he had acquired were always at command. If there was one period with the literature of which he was more particularly familiar, it was the 16th and 17th centuries. Here in every department he was at home. He had gathered a vast amount of its theological lore, had a critical knowledge especially of its Latin poetry, and was minutely acquainted with the history of the actors in its varied scenes, not only as narrated in professed records, but as revealed in the letters, table-talk, and casual effusions of themselves or their contemporaries (cf. his article on the *Epistolae obscurorum virorum*, and his pamphlet on the Disruption of the Church of Scotland in 1843). Among his literary projects were editions of the works of George Buchanan and Julius Caesar Scaliger. His general scholarship found expression in his library, which, though mainly, was far from being exclusively, a philosophical collection. It now forms a distinct portion of the library of the university of Glasgow.

His chief practical interest was in education—an interest which he manifested alike as a teacher and as a writer, and which had led him long before he was either to a study of the subject both theoretical and historical. He thence adopted views as to the ends and methods of education that, when afterwards carried out or advocated by him, met with general recognition; but he also expressed in one of his articles an unfavourable view of the study of mathematics as a mental gymnastic, which excited much opposition, but which he never saw reason to alter. As a teacher, he was zealous and successful, and his writings on university organization and reform had, at the time of their appearance, a decisive practical effect, and contain much that is of permanent value.

His posthumous works are his *Lectures on Metaphysics and Logic*, 4 vols., edited by H. L. Mansel, Oxford, and John Veitch (*Metaphysics*, 1858; *Logic*, 1860); and *Additional Notes to Reid's Works*, from Sir W. Hamilton's MSS., under the editorship of H. L. Mansel, D.D. (1862). *A Memoir of Sir W. Hamilton*, by Veitch, appeared in 1869.

HAMILTON, WILLIAM GERARD (1729-1796), English statesman, popularly known as "Single Speech Hamilton," was born in London on the 28th of January 1729, the son of a Scottish bencher of Lincoln's Inn. He was educated at Winchester and at Oriel College, Oxford. Inheriting his father's fortune he entered political life and became M.P. for Petersfield, Hampshire. His maiden speech, delivered on the 13th of November 1755, during the debate on the address, which excited Walpole's admiration, is generally supposed to have been his only effort in the House of Commons. But the nickname "Single Speech" is undoubtedly misleading, and Hamilton is known to have spoken with success on other occasions, both in the House of Commons and in the Irish parliament. In 1756 he was appointed one of the commissioners for trade and plantations, and in 1761 he became chief secretary to Lord Halifax, the lord-lieutenant of Ireland, as well as Irish M. P. for Killebegs and English M. P. for Pontefract. He was chancellor of the exchequer in Ireland in 1763, and subsequently filled various other administrative offices. Hamilton was thought very highly of by Dr Johnson, and it is certain that he was strongly opposed to the British taxation of America. He died in London on the 16th of July 1796, and was buried in the chancel vault of St Martin's-in-the-fields.

Two of his speeches in the Irish House of Commons, and some other miscellaneous works, were published after his death under the title *Parliamentary Logick*.

HAMILTON, SIR WILLIAM ROWAN (1805-1865), Scottish mathematician, was born in Dublin on the 4th of August 1805. His father, Archibald Hamilton, who was a solicitor, and his uncle, James Hamilton (curate of Trim), migrated from Scotland in youth. A branch of the Scottish family to which they belonged had settled in the north of Ireland in the time of James I., and this fact seems to have given rise to the common impression that Hamilton was an Irishman.

His genius first displayed itself in the form of a wonderful power of acquiring languages. At the age of seven he had already made very considerable progress in Hebrew, and before he was thirteen he had acquired, under the care of his uncle, who was an extraordinary linguist, almost as many languages as he had years of age. Among these, besides the classical and the modern European languages, were included Persian, Arabic, Hindustani, Sanskrit and even Malay. But though to the very end of his life he retained much of the singular learning of his childhood and youth, often reading Persian and Arabic in the intervals of sterner pursuits, he had long abandoned them as a study, and employed them merely as a relaxation.

His mathematical studies seem to have been undertaken and carried to their full development without any assistance whatever, and the result is that his writings belong to no particular "school," unless indeed we consider them to form, as they are well entitled to do, a school by themselves. As an arithmetical calculator he was not only wonderfully expert, but he seems to have occasionally found a positive delight in working out to an enormous number of places of decimals the result of some irksome calculation. At the age of twelve he engaged Zerah Colburn, the American "calculating boy," who was then being exhibited as a curiosity in Dublin, and he had not always the worst of the encounter. But, two years before, he had accidentally fallen in with a Latin copy of *Euclid*, which he eagerly devoured; and at twelve he attacked Newton's *Arithmetica universalis*. This was his introduction to modern analysis. He soon commenced to read the *Principia*, and at sixteen he had mastered a great part of that work, besides some more modern works on analytical geometry and the differential calculus.

About this period he was also engaged in preparation for entrance at Trinity College, Dublin, and had therefore to devote a portion of his time to classics. In the summer of 1822, in his seventeenth year, he began a systematic study of Laplace's *Mécanique Céleste*. Nothing could be better fitted to call forth such mathematical powers as those of Hamilton; for Laplace's great work, rich to profusion in analytical processes alike novel and powerful, demands from the most gifted student careful and often laborious study. It was in the successful effort to open this treasure-house that Hamilton's mind received its final temper, "Dès-lors il commença à marcher

seul," to use the words of the biographer of another great mathematician. From that time he appears to have devoted himself almost wholly to original investigation (so far at least as regards mathematics), though he ever kept himself well acquainted with the progress of science both in Britain and abroad.

Having detected an important defect in one of Laplace's demonstrations, he was induced by a friend to write out his remarks, that they might be shown to Dr John Brinkley (1763-1835), afterwards bishop of Cloyne, but who was then the first royal astronomer for Ireland, and an accomplished mathematician. Brinkley seems at once to have perceived the vast talents of young Hamilton, and to have encouraged him in the kindest manner. He is said to have remarked in 1823 of this lad of eighteen: "This young man, I do not say *will be*, but *is*, the first mathematician of his age."

Hamilton's career at College was perhaps unexampled. Amongst a number of competitors of more than ordinary merit, he was first in every subject and at every examination. He achieved the rare distinction of obtaining an *optime* for both Greek and for physics. How many more such honours he might have attained it is impossible to say; but he was expected to win both the gold medals at the degree examination, had his career as a student not been cut short by an unprecedented event. This was his appointment to the Andrews professorship of astronomy in the university of Dublin, vacated by Dr Brinkley in 1827. The chair was not exactly offered to him, as has been sometimes asserted, but the electors, having met and talked over the subject, authorized one of their number, who was Hamilton's personal friend, to urge him to become a candidate, a step which his modesty had prevented him from taking. Thus, when barely twenty-two, he was established at the Observatory, Dunsink, near Dublin. He was not specially fitted for the post, for although he had a profound acquaintance with theoretical astronomy, he had paid but little attention to the regular work of the practical astronomer. And it must be said that his time was better employed in original investigations than it would have been had he spent it in observations made even with the best of instruments,—infinitely better than if he had spent it on those of the observatory, which, however good originally, were then totally unfit for the delicate requirements of modern astronomy. Indeed there can be little doubt that Hamilton was intended by the university authorities who elected him to the professorship of astronomy to spend his time as he best could for the advancement of science, without being tied down to any particular branch. Had he devoted himself to practical astronomy they would assuredly have furnished him with modern instruments and an adequate staff of assistants.

In 1835, being secretary to the meeting of the British Association which was held that year in Dublin, he was knighted by the lord-lieutenant. But far higher honours rapidly succeeded, among which we may merely mention his election in 1837 to the president's chair in the Royal Irish Academy, and the rare distinction of being made corresponding member of the academy of St Petersburg. These are the few salient points (other, of course, than the epochs of his more important discoveries and inventions presently to be considered) in the uneventful life of this great man. He retained his wonderful faculties unimpaired to the very last, and steadily continued till within a day or two of his death, which occurred on the 2nd of September 1865, the task (his *Elements of Quaternions*) which had occupied the last six years of his life.

> The germ of his first great discovery was contained in one of those early papers which in 1823 he communicated to Dr Brinkley, by whom, under the title of "Caustics," it was presented in 1824 to the Royal Irish Academy. It was referred as usual to a committee. Their report, while acknowledging the novelty and value of its contents, and the great mathematical skill of its author, recommended that, before being published, it should be still further developed and simplified. During the next three years the paper grew to an immense bulk, principally by the additional details which had been inserted at the desire of the committee. But it also assumed a much more intelligible form, and the grand features of the new method were now easily to be seen. Hamilton himself seems not till this period to have fully understood either the nature or the importance of his discovery, for it is only now that we find him announcing his intention of applying his method to dynamics. The paper was finally entitled "Theory of Systems of Rays," and the first part was printed in 1828 in the *Transactions of the Royal Irish Academy*. It is understood that the more important contents of the second and third parts appeared in the three voluminous supplements (to the first part) which were published in the same *Transactions*, and in the two papers "On a General Method in Dynamics," which appeared in the *Philosophical Transactions* in 1834-1835. The principle of "Varying Action" is the great feature of these papers; and it is strange, indeed, that the one particular result of this theory which, perhaps more than anything else that Hamilton has done, has rendered his name known beyond the little world of true philosophers, should have been easily within the reach of Augustin Fresnel and others for many years before, and in no way required Hamilton's new conceptions or methods, although it was by them that he was led to its discovery. This singular result is still known by the name "conical refraction," which he proposed for it when he first predicted its existence in the third supplement to his "Systems of Rays," read in 1832.
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> The step from optics to dynamics in the application of the method of "Varying Action" was made in 1827, and communicated to the Royal Society, in whose *Philosophical Transactions* for

1834 and 1835 there are two papers on the subject. These display, like the “Systems of Rays,” a mastery over symbols and a flow of mathematical language almost unequalled. But they contain what is far more valuable still, the greatest addition which dynamical science had received since the grand strides made by Sir Isaac Newton and Joseph Louis Lagrange. C. G. J. Jacobi and other mathematicians have developed to a great extent, and as a question of pure mathematics only, Hamilton’s processes, and have thus made extensive additions to our knowledge of differential equations. But there can be little doubt that we have as yet obtained only a mere glimpse of the vast physical results of which they contain the germ. And though this is of course by far the more valuable aspect in which any such contribution to science can be looked at, the other must not be despised. It is characteristic of most of Hamilton’s, as of nearly all great discoveries, that even their indirect consequences are of high value.

The other great contribution made by Hamilton to mathematical science, the invention of Quaternions, is treated under that heading. The following characteristic extract from a letter shows Hamilton’s own opinion of his mathematical work, and also gives a hint of the devices which he employed to render written language as expressive as actual speech. His first great work, *Lectures on Quaternions* (Dublin, 1852), is almost painful to read in consequence of the frequent use of italics and capitals.

“I hope that it may not be considered as unpardonable vanity or presumption on my part, if, as my own taste has always led me to feel a greater interest in *methods* than in *results*, so it is by METHODS, rather than by *any* THEOREMS, which *can* be separately *quoted*, that I desire and hope to be remembered. Nevertheless it is only human nature, to derive *some* pleasure from being cited, now and then, even about a ‘Theorem’; especially where ... the quoter can enrich the subject, by combining it with researches of *his own*.”

The discoveries, papers and treatises we have mentioned might well have formed the whole work of a long and laborious life. But not to speak of his enormous collection of MS. books, full to overflowing with new and original matter, which have been handed over to Trinity College, Dublin, the works we have already called attention to barely form the greater portion of what he has published. His extraordinary investigations connected with the solution of algebraic equations of the fifth degree, and his examination of the results arrived at by N. H. Abel, G. B. Jerrard, and others in their researches on this subject, form another grand contribution to science. There is next his great paper on *Fluctuating Functions*, a subject which, since the time of J. Fourier, has been of immense and ever increasing value in physical applications of mathematics. There is also the extremely ingenious invention of the hodograph. Of his extensive investigations into the solution (especially by numerical approximation) of certain classes of differential equations which constantly occur in the treatment of physical questions, only a few items have been published, at intervals, in the *Philosophical Magazine*. Besides all this, Hamilton was a voluminous correspondent. Often a single letter of his occupied from fifty to a hundred or more closely written pages, all devoted to the minute consideration of every feature of some particular problem; for it was one of the peculiar characteristics of his mind never to be satisfied with a general understanding of a question; he pursued it until he knew it in all its details. He was ever courteous and kind in answering applications for assistance in the study of his works, even when his compliance must have cost him much time. He was excessively precise and hard to please with reference to the final polish of his own works for publication; and it was probably for this reason that he published so little compared with the extent of his investigations.

Like most men of great originality, Hamilton generally matured his ideas before putting pen to paper. “He used to carry on,” says his elder son, William Edwin Hamilton, “long trains of algebraical and arithmetical calculations in his mind, during which he was unconscious of the earthly necessity of eating; we used to bring in a ’snack’ and leave it in his study, but a brief nod of recognition of the intrusion of the chop or cutlet was often the only result, and his thoughts went on soaring upwards.”

For further details about Hamilton (his poetry and his association with poets, for instance) the reader is referred to the *Dublin University Magazine* (Jan. 1842), the *Gentleman’s Magazine* (Jan. 1866), and the *Monthly Notices of the Royal Astronomical Society* (Feb. 1866); and also to an article by the present writer in the *North British Review* (Sept. 1866), from which much of the above sketch has been taken. His works have been collected and published by R. P. Graves, *Life of Sir W. R. Hamilton* (3 vols., 1882, 1885, 1889).

(P. G. T.)

HAMILTON, a town of Dundas and Normanby counties, Victoria, Australia, on the Grange Burne Creek, 197½ m. by rail W. of Melbourne. Pop. (1901) 4026. Hamilton has a number of educational institutions, chief among which are the Hamilton and Western District College, one of the finest buildings of its kind in Victoria, the Hamilton Academy, and the Alexandra ladies’

college, a state school, and a Catholic college. It has a fine racecourse, and pastoral and agricultural exhibitions are held annually, as the surrounding district is mainly devoted to sheep-farming. Mutton is frozen and exported. Hamilton became a borough in 1859.

HAMILTON (Grand or Ashuanipi), the chief river of Labrador, Canada. It rises in the Labrador highlands at an elevation of 1700 ft., its chief sources being Lakes Attikonak and Ashuanipi, between 65° and 66° W. and 52° and 53° N. After a precipitous course of 600 m. it empties into Melville Lake (90 m. long and 18 wide), an extension of Hamilton inlet, on the Atlantic. About 220 m. from its mouth occur the Grand Falls of Labrador. Here in a distance of 12 m. the river drops 760 ft., culminating in a final vertical fall of 316 ft. Below the falls are violent rapids, and the river sweeps through a deep and narrow canyon. The country through which it passes is for the most part a wilderness of barren rock, full of lakes and lacustrine rivers, many of which are its tributaries. In certain portions of the valley spruce and poplars grow to a moderate size. From the head of Lake Attikonak a steep and rocky portage of less than a mile leads to Burnt Lake, which is drained into the St Lawrence by the Romaine river.

HAMILTON, one of the chief cities of Canada, capital of Wentworth county, Ontario. It occupies a highly picturesque situation upon the shore of a spacious land-locked bay at the western end of Lake Ontario. It covers the plain stretching between the water-front and the escarpment (called “The Mountain”), this latter being a continuation of that over which the Falls of Niagara plunge 40 m. to the west. Founded about 1778 by one Robert Land, the growth of Hamilton has been steady and substantial, and, owing to its remarkable industrial development, it has come to be called “the Birmingham of Canada.” This development is largely due to the use of electrical energy generated by water-power, in regard to which Hamilton stands first among Canadian cities. The electricity has not, however, been obtained from Niagara Falls, but from De Cew Falls, 35 m. S.E. of the city. The entire electrical railway system, the lighting of the city, and the majority of the factories are operated by power obtained from this source. The manufacturing interests of Hamilton are varied, and some of the establishments are of vast size, employing many thousands of hands each, such as the International Harvester Co. and the Canadian Westinghouse Co. In addition Hamilton is the centre of one of the finest fruit-growing districts on the continent, and its open-air market is a remarkable sight. The municipal matters are managed by a mayor and board of aldermen. Six steam railroads and three electric radial roads afford Hamilton ample facilities for transport by land, while during the season of navigation a number of steamboat lines supply daily services to Toronto and other lake ports. 892 Entrance into the broad bay is obtained through a short canal intersecting Burlington Beach, which is crossed by two swing bridges, whereof one—that of the Grand Trunk railway—is among the largest of its kind in the world. Burlington Beach is lined with cottages occupied by the city residents during the hot summer months. Hamilton is rich in public institutions. The educational equipment comprises a normal college, collegiate institute, model school and more than a score of public schools, for the most part housed in handsome stone and brick buildings. There are four hospitals, and the asylum for the insane is the largest in Canada. There is an excellent public library, and in the same building with it a good art school. Hamilton boasts of a number of parks, Dundurn Castle Park, containing several interesting relics of the war of 1812, being the finest, and, as it is practically within the city limits, it is a great boon to the people. Gore Park, in the centre of the city, is used for concerts, given by various bands, one of which has gained an international reputation. Since its incorporation in 1833 the history of Hamilton has shown continuous growth. In 1836 the population was 2846; In 1851, 10,248; in 1861, 19,096; in 1871, 26,880; in 1881, 36,661; in 1891, 48,959; and in 1901, 52,634. The Anglican bishop of Niagara has his seat here, and also a Roman Catholic bishop. Hamilton returns two members to the Provincial parliament and two to the Dominion.

HAMILTON, a municipal and police burgh of Lanarkshire, Scotland. Pop. (1891), 24,859;

(1901), 32,775. It is situated about 1 m. from the junction of the Avon with the Clyde, 10¾ m. S.E. of Glasgow by road, and has stations on the Caledonian and North British railways. The town hall in the Scottish Baronial style has a clock-tower 130 ft. high, and the county buildings are in the Grecian style. Among the subjects of antiquarian interest are Queenzie Neuk, the spot where Queen Mary rested on her journey to Langside, the old steeple and pillory built in the reign of Charles I., the Mote Hill, the old Runic cross, and the carved gateway in the palace park. In the churchyard there is a monument to four covenanters who suffered at Edinburgh, on the 7th of December 1600, whose heads were buried here. Among the industries are manufactures of cotton, lace and embroidered muslins, and carriage-building, and there are also large market gardens, the district being famed especially for its apples, and some dairy-farming; but the prosperity of the town depends chiefly upon the coal and ironstone of the surrounding country, which is the richest mineral field in Scotland. Hamilton originated in the 15th century under the protecting influence of the lords of Hamilton, and became a burgh of barony in 1456 and a royal burgh in 1548. The latter rights were afterwards surrendered and it was made the chief burgh of the regality and dukedom of Hamilton in 1668, the third marquess having been created duke in 1643. It unites with Airdrie, Falkirk, Lanark and Linlithgow to form the Falkirk district of burghs, which returns one member to parliament.

Immediately east of the town is Hamilton palace, the seat of the duke of Hamilton and Brandon, premier peer of Scotland. It occupies most of the site of the original burgh of Netherton. The first mansion was erected at the end of the 16th century and rebuilt about 1710, to be succeeded in 1822-1829 by the present palace, a magnificent building in the classical style. Its front is a specimen of the enriched Corinthian architecture, with a projecting pillared portico after the style of the temple of Jupiter Stator at Rome, 264 ft. in length and 60 ft. in height. Each of the twelve pillars of the portico is a single block of stone, quarried at Dalserf, midway between Hamilton and Lanark, and required thirty horses to draw it to its site. The interior is richly decorated and once contained the finest collection of paintings in Scotland, but most of them, together with the Hamilton and Beckford libraries, were sold in 1882. Within the grounds, which comprise nearly 1500 acres, is the mausoleum erected by the 10th duke, a structure resembling in general design that of the emperor Hadrian at Rome, being a circular building springing from a square basement, and enclosing a decorated octagonal chapel, the door of which is a copy in bronze of Ghiberti’s gates at Florence. At Barncluith, 1 m. S.E. of the town, may be seen the Dutch gardens which were laid down in terraces on the steep banks of the Avon. Their quaint shrubbery and old-fashioned setting render them attractive. They were planned in 1583 by John Hamilton, an ancestor of Lord Belhaven, and now belong to Lord Ruthven. About 2 m. S.E. of Hamilton, within the western High Park, on the summit of a precipitous rock 200 ft. in height, the foot of which is washed by the Avon, stand the ruins of Cadzow Castle, the subject of a spirited ballad by Sir Walter Scott. The castle had been a royal residence for at least two centuries before Bannockburn (1314), but immediately after the battle Robert Bruce granted it to Sir Walter FitzGilbert Hamilton, the son of the founder of the family, in return for the fealty. Near it is the noble chase with its ancient oaks, the remains of the Caledonian Forest, where are still preserved some of the aboriginal breed of wild cattle. Opposite Cadzow Castle, in the eastern High Park, on the right bank of the Avon, is Chatelherault, consisting of stables and offices, and imitating in outline the palace of that name in France.

HAMILTON, a village of Madison county, New York, U.S.A., about 29 m. S.W. of Utica. Pop. (1890), 1744; (1900), 1627; (1905) 1522; (1910) 1689. It is served by the New York, Ontario & Western railway. Hamilton is situated in a productive agricultural region, and has a large trade in hops; among its manufactures are canned vegetables, lumber and knit goods. There are several valuable stone quarries in the vicinity. The village owns and operates its water-supply and electric-lighting system. Hamilton is the seat of Colgate University, which was founded in 1819, under the name of the Hamilton Literary and Theological Institution, as a training school for the Baptist ministry, was chartered as Madison University in 1846, and was renamed in 1890 in honour of the Colgate family, several of whom, especially William (1783-1857), the soap manufacturer, and his sons, James Boorman (1818-1904), and Samuel (1822-1897), were its liberal benefactors. In 1908-1909 it had a university faculty of 33 members, 307 students in the college, 60 in the theological department, and 134 in the preparatory department, and a library of 54,000 volumes, including the Baptist Historical collection (about 5000 vols.) given by Samuel Colgate. The township in which the village is situated and which bears the same name (pop. in 1910, 3825) was settled about 1790 and was separated from the township of Paris in 1795. The village was incorporated in 1812.

HAMILTON, a city and the county-seat of Butler county, Ohio, U.S.A., on both sides of the Great Miami river, 25 m. N. of Cincinnati. Pop. (1890), 17,565; (1900), 23,914, of whom 2949 were foreign-born; (1910 census), 35,279. It is served by the Cincinnati, Hamilton & Dayton, and the Pittsburg, Cincinnati, Chicago & St Louis railways, and by interurban electric lines connecting with Cincinnati, Dayton and Toledo. The valley in which Hamilton is situated is noted for its fertility. The city has a fine public square and the Lane free library (1866); the court house is its most prominent public building. A hydraulic canal provides the city with good water power, and in 1905, in the value of its factory products ($13,992,574, being 31.3% more than in 1900), Hamilton ranked tenth among the cities of the state. Its most distinctive manufactures are paper and wood pulp; more valuable are foundry and machine shop products; other manufactures are safes, malt liquors, flour, woollens, Corliss engines, carriages and wagons and agricultural implements. The municipality owns and operates the water-works, electric-lighting plant and gas plant. A stockade fort was built here in 1791 by General Arthur Saint Clair, but it was abandoned in 1796, two years after the place had been laid out as a town and named Fairfield. The town was renamed, in honour of Alexander Hamilton, about 1796. In 1803 Hamilton was made the county-seat; in 1810 it was incorporated as a village; in 1854 it annexed the town of Rossville on the opposite side of the river; and in 1857 it was made a city. In 1908, by the annexation of suburbs, the area and the population of Hamilton were considerably increased. Hamilton was the early home of William Dean Howells, whose recollections of it are to be found in his *A Boy's Town*; his father's anti-slavery sentiments made it necessary for him to sell his printing office, where the son had learned to set type in his teens, and to remove to Dayton.

HAMIRPUR, a town and district of British India, in the Allahabad division of the United Provinces. The town stands on a tongue of land near the confluence of the Betwa and Jumna, 110 m. N.W. of Allahabad. Pop. (1901), 6721. It was founded, according to tradition, in the 11th century by Hamir Deo, a Karchuli Rajput expelled from Alwar by the Mahommedans.

The district has an area of 2289 sq. m., and encloses the native states of Sarila, Jigni and Bihat, besides portions of Charkhari and Garrauli. Hamirpur forms part of the great plain of Bundelkhand, which stretches from the banks of the Jumna to the central Vindhyan plateau. The district is in shape an irregular parallelogram, with a general slope northward from the low hills on the southern boundary. The scenery is rendered picturesque by the artificial lakes of Mahoba. These magnificent reservoirs were constructed by the Chandel rajas before the Mahommedan conquest, for purposes of irrigation and as sheets of ornamental water. Many of them enclose craggy islets or peninsulas, crowned by the ruins of granite temples, exquisitely carved and decorated. From the base of this hill and lake country the general plain of the district spreads northward in an arid and treeless level towards the broken banks of the rivers. Of these the principal are the Betwa and its tributary the Dhasan, both of which are unnavigable. There is little waste land, except in the ravines by the river sides. The deep black soil of Bundelkhand, known as *mār*, retains the moisture under a dried and rifted surface, and renders the district fertile. The staple produce is grain of various sorts, the most important being gram. Cotton is also a valuable crop. Agriculture suffers much from the spread of the *kāns* grass, a noxious weed which overruns the fields and is found to be almost ineradicable wherever it has once obtained a footing. Droughts and famine are unhappily common. The climate is dry and hot, owing to the absence of shade and the bareness of soil, except in the neighbourhood of the Mahoba lakes, which cool and moisten the atmosphere.

In 1901 the pop. was 458,542, showing a decrease of 11% in the decade, due to the famine of 1895-1897. Export trade is chiefly in agricultural produce and cotton cloth. Rath is the principal commercial centre. The Midland branch of the Great Indian Peninsula railway passes through the south of the district.

From the 9th to the 12th century this district was the centre of the Chandel kingdom, with its capital at Mahoba. The rajas adorned the town with many splendid edifices, remains of which still exist, besides constructing the noble artificial lakes already described. At the end of the 12th century Mahoba fell into the hands of the Mussulmans. In 1680 the district was conquered by Chhatar Sal, the hero of the Bundelas, who assigned at his death one-third of his dominions to his ally the peshwa of the Mahrattas. Until Bundelkhand became British territory in 1803 there was constant warfare between the Bundela princes and the Mahratta chieftains. On the outbreak of the Mutiny in 1857, Hamirpur was the scene of a fierce rebellion, and all the principal towns were plundered by the surrounding chiefs. After a short period of desultory guerrilla warfare the rebels were effectually quelled and the work of reorganization began. The

district has since been subject to cycles of varying agricultural prosperity.

HAMITIC RACES AND LANGUAGES. The questions involved in a consideration of Hamitic races and Hamitic languages are independent of one another and call for separate treatment.

I. *Hamitic Races.*—The term Hamitic as applied to race is not only extremely vague but has been much abused by anthropological writers. Of the few who have attempted a precise definition the most prominent is Sergi,[1] and his classification may be taken as representing one point of view with regard to this difficult question.

Sergi considers the Hamites, using the term in the racial sense, as a branch of his "Mediterranean Race"; and divides them as follows:—

1. *Eastern Branch*—

(*a*) Ancient and Modern Egyptian (excluding the Arabs).

(*b*) Nubians, Beja.

(*c*) Abyssinians.

(*d*) Galla, Danakil, Somali.

(*e*) Masai.

(*f*) Wahuma or Watusi.

2. *Northern Branch*—

(*a*) Berbers of the Mediterranean, Atlantic and Sahara.

(*b*) Tibbu.

(*c*) Fula.

(*d*) Guanches (extinct).

With regard to this classification the following conclusions may be regarded as comparatively certain: that the members of groups *d*, *e* and *f* of the first branch appear to be closely inter-connected by ties of blood, and also the members of the second branch. The Abyssinians in the south have absorbed a certain amount of Galla blood, but the majority are Semitic or Semito-Negroid. The question of the racial affinities of the Ancient Egyptians and the Beja are still a matter of doubt, and the relation of the two groups to each other is still controversial. Sergi, it is true, arguing from physical data believes that a close connexion exists; but the data are so extremely scanty that the finality of his conclusion may well be doubted. His "Northern Branch" corresponds with the more satisfactory term "Libyan Race," represented in fair purity by the Berbers, and, mixed with Negro elements, by the Fula and Tibbu. This Libyan race is distinctively a white race, with dark curly hair; the Eastern Hamites are equally distinctively a brown people with frizzy hair. If, as Sergi believes, these brown people are themselves a race, and not a cross between white and black in varying proportions, they are found in their greatest purity among the Somali and Galla, and mixed with Bantu blood among the Ba-Hima (Wahuma) and Watussi. The Masai seem to be as much Nilotic Negro as Hamite. This Galla type does not seem to appear farther north than the southern portion of Abyssinia, and it is not unlikely that the Beja are very early Semitic immigrants with an aboriginal Negroid admixture. It is also possible that they and the Ancient Egyptians may contain a common element. The Nubians appear akin to the Egyptians but with a strong Negroid element.

To return to Sergi's two branches, besides the differences in skin colour and hair-texture there is also a cultural difference of great importance. The Eastern Hamites are essentially a pastoral people and therefore nomadic or semi-nomadic; the Berbers, who, as said above, are the purest representatives of the Libyans, are agriculturists. The pastoral habits of the Eastern Hamites are of importance, since they show the utmost reluctance to abandon them. Even the Ba-Hima and Watussi, for long settled and partly intermixed with the agricultural Bantu, regard any pursuit but that of cattle-tending as absolutely beneath their dignity.

It would seem therefore that, while sufficient data have not been collected to decide whether, on the evidence of exact anthropological measurements, the Libyans are connected racially with the Eastern Hamites, the testimony derived from broad "descriptive characteristics" and general culture is against such a connexion. To regard the Libyans as Hamites solely on the ground that the languages spoken by the two groups show affinities would be as rash and might be as false as to aver that the present-day Hungarians are Mongolians because Magyar is an Asiatic tongue. Regarding the present state of knowledge it would be safer therefore to restrict the term

"Hamites" to Sergi's first group; and call the second by the name "Libyans." The difficult question of the origin of the ancient Egyptians is discussed elsewhere.

As to the question whether the Hamites in this restricted sense are a definite race or a blend, no discussion can, in view of the paucity of evidence, as yet lead to a satisfactory conclusion, but it might be suggested very tentatively that further researches may possibly connect them with the Dravidian peoples of India. It is sufficient for present purposes that the term Hamite, using it as coextensive with Sergi's Eastern Hamite, has a definite connotation. By the term is meant a brown people with frizzy hair, of lean and sinewy physique, with slender but muscular arms and legs, a thin straight or even aquiline nose with delicate nostrils, thin lips and no trace of prognathism.

(T. A. J.)

II. *Hamitic Languages.*—The whole north of Africa was once inhabited by tribes of the Caucasian race, speaking languages which are now generally called, after Genesis x., Hamitic, a term introduced principally by Friedrich Müller. The linguistic coherence of that race has been broken up especially by the intrusion of Arabs, whose language has exercised a powerful influence on all those nations. This splitting up, and the immense distances over which those tribes were spread, have made those languages diverge more widely than do the various tongues of the Indo-European stock, but still their affinity can easily be traced by the linguist, and is, perhaps, greater than the corresponding anthropologic similarity between the white Libyan, red Galla and swarthy Somali. The relationship of these languages to Semitic has long been noticed, but was at first taken for descent from Semitic (cf. the name "Syro-Arabian" proposed by Prichard). Now linguists are agreed that the Proto-Semites and Proto-Hamites once formed a unity, probably in Arabia. That original unity has been demonstrated especially by Friedrich Müller (*Reise der österreichischen Fregatte Novara*, p. 51, more fully, *Grundriss der Sprachwissenschaft*, vol. iii. fasc. 2, p. 226); cf. also A. H. Sayce, *Science of Language*, ii. 178; R. N. Cust, *The Modern Languages of Africa*, i. 94, &c. The comparative grammars of Semitic (W. Wright, 1890, and especially H. Zimmern, 1898) demonstrate this now to everybody by comparative tables of the grammatical elements.

The classification of Hamitic languages is as follows:[2]—

1. *The Libyan Dialects* (mostly misnamed "Berber languages," after an unfortunate, vague Arabic designation, *barābra*, "people of foreign language"). The representatives of this large group extend from the Senegal river (where they are called Zenaga; imperfect *Grammaire* by L. Faidherbe, 1877) and from Timbuktu (dialect of the Auelimmiden, sketched by Heinrich Barth, *Travels*, vol. v., 1857) to the oases of Aujila (Bengazi) and of Siwa on the western border of Egypt. Consequently, these "dialects" differ more strongly from each other than, *e.g.* the Semitic languages do between themselves. The purest representative seems to be the language of the Algerian mountaineers (Kabyles), especially that of the Zuawa (Zouaves) tribe, described by A. Hanoteau, *Essai de grammaire kabyle* (1858); Ben Sedira, *Cours de langue kab.* (1887); *Dictionnaire* by Olivier (1878). The learned little *Manuel de langue kabyle*, by R. Basset (1887) is an introduction to the study of the many dialects with full bibliography, cf. also Basset's *Notes de lexicographie berbère* (1883 foll.). (The dictionaries by Brosselard and Venture de Paradis are imperfect.) The best now described is Shilḥ(*a*). a Moroccan dialect (H. Stumme, *Handbuch des Schilhischen*, 1899), but it is an inferior dialect. That of Ghat in Tripoli underlies the *Grammar* of F. W. Newman (1845) and the *Grammaire Tamashek* of Hanoteau (1860); cf. also the *Dictionnaire* of Cid Kaoui (1900). Neither medieval reports on the language spoken by the Guanches of the Canary Islands (fullest in A. Berthelot, *Antiquités canariennes*, 1879; akin to Shilha; by no means primitive Libyan untouched by Arabic), nor the modern dialect of Siwa (still little known; tentative grammar by Basset, 1890), have justified hopes of finding a pure Libyan dialect. Of a few literary attempts in Arabic letters the religious *Poème de Çabi* (ed. Basset, *Journ. asiatique*, vii. 476) is the most remarkable. The imperfect native writing (named *tifinaghen*), a derivation from the Sabaean alphabet (not, as Halévy claimed, from the Punic), still in use among the Sahara tribes, can be traced to the 2nd century B.C. (bilingual inscription of Tucca, &c.; cf. J. Halévy, *Essai d'épigraphie libyque*, 1875), but hardly ever served for literary uses.

2. *The Cushitic or Ethiopian Family.*—The nearest relative of Libyan is not Ancient Egyptian but the language of the nomadic Bisharin or Beja of the Nubian Desert (cf. H. Almkvist, *Die Bischari Sprache*, 1881 [the northern dialect], and L. Reinisch, *Die Bedauye Sprache*, 1893, *Wörterbuch*, 1895). The speech of the peoples occupying the lowland east of Abyssinia, the Saho (Reinisch, grammar in *Zeitschrift d. deutschen morgenländ. Gesellschaft*, 32, 1878; *Texte*, 1889; *Wörterbuch*, 1890; cf. also Reinisch, Die Sprache der Irob Saho, 1878), and the Afar or Danakil (Reinisch, *Die Afar Sprache*, 1887; G. Colizza, *Lingua Afar*, 1887), merely dialects of one language, form the connecting link with the southern Hamitic group, *i.e.* Somali (Reinisch, *Somali Sprache*, 1900-1903, 3 vols.; Larajasse und de Sampont, *Practical Grammar of the Somali Language*, 1897; imperfect sketches by Hunter, 1880, and Schleicher, 1890), and Galla (L. Tutscheck, *Grammar*, 1845, *Lexicon*, 1844; Massaja, *Lectiones*, 1877; G. F. F. Praetorius, *Zur Grammatik der Gallasprache*, 1893, &c.). All these Cushitic languages, extending from Egypt to the equator, are separated by Reinisch as *Lower Cushitic* from the *High Cushitic* group, *i.e.* the

many dialects spoken by tribes dwelling in the Abyssinian highlands or south of Abyssinia. Of the original inhabitants of Abyssinia, called collectively Agâu (or Agâu) by the Abyssinians, or Falashas (this name principally for Jewish tribes), Reinisch considers the Bilin or Bogos tribe as preserving the most archaic dialect (*Die Bilin Sprache*, Texts, 1883; *Grammatik*, 1882; *Wörterbuch*, 1887); the same scholar gave sketches of the Khamir (1884) and Quara (1885) dialects. On other dialects, struggling against the spreading Semitic tongues (Tigré, Amharic, &c.), see Conti Rossini, "Appunti sulla lingua Khamta," in *Giorn. soc. orient.* (1905); Waldmeyer, *Wörtersammlung* (1868); J. Halévy, "Essai sur la langue Agaou" (*Actes soc. philologique*, 1873), &c. Similar dialects are those of the Sid(d)âma tribes, south of Abyssinia, of which only Kaf(f)a (Reinisch, *Die Kafa Sprache*, 1888) is known at all fully. Of the various other dialects (Kullo, Tambaro, &c.), vocabularies only are known; cf. Borelli, *Éthiopie méridionale* (1890). (On Hausa see below.)

There is no question that the northernmost Hamitic languages have preserved best the original wealth of inflections which reminds us so strongly of the formal riches of southern Semitic. Libyan and Beja are the best-preserved types, and the latter especially may be called the Sanskrit of Hamitic. The other Cushitic tongues exhibit increasing agglutinative tendencies the farther we go south, although single archaisms are found even in Somali. The early isolated High Cushitic tongues (originally branched off from a stock common with Galla and Somali) diverge most strongly from the original type. Already the Agâu dialects are full of very peculiar developments; the Hamitic character of the Sid(d)ama languages can be traced only by lengthy comparisons.

The simple and pretty Haus(s)a language, the commercial language of the whole Niger region and beyond (Schoen, *Grammar*, 1862, *Dictionary*, 1876; Charles H. Robinson, 1897, in Robinson and Brookes's *Dictionary*) has fairly well preserved its Hamitic grammar, though its vocabulary was much influenced by the surrounding Negro languages. It is no relative of Libyan (though it has experienced some Libyan influences), but comes from the (High ?) Cushitic family; its exact place in this family remains to be determined. Various languages of the Niger region *were* once Hamitic like Haus(s)a, or at least under some Hamitic influence, but have now lost that character too far to be classified as Hamitic, *e.g.* the Muzuk or Musgu language (F. Müller, 1886). The often-raised question of some (very remote) relationship between Hamitic and the great Bantu family is still undecided; more doubtful is that with the interesting Ful (a) language in the western Sudan, but a relationship with the Nilotic branch of negro languages is impossible (though a few of these, *e.g.* Nuba, have borrowed some words from neighbouring Hamitic peoples). The development of a grammatical gender, this principal characteristic of Semito-Hamitic, in Bari and Masai, may be rather accidental than borrowed; certainly, the same phenomenon in Hottentot does not justify the attempt often made to classify this with Hamitic.

3. *Ancient Egyptian*, as we have seen, does not form the connecting link between Libyan and Cushitic which its geographical position would lead us to expect. It represents a third independent branch, or rather a second one, Libyan and Cushitic forming one division of Hamitic. A few resemblances with Libyan (M. de Rochemonteix in *Mémoires du congrès internat. des orientalistes*, Paris, 1873; elementary) are less due to original relationship than to the general better preservation of the northern idioms (see above). Frequent attempts to detach Egyptian from Hamitic and to attribute it to a Semitic immigration later than that of the other Hamites cannot be proved. Egyptian is, in many respects, more remote from Semitic than the Libyan-Cushitic division, being more agglutinative than the better types of its sister branch, having lost the most characteristic verbal flection (the Hamito-Semitic imperfect), forming the nominal plural in its own peculiar fashion, &c. The advantage of Egyptian, that it is represented in texts of 3000 B.C., while the sister tongues exist only in forms 5000 years later, allows us, *e.g.* to trace the Semitic principle of triliteral roots more clearly in Egyptian; but still the latter tongue is hardly more characteristically archaic or nearer Semitic than Beja or Kabylic.

All this is said principally of the grammar. Of the vocabulary it must not be forgotten that none of the Hamitic tongues remained untouched by Semitic influences after the separation of the Hamites and Semites, say 4000 or 6000 B.C. Repeated Semitic immigrations and influences have brought so many layers of loan-words that it is questionable if any modern Hamitic language has now more than 10% of original Hamitic words. Which Semitic resemblances are due to original affinity, which come from pre-Christian immigrations, which from later influences, are difficult questions not yet faced by science; *e.g.* the half-Arabic numerals of Libyan have often been quoted as a proof of primitive Hamito-Semitic kinship, but they are probably only a gift of some Arab invasion, prehistoric for us. Arab tribes seem to have repeatedly swept over the whole area of the Hamites, long before the time of Mahomet, and to have left deep impressions on races and languages, but none of these migrations stands in the full light of history (not even that of the Gee'z tribes of Abyssinia). Egyptian exhibits constant influences from its Canaanitish neighbours; it is crammed with such loan-words already in 3000 B.C.; new affluxes can be traced, especially *c.* 1600. (The Punic influences on Libyan are, however, very slight, inferior to the Latin.) Hence the relations of Semitic and Hamitic still require many investigations in detail, for which the works of Reinisch and Basset have merely built up a basis.

(W. M. M.)

1 G. Sergi, *The Mediterranean Race. A Study of the Origin of European Peoples* (London, 1901); *idem. Africa, Antropologia della stirpe camitica* (Turin, 1897).

2 Only works of higher linguistic standing are quoted here; many vocabularies and imperfect attempts of travellers cannot be enumerated.

HAMLET, the hero of Shakespeare's tragedy, a striking figure in Scandinavian romance.

The chief authority for the legend of Hamlet is Saxo Grammaticus, who devotes to it parts of the third and fourth books of his *Historia Danica*, written at the beginning of the 13th century. It is supposed that the story of Hamlet, Amleth or Amloði,[1] was contained in the lost Skjöldunga saga, but we have no means of determining whether Saxo derived his information in this case from oral or written sources. The close parallels between the tale of Hamlet and the English romances of Havelok, Horn and Bevis of Hampton make it not unlikely that Hamlet is of British rather than of Scandinavian origin. His name does in fact occur in the Irish *Annals of the Four Masters* (ed. O'Donovan, 1851) in a stanza attributed to the Irish Queen Gormflaith, who laments the death of her husband, Niall Glundubh, at the hands of Amhlaiðe in 919 at the battle of Ath-Cliath. The slayer of Niall Glundubh is by other authorities stated to have been Sihtric. Now Sihtric was the father of that Olaf or Anlaf Cuaran who was the prototype of the English Havelok, but nowhere else does he receive the nickname of Amhlaiðe. If Amhlaiðe may really be identified with Sihtric, who first went to Dublin in 888, the relations between the tales of Havelok and Hamlet are readily explicable, since nothing was more likely than that the exploits of father and son should be confounded (see Havelok). But, whoever the historic Hamlet may have been, it is quite certain that much was added that was extraneous to Scandinavian tradition. Later in the 10th century there is evidence of the existence of an Icelandic saga of Amlóði or Amleth in a passage from the poet Snaebjorn in the second part of the prose *Edda*.[2] According to Saxo,[3] Hamlet's history is briefly as follows. In the days of Rorik, king of Denmark, Gervendill was governor of Jutland, and was succeeded by his sons Horvendill and Feng. Horvendill, on his return from a Viking expedition in which he had slain Koll, king of Norway, married Gerutha, Rorik's daughter, who bore him a son Amleth. But Feng, out of jealousy, murdered Horvendill, and persuaded Gerutha to become his wife, on the plea that he had committed the crime for no other reason than to avenge her of a husband by whom she had been hated. Amleth, afraid of sharing his father's fate, pretended to be imbecile, but the suspicion of Feng put him to various tests which are related in detail. Among other things they sought to entangle him with a young girl, his foster-sister, but his cunning saved him. When, however, Amleth slew the eavesdropper hidden, like Polonius, in his mother's room, and destroyed all trace of the deed, Feng was assured that the young man's madness was feigned. Accordingly he despatched him to England in company with two attendants, who bore a letter enjoining the king of the country to put him to death. Amleth surmised the purport of their instructions, and secretly altered the message on their wooden tablets to the effect that the king should put the attendants to death and give Amleth his daughter in marriage. After marrying the princess Amleth returned at the end of a year to Denmark. Of the wealth he had accumulated he took with him only certain hollow sticks filled with gold. He arrived in time for a funeral feast, held to celebrate his supposed death. During the feast he plied the courtiers with wine, and executed his vengeance during their drunken sleep by fastening down over them the woollen hangings of the hall with pegs he had sharpened during his feigned madness, and then setting fire to the palace. Feng he slew with his own sword. After a long harangue to the people he was proclaimed king. Returning to England for his wife he found that his father-in-law and Feng had been pledged each to avenge the other's death. The English king, unwilling personally to carry out his pledge, sent Amleth as proxy wooer for the hand of a terrible Scottish queen Hermuthruda, who had put all former wooers to death, but fell in love with Amleth. On his return to England his first wife, whose love proved stronger than her resentment, told him of her father's intended revenge. In the battle which followed Amleth won the day by setting up the dead men of the day before with stakes, and thus terrifying the enemy. He then returned with his two wives to Jutland, where he had to encounter the enmity of Wiglek, Rorik's successor. He was slain in a battle against Wiglek, and Hermuthruda, although she had engaged to die with him, married the victor.

The other Scandinavian versions of the tale are: the *Hrolfssaga Kraka*,[4] where the brothers Helgi and Hroar take the place of the hero; the tale of Harald and Halfdan, as related in the 7th book of Saxo Grammaticus; the modern Icelandic *Ambales Saga*,[5] a romantic tale the earliest MS. of which dates from the 17th century; and the folk-tale of Brjám[6] which was put in writing in 1707. Helgi and Hroar, like Harald and Halfdan, avenge their father's death on their uncle by burning him in his palace. Harald and Halfdan escape after their father's death by being brought

up, with dogs' names, in a hollow oak, and subsequently by feigned madness; and in the case of the other brothers there are traces of a similar motive, since the boys are called by dogs' names. The methods of Hamlet's madness, as related by Saxo, seem to point to cynanthropy. In the *Ambales Saga*, which perhaps is collateral to, rather than derived from, Saxo's version, there are, besides romantic additions, some traits which point to an earlier version of the tale.

Saxo Grammaticus was certainly familiar with the Latin historians, and it is most probable that, recognizing the similarity between the northern Hamlet legend and the classical tale of Lucius Junius Brutus as told by Livy, by Valerius Maximus, and by Dionysius of Halicarnassus (with which he was probably acquainted through a Latin epitome), he deliberately added circumstances from the classical story. The incident of the gold-filled sticks could hardly appear fortuitously in both, and a comparison of the harangues of Amleth (Saxo, Book iv.) and of Brutus (Dionysius iv. 77) shows marked similarities. In both tales the usurping uncle is ultimately succeeded by the nephew who has escaped notice during his youth by a feigned madness. But the parts played by the personages who in Shakespeare became Ophelia and Polonius, the method of revenge, and the whole narrative of Amleth's adventure in England, have no parallels in the Latin story.

Dr. O. L. Jiriczek[7] first pointed out the striking similarities existing between the story of Amleth in Saxo and the other northern versions, and that of Kei Chosro in the *Shahnameh* (Book of the King) of the Persian poet Firdausi. The comparison was carried farther by R. Zenker (*Boeve Amlethus*, pp. 207-268, Berlin and Leipzig, 1904), who even concluded that the northern saga rested on an earlier version of Firdausi's story, in which indeed nearly all the individual elements of the various northern versions are to be found. Further resemblances exist in the *Ambales Saga* with the tales of Bellerophon, of Heracles, and of Servius Tullius. That Oriental tales through Byzantine and Arabian channels did find their way to the west is well known, and there is nothing very surprising in their being attached to a local hero.

The tale of Hamlet's adventures in Britain forms an episode so distinct that it was at one time referred to a separate hero. The traitorous letter, the purport of which is changed by Hermuthruda, occurs in the popular *Dit de l'empereur Constant*,[8] and in Arabian and Indian tales. Hermuthruda's cruelty to her wooers is common in northern and German mythology, and close parallels are afforded by Thrytho, the terrible bride of Offa I., who figures in *Beowulf*, and by Brunhilda in the *Nibelungenlied*.

The story of Hamlet was known to the Elizabethans in François de Belleforest's *Histoires tragiques* (1559), and found its supreme expression in Shakespeare's tragedy. That as early as 1587 or 1589 Hamlet had appeared on the English stage is shown by Nash's preface to Greene's *Menaphon*: "He will afford you whole Hamlets, I should say, handfulls of tragical speeches." The Shakespearian Hamlet owes, however, little but the outline of his story to Saxo. In character he is diametrically opposed to his prototype. Amleth's madness was certainly altogether feigned; he prepared his vengeance a year beforehand, and carried it out deliberately and ruthlessly at every point. His riddling speech has little more than an outward similarity to the words of Hamlet, who resembles him, however, in his disconcerting penetration into his enemies' plans. For a discussion of Shakespeare's play and its immediate sources see Shakespeare.

See an appendix to Elton's trans. of Saxo Grammaticus; I. Gollancz, *Hamlet in Iceland* (London, 1898); H. L. Ward, *Catalogue of Romances*, under "Havelok," vol. i. pp. 423 seq.; *English Historical Review*, x. (1895); F. Detter, "Die Hamletsage," *Zeitschr. f. deut. Alter.* vol. 36 (Berlin, 1892); O. L. Jiriczek, "Die Amlethsage auf Island," in *Germanistische Abhandlungen*, vol. xii. (Breslau), and "Hamlet in Iran," in *Zeitschr. des Vereins für Volkskunde*, x. (Berlin, 1900); A. Olrik, *Kilderne til Sakses Oldhistorie* (Copenhagen, 2 vols., 1892-1894).

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1 The word is used in modern Icelandic metaphorically of an imbecile or weak-minded person (see Cleasby and Vigfússon, *Icelandic-English Dictionary*, 1869).

2 "'Tis said that far out, off yonder ness, the Nine Maids of the Island Mill stir amain the host—cruel skerry-quern—they who in ages past ground Hamlet's meal. The good Chieftain furrows the hull's lair with his ship's beaked prow." This passage may be compared with some examples of Hamlet's cryptic sayings quoted by Saxo: "Again, as he passed along the beach, his companions found the rudder of a ship which had been wrecked, and said they had discovered a huge knife. 'This,' said he, 'was the right thing to carve such a huge ham....' Also, as they passed the sand-hills, and bade him look at the meal, meaning the sand, he replied that it had been ground small by the hoary tempests of the ocean."

3 Books iii. and iv., chaps. 86-106, Eng. trans. by O. Elton (London, 1894).

4 Printed in Fornaldar Sögur Norðtrlanda (vol. i. Copenhagen, 1829), analysed by F. Detter in *Zeitschr. für deutsches Altertum* (vol. 36, Berlin, 1892).

5 Printed with English translation and with other texts germane to the subject by I. Gollancz (*Hamlet in Iceland*, London, 1898).

6 Professor I. Gollancz points out (p. lxix.) that Brjám is a variation of the Irish Brian, that the

relations between Ireland and the Norsemen were very close, and that, curiously enough, Brian Boroimhe was the hero of that very battle of Clontarf (1014) where the device (which occurs in Havelok and Hamlet) of bluffing the enemy by tying the wounded to stakes to represent active soldiers was used.

7 "Hamlet in Iran," in *Zeitschrift des Vereins für Volkskunde*, x. (Berlin, 1900).

8 See A. B. Gough, *The Constance Saga* (Berlin, 1902).

HAMLEY, SIR EDWARD BRUCE (1824-1893), British general and military writer, youngest son of Vice-Admiral William Hamley, was born on the 27th of April 1824 at Bodmin, Cornwall, and entered the Royal Artillery in 1843. He was promoted captain in 1850, and in 1851 went to Gibraltar, where he commenced his literary career by contributing articles to magazines. He served throughout the Crimean campaign as aide-de-camp to Sir Richard Dacres, commanding the artillery, taking part in all the operations with distinction, and becoming successively major and lieutenant-colonel by brevet. He also received the C.B. and French and Turkish orders. During the war he contributed to *Blackwood's Magazine* an admirable account of the progress of the campaign, which was afterwards republished. The combination in Hamley of literary and military ability secured for him in 1859 the professorship of military history at the new Staff College at Sandhurst, from which in 1866 he went to the council of military education, returning in 1870 to the Staff College as commandant. From 1879 to 1881 he was British commissioner successively for the delimitation of the frontiers of Turkey and Bulgaria, Turkey in Asia and Russia, and Turkey and Greece, and was rewarded with the K.C.M.G. Promoted colonel in 1863, he became a lieutenant-general in 1882, when he commanded the 2nd division of the expedition to Egypt under Lord Wolseley, and led his troops in the battle of Tell-el-Kebir, for which he received the K.C.B., the thanks of parliament, and 2nd class of Osmanieh. Hamley considered that his services in Egypt had been insufficiently recognized in Lord Wolseley's despatches, and expressed his indignation freely, but he had no sufficient ground for supposing that there was any intention to belittle his services. From 1885 until his death on the 12th of August 1893 he represented Birkenhead in parliament in the Conservative interest.

Hamley was a clever and versatile writer. His principal work, *The Operations of War*, published in 1867, became a text-book of military instruction. He published some pamphlets on national defence, was a frequent contributor to magazines, and the author of several novels, of which perhaps the best known is *Lady Lee's Widowhood*.

HAMLIN, HANNIBAL (1809-1891), vice-president of the United States (1861-1865), was born at Paris, Maine, on the 27th of August 1809. After studying in Hebron Academy, he conducted his father's farm for a time, became schoolmaster, and later managed a weekly newspaper at Paris. He then studied law, was admitted to the bar in 1833, and rapidly acquired a reputation as an able lawyer and a good public speaker. Entering politics as an anti-slavery Democrat, he was a member of the state House of Representatives in 1836-1840, serving as its presiding officer during the last four years. He was a representative in Congress from 1843 to 1847, and was a member of the United States Senate from 1848 to 1856. From the very beginning of his service in Congress he was prominent as an opponent of the extension of slavery; he was a conspicuous supporter of the Wilmot Proviso, spoke against the Compromise Measures of 1850, and in 1856, chiefly because of the passage in 1854 of the Kansas-Nebraska Bill, which repealed the Missouri Compromise, and his party's endorsement of that repeal at the Cincinnati Convention two years later, he withdrew from the Democrats and joined the newly organized Republican party. The Republicans of Maine nominated him for governor in the same year, and having carried the election by a large majority he was inaugurated in this office on the 8th of January 1857. In the latter part of February, however, he resigned the governorship, and was again a member of the Senate from 1857 to January 1861. From 1861 to 1865, during the Civil War, he was Vice-President of the United States. While in this office he was one of the chief advisers of President Lincoln, and urged both the Emancipation Proclamation and the arming of the negroes. After the war he again served in the Senate (1869-1881), was minister to Spain (1881-1883), and then retired from public life. He died at Bangor, Maine, on the 4th of July 1891.

See *Life and Times of Hannibal Hamlin* (Cambridge, Mass., 1899), by C. E. Hamlin, his

grandson.

HAMM, a town of Germany, in the Prussian province of Westphalia, on the Lippe, 19 m. by rail N.E. from Dortmund on the main line Cologne-Hanover. Pop. (1905) 38,430. It is surrounded by pleasant promenades occupying the site of the former engirdling fortifications. The principal buildings are four Roman Catholic and three Evangelical churches, several schools and an infirmary. The town is flourishing and rapidly increasing, and possesses very extensive wire factories (in connexion with which there are puddling and rolling works), machine works, and manufactories of gloves, baskets, leather, starch, chemicals, varnish, oil and beer. Near the town are some thermal baths.

Hamm, which became a town about the end of the 12th century, was originally the capital of the countship of Mark, and was fortified in 1226. It became a member of the Hanseatic League. In 1614 it was besieged by the Dutch, and it was several times taken and retaken during the Thirty Years' War. In 1666 it came into the possession of Brandenburg. In 1761 and 1762 it was bombarded by the French, and in 1763 its fortifications were dismantled.

HAMMĀD AR-RĀWIYA [Abū-l-Qāsim Ḥammād ibn Abī Laila Sāpūr (or ibn Maisara)] (8th century A.D.), Arabic scholar, was of Dailamite descent, but was born in Kufa. The date of his birth is given by some as 694, by others as 714. He was reputed to be the most learned man of his time in regard to the "days of the Arabs" (*i.e.* their chief battles), their stories, poems, genealogies and dialects. He is said to have boasted that he could recite a hundred long *qasīdas* for each letter of the alphabet (*i.e.* rhyming in each letter) and these all from pre-Islamic times, apart from shorter pieces and later verses. Hence his name *Hammad ar-Rawiya*, "the reciter of verses from memory." The Omayyad caliph Walīd is said to have tested him, the result being that he recited 2900 qasīdas of pre-Islamic date and Walīd gave him 100,000 dirhems. He was favoured by Yazīd II. and his successor Hishām, who brought him up from Irak to Damascus. Arabian critics, however, say that in spite of his learning he lacked a true insight into the genius of the Arabic language, and that he made more than thirty—some say three hundred—mistakes of pronunciation in reciting the Koran. To him is ascribed the collecting of the *Mo'allakāt* (*q.v.*). No diwan of his is extant, though he composed verse of his own and probably a good deal of what he ascribed to earlier poets.

Biography in McG. de Slane's trans. of Ibn Khallikān, vol. i. pp. 470-474, and many stories are told of him in the *Kitāb ul-Aghāni*, vol. v. pp. 164-175.

(G. W. T.)

HAMMER, FRIEDRICH JULIUS (1810-1862), German poet, was born on the 7th of June 1810 at Dresden. In 1831 he went to Leipzig to study law, but devoted himself mainly to philosophy and belles lettres. Returning to Dresden in 1834 a small comedy, *Das seltsame Frühstück*, introduced him to the literary society of the capital, notably to Ludwig Tieck, and from this time he devoted himself entirely to writing. In 1837 he returned to Leipzig, and, coming again to Dresden, from 1851 to 1859 edited the feuilleton of *Sächsische konstitutionelle Zeitung*, and took the lead in the foundation in 1855 of the Schiller Institute in Dresden. His marriage in 1851 had made him independent, and he bought a small property at Pillnitz, on which, soon after his return from a residence of several years at Nuremberg, he died, on the 23rd of August 1862.

Hammer wrote, besides several comedies, a drama *Die Brüder* (1856), a number of unimportant romances, and the novel *Einkehr und Umkehr* (Leipzig, 1856); but his reputation rests upon his epigrammatic and didactic poems. His *Schau' um dich, und schau' in dich* (1851), which made his name, has passed through more than thirty editions. It was followed by *Zu allen guten Stunden* (1854), *Fester Grund* (1857), *Auf stillen Wegen* (1859), and *Lerne, liebe, lebe* (1862). Besides these he wrote a book of Turkish songs, *Unter dem Halbmond* (Leipzig, 1860),

and rhymed versions of the psalms (1861), and compiled the popular religious anthology *Leben und Heimat in Gott*, of which a 14th edition was published in 1900.

See C. G. E. Am Ende, *Julius Hammer* (Nuremberg, 1872).

HAMMER, an implement consisting of a shaft or handle with head fixed transversely to it. The head, usually of metal, has one flat face, the other may be shaped to serve various purposes, *e.g.* with a claw, a pick, &c. The implement is used for breaking, beating, driving nails, rivets, &c., and the word is applied to heavy masses of metal moved by machinery, and used for similar purposes. (See TOOL.) "Hammer" is a word common to Teutonic languages. It appears in the same form in German and Danish, and in Dutch as *hamer*, in Swedish as *hammare*. The ultimate origin is unknown. It has been connected with the root seen in the Greek κάμπτειν, to bend; the word would mean, therefore, something crooked or bent. A more illuminating suggestion connects the word with the Slavonic *kamy*, a stone, cf. Russian *kamen*, and ultimately with Sanskrit *acman*, a pointed stone, a thunderbolt. The legend of Thor's hammer, the thunderbolt, and the probability of the primitive hammer being a stone, adds plausibility to this derivation. The word is applied to many objects resembling a hammer in shape or function. Thus the "striker" in a clock, or in a bell, when it is sounded by an independent lever and not by the swinging of the "tongue," is called a "hammer"; similarly, in the "action" of a pianoforte the word is used of a wooden shank with felt-covered head attached to a key, the striking of which throws the "hammer" against the strings. In the mechanism of a fire-arm, the "hammer" is that part which by its impact on the cap or primer explodes the charge. (See GUN.) The hammer, more usually known by its French name of *martel de fer*, was a medieval hand-weapon. With a long shaft it was used by infantry, especially when acting against mounted troops. With a short handle and usually made altogether of metal, it was also used by horse-soldiers. The *martel* had one part of the head with a blunted face, the other pointed, but occasionally both sides were pointed. There are 16th century examples in which a hand-gun forms the handle. The name of "hammer," in Latin *malleus*, has been frequently applied to men, and also to books, with reference to destructive power. Thus on the tomb of Edward I. in Westminster Abbey is inscribed his name of *Scotorum Malleus*, the "Hammer of the Scots." The title of "Hammer of Heretics," *Malleus Haereticorum*, has been given to St Augustine and to Johann Faber, whose tract against Luther is also known by the name. Thomas Cromwell was styled *Malleus Monachorum*. The famous text-book of procedure in cases of witchcraft, published by Sprenger and Krämer in 1489, was called *Hexenhammer* or *Malleus Maleficarum* (see WITCHCRAFT).

The origin of the word "hammer-cloth," an ornamental cloth covering the box-seat on a state-coach, has been often explained from the hammer and other tools carried in the box-seat by the coachman for repairs, &c. The *New English Dictionary* points out that while the word occurs as early as 1465, the use of a box-seat is not known before the 17th century. Other suggestions are that it is a corruption of "hamper-cloth," or of "hammock-cloth," which is used in this sense, probably owing to a mistake. Neither of these supposed corruptions helps very much. Skeat connects the word with a Dutch word *hemel*, meaning a canopy. In the name of the bird, the yellow-hammer, the latter part should be "ammer." This appears in the German name, *Emmerling*, and the word probably means the "chirper," cf. the Ger. *jammern*, to wail, lament.

HAMMERBEAM ROOF, in architecture, the name given to a Gothic open timber roof, of which the finest example is that over Westminster Hall (1395-1399). In order to give greater height in the centre, the ordinary tie beam is cut through, and the portions remaining, known as hammerbeams, are supported by curved braces from the wall; in Westminster Hall, in order to give greater strength to the framing, a large arched piece of timber is carried across the hall, rising from the bottom of the wall piece to the centre of the collar beam, the latter being also supported by curved braces rising from the end of the hammerbeam. The span of Westminster Hall is 68 ft. 4 in., and the opening between the ends of the hammerbeams 25 ft. 6 in. The height from the paving of the hall to the hammerbeam is 40 ft., and to the underside of the collar beam 63 ft. 6 in., so that an additional height in the centre of 23 ft. 6 in. has been gained. Other important examples of hammerbeam roofs exist over the halls of Hampton Court and Eltham palaces, and there are numerous examples of smaller dimensions in churches throughout England and particularly in the eastern counties. The ends of the hammerbeams are usually

decorated with winged angels holding shields; the curved braces and beams are richly moulded, and the spandrils in the larger examples filled in with tracery, as in Westminster Hall. Sometimes, but rarely, the collar beam is similarly treated, or cut through and supported by additional curved braces, as in the hall of the Middle Temple, London.

HAMMERFEST, the most northern town in Europe. Pop. (1900) 2300. It is situated on an island (Kvalö) off the N.W. coast of Norway, in Finmarken *amt* (county), in 70° 40′ 11″ N., the latitude being that of the extreme north of Alaska. Its position affords the best illustration of the warm climatic influence of the north-eastward Atlantic drift, the mean annual temperature being 36° F. (January 31°, July 57°). Hammerfest is 674 m. by sea N.E. of Trondhjem, and 78 S.W. from the North Cape. The character of this coast differs from the southern, the islands being fewer and larger, and of table shape. The narrow strait Strömmen separates Kvalö from the larger Seiland, whose snow-covered hills with several glaciers rise above 3500 ft., while an insular rampart of mountains, Sorö, protects the strait and harbour from the open sea. The town is timber-built and modern; and the Protestant church, town-hall, and schools were all rebuilt after fire in 1890. There is also a Roman Catholic church. The sun does not set at Hammerfest from the 13th of May to the 29th of July. This is the busy season of the townsfolk. Vessels set out to the fisheries, as far as Spitsbergen and the Kara Sea; and trade is brisk, not only Norwegian and Danish but British, German and particularly Russian vessels engaging in it. Cod-liver oil and salted fish are exported with some reindeer-skins, fox-skins and eiderdown; and coal and salt for curing are imported. In the spring the great herds of tame reindeer are driven out to swim Strömmen and graze in the summer pastures of Seiland; towards winter they are called home again. From the 18th of November to the 23rd of January the sun is not seen, and the enforced quiet of winter prevails. Electric light was introduced in the town in 1891. On the Fuglenaes or Birds' Cape, which protects the harbour on the north, there stands a column with an inscription in Norse and Latin, stating that Hammerfest was one of the stations of the expedition for the measurement of the arc of the meridian in 1816-1852. Nor is this its only association with science; for it was one of the spots chosen by Sir Edward Sabine for his series of pendulum experiments in 1823. The ascent of the Sadlen or the Tyven in the neighbourhood is usually undertaken by travellers for the view of the barren, snow-clad Arctic landscape, the bluff indented coast, and the vast expanse of the Arctic Ocean.

HAMMER-KOP, or Hammerhead, an African bird, which has been regarded as a stork and as a heron, the *Scopus umbretta* of ornithologists, called the "Umbre" by T. Pennant, now placed in a separate family *Scopidae* between the herons and storks. It was discovered by M. Adanson, the French traveller, in Senegal about the middle of the 19th century, and was described by M. J. Brisson in 1760. It has since been found to inhabit nearly the whole of Africa and Madagascar, and is the "hammerkop" (hammerhead) of the Cape colonists. Though not larger than a raven, it builds an enormous nest, some six feet in diameter, with a flat-topped roof and a small hole for entrance and exit, and placed either on a tree or a rocky ledge. The bird, of an almost uniform brown colour, slightly glossed with purple and its tail barred with black, has a long occipital crest, generally borne horizontally, so as to give rise to its common name. It is somewhat sluggish by day, but displays much activity at dusk, when it will go through a series of strange performances.

(A. N.)

HAMMER-PURGSTALL, JOSEPH, Freiherr von (1774-1856), Austrian orientalist, was born at Graz on the 9th of June 1774, the son of Joseph Johann von Hammer, and received his early education mainly in Vienna. Entering the diplomatic service in 1796, he was appointed in 1799 to a position in the Austrian embassy in Constantinople, and in this capacity he took part in the expedition under Admiral Sir William Sidney Smith and General Sir John Hely Hutchinson against the French. In 1807 he returned home from the East, after which he was made a privy

councillor, and, on inheriting in 1835 the estates of the countess Purgstall in Styria, was given the title of “freiherr.” In 1847 he was elected president of the newly-founded academy, and he died at Vienna on the 23rd of November 1856.

For fifty years Hammer-Purgstall wrote incessantly on the most diverse subjects and published numerous texts and translations of Arabic, Persian and Turkish authors. It was natural that a scholar who traversed so large a field should lay himself open to the criticism of specialists, and he was severely handled by Friedrich Christian Diez (1794-1876), who, in his *Unfug und Betrug* (1815), devoted to him nearly 600 pages of abuse. Von Hammer-Purgstall did for Germany the same work that Sir William Jones (*q.v.*) did for England and Silvestre de Sacy for France. He was, like his younger but greater English contemporary, Edward William Lane, with whom he came into friendly conflict on the subject of the origin of *The Thousand and One Nights*, an assiduous worker, and in spite of many faults did more for oriental studies than most of his critics put together.

Von Hammer’s principal work is his *Geschichte des osmanischen Reiches* (10 vols., Pesth, 1827-1835). Another edition of this was published at Pesth in 1834-1835, and it has been translated into French by J. J. Hellert (1835-1843). Among his other works are *Constantinopolis und der Bosporos* (1822); *Sur les origines russes* (St Petersburg, 1825); *Geschichte der osmanischen Dichtkunst* (1836); *Geschichte der Goldenen Horde in Kiptschak* (1840); *Geschichte der Chane der Krim* (1856); and an unfinished *Litteraturgeschichte der Araber* (1850-1856). His *Geschichte der Assassinen* (1818) has been translated into English by O. C. Wood (1835). Texts and translations—*Eth-Thaālabi*, Arab. and Ger. (1829); *Ibn Wahshiyah, History of the Mongols*, Arab. and Eng. (1806); *El-Wassāf*, Pers. and Ger. (1856); *Esch-Schebistani’s Rosenflor des Geheimnisses*, Pers. and Ger. (1838); *Ez-Zamakhsheri, Goldene Halsbänder*, Arab. and Germ. (1835); *El-Ghazzālī, Hujjet-el-Islám*, Arab. and Ger. (1838); *El-Hamawi, Das arab. Hohe Lied der Liebe*, Arab. and Ger. (1854). Translations of—*El-Mutanebbi’s Poems; Er-Resmi’s Account of his Embassy* (1809); *Contes inédits des 1001 nuits* (1828). Besides these and smaller works, von Hammer contributed numerous essays and criticisms to the *Fundgruben des Orients*, which he edited; to the *Journal asiatique*; and to many other learned journals; above all to the *Transactions* of the “Akademie der Wissenschaften” of Vienna, of which he was mainly the founder; and he translated Evliya Effendi’s *Travels in Europe*, for the English Oriental Translation Fund. For a fuller list of his works, which amount in all to nearly 100 volumes, see *Comptes rendus* of the Acad. des Inscr. et des Belles-Lettres (1857). See also Schlottman, *Joseph von Hammer-Purgstall* (Zurich, 1857).

HAMMERSMITH, a western metropolitan borough of London, England, bounded E. by Kensington and S. by Fulham and the river Thames, and extending N. and W. to the boundary of the county of London. Pop. (1901) 112,239. The name appears in the early forms of *Hermodewode* and *Hamersmith*; the derivation is probably from the Anglo-Saxon, signifying the place with a haven (*hythe*). Hammersmith is mentioned with Fulham as a winter camp of Danish invaders in 879, when they occupied the island of Hame, which may be identified with Chiswick Eyot. Hammersmith consists of residential streets of various classes. There are many good houses in the districts of Brook Green in the south-east, and Ravenscourt Park and Starch Green in the west. Shepherd’s Bush in the east is a populous and poorer quarter. Boat-building yards, lead-mills, oil mills, distilleries, coach factories, motor works, and other industrial establishments are found along the river and elsewhere in the borough. The main thoroughfares are Uxbridge Road and Goldhawk Road, from Acton on the west, converging at Shepherd’s Bush and continuing towards Notting Hill; King Street from Chiswick on the south-west, continued as Hammersmith Broadway and Road to Kensington Road; Bridge Road from Hammersmith Bridge over the Thames, and Fulham Palace Road from Fulham, converging at the Broadway. Old Hammersmith Bridge, designed by Tierney Clark (1824), was the earliest suspension bridge erected near London. This bridge was found insecure and replaced in 1884-1887. Until 1834 Hammersmith formed part of Fulham parish. Its church of St Paul was built as a chapel of ease to Fulham, and consecrated by Laud in 1631. The existing building dates from 1890. Among the old monuments preserved is that of Sir Nicholas Crispe (d. 1665), a prominent royalist during the civil wars and a benefactor of the parish. Schools and religious houses are numerous. St Paul’s school is one of the principal public schools in England. It was founded in or about 1509 by John Colet, dean of St Paul’s, under the shadow of the cathedral church. But it appears that Colet actually refounded and reorganized a school which had been attached to the cathedral of St Paul from very early times; the first mention of such a school dates from the early part of the 12th century (see an article in *The Times*, London, July 7, 1909, on the occasion of the celebration of the quatercentenary of Colet’s foundation). The school was moved to its present site in Hammersmith Road in 1883. The number of foundation scholars, that is, the number for

which Colet's endowment provided, is 153, according to the number of fishes taken in the miraculous draught. The total number of pupils is about 600. The school governors are appointed by the Mercers' Company (by which body the new site was acquired), and the universities of Oxford, Cambridge and London. Close to the school is St Paul's preparatory school, and at Brook Green is a girls' school in connexion with the main school. There are, besides, the Edward Latymer foundation school for boys (1624), part of the income of which is devoted to general charitable purposes; the Godolphin school, founded in the 16th century and remodelled as a grammar school in 1861; Nazareth House of Little Sisters of the Poor, the Convent of the Sacred Heart, and other convents. The town hall, the West London hospital with its post-graduate college, and Wormwood Scrubbs prison are noteworthy buildings. Other institutions are the Hammersmith school of art and a Roman Catholic training college. Besides the picturesque Ravenscourt Park (31 acres) there are extensive recreation grounds in the north of the borough at Wormwood Scrubbs (193 acres), and others of lesser extent. An important place of entertainment is Olympia, near Hammersmith Road and the Addison Road station on the West London railway, which includes a vast arena under a glass roof; while at Shepherd's Bush are the extensive grounds and buildings first occupied by the Franco-British Exhibition of 1908, including a huge stadium for athletic displays. In the extreme north of the borough is the Kensal Green Roman Catholic cemetery, in which Cardinal Manning and many other prominent members of this faith are buried. In the neighbourhood of the Mall, bordering the river, are the house where Thomson wrote his poem "The Seasons," and Kelmscott House, the residence of William Morris. The parliamentary borough of Hammersmith returns one member. The borough council consists of a mayor, 5 aldermen, and 30 councillors. Area, 2286.3 acres.

HAMMER-THROWING, a branch of field athletics which consists of hurling to the greatest possible distance an instrument with a heavy head and slender handle called the hammer. Throwing the hammer is in all probability of Keltic origin, as it has been popular in Ireland and Scotland for many centuries. The missile was, however, not a hammer, but the wheel of a chariot attached to a fixed axle, by which it was whirled round the head and cast for distance. Such a sport was undoubtedly cultivated in the old Irish games, a large stone being substituted for the wheel at the beginning of the Christian era. In the Scottish highlands the missile took the form of a smith's sledgehammer, and in this form the sport became popular in England in early days. Edward II. is said to have fostered it, and Henry VIII. is known to have been proficient. At the beginning of the 19th century two standard hammers were generally recognized in Scotland, the heavy hammer, weighing about 21 lb, and the light hammer, weighing about 16 lb. These were in general use until about 1885, although the light hammer gradually attained popularity at the expense of the heavy. Although originally an ordinary blacksmith's sledge with a handle about 3 ft. long, the form of the head was gradually modified until it acquired its present spherical shape, and the stiff wooden handle gave place to one of flexible whalebone about ⅜ in. in diameter. The Scottish style of throwing, which also obtained in America, was to stand on a mark, swing the hammer round the head several times and hurl it backwards over the shoulder, the length being measured from the mark made by the falling hammer to the nearest foot of the thrower, no run or follow being allowed. Such men as Donald Dinnie, G. Davidson and Kenneth McRae threw the light hammer over 110 ft., and Dinnie's record was 132 ft. 8 in., made, however, from a raised mount. Meanwhile the English Amateur Athletic Association had early fixed the weight of the hammer at 16 lb, but the length of the handle and the run varied widely, the restrictions being few. Under these conditions S. S. Brown, of Oxford, made in 1873 a throw of 120 ft., which was considered extraordinary at the time. In 1875 the throw was made from a 7-ft. circle without run, head and handle of the missile weighing together exactly 16 lb. In 1887 the circle was enlarged to 9 ft., and in 1896 a handle of flexible metal was legalized. The throw was made after a few rapid revolutions of the body, which added an impetus that greatly added to the distance attained. It thus happened that the Scottish competitors at the English games, who clung to their standing style of throwing, were, although athletes of the very first class, repeatedly beaten; the result being that the Scottish association was forced to introduce the English rules. This was also the case in America, where the throw from the 7-ft. circle, any motions being allowed within it, was adopted in 1888, and still obtains. The Americans still further modified the handle, which now consists of steel wire with two skeleton loops for the hands, the wire being joined to the head by means of a ball-bearing swivel. Thus the greatest mechanical advantage, that of having the entire weight of the missile at the end, as well as the least friction, is obtained. In England the Amateur Athletic Association in 1908 enacted that "the head and handle may be of any size, shape and material, provided that the complete implement shall not be more than 4 ft. and its weight not less than 16 lb. The competitor may assume any position he chooses, and use either one or both hands. All throws shall be made from a circle 7

ft. in diameter.” The modern hammer-thrower, if right-handed, begins by placing the head on the ground at his right side. He then lifts and swings it round his head with increasing rapidity, his whole body finally revolving with outstretched arms twice, in some cases three times, as rapidly as possible, the hammer being released in the desired direction. During the “spinning,” or revolving of the body, the athlete must be constantly, “ahead of the hammer,” *i.e.* he must be drawing it after him with continually increased pressure up to the very moment of delivery. The muscles chiefly called into play are those of the shoulders, back and loins. The adoption of the hand-loops has given the thrower greater control over the hammer and has thus rendered the sport much less dangerous than it once was.

With a wooden handle the longest throw made in Great Britain from a 9-ft. circle was that of W. J. M. Barry in 1892, who won the championship in that year with 133 ft. 3 in. With the flexible handle, “unlimited run and follow” being permitted, the record was held in 1909 by M. J. McGrath with 175 ft. 8 in., made in 1907; a Scottish amateur, T. R. Nicholson, held the British record of 169 ft. 8 in. The world’s record for throw from a 7-ft. circle was 172 ft. 11 in. by J. Flanagan in 1904 in America; the British record from 9-ft. circle being also held by Flanagan with a throw of 163 ft. 1 in. made in 1900. Flanagan’s Olympic record (London, 1908) was 170 ft. 4¼ in.

See *Athletics* in the Badminton library; *Athletes’ Guide* in Spalding’s Athletic library; “Hammer-Throwing” in vol. xx. of *Outing*.

HAMMER-TOE, a painful condition in which a toe is rigidly bent and the salient angle on its upper aspect is constantly irritated by the boot. It is treated surgically, not as formerly by amputation of the toe, but the toe is made permanently to lie flat by the simple excision of the small digital joint. Even in extremely bad cases of hammer-toe the operation of resection of the head of the metatarsal phalanx is to be recommended rather than amputation.

HAMMOCK, a bed or couch slung from each end. The word is said to have been derived from the hamack tree, the bark of which was used by the aboriginal natives of Brazil to form the nets, suspended from trees, in which they slept. The hammock may be of matting, skin or textiles, lined with cushions or filled with bedding. It is much used in hot climates.

HAMMOND, HENRY (1605-1660), English divine, was born at Chertsey in Surrey on the 18th of August 1605. He was educated at Eton and at Magdalen College, Oxford, becoming demy or scholar in 1619, and fellow in 1625. He took orders in 1629, and in 1633 in preaching before the court so won the approval of the earl of Leicester that he presented him to the living of Penshurst in Kent. In 1643 he was made archdeacon of Chichester. He was a member of the convocation of 1640, and was nominated one of the Westminster Assembly of divines. Instead of sitting at Westminster he took part in the unsuccessful rising at Tunbridge in favour of King Charles I., and was obliged to flee in disguise to Oxford, then the royal headquarters. There he spent much of his time in writing, though he accompanied the king’s commissioners to London, and afterwards to the ineffectual convention at Uxbridge in 1645, where he disputed with Richard Vines, one of the parliamentary envoys. In his absence he was appointed canon of Christ Church and public orator of the university. These dignities he relinquished for a time in order to attend the king as chaplain during his captivity in the hands of the parliament. When Charles was deprived of all his loyal attendants at Christmas 1647, Hammond returned to Oxford and was made subdean of Christ Church, only, however, to be removed from all his offices by the parliamentary visitors, who imprisoned him for ten weeks. Afterwards he was permitted, though still under quasi-confinement, to retire to the house of Philip Warwick at Clapham in Bedfordshire. In 1650, having regained his full liberty, Hammond betook himself to the friendly mansion of Sir John Pakington, at Westwood, in Worcestershire, where he died on the 25th of April 1660, just on the eve of his preferment to the see of Worcester. Hammond was held in high

esteem even by his opponents. He was handsome in person and benevolent in disposition. He was an excellent preacher; Charles I. pronounced him the most natural orator he had ever heard. His range of reading was extensive, and he was a most diligent scholar and writer.

His writings, published in 4 vols. fol. (1674-1684), consist for the most part of controversial sermons and tracts. The *Anglo-Catholic Library* contains four volumes of his *Miscellaneous Theological Works* (1847-1850). The best of them are his *Practical Catechism*, first published in 1644; his *Paraphrase and Annotations on the New Testament*; and an incomplete work of a similar nature on the Old Testament. His *Life*, a delightful piece of biography, written by Bishop Fell, and prefixed to the collected *Works*, has been reprinted in vol. iv. of Wordsworth's *Ecclesiastical Biography*. See also *Life of Henry Hammond*, by G. G. Perry.

HAMMOND, a city of Lake county, Indiana, U.S.A., about 18 m. S.E. of the business centre of Chicago, on the Grand Calumet river. Pop. (1890), 5428; (1900) 12,376, of whom 3156 were foreign-born; (1910, census) 20,925. It is served by no fewer than eight railways approaching Chicago from the east, and by several belt lines. As far as its industries are concerned, it is a part of Chicago, to which fact it owes its rapid growth and its extensive manufacturing establishments, which include slaughtering and packing houses, iron and steel works, chemical works, piano, wagon and carriage factories, printing establishments, flour and starch mills, glue works, breweries and distilleries. In 1900 Hammond was the principal slaughtering and meat-packing centre of the state, but subsequently a large establishment removed from the city, and Hammond's total factory product (all industries) decreased from $25,070,551 in 1900 to $7,671,203 in 1905; after 1905 there was renewed growth in the city's manufacturing interests. It has a good water-supply system which is owned by the city. Hammond was first settled about 1868, was named in honour of Abram A. Hammond (acting governor of the state in 1860-1861) and was chartered as a city in 1883.

HAMON, JEAN LOUIS (1821-1874), French painter, was born at Plouha on the 5th of May 1821. At an early age he was intended for the priesthood, and placed under the care of the brothers Lamennais, but his strong desire to become a painter finally triumphed over family opposition, and in 1840 he courageously left Plouha for Paris—his sole resources being a pension of five hundred francs, granted him for one year only by the municipality of his native town. At Paris Hamon received valuable counsels and encouragement from Delaroche and Gleyre, and in 1848 he made his appearance at the Salon with "Le Tombeau du Christ" (Musée de Marseille), and a decorative work, "Dessus de Porte." The works which he exhibited in 1849 —"Une Affiche romaine," "L'Égalité au sérail," and "Perroquet jasant avec deux jeunes filles"— obtained no marked success. Hamon was therefore content to accept a place in the manufactory of Sèvres, but an enamelled casket by his hand having attracted notice at the London International Exhibition of 1851, he received a medal, and, reinspired by success, left his post to try his chances again at the Salon of 1852. "La Comédie humaine," which he then exhibited, turned the tide of his fortune, and "Ma sœur n'y est pas" (purchased by the emperor) obtained for its author a third-class medal in 1853. At the Paris International Exhibition of 1855, when Hamon re-exhibited the casket of 1851, together with several vases and pictures of which "L'Amour et son troupeau," "Ce n'est pas moi," and "Une Gardeuse d'enfants" were the chief, he received a medal of the second class, and the ribbon of the legion of honour. In the following year he was absent in the East, but in 1857 he reappeared with "Boutique à quatre sous," "Papillon enchaîné," "Canthariде esclave," "Dévideuses," &c., in all ten pictures; "L'Amour en visite" was contributed to the Salon of 1859, and "Vierge de Lesbos," "Tutelle," "La Volière," "L'Escamoteur" and "La Sœur aînée" were all seen in 1861. Hamon now spent some time in Italy, chiefly at Capri, whence in 1864 he sent to Paris "L'Aurore" and "Un Jour de fiançailles." The influence of Italy was also evident in "Les Muses à Pompéi," his sole contribution to the Salon of 1866, a work which enjoyed great popularity and was re-exhibited at the International Exhibition of 1867, together with "La Promenade" and six other pictures of previous years. His last work, "Le Triste Rivage," appeared at the Salon of 1873. It was painted at St Raphael, where Hamon had finally settled in a little house on the shores of the Mediterranean, close by Alphonse Karr's famous garden. In this house he died on the 29th of May 1874.

HAMPDEN, HENRY BOUVERIE WILLIAM BRAND, 1st Viscount[1] (1812-1892), speaker of the House of Commons, was the second son of the 21st Baron Dacre, and descended from John Hampden, the patriot, in the female line; the barony of Dacre devolved on him in 1890, after he had been created Viscount Hampden in 1884. He entered parliament as a Liberal in 1852, and for some time was chief whip of his party. In 1872 he was elected speaker, and retained this post till February 1884. It fell to him to deal with the systematic obstruction of the Irish Nationalist party, and his speakership is memorable for his action on the 2nd of February 1881 in refusing further debate on W. E. Forster's Coercion Bill—a step which led to the formal introduction of the closure into parliamentary procedure. He died on the 14th of March 1892, being succeeded as 2nd viscount by his son (*b.* 1841), who was governor of New South Wales, 1895-1899.

1 An earlier viscountcy was bestowed in 1776 on Robert Hampden-Trevor, 4th Baron Trevor (1706-1783), a great-grandson of the daughter of John Hampden, the patriot; it became extinct in 1824 by the death of the 3rd viscount.

HAMPDEN, JOHN (*c.* 1595-1643), English statesman, the eldest son of William Hampden, of Great Hampden in Buckinghamshire, a descendant of a very ancient family of that place, said to have been established there before the Conquest, and of Elizabeth, second daughter of Sir Henry Cromwell, and aunt of Oliver, the future protector, was born about the year 1595. By his father's death, when he was but a child, he became the owner of a good estate and a ward of the crown. He was educated at the grammar school at Thame, and on the 30th of March 1610 became a commoner of Magdalen College at Oxford. In 1613 he was admitted a student of the Inner Temple. He first sat in parliament for the borough of Grampound in 1621, representing later Wendover in the first three parliaments of Charles I., Buckinghamshire in the Short Parliament of 1640, and Wendover again in the Long Parliament. In the early days of his parliamentary career he was content to be overshadowed by Eliot, as in its later days he was content to be overshadowed by Pym and to be commanded by Essex. Yet it is Hampden, and not Eliot or Pym, who lives in the popular imagination as the central figure of the English revolution in its earlier stages. It is Hampden whose statue rather than that of Eliot or Pym has been selected to take its place in St Stephen's Hall as the noblest type of the parliamentary opposition, as Falkland's has been selected as the noblest type of parliamentary royalism.

Something of Hampden's fame no doubt is owing to the position which he took up as the opponent of ship-money. But it is hardly possible that even resistance to ship-money would have so distinguished him but for the mingled massiveness and modesty of his character, his dislike of all pretences in himself or others, his brave contempt of danger, and his charitable readiness to shield others as far as possible from the evil consequences of their actions. Nor was he wanting in that skill which enabled him to influence men towards the ends at which he aimed, and which was spoken of as subtlety by those who disliked his ends.

During these first parliaments Hampden did not, so far as we know, open his lips in public debate, but he was increasingly employed in committee work, for which he seems to have had a special aptitude. In 1626 he took an active part in the preparation of the charges against Buckingham. In January 1627 he was bound over to answer at the council board for his refusal to pay the forced loan. Later in the year he was committed to the gatehouse, and then sent into confinement in Hampshire, from which he was liberated just before the meeting of the third parliament of the reign, in which he once more rendered useful but unobtrusive assistance to his leaders.

When the breach came in 1629 Hampden is found in epistolary correspondence with the imprisoned Eliot, discussing with him the prospects of the Massachusetts colony,[1] or rendering 901
hospitality and giving counsel to the patriot's sons now that they were deprived of a father's personal care. It was not till 1637, however, that his resistance to the payment of ship-money gained for his name the lustre which it has never since lost. (See Ship-Money.) Seven out of the twelve judges sided against him, but the connexion between the rights of property and the parliamentary system was firmly established in the popular mind. The tax had been justified, says Clarendon, who expresses his admiration at Hampden's "rare temper and modesty" at this crisis, "upon such grounds and reasons as every stander-by was able to swear was not law" (*Hist.* i. 150, vii. 82).

In the Short Parliament of 1640 Hampden stood forth amongst the leaders. He guided the House in the debate on the 4th of May in its opposition to the grant of twelve subsidies in return for the surrender of ship-money. Parliament was dissolved the next day, and on the 6th an

unsuccessful search was made among the papers of Hampden and of other chiefs of the party to discover incriminating correspondence with the Scots. During the eventful months which followed, when Strafford was striving in vain to force England, in spite of its visible reluctance, to support the king in his Scottish war, rumour has much to tell of Hampden's activity in rousing opposition. It is likely enough that the rumour is in the main true, but we are not possessed of any satisfactory evidence on the subject.

In the Long Parliament, though Hampden was by no means a frequent speaker, it is possible to trace his course with sufficient distinctness. His power consisted in his personal influence, and as a debater rather than as an orator. "He was not a man of many words," says Clarendon, "and rarely began the discourse or made the first entrance upon any business that was assumed, but a very weighty speaker, and after he had heard a full debate and observed how the House was likely to be inclined, took up the argument and shortly and clearly and craftily so stated it that he commonly conducted it to the conclusion he desired; and if he found he could not do that, he never was without the dexterity to divert the debate to another time, and to prevent the determining anything in the negative which might prove inconvenient in the future" (*Hist.* iii. 31). Unwearied in attendance upon committees, he was in all things ready to second Pym, whom he plainly regarded as his leader. Hampden was one of the eight managers of Stratford's prosecution. Like Pym, he was in favour of the more legal and regular procedure by impeachment rather than by attainder, which at the later stage was supported by the majority of the Commons; and through his influence a compromise was effected by which, while an attainder was subsequently adopted, Strafford's counsel were heard as in the case of an impeachment, and thus a serious breach between the two Houses, which threatened to cause the breakdown of the whole proceedings, was averted.

There was another point on which there was no agreement. A large minority wished to retain Episcopacy, and to keep the common Prayer Book unaltered, whilst the majority were at least willing to consider the question of abolishing the one and modifying the other. On this subject the parties which ultimately divided the House and the country itself were fully formed as early as the 8th of February 1641. It is enough to say that (*v.* under Pym) Hampden fully shared in the counsels of the opponents of Episcopacy. It is not that he was a theoretical Presbyterian, but the bishops had been in his days so fully engaged in the imposition of obnoxious ceremonies that it was difficult, if not impossible, to dissociate them from the cause in which they were embarked. Closely connected with Hampden's distrust of the bishops was his distrust of monarchy as it then existed. The dispute about the church therefore soon attained the form of an attack upon monarchy, and, when the majority of the House of Lords arrayed itself on the side of Episcopacy and the Prayer Book, of an attack upon the House of Lords as well.

No serious importance therefore can be attached to the offers of advancement made from time to time to Hampden and his friends. Charles would gladly have given them office if they had been ready to desert their principles. Every day Hampden's conviction grew stronger that Charles would never abandon the position which he had taken up. In August 1640 Hampden was one of the four commissioners who attended Charles in Scotland, and the king's conduct there, connected with such events as the "Incident," must have proved to a man far less sagacious than Hampden that the time for compromise had gone by. He was therefore a warm supporter of the Grand Remonstrance, and was marked out as one of the five impeached members whose attempted arrest brought at last the opposing parties into open collision (see also Pym, Strode, Holles and Lenthall). In the angry scene which arose on the proposal to print the Grand Remonstrance, it was Hampden's personal intervention which prevented an actual conflict, and it was after the impeachment had been attempted that Hampden laid down the two conditions under which resistance to the king became the duty of a good subject. Those conditions were an attack upon religion and an attack upon the fundamental laws. There can be no doubt that Hampden fully believed that both those conditions were fulfilled at the opening of 1642.

When the Civil War began, Hampden was appointed a member of the committee for safety, levied a regiment of Buckinghamshire men for the parliamentary cause, and in his capacity of deputy-lieutenant carried out the parliamentary militia ordinance in the county. In the earlier operations of the war he bore himself gallantly and well. He took no actual part in the battle of Edgehill. His troops in the rear, however, arrested Rupert's charge at Kineton, and he urged Essex to renew the attack here, and also after the disaster at Brentford. In 1643 he was present at the siege and capture of Reading. But it is not on his skill as a regimental officer that Hampden's fame rests. In war as in peace his distinction lay in his power of disentangling the essential part from the non-essential. In the previous constitutional struggle he had seen that the one thing necessary was to establish the supremacy of the House of Commons. In the military struggle which followed he saw, as Cromwell saw afterwards, that the one thing necessary was to beat the enemy. He protested at once against Essex's hesitations and compromises. In the formation of the confederacy of the six associated counties, which was to supply a basis for Cromwell's operations, he took an active part. His influence was felt alike in parliament and in the field. But he was not in supreme command, and he had none of that

impatience which often leads able men to fail in the execution of orders of which they disapprove. His precious life was a sacrifice to his unselfish devotion to the call of discipline and duty. On the 18th of June 1643, when he was holding out on Chalgrove Field against the superior numbers of Rupert till reinforcements arrived, he received two carbine balls in the shoulder. Leaving the field he reached Thame, survived six days, and died on the 24th.

Hampden married (1) in 1619 Elizabeth, daughter of Edmund Symeon of Pyrton, Oxfordshire, and (2) Letitia, daughter of Sir Francis Knollys and widow of Sir Thomas Vachell. By his first wife he had nine children, one of whom, Richard (1631-1695) was chancellor of the exchequer in William III.'s reign; from two of his daughters are descended the families of Trevor-Hampden and Hobart-Hampden, the descent in the male line becoming apparently extinct in 1754 in the person of John Hampden.

JOHN HAMPDEN the younger (*c.* 1656-1696), the second son of Richard Hampden, returned to England after residing for about two years in France, and joined himself to Lord William Russell and Algernon Sidney and the party opposed to the arbitrary government of Charles II. With Russell and Sidney he was arrested in 1683 for alleged complicity in the Rye House Plot, but more fortunate than his colleagues his life was spared, although as he was unable to pay the fine of £40,000 which was imposed upon him he remained in prison. Then in 1685, after the failure of Monmouth's rising, Hampden was again brought to trial, and on a charge of high treason was condemned to death. But the sentence was not carried out, and having paid £6000 he was set at liberty. In the Convention parliament of 1689 he represented Wendover, but in the subsequent parliaments he failed to secure a seat. He died by his own hand on the 12th of December 1696. Hampden wrote numerous pamphlets, and Bishop Burnet described him as "one of the learnedest gentlemen I ever knew."

See S. R. Gardiner's *Hist. of England* and *of the Great Civil War*; the article on Hampden in the *Dict. of Nat. Biography*, by C. H. Firth, with authorities there collected; Clarendon's *Hist. of the Rebellion*; Sir Philip Warwick's *Mems.* p. 239; Wood's *Ath. Oxon.* iii. 59; Lord Nugent's *Memorials of John Hampden* (1831); Macaulay's *Essay on Hampden* (1831). The printed pamphlet announcing his capture of Reading in December 1642 is shown by Mr Firth to be spurious, and the account in *Mercurius Aulicus*, January 27 and 29, 1643, of Hampden commanding an attack at Brill, to be also false, while the published speech supposed to be spoken by Hampden on the 4th of January 1642, and reproduced by Forster in the *Arrest of the Five Members* (1660), has been proved by Gardiner to be a forgery (*Hist. of England*, x. 135). Mr Firth has also shown in *The Academy* for 1889, November 2 and 9, that "the belief that we possess the words of Hampden's last prayer must be abandoned."

1 Hampden was one of the persons to whom the earl of Warwick granted land in Connecticut, but for the anecdote which relates his attempted emigration with Cromwell there is no foundation (*v.* under JOHN PYM).

HAMPDEN, RENN DICKSON (1793-1868), English divine, was born in Barbados, where his father was colonel of militia, in 1793, and was educated at Oriel College, Oxford. Having taken his B.A. degree with first-class honours in both classics and mathematics in 1813, he next year obtained the chancellor's prize for a Latin essay, and shortly afterwards was elected to a fellowship in his college, Keble, Newman and Arnold being among his contemporaries. Having left the university in 1816 he held successively a number of curacies, and in 1827 he published *Essays on the Philosophical Evidence of Christianity*, followed by a volume of *Parochial Sermons illustrative of the Importance of the Revelation of God in Jesus Christ* (1828). In 1829 he returned to Oxford and was Bampton lecturer in 1832. Notwithstanding a charge of Arianism now brought against him by the Tractarian party, he in 1833 passed from a tutorship at Oriel to the principalship of St Mary's Hall. In 1834 he was appointed professor of moral philosophy, and despite much university opposition, Regius professor of divinity in 1836. There resulted a widespread and violent though ephemeral controversy, after the subsidence of which he published a *Lecture on Tradition*, which passed through several editions, and a volume on *The Thirty-nine Articles of the Church of England*. His nomination by Lord John Russell to the vacant see of Hereford in December 1847 was again the signal for a violent and organized opposition; and his consecration in March 1848 took place in spite of a remonstrance by many of the bishops and the resistance of Dr John Merewether, the dean of Hereford, who went so far as to vote against the election when the *congé d'élire* reached the chapter. As bishop of Hereford Dr Hampden made no change in his long-formed habits of studious seclusion, and though he showed no special ecclesiastical activity or zeal, the diocese certainly prospered in his charge. Among the more important of his later writings were the articles on Aristotle, Plato and

Socrates, contributed to the eighth edition of the *Encyclopaedia Britannica*, and afterwards reprinted with additions under the title of *The Fathers of Greek Philosophy* (Edinburgh, 1862). In 1866 he had a paralytic seizure, and died in London on the 23rd of April 1868.

His daughter, Henrietta Hampden, published *Some Memorials of R. D. Hampden* in 1871.

HAMPDEN-SIDNEY, a village of Prince Edward county, Virginia, U.S.A., about 70 m. S.W. of Richmond. Pop. about 350. Daily stages connect the village with Farmville (pop. in 1910, 2971), the county-seat, 6 m. N.E., which is served by the Norfolk & Western and the Tidewater & Western railways. Hampden-Sidney is the seat of Hampden-Sidney College, founded by the presbytery of Hanover county as Hampden-Sidney Academy in 1776, and named in honour of John Hampden and Algernon Sidney. It was incorporated as Hampden-Sidney College in 1783. The incorporators included James Madison, Patrick Henry (who is believed to have drafted the college charter), Paul Carrington, William Cabell, Sen., and Nathaniel Venable. The Union Theological School was established in connexion with the college in 1812, but in 1898 was removed to Richmond, Virginia. In 1907-1908 the college had 8 instructors, 125 students, and a library of 11,000 volumes. The college has maintained a high standard of instruction, and many of its former students have been prominent as public men, educationalists and preachers. Among them were President William Henry Harrison, William H. Cabell (1772-1853), president of the Virginia Court of Appeals; George M. Bibb (1772-1859), secretary of the treasury (1844-1845) in President Tyler’s cabinet; William B. Preston (1805-1862), secretary of the navy in 1849-1850; William Cabell Rives and General Sterling Price (1809-1867).

HAMPSHIRE (or County or Southampton, abbreviated Hants), a southern county of England, bounded N. by Berkshire, E. by Surrey and Sussex, S. by the English Channel, and W. by Dorsetshire and Wiltshire. The area is 1623.5 sq. m. From the coast of the mainland, which is for the most part low and irregular, a strait, known in its western part as the Solent, and in its eastern as Spithead, separates the Isle of Wight. This island is included in the county. The inlet of Southampton Water opens from this strait, penetrating inland in a north-westerly direction for 12 m. The easterly part of the coast forms a large shallow bay containing Hayling and Portsea Islands, which divide it into Chichester Harbour, Langston Harbour and Portsmouth Harbour. The westerly part forms the more regular indentations of Christchurch Bay and part of Poole Bay. In its general aspect Hampshire presents a beautiful variety of gently rising hills and fruitful valleys, adorned with numerous mansions and pleasant villages, and interspersed with extensive tracts of woodland. Low ranges of hills, included in the system to which the general name of the Western Downs is given, reach their greatest elevation in the northern and eastern parts of the county, where there are many picturesque eminences, of which Beacon, Sidown and Pilot hills near Highclere in the north-west, each exceeding 850 ft., are the highest. The portion of the county west of Southampton Water is almost wholly included in the New Forest, a sequestered district, one of the few remaining examples of an ancient afforested tract. The river Avon in the south-west rises in Wiltshire, and passing Fordingbridge and Ringwood falls into Christchurch Bay below Christchurch, being joined close to its mouth by the Stour. The Lymington or Boldre river rises in the New Forest, and after collecting the waters of several brooks falls into the Solent through Lymington Creek. The Beaulieu in the eastern part of the forest also enters the Solent by way of a long and picturesque estuary. The Test rises near Overton in the north, and after its junction with the Anton at Fullerton passes Stockbridge and Romsey, and enters the head of Southampton Water. The Itchen rises near Alresford, and flowing by Winchester and Eastleigh falls into Southampton Water east of Southampton. The Hamble rises near Bishops Waltham, and soon forms a narrow estuary opening into Southampton Water. The Wey, the Loddon and the Blackwater, rising in the north-eastern part of the county, bring that part into the basin of the Thames. The streams from the chalk hills run clear and swift, and the trout-fishing in the county is famous. Salmon are taken in the Avon.

Geology.—Somewhat to the north of the centre of the county is a broad expanse of hilly chalk country about 21 m. wide; the whole of it has been bent up into a great fold so that the strata on the north dip northward steeply in places, while those on the south dip in the opposite direction more gently. In the north the chalk disappears beneath Tertiary strata of the “London Basin,” and some little distance south of Winchester it runs in a similar manner beneath the Tertiaries of

the “Hampshire Basin.” Scattered here and there over the chalk are small outlying remnants which remain to show that the two Tertiary areas were once continuous, before the agencies of denudation had removed them from the chalk. These same agencies have exposed the strata beneath the chalk over a small area on the eastern border.

The oldest formation in Hampshire is the Lower Greensand in the neighbourhood of Woolmer Forest and Petersfield; it is represented by the Hythe beds, sandstones and limestones which form the high ridge which runs on towards Hind Head, then by the sands and clays of the Sandgate beds which lie in the low ground west of the ridge, and finally by the Folkestone beds; all these dip westward beneath the Gault. The last-named formation, a clay, worked here and there for bricks, crops out as a narrow band from Fareham through Worldham and Stroud common to Petersfield. Between the Gault and the chalk is the Upper Greensand with a hard bed of calcareous sandstone, the Malm rock, which stands up in places as a prominent escarpment. The Upper Greensand is also exposed at Burghclere as an inlier; the rocks are bent into a sharp anticline and the chalk, having been denuded from its crest, the older sandy strata are brought to light. A much more gentle anticline brings up the chalk through the Tertiary rocks in the neighbourhood of Fareham. Besides occupying the central region already mentioned, which includes Basingstoke, Whitchurch, Andover, Alresford and Winchester, the chalk appears also in a small patch round Rockbourne. The Tertiary rocks of the north (London basin) about Farnborough, Aldershot and Kingsclere, comprise the Reading beds, London clay and the more sandy Bagshot beds which cover the latter in many places, giving rise to heathy commons. The southern Tertiary rocks of the Hampshire basin include the Lower Eocene Reading beds—used for brick-making—and the London clay which extend from the boundary of the chalk by Romsey, Bishop’s Waltham, to Havant. These are succeeded towards the south by the Upper Eocene beds, the Bracklesham beds and the Barton clay. The Barton clays are noted for their abundant fossils and the Bagshot beds at Bournemouth contain numerous remains of subtropical plants. A series of clays and sands of Oligocene age (unknown in the London basin) are found in the vicinity of Lymington, Brockenhurst and Beaulieu; they include the Headon beds, with a fluvio-marine fauna, well exposed at Hordwell cliffs, and the marine beds of Brockenhurst. Numerous small outliers of Tertiary rocks are scattered over the chalk area, and many of the chalk and Tertiary areas are obscured by patches of Pleistocene deposits of brick earth and gravel.

Agriculture and Industries.—Nearly seven-tenths of the total area is under cultivation (an amount below the average of English counties) and of this area about two-fifths is in permanent pasture. The acreage under oats is roughly equal to that under wheat and barley. Small quantities of rye and hops are cultivated. Barley is usually sown after turnips, and is more grown in the uplands than in the lower levels. Beans, pease and potatoes are only grown to a small extent. On account of the number of sheep pastured on the uplands a large acreage of turnips is grown. Rotation grasses are grown chiefly in the uplands, and their acreage is greater than in any other of the southern counties of England. Sanfoin is the grass most largely grown, as it is best adapted to land with a calcareous subsoil. In the lower levels no sanfoin and scarcely any clover is grown, the hay being supplied from the rich water meadows, which are managed with great skill and attention, and give the best money return of any lands in the county. Where a rapid stream of water can be passed over them during the winter it seldom becomes frozen, and the grasses grow during the cold weather so as to be fit for pasture before any traces of vegetation appear in the surrounding fields. Hops are grown in the eastern part of the county bordering on Surrey. Farming is generally conducted on the best modern principles, but owing to the varieties of soil there is perhaps no county in England in which the rotation observed is more diversified, or the processes and methods more varied. Most of the farms are large, and there are a number of model farms. The waste land has been mostly brought under tillage, but a very large acreage of the ancient forests is still occupied by wood. In addition to the New Forest there are in the east Woolmer Forest and Alice Holt, in the south-east the Forest of Bere and Waltham Chase, and in the Isle of Wight Parkhurst Forest. The honey of the county is especially celebrated. Much attention is paid to the rearing of sheep and cattle. The original breed of sheep was white-faced with horns, but most of the flocks are now of a Southdown variety which have acquired certain distinct peculiarities, and are known as “short wools” or “Hampshire downs.” Cattle are of no distinctive breed, and are kept largely for dairy purposes, especially for the supply of milk. The breeding and rearing of horses is widely practised, and the fattening of pigs has long been an important industry. The original breed of pigs is crossed with Berkshire, Essex and Chinese pigs. In the vicinity of the forest the pigs are fed on acorns and beechmast, and the flesh of those so reared is considered the best, though the reputation of Hampshire bacon depends chiefly on the skilful manner in which it is cured.

The manufactures are unimportant, except those carried on at Portsmouth and Gosport in connexion with the royal navy. Southampton is one of the principal ports in the kingdom. In many of the towns there are breweries and tanneries, and paper is manufactured at several places. Fancy pottery and terra-cotta are made at Fareham and Bishop’s Waltham; and Ringwood is celebrated for its knitted gloves. At most of the coast towns fishing is carried on, and there are oyster beds at Hayling Island. Cowes in the Isle of Wight is the station of the Royal Yacht Squadron, and has building yards for yachts and large vessels. The principal seaside resorts besides those in the Isle of Wight are Bournemouth, Milford, Lee-on-the-Solent, Southsea and South Hayling. Aldershot is the principal military training centre in the British Isles.

Communications.—Communications are provided mainly by the lines of the London & South-Western railway company, which also owns the docks at Southampton. The main line serves Farnborough, Basingstoke, Whitchurch and Andover, and a branch diverges southward from Basingstoke for Winchester, Southampton and the New Forest and Bournemouth. An alternative line from eastward to Winchester serves Aldershot, Alton and Alresford. The main Portsmouth line skirts the south-eastern border by Petersfield to Havant, where it joins the Portsmouth line of the London, Brighton & South Coast railway. The South-Western system also connects Portsmouth and Gosport with Southampton, has numerous branches in the Southampton and south-western districts, and large work shops at Eastleigh near Southampton. The Great Western company serves Basingstoke from Reading and Whitchurch, Winchester and Southampton from Didcot (working the Didcot, Newbury & Southampton line); the Midland & South-Western Junction line connects Andover with Cheltenham; and the Somerset & Dorset (also a Midland & South-Western joint line) connects Bournemouth with Bath—all these affording through communications between Southampton, Bournemouth, and the midlands and north of England. None of the rivers, except in the estuarine parts, is navigable.

Population and Administration.—The area of the ancient county is 1,039,031 acres, including the Isle of Wight. The population was 690,097 in 1891 and 797,634 in 1901. The area of the administrative county of Southampton is 958,742 acres, and that of the administrative county of the Isle of Wight 94,068 acres. The county is divided for parliamentary purposes into the following divisions: Northern or Basingstoke, Western or Andover, Eastern or Petersfield, Southern or Fareham, New Forest, and Isle of Wight, each returning one member. It also includes the parliamentary boroughs of Portsmouth and Southampton, each returning two members, and of Christchurch and Winchester, each returning one. There are 11 municipal boroughs: Andover (pop. 6509), Basingstoke (9793), Bournemouth (59,762), Christchurch (4204), Lymington (4165), Portsmouth (188,133), Romsey (4365), Southampton (104,824), Winchester (20,929), and in the Isle of Wight, Newport (10,911) and Ryde (11,043). Bournemouth, Portsmouth and Southampton are county boroughs. The following are urban districts: Aldershot (30,974), Alton (5479), Eastleigh and Bishopstoke (9317), Fareham (8246), Farnborough (11,500), Gosport and Alverstoke (28,884), Havant (3837), Itchen (13,097), Petersfield (3265), Warblington (3639); and in the Isle of Wight, Cowes (8652), East Cowes (3196), St Helen’s (4652), Sandown (5006), Shanklin (4533), Ventnor (5866). The county is in the western circuit, and assizes are held at Winchester. It has one court of quarter sessions, and is divided into 14 petty sessional divisions. The boroughs of Andover, Basingstoke, Bournemouth, Lymington, Newport, Portsmouth, Romsey, Ryde, Southampton (a county in itself) and Winchester have separate commissions of the peace, and the boroughs of Andover, Bournemouth, Portsmouth, Southampton and Winchester have in addition separate courts of quarter sessions. There are 394 civil parishes. Hampshire is in the diocese of Winchester, excepting small parts in those of Oxford and Salisbury, and contains 411 ecclesiastical parishes or districts wholly or in part.

History.—The earliest English settlers in the district which is now Hampshire were a Jutish tribe who occupied the northern parts of the Isle of Wight and the valleys of the Meon and the Hamble. Their settlements were, however, unimportant, and soon became absorbed in the territory of the West Saxons who in 495 landed at the mouth of the Itchen under the leadership of Cerdic and Cynric, and in 508 slew 5000 Britons and their king. But it was not until after another decisive victory at Charford in 519 that the district was definitely organized as West Saxon territory under the rule of Cerdic and Cynric, thus becoming the nucleus of the vast later kingdom of Wessex. The Isle of Wight was subjugated in 530 and bestowed on Stuf and Wihtgar, the nephews of Cerdic. The Northmen made their first attack on the Hampshire coast in 835, and for the two centuries following the district was the scene of perpetual devastations by the Danish pirates, who made their headquarters in the Isle of Wight, from which they plundered the opposite coast. Hampshire suffered less from the Conquest than almost any English county, and was a favourite resort of the Norman kings. The alleged destruction of property for the formation of the New Forest is refuted by the Domesday record, which shows that this district had never been under cultivation.

In the civil war of Stephen’s reign Baldwin de Redvers, lord of the Isle of Wight, supported the empress Matilda, and Winchester Castle was secured in her behalf by Robert of Gloucester, while the neighbouring fortress of Wolvesey was held for Stephen by Bishop Henry de Blois. In 1216 Louis of France, having arrived in the county by invitation of the barons, occupied Winchester Castle, and only met with resistance at Odiham Castle, which made a brave stand against him for fifteen days. During the Wars of the Roses Anthony Woodville, 2nd earl Rivers, defeated the duke of Clarence at Southampton, and in 1471, after the battle of Barnet, the countess of Warwick took sanctuary at Beaulieu Abbey. The chief events connected with Hampshire in the Civil War of the 17th century were the gallant resistance of the cavalier garrisons at Winchester and Basing House; a skirmish near Cheriton in 1644 notable as the last battle fought on Hampshire soil; and the concealment of Charles at Titchfield in 1647 before his removal to Carisbrooke. The duke of Monmouth, whose rebellion met with considerable support in Hampshire, was captured in 1685 near Ringwood.

Hampshire was among the earliest shires to be created, and must have received its name before the revival of Winchester in the latter half of the 7th century. It is first mentioned in the Saxon chronicle in 755, at which date the boundaries were practically those of the present day. The Domesday Survey mentions 44 hundreds in Hampshire, but by the 14th century the number had been reduced to 37. The hundreds of East Medina and West Medina in the Isle of Wight are mentioned in 1316. Constables of the hundreds were first appointed by the Statute of Winchester in 1285, and the hundred court continued to elect a high constable for Fordingbridge until 1878. The chief court of the Isle of Wight was the Knighten court held at Newport every three weeks. The sheriff's court and the assizes and quarter sessions for the county were formerly held at Winchester, but in 1831 the county was divided into 14 petty sessional divisions; the quarter sessions for the county were held at Andover; and Portsmouth, Southampton and Winchester had separate jurisdiction. Southampton was made a county by itself with a separate sheriff in 1447.

In the middle of the 7th century Hampshire formed part of the West Saxon bishopric of Dorchester-on-Thames. On the transference of the episcopal seat to Winchester in 676 it was included in that diocese in which it has remained ever since. In 1291 the archdeaconry of Winchester was coextensive with the county and comprised the ten rural deaneries of Alresford, Alton, Andover, Basingstoke, Drokinsford, Fordingbridge, Isle of Wight, Sombourne, Southampton and Winchester. In 1850 the Isle of Wight was subdivided into the deaneries of East Medina and West Medina. In 1856 the deaneries were increased to 24. In 1871 the archdeaconry of the Isle of Wight was constituted, and about the same time the deaneries were reduced to 21. In 1892 the deaneries were reconstituted and made 18 in number, and the archdeaconry of the Isle of Wight was divided into the deaneries of East Wight and West Wight.

After the Conquest the most powerful Hampshire baron was William Fitz-Osbern, who in addition to the lordship of the Isle of Wight held considerable estates on the mainland. At the time of the Domesday Survey the chief landholders were Hugh de Port, ancestor of the Fitz-Johns; Ralf de Mortimer; William Mauduit whose name is preserved in Hartley Mauditt; and Waleran, called the Huntsman, ancestor of the Waleraund family. Hursley near Winchester was the seat of Richard Cromwell; and Gilbert White, the naturalist, was curate of Farringdon near Selborne.

Apart from the valuable foreign and shipbuilding trade which grew up with the development of its ports, Hampshire has always been mainly an agricultural county, the only important manufacture being that of wool and cloth, which prospered at Winchester in the 12th century and survived till within recent years. Salt-making and the manufacture of iron from native ironstone also flourished in Hampshire from pre-Norman times until within the 19th century. In the 14th century Southampton had a valuable trade with Venice, and from the 15th to the 18th century many famous warships were constructed in its docks. Silk-weaving was formerly carried on at Winchester, Andover, Odiham, Alton, Whitchurch and Overton, the first mills being set up in 1684 at Southampton by French refugees. The paper manufacture at Laverstoke was started by the Portals, a family of Huguenot refugees, in 1685, and a few years later Henri de Portal obtained the privilege of supplying the bank-note paper to the Bank of England.

Hampshire returned four members to parliament in 1295, when the boroughs of New Alresford, Alton, Andover, Basingstoke, Overton, Portsmouth, Southampton, Winchester, Yarmouth and Newport were also represented. After this date the county was represented by two members, but most of the boroughs ceased to make returns. Odiham and the Isle of Wight were represented in 1300, Fareham in 1306, and Petersfield in 1307. From 1311 to 1547 Southampton, Portsmouth, and Winchester were the only boroughs represented. By the end of the 16th century Petersfield, Newport, Yarmouth, and Andover had regained representation, and Stockbridge, Christchurch, Lymington, Newtown and Whitchurch returned two members each, giving the county with its boroughs a total representation of 26 members. Under the Reform Act of 1832 the county returned four members in four divisions; Christchurch and Petersfield lost one member each; and Newtown, Yarmouth, Stockbridge and Whitchurch were disfranchised. By the act of 1868 Andover, Lymington and Newport were deprived of one member each.

Antiquities.—Hampshire is rich in monastic remains. Those considered under separate headings include the monastery of Hyde near Winchester, the magnificent churches at Christchurch and Romsey, the ruins of Netley Abbey, and of Beaulieu Abbey in the New Forest, the fragments of the priory of St Denys, Southampton, the church at Porchester and the slight ruins at Titchfield, near Fareham, and Quarr Abbey in the Isle of Wight. Other foundations, of which the remains are slight, were the Augustinian priory of Southwick near Fareham, founded by William of Wykeham; that of Breamore, founded by Baldwin de Redvers, and that of Mottisfont near Romsey, endowed soon after the Conquest. There are many churches of interest, apart from the cathedral church of Winchester and those in some of the towns in the Isle of Wight, or already mentioned in connexion with monastic foundations. Pre-Conquest work is well shown in the churches of Corhampton and Breamore, and very early masonry is also found in

Headbourne Worthy church, where is also a brass of the 15th century to a scholar of Winchester College in collegiate dress. The most noteworthy Norman churches are at Chilcombe and Kingsclere and (with Early English additions) at Brockenhurst, Upper Clatford, which has the unusual arrangement of a double chancel arch, Hambledon, Milford and East Meon. Principally Early English are the churches of Cheriton, Grately, which retains some excellent contemporary stained glass from Salisbury cathedral; Sopley, which is partly Perpendicular; and Thruxton, which contains a brass to Sir John Lisle (d. 1407), affording a very early example of complete plate armour. Specimens of the later styles are generally less remarkable. The frescoes in Bramley church, ranging in date from the 13th to the 15th century, include a representation of the murder of Thomas à Beckett. A fine series of Norman fonts in black marble should be mentioned; they occur in Winchester cathedral and the churches of St Michael, Southampton, East Meon and St Mary Bourne.

The most notable old castles are Carisbrooke in the Isle of Wight; Porchester, a fine Norman stronghold embodying Roman remains, on Portsmouth Harbour; and Hurst, guarding the mouth of the Solent, where for a short time Charles I. was imprisoned. Henry VIII. built several forts to guard the Solent, Spithead and Southampton Water; Hurst Castle was one, and others remaining, but adapted to various purposes, are at Cowes, Calshot and Netley. Fine mansions are unusually numerous. That of Stratfieldsaye or Strathfieldsaye, which belonged to the Pitt family, was purchased by parliament for presentation to the duke of Wellington in 1817, his descendants holding the estate from the Crown in consideration of the annual tribute of a flag to the guard-room at Windsor. A statue of the duke stands in the grounds, and his war-horse “Copenhagen” is buried here. The name of Tichborne Park, near Alresford, is well known in connexion with the famous claimant of the estates whose case was heard in 1871. Among ancient mansions the Jacobean Bramshill is conspicuous, lying near Stratfieldsaye in the north of the county. It is built of stone and is highly decorated, and though the complete original design was not carried out the house is among the finest of its type in England. At Bishops Waltham, a small town 10 m. S.S.E. of Winchester, Henry de Blois, bishop of Winchester, erected a palace, which received additions from William of Wykeham, who died here in 1404, and from other bishops. The ruins are picturesque but not extensive.

See *Victoria County History*, “Hampshire,” R. Warner, *Collections for the History of Hampshire*; &c. (London, 1789); H. Moody, *Hampshire in 1086* (1862), and the same author’s *Antiquarian and Topographical Sketches* (1846), and *Notes and Essays relating to the Counties of Hants and Wilts* (1851); R. Mudie, *Hampshire*, &c. (3 vols., Winchester, 1838); B. B. Woodward, T. C. Wilks and C. Lockhart, *General History of Hampshire* (1861-1869); G. N. Godwin, *The Civil War in Hampshire, 1642-1645* (London, 1882); H. M. Gilbert and G. N. Godwin, *Bibliotheca Hantoniensis* (Southampton, 1891). See also various papers in *Hampshire Notes and Queries* (Winchester, 1883 et seq.).

HAMPSTEAD, a north-western metropolitan borough of London, England, bounded E. by St Pancras and S. by St Marylebone, and extending N. and W. to the boundary of the county of London. Pop. (1901), 81,942. The name, *Hamstede*, is synonymous with “homestead,” and the manor is first named in a charter of Edgar (957-975), and was granted to the abbey of Westminster by Ethelred in 986. It reverted to the Crown in 1550, and had various owners until the close of the 18th century, when it came to Sir Thomas Spencer Wilson, whose descendants retain it. The borough includes the sub-manor of Belsize and part of the hamlet of Kilburn.

The surface of the ground is sharply undulating, an elevated spur extending south-west from the neighbourhood of Highgate, and turning south through Hampstead. It reaches a height of 443 ft. above the level of the Thames. The Edgware Road bounds Hampstead on the west; and the borough is intersected, parallel to this thoroughfare, by Finchley Road, and by Haverstock Hill, which, continued under the names of Rosslyn Hill, High Street, Heath Street, and North End, crosses the Heath for which Hampstead is chiefly celebrated. This is a fine open space of about 240 acres, including in its bounds the summit of Hampstead Hill. It is a sandy tract, in parts well wooded, diversified with several small sheets of water, and to a great extent preserves its natural characteristics unaltered. Beautiful views, both near and distant, are commanded from many points. Of all the public grounds within London this is the most valuable to the populace at large; the number of visitors on a Bank holiday in August is generally, under favourable conditions, about 100,000; and strenuous efforts are always forthcoming from either public or private bodies when the integrity of the Heath is in any way menaced. As early as 1829 attempts to save it from the builder are recorded. In 1871 its preservation as an open space was insured after several years’ dispute, when the lord of the manor gave up his rights. An act of parliament transferred the ownership to the Metropolitan Board of Works, to which body the

London County Council succeeded. The Heath is continued eastward in Parliament Hill (borough of St Pancras), acquired for the public in 1890; and westward outside the county boundary in Golders Hill, owned by Sir Spenser Wells, Bart., until 1898. A Protection Society guards the preservation of the natural beauty and interests of the Heath. It is not the interests of visitors alone that must be consulted, for Hampstead, adding to its other attractions a singularly healthy climate, has long been a favourite residential quarter, especially for lawyers, artists and men of letters. Among famous residents are found the first earl of Chatham, John Constable, George Romney, George du Maurier, Joseph Butler, author of the *Analogy*, Sir Richard Steele, John Keats, the sisters Joanna and Agnes Baillie, Leigh Hunt and many others. The parish church of St John (1747) has several monuments of eminent persons. Chatham's residence was at North End, a picturesque quarter yet preserving characteristics of a rural village; here also Wilkie Collins was born. Three old-established inns, the Bull and Bush, the Spaniards, and Jack Straw's Castle (the name of which has no historical significance), claim many great names among former visitors; while the Upper Flask Inn, now a private house, was the meeting-place of the Kit-Cat Club. Chalybeate springs were discovered at Hampstead in the 17th century, and early in the 18th rivalled those of Tunbridge Wells and Epsom. The name of Well Walk recalls them, but their fame is lost. There are others at Kilburn.

In the south-east Hampstead includes the greater part of Primrose Hill, a public ground adjacent to the north side of Regent's Park. The borough has in all about 350 acres of open spaces. The name of the sub-manor of Belsize is preserved in several streets in the central part. Kilburn, which as a district extends outside the borough, takes name from a stream which, as the Westbourne, entered the Thames at Chelsea. Fleet Road similarly recalls the more famous stream which washed the walls of the City of London on the west. Hampstead has numerous charitable institutions, amongst which are the North London consumptive hospital, the Orphan Working School, Haverstock Hill (1758), the general hospital and the north-western fever hospital. In Finchley Road are the New and Hackney Colleges, both Congregational. The parliamentary borough of Hampstead returns one member. The borough council consists of a mayor, 7 aldermen and 42 councillors. Area, 2265 acres.

HAMPTON, WADE (1818-1902), American cavalry leader was born on the 28th of March 1818 at Columbia, South Carolina, the son of Wade Hampton (1791-1858), one of the wealthiest planters in the South, and the grandson of Wade Hampton (1754-1835), a captain in the War of Independence and a brigadier-general in the War of 1812. He graduated (1836) at South Carolina College, and was trained for the law. He devoted himself, however, to the management of his great plantations in South Carolina and in Mississippi, and took part in state politics and legislation. Though his own views were opposed to the prevailing state-rights tone of South Carolinian opinion, he threw himself heartily into the Southern cause in 1861, raising a mixed command known as "Hampton's Legion," which he led at the first battle of Bull Run. During the Civil War he served in the main with the Army of Northern Virginia in Stuart's cavalry corps. After Stuart's death Hampton distinguished himself greatly in opposing Sheridan in the Shenandoah Valley, and was made lieutenant-general to command Lee's whole force of cavalry. In 1865 he assisted Joseph Johnston in the attempt to prevent Sherman's advance through the Carolinas. After the war his attitude was conciliatory and he recommended a frank acceptance by the South of the war's political consequences. He was governor of his state in 1876-1879, being installed after a memorable contest; he served in the United States Senate in 1879-1891, and was United States commissioner of Pacific railways in 1893-1897. He died on the 11th of April 1902.

See E. L. Wells, *Hampton and Reconstruction* (Columbia, S. C., 1907).

HAMPTON, an urban district in the Uxbridge parliamentary division of Middlesex, England, 15 m. S.W. of St Paul's cathedral, London, on the river Thames, served by the London & South Western railway. Pop. (1901), 6813. Close to the river, a mile below the town, stands Hampton Court Palace, one of the finest extant specimens of Tudor architecture, and formerly a royal residence. It was erected by Cardinal Wolsey, who in 1515 received a lease of the old mansion and grounds for 99 years. As the splendour of the building seemed to awaken the cupidity of Henry VIII., Wolsey in 1526 thought it prudent to make him a present of it. It became Henry's

favourite residence, and he made several additions to the building, including the great hall and chapel in the Gothic style. Of the original five quadrangles only two now remain, but a third was erected by Sir Christopher Wren for William III. In 1649 a great sale of the effects of the palace took place by order of parliament, and later the manor itself was sold to a private owner but immediately after came into the hands of Cromwell; and Hampton Court continued to be one of the principal residences of the English sovereigns until the time of George II. It was the birthplace of Edward VI., and the meeting-place (1604) of the conference held in the reign of James I. to settle the dispute between the Presbyterians and the state clergy. William III., riding in the grounds, met with the accident which resulted in his death. It is now partly occupied by persons of rank in reduced circumstances; but the state apartments and picture galleries are open to the public, as is the home park. The gardens, with their ornamental waters, are beautifully laid out in the Dutch style favoured by William III., and contain a magnificent vine planted in 1768. In the enclosure north of the palace, called the Wilderness, is the Maze, a favourite resort. North again lies Bushey Park, a royal demesne exceeding 1000 acres in extent. It is much frequented, especially in early summer, when its triple avenue of horse-chestnut trees is in blossom.

Among several residences in the vicinity of Hampton is Garrick Villa, once, under the name of Hampton House, the residence of David Garrick the actor. Sir Christopher Wren and Sir Richard Steele are among famous former residents. Hampton Wick, on the river E. of Bushey Park, is an urban district with a population (1901) of 2606.

See E. Law, *History of Hampton Court Palace* (London, 1890).

HAMPTON, a city and the county-seat of Elizabeth City county, Virginia, U.S.A., at the mouth of the James river, on Hampton Roads, about 15 m. N.W. of Norfolk. Pop. (1890), 2513; (1900) 2764, including 1249 negroes; (1910) 5505. It is served by the Chesapeake & Ohio railway, and by trolley lines to Old Point Comfort and Newport News. Hampton is an agricultural shipping point, ships fish, oysters and canned crabs, and manufactures fish oil and brick. In the city are St John's church, built in 1727; a national cemetery, a national soldiers' home (between Phoebus and Hampton), which in 1907-1908 cared for 4093 veterans and had an average attendance of 2261; and the Hampton Normal and Agricultural Institute (coeducational), which was opened by the American Missionary Association in 1868 for the education of negroes. This last was chartered and became independent of any denominational control in 1870, and was superintended by Samuel Chapman Armstrong (*q.v.*) from 1868 to 1893. The school was opened in 1878 to Indians, whose presence has been of distinct advantage to the negro, showing him, says Booker T. Washington, the most famous graduate of the school, that the negro race is not alone in its struggle for improvement. The National government pays $167 a year for the support of each of the Indian students. The underlying idea of the Institute is such industrial training as will make the pupil a willing and a good workman, able to teach his trade to others; and the school's graduates include the heads of other successful negro industrial schools, the organizers of agricultural and industrial departments in Southern public schools and teachers in graded negro schools. The mechanism of the school includes three schemes: that of "work students," who work during the day throughout the year and attend night school for eight months; that of day school students, who attend school for four or five days and do manual work for one or two days each week; and that of trade students, who receive trade instruction in their daily eight-hours' work and study in night school as well. Agriculture in one or more of its branches is taught to all, including the four or five hundred children of the Whittier school, a practice school with kindergarten and primary classes. Graduate courses are given in agriculture, business, domestic art and science, library methods, "matrons'" training, and public school teaching. The girl students are trained in every branch of housekeeping, cooking, dairying and gardening. The institute publishes *The Southern Workman*, a monthly magazine devoted to the interests of the Negro and the Indian and other backward races. In 1908 the Institute had more than 100 buildings and 188 acres of land S.W. of the national cemetery and on Hampton river and Jones Creek, and 600 acres at Shellbanks, a stock farm 6 m. away; the enrolment was 21 in graduate classes, 372 in day school, 489 in night school and 524 in the Whittier school. Of the total, 88 were Indians.

Hampton was settled in 1610 on the site of an Indian village, Kecoughtan, a name it long retained, and was represented at the first meeting (1619) of the Virginia House of Burgesses. It was fired by the British during the War of 1812 and by the Confederates under General J. B. Magruder in August 1861. During the Civil War there was a large Union hospital here, the building of the Chesapeake Female College, erected in 1857, being used for this purpose.

Hampton was incorporated as a town in 1887, and in 1908 became a city of the second class.

HAMPTON ROADS, a channel through which the waters of the James, Nansemond and Elizabeth rivers of Virginia, U.S.A., pass (between Old Point Comfort to the N. and Sewell's Point to the S.) into Chesapeake Bay. It is an important highway of commerce, especially for the cities of Norfolk, Portsmouth and Newport News, and is the chief rendezvous of the United States navy. For a width of 500 ft. the Federal government during 1902-1905 increased its minimum depth at low water from 25½ ft. to 30 ft. The entrance from Chesapeake Bay is defended by Fortress Monroe on Old Point Comfort and by Fort Wood on a small island called the Rip Raps near the middle of the channel; and at Portsmouth, a few miles up the Elizabeth river, is an important United States navy-yard.

Hampton Roads is famous in history as the scene of the first engagement between iron-clad vessels. In the spring of 1861 the Federals set fire to several war vessels in the Gosport navy yard on the Elizabeth river and abandoned the place. In June the Confederates set to work to raise one of these abandoned vessels, the frigate "Merrimac" of 3500 tons and 40 guns, and to rebuild it as an iron-clad. The vessel (renamed the "Virginia" though it is generally known in history by its original name) was first cut down to the water-line and upon her hull was built a rectangular casemate, constructed of heavy timber (24 in. in thickness), covered with bar-iron 4 in. thick, and rising from the water on each side at an angle of about 35°. The iron plating extended 2 ft. below the water line; and beyond the casemate, toward the bow, was a cast-iron pilot house, extending 3 ft. above the deck. The reconstruction of the vessel was completed on the 5th of March 1862. The vessel drew 22 ft. of water, was equipped with poor engines, so that it could not make more than 5 knots, and was so unwieldy that it could not be turned in less than 30 minutes. It was armed with 10 guns—2 (rifled) 7 in., 2 (rifled) 6 in., and 6 (smooth bore Dahlgren) 9 in. Her most powerful equipment, however, was her 18 in. cast-iron ram. In October 1861 Captain John Ericsson, an engineer, and a Troy (N.Y.) firm, as builders, began the construction of the iron-clad "Monitor" for the Federals, at Greenpoint, Long Island. With a view to enable this vessel to carry at good speed the thickest possible armour compatible with buoyancy, Ericsson reduced the exposed surface to the least possible area. Accordingly, the vessel was built so low in the water that the waves glided easily over its deck except at the middle, where was constructed a revolving turret[1] for the guns, and though the vessel's iron armour had a thickness of 1 in. on the deck, 5 in. on the side, and 8 in. on the turret, its draft was only 10 ft. 6 in., or less than one-half that of the "Merrimac." Its turret, 9 ft. high and 20 ft. in inside diameter, seemed small for its length of 172 ft. and its breadth of 41 ft. 6 in., and this, with the lowness of its freeboard, caused the vessel to be called the "Yankee cheese-box on a raft." Forward of the turret was the iron pilot house, square in shape, and rising about 4 ft. above the deck. The "Monitor's" displacement was about 1200 tons and her armament was two 11 in. Dahlgren guns; her crew numbered 58, while that of the "Merrimac" numbered about 300. She was seaworthy in the shallow waters off the southern coasts and steered fairly well. The "Monitor" was launched at Greenpoint, Long Island, on the 30th of January, and was turned over to the government on the 19th of the following month. The building of the two vessels was practically a race between the two combatants.

On the 8th of March about 1 P.M., the "Merrimac," commanded by Commodore Franklin Buchanan (1795-1871), steamed down the Elizabeth accompanied by two one-gun gun-boats, to engage the wooden fleet of the Federals, consisting of the frigate "Congress," 50 guns, and the sloop "Cumberland," 30 guns, both sailing vessels, anchored off Newport News, and the steam frigates "Minnesota," and "Roanoke," the sailing frigate "St Lawrence," and several gun-boats, anchored off Fortress Monroe. Actual firing began about 2 o'clock, when the "Merrimac" was nearly a mile from the "Congress" and the "Cumberland." Passing the first of these vessels with terrific broadsides, the "Merrimac" rammed the "Cumberland" and then turned her fire again on the "Congress," which in an attempt to escape ran aground and was there under fire from three other Confederate gun-boats which had meanwhile joined the "Merrimac." About 3.30 P.M. the "Cumberland," which, while it steadily careened, had been keeping up a heavy fire at the Confederate vessels, sank, with "her pennant still flying from the topmast above the waves." Between 4 and 4.30 the "Congress," having been raked fore and aft for nearly an hour by the "Merrimac," was forced to surrender. While directing a fire of hot shot to burn the "Congress," Commodore Buchanan of the "Merrimac" was severely wounded and was succeeded in the command by Lieutenant Catesby ap Roger Jones. The Federal steam frigates, "Roanoke," "St Lawrence" and "Minnesota" had all gone aground in their trip from Old Point Comfort toward the scene of battle, and only the "Minnesota" was near enough (about 1 m.) to take any part in the fight. She was in such shallow water that the Confederate iron-clad ram could not get near

her at ebb tide, and about 5 o'clock the Confederates postponed her capture until the next day and anchored off Sewell's Point.

The "Monitor," under Lieut. John Lorimer Worden (1818-1897). had left New York on the morning of the 6th of March; after a dangerous passage in which she twice narrowly escaped sinking, she arrived at Hampton Roads during the night of the 8th, and early in the morning of the 9th anchored near the "Minnesota." When the "Merrimac" advanced to attack the "Minnesota," the "Monitor" went out to meet her, and the battle between the iron-clads began about 9 A.M. on the 9th. Neither vessel was able seriously to injure the other, and not a single shot penetrated the armour of either. The "Monitor" had the advantage of being able to out-manœuvre her heavier and more unwieldy adversary; but the revolving turret made firing difficult and communications were none too good with the pilot house, the position of which on the forward deck lessened the range of the two turret-guns. The machinery worked so badly that the revolution of the turret was stopped. After two hours' fighting, the "Monitor" was drawn off, so that more ammunition could be placed in her turret. When the battle was renewed (about 11.30) the "Merrimac" began firing at the "Monitor's" pilot house; and a little after noon a shot struck the sight-hole of the pilot house and blinded Lieut. Worden. The "Monitor" withdrew in the confusion consequent upon the wounding of her commanding officer; and the "Merrimac" after a short wait for her adversary steamed back to Norfolk. There were virtually no casualties on either side. After the evacuation of Norfolk by the Confederates on the 9th of May Commodore Josiah Tattnall, then in command of the "Merrimac," being unable to take her up the James, sank her. The "Monitor" was lost in a gale off Cape Hatteras on the 31st of December 1862.

Though the battle between the two vessels was indecisive, its effect was to "neutralize" the "Merrimac," which had caused great alarm in Washington, and to prevent the breaking of the Federal blockade at Hampton Roads; in the history of naval warfare it may be regarded as marking the opening of a new era—the era of the armoured warship. On the 3rd of February 1865 near Fortress Monroe on board a steamer occurred the meeting of President Lincoln and Secretary Seward with Confederate commissioners which is known as the Hampton Roads Conference (see LINCOLN, ABRAHAM). At Sewell's Point, on Hampton Roads, in 1907 was held the Jamestown Tercentennial Exposition.

See James R. Soley, *The Blockade and the Cruisers* (New York, 1883); *Battles and Leaders of the Civil War*, vol. i. (New York, 1887); chap. ii. of Frank M. Bennett's *The Monitor and the Navy under Steam* (Boston, 1900); and William Swinton, *Twelve Decisive Battles of the War* (New York, 1867).

1 For the idea of the low free-board and the revolving turret Ericsson was indebted to Theodore R. Timby (1819-1909), who in 1843 had filed a caveat for revolving towers for offensive or defensive warfare whether placed on land or water, and to whom the company building the "Monitor" paid $5000 royalty for each turret.

HAMSTER, a European mammal of the order Rodentia, scientifically known as *Cricetus frumentarius* (or *C. cricetus*), and belonging to the mouse tribe, *Muridae*, in which it typifies the sub-family *Cricetinae*. The essential characteristic of the Cricetines is to be found in the upper cheek-teeth, which (as shown in the figure of those of *Cricetus* in the article RODENTIA) have their cusps arranged in two longitudinal rows separated by a groove. The hamsters, of which there are several kinds, are short-tailed rodents, with large cheek-pouches, of which the largest is the common *C. frumentarius*. Their geographical distribution comprises a large portion of Europe and Asia north of the Himalaya. All the European hamsters show more or less black on the under-parts, but the small species from Central Asia, which constitute distinct subgenera, are uniformly grey. The common species is specially interesting on account of its habits. It constructs elaborate burrows containing several chambers, one of which is employed as a granary, and filled with corn, frequently of several kinds, for winter use. As a rule, the males, females, and young of the first year occupy separate burrows. During the winter these animals retire to their burrows, sleeping the greater part of the time, but awakening about February or March, when they feed on the garnered grain. They are very prolific, the female producing several litters in the year, each consisting of over a dozen blind young; and these, when not more than three weeks old, are turned out of the parental burrow to form underground homes for themselves. The burrow of the young hamster is only about a foot in depth, while that of the adult descends 4 or 5 ft. beneath the surface. On retiring for the winter the hamster closes the various entrances to its burrow, and becomes torpid during the coldest period. Although feeding chiefly on roots, fruits and grain, it is also to some extent carnivorous, attacking and eating

small quadrupeds, lizards and birds. It is exceedingly fierce and pugnacious, the males especially fighting with each other for possession of the females. The numbers of these destructive rodents are kept in check by foxes, dogs, cats and pole-cats, which feed upon them. The skin of the hamster is of some value, and its flesh is used as food. Its burrows are sought after in the countries where it abounds, both for capturing the animal and for rifling its store. America, especially North America, is the home of by far the great majority of *Cricetinae*, several of which are called white-footed or deer-mice. They are divided into numerous genera and the number of species is very large indeed. Both in size and form considerable variability is displayed, the species of *Holochilus* being some of the largest, while the common white-footed mouse (*Eligmodon leucopus*) of North America is one of the smaller forms. Some kinds, such as *Oryzomys* and *Peromyscus* have long, rat-like tails, while others, like *Acodon*, are short-tailed and more vole-like in appearance. In habits some are partially arboreal, others wholly terrestrial, and a few more or less aquatic. Among the latter, the most remarkable are the fish-eating rats (*Ichthyomys*) of North-western South America, which frequent streams and feed on small fish. The Florida rice-rat (*Sigmodon hispidus*) is another well-known representative of the group. In the Old World the group is represented by the Persian *Calomyscus*, a near relative of *Peromyscus*.

(R. L.*)

HANAPER, properly a case or basket to contain a “hanap” (O. Eng. *hnæp*: cf. Dutch *nap*), a drinking vessel, a goblet with a foot or stem; the term which is still used by antiquaries for medieval stemmed cups. The famous Royal Gold Cup in the British Museum is called a “hanap” in the inventory of Charles VI. of France. The word “hanaper” (Med. Lat. *hanaperium*) was used particularly in the English chancery of a wicker basket in which were kept writs and other documents, and hence it became the name of a department of the chancery, now abolished, under an officer known as the clerk or warden of the hanaper, into which were paid fees and other moneys for the sealing of charters, patents, writs, &c., and from which issued certain writs under the great seal (S. R. Scargill-Bird, *Guide to the Public Records* (1908). In Ireland it still survives in the office of the clerk of the crown and hanaper, from which are issued writs for the return of members of parliament for Ireland. From “hanaper” is derived the modern “hamper,” a wicker or rush basket used for the carriage of game, fish, wine, &c. The verb “to hamper,” to entangle, obstruct, hinder, especially used of disturbing the mechanism of a lock or other fastening so as to prevent its proper working, is of doubtful origin. It is probably connected with a root seen in the Icel. *hemja*, to restrain, and Ger. *hemmen*, to clog.

HANAU, a town of Germany, in the Prussian province of Hesse-Nassau, on the right bank of the Main, 14 m. by rail E. from Frankfort and at the junction of lines to Friedberg, Bebra and Aschaffenburg. Pop. (1905) 31,637. It consists of an old and a new town. The streets of the former are narrow and irregular, but the latter, founded at the end of the 16th century by fugitive Walloons and Netherlanders, is built in the form of a pentagon with broad streets crossing at right angles, and possesses several fine squares, among which may be mentioned the market-place, adorned with handsome fountains at the four corners. Among the principal buildings are the ancient castle, formerly the residence of the counts of Hanau; the church of St John, dating from the 17th century, with a handsome tower; the old church of St Mary, containing the burial vault of the counts of Hanau; the church in the new town, built by the Walloons in the beginning of the 17th century in the form of two intersecting circles; the Roman Catholic church, the synagogue, the theatre, the barracks, the arsenal and the hospital. Its educational establishments include a classical school, and a school of industrial art. There is a society of natural history and an historical society, both of which possess considerable libraries and collections. Hanau is the birthplace of the brothers Grimm, to whom a monument was erected here in 1896. In the neighbourhood of the town are the palace of Philippsruhe, with an extensive park and large orangeries, and the spa of Wilhelmsbad.

Hanau is the principal commercial and manufacturing town in the province, and stands next to Cassel in point of population. It manufactures ornaments of various kinds, cigars, leather, paper, playing cards, silver and platina wares, chocolate, soap, woollen cloth, hats, silk, gloves, stockings, ropes and matches. Diamond cutting is carried on and the town has also foundries, breweries, and in the neighborhood extensive powder-mills. It carries on a large trade in wood,

wine and corn, in addition to its articles of manufacture.

From the number of urns, coins and other antiquities found near Hanau it would appear that it owes its origin to a Roman settlement. It received municipal rights in 1393, and in 1528 it was fortified by Count Philip III. who rebuilt the castle. At the end of the 16th century its prosperity received considerable impulse from the accession of the Walloons and Netherlanders. During the Thirty Years' War it was in 1631 taken by the Swedes, and in 1636 it was besieged by the imperial troops, but was relieved on the 13th of June by Landgrave William V. of Hesse-Cassel, on account of which the day is still commemorated by the inhabitants. Napoleon on his retreat from Leipzig defeated the Germans under Marshal Wrede at Hanau, on the 30th of October 1813; and on the following day the allies vacated the town, when it was entered by the French. Early in the 15th century Hanau became the capital of a principality of the Empire, which on the death of Count Reinhard in 1451 was partitioned between the Hanau-Münzenberg and Hanau-Lichtenberg lines, but was reunited in 1642 when the elder line became extinct. The younger line received princely rank in 1696, but as it became extinct in 1736 Hanau-Münzenberg was joined to Hesse-Cassel and Hanau-Lichtenberg to Hesse-Darmstadt. In 1785 the whole province was united to Hesse-Cassel, and in 1803 it became an independent principality. In 1815 it again came into the possession of Hesse-Cassel, and in 1866 it was joined to Prussia.

See R. Wille, *Hanau im dreissigjährigen Krieg* (Hanau, 1886); and Junghaus, *Geschichte der Stadt und des Kreises Hanau* (1887).

HANBURY WILLIAMS, SIR CHARLES (1708-1759), English diplomatist and author, was a son of Major John Hanbury (1664-1734), of Pontypool, Monmouthshire, and a scion of an ancient Worcestershire family. His great-great-great-grand-father, Capel Hanbury, bought property at Pontypool and began the family iron-works there in 1565. His father John Hanbury was a wealthy iron-master and member of parliament, who inherited another fortune from his friend Charles Williams of Caerleon, his son's godfather, with which he bought the Coldbrook estate, Monmouthshire. Charles accordingly took the name of Williams in 1729. He went to Eton, and there made friends with Henry Fielding, the novelist, and, after marrying in 1732 the heiress of Earl Coningsby, was elected M.P. for Monmouthshire (1734-1747) and subsequently for Leominster (1754-1759). He became known as one of the prominent gallants and wits about town, and following Pope he wrote a great deal of satirical light verse, including *Isabella, or the Morning* (1740), satires on Ruth Darlington and Pulleney (1741-1742), *The Country Girl* (1742), *Lessons for the Day* (1742), *Letter to Mr Dodsley* (1743), &c. A collection of his poems was published in 1763 and of his *Works* in 1822. In 1746 he was sent on a diplomatic mission to Dresden, which led to further employment in this capacity; and through Henry Fox's influence he was sent as envoy to Berlin (1750), Dresden (1751), Vienna (1753), Dresden (1754) and St Petersburg (1755-1757); in the latter case he was the instrument for a plan for the alliance between England, Russia and Austria, which finally broke down, to his embarrassment. He returned to England, and committed suicide on the 2nd of November 1759, being buried in Westminster Abbey. He had two daughters, the elder of whom married William Capel, 4th earl of Essex, and was the mother of the 5th earl. The Coldbrook estates went to Charles's brother, George Hanbury-Williams, to whose heirs it descended.

See William Coxe's *Historical Tour in Monmouthshire* (1801), and T. Seccombe's article in the *Dict. Nat. Biog.* with bibliography.

HANCOCK, JOHN (1737-1793), American Revolutionary statesman, was born in that part of Braintree, Massachusetts, now known as Quincy, on the 23rd of January 1737. After graduating from Harvard in 1754, he entered the mercantile house of his uncle, Thomas Hancock of Boston, who had adopted him, and on whose death, in 1764, he fell heir to a large fortune and a prosperous business. In 1765 he became a selectman of Boston, and from 1766 to 1772 was a member of the Massachusetts general court. An event which is thought to have greatly influenced Hancock's subsequent career was the seizure of the sloop "Liberty" in 1768 by the customs officers for discharging, without paying the duties, a cargo of Madeira wine consigned to Hancock. Many suits were thereupon entered against Hancock, which, if successful, would have caused the confiscation of his estate, but which undoubtedly enhanced his popularity with the Whig element and increased his resentment against the British government. He was a

member of the committee appointed in a Boston town meeting immediately after the “Boston Massacre” in 1770 to demand the removal of British troops from the town. In 1774 and 1775 he was president of the first and second Provincial Congresses respectively, and he shared with Samuel Adams the leadership of the Massachusetts Whigs in all the irregular measures preceding the War of American Independence. The famous expedition sent by General Thomas Gage of Massachusetts to Lexington and Concord on the 18th-19th of April 1775 had for its object, besides the destruction of materials of war at Concord, the capture of Hancock and Adams, who were temporarily staying at Lexington, and these two leaders were expressly excepted in the proclamation of pardon issued on the 12th of June by Gage, their offences, it was said, being “of too flagitious a nature to admit of any other consideration than that of condign punishment.” Hancock was a member of the Continental Congress from 1775 to 1780, was president of it from May 1775 to October 1777, being the first to sign the Declaration of Independence, and was a member of the Confederation Congress in 1785-1786. In 1778 he commanded, as major-general of militia, the Massachusetts troops who participated in the Rhode Island expedition. He was a member of the Massachusetts Constitutional Convention of 1779-1780, became the first governor of the state, and served from 1780 to 1785 and again from 1787 until his death. Although at first unfriendly to the Federal Constitution as drafted by the convention at Philadelphia, he was finally won over to its support, and in 1788 he presided over the Massachusetts convention which ratified the instrument. Hancock was not by nature a leader, but he wielded great influence on account of his wealth and social position, and was liberal, public-spirited, and, as his repeated election—the elections were annual—to the governorship attests, exceedingly popular. He died at Quincy, Mass., on the 8th of October 1793.

See Abram E. Brown, *John Hancock, His Book* (Boston, 1898), a work consisting largely of extracts from Hancock’s letters.

HANCOCK, WINFIELD SCOTT (1824-1886), American general, was born on the 14th of February 1824, in Montgomery county, Pa. He graduated in 1844 at the United States Military Academy, where his career was creditable but not distinguished. On the 1st of July 1844 he was breveted, and on the 18th of June 1846 commissioned second lieutenant. He took part in the later movements under Winfield Scott against the city of Mexico, and was breveted first lieutenant for “gallant and meritorious conduct.” After the Mexican war he served in the West, in Florida and elsewhere; was married in 1850 to Miss Almira Russell of St Louis; became first lieutenant in 1853, and assistant-quartermaster with the rank of captain in 1855. The outbreak of the Civil War found him in California. At his own request he was ordered east, and on the 23rd of September 1861 was made brigadier-general of volunteers and assigned to command a brigade in the Army of the Potomac. He took part in the Peninsula campaign, and the handling of his troops in the engagement at Williamsburg on the 5th of May 1862, was so brilliant that McClellan reported “Hancock was superb,” an epithet always afterwards applied to him. At the battle of Antietam he was placed in command of the first division of the II. corps, and in November he was made major-general of volunteers, and about the same time was promoted major in the regular army. In the disastrous battle of Fredericksburg (*q.v.*), Hancock’s division was on the right among the troops that were ordered to storm Marye’s Heights. Out of the 5006 men in his division 2013 fell. At Chancellorsville his division received both on the 2nd and the 3rd of May the brunt of the attack of Lee’s main army. Soon after the battle he was appointed commander of the II. corps.

The battle of Gettysburg (*q.v.*) began on the 1st of July with the defeat of the left wing of the Army of the Potomac and the death of General Reynolds. About the middle of the afternoon Hancock arrived on the field with orders from Meade to assume command and to decide whether to continue the fight there or to fall back. He decided to stay, rallied the retreating troops, and held Cemetery Hill and Ridge until the arrival of the main body of the Federal army. During the second day’s battle he commanded the left centre of the Union army, and after General Sickles had been wounded, the whole of the left wing. In the third day’s battle he commanded the left centre, upon which fell the full brunt of Pickett’s charge, one of the most famous incidents of the war. Hancock’s superb presence and power over men never shone more clearly than when, as the 150 guns of the Confederate army opened the attack he calmly rode along the front of his line to show his soldiers that he shared the dangers of the cannonade with them. His corps lost in the battle 4350 out of less than 10,000 fighting men. But it had captured twenty-seven Confederate battle flags and as many prisoners as it had men when the fighting ceased. Just as the Confederate troops reached the Union line Hancock was struck in the groin by a bullet, but continued in command until the repulse of the attack, and as he was at last

borne off the field earnestly recommended Meade to make a general attack on the beaten Confederates. The wound proved a severe one, so that some six months passed before he resumed command.

In the battles of the year 1864 Hancock's part was as important and striking as in those of 1863. At the Wilderness he commanded, during the second day's fighting, half of the Union army; at Spottsylvania he had charge of the fierce and successful attack on the "salient"; at Cold Harbor his corps formed the left wing in the unsuccessful assault on the Confederate lines. In August he was promoted to brigadier-general in the regular army. In November, his old wound troubling him, he obtained a short leave of absence, expecting to return to his corps in the near future. He was, however, detailed to raise a new corps, and later was placed in charge of the "Middle Division." It was expected that he would move towards Lynchburg, as part of a combined movement against Lee's communications. But before he could take the field Richmond had fallen and Lee had surrendered. It thus happened that Hancock, who for three years had been one of the most conspicuous figures in the Army of the Potomac did not take part in its final triumph.

After the assassination of Lincoln, Hancock was placed in charge of Washington, and it was under his command that Booth's accomplices were tried and executed. In July 1866 he was appointed major-general in the regular army. A little later he was placed in command of the department of the Missouri, and the year following assumed command of the fifth military division, comprising Louisiana and Texas. His policy, however, of discountenancing military trials and conciliating the conquered did not meet with approval at Washington, and he was at his own request transferred. Hancock had all his life been a Democrat. His splendid war record and his personal popularity caused his name to be considered as a candidate for the Presidency as early as 1868, and in 1880 he was nominated for that office by the Democrats; but he was defeated by his Republican opponent, General Garfield, though by the small popular plurality of seven thousand votes. He died at Governor's Island, near New York, on the 9th of February 1886. Hancock was in many respects the ideal soldier of the Northern armies. He was quick, energetic and resourceful, reckless of his own safety, a strict disciplinarian, a painstaking and hard-working officer. It was on the field of battle, and when the fighting was fiercest, that his best qualities came to the front. He was a born commander of men, and it is doubtful if any other officer in the Northern army could get more fighting and more marching out of his men. Grant said of him, "Hancock stands the most conspicuous figure of all the general officers who did not exercise a separate command. He commanded a corps longer than any other, and his name was never mentioned as having committed in battle a blunder for which he was responsible."

A biography of him has been written by General Francis A. Walker (New York, 1894). See also *History of the Second Corps*, by the same author (1886).

(F. H. H.)

HANCOCK, a city of Houghton county, Michigan, U.S.A., on Portage Lake, opposite Houghton. Pop. (1890) 1772; (1900) 4050, of whom 1409 were foreign-born; (1904) 6037; (1910) 8981. Hancock is served by the Mineral Range, the Copper Range, the Chicago, Milwaukee & St Paul, and the Duluth, South Shore & Atlantic railways (the last two send their trains in over the Mineral Range tracks), and by steamboats through the Portage Lake Canal which connects with Lake Superior. Hancock is connected by a bridge and an electric line with the village of Houghton (pop. in 1910, 5113), the county-seat of Houghton county and the seat of the Michigan College of Mines (opened in 1886). Hancock has three parks, and a marine and general hospital. The city is the seat of a Finnish Lutheran Seminary—there are many Finns in and near Hancock, and a Finnish newspaper is published here. Hancock is in the Michigan copper region—the Quincy, Franklin and Hancock mines are in or near the city—and the mining, working and shipping of copper are the leading industries; among the city's manufactures are mining machinery, lumber, bricks and beer. The municipality owns and operates the water-works. The electric-lighting plant, the gas plant and the street railway are owned by private corporations. Hancock was settled in 1859, was incorporated as a village in 1875, and was chartered as a city in 1903.

HAND, FERDINAND GOTTHELF (1786-1851). German classical scholar, was born at Plauen in Saxony on the 15th of February 1786. He studied at Leipzig, in 1810 became professor at the Weimar gymnasium, and in 1817 professor of philosophy and Greek literature in the university of Jena, where he remained till his death on the 14th of March 1851. The work by which Hand is chiefly known is his (unfinished) edition of the treatise of Horatius Tursellinus (Orazio Torsellino, 1545-1599) on the Latin particles (*Tursellinus, seu de particulis Latinis commentarii*, 1829-1845). Like his treatise on Latin style (*Lehrbuch des lateinischen Stils*, 3rd ed. by H. L. Schmitt, 1880), it is too abstruse and philosophical for the use of the ordinary student. Hand was also an enthusiastic musician, and in his *Ästhetik der Tonkunst* (1837-1841) he was the first to introduce the subject of musical aesthetics.

The first part of the last-named work has been translated into English by W. E. Lawson (*Aesthetics of Musical Art*, or *The Beautiful in Music*, 1880), and B. Sears's *Classical Studies* (1849) contains a "History of the Origin and Progress of the Latin Language," abridged from Hand's work on the subject. There is a memoir of his life and work by G. Queck (Jena, 1852).

HAND (a word common to Teutonic languages; cf. Ger. *Hand*, Goth. *handus*), the terminal part of the human arm from below the wrist, and consisting of the fingers and the palm. The word is also used of the prehensile termination of the limbs in certain other animals (see Anatomy: *Superficial and artistic*; Skeleton: *Appendicular*, and such articles as Muscular System and Nervous System). There are many transferred applications of "hand," both as a substantive and in various adverbial phrases. The following may be mentioned: charge or authority, agency, source, chiefly in such expressions as "in the hands of," "by hand," "at first hand." From the position of the hands at the side of the body, the word means "direction," *e.g.*, on the right, left hand, cf. "at hand." The hand as given in betrothal or marriage has been from early times the symbol of marriage as it also is of oaths. Other applications are to labourers engaged in manual occupations, the members of the crew of a ship, to a person who has some special skill, as in the phrase, "old parliamentary hand," and to the pointers of a clock or watch and to the number of cards dealt to each player in a card game. As a measure of length the term "hand" is now only used in the measurement of horses, it is equal to 4 in. The name "hand of glory," is given to a hand cut from the corpse of a hanged criminal, dried in smoke, and used as a charm or talisman, for the finding of treasures, &c. The expression is the translation of the Fr. *main de gloire*, a corruption of the O. Fr. *mandegloire*, *mandegoire*, *i.e. mandragore*, mandragora, the mandrake, to the root of which many magical properties are attributed.

HANDEL, GEORGE FREDERICK (1685-1759), English musical composer, German by origin, was born at Halle in Lower Saxony, on the 23rd of February 1685. His name was Handel, but, like most 18th-century musicians who travelled, he compromised with its pronunciation by foreigners, and when in Italy spelt it Hendel, and in England (where he became naturalized) accepted the version Handel, which is therefore correct for English writers, while Händel remains the correct version in Germany. His father was a barber-surgeon, who disapproved of music, and wished George Frederick to become a lawyer. A friend smuggled a clavichord into the attic, and on this instrument, which is inaudible behind a closed door, the little boy practised secretly. Before he was eight his father went to visit a son by a former marriage who was a valet-de-chambre to the duke of Saxe-Weissenfels. The little boy begged in vain to go also, and at last ran after the carriage on foot so far that he had to be taken. He made acquaintance with the court musicians and contrived to practise on the organ when he could be overheard by the duke, who, immediately recognizing his talent, spoke seriously to the father, who had to yield to his arguments. On returning to Halle Handel became a pupil of Zachau, the cathedral organist, who gave him a thorough training as a composer and as a performer on keyed instruments, the oboe and the violin. Six very good trios for two oboes and bass, which Handel wrote at the age of ten, are extant; and when he himself was shown them by an English admirer who had discovered them, he was much amused and remarked, "I wrote like the devil in those days, and chiefly for the oboe, which was my favourite instrument." His master also of course made him write an enormous amount of vocal music, and he had to produce a motet every week. By the time he was twelve Zachau thought he could teach him no more, and accordingly the boy was sent to Berlin, where he made a great impression at the court.

Life.

His father, however, thought fit to decline the proposal of the elector of Brandenburg, afterwards King Frederick I. of Prussia, to send the boy to Italy in order afterwards to attach him to the court at Berlin. German court musicians, as late as the time of Mozart, had hardly enough freedom to satisfy a man of independent character, and the elder Händel had not yet given up hope of his son's becoming a lawyer. Young Handel, therefore, returned to Halle and resumed his work with Zachau. In 1697 his father died, but the boy showed great filial piety in finishing the ordinary course of his education, both general and musical, and even entering the university of Halle in 1702 as a law student. But in that year he succeeded to the post of organist at the cathedral, and after his "probation" year in that capacity he departed to Hamburg, where the only German opera worthy of the name was flourishing under the direction of its founder, Reinhold Keiser. Here he became friends with Matheson, a prolific composer and writer on music. On one occasion they set out together to go to Lübeck, where a successor was to be appointed to the post left vacant by the great organist Buxtehude, who was retiring on account of his extreme age. Handel and Matheson made much music on this occasion, but did not compete, because they found that the successful candidate was required to accept the hand of the elderly daughter of the retiring organist.

Another adventure might have had still more serious consequences. At a performance of Matheson's opera *Cleopatra* at Hamburg, Handel refused to give up the conductor's seat to the composer when the latter returned to his usual post at the harpsichord after singing the part of Antony on the stage. The dispute led to a duel outside the theatre, and, but for a large button on Handel's coat which intercepted Matheson's sword, there would have been no *Messiah* or *Israel in Egypt*. But the young men remained friends, and Matheson's writings are full of the most valuable facts for Handel's biography. He relates in his *Ehrenpforte* that his friend at that time used to compose "interminable cantatas" of no great merit; but of these no traces now remain, unless we assume that a *Passion according to St John*, the manuscript of which is in the royal library at Berlin, is among the works alluded to. But its authenticity, while strongly upheld by Chrysander, has recently been as strongly assailed on internal evidence.

On the 8th of January 1705, Handel's first opera, *Almira*, was performed at Hamburg with great success, and was followed a few weeks later by another work, entitled *Nero*. *Nero* is lost, but *Almira*, with its mixture of Italian and German language and form, remains as a valuable example of the tendencies of the time and of Handel's eclectic methods. It contains many themes used by Handel in well-known later works; but the current statement that the famous aria in *Rinaldo*, "Lascia ch'io pianga," comes from a saraband in *Almira*, is based upon nothing more definite than the inevitable resemblance between the simplest possible forms of saraband-rhythm.

In 1706 Handel left Hamburg for Italy, where he remained for three years, rapidly acquiring the smooth Italian vocal style which hereafter always characterized his work. He had before this refused offers from noble patrons to send him there, but had now saved enough money, not only to support his mother at home, but to travel as his own master. He divided his time in Italy between Florence, Rome, Naples and Venice; and many anecdotes are preserved of his meetings with Corelli, Lotti, Alessandro Scarlatti and Domenico Scarlatti, whose wonderful harpsichord technique still has a direct bearing on some of the most modern features of pianoforte style. Handel soon became famous as *Il Sassone* ("the Saxon"), and it is said that Domenico on first hearing him play incognito exclaimed, "It is either the devil or the Saxon!" Then there is a story of Corelli's coming to grief over a passage in Handel's overture to *Il Trionfo del tempo*, in which the violins went up to A in altissimo. Handel impatiently snatched the violin to show Corelli how the passage ought to be played, and Corelli, who had never written or played beyond the third position in his life (this passage being in the seventh), said gently, "My dear Saxon, this music is in the French style, which I do not understand." In Italy Handel produced two operas, *Rodrigo* and *Agrippina*, the latter a very important work, of which the splendid overture was remodelled forty-four years afterwards as that of his last original oratorio, *Jephtha*. He also produced two oratorios, *La Resurrezione*, and *Il Trionfo del tempo*. This, forty-six years afterwards, formed the basis of his last work. *The Triumph of Time and Truth*, which contains no original matter. All Handel's early works contain material that he used often with very little alteration later on, and, though the famous "Lascia ch'io pianga" does not occur in Almira, it occurs note for note in *Agrippina* and the two Italian oratorios. On the other hand the cantata *Aci, Galattea e Polifemo* has nothing in common with *Acis and Galatea*. Besides these larger works there are several choral and solo cantatas of which the earliest, such as the great *Dixit Dominus*, show in their extravagant vocal difficulty how radical was the change which Handel's Italian experience so rapidly effected in his methods.

Handel's success in Italy established his fame and led to his receiving at Venice in 1709 the offer of the post of Kapellmeister to the elector of Hanover, transmitted to him by Baron Kielmansegge, his patron and staunch friend of later years. Handel at the time contemplated a visit to England, and he accepted this offer on condition of leave of absence being granted to him for that purpose. To England accordingly Handel journeyed after a short stay at Hanover,

arriving in London towards the close of 1710. He came as a composer of Italian opera, and earned his first success at the Haymarket with *Rinaldo*, composed, to the consternation of the hurried librettist, in a fortnight, and first performed on the 24th of February 1711. In this opera the aria “Lascia ch’io pianga” found its final home. The work was produced with the utmost magnificence, and Addison’s delightful reviews of it in the *Spectator* poked fun at it from an unmusical point of view in a way that sometimes curiously foreshadows the criticisms that Gluck might have made on such things at a later period. The success was so great, especially for Walsh the publisher, that Handel proposed that Walsh should compose the next opera, and that he should publish it. He returned to Hanover at the close of the opera season, and composed a good deal of vocal chamber music for the princess Caroline, the step-daughter of the elector, besides the instrumental works known to us as the oboe concertos. In 1712 Handel returned to London and spent a year with Andrews, a rich musical amateur, in Barn Elms, Surrey. Three more years were spent in Burlington, in the neighbourhood of London. He evidently was but little inclined to return to Hanover, in spite of his duties to the court there. Two Italian operas and the *Utrecht Te Deum* written by the command of Queen Anne are the principal works of this period. It was somewhat awkward for the composer when his deserted master came to London in 1714 as George I. of England. For some time Handel did not venture to appear at court, and it was only at the intercession of Baron Kielmansegge that his pardon was obtained. By his advice Handel wrote the *Water Music* which was performed at a royal water party on the Thames, and it so pleased the king that he at once received the composer into his good graces and granted him a salary of £400 a year. Later Handel became music master to the little princesses and was given an additional £200 by the princess Caroline. In 1716 he followed the king to Germany, where he wrote a second German Passion to the popular poem of Brockes, a text which, divested of its worst features, forms the basis of several of the arias in Bach’s *Passion according to St John*. This was Handel’s last work to a German text.

On his return to England he entered the service of the duke of Chandos as conductor of his concerts, receiving a thousand pounds for his first oratorio *Esther*. The music which Handel wrote for performance at “Cannons,” the duke of Chandos’s residence at Edgware, is comprised in the first version of *Esther, Acis and Galatea*, and the twelve *Chandos Anthems*, which are compositions approximately in the same form as Bach’s church cantatas but without any systematic use of chorale tunes. The fashionable Londoner would travel 9 miles in those days to the little chapel of Whitchurch to hear Handel’s music, and all that now remains of the magnificent scene of these visits is the church, which is the parish church of Edgware. In 1720 Handel appeared again in a public capacity as impresario of the Italian opera at the Haymarket theatre, which he managed for the institution called the Royal Academy of Music. Senesino, a famous singer, to engage whom Handel especially journeyed to Dresden, was the mainstay of the enterprise, which opened with a highly successful performance of Handel’s opera *Radamisto*. To this time belongs the famous rivalry between Handel and Buononcini, a melodious Italian composer whom many thought to be the greater of the two. The controversy has been perpetuated in John Byrom’s lines:

> “Some say, compared to Buononcini
> That Mynheer Handel’s but a ninny;
> Others aver that he to Handel
> Is scarcely fit to hold a candle.
> Strange all this difference should be
> Twixt tweedle-dum and tweedle-dee.”

It must be remembered that at this time Handel had not yet asserted his greatness as a choral writer; the fashionable ideas of music and musicianship were based entirely upon success in Italian opera, and the contest between the rival composers was waged on the basis of works which have fallen into almost as complete an oblivion in Handel’s case as in Buononcini’s. None of Handel’s forty-odd Italian operas can be said to survive, except in some two or three detached arias out of each opera; arias which reveal their essential qualities far better in isolation than when performed in groups of between twenty and thirty on the stage, as interruptions to the action of a classical drama to which nobody paid the slightest attention. But even within these limits Handel’s artistic resources were too great to leave the issue in doubt; and when Handel wrote the third act of an opera *Muzio Scevola*, of which Buononcini and Ariosti[1] wrote the other two, his triumph was decisive, especially as Buononcini soon got into discredit by failing to defend himself against the charge of producing as a prize-madrigal of his own a composition which proved to be by Lotti. At all events Buononcini left London, and Handel for the next ten years was without a rival in his ventures as an operatic composer. He was not, however, without a rival as an impresario; and the hostile competition of a rival company which obtained the services of the great Farinelli and also induced Senesino to desert him, led to his bankruptcy in 1737, and to an attack of paralysis caused by anxiety and overwork. The rival company also had to be dissolved from want of support, so that Handel’s misfortunes must not be attributed to any failure to maintain his position in the musical world. Handel’s artistic conscience was that of the

most easy-going opportunist, or he would never have continued till 1741 to work in a field that gave so little scope for his genius. But the public seemed to want operas, and, if opera had no scope for his genius, at all events he could supply better operas with greater rapidity and ease than any three other living composers working together. And this he naturally continued to do so long as it seemed to be the best way to keep up his reputation. But with all this artistic opportunism he was not a man of tact, and there are numerous stories of the type of his holding the great primadonna donna Cuzzoni at arm's-length out of a window and threatening to drop her unless she consented to sing a song which she had declared unsuitable to her style.

Already before his last opera, *Deidamia*, produced in 1741, Handel had been making a growing impression with his oratorios. In these, freed from the restrictions of the stage, he was able to give scope to his genius for choral writing, and so to develop, or rather revive, that art of chorus singing which is the normal outlet for English musical talent. In 1726 Handel had become a naturalized Englishman, and in 1733 he began his public career as a composer of English texts by producing the second and larger version of *Esther* at the King's theatre. This was followed early in the same year by *Deborah*, in which the share of the chorus is much greater. In July he produced *Athalia* at Oxford, the first work in which his characteristic double choruses appear. The share of the chorus increases in *Saul* (1738); and *Israel in Egypt* (also 1738) is practically entirely a choral work, the solo movements, in spite of their fame, being as perfunctory in character as they are few in number. It was not unnatural that the public, who still considered Italian opera the highest, because the most modern form of musical art, obliged Handel at subsequent performances of this gigantic work to insert more solos.

The *Messiah* was produced at Dublin on the 13th of April 1742. *Samson* (which Handel preferred to the *Messiah*) appeared at Covent Garden on the 2nd of March 1744; *Belshazzar* at the King's theatre, 27th of March 1745; the *Occasional Oratorio* (chiefly a compilation of the earlier oratorios, but with a few important new numbers), on the 14th of February 1746 at Covent Garden, where all his later oratorios were produced; *Judas Maccabaeus* on the 1st of April 1747; *Joshua* on the 9th of March 1748; *Alexander Balus* on the 23rd of March 1748; Solomon on the 17th of March 1749; *Susanna*, spring of 1749; *Theodora*, a great favourite of Handel's, who was much disappointed by its cold reception, on the 16th of March 1750; *Jephtha* (strictly speaking, his last work) on the 26th of February 1752, and *The Triumph of Time and Truth* (transcribed from *Il Trionfo del tempo* with the addition of many later favourite numbers), 1757. Other important works, indistinguishable in artistic form from oratorios, but on secular subjects, are *Alexander's Feast*, 1736; *Ode for St Cecilia's Day* (words by Dryden); *L'Allegro, il pensieroso ed il moderato* (the words of the third part by Jennens), 1740; *Semele*, 1744; *Hercules*, 1745; and *The Choice of Hercules*, 1751.

By degrees the enmity against Handel died away, though he had many troubles. In 1745 he had again become bankrupt; for, although he had no rival as a composer of choral music it was possible for his enemies to give balls and banquets on the nights of his oratorio performances. As with his first bankruptcy, so in his later years, he showed scrupulous sense of honour in discharging his debts, and he continued to work hard to the end of his life. He had not only completely recovered his financial position by the year 1750, but he must have made a good deal of money, for he then presented an organ to the Foundling Hospital, and opened it with a performance of the *Messiah* on the 15th of May. In 1751 his sight began to trouble him; and the autograph of *Jephtha*, published in facsimile by the *Händelgesellschaft*, shows pathetic traces of this in his handwriting,[2] and so affords a most valuable evidence of his methods of composition, all the accompaniments, recitatives, and less essential portions of the work being evidently filled in long after the rest. He underwent unsuccessful operations, one of them by the same surgeon who had operated on Bach's eyes. There is evidence that he was able to see at intervals during his last years, but his sight practically never returned after May 1752. He continued superintending performances of his works and writing new arias for them, or inserting revised old ones, and he attended a performance of the *Messiah* a week before his death, which took place, according to the *Public Advertiser* of the 16th of April, not on Good Friday, the 13th of April, according to his own pious wish and according to common report, but on the 14th of April 1759. He was buried in Westminster Abbey; and his monument is by L. F. Roubilliac, the same sculptor who modelled the marble statue erected in 1739 in Vauxhall Gardens, where his works had been frequently performed.

> Handel was a man of high character and intelligence, and his interest was not confined to his own art exclusively. He liked the society of politicians and literary men, and he was also a collector of pictures and articles of *vertu*. His power of work was enormous, and the *Händelgesellschaft's* edition of his complete works fills one hundred volumes, forming a total bulk almost equal to the works of Bach and Beethoven together.
>
> (F. H.; D. F. T.)

No one has more successfully popularized the greatest artistic ideals than Handel; no artist is more disconcerting to critics who imagine that a great man's mental development is easy to follow. Not even Wagner effected a greater transformation in the possibilities of dramatic music

Handel as composer. than Handel effected in oratorio, yet we have seen that Handel was the very opposite of a reformer. He was not even conservative, and he hardly took the pains to ascertain what an art-form was, so long as something externally like it would convey his idea. But he never failed to convey his idea, and, if the hybrid forms in which he conveyed it had no historic influence and no typical character, they were none the less accurate in each individual case. The same aptness and the same absence of method are conspicuous in his style. The popular idea that Handel's style is easily recognizable comes from the fact that he overshadows all his predecessors and contemporaries, except Bach, and so makes us regard typical 18th-century Italian and English style as Handelian, instead of regarding Handel's style as typical Italian 18th-century. Nothing in music requires more minute expert knowledge than the sifting of the real peculiarities of Handel's style from the mass of contemporary formulae which in his inspired pages he absorbed, and which in his uninspired pages absorbed him.

His easy mastery was acquired, like Mozart's, in childhood. The later sonatas for two oboes and bass which he wrote in his eleventh year are, except in their diffuseness and an occasional slip in grammar, indistinguishable from his later works, and they show a boyish inventiveness worthy of Mozart's work at the same age. Such early choral works, as the *Dixit Dominus* (1707), show the ill-regulated power of his choral writing before he assimilated Italian influences. Its practical difficulties are at least as extravagant as Bach's, while they are not accounted for by any corresponding originality and necessity of idea; but the grandeur of the scheme and nobility of thought is already that for which Handel so often in later years found the simplest and easiest adequate means of expression that music has ever attained. His eminently practical genius soon formed his vocal style, and long before the period of his great oratorios, such works as *The Birthday Ode for Queen Anne* (1713) and the *Utrecht Te Deum* show not a trace of German extravagance. The only drawback to his practical genius was that it led him to bury perhaps half of his finest melodies, and nearly all the secular features of interest in his treatment of instruments and of the aria forms, in that deplorable limbo of vanity, the 18th-century Italian opera. It is not true, as has been alleged against him, that his operas are in no way superior to those of his contemporaries; but neither is it true that he stirred a finger to improve the condition of dramatic musical art. He was no slave to singers, as is amply testified by many anecdotes. Nor was he bound by the operatic conventions of the time. In *Teseo* he not only wrote an opera in five acts when custom prescribed three, but also broke a much more plausible rule in arranging that each character should have two arias in succession. He also showed a feeling for expression and style which led him to write arias of types which singers might not expect. But he never made any innovation which had the slightest bearing upon the stage-craft of opera, for he never concerned himself with any artistic question beyond the matter in hand; and the matter in hand was not to make dramatic music, or to make the story interesting or intelligible, but simply to provide a concert of between some twenty and thirty Italian arias and duets, wherein singers could display their abilities and spectators find distraction from the monotony of so large a dose of the aria form (which was then the only possibility for solo vocal music) in the gorgeousness of the dresses and scenery.

When the question arose how a musical entertainment of this kind could be managed in Lent without protests from the bishop of London, Handelian oratorio came into being as a matter of course. But though Handel was an opportunist he was not shallow. His artistic sense seized upon the natural possibilities which arose as soon as the music was transferred from the stage to the concert platform; and his first English oratorio, *Esther* (1720), beautifully shows the transition. The subject is as nearly secular as any that can be extracted from the Bible, and the treatment was based on Racine's *Esther*, which was much discussed at the time. Handel's oratorio was reproduced in an enlarged version in 1732 at the King's theatre: the princess royal wished for scenery and action, but the bishop of London protested. And the choruses, of which in the first version there are already no less than ten, are on the one hand operatic and unecclesiastical in expression, until the last, where polyphonic work on a large scale first appears; but on the other hand they are all much too long to be sung by heart, as is necessary in operas. In fact, the turning-point in Handel's development is the emancipation of the chorus from theatrical limitations. This had as great effect upon his few but important secular English works as upon his other oratorios. *Acis and Galatea*, *Semele* and *Hercules*, are in fact secular oratorios; the choral music in them is not ecclesiastical, but it is large, independent and polyphonic.

We must remember, then, that Handel's scheme of oratorio is operatic in its origin and has no historic connexion with such principles as might have been generalized from the practice of the German Passion music of the time; and it is sufficiently astonishing that the chorus should have so readily assumed its proper place in a scheme which the public certainly regarded as a sort of Lenten biblical opera. And, although the chorus owes its freedom of development to the disappearance of theatrical necessities, it becomes no less powerful as a means of dramatic expression (as opposed to dramatic action) than as a purely musical resource. Already in *Athalia* the "Hallelujah" chorus at the end of the first act is a marvel of dramatic truth. It is sung by

Israelites almost in despair beneath usurping tyranny; and accordingly it is a severe double fugue in a minor key, expressive of devout courage at a moment of depression. On purely musical grounds it is no less powerful in throwing into the highest possible relief the ecstatic solemnity of the psalm with which the second act opens. Now this sombre “Hallelujah” chorus is a very convenient illustration of Handel’s originality, and the point in which his creative power really lies. It was not originally written for its situation in *Athalia*, but it was chosen for it. It was originally the last chorus of the second version of the anthem, *As pants the Hart*, from the autograph of which it is missing because Handel cut out the last pages in order to insert them into the manuscript of *Athalia*. The inspiration in *Athalia* thus lies not in the creation of the chorus itself, but in the choice of it.

In choral music Handel made no more innovation than he made in arias. His sense of fitness in expression was of little use to him in opera, because opera could not become dramatic until musical form became capable of developing and blending emotions in all degrees of climax in a way that may be described as pictorial and not merely decorative (see Music; Sonata-Forms; and Instrumentation). But in oratorio there was not the least necessity for reforming any art-forms. The ordinary choral resources of the time had perfect expressive possibilities where there were no actors to keep waiting, and where no dresses and scenery need distract the attention of the listener. When lastly, ordinary decorum dictated an attitude of reverent attention towards the subject of the oratorio, then the man of genius could find such a scope for his real sense of dramatic fitness as would make his work immortal.

In estimating Handel’s greatness we must think away all orthodox musical and progressive prejudices, and learn to apply the lessons critics of architecture and some critics of literature seem to know by nature. Originality, in music as in other arts, lies in the whole, and in a sense of the true meaning of every part. When Handel wrote a normal double fugue in a minor key on the word “Hallelujah” he showed that he at all events knew what a vigorous and dignified thing an 18th-century double fugue could be. In putting it at the end of a melancholy psalm he showed his sense of the value of the minor mode. When he put it in its situation in *Athalia* he showed as perfect a sense of dramatic and musical fitness as could well be found in art. Now it is obvious that in works like oratorios (which are dramatic schemes vigorously but loosely organized by the putting together of some twenty or thirty complete pieces of music) the proper conception of originality will be very different from that which animates the composer of modern lyric, operatic or symphonic music. When we add to this the characteristics of a method like Handel’s, in which musical technique has become a masterly automatism, it becomes evident that our conception of originality must be at least as broad as that which we would apply in the criticism of architecture. The disadvantages of the want of such a conception have been aggravated by the dearth of general knowledge of the structure of musical art; a knowledge which shows that the parallel we have suggested between music and architecture, as regards the nature of originality, is no mere figure of speech.

In every art there is an antithesis between form and matter, which becomes reconciled only when the work of art is perfect in its execution. And, whatever this perfection, the antithesis must always remain in the mind of the artist and critic to this extent, that some part of the material seems to be the special subject of technical rule rather than another. In the plastic and literary arts one type of this antithesis is more or less permanently maintained in the relation between subject and treatment. The mere fact that these arts express themselves by representing things that have some previous independent existence, helps us to look for originality rather in the things that make for perfection of treatment than in novelty of subject. But in music we have no permanent means of deciding which of many aspects we shall call the subject and which the treatment. In the 16th century the a priori form existed mainly in the practice of basing almost every melodic detail of the work on phrases of Gregorian chant or popular song, treated for the most part in terms of very definitely regulated polyphonic design, and on harmonic principles regulated in almost every detail by the relation between the melodic aspects of the church modes and the necessity for occasional alterations of the strict mode to secure finality at the close. In modern music such a relation between form and matter, prescribing as it does for every aspect at every moment both of the shape and the texture of the music, would exclude the element of invention altogether. In 16th-century music it by no means had that effect. An inventive 16th-century composer is as clearly distinguishable from a dull one as a good architect from a bad. The originality of the composer resides, in 16th-century music as in all art, in his whole work; but naturally his conception of property and ideas will not extend to themes or isolated passages. That man is entitled to an idea who can show what it means, or who can make it mean what he likes. Let him wear the giant’s robe if it fits him. And it is merely a local difference in point of view which makes us think that there is property in themes and no property in forms. Nowadays we happen to regard the shape of a whole composition as its form, and its theme as its matter. And, as artistic organization becomes more complex and heterogeneous, the need of the broadest and most forcible possible outline of design is more pressingly felt; so that in what we choose to call form we are willing to sacrifice all conception of originality for the sake of general intelligibility, while we insist upon complete originality in

those thematic details which we are pleased to call matter. But, if this explains, it does not excuse our setting up a criterion for musical originality which can be accepted by no intelligent critics of other arts, and which is completely upset by the study of any music earlier than the beginning of the 19th century.

The difficulty many writers have found in explaining the subject of Handel's "plagiarisms" is not entirely accounted for by mere lack of these considerations; but the grossest confusion of ideas as to the difference between cases in point prevails to this day, and many discussions which have been raised in regard to the ethical aspect of the question are frankly absurd.[3] It has been argued, for instance, that great injustice was done to Buononcini over his unfortunate affair with the prize madrigal, while his great rival was allowed the credit of *Israel in Egypt*, which contains a considerable number of entire choruses (besides hosts of themes) by earlier Italian and German writers. But the very idea of Handelian oratorio is that of some three hours of music, religious or secular, arranged, like opera, in the form of a colossal entertainment, and with high dramatic and emotional interest imparted to it, if not by the telling of a story, at all events by the nature and development of the subject. It seems, moreover, to be entirely overlooked that the age was an age of *pasticcios*. Nothing was more common than the organization of some such solemn entertainment by the skilful grouping of favourite pieces. Handel himself never revived one of his oratorios without inserting in it favourite pieces from his other works as well as several new numbers; and the story is well known that the turning point in Gluck's career was his perception of the true possibilities of dramatic music from the failure of a *pasticcio* in which he had reset some rather definitely expressive music to situations for which it was not originally designed. The success of an oratorio was due to the appropriateness of its contrasts, together of course with the mastery of its detail, whether that detail were new or old; and there are many gradations between a réchauffé of an early work like *The Triumph of Time and Truth*, or a *pasticcio* with a few original numbers like the *Occasional Oratorio*, and such works as *Samson*, which was entirely new except that the "Dead March" first written for it was immediately replaced by the more famous one imported from *Saul*. That the idea of the *pasticcio* was extremely familiar to the age is shown by the practice of announcing an oratorio as "new and original," a term which would obviously be meaningless if it were as much a matter of course as it is at the present day, and which, if used at all, must obviously so apply to the whole work without forbidding the composer from gratifying the public with the reproduction of one or two favourite arias. But of course the question of originality becomes more serious when the imported numbers are not the composer's own. And here it is very noticeable that Handel derived no credit, either with his own public or with us, from whole movements that are not of his own designing. In *Israel in Egypt*, the choruses "Egypt was glad when they departed," "And I will exalt Him," "Thou sentest forth Thy Wrath" and "The Earth swallowed them," are without exception the most colourless and unattractive pieces of severe counterpoint to be found among Handel's works; and it is very difficult to fathom his motive in copying them from obscure pieces by Erba and Kaspar Kerl, unless it be that he wished to train his audiences to a better understanding of a polyphonic style. He certainly felt that the greatest possibilities of music lay in the higher choral polyphony, and so in *Israel in Egypt* he designed a work consisting almost entirely of choruses, and may have wished in these instances for severe contrapuntal movements which he had not time to write, though he could have done them far better himself. Be this as it may, these choruses have certainly added nothing to the popularity of a work of which the public from the outset complained that there was not enough solo music; and what effect they have is merely to throw Handel's own style into relief. To draw any parallel between the theft of such unattractive details in the grand and intensely Handelian scheme of *Israel in Egypt* and Buononcini's alleged theft of a prize madrigal is merely ridiculous. Handel himself, if he had any suspicion that contemporaries did not take a sane architect's view of the originality of large musical schemes,[4] probably gave himself no more trouble about their scruples on this matter than about other forms of musical banality.

The *History of Music* by Burney, the cleverest and most refined musical critic of the age, shows in the very freshness of its musical scholarship how completely unscholarly were the musical ideas of the time. Burney was incapable of regarding choral music as other than a highly improving academic exercise in which he himself was proficient; and for him Handel is the great opera-writer whose choral music will reward the study of the curious. If Handel had attempted to explain his methods to the musicians of his age, he would probably have found himself alone in his opinions as to the property of musical ideas. He did not trouble to explain, but he made no concealment of his sources. He left his whole musical library to his copyist, and it was from this that the sources of his work were discovered. And when the whole series of plagiarisms is studied, the fact forces itself upon us that nothing except themes and forms which are common property in all 18th-century music, has yet been discovered as the source of any work of Handel's which is not felt as part of a larger design. Operatic arias were never felt as parts of a whole. The opera was a concert on the stage, and it stood or fell, not by a dramatic propriety which it notoriously neglected to consider at all, but by the popularity of its arias. There is no aria in Handel's operas which is traceable to another composer. Even in the oratorios there is no

solo number in which more than the themes are pilfered, for in oratorios the solo work still appealed to the popular criterion of novelty and individual attractiveness. And when we leave the question of copying of whole movements and come to that of the adaptation of passages, and still more of themes, Handel shows himself to be simply on a line with Mozart. Jahn compares the opening of Mozart's *Requiem* with that of the first chorus in Handel's *Funeral Anthem*. Mozart recreates at least as much from Handel's already perfect framework as Handel ever idealized from the inorganic fragments of earlier writers. The double counterpoint of the Kyrie in Mozart's *Requiem* is still more indisputably identical with that of the last chorus of Handel's *Joseph*, and if the themes are common property their combination certainly is not. But the true plagiarist is the man who does not know the meaning of the ideas he copies, and the true creator is he in whose hands they remain or become true ideas. The theme "He led them forth like sheep" in the chorus "But as for his people" is one of the most beautiful in Handel's works, and the bare statement that it comes from a serenata by Stradella seems at first rather shocking. But, to any one who knew Stradella's treatment of it first, Handel's would come as a revelation actually greater than if he had never heard the theme before. Stradella makes nothing more of it, and therefore presumably sees nothing more in it than an agreeable and essentially frivolous little tune which lends itself to comic dramatic purpose by a wearisome repetition throughout eight pages of patchy aria and instrumental ritornello at an ever-increasing pace. What Handel sees in it is what he makes of it, one of the most solemn and poetic things in music. Again, it may be very shocking to discover that the famous opening of the "Hailstone chorus" comes from the patchy and facetious overture to this same serenata, with which it is identical for ten bars all in the tonic chord (representing, according to Stradella, someone knocking at a door). And it is no doubt yet more shocking that the chorus "He spake the word, and there came all manner of flies" contains no idea of Handel's own except the realistic swarming violin-passages, the general structure, and the vocal colouring; whereas the rhythmic and melodic figures of the voice parts come from an equally patchy *sinfonia concertata* in Stradella's work. The real interest of these things ought not to be denied either by the misstatement that the materials adapted are mere common property, nor by the calumny that Handel was uninventive.

The effects of Handel's original inspiration upon foreign material are really the best indication of the range of his style. The comic meaning of the broken rhythm of Stradella's overture becomes indeed Handel's inspiration in the light of the gigantic tone-picture of the "Hailstone chorus." In the theme of "He led them forth like sheep" we have already cited a particular case where Handel perceived great solemnity in a theme originally intended to be frivolous. The converse process is equally instructive. In the short Carillon choruses in Saul where the Israelitish women welcome David after his victory over Goliath, Handel uses a delightful instrumental tune which stands at the beginning of a *Te Deum* by Urio, from which he borrowed an enormous amount of material in *Saul, L'Allegro*, the *Dettingen Te Deum* and other works. Urio's idea is first to make a jubilant and melodious noise from the lower register of the strings, and then to bring out a flourish of high trumpets as a contrast. He has no other use for his beautiful tune, which indeed would not bear more elaborate treatment than he gives it. The ritornello falls into statement and counterstatement, and the counterstatement secures one repetition of the tune, after which no more is heard of it. It has none of the solemnity of church music, and its value as a contrast to the flourish of trumpets depends, not upon itself, but upon its position in the orchestra. Handel did not see in it a fine opening for a great ecclesiastical work, but he saw in it an admirable expression of popular jubilation, and he understood how to bring out its character with the liveliest sense of climax and dramatic interest by taking it at its own value as a popular tune. So he uses it as an instrumental interlude accompanied with a jingle of carillons, while the daughters of Israel sing to a square-cut tune those praises of David which aroused the jealousy of Saul. But now turn to the opening of the *Dettingen Te Deum* and see what splendid use is made of the other side of Urio's idea, the contrast between a jubilant noise in the lowest part of the scale and the blaze of trumpets at an extreme height. In the fourth bar of the *Dettingen Te Deum* we find the same florid trumpet figures as we find in the fifth bar of Urio's, but at the first moment they are on oboes. The first four bars beat a tattoo on the tonic and dominant, with the whole orchestra, including trumpets and drums, in the lowest possible position and in a stirring rhythm with a boldness and simplicity characteristic only of a stroke of genius. Then the oboes appear with Urio's trumpet flourishes; the momentary contrast is at least as brilliant as Urio's; and as the oboes are immediately followed by the same figures on the trumpets themselves the contrast gains incalculably in subtlety and climax. Moreover, these flourishes are more melodious than the broad and massive opening, instead of being, as in Urio's scheme, incomparably less so. Lastly, Handel's primitive opening rhythmic figures inevitably underlie every subsequent inner part and bass that occurs at every half close and full close throughout the movement, especially where the trumpets are used. And thus every detail of his scheme is rendered alive with a rhythmic significance which the elementary nature of the theme prevents from ever becoming obtrusive.

No other great composer has ever so overcrowded his life with occasional and mechanical work as Handel, and in no other artist are the qualities that make the difference between

inspired and uninspired pages more difficult to analyse. The libretti of his oratorios are full of absurdities, except when they are derived in every detail from Scripture, as in the *Messiah* and *Israel in Egypt*, or from the classics of English literature, as in *Samson* and *L'Allegro*. These absurdities, and the obvious fact that in every oratorio Handel writes many more numbers than are desirable for one performance, and that he was continually in later performances adding, transferring and cutting out solo numbers and often choruses as well—all this may seem at first sight to militate seriously against the view that Handel's originality and greatness consists in his grasp of the works as wholes, but in reality it strengthens that view. These things militate against the perfection of the whole, but they would have been absolutely fatal to a work of which the whole is not (as in all true art) greater than the sum of its parts. That they are felt as absurdities and defects already shows that Handel created in English oratorio a true art-form on the largest possible scale.

There never has been a time when Handel has been overrated, except in so far as other composers have been neglected. But no composer has suffered so much from pious misinterpretation and the popular admiration of misleading externals. It is not the place here to dilate upon the burial of Handel's art beneath the "mammoth" performances of the Handel Festivals at the Crystal Palace; nor can we give more than a passing reference to the effects of "additional accompaniments" in the style of an altogether later age, started most unfortunately by Mozart (whose share in the work has been very much misinterpreted and corrupted) and continued in the middle of the 19th century by musicians of every degree of intelligence and refinement, until all sense of unity of style has been lost and does not seem likely to be recovered as a general element in the popular appreciation of Handel for some time to come. But in spite of this, Handel will never cease to be revered and loved as one of the greatest of composers, if we value the criteria of architectonic power, a perfect sense of style, and the power to rise to the most sublime height of musical climax by the simplest means.

Handel's important works have all been mentioned above with their dates, and a separate detailed list does not seem necessary. He was an extremely rapid worker, and his later works are dated almost day by day as they proceed. From this we learn that the *Messiah* was sketched and scored within twenty-one days, and that even *Jephtha*, with an interruption of nearly four months besides several other delays caused by Handel's failing sight, was begun and finished within seven months, representing hardly five weeks' actual writing. Handel's extant works may be roughly summarized from the edition of the *Händelgesellschaft* as 41 Italian operas, 2 Italian oratorios, 2 German Passions, 18 English oratorios, 4 English secular oratorios, 4 English secular cantatas, and a few other small works, English and Italian, of the type of oratorio or incidental dramatic music; 3 Latin settings of the *Te Deum*; the (English) *Dettingen Te Deum* and *Utrecht Te Deum and Jubilate*; 4 coronation anthems; 3 volumes of English anthems (*Chandos Anthems*); 1 volume of Latin church music; 3 volumes of Italian vocal chamber-music; 1 volume of clavier works; 37 instrumental duets and trios (sonatas), and 4 volumes of orchestral music and organ concertos (about 40 works). Precise figures are impossible as there is no means of drawing the line between *pasticcios* and original works. The instrumental pieces especially are used again and again as overtures to operas and oratorios and anthems.

The complete edition of the German *Händelgesellschaft* suffers from being the work of one man who would not recognize that his task was beyond any single man's power. The best arrangements of the vocal scores are undoubtedly those published by Novello that are not based on "additional accompaniments." None is absolutely trustworthy, and those of the editor of the German *Händelgesellschaft* are sad proofs of the uselessness of expert library-scholarship without a sound musical training. Yet Chrysander's services in the restoration of Handel are beyond praise. We need only mention his discovery of authentic trombone parts in *Israel in Egypt* as one among many of his priceless contributions to musical history and aesthetics.

(D. F. T.)

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1 Chrysander says Mattei instead of Ariosti.

2 By a dramatic coincidence Handel's blindness interrupted him during the writing of the chorus, "How dark, oh Lord, are Thy decrees, ... all our joys to sorrow turning ... as the night succeeds the day."

3 The "moral" question has been raised afresh in reviews of Mr Sedley Taylor's admirable volume of analysed illustrations (*The Indebtedness of Handel to works of other Composers*, Cambridge, 1906). The latest argument is that Handel shows moral obliquity in borrowing "regrettably" from sources no one could know at the time. This reasoning makes it mysterious that a man of such moral obliquity should ever have written a note of his own music in England when he could have stolen the complete choral works of Bach and most of the hundred operas of Alessandro Scarlatti with the certainty that the sources would not be printed for a century after his death, even if his own name did not then check curiosity among antiquarians. Of course Handel's plagiarisms would have damaged his reputation if contemporaries had known of them. His polyphonic scholarship was more "antiquated" in the 18th century than it is in the 20th.

4 Much light would be thrown on the subject if some one sufficiently ignorant of architecture were to make researches into Sir Christopher Wren's indebtedness to Italian architects!

HANDFASTING (A.S. *handfæstnung*, pledging one's hand), primarily the O. Eng. synonym for *betrothal* (*q.v.*), and later a peculiar form of temporary marriage at one time common in Scotland, the only necessary ceremony being the verbal pledge of the couple while holding hands. The pair thus handfasted were, in accordance with Scotch law, entitled to live together for a year and a day. If then they so wished, the temporary marriage could be made permanent: if not, they could go their several ways without reproach, the child, if any, being supported by the party who objected to further cohabitation.

HANDICAP (from the expression *hand in cap*, referring to drawing lots), a disadvantageous condition imposed upon the superior competitor in sports and games, or an advantage allowed the inferior, in order to equalize the chances of both. The character of the handicap depends upon the nature of the sport. Thus in horse-racing the better horse must carry the heavier weight. In foot races the inferior runners are allowed to start at certain distances in advance of the best (or "scratch") man, according to their previous records. In distance competitions (weights, fly-casting, jumping, &c.) the inferior contestants add certain distances to their scores. In time contests (yachting, canoe-racing, &c.) the weaker or smaller competitors subtract certain periods of time from that actually made, reckoned by the mile. In stroke contests (*e.g.* golf) a certain number of strokes are subtracted from or added to the scores, according to the strength of the players. In chess and draughts the stronger competitor may play without one or more pieces. In court games (tennis, lawn-tennis, racquets, &c.) and in billiards certain points, or percentage of points, are accorded the weaker players.

Handicapping was applied to horse-racing as early as 1680, though the word was not used in this connexion much before the middle of the 18th century. A "Post and Handy-Cap Match" is described in *Pond's Racing Calendar* for 1754. A reference to something similar in Germany and Scandinavia, called *Freimarkt*, may be found in *Germania*, vol. xix.

Competitions in which handicaps are given are called *handicap-events* or *handicaps*. There are many systems which depend upon the whim of the individual competitors. Thus a tennis player may offer to play against his inferior with a selzer-bottle instead of a racquet; or a golfer to play with only one club; or a chess-player to make his moves without seeing the board.

The name "handicap" was taken from an ancient English game, to which Pepys, in his *Diary* under the date of the 18th of September 1660, thus refers: "Here some of us fell to handicap, a sport that I never knew before, which was very good." This game, which became obsolete in the 19th century, was described as early as the 14th in *Piers the Plowman* under the name of "New Faire." It was originally played by three persons, one of whom proposed to "challenge," or exchange, some piece of property belonging to another for something of his own. The challenge being accepted an umpire was chosen, and all three put up a sum of money as a forfeit. The two players then placed their right hands in a cap, or in their pockets, in which there was loose money, while the umpire proceeded to describe the two objects of exchange, and to declare what sum of money the owner of the inferior article should pay as a bonus to the other. This declaration was made as rapidly as possible and ended with the invitation, "Draw, gentlemen!" Each player then withdrew and held out his hand, which he opened. If both hands contained money the exchange was effected according to the conditions laid down by the umpire, who then took the forfeit money for himself. If neither hand contained money the exchange was declined and the umpire took the forfeit money. If only one player signified his acceptance of the exchange by holding money in his hand, he was entitled to the forfeit-money, though the exchange was not made.

Handicap was also the name of an old game at cards, now obsolete. It resembled the game of Loo, and probably derived its name from the ancient sport described above.

HANDSEL, the O. Eng. term for earnest money; especially in Scotland the first money taken

at a market or fair. The termination *sel* is the modern “sell.” “Hand” indicates, not a bargain by shaking hands, but the actual putting of the money into the hand. Handsels were also presents or earnests of goodwill in the North; thus Handsel Monday, the first Monday in the year, an occasion for universal tipping, is the equivalent of the English Boxing day.

HANDSWORTH. (1) An urban district in the Handsworth parliamentary division of Staffordshire, England, suburban to Birmingham on the north-west. Pop. (1891), 32,756; (1901) 52,921. (See BIRMINGHAM.) (2) An urban district in the Hallamshire parliamentary division of Yorkshire, 4 m. S.E. of Sheffield. Pop. (1901), 13,404. In this neighbourhood are extensive collieries and quarries.

HANDWRITING. Under PALAEOGRAPHY and WRITING, the history of handwriting is dealt with. Questions of handwriting come before legal tribunals mainly in connexion with the law of evidence. In Roman law, the authenticity of documents was proved first by the attesting witnesses; in the second place, if they were dead, by comparison of handwritings. It was necessary, however, that the document to be used for purposes of comparison either should have been executed with the formalities of a public document, or should have its genuineness proved by three attesting witnesses. The determination was apparently, in the latter case, left to experts, who were sworn to give an impartial opinion (Code 4, 21. 20). Proof by comparison of handwritings, with a reference if necessary to three experts as to the handwriting which is to be used for the purposes of comparison, is provided for in the French Code of Civil Procedure (arts. 193 et seq.); and in Quebec (Code Proc. Civ. arts. 392 et seq.) and St Lucia (Code Civ. Proc. arts. 286 et seq.), the French system has been adopted with modifications. Comparison by witnesses of disputed writings with any writing proved to the satisfaction of the judge to be genuine is accepted in England and Ireland in all legal proceedings whether criminal or civil, including proceedings before arbitrators (Denman Act, 28 & 29 Vict. c. 18, 55. 1, 8); and such writings and the evidence of witnesses respecting the same may be submitted to the court and jury as evidence of the genuineness or otherwise of the writing in dispute. It is admitted in Scotland (where the term *comparatio literarum* is in use) and in most of the American states, subject to the same conditions. In England, prior to the Common Law Procedure Act of 1854 (now superseded by the act of 1866), documents irrelevant to the matter in issue were not admissible for the sole purpose of comparison, and this rule has been adopted, and is still adhered to, in some of the states in America. In England, as in the United States, and in most legal systems, the primary and best evidence of handwriting is that of the writer himself. Witnesses who saw him write the writing in question, or who are familiar with his handwriting either from having seen him write or from having corresponded with him, or otherwise, may be called. In cases of disputed handwriting the court will accept the evidence of experts in handwriting, *i.e.* persons who have an adequate knowledge of handwriting, whether acquired in the way of their business or not, such as solicitors or bank cashiers (*R.* v. *Silverlock*, 1894, 2 Q.B. 766). In such cases the witness is required to compare the admitted handwriting of the person whose writing is in question with the disputed document, and to state in detail the similarities or differences as to the formation of words and letters, on which he bases his opinion as to the genuineness or otherwise of the disputed document. By the use of the magnifying glass, or, as in the Parnell case, by enlarged photographs of the letters alleged to have been written by Mr Parnell, the court and jury are much assisted to appreciate the grounds on which the conclusions of the expert are founded. Evidence of this kind, being based on opinion and theory, needs to be very carefully weighed, and the dangers of implicit reliance on it have been illustrated in many cases (*e.g.* the Beck case in 1904; and see *Seaman* v. *Netherclift*, 1876, 1 C.P.D. 540). Evidence by comparison of handwriting comes in principally either in default, or in corroboration, of the other modes of proof.

Where attestation is necessary to the validity of a document, *e.g.* wills and bills of sale, the execution must be proved by one or more of the attesting witnesses, unless they are dead or cannot be produced, when it is sufficient to prove the signature of one of them to the attesting clause (28 & 29 Vict. c. 18, s. 7). Signatures to certain public and official documents need not in general be proved (see *e.g.* Evidence Act, 1845, ss. 1, 2).

See Taylor, *Law of Evidence* (10th ed., London, 1906); Erskine *Principles of the Law of*

Scotland (20th ed., Edinburgh, 1903); Bouvier, *Law Dicty.* (Boston and London, 1897); Harris, *Identification* (Albany, 1892); Hagan, *Disputed Handwriting* (New York, 1894); also the article IDENTIFICATION.

(A. W. R.)

HANG-CHOW-FU, a city of China, in the province of Cheh-Kiang, 2 m. N.W. of the Tsien-tang-Kiang, at the southern terminus of the Grand canal, by which it communicates with Peking. It lies about 100 m. S.W. of Shanghai, in 30° 20′ 20″ N., 120° 7′ 27″ E. Towards the west is the Si-hu or Western Lake, a beautiful sheet of water, with its banks and islands studded with villas, monuments and gardens, and its surface traversed by gaily-painted pleasure boats. Exclusive of extensive and flourishing suburbs, the city has a circuit, of 12 m.; its streets are well paved and clean; and it possesses a large number of arches, public monuments, temples, hospitals and colleges. It has long ranked as one of the great centres of Chinese commerce and Chinese learning. In 1869 the silk manufactures alone were said to give employment to 60,000 persons within its walls, and it has an extensive production of gold and silver work and tinsel paper. On one of the islands in the lake is the great Wên-lan-ko or pavilion of literary assemblies, and it is said that at the examinations for the second degree, twice every three years, from 10,000 to 15,000 candidates come together. In the north-east corner of the city is the Nestorian church which was noted by Marco Polo, the façade being “elaborately carved and the gates covered with elegantly wrought iron.” There is a Roman Catholic mission in Hangchow, and the Church Missionary Society, the American Presbyterians, and the Baptists have stations. The local dialect differs from the Mandarin mainly in pronunciation. The population, which is remarkable for gaiety of clothing, was formerly reckoned at 2,000,000, but is now variously estimated at 300,000, 400,000 or 800,000. Hang-chow-fu was declared open to foreign trade in 1896, in pursuance of the Japanese treaty of Shimonoseki. It is connected with Shanghai by inland canal, which is navigable for boats drawing up to 4 ft. of water, and which might be greatly improved by dredging. The cities of Shanghai, Hangchow and Suchow form the three points of a triangle, each being connected with the other by canal, and trade is now open by steam between all three under the inland navigation rules. These canals pass through the richest and most populous districts of China, and in particular lead into the great silk-producing districts. They have for many centuries been the highway of commerce, and afford a cheap and economical means of transport. Hangchow lies at the head of the large estuary of that name, which is, however, too shallow for navigation by steamers. The estuary or bay is funnel-shaped, and its configuration produces at spring tides a “bore” or tidal wave, which at its maximum reaches a height of 15 to 20 ft. The value of trade passing through the customs in 1899 was £1,729,000; in 1904 these figures had risen to £2,543,831.

Hang-chow-fu is the Kinsai of Marco Polo, who describes it as the finest and noblest city in the world, and speaks enthusiastically of the number and splendour of its mansions and the wealth and luxuriance of its inhabitants. According to this authority it had a circuit of 100 m., and no fewer than 12,000 bridges and 3000 baths. The name Kinsai, which appears in Wassaf as Khanzai, in Ibn Batuta as Khansa, in Odoric of Pordenone as Camsay, and elsewhere as Campsay and Cassay, is really a corruption of the Chinese *King-sze*, capital, the same word which is still applied to Peking. From the 10th to the 13th century (960-1272) the city, whose real name was then Ling-nan, was the capital of southern China and the seat of the Sung dynasty, which was dethroned by the Mongolians shortly before Marco Polo’s visit. Up to 1861, when it was laid in ruins by the T’aip’ings, Hangchow continued to maintain its position as one of the most flourishing cities in the empire.

HANGING, one of the modes of execution under Roman law (*ad furcam domnatio*), and in England and some other countries the usual form of capital punishment. It was derived by the Anglo-Saxons from their German ancestors (Tacitus, *Germ.* 12). Under William the Conqueror this mode of punishment is said to have been disused in favour of mutilation: but Henry I. decreed that all thieves taken should be hanged (*i.e.* summarily without trial), and by the time of Henry II. hanging was fully established as a punishment for homicide; the “right of pit and gallows” was ordinarily included in the royal grants of jurisdiction to lords of manors and to ecclesiastical[1] and municipal corporations. In the middle ages every town, abbey, and nearly all the more important manorial lords had the right of hanging. The clergy had rights, too, in

respect to the gallows. Thus William the Conqueror invested the abbot of Battle Abbey with authority to save the life of any criminal. From the end of the 12th century the jurisdiction of the royal courts gradually became exclusive; as early as 1212 the king's justices sentenced offenders to be hanged (*Seld. Soc. Publ.* vol. i.; *Select Pleas of the Crown*, p. 111), and in the Gloucester eyre of 1221 instances of this sentence are numerous (Maitland, pl. 72, 101, 228). In 1241 a nobleman's son, William Marise, was hanged for piracy. In the reign of Edward I. the abbot of Peterborough set up a gallows at Collingham, Notts, and hanged a thief. In 1279 two hundred and eighty Jews were hanged for clipping coin. The mayor and the porter of the South Gate of Exeter were hanged for their neglect in leaving the city gate open at night, thereby aiding the escape of a murderer. Hanging in time superseded all other forms of capital punishment for felony. It was substituted in 1790 for burning as a punishment of female traitors and in 1814 for beheading as a punishment for male traitors. The older and more primitive modes of carrying out the sentence were by hanging from the bough of a tree ("the father to the bough, the son to the plough") or from a gallows. Formerly in the worst cases of murder it was customary after execution to hang the criminal's body in chains near the scene of his crime. This was known as "gibbeting," and, though by no means rare in the earliest times, was, according to Blackstone, no part of the legal sentence. Holinshed is the authority for the statement that sometimes culprits were gibbeted alive, but this is doubtful. It was not until 1752 that gibbeting was recognized by statute. The act (25 Geo. II. c. 37) empowered the judges to direct that the dead body of a murderer should be hung in chains, in the manner practised for the most atrocious offences, or given over to surgeons to be dissected and anatomized, and forbade burial except after dissection (see Foster, Crown Law, 107, Earl Ferrers' case, 1760). The hanging in chains was usually on the spot where the murder took place. Pirates were gibbeted on the sea shore or river bank. The act of 1752 was repealed in 1828, but the alternatives of dissection or hanging in chains were re-enacted and continued in use until abolished as to dissection by the Anatomy Act in 1832, and as to hanging in chains in 1834. The last murderer hung in chains seems to have been James Cook, executed at Leicester on the 10th of August 1832. The irons used on that occasion are preserved in Leicester prison. Instead of chains, gibbet irons, a framework to hold the limbs together, were sometimes used. At the town hall, Rye, Sussex, are preserved the irons used in 1742 for one John Breeds who murdered the mayor.

The earlier modes of hanging were gradually disused, and the present system of hanging by use of the drop is said to have been inaugurated at the execution of the fourth Earl Ferrers in 1760. The form of scaffold now in use[2] has under the gallows a drop constructed on the principle of the trap-doors on a theatrical stage, upon which the convict is placed under the gallows, a white cap is placed over his head, and when the halter has been properly adjusted the drop is withdrawn by a mechanical contrivance worked by a lever, much like those in use on railways for moving points and signals. The convict falls into a pit, the length of the fall being regulated by his height and weight. Death results not from real hanging and strangulation, but from a fracture of the cervical vertebrae. Compression of the windpipe by the rope and the obstruction of the circulation aid in the fatal result. Recently the noose has had imbedded in its fibre a metal eyelet which is adjusted tightly beneath the ear and considerably expedites death. The convict is left hanging until life is extinct.

It was long considered essential that executions, like trials, should be public, and be carried out in a manner calculated to impress evil-doers. Partly to this idea, partly to notions of revenge and temporal punishment of sin, is probably due the rigour of the administration of the English law. But the methods of execution were unseemly, as delineated in Hogarth's print of the execution of the idle apprentice, and were ineffectual in reducing the bulk of crime, which was augmented by the inefficiency of the police and the uncertainty and severity of the law, which rendered persons tempted to commit crime either reckless or confident of escape. The scandals attending public executions led to an attempt to alter the law in 1841, although many protests had been made long before, among them those of the novelist Fielding. But perhaps the most forcible and effectual was that of Charles Dickens in his letters to *The Times* written after mixing in the crowd gathered to witness the execution of the Mannings at Horsemonger Lane gaol in 1849. After his experiences he came to the conclusion that public executions attracted the depraved and those affected by morbid curiosity; and that the spectacle had neither the solemnity nor the salutary effect which should attend the execution of public justice. His views were strongly resisted in some quarters; and it was not until 1868 (31 & 32 Vict. c. 24) that they were accepted. The last public hanging in England was that of Michael Barrett for murder by causing an explosion at Clerkenwell prison with the object of releasing persons confined there for treason and felony (Ann. Reg., 1868, p. 63). Under the act of 1868 (31 & 32 Vict. c. 24), which was adapted from similar legislation already in force in the Australian colonies convicted murderers are hanged within the walls of a prison. The sentence of the court is that the convict "be hanged by the neck until he is dead." The execution of the sentence devolves on the sheriff of the county (Sheriffs Act 1887, s. 13). As a general rule the sentence is carried out in England and Ireland at 8 A.M. on a week-day (not being Monday), in the week following the third Sunday after sentence was passed. In old times prisoners were often hanged on the day after sentence

was passed; and under the act of 1752 this was made the rule in cases of murder. A public notice of the date and hour of execution must be posted on the prison walls not less than twelve hours before the execution and must remain until the inquest is over. The persons required to be present are the sheriff, the gaoler, chaplain and surgeon of the prison, and such other officers of the prison as the sheriff requires; justices of the peace for the jurisdiction to which the prison belongs, and such of the relatives, or such other persons as the sheriff or visiting justices allow, may also attend. It is usual to allow the attendance of some representatives of the press. The death of the prisoner is certified by the prison surgeon, and a declaration that judgment of death has been executed is signed by the sheriff. An inquest is then held on the body by the coroner for the jurisdiction and a jury from which prison officers are excluded. The certificate and declaration, and a duplicate of the coroner's inquiry also, are sent to the home office, or in Ireland to the lord-lieutenant, and the body of the prisoner is interred in quicklime within the prison walls if space is available. It is also the practice to toll the bell of the parish or other neighbouring church, for fifteen minutes before and fifteen minutes after the execution. The hoisting of the black flag at the moment of execution was abolished in 1902. The regulations as to execution are printed in the Statutory Rules and Orders, Revised ed. 1904, vol. x. (tits. Prison E. and Prison I). The act of 1868 applies only to executions for murder; but since the passing of the act there have been no executions for any other crime within the United Kingdom. (See further Capital Punishment.)

In Scotland execution by hanging is carried out in the same manner as in England and Ireland, but under the supervision of the magistrates of the burgh in which it is decreed to take place, and in lieu of the inquest required in England and Ireland an inquiry is held at the instance of the procurator-fiscal before a sheriff or sheriff substitute (act of 1868, s. 13). The procedure at the execution is governed by the act of 1868 and the Scottish Prison Rules, rr. 465-469 (Stat. Rules and Orders, Revised ed. 1904, tit. Prison S).

British Dominions beyond the Seas.—Throughout the King's dominions hanging is the regular method of executing sentence of death. In India the Penal Code superseded the modes of punishment under Mahommedan law, and s. 368 of the Criminal Procedure Code of 1898 provides that sentence of death is to be executed by hanging by the neck.

In Canada the sentence is executed within a prison under conditions very similar to those in England (Criminal Code, 1892; ss. 936-945). In Australia the execution takes place within the prison walls, at a time and place appointed by the governor of the state. See Queensland Code, 1899, s. 664; Western Australia Code, 1901, s. 663; in these states no inquest is held. In Western Australia the governor may cause an aboriginal native to be executed outside a prison. In New Zealand the only mode of execution is by hanging within a prison (Act of 1883).

United States.—-In all the states except New York, Massachusetts, New Jersey, North Carolina, Mississippi, Virginia, and Ohio (see Electrocution) persons sentenced to death are hanged. In Utah the criminal may elect to be shot instead.

The only countries, whose law is not of direct English origin, which inflict capital punishment by hanging are Japan, Austria, Hungary and Russia.

(W. F. C.)

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1 See Pollock and Maitland vol. i. 563. The sole survival of these grants is the jurisdiction of the justices of the Soke of Peterborough to try for capital offences at their quarter sessions.

2 In most counties in Ireland the scaffold used (in 1852) to consist in an iron balcony permanently fixed outside the gaol wall. There was a small door in the wall commanding the balcony and opening out upon it. The bottom of the iron balcony or cage was so constructed that on the withdrawal of a pin or bolt which could be managed from within the gaol, the trap-door upon which the culprit stood dropped from under his feet. The upper end of the rope was fastened to a strong iron bar, which projected over the trap-door. There were usually two or three trap-doors on the same balcony, so that, if required, two or more men could be hanged simultaneously. (Trench, *Realities of Irish Life* (1869), 280.)

HANGÖ, a port and sea-bathing resort situated on the promontory of Hangöudd, to the extreme south-west of Finland. Hangö owes its commercial importance to the fact that it is practically the only winter ice-free port in Finland, and is thus of value both to the Finnish and the Russian sea-borne trade. When incorporated in 1874 it had only a few hundred inhabitants; in 1900 it had 2501 and it has now over six thousand (5986 in 1904). It is connected by railway with Helsingfors and Tammerfors, and is the centre of the Finnish butter export, which now amounts to over £1,000,000 yearly. There is a considerable import of coal, cotton, iron and

breadstuffs, the chief exports being butter, fish, timber and wood pulp. During the period of emigration, owing to political troubles with Russia, over 12,000 Finns sailed from Hangö in a single year (1901), mostly for the United States and Canada. Hangö now takes front rank as a fashionable watering-place, especially for wealthy Russians, having a dry climate and a fine strand.

HANKA, WENCESLAUS (1791-1861), Bohemian philologist, was born at Horeniowes, a hamlet of eastern Bohemia, on the 10th of June 1791. He was sent in 1807 to school at Königgrätz, to escape the conscription, then to the university of Prague, where he founded a society for the cultivation of the Czech language. At Vienna, where he afterwards studied law, he established a Czech periodical; and in 1813 he made the acquaintance of Joseph Dobrowsky, the eminent philologist. On the 16th of September 1817 Hanka alleged that he had discovered some ancient Bohemian manuscript poems (the Königinhof MS.) of the 13th and 14th century in the church tower of the village of Kralodwor, or Königinhof. These were published in 1818, under the title *Kralodworsky Rukopis*, with a German translation by Swoboda. Great doubt, however, was felt as to their genuineness, and Dobrowsky, by pronouncing *The Judgment of Libussa*, another manuscript found by Hanka, an "obvious fraud," confirmed the suspicion. Some years afterwards Dobrowsky saw fit to modify his decision, but by modern Czech scholars the MS. is regarded as a forgery. A translation into English, *The Manuscript of the Queen's Court*, was made by Wratislaw in 1852. The originals were presented by the discoverer to the Bohemian museum at Prague, of which he was appointed librarian in 1818. In 1848 Hanka, who was an ardent Panslavist, took part in the Slavonic congress and other peaceful national demonstrations, being the founder of the political society Slovanska Lipa. He was elected to the imperial diet at Vienna, but declined to take his seat. In the winter of 1848 he became lecturer and in 1849 professor of Slavonic languages in the university of Prague, where he died on the 12th of January 1861.

His chief works and editions are the following: *Hankowy Pjsne* (Prague, 1815), a volume of poems; *Starobyla Skladani* (1817-1826), in 5 vols.—a collection of old Bohemian poems, chiefly from unpublished manuscripts; *A Short History of the Slavonic Peoples* (1818); *A Bohemian Grammar* (1822) and *A Polish Grammar* (1839)—these grammars were composed on a plan suggested by Dobrowsky; *Igor* (1821), an ancient Russian epic, with a translation into Bohemian; a part of the Gospels from the Reims manuscript in the Glagolitic character (1846); the old Bohemian Chronicles of *Dalimil* (1848) and the *History of Charles IV.*, by Procop Lupáč (1848); *Evangelium Ostromis* (1853).

HANKOW ("Mouth of the Han"), the great commercial centre of the middle portion of the Chinese empire, and since 1858 one of the principal places opened to foreign trade. It is situated on the northern side of the Yangtsze-kiang at its junction with the Han river, about 600 m. W. of Shanghai in 30° 32′ 51″ N., 114° 19′ 55″ E., at a height of 150 ft. By the Chinese it is not considered a separate city, but as a suburb of the now decadent city of Hanyang; and it may almost be said to stand in a similar relation to Wu-chang the capital of the province of Hupeh, which lies immediately opposite on the southern bank of the Yangtsze-kiang. Hankow extends for about a mile along the main river and about two and a half along the Han. It is protected by a wall 18 ft. high, which was erected in 1863 and has a circuit of about 4 m. Within recent years the port has made rapid advance in wealth and importance. The opening up of the upper waters of the Yangtsze to steam navigation has made it a commercial *entrepôt* second only to Shanghai. It is the terminus of a railway between Peking and the Yangtsze, the northern half of the trunk line from Peking to Canton. There is daily communication by regular lines of steamers with Shanghai, and smaller steamers ply on the upper section of the river between Hankow and Ich'ang. The principal article of export continues to be black tea, of which staple Hankow has always been the central market. The bulk of the leaf tea, however, now goes to Russia by direct steamers to Odessa instead of to London as formerly, and a large quantity goes overland via Tientsin and Siberia in the form of brick tea. The quantity of brick tea thus exported in 1904 was upwards of 10 million lb. The exports which come next in value are opium, wood-oil, hides, beans, cotton yarn and raw silk. The population of Hankow, together with the city of Wu-chang on the opposite bank, is estimated at 800,000, and the number of foreign residents is about 500. Large iron-works have been erected by the Chinese authorities at Hanyang, a couple of miles higher up the river, and at Wuchang there are two official cotton mills. The British concession, on which the business part of the foreign settlement is built, was obtained in 1861 by a lease in perpetuity from the Chinese authorities in favour of the crown. By 1863 a great embankment and a roadway were completed along the river, which may rise as much as 50 ft. or more above its ordinary levels, and not infrequently, as in 1849 and 1866, lays a large part of the town under

water. On the former occasion little was left uncovered but the roofs of the houses. In 1864 a public assay office was established. Sub-leases for a term of years are granted by the crown to private individuals; local control, including the policing of the settlement, is managed by a municipal council elected under regulations promulgated by the British minister in China, acting by authority of the sovereign's orders in council. Foreigners, *i.e.* non-British, are admitted to become lease-holders on their submitting to be bound by the municipal regulations. The concession, however, gives no territorial jurisdiction. All foreigners, of whatever nationality, are justiciable only before their own consular authorities by virtue of the extra-territorial clauses of their treaties with China. In 1895 a concession, on similar terms to that under which the British is held, was obtained by Germany, and this was followed by concessions to France and Russia. These three concessions all lie on the north bank of the river and immediately below the British. An extension of the British concession backwards was granted in 1898. The Roman Catholics, the London Missionary Society and the Wesleyans have all missions in the town; and there are two missionary hospitals. The total trade in 1904 was valued at £15,401,076 (£9,042,190 being exports and £6,358,886 imports) as compared with a total of £17,183,400 in 1891 and £11,628,000 in 1880.

HANLEY, a market town and parliamentary borough of Staffordshire, England, in the Potteries district, 148 m. N.W. from London, on the North Staffordshire railway. Pop. (1891) 54,946; (1901) 61,599. The parliamentary borough includes the adjoining town of Burslem. The town, which lies on high ground, has handsome municipal buildings, free library, technical and art museum, elementary, science and art schools, and a large park. Its manufactures include porcelain, encaustic tiles, and earthenware, and give employment to the greater part of the population, women and children being employed almost as largely as men. In the neighbourhood coal and iron are obtained. Hanley is of modern development. Its municipal constitution dates from 1857, the parliamentary borough from 1885, and the county borough from 1888. Shelton, Hope, Northwood and Wellington are populous ecclesiastical parishes included within its boundaries. That of Etruria, adjoining on the west, originated in the Ridge House pottery works of Josiah Wedgwood and Thomas Bentley, who founded them in 1769, naming them after the country of the Etruscans in Italy. Etruria Hall was the scene of Wedgwood's experiments. The parliamentary borough of Hanley returns one member. The town was governed by a mayor, 6 aldermen, and 18 councillors until under the "Potteries federation" scheme (1908) it became part of the borough of Stoke-on-Trent (*q.v.*) in 1910.

HANNA, MARCUS ALONZO (1837-1904), American politician, was born at New Lisbon (now Lisbon) Columbiana county, Ohio, on the 24th of September 1837. In 1852 he removed with his father to Cleveland, where the latter established himself in the wholesale grocery business, and the son received his education in the public schools of that city, and at the Western Reserve University. Leaving college before the completion of his course, he became associated with his father in business, and on his father's death (1862) became a member of the firm. In 1867 he entered into partnership with his father-in-law, Daniel P. Rhodes, in the coal and iron business. It was largely due to Hanna's progressive methods that the business of the firm, which became M. A. Hanna & Company in 1877, was extended to include the ownership of a fleet of lake steam-ships constructed in their own shipyards, and the control and operation of valuable coal and iron mines. Subsequently he became largely interested in street railway properties in Cleveland and elsewhere, and in various banking institutions. In early life he had little time for politics, but after 1880 he became prominent in the affairs of the Republican party in Cleveland, and in 1884 and 1888 was a delegate to the Republican National Convention, in the latter year being associated with William McKinley in the management of the John Sherman canvass. It was not, however, until 1896, when he personally managed the canvass that resulted in securing the Republican presidential nomination for William McKinley at the St Louis Convention (at which he was a delegate), that he became known throughout the United States as a political manager of great adroitness, tact and resourcefulness. Subsequently he became chairman of the Republican National Committee, and managed with consummate skill the campaign of 1896 against William Jennings Bryan and "free-silver." In March 1897 he was appointed, by Governor Asa S. Bushnell (1834-1904) United States senator from Ohio, to succeed John Sherman. In the senate, to which in January 1898 he was elected for the short term ending on the 3rd of March

1899 and for the succeeding full term, he took little part in the debates, but was recognized as one of the principal advisers of the McKinley administration, and his influence was large in consequence. Apart from politics he took a deep and active interest in the problems of capital and labour, was one of the organizers (1901) and the first president of the National Civic Federation, whose purpose was to solve social and industrial problems, and in December 1901 became chairman of a permanent board of conciliation and arbitration established by the Federation. After President Roosevelt's policies became defined, Senator Hanna came to be regarded as the leader of the conservative branch of the Republican party and a possible presidential candidate in 1904. He died at Washington on the 15th of February 1904.

HANNAY, JAMES (1827-1873), Scottish critic, novelist and publicist, was born at Dumfries on the 17th of February 1827. He came of the Hannays of Sorbie, an ancient Galloway family. He entered the navy in 1840 and served till 1845, when he adopted literature as his profession. He acted as reporter on the *Morning Chronicle* and gradually obtained a connexion, writing for the quarterly and monthly journals. In 1857 Hannay contested the Dumfries burghs in the Conservative interest, but without success. He edited the *Edinburgh Courant* from 1860 till 1864, when he removed to London. From 1868 till his death on the 8th of January 1873 he was British consul at Barcelona. His letters to the *Pall Mall Gazette* "From an Englishman in Spain" were highly appreciated. Hannay's best books are his two naval novels, *Singleton Fontenoy* (1850) and *Eustace Conyers* (1855); *Satire and Satirists* (1854); and *Essays from the Quarterly Review* (1861). *Satire* not only shows loving appreciation of the great satirists of the past, but is itself instinct with wit and fine satiric power. The book sparkles with epigrams and apposite classical allusions, and contains admirable critical estimates of Horace (Hannay's favourite author), Juvenal, Erasmus, Sir David Lindsay, George Buchanan, Boileau, Butler, Dryden, Swift, Pope, Churchill, Burns, Byron and Moore.

Among his other works are *Biscuits and Grog, Claret Cup*, and *Hearts are Trumps* (1848); *King Dobbs* (1849); *Sketches in Ultramarine* (1853); an edition of the *Poems* of Edgar Allan Poe, to which he prefixed an essay on the poet's life and genius (1852); *Characters and Criticisms*, consisting mainly of his contributions to the *Edinburgh Courant* (1865); *A Course of English Literature* (1866); *Studies on Thackeray* (1869); and a family history entitled *Three Hundred Years of a Norman House* (the Gurneys) (1867).

HANNEN, JAMES HANNEN, Baron (1821-1894), English judge, son of a London merchant, was born at Peckham in 1821. He was educated at St Paul's school and at Heidelberg University, which was famous as a school of law. Called to the bar at the Middle Temple in 1848, he joined the home circuit. At this time he also wrote for the press, and supplied special reports for the *Morning Chronicle*. Though not eloquent in speech, he was clear, accurate and painstaking, and soon advanced in his profession, passing many more brilliant competitors. He appeared for the claimant in the Shrewsbury peerage case in 1858, when the 3rd Earl Talbot was declared to be entitled to the earldom of Shrewsbury as the descendant of the 2nd earl; was principal agent for Great Britain on the mixed British and American commission for the settlement of outstanding claims, 1853-1855; and assisted in the prosecution of the Fenian prisoners at Manchester. In 1868 Hannen was appointed a judge of the Court of Queen's Bench. In many cases he took a strong position of his own, notably in that of *Farrar* v. *Close* (1869), which materially affected the legal status of trade unions and was regarded by unionists as a severe blow to their interests. Hannen became judge of the Probate and Divorce Court in 1872, and in 1875 he was appointed president of the probate and admiralty division of the High Court of Justice. Here he showed himself a worthy successor to Cresswell and Penzance. Many important causes came before him, but he will chiefly be remembered for the manner in which he presided over the Parnell special commission. His influence pervaded the whole proceedings, and it is understood that he personally penned a large part of the voluminous report. Hannen's last public service was in connexion with the Bering Sea inquiry at Paris, when he acted as one of the British arbitrators. In January 1891 he was appointed a lord of appeal in ordinary (with the dignity of a life peerage), but in that capacity he had few opportunities for displaying his powers, and he retired at the close of the session of 1893. He died in London, after a prolonged illness, on the 29th of March 1894.

HANNIBAL (“mercy” or “favour of Baal”), Carthaginian general and statesman, son of Hamilcar Barca (*q.v.*), was born in 249 or 247 B.C. Destined by his father to succeed him in the work of vengeance against Rome, he was taken to Spain, and while yet a boy gave ample evidence of his military aptitude. Upon the death of his brother-in-law Hasdrubal (221) he was acclaimed commander-in-chief by the soldiers and confirmed in his appointment by the Carthaginian government. After two years spent in completing the conquest of Spain south of the Ebro, he set himself to begin what he felt to be his life’s task, the conquest and humiliation of Rome. Accordingly in 219 he seized some pretext for attacking the town of Saguntum (mod. Murviedro), which stood under the special protection of Rome, and disregarding the protests of Roman envoys, stormed it after an eight months’ siege. As the home government, in view of Hannibal’s great popularity, did not venture to repudiate this action, the declaration of war which he desired took place at the end of the year.

Of the large army of Libyan and Spanish mercenaries which he had at his disposal Hannibal selected the most trustworthy and devoted contingents, and with these determined to execute the daring plan of carrying the war into the heart of Italy by a rapid march through Spain and Gaul. Starting in the spring of 218 he easily fought his way through the northern tribes to the Pyrenees, and by conciliating the Gaulish chiefs on his passage contrived to reach the Rhone before the Romans could take any measures to bar his advance. After out-manœuvring the natives, who endeavoured to prevent his crossing, Hannibal evaded a Roman force sent to operate against him in Gaul; he proceeded up the valley of one of the tributaries of the Rhone (Isère or, more probably, Durance), and by autumn arrived at the foot of the Alps. His passage over the mountain-chain, at a point which cannot be determined with certainty, though the balance of the available evidence inclines to the Mt Genèvre pass, and fair cases can be made out for the Col d’Argentière and for Mt Cenis, was one of the most memorable achievements of any military force of ancient times. Though the opposition of the natives and the difficulties of ground and climate cost Hannibal half his army, his perilous march brought him directly into Roman territory and entirely frustrated the attempts of the enemy to fight out the main issue on foreign ground. His sudden appearance among the Gauls, moreover, enabled him to detach most of the tribes from their new allegiance to the Romans before the latter could take steps to check rebellion. After allowing his soldiers a brief rest to recover from their exertions Hannibal first secured his rear by subduing the hostile tribe of the Taurini (mod. Turin), and moving down the Po valley forced the Romans by virtue of his superior cavalry to evacuate the plain of Lombardy. In December of the same year he had an opportunity of showing his superior military skill when the Roman commander attacked him on the river Trebia (near Placentia); after wearing down the excellent Roman infantry he cut it to pieces by a surprise attack from an ambush in the flank. Having secured his position in north Italy by this victory, he quartered his troops for the winter on the Gauls, whose zeal in his cause thereupon began to abate. Accordingly in spring 217 Hannibal decided to find a more trustworthy base of operations farther south; he crossed the Apennines without opposition, but in the marshy lowlands of the Arno he lost a large part of his force through disease and himself became blind in one eye. Advancing through the uplands of Etruria he provoked the main Roman army to a hasty pursuit, and catching it in a defile on the shore of Lake Trasimenus destroyed it in the waters or on the adjoining slopes (see TRASIMENE). He had now disposed of the only field force which could check his advance upon Rome, but realizing that without siege engines he could not hope to take the capital, he preferred to utilize his victory by passing into central and southern Italy and exciting a general revolt against the sovereign power. Though closely watched by a force under Fabius Maximus Cunctator, he was able to carry his ravages far and wide through Italy: on one occasion he was entrapped in the lowlands of Campania, but set himself free by a stratagem which completely deluded his opponent. For the winter he found comfortable quarters in the Apulian plain, into which the enemy dared not descend. In the campaign of 217 Hannibal had failed to obtain a following among the Italians; in the following year he had an opportunity of turning the tide in his favour. A large Roman army advanced into Apulia in order to crush him, and accepted battle on the site of Cannae. Thanks mainly to brilliant cavalry tactics, Hannibal, with much inferior numbers, managed to surround and cut to pieces the whole of this force; moreover, the moral effect of this victory was such that all the south of Italy joined his cause. Had Hannibal now received proper material reinforcements from his countrymen at Carthage he might have made a direct attack upon Rome; for the present he had to content himself with subduing the fortresses which still held out against him, and the only other notable event of 216 was the defection of Capua, the second largest city of Italy, which Hannibal made his new base.

In the next few years Hannibal was reduced to minor operations which centred mainly round the cities of Campania. He failed to draw his opponents into a pitched battle, and in some

slighter engagements suffered reverses. As the forces detached under his lieutenants were generally unable to hold their own, and neither his home government nor his new ally Philip V. of Macedon helped to make good his losses, his position in south Italy became increasingly difficult and his chance of ultimately conquering Rome grew ever more remote. In 212 he gained an important success by capturing Tarentum, but in the same year he lost his hold upon Campania, where he failed to prevent the concentration of three Roman armies round Capua. Hannibal attacked the besieging armies with his full force in 211, and attempted to entice them away by a sudden march through Samnium which brought him within 3 m. of Rome, but caused more alarm than real danger to the city. But the siege continued, and the town fell in the same year. In 210 Hannibal again proved his superiority in tactics by a severe defeat inflicted at Herdoniae (mod. Ordona) in Apulia upon a proconsular army, and in 208 destroyed a Roman force engaged in the siege of Locri Epizephyrii. But with the loss of Tarentum in 209 and the gradual reconquest by the Romans of Samnium and Lucania his hold on south Italy was almost lost. In 207 he succeeded in making his way again into Apulia, where he waited to concert measures for a combined march upon Rome with his brother Hasdrubal (*q.v.*). On hearing, however, of his brother's defeat and death at the Metaurus he retired into the mountain fastnesses of Bruttium, where he maintained himself for the ensuing years. With the failure of his brother Mago (*q.v.*) in Liguria (205-203) and of his own negotiations with Philip of Macedon, the last hope of recovering his ascendancy in Italy was lost. In 203, when Scipio was carrying all before him in Africa and the Carthaginian peace-party were arranging an armistice, Hannibal was recalled from Italy by the "patriot" party at Carthage. After leaving a record of his expedition, engraved in Punic and Greek upon brazen tablets, in the temple of Juno at Crotona, he sailed back to Africa. His arrival immediately restored the predominance of the war-party, who placed him in command of a combined force of African levies and of his mercenaries from Italy. In 202 Hannibal, after meeting Scipio in a fruitless peace conference, engaged him in a decisive battle at Zama. Unable to cope with his indifferent troops against the well-trained and confident Roman soldiers, he experienced a crushing defeat which put an end to all resistance on the part of Carthage.

Hannibal was still only in his forty-sixth year. He soon showed that he could be a statesman as well as a soldier. Peace having been concluded, he was appointed chief magistrate (*suffetes, sofet*). The office had become rather insignificant, but Hannibal restored its power and authority. The oligarchy, always jealous of him, had even charged him with having betrayed the interests of his country while in Italy, and neglected to take Rome when he might have done so. The dishonesty and incompetence of these men had brought the finances of Carthage into grievous disorder. So effectively did Hannibal reform abuses that the heavy tribute imposed by Rome could be paid by instalments without additional and extraordinary taxation.

Seven years after the victory of Zama, the Romans, alarmed at this new prosperity, demanded Hannibal's surrender. Hannibal thereupon went into voluntary exile. First he journeyed to Tyre, the mother-city of Carthage, and thence to Ephesus, where he was honourably received by Antiochus III. of Syria, who was then preparing for war with Rome. Hannibal soon saw that the king's army was no match for the Romans. He advised him to equip a fleet and throw a body of troops on the south of Italy, adding that he would himself take the command. But he could not make much impression on Antiochus, who listened more willingly to courtiers and flatterers, and would not entrust Hannibal with any important charge. In 190 he was placed in command of a Phoenician fleet, but was defeated in a battle off the river Eurymedon.

From the court of Antiochus, who seemed prepared to surrender him to the Romans, Hannibal fled to Crete, but he soon went back to Asia, and sought refuge with Prusias, king of Bithynia. Once more the Romans were determined to hunt him out, and they sent Flaminius to insist on his surrender. Prusias agreed to give him up, but Hannibal did not choose to fall into his enemies' hands. At Libyssa, on the eastern shore of the Sea of Marmora, he took poison, which, it was said, he had long carried about with him in a ring. The precise year of his death was a matter of controversy. If, as Livy seems to imply, it was 183, he died in the same year as Scipio Africanus.

As to the transcendent military genius of Hannibal there cannot be two opinions. The man who for fifteen years could hold his ground in a hostile country against several powerful armies and a succession of able generals must have been a commander and a tactician of supreme capacity. In the use of stratagems and ambuscades he certainly surpassed all other generals of antiquity. Wonderful as his achievements were, we must marvel the more when we take into account the grudging support he received from Carthage. As his veterans melted away, he had to organize fresh levies on the spot. We never hear of a mutiny in his army, composed though it was of Africans, Spaniards and Gauls. Again, all we know of him comes for the most part from hostile sources. The Romans feared and hated him so much that they could not do him justice. Livy speaks of his great qualities, but he adds that his vices were equally great, among which he singles out his "more than Punic perfidy" and "an inhuman cruelty." For the first there would seem to be no further justification than that he was consummately skilful in the use of

ambuscades. For the latter there is, we believe, no more ground than that at certain crises he acted in the general spirit of ancient warfare. Sometimes he contrasts most favourably with his enemy. No such brutality stains his name as that perpetrated by Claudius Nero on the vanquished Hasdrubal. Polybius merely says that he was accused of cruelty by the Romans and of avarice by the Carthaginians. He had indeed bitter enemies, and his life was one continuous struggle against destiny. For steadfastness of purpose, for organizing capacity and a mastery of military science he has perhaps never had an equal.

AUTHORITIES.—Polybius iii.-xv., xxi.-ii., xxiv.; Livy xxi.-xxx.; Cornelius Nepos, *Vita Hannibalis*; Appian, *Bellum Hannibalicum*; E. Hennebert, *Histoire d'Annibal* (Paris, 1870-1891, 3 vols.); F. A. Dodge, *Great Captains, Hannibal* (Boston and New York, 1891); D. Grassi, *Annibale giudicato da Polibio e Tito Livio* (Vicenza, 1896); W. How, *Hannibal and the Great War between Rome and Carthage* (London, 1899); Te Montanari, *Annibale*, down to 217 B.C. (Rovigo, 1901); K. Lehmann, *Die Angriffe der drei Barkiden auf Italien* (Leipzig, 1905), with bibliography. See also PUNIC WARS and articles on the chief battle sites. On Hannibal's passage through Gaul and the Alps see T. Arnold, *The Second Punic War* (ed. W. T. Arnold, London, 1886), Appendix B, pp. 362-373, with bibliography; D. Freshfield in *Alpine Journal* (1883), pp. 267-300; L. Montlahuc, *Le Vrai Chemin d'Annibal à travers les Alpes* (Paris, 1896); J. Fuchs, *Hannibals Alpenübergang* (Vienna, 1897); G. E. Marindin in *Classical Review* (1899), pp. 238-249; W. Osiander, *Der Hannibalweg neu untersucht* (Berlin, 1900); P. Azan, *Annibal dans les Alpes* (Paris, 1902); J. L. Colin, *Annibal en Gaule* (Paris, 1904); E. Hesselmeyer, *Hannibals Alpenübergang im Lichte der neueren Kriegsgeschichte*, (1906); Kromyer, in *N. Jahrb. f. kl. Alt.* (1907).

(M. O. B. C.)

HANNIBAL, a city of Marion county, Missouri, U.S.A., on the Mississippi river, about 120 m. N.W. of Saint Louis. Pop. (1890), 12,857; (1900), 12,780, including 920 foreign-born and 1836 negroes; (1910) 18,341. It is served by the Wabash, the Missouri, Kansas & Texas, the Chicago, Burlington & Quincy, and the St Louis & Hannibal railways, and by boat lines to Saint Louis, Saint Paul and intermediate points. The business section is in the level bottom-lands of the river, while the residential portion spreads up the banks, which afford fine building sites with beautiful views. Mark Twain's boyhood was spent at Hannibal, which is the setting of *Life on the Mississippi*, *Huckleberry Finn* and *Tom Sawyer*; Hannibal Cave, described in *Tom Sawyer*, extends for miles beneath the river and its bluffs. Hannibal has a good public library (1889; the first in Missouri); other prominent buildings are the Federal building, the court house, a city hospital and the high school. The river is here spanned by a long iron and steel bridge connecting with East Hannibal, Ill. Hannibal is the trade centre of a rich agricultural region, and has an important lumber trade, railway shops, and manufactories of lumber, shoes, stoves, flour, cigars, lime, Portland cement and pearl buttons (made from mussel shells); the value of the city's factory products increased from $2,698,720 in 1900 to $4,442,099 in 1905, or 64.6%. In the vicinity are valuable deposits of crinoid limestone, a coarse white building stone which takes a good polish. The electric-lighting plant is owned and operated by the municipality. Hannibal was laid out as a town in 1819 (its origin going back to Spanish land grants, which gave rise to much litigation) and was first chartered as a city in 1839. The town of South Hannibal was annexed to it in 1843.

HANNINGTON, JAMES (1847-1885), English missionary, was born at Hurstpierpoint, in Sussex, on the 3rd of September 1847. From earliest childhood he displayed a love of adventure and natural history. At school he made little progress, and left at the age of fifteen for his father's counting-house at Brighton. He had no taste for office work, and much of his time was occupied in commanding a battery of volunteers and in charge of a steam launch. At twenty-one he decided on a clerical career and entered St Mary's Hall, Oxford, where he exercised a remarkable influence over his fellow-undergraduates. He was, however, a desultory student, and in 1870 was advised to go to the little village of Martinhoe, in Devon, for quiet reading, but distinguished himself more by his daring climbs after sea-gulls' eggs and his engineering skill in cutting a pathway along precipitous cliffs to some caves. In 1872 the death of his mother made a deep impression upon him. He began to read hard, took his B.A. degree, and in 1873 was ordained deacon and placed in charge of the small country parish of Trentishoe in Devon. Whilst curate in charge at Hurstpierpoint, his thoughts were turned by the murder of two missionaries

on the shores of Victoria Nyanza to mission work. He offered himself to the Church Missionary Society and sailed on the 17th of May 1882, at the head of a party of six, for Zanzibar, and thence set out for Uganda; but, prostrated by fever and dysentery, he was obliged to return to England in 1883. On his recovery he was consecrated bishop of Eastern Equatorial Africa (June 1884), and in January 1885 started again for the scene of his mission, and visited Palestine on the way. On his arrival at Freretown, near Mombasa, he visited many stations in the neighbourhood. Then, filled with the idea of opening a new route to Uganda, he set out and reached a spot near Victoria Nyanza in safety. His arrival, however, roused the suspicion of the natives, and under King Mwanga's orders he was lodged in a filthy hut swarming with rats and vermin. After eight days his men were murdered, and on the 29th of October 1885 he himself was speared in both sides, his last words to the soldiers appointed to kill him being, "Go, tell Mwanga I have purchased the road to Uganda with my blood."

His *Last Journals* were edited in 1888. See also *Life* by E. C. Dawson (1887); and W. G. Berry, *Bishop Hannington* (1908).

HANNINGTON, a lake of British East Africa in the eastern rift-valley just south of the equator and in the shadow of the Laikipia escarpment. It is 7 m. long by 2 m. broad. The water is shallow and brackish. Standing in the lake and along its shores are numbers of dead trees, the remains of an ancient forest, which serve as eyries for storks, herons and eagles. The banks and flats at the north end of the lake are the resort of hundreds of thousands of flamingoes. The places where they cluster are dazzling white with guano deposits. The lake is named after Bishop James Hannington.

HANNO, the name of a large number of Carthaginian soldiers and statesmen. Of the majority little is known; the most important are the following[1]:—

1. Hanno, Carthaginian navigator, who probably flourished about 500 B.C. It has been conjectured that he was the son of the Hamilcar who was killed at Himera (480), but there is nothing to prove this. He was the author of an account of a coasting voyage on the west coast of Africa, undertaken for the purpose of exploration and colonization. The original, inscribed on a tablet in the Phoenician language, was hung up in the temple of Melkarth on his return to Carthage. What is generally supposed to be a Greek translation of this is still extant, under the title of *Periplus*, although its authenticity has been questioned. Hanno appears to have advanced beyond Sierra Leone as far as Cape Palmas. On the island which formed the terminus of his voyage the explorer found a number of hairy women, whom the interpreters called Gorillas (Γορίλλας).

Valuable editions by T. Falconer (1797, with translation and defence of its authenticity) and C. W. Müller in *Geographici Graeci minores*, i.; see also E. H. Bunbury, *History of Ancient Geography*, i., and treatise by C. T. Fischer (1893), with bibliography.

2. Hanno (3rd century B.C.), called "the Great," Carthaginian statesman and general, leader of the aristocratic party and the chief opponent of Hamilcar and Hannibal. He appears to have gained his title from military successes in Africa, but of these nothing is known. In 240 B.C. he drove Hamilcar's veteran mercenaries to rebellion by withholding their pay, and when invested with the command against them was so unsuccessful that Carthage might have been lost but for the exertions of his enemy Hamilcar (*q.v.*). Hanno subsequently remained at Carthage, exerting all his influence against the democratic party, which, however, had now definitely won the upper hand. During the Second Punic War he advocated peace with Rome, and according to Livy even advised that Hannibal should be given up to the Romans. After the battle of Zama (202) he was one of the ambassadors sent to Scipio to sue for peace. Remarkably little is known of him, considering the great influence he undoubtedly exercised amongst his countrymen.

Livy xxi. 3 ff., xxiii. 12; Polybius i. 67 ff.; Appian, *Res Hispanicae*, 4, 5, *Res Punicae*, 34, 49, 68.

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1 For others of the name see Carthage; Hannibal; Punic Wars. Smith's *Classical Dictionary* has notices of some thirty of the name.

HANOI, capital of Tongking and of French Indo-China, on the right bank of the Song-koi or Red river, about 80 m. from its mouth in the Gulf of Tongking. Taking in the suburban population the inhabitants numbered in 1905 about 110,000, including 103,000 Annamese, 2289 Chinese and 2665 French, exclusive of troops. Hanoi resembles a European city in the possession of wide well-paved streets and promenades, systems of electric light and drainage and a good water-supply. A crowded native quarter built round a picturesque lake lies close to the river with the European quarter to the south of it. The public buildings include the palace of the governor-general, situated in a spacious botanical and zoological garden, the large military hospital, the cathedral of St Joseph, the Paul Bert college, and the theatre. The barracks and other military buildings occupy the site of the old citadel, an area of over 300 acres, to the west of the native town. The so-called pagoda of the Great Buddha is the chief native building. The river is embanked and is crossed by the Pont Doumer, a fine railway bridge over 1 m. long. Vessels drawing 8 or 9 ft. can reach the town. Hanoi is the seat of the general government of Indo-China, of the resident-superior of Tongking, and of a bishop, who is vicar-apostolic of central Tongking. It is administered by an elective municipal council with a civil service administrator as mayor. It has a chamber of commerce, the president of which has a seat on the superior council of Indo-China; a chamber of the court of appeal of Indo-China, a civil tribunal of the first order, and is the seat of the chamber of agriculture of Tongking. Its industries include cotton-spinning, brewing, distilling, and the manufacture of tobacco, earthenware and matches; native industry produces carved and inlaid furniture, bronzes and artistic metal-work, silk embroidery, &c. Hanoi is the junction of railways to Hai-Phong, its seaport, Lao-Kay, Vinh, and the Chinese frontier via Lang-Son. It is in frequent communication with Hai-Phong by steamboat.

See C. Madrolle, *Tonkin du sud: Hanoi* (Paris, 1907).

HANOTAUX, ALBERT AUGUSTE GABRIEL (1853-), French statesman and historian, was born at Beaurevoir in the department of Aisne. He received his historical training in the École des Chartes, and became *maître de conférences* in the École des Hautes Études. His political career was rather that of a civil servant than of a party politician. In 1879 he entered the ministry of foreign affairs as a secretary, and rose step by step through the diplomatic service. In 1886 he was elected deputy for Aisne, but, defeated in 1889, he returned to his diplomatic career, and on the 31st of May 1894 was chosen by Charles Dupuy to be minister of foreign affairs. With one interruption (during the Ribot ministry, from the 26th of January to the 2nd of November 1895) he held this portfolio until the 14th of June 1898. During his ministry he developed the *rapprochement* of France with Russia—visiting St Petersburg with the president, Felix Faure—and sent expeditions to delimit the French colonies in Africa. The Fashoda incident of July 1898 was a result of this policy, and Hanotaux's distrust of England is frankly stated in his literary works. As an historian he published *Origines de l'institution des intendants de provinces* (1884), which is the authoritative study on the intendants; *Études historiques sur les XVI^{e} et XVII^{e} siècles en France* (1886); *Histoire de Richelieu* (2 vols., 1888); and *Histoire de la Troisième République (1904, &c.), the standard history of contemporary France.* He also edited the *Instructions des ambassadeurs de France à Rome, depuis les traités de Westphalie* (1888). He was elected a member of the French Academy on the 1st of April 1897.

HANOVER (Ger. *Hannover*), formerly an independent kingdom of Germany, but since 1866 a province of Prussia. It is bounded on the N. by the North Sea, Holstein, Hamburg and Mecklenburg-Schwerin, E. and S.E. by Prussian Saxony and the duchy of Brunswick, S.W. by the Prussian provinces of Hesse-Nassau and Westphalia, and W. by Holland. These boundaries include the grand-duchy of Oldenburg and the free state of Bremen, the former stretching southward from the North Sea nearly to the southern boundary of Hanover. A small portion of the province in the south is separated from Hanover proper by the interposition of part of Brunswick. On the 23rd of March 1873 the province was increased by the addition of the Jade territory (purchased by Prussia from Oldenburg), lying south-west of the Elbe and containing the great naval station and arsenal of Wilhelmshaven. The area of the province is 14,870 sq. m.

Physical Features.—The greater part of Hanover is a plain with sandhills, heath and moor. The most fertile districts lie on the banks of the Elbe and near the North Sea, where, as in Holland,

rich meadows are preserved from encroachment of the sea by broad dikes and deep ditches, kept in repair at great expense. The main feature of the northern plain is the so-called *Lüneburger Heide*, a vast expanse of moor and fen, mainly covered with low brushwood (though here and there are oases of fine beech and oak woods) and intersected by shallow valleys, and extending almost due north from the city of Hanover to the southern arm of the Elbe at Harburg. The southern portion of the province is hilly, and in the district of Klausenburg, containing the Harz, mountainous. The higher elevations are covered by dense forests of fir and larch, and the lower slopes with deciduous trees. The eastern portion of the northern plain is covered with forests of fir. The whole of Hanover dips from the Harz Mountains to the north, and the rivers consequently flow in that direction. The three chief rivers of the province are the Elbe in the north-east, where it mainly forms the boundary and receives the navigable tributaries Jeetze, Ilmenau, Seve, Este, Lühe, Schwinge and Medem; the Weser in the centre, with its important tributary the Aller (navigable from Celle downwards); and in the west the Ems, with its tributaries the Aa and the Leda. Still farther West is the Vecht, which, rising in Westphalia, flows to the Zuider Zee. Canals are numerous and connect the various river systems.

The principal lakes are the Steinhuder Meer, about 4 m. long and 2 m. broad, and 20 fathoms deep, on the borders of Schaumburg-Lippe; the Dümmersee, on the borders of Oldenburg, about 12 m. in circuit; the lakes of Bederkesa and some others in the moorlands of the north; the Seeburger See, near Duderstadt; and the Oderteich, in the Harz, 2100 ft. above the level of the sea.

Climate.—The climate in the low-lying districts near the coast is moist and foggy, in the plains mild, on the Harz mountains severe and variable. In spring the prevailing winds blow from the N.E. and E., in summer from the S.W. The mean annual temperature is about 46° Fahr.; in the town of Hanover it is higher. The average annual rainfall is about 23.5 in.; but this varies greatly in different districts. In the west the Herauch, a thick fog arising from the burning of the moors, is a plague of frequent occurrence.

Population; Divisions.—The province contains an area of 14,869 sq. m., and the total population, according to the census of 1905, was 2,759,699 (1,384,161 males and 1,375,538 females). In this connexion it is noticeable that in Hanover, almost alone among German states and provinces, there is a considerable proportion of male births over female. The density of the population is 175 to the sq. m. (English), and the proportion of urban to rural population, roughly, as 1 to 3 of the inhabitants. The province is divided into the six *Regierungsbezirke* (or departments) of Hanover, Hildesheim, Lüneburg, Stade, Osnabrück and Aurich, and these again into Kreise (circles, or local government districts)—76 in all. The chief towns—containing more than 10,000 inhabitants—are Hanover, Linden, Osnabrück, Hildesheim, Geestemünde, Wilhelmshaven, Harburg, Lüneburg, Celle, Göttingen and Emden. Religious statistics show that 84% of the inhabitants belong to the Evangelical-Lutheran Church, 17 to the Roman Catholic and less than 1% to the Jewish communities. The Roman Catholics are mostly gathered around the episcopal sees of Hildesheim and Osnabrück and close to Münster (in Westphalia) on the western border, and the Jews in the towns. A court of appeal for the whole province sits at Celle, and there are eight superior courts. Hanover returns 19 members to the *Reichstag* (imperial diet) and 36 to the *Abgeordnetenhaus* (lower house) of the Prussian parliament (*Landtag*).

Education.—Among the educational institutions of the province the university of Göttingen stands first, with an average yearly attendance of 1500 students. There are, besides, a technical college in Hanover, an academy of forestry in Münden, a mining college in Clausthal, a military school and a veterinary college (both in Hanover), 26 gymnasia (classical schools), 18 semi-classical, and 14 commercial schools. There are also two naval academies, asylums for the deaf and dumb, and numerous charitable institutions.

Agriculture.—Though agriculture constitutes the most important branch of industry in the province, it is still in a very backward state. The greater part of the soil is of inferior quality, and much that is susceptible of cultivation is still lying waste. Of the entire area of the country 28.6% is arable, 16.2 in meadow or pasture land, 14% in forests, 37.2% in uncultivated moors, heaths, &c.; from 17 to 18% is in possession of the state. The best agriculture is to be found in the districts of Hildesheim, Calenberg, Göttingen and Grubenhagen, on the banks of the Weser and Elbe, and in East Friesland. Rye is generally grown for bread. Flax, for which much of the soil is admirably adapted, is extensively cultivated, and forms an important article of export, chiefly, however, in the form of yarn. Potatoes, hemp, turnips, hops, tobacco and beet are also extensively grown, the latter, in connexion with the sugar industry, showing each year a larger return. Apples, pears, plums and cherries are the principal kinds of fruit cultivated, while the wild red cranberries from the Harz and the black bilberries from the Lüneburger Heide form an important article of export.

Live Stock.—Hanover is renowned for its cattle and live stock generally. Of these there were counted in 1900 1,115,022 head of horned cattle, 824,000 sheep, 1,556,000 pigs, and 230,000 goats. The Lüneburger Heide yields an excellent breed of sheep, the *Heidschnucken*, which equal the Southdowns of England in delicacy of flavour. Horses famous for their size and quality are reared in the marshes of Aurich and Stade, in Hildesheim and Hanover; and, for breeding purposes, in the stud farm of Celle. Bees are principally kept on the Lüneburger Heide, and the

annual yield of honey is very considerable. Large flocks of geese are kept in the moist lowlands; their flesh is salted for domestic consumption during the winter, and their feathers are prepared for sale. The rivers yield trout, salmon (in the Weser) and crayfish. The sea fisheries are important and have their chief centre at Geestemünde.

Mining.—Minerals occur in great variety and abundance. The Harz Mountains are rich in silver, lead, iron and copper; coal is found around Osnabrück, on the Deister, at Osterwald, &c., lignite in various places; salt-springs of great richness exist at Egestorfshall and Neuhall near Hanover, and at Lüneburg; and petroleum may be obtained south of Celle. In the cold regions of the northern lowlands peat occurs in beds of immense thickness.

Manufactures.—Works for the manufacture of iron, copper, silver, lead, vitriol and sulphur are carried on to a large extent. The iron works are very important: smelting is carried on in the Harz and near Osnabrück; there are extensive foundries and machine factories at Hanover, Linden, Osnabrück, Hameln, Geestemünde, Harburg, Osterode, &c., and manufactories of arms at Herzberg, and of cutlery in the towns of the Harz and in the Sollinger Forest. The textile industries are prosecuted chiefly in the towns. Linen yarn and cloth are largely manufactured, especially in the south about Osnabrück and Hildesheim, and bleaching is engaged in extensively; woollen cloths are made to a considerable extent in the south about Einbeck, Göttingen and Hameln; cotton-spinning and weaving have their principal seats at Hanover and Linden. Glass houses, paper-mills, potteries, tile works and tobacco-pipe works are numerous. Wax is bleached to a considerable extent, and there are numerous tobacco factories, tanneries, breweries, vinegar works and brandy distilleries. Shipbuilding is an important industry, especially at Wilhelmshaven, Papenburg, Leer, Stade and Harburg; and at Münden river-barges are built.

Commerce.—Although the carrying trade of Hanover is to a great extent absorbed by Hamburg and Bremen, the shipping of the province counted, in 1903, 750 sailing vessels and 86 steamers of, together, 55,498 registered tons. The natural port is Bremen-Geestemünde and to it is directed the river traffic down the Weser, which practically forms the chief commercial artery of the province.

Communications.—The roads throughout are, on the whole, well laid, and those connecting the principal towns macadamized. Hanover is intersected by important trunk lines of railway; notably the lines from Berlin to Cologne, from Hamburg to Frankfort-on-Main, from Hamburg to Bremen and Cologne, and from Berlin to Amsterdam.

History.—The name Hanover (*Hohenufer* = high bank), originally confined to the town which became the capital of the duchy of Lüneburg-Calenberg, came gradually into use to designate, first, the duchy itself, and secondly, the electorate of Brunswick-Lüneburg; and it was officially recognized as the name of the state when in 1814 the electorate was raised to the rank of a kingdom.

The early history of Hanover is merged in that of the duchy of Brunswick (*q.v.*), from which the duchy of Brunswick-Lüneburg and its offshoots, the duchies of Lüneburg-Celle and Lüneburg-Calenberg have sprung. Ernest I. (1497-1546), duke of Brunswick-Lüneburg, who introduced the reformed doctrines into Lüneburg, obtained the whole of this duchy in 1539; and in 1569 his two surviving sons made an arrangement which was afterwards responsible for the birth of the kingdom of Hanover. By this agreement the greater part of the duchy, with its capital at Celle, came to William (1535-1592), the younger of the brothers, who gave laws to his land and added to its area; and this duchy of Lüneburg-Celle was subsequently ruled in turn by four of his sons: Ernest II. (1564-1611), Christian (1566-1633), Augustus (d. 1636) and Frederick (d. 1648). In addition to these four princes Duke William left three other sons, and in 1610 the seven brothers entered into a compact that the duchy should not be divided, and that only one of them should marry and continue the family. Casting lots to determine this question, the lot fell upon the sixth brother, George (1582-1641), who was a prominent soldier during the period of the Thirty Years' War and saw service in almost all parts of Europe, fighting successively for Christian IV. of Denmark, the emperor Ferdinand II., and for the Swedes both before and after the death of Gustavus Adolphus. In 1617 he aided his brother, Duke Christian, to add Grubenhagen to Lüneburg, and after the extinction of the family of Brunswick-Wolfenbüttel in 1634, he obtained Calenberg for himself, making Hanover the capital of his small dukedom. In 1648, on Duke Frederick's death, George's eldest son, Christian Louis (d. 1665), became duke of Lüneburg-Celle; and at this time he handed over Calenberg, which he had ruled since his father's death, to his second brother, George William (d. 1705). When Christian Louis died George William succeeded him in Lüneburg-Celle; but the duchy was also claimed by a younger brother, John Frederick, a cultured and enlightened prince who had forsaken the Lutheran faith of his family and had become a Roman Catholic. Soon, however, by an arrangement John Frederick received Calenberg and Grubenhagen, which he ruled in absolute fashion, creating a standing army and modelling his court after that of Louis XIV., and which came on his death in 1679 to his youngest brother, Ernest Augustus (1630-1698), the Protestant bishop of Osnabrück. During the French wars of aggression the Lüneburg princes were eagerly courted by Louis XIV. and by his

opponents; and after some hesitation George William, influenced by Ernest Augustus, fought among the Imperialists, while John Frederick was ranged on the side of France. In 1689 George William was one of the claimants for the duchy of Saxe-Lauenburg, which was left without a ruler in that year; and after a struggle with John George III., elector of Saxony, and other rivals, he was invested with the duchy by the emperor Leopold I. It was, however, his more ambitious brother, Ernest Augustus, who did most for the prestige and advancement of the house. Having introduced the principle of primogeniture into Calenberg in 1682, Ernest determined to secure for himself the position of an elector, and the condition of Europe and the exigencies of the emperor favoured his pretensions. He made skilful use of Leopold's difficulties; and in 1692, in return for lavish promises of assistance to the Empire and the Habsburgs, the emperor granted him the rank and title of elector of Brunswick-Lüneburg with the office of standard-bearer in the Holy Roman Empire. Indignant protests followed this proceeding. A league was formed to prevent any addition to the electoral college; France and Sweden were called upon for assistance; and the constitution of the Empire was reduced to a state of chaos. This agitation, however, soon died away; and in 1708 George Louis, the son and successor of Ernest Augustus, was recognized as an elector by the imperial diet. George Louis married his cousin Sophia Dorothea, the only child of George William of Lüneburg-Celle; and on his uncle's death in 1705 he united this duchy, together with Saxe-Lauenburg, with his paternal inheritance of Calenberg or Hanover. His father, Ernest Augustus, had taken a step of great importance in the history of Hanover when he married Sophia, daughter of the elector palatine, Frederick V., and granddaughter of James I. of England, for, through his mother, the elector George Louis became, by the terms of the Act of Settlement of 1701, king of Great Britain and Ireland in 1714.

From this time until the death of William IV. in 1837, Lüneburg or Hanover, was ruled by the same sovereign as Great Britain, and this personal union was not without important results for both countries. Under George I. Hanover joined the alliance against Charles XII. of Sweden in 1715; and by the peace of Stockholm in November 1719 the elector received the duchies of Bremen and Verden, which formed an important addition to the electorate. His son and successor, George II., who founded the university of Göttingen in 1737, was on bad terms with his brother-in-law Frederick William I. of Prussia, and his nephew Frederick the Great; and in 1729 war between Prussia and Hanover was only just avoided. In 1743 George took up arms on behalf of the empress Maria Theresa; but in August 1745 the danger in England from the Jacobites led him to sign the convention of Hanover with Frederick the Great, although the struggle with France raged around his electorate until the peace of Aix-la-Chapelle in 1748. Induced by political exigencies George allied himself with Frederick the Great when the Seven Years' War broke out in 1756; but in September 1757 his son William Augustus, duke of Cumberland, was compelled after his defeat at Hastenbeck to sign the convention of Klosterzeven and to abandon Hanover to the French. English money, however, came to the rescue; in 1758 Ferdinand, duke of Brunswick, cleared the electorate of the invader; and Hanover suffered no loss of territory at the peace of 1763. Both George I. and George II. preferred Hanover to England as a place of residence, and it was a frequent and perhaps justifiable cause of complaint that the interests of Great Britain were sacrificed to those of the smaller country. But George III. was more British than either his grandfather or his great-grandfather, and owing to a variety of causes the foreign policies of the two countries began to diverge in the later years of his reign. Two main considerations dominated the fortunes of Hanover during the period of the Napoleonic wars, the jealousy felt by Prussia at the increasing strength and prestige of the electorate, and its position as a vulnerable outpost of Great Britain. From 1793 the Hanoverian troops fought for the Allies against France, until the treaty of Basel between France and Prussia in 1795 imposed a forced neutrality upon Hanover. At the instigation of Bonaparte Hanover was occupied by the Prussians for a few months in 1801, but at the settlement which followed the peace of Lunéville the secularized bishopric of Osnabrück was added to the electorate. Again tempting the fortune of war after the rupture of the peace of Amiens, the Hanoverians found that the odds against them were too great; and in June 1803 by the convention of Sulingen their territory was occupied by the French. The formation of the third coalition against France in 1805 induced Napoleon to purchase the support of Prussia by allowing her troops to seize Hanover; but in 1807, after the defeat of Prussia at Jena, he incorporated the southern part of the electorate in the kingdom of Westphalia, adding the northern portion to France in 1810. The French occupation was costly and aggressive; and the Hanoverians, many of whom were found in the allied armies, welcomed the fall of Napoleon and the return of the old order. Represented at the congress of Vienna by Ernest, Count Münster, the elector was granted the title of king; but the British ministers wished to keep the interests of Great Britain distinct from those of Hanover. The result of the congress, however, was not unfavourable to the new kingdom, which received East Friesland, the secularized bishopric of Hildesheim, the city of Goslar, and some smaller additions of territory, in return for the surrender of the greater part of the duchy of Saxe-Lauenburg to Prussia.

Like those of the other districts of Germany, the estates of the different provinces which formed the kingdom of Hanover had met for many years in an irregular fashion to exercise their

varying and ill-defined authority; and, although the elector Ernest Augustus introduced a system of administrative councils into Celle, these estates, consisting of the three orders of prelates, nobles and towns, together with a body somewhat resembling the English privy council, were the only constitution which the country possessed, and the only check upon the power of its ruler. When the elector George Louis became king of Great Britain in 1714 he appointed a representative, or *Statthalter*, to govern the electorate, and thus the union of the two countries was attended with constitutional changes in Hanover as well as in Great Britain. Responsible of course to the elector, the Statthalter, aided by the privy council, conducted the internal affairs of the electorate, generally in a peaceful and satisfactory fashion, until the welter of the Napoleonic wars. On the conclusion of peace in 1814 the estates of the several provinces of the kingdom were fused into one body, consisting of eighty-five members, but the chief power was exercised as before by the members of a few noble families. In 1819, however, this feudal relic was supplanted by a new constitution. Two chambers were established, the one formed of nobles and the other of elected representatives; but although they were authorized to control the finances, their power with regard to legislation was very circumscribed. This constitution was sanctioned by the prince regent, afterwards King George IV.; but it was out of harmony with the new and liberal ideas which prevailed in Europe, and it hardly survived George’s decease in 1830. The revolution of that year compelled George’s brother and successor, William, to dismiss Count Münster, who had been the actual ruler of the country, and to name his own brother, Adolphus Frederick, duke of Cambridge, a viceroy of Hanover; one of the viceroy’s earliest duties being to appoint a commission to draw up a new constitution. This was done, and after William had insisted upon certain alterations, it was accepted and promulgated in 1833. Representation was granted to the peasants; the two chambers were empowered to initiate legislation; ministers were made responsible for all acts of government; a civil list was given to the king in return for the surrender of the crown lands; and, in short, the new constitution was similar to that of Great Britain. These liberal arrangements, however, did not entirely allay the discontent. A strong and energetic party endeavoured to thwart the working of the new order, and matters came to a climax on the death of William IV. in 1837.

By the law of Hanover a woman could not ascend the throne, and accordingly Ernest Augustus, duke of Cumberland, the fifth son of George III., and not Victoria, succeeded William as sovereign in 1837, thus separating the crowns of Great Britain and Hanover after a union of 123 years. Ernest, a prince with very autocratic ideas, had disapproved of the constitution of 1833, and his first important act as king was to declare it invalid. He appears to have been especially chagrined because the crown lands were not his personal property, but the whole of the new arrangements were repugnant to him. Seven Göttingen professors who protested against this proceeding were deprived of their chairs; and some of them, including F. C. Dahlmann and Jakob Grimm, were banished from the country for publishing their protest. To save the constitution an appeal was made to the German Confederation, which Hanover had joined in 1815; but the federal diet declined to interfere, and in 1840 Ernest altered the constitution to suit his own illiberal views. Recovering the crown lands, he abolished the principle of ministerial responsibility, the legislative power of the two chambers, and other reforms, virtually restoring affairs to their condition before 1833. The inevitable crisis was delayed until the stormy year 1848, when the king probably saved his crown by hastily giving back the constitution of 1833. Order, however, having been restored, in 1850 he dismissed the Liberal ministry and attempted to evade his concessions; a bitter struggle had just broken out when Ernest Augustus died in November 1851. During this reign the foreign policy of Hanover both within and without Germany had been coloured by jealousy of Prussia and by the king’s autocratic ideas. Refusing to join the Prussian *Zollverein*, Hanover had become a member of the rival commercial union, the *Steuerverein*, three years before Ernest’s accession; but as this union was not a great success the *Zollverein* was joined in 1851. In 1849, after the failure of the German parliament at Frankfort, the king had joined with the sovereigns of Prussia and Saxony to form the “three kings’ alliance”; but this union with Prussia was unreal, and with the king of Saxony he soon transferred his support to Austria and became a member of the “four kings’ alliance.”

George V., the new king of Hanover, who was unfortunately blind, sharing his father’s political ideas, at once appointed a ministry whose aim was to sweep away the constitution of 1848. This project, however, was resisted by the second chamber of the *Landtag*, or parliament; and after several changes of government a new ministry advised the king in 1855 to appeal to the diet of the German Confederation. This was done, and the diet declared the constitution of 1848 to be invalid. Acting on this verdict, not only was a ministry formed to restore the constitution of 1840, but after some trouble a body of members fully in sympathy with this object was returned to parliament in 1857. But these members were so far from representing the opinions of the people that popular resentment compelled George to dismiss his advisers in 1862. But the more liberal government which succeeded did not enjoy his complete confidence, and in 1865 a ministry was once more formed which was more in accord with his own ideas. This contest soon lost both interest and importance owing to the condition of affairs in Germany. Bismarck, the director of

the policy of Prussia, was devising methods for the realization of his schemes, and it became clear after the war over the duchies of Schleswig and Holstein that the smaller German states would soon be obliged to decide definitely between Austria and Prussia. After a period of vacillation Hanover threw in her lot with Austria, the decisive step being taken when the question of the mobilization of the federal army was voted upon in the diet on the 14th of June 1866. At once Prussia requested Hanover to remain unarmed and neutral during the war, and with equal promptness King George refused to assent to these demands. Prussian troops then crossed his frontier and took possession of his capital. The Hanoverians, however, were victorious at the battle of Langensalza on the 27th of June 1866, but the advance of fresh bodies of the enemy compelled them to capitulate two days later. By the terms of this surrender the king was not to reside in Hanover, his officers were to take no further part in the war, and his ammunition and stores became the property of Prussia. The decree of the 20th of September 1866 formally annexed Hanover to Prussia, when it became a province of that kingdom, while King George from his retreat at Hietzing appealed in vain to the powers of Europe. Many of the Hanoverians remained loyal to their sovereign; some of them serving in the Guelph Legion, which was maintained largely at his expense in France, where a paper, *La Situation*, was founded by Oskar Meding (1829-1903) and conducted in his interests. These and other elaborate efforts, however, failed to bring about the return of the king to Hanover, though the Guelph party continued to agitate and to hope even after the Franco-German War had immensely increased the power and the prestige of Prussia. George died in June 1878. His son, Ernest Augustus, duke of Cumberland, continued to maintain his claim to the crown of Hanover, and refused to be reconciled with Prussia. Owing to this attitude the German imperial government refused to allow him to take possession of the duchy of Brunswick, which he inherited on the extinction of the elder branch of his family in 1884, and again in 1906 when the same subject came up for settlement on the death of the regent, Prince Albert of Prussia.

In 1867 King George had agreed to accept Prussian bonds to the value of about £1,600,000 as compensation for the confiscation of his estates in Hanover. In 1868, however, on account of his continued hostility to Prussia, the Prussian government sequestrated this property; and, known as the *Welfenfonds*, or *Reptilienfonds*, it was employed as a secret service fund to combat the intrigues of the Guelphs in various parts of Europe; until in 1892 it was arranged that the interest should be paid to the duke of Cumberland. In 1885 measures were taken to incorporate the province of Hanover more thoroughly in the kingdom of Prussia, and there is little doubt but that the great majority of the Hanoverians have submitted to the inevitable, and are loyal subjects of the king of Prussia.

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HANOVER, the capital of the Prussian province of the same name, situated in a sandy but fertile plain on the Leine, which here receives the Ihme, 38 m. N.W. from Brunswick, 78 S.E. of Bremen, and at the crossing of the main lines of railway, Berlin to Cologne and Hamburg to Frankfort-on-Main. Pop. (1885) 139,731; (1900) 235,666; (1905) 250,032. On the north and east the town is half encircled by the beautiful woods and groves of the Eilenriede and the List which form the public park. The Leine flows through the city, having the old town on its right and the quaint Calenberger quarter between its left bank and the Ihme. The old town is irregularly built, with narrow streets and old-fashioned gabled houses. In its centre lies the Markt Kirche, a red-brick edifice of the 14th century, containing interesting monuments and some fine stained-glass windows, and with a steeple 310 ft. in height (the highest in Hanover). Its interior was restored in 1855. Close by, on the market square, is the red-brick medieval town-hall (Rathaus), with an historical wine cellar beneath. It has been superseded for municipal business by a new building, and now contains the civic archives and museum. The new town, surrounding the old on the north and east, and lying between it and the woods referred to, has wide streets, handsome buildings and beautiful squares. Among the last-mentioned are the square at the railway station

—the Ernst August-Platz—with an equestrian statue of King Ernest Augustus in bronze; the triangular Theater-Platz, with statues of the composer Marschner and others; and the Georgs-Platz, with a statue of Schiller. To the south of the old town, on the banks of the Ihme, lies the Waterloo-Platz, with a column of victory, 154 ft. high, having inscribed on it the names of 800 Hanoverians who fell at Waterloo. In the adjacent gardens an open rotunda encloses a marble bust of the philosopher Leibnitz, and near it is a monument to General Count von Alten, the commander of the Hanoverian troops at Waterloo. Among the other churches the most noticeable are the Neustädterkirche, with a graceful shrine containing the tomb of Leibnitz, the Kreuzkirche, built about 1300, with a curious steeple, and the Aegidienkirche among ancient edifices, and among modern ones the Christuskirche, a gift of King George V., the Lukaskirche, the Lutherkirche, and the Roman Catholic church of St Mary, with a tower 300 ft. high, containing the grave of Ludwig Windthorst, “his little excellency,” for many years leader of the Ultramontane (Centre) party in the imperial diet. Of secular buildings the most remarkable is the royal palace—Schloss—built 1636-1640, with a grand portal and handsome quadrangle. In its chapel are preserved the relics of saints which Henry the Lion brought from Palestine. The new provincial museum built in 1897-1902 contains the Cumberland Gallery and the Guelph Museum; and the Kestner Museum also contains interesting and valuable collections of works of art. The other principal public buildings are the royal archives and library, containing a library of 200,000 volumes and 3500 manuscripts; the old provincial museum, which houses a variety of collections, such as natural, historical and ethnographical, and a collection of modern paintings; the theatre (built 1845-1852), one of the largest in Germany, the archaeological museum, the railway station, and, in the west, close to Herrenhausen (see below), the magnificent Welfenschloss (Guelph-palace). The last, begun in 1859, was almost completed in 1866, but was never occupied by the Hanoverian royal family. Since 1875 it has been occupied by the technical high school, an academy with university privileges. Close to it lies the famous Herrenhausen, the summer palace of the former kings of Hanover, with fine gardens, an open-air theatre, a museum and an orangery, and approached by a grand avenue over a mile in length.

Hanover has a number of colleges and schools, and is the seat of several learned societies. It is largely frequented by foreign students, especially English, attracted by the educational facilities it offers and by the reputed purity of the German spoken. Hanover is the headquarters of the X. Prussian army corps, has a large garrison of nearly all arms and a famous military riding school. It occupies a leading position among the industrial and commercial towns of the empire, and of recent years has made rapid progress in prosperity. It is connected by railway with Berlin, Hamburg, Bremen, Hameln, Cologne, Altenbeken and Cassel, and the facilities of intercourse have, under the fostering care of the Prussian government, enormously developed its trade and manufactures. Almost all industries are represented; chief among them are machine-building, the manufacture of india-rubber, linen, cloth, hardware, chemicals, tobacco, pianos, furniture and groceries. The commerce consists principally in wine, hides, horses, coal, wood and cereals. There are extensive printing establishments. Hanover was the first German town that was lighted with gas. It is the birthplace of Sir William Herschel, the astronomer, of the brothers Schlegel, of Iffland and of the historian Pertz. The philosopher Leibnitz died there in 1716.

> Close by, on the left bank of the Leine, lies the manufacturing town of Linden, which, though practically forming one town with Hanover, is treated under a separate heading.

The town of Hanover is first mentioned during the 12th century. It belonged to the family of Welf, then to the bishops of Hildesheim, and then, in 1369, it came again into the possession of the Welfs, now dukes of Brunswick. It joined the Hanseatic League, and was later the residence of the branch of the ducal house, which received the title of elector of Hanover and ascended the British throne in the person of George I. One or two important treaties were signed in Hanover, which from 1810 to 1813 was part of the kingdom of Westphalia, and in 1866 was annexed by Prussia, after having been the capital of the kingdom of Hanover since its foundation in 1815.

> See O. Ulrich, *Bilder aus Hannovers Vergangenheit* (1891); Hoppe, *Geschichte der Stadt Hannover* (1845); Hirschfeld, *Hannovers Grossindustrie und Grosshandel* (Leipzig, 1891); Frensdorff, *Die Stadtverfassung Hannovers in alter und neuer Zeit* (Leipzig, 1883); W. Bahrdt, *Geschichte der Reformation der Stadt Hannover* (1891); Hartmann, *Geschichte von Hannover mit besonderer Rücksichtnahme auf die Entwickelung der Residenzstadt Hannover* (1886); *Hannover und Umgegend, Entwickelung und Zustände seiner Industrie und Gewerbe* (1874); and the *Urkundenbuch der Stadt Hannover* (1860, fol.).

HANOVER, a town of Jefferson county, Indiana, U.S.A., on the Ohio river, about 5 m. below Madison. Pop. (1900) 377; (1910) 356. It is served by boats on the Ohio river and by stages to

Madison, the nearest railway station. Along the border of the town and on a bluff rising about 500 ft. above the river is Hanover College, an institution under Presbyterian control, embracing a college and a preparatory department, and offering classical and scientific courses and instruction in music; there is no charge for tuition. In 1908-1909 there were 211 students, 75 being in the Academy. The institution was opened in a log cabin in 1827, was incorporated as Hanover Academy in 1828, was adopted as a synodical school by the Presbyterian Synod of Indiana in 1829 on condition that a Theological department be added, and in 1833 was incorporated under its present name. In 1840, however, the theological department became a separate institution and was removed to New Albany, whence in 1859 it was removed to Chicago, where it was named, first, the Presbyterian Theological Seminary of the North-west, and, in 1886, the McCormick Theological Seminary. In the years immediately after its incorporation in 1833 Hanover College introduced the “manual labor system” and was for a time very prosperous, but the system was not a success, the college ran into debt, and in 1843 the trustees attempted to surrender the charter and to acquire the charter of a university at Madison. This effort was opposed by a strong party, which secured a more liberal charter for the college. In 1880 the college became coeducational.

HANOVER, a township of Grafton county, New Hampshire, U.S.A., on the Connecticut river, 75 m. by rail N.W. of Concord. Pop. (1900) 1884; (1910) 2075. No railway enters this township; the Ledyard Free Bridge (the first free bridge across the Connecticut) connects it with Norwich, Vt., which is served by the Boston & Maine railway. Ranges of rugged hills, broken by deep narrow gorges and by the wider valley of Mink Brook, rise near the river and culminate in the E. section in Moose Mountain, 2326 ft. above the sea. Near the foot of Moose Mountain is the birthplace of Laura D. Bridgman. Agriculture, dairying and lumbering are the chief pursuits of the inhabitants. The village of Hanover, the principal settlement of the township, occupies Hanover Plain in the S.W. corner, and is the seat of Dartmouth College (*q.v.*), which has a strikingly beautiful campus, and among its buildings several excellent examples of the colonial style, notably Dartmouth Hall. The Mary Hitchcock memorial hospital, a cottage hospital of 36 beds, was erected in 1890-1893 by Hiram Hitchcock in memory of his wife. The charter of the township was granted by Gov. Benning Wentworth on the 4th of July 1761, and the first settlement was made in May 1765. The records of the town meetings and selectmen, 1761-1818, have been published by E. P. Storrs (Hanover, 1905).

See Frederick Chase, *A History of Dartmouth College and the Town of Hanover* (Cambridge, 1891).

HANOVER, a borough of York county, Pennsylvania, U.S.A., 36 m. S. by W. of Harrisburg, and 6 m. from the S. border of the state. Pop. (1890) 3746; (1900) 5302, (133 foreign-born); (1910) 7057. It is served by the Northern Central and the Western Maryland railways. The borough is built on nearly level ground in the fertile valley of the Conewago, at the point of intersection of the turnpike roads leading to Baltimore, Carlisle, York and Frederick, from which places the principal streets—sections of these roads—are named. Among its manufactures are foundry and machine-shop products, flour, silk, waggons, shoes, gloves, furniture, wire cloth and cigars. The settlement of the place was begun mostly by Germans during the middle of the 18th century. Hanover was laid out in 1763 or 1764 by Col. Richard MacAllister; and in 1815 it was incorporated. On the 30th of June 1863 there was a cavalry engagement in and near Hanover between the forces of Generals H. J. Kilpatrick (Union) and J. E. B. Stuart (Confederate) preliminary to the battle of Gettysburg. This engagement is commemorated by an equestrian statue erected in Hanover by the state.

HANRIOT, FRANÇOIS (1761-1794), French revolutionist, was born at Nanterre (Seine) of poor parentage. Having lost his first employment—with a *procureur*—through dishonesty, he

obtained a clerkship in the Paris octroi in 1789, but was dismissed for abandoning his post when the Parisians burned the *octroi* barriers on the night of the 12th-13th of July 1789. After leading a hand-to-mouth existence for some time, he became one of the orators of the section of the *sans-culottes*, and commanded the armed force of that section during the insurrection on the 10th of August 1792 and the massacres of September. But he did not come into prominence until the night of the 30th-31st of May 1793, when he was provisionally appointed commandant-general of the armed forces of Paris by the council general of the Commune. On the 31st of May he was one of the delegates from the Commune to the Convention demanding the dissolution of the Commission of Twelve and the proscription of the Girondists (*q.v.*), and he was in command of the insurrectionary forces of the Commune during the *émeute* of the 2nd of June (see French Revolution). On the 11th of June he resigned his command, declaring that order had been restored. On the 13th he was impeached in the Convention; but the motion was not carried, and on the 1st of July he was elected by the Commune permanent commander of the armed forces of Paris. This position, which gave him enormous power, he retained until the revolution of the 9th Thermidor (July 27, 1794). His arrest was decreed; but he had the *générale* sounded and the tocsin rung, and tried to rescue Robespierre, who was under arrest in the hall of the *Comité de Sûreté Générale*. Hanriot was himself arrested, but was rescued by his adherents, and hastened to the Hôtel de Ville. After a vain attempt to organize resistance he fled and hid in a secluded yard, where he was discovered the next day. He was arrested, sentenced to death, and guillotined with Robespierre and his friends on the 10th Thermidor of the year II. (the 28th of July 1794).

HANSARD, LUKE (1752-1828), English printer, was born on the 5th of July 1752 in St Mary's parish, Norwich. He was educated at Boston grammar school, and was apprenticed to Stephen White, a Norwich printer. As soon as his apprenticeship had expired Hansard started for London with only a guinea in his pocket, and became a compositor in the office of John Hughs (1703-1771), printer to the House of Commons. In 1774 he was made a partner, and undertook almost the entire conduct of the business, which in 1800 came completely into his hands. On the admission of his sons the firm became Luke Hansard & Sons. Among those whose friendship Hansard won in the exercise of his profession were Robert Orme, Burke and Dr Johnson; while Porson praised him as the most accurate printer of Greek. He printed the *Journals of the House of Commons* from 1774 till his death. The promptitude and accuracy with which Hansard printed parliamentary papers were often of the greatest service to government—notably on one occasion when the proof-sheets of the report of the Secret Committee on the French Revolution were submitted to Pitt twenty-four hours after the draft had left his hands. On the union with Ireland in 1801, the increase of parliamentary printing compelled Hansard to give up all private printing except when parliament was not sitting. He devised numerous expedients for reducing the expense of publishing the reports; and in 1805, when his workmen struck at a time of great pressure, he and his sons themselves set to work as compositors. Luke Hansard died on the 29th of October 1828.

His son, Thomas Curson Hansard (1776-1833), established a press of his own in Paternoster Row, and began in 1803 to print the *Parliamentary Debates*, which were not at first independent reports, but were taken from the newspapers. After 1889 the debates were published by the Hansard Publishing Union Limited. T. C. Hansard was the author of *Typographia, an Historical Sketch of the Origin and Progress of the Art of Printing* (1825). The original business remained in the hands of his younger brothers, James and Luke Graves Hansard (1777-1851). The firm was prosecuted in 1837 by John Joseph Stockwell for printing by order of the House of Commons, in an official report of the inspector of prisons, statements regarded by the plaintiff as libellous. Hansard sheltered himself on the ground of privilege, but it was not until after much litigation that the security of the printers of government reports was guaranteed by statute in 1840.

HANSEATIC LEAGUE. It is impossible to assign any precise date for the beginning of the Hanseatic League or to name any single factor which explains the origin of that loose but effective federation of North German towns. Associated action and partial union among these towns can be traced back to the 13th century. In 1241 we find Lübeck and Hamburg agreeing to

safeguard the important road connecting the Baltic and the North Sea. The first known meeting of the “maritime towns,” later known as the Wendish group and including Lübeck, Hamburg, Lüneburg, Wismar, Rostock and Stralsund, took place in 1256. The Saxon towns, during the following century, were joining to protect their common interests, and indeed at this period town confederacies in Germany, both North and South, were so considerable as to call for the declaration against them in the Golden Bull of 1356. The decline of the imperial power and the growing opposition between the towns and the territorial princes justified these defensive town alliances, which in South Germany took on a peculiarly political character. The relative weakness of territorial power in the North, after the fall of Henry the Lion of Saxony, diminished without however removing this motive for union, but the comparative immunity from princely aggression on land left the towns freer to combine in a stronger and more permanent union for the defence of their commerce by sea and for the control of the Baltic.

While the political element in the development of the Hanseatic League must not be underestimated, it was not so formative as the economic. The foundation was laid for the growth of German towns along the southern shore of the Baltic by the great movement of German colonization of Slavic territory east of the Elbe. This movement, extending in time from about the middle of the 11th to the middle of the 13th century and carrying a stream of settlers and traders from the North-west, resulted not only in the Germanization of a wide territory but in the extension of German influence along the sea-coast far to the east of actual territorial settlement. The German trading towns, at the mouths of the numerous streams which drain the North European plain, were stimulated or created by the unifying impulse of a common and long-continued advance of conquest and colonization.

The impetus of this remarkable movement of expansion not only carried German trade to the East and North within the Baltic basin, but reanimated the older trade from the lower Rhine region to Flanders and England in the West. Cologne and the Westphalian towns, the most important of which were Dortmund, Soest and Münster, had long controlled this commerce but now began to feel the competition of the active traders of the Baltic, opening up that direct communication by sea from the Baltic to western Europe which became the essential feature in the history of the League. The necessity of seeking protection from the sea-rovers and pirates who infested these waters during the whole period of Hanseatic supremacy, the legal customs, substantially alike in the towns of North Germany, which governed the groups of traders in the outlying trading posts, the establishment of common factories, or “counters” (Komtors) at these points, with aldermen to administer justice and to secure trading privileges for the community of German merchants—such were some of the unifying influences which preceded the gradual formation of the League. In the century of energetic commercial development before 1350 the German merchants abroad led the way.

Germans were early pushing as permanent settlers into the Scandinavian towns, and in Wisby, on the island of Gothland, the Scandinavian centre of Baltic trade, equal rights as citizens in the town government were possessed by the German settlers as early as the beginning of the 13th century. There also came into existence at Wisby the first association of German traders abroad, which united the merchants of over thirty towns, from Cologne and Utrecht in the West to Reval in the East. We find the Gothland association making in 1229 a treaty with a Russian prince and securing privileges for their branch trading station at Novgorod. According to the “Skra,” the by-laws of the Novgorod branch, the four aldermen of the community of Germans, who among other duties held the keys of the common chest, deposited in Wisby, were to be chosen from the merchants of the Gothland association and of the towns of Lübeck, Soest and Dortmund. The Gothland association received in 1237 trading rights in England, and shortly after the middle of the century it also secured privileges in Flanders. It legislated on matters relating to common trade interests, and, in the case of the regulation of 1287 concerning shipwrecked goods, we find it imposing this legislation on the towns under the penalty of exclusion from the association. But with the extension of the East and West trade beyond the confines of the Baltic, this association by the end of the century was losing its position of leadership. Its inheritance passed to the gradually forming union of towns, chiefly those known as Wendish, which looked to Lübeck as their head. In 1293 the Saxon and Wendish merchants at Rostock decided that all appeals from Novgorod be taken to Lübeck instead of to Wisby, and six years later the Wendish and Westphalian towns, meeting at Lübeck, ordered that the Gothland association should no longer use a common seal. Though Lübeck’s right as court of appeal from the Hanseatic counter at Novgorod was not recognized by the general assembly of the League until 1373, the long-existing practice had simply accorded with the actual shifting of commercial power. The union of merchants abroad was beginning to come under the control of the partial union of towns at home.

A similar and contemporary extension of the influence of the Baltic traders under Lübeck’s leadership may be witnessed in the West. As a consequence of the close commercial relations early existing between England and the Rhenish-Westphalian towns, the merchants of Cologne were the first to possess a gild-hall in London and to form a “hansa” with the right of admitting

other German merchants on payment of a fee. The charter of 1226, however, by which Emperor Frederick II. created Lübeck a free imperial city, expressly declared that Lübeck citizens trading in England should be free from the dues imposed by the merchants of Cologne and should enjoy equal rights and privileges. In 1266 and 1267 the merchants of Hamburg and Lübeck received from Henry III. the right to establish their own hansas in London, like that of Cologne. The situation thus created led by 1282 to the coalescence of the rival associations in the “Gild-hall of the Germans,” but though the Baltic traders had secured a recognized foothold in the enlarged and unified organization, Cologne retained the controlling interest in the London settlement until 1476. Lübeck and Hamburg, however, dominated the German trade in the ports of the east coast, notably in Lynn and Boston, while they were strong in the organized trading settlements at York, Hull, Ipswich, Norwich, Yarmouth and Bristol. The counter at London, first called the Steelyard in a parliamentary petition of 1422, claimed jurisdiction over the other factories in England.

In Flanders, also, the German merchants from the West had long been trading, but here had later to endure not only the rivalry but the pre-eminence of those from the East. In 1252 the first treaty privileges for German trade in Flanders show two men of Lübeck and Hamburg heading the “Merchants of the Roman Empire,” and in the later organization of the counter at Bruges four or five of the six aldermen were chosen from towns east of the Elbe, with Lübeck steadily predominant. The Germans recognized the staple rights of Bruges for a number of commodities, such as wool, wax, furs, copper and grain, and in return for this material contribution to the growing commercial importance of the town, they received in 1309 freedom from the compulsory brokerage which Bruges imposed on foreign merchants. The importance and independence of the German trading settlements abroad was exemplified in the statutes of the “Company of German merchants at Bruges,” drawn up in 1347, where for the first time appears the grouping of towns in three sections (the “Drittel”), the Wendish-Saxon, the Prussian-Westphalian, and those of Gothland and Livland. Even more important than the assistance which the concentration of the German trade at Bruges gave to that leading mart of European commerce was the service rendered by the German counter of Bruges to the cause of Hanseatic unity. Not merely because of its central commercial position, but because of its width of view, its political insight, and its constant insistence on the necessity of union, this counter played a leading part in Hanseatic policy. It was more Hanse than the Hanse towns.

The last of the chief trading settlements, both in importance and in date of organization, was that at Bergen in Norway, where in 1343 the Hanseatics obtained special trade privileges. Scandinavia had early been sought for its copper and iron, its forest products and its valuable fisheries, especially of herring at Schonen, but it was backward in its industrial development and its own commerce had seriously declined in the 14th century. It had come to depend largely upon the Germans for the importation of all its luxuries and of many of its necessities, as well as for the exportation of its products, but regular trade with the three kingdoms was confined for the most part to the Wendish towns, with Lübeck steadily asserting an exclusive ascendancy. The fishing centre at Schonen was important as a market, though, like Novgorod, its trade was seasonal, but it did not acquire the position of a regularly organized counter, reserved alone, in the North, for Bergen. The commercial relations with the North cannot be regarded as an important element in the union of the Hanse towns, but the geographical position of the Scandinavian countries, especially that of Denmark, commanding the Sound which gives access to the Baltic, compelled a close attention to Scandinavian politics on the part of Lübeck and the League and thus by necessitating combined political action in defence of Hanseatic sea-power exercised a unifying influence.

Energetic and successful though the scattered trading settlements had been in establishing German trade connexions and in securing valuable trade privileges, the middle of the 14th century found them powerless to meet difficulties arising from internal dissension and still more from the political rivalries and trade jealousies of nascent nationalities. Flanders became a battle-field in the great struggle between France and England, and the war of trade prohibitions led to infractions of the German privileges in Bruges. An embargo on trade with Flanders, voted in 1358 by a general assembly, resulted by 1360 in the full restoration of German privileges in Flanders, but reduced the counter at Bruges to an executive organ of a united town policy. It is worth noting that in a document connected with this action the union of towns, borrowing the term from English usage, was first called the “German Hansa.” In 1361 representatives from Lübeck and Wisby visited Novgorod to recodify the by-laws of the counter and to admonish it that new statutes required the consent of Lübeck, Wisby, Riga, Dorpat and Reval. This action was confirmed in 1366 by an assembly of the Hansa which at the same time, on the occasion of a regulation made by the Bruges counter and of statutes drawn up by the young Bergen counter, ordered that in future the approval of the towns must be obtained for all new regulations.

The counter at London was soon forced to follow the example of the other counters at Bruges, Novgorod and Bergen. After the failure of the Italians, the Hanseatics remained the strongest group of alien merchants in England, and, as such, claimed the exclusive enjoyment of the

privileges granted by the *Carta Mercatoria* of 1303. Their highly favoured position in England, contrasting markedly with their refusal of trade facilities to the English in some of the Baltic towns and their evident policy of monopoly in the Baltic trade, incensed the English mercantile classes, and doubtless influenced the increases in customs-duties which were regarded by the Germans as contrary to their treaty rights. Unsuccessful in obtaining redress from the English government, the German merchants finally, in 1374, appealed for aid to the home towns, especially to Lübeck. The result of Hanseatic representations was the confirmation by Richard II. in 1377 of all their privileges, which accorded them the preferential treatment they had claimed and became the foundation of the Hanseatic position in England.

In the meanwhile, the conquest of Wisby by Waldemar IV. of Denmark in 1361 had disclosed his ambition for the political control of the Baltic. He was promptly opposed by an alliance of Hanse towns, led by Lübeck. The defeat of the Germans at Helsingborg only called into being the stronger town and territorial alliance of 1367, known as the Cologne Confederation, and its final victory, with the peace of Stralsund in 1370, which gave for a limited period the four chief castles on the Sound into the hands of the Hanseatic towns, greatly enhanced the prestige of the League.

The assertion of Hanseatic influence in the two decades, 1356 to 1377, marks the zenith of the League's power and the completion of the long process of unification. Under the pressure of commercial and political necessity, authority was definitely transferred from the Hansas of merchants abroad to the Hansa of towns at home, and the sense of unity had become such that in 1380 a Lübeck official could declare that "whatever touches one town touches all." But even at the time when union was most important, this statement went further than the facts would warrant, and in the course of the following century it became less and less true. Dortmund held aloof from the Cologne Confederation on the ground that it had no concern in Scandinavian politics. It became, indeed, increasingly difficult to obtain the support of the inland towns for a policy of sea-power in the Baltic. Cologne sent no representatives to the regular Hanseatic assemblies until 1383, and during the 15th century its independence was frequently manifested. It rebelled at the authority of the counter at Bruges, and at the time of the war with England (1469-1474) openly defied the League. In the East, the German Order, while enjoying Hanseatic privileges, frequently opposed the policy of the League abroad, and was only prevented by domestic troubles and its Hinterland enemies from playing its own hand in the Baltic. After the fall of the order in 1467, the towns of Prussia and Livland, especially Dantzig and Riga, pursued an exclusive trade policy even against their Hanseatic confederates. Lübeck, however, supported by the Bruges counter, despite the disaffection and jealousy on all sides hampering and sometimes thwarting its efforts, stood steadfastly for union and the necessity of obedience to the decrees of the assemblies. Its headship of the League, hitherto tacitly accepted, was definitely recognized in 1418.

The governing body of the Hansa was the assembly of town representatives, the "Hansetage," held irregularly as occasion required at the summons of Lübeck, and, with few exceptions, attended but scantily. The delegates were bound by instructions from their towns and had to report home the decisions of the assembly for acceptance or rejection. In 1469 the League declared that the English use of the terms "societas," "collegium" and "universitas" was inappropriate to so loose an organization. It preferred to call itself a "firma confederatio" for trade purposes only. It had no common seal, though that of Lübeck was accepted, particularly by foreigners, in behalf of the League. Disputes between the confederate towns were brought for adjudication before the general assembly, but the League had no recognized federal judiciary. Lübeck, with the counters abroad, watched over the execution of the measures voted by the assembly, but there was no regular administrative organization. Money for common purposes was raised from time to time, as necessity demanded, by the imposition on Hanse merchandise of poundage dues, introduced in 1361, while the counters relied upon a small levy of like nature and upon fines to meet current needs. Even this slender financial provision met with opposition. The German Order in 1398 converted the Hanseatic poundage to a territorial tax for its own purposes, and one of the chief causes for Cologne's disaffection a half-century later was the extension from Flanders to other parts of the Netherlands of the levy made by the counter at Bruges. Since the authority of the League rested primarily on the moral support of its members, allied in common trade interests and acquiescing in the able leadership of Lübeck, its only means of compulsion was the "Verhansung," or exclusion of a recalcitrant town from the benefits of the trade privileges of the League. A conspicuous instance was the exclusion of Cologne from 1471 until its obedience in 1476, but the penalty had been earlier imposed, as in the case of Brunswick, on towns which overthrew their patrician governments. It was obviously, however, a measure to be used only in the last resort and with extreme reluctance.

The decisive factor in determining membership in the League was the historical right of the citizens of a town to participate in Hanseatic privileges abroad. At first the merchant Hansas had shared these privileges with almost any German merchant, and thus many little villages, notably those in Westphalia, ultimately claimed membership. Later, under the Hansa of the

towns, the struggle for the maintenance of a coveted position abroad led to a more exclusive policy. A few new members were admitted, mainly from the westernmost sphere of Hanseatic influence, but membership was refused to some important applicants. In 1447 it was voted that admission be granted only by unanimous consent. No complete list of members was ever drawn up, despite frequent requests from foreign powers. Contemporaries usually spoke of 70, 72, 73 or 77 members, and perhaps the list is complete with Daenell's recent count of 72, but the obscurity on so vital a point is significant of the amorphous character of the organization.

The towns of the League, stretching from Thorn and Krakow on the East to the towns of the Zuider Zee on the West, and from Wisby and Reval in the North to Göttingen in the South, were arranged in groups, following in the main the territorial divisions. Separate assemblies were held in the groups for the discussion both of local and Hanseatic affairs, and gradually, but not fully until the 16th century, the groups became recognized as the lowest stage of Hanse organization. The further grouping into "Thirds," later "Quarters," under head-towns, was also more emphasized in that century.

In the 15th century the League, with increasing difficulty, held a defensive position against the competition of strong rivals and new trade-routes. In England the inevitable conflict of interests between the new mercantile power, growing conscious of its national strength, and the old, standing insistant on the letter of its privileges, was postponed by the factional discord out of which the Hansa in 1474 dexterously snatched a renewal of its rights. Under Elizabeth, however, the English Merchant Adventurers could finally rejoice at the withdrawal of privileges from the Hanseatics and their concession to England, in return for the retention of the Steelyard, of a factory in Hamburg. In the Netherlands the Hanseatics clung to their position in Bruges until 1540, while trade was migrating to the ports of Antwerp and Amsterdam. By the peace of Copenhagen in 1441, after the unsuccessful war of the League with Holland, the attempted monopoly of the Baltic was broken, and, though the Hanseatic trade regulations were maintained on paper, the Dutch with their larger ships increased their hold on the herring fisheries, the French salt trade, and the Baltic grain trade. For the Russian trade new competitors were emerging in southern Germany. The Hanseatic embargo against Bruges from 1451 to 1457, its later war and embargo against England, the Turkish advance closing the Italian Black Sea trade with southern Russia, all were utilized by Nuremberg and its fellows to secure a land-trade outside the sphere of Hanseatic influence. The fairs of Leipzig and Frankfort-on-Main rose in importance as Novgorod, the stronghold of Hanse trade in the East, was weakened by the attacks of Ivan III. The closing of the Novgorod counter in 1494 was due not only to the development of the Russian state but to the exclusive Hanseatic policy which had stimulated the opening of competing trade routes.

Within the League itself increasing restiveness was shown under the restrictions of its trade policy. At the Hanseatic assembly of 1469, Dantzig, Hamburg and Breslau opposed the maintenance of a compulsory staple at Bruges in the face of the new conditions produced by a widening commerce and more advantageous markets. Complaint was made of South German competition in the Netherlands. "Those in the Hansa," protested Breslau, "are fettered and must decline and those outside the Hansa are free and prosper." By 1477 even Lübeck had become convinced that a continuance of the effort to maintain the compulsory staple against Holland was futile and should be abandoned. But while it was found impossible to enforce the staple or to close the Sound against the Dutch, other features of the monopolistic system of trade regulations were still upheld. It was forbidden to admit an outsider to partnership or to co-ownership of ships, to trade in non-Hanseatic goods, to buy or sell on credit in a foreign mart or to enter into contracts for future delivery. The trade of foreigners outside the gates of Hanse towns or with others than Hanseatics was forbidden in 1417, and in the Eastern towns the retail trade of strangers was strictly limited. The whole system was designed to suppress the competition of outsiders, but the divergent interests of individuals and towns, the pressure of competition and changing commercial conditions, in part the reactionary character of the legislation, made enforcement difficult. The measures were those of the late-medieval town economy applied to the wide region of the German Baltic trade, but not supported, as was the analogous mercantilist system, by a strong central government.

Among the factors, economic, geographic, political and social, which combined to bring about the decline of the Hanseatic League, none was probably more influential than the absence of a German political power comparable in unity and energy with those of France and England, which could quell particularism at home, and abroad maintain in its vigour the trade which these towns had developed and defended with their imperfect union. Nothing was to be expected from the declining Empire. Still less was any co-operation possible between the towns and the territorial princes. The fatal result of conflict between town autonomy and territorial power had been taught in Flanders. The Hanseatics regarded the princes with a growing and exaggerated fear and found some relief in the formation in 1418 of a thrice-renewed alliance, known as the "Tohopesate," against princely aggression. But no territorial power had as yet arisen in North Germany capable of subjugating and utilizing the towns, though it could detach

the inland towns from the League. The last wars of the League with the Scandinavian powers in the 16th century, which left it shorn of many of its privileges and of any pretension to control of the Baltic basin eliminated it as a factor in the later struggle of the Thirty Years' War for that control. At an assembly of 1629, Lübeck, Bremen and Hamburg were entrusted with the task of safeguarding the general welfare, and after an effort to revive the League in the last general assembly of 1669, these three towns were left alone to preserve the name and small inheritance of the Hansa which in Germany's disunion had upheld the honour of her commerce. Under their protection, the three remaining counters lingered on until their buildings were sold at Bergen in 1775, at London in 1852 and at Antwerp in 1863.

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(E. F. G.)

HANSEN, PETER ANDREAS (1795-1874), Danish astronomer, was born on the 8th of December 1795, at Tondern, in the duchy of Schleswig. The son of a goldsmith, he learned the trade of a watchmaker at Flensburg, and exercised it at Berlin and Tondern, 1818-1820. He had, however, long been a student of science; and Dr Dircks, a physician practising at Tondern, prevailed with his father to send him in 1820 to Copenhagen, where he won the patronage of H. C. Schumacher, and attracted the personal notice of King Frederick VI. The Danish survey was then in progress, and he acted as Schumacher's assistant in work connected with it, chiefly at the new observatory of Altona, 1821-1825. Thence he passed on to Gotha as director of the Seeberg observatory; nor could he be tempted to relinquish the post by successive invitations to replace F. G. W. Struve at Dorpat in 1829, and F. W. Bessel at Königsberg in 1847. The problems of gravitational astronomy engaged the chief part of Hansen's attention. A research into the mutual perturbations of Jupiter and Saturn secured for him the prize of the Berlin Academy in 1830, and a memoir on cometary disturbances was crowned by the Paris Academy in 1850. In 1838 he published a revision of the lunar theory, entitled *Fundamenta nova investigationis*, &c., and the improved Tables of the Moon based upon it were printed in 1857, at the expense of the British government, their merit being further recognized by a grant of £1000, and by their immediate adoption in the *Nautical Almanac*, and other Ephemerides. A theoretical discussion of the disturbances embodied in them (still familiarly known to lunar experts as the *Darlegung*) appeared in the *Abhandlungen* of the Saxon Academy of Sciences in 1862-1864. Hansen twice visited England and was twice (in 1842 and 1860) the recipient of the Royal Astronomical Society's gold medal. He communicated to that society in 1847 an able paper on a long-period lunar inequality (*Memoirs Roy. Astr. Society*, xvi. 465), and in 1854 one on the moon's figure, advocating the mistaken hypothesis of its deformation by a huge elevation directed towards the earth (*Ib.* xxiv. 29). He was awarded the Copley medal by the Royal Society in 1850, and his Solar Tables, compiled with the assistance of Christian Olufsen, appeared in 1854. Hansen gave in 1854 the first intimation that the accepted distance of the sun was too great by some millions of miles (*Month. Notices Roy. Astr. Soc.* xv. 9), the error of J. F. Encke's result having been rendered evident through his investigation of a lunar inequality. He died on the 28th of March 1874, at the new observatory in the town of Gotha, erected under his care in 1857.

See *Vierteljahrsschrift astr. Gesellschaft*, x. 133; *Month. Notices Roy. Astr. Society*, xxxv. 168; *Proc. Roy. Society*, xxv. p. v.; R. Wolf, *Geschichte der Astronomie*, p. 526; *Wochenschrift für Astronomie*, xvii. 207 (account of early years by E. Heis); *Allgemeine deutsche Biographie* (C. Bruhns).

(A. M. C.)

HANSI, a town of British India, in the Hissar district of the Punjab, on a branch of the Western Jumna canal, with a station on the Rewari-Ferozepore railway, 16 m. E. of Hissar. Pop. (1901) 16,523. Hansi is one of the most ancient towns in northern India, the former capital of the tract called Hariana. At the end of the 18th century it was the headquarters of the famous Irish adventurer George Thomas; from 1803 to 1857 it was a British cantonment, and it became the scene of a murderous outbreak during the Mutiny. A ruined fort overlooks the town, which is still surrounded by a high brick wall, with bastions and loop holes. It is a centre of local trade, with factories for ginning and pressing cotton.

HANSOM, JOSEPH ALOYSIUS (1803-1882), English architect and inventor, was born in York on the 26th of October 1803. Showing an aptitude for designing and construction, he was taken from his father’s joinery shop and apprenticed to an architect in York, and, by 1831, his designs for the Birmingham town hall were accepted and followed—to his financial undoing, as he had become bond for the builders. In 1834 he registered the design of a “Patent Safety Cab,” and subsequently sold the patent to a company for £10,000, which, however, owing to the company’s financial difficulties, was never paid. The hansom cab as improved by subsequent alterations, nevertheless, took and held the fancy of the public. There was no back seat for the driver in the original design, and there is little beside the suspended axle and large wheels in the modern hansom to recall the early ones. In 1834 Hansom founded the *Builder* newspaper, but was compelled to retire from this enterprise owing to insufficient capital. Between 1854 and 1879 he devoted himself to architecture, designing and erecting a great number of important buildings, private and public, including churches, schools and convents for the Roman Catholic church to which he belonged. Buildings from his designs are scattered all over the United Kingdom, and were even erected in Australia and South America. He died in London on the 29th of June 1882.

HANSON, SIR RICHARD DAVIES (1805-1876), chief justice of South Australia, was born in London on the 6th of December 1805. Admitted a solicitor in 1828, he practised for some time in London. In 1838 he went with Lord Durham to Canada as assistant-commissioner of inquiry into crown lands and immigration. In 1840, on the death of Lord Durham, whose private secretary he had been, he settled in Wellington, New Zealand. He there acted as crown prosecutor, but in 1846 removed to South Australia. In 1851 he was appointed advocate-general of that colony and took an active share in the passing of many important measures, such as the first Education Act, the District Councils Act of 1852, and the Act of 1856 which granted constitutional government to the colony. In 1856 and again from 1857 to 1860 he was attorney-general and leader of the government. In 1861 he was appointed chief justice of the supreme court of South Australia and was knighted in 1869. He died in Australia on the 4th of March 1876.

HANSTEEN, CHRISTOPHER (1784-1873), Norwegian astronomer and physicist, was born at Christiania, on the 26th of September 1784. From the cathedral school he went to the university at Copenhagen, where first law and afterwards mathematics formed his main study. In 1806 he

taught mathematics in the gymnasium of Frederiksborg, Zeeland, and in the following year he began the inquiries in terrestrial magnetism with which his name is especially associated. He took in 1812 the prize of the Danish Royal Academy of Sciences for his reply to a question on the magnetic axes. Appointed lecturer in 1814, he was in 1816 raised to the chair of astronomy and applied mathematics in the university of Christiania. In 1819 he published a volume of researches on terrestrial magnetism, which was translated into German by P. T. Hanson, under the title of *Untersuchungen über den Magnetismus der Erde*, with a supplement containing *Beobachtungen der Abweichung und Neigung der Magnetnadel* and an atlas. By the rules there framed for the observation of magnetical phenomena Hansteen hoped to accumulate analyses for determining the number and position of the magnetic poles of the earth. In prosecution of his researches he travelled over Finland and the greater part of his own country; and in 1828-1830 he undertook, in company with G. A. Erman, and with the co-operation of Russia, a government mission to Western Siberia. A narrative of the expedition soon appeared (*Reise-Erinnerungen aus Sibirien*, 1854; *Souvenirs d'un voyage en Sibérie*, 1857); but the chief work was not issued till 1863 (*Resultate magnetischer Beobachtungen*, &c.). Shortly after the return of the mission, an observatory was erected in the park of Christiania (1833), and Hansteen was appointed director. On his representation a magnetic observatory was added in 1839. In 1835-1838 he published text-books on geometry and mechanics; and in 1842 he wrote his *Disquisitiones de mutationibus quas patitur momentum acus magneticae*, &c. He also contributed various papers to different scientific journals, especially the *Magazin for Naturvidenskaberne*, of which he became joint-editor in 1823. He superintended the trigonometrical and topographical survey of Norway, begun in 1837. In 1861 he retired from active work, but still pursued his studies, his *Observations de l'inclination magnétique* and *Sur les variations séculaires du magnétisme* appearing in 1865. He died at Christiania on the 11th of April 1873.

HANTHAWADDY, a district in the Pegu division of Lower Burma, the home district of Rangoon, from which the town was detached to make a separate district in 1880. It has an area of 3023 sq. m., with a population in 1901 of 484,811, showing an increase of 22% in the decade. Hanthawaddy and Henzada are the two most densely populated districts in the province. It consists of a vast plain stretching up from the sea between the To or China Bakir mouth of the Irrawaddy and the Pegu Yomas. Except the tract lying between the Pegu Yomas on the east and the Hlaing river, the country is intersected by numerous tidal creeks, many navigable by large boats and some by steamers. The headquarters of the district are in Rangoon, which is also the sub-divisional headquarters. The second sub-division has its headquarters at Insein, where there are large railway works. Cultivation is almost wholly confined to rice, but there are many vegetable and fruit gardens.

HANUKKAH, a Jewish festival, the "Feast of Dedication" (cf. John x. 22) or the "Feast of the Maccabees," beginning on the 25th day of the ninth month *Kislev* (December), of the Hebrew ecclesiastical year, and lasting eight days. It was instituted in 165 B.C. in commemoration of, and thanksgiving for, the purification of the temple at Jerusalem on this day by Judas Maccabaeus after its pollution by Antiochus Epiphanes, king of Syria, who in 168 B.C. set up a pagan altar to Zeus Olympius. The Talmudic sources say that when the perpetual lamp of the temple was to be relighted only one flask of holy oil sufficient for the day remained, but this miraculously lasted for the eight days (cf. the legend in 2 Macc. i. 18). In memory of this the Jews burn both in synagogues and in houses on the first night of the festival one light, on the second two, and so on to the end (so the Hillelites), or vice versa eight lights on the first, and one less on each succeeding night (so the Shammaites). From the prominence of the lights the festival is also known as the "Festival of Lights" or "Illumination" (*Talmud*). It is said that the day chosen by Judas for the setting up of the new altar was the anniversary of that on which Antiochus had set up the pagan altar; hence it is suggested (*e.g.* by Wellhausen) that the 25th of Kislev was an old pagan festival, perhaps the day of the winter solstice.

For further details and illustrations of Ḥanukkah lamps see *Jewish Encyc.*, s.v.

HANUMAN, in Hindu mythology, a monkey-god, who forms a central figure in the *Ramayana*. He was the child of a nymph by the god of the wind. His exploits, as the ally of Rama (incarnation of Vishnu) in the latter's recovery of his wife Sita from the clutches of the demon Ravana, include the bridging of the straits between India and Ceylon with huge boulders carried away from the Himalayas. He is the leader of a host of monkeys who aid in these supernatural deeds. Temples in his honour are frequent throughout India.

HANWAY, JONAS (1712-1786), English traveller and philanthropist, was born at Portsmouth in 1712. While still a child, his father, a victualler, died, and the family moved to London. In 1729 Jonas was apprenticed to a merchant in Lisbon. In 1743, after he had been some time in business for himself in London, he became a partner with Mr Dingley, a merchant in St Petersburg, and in this way was led to travel in Russia and Persia. Leaving St Petersburg on the 10th of September 1743, and passing south by Moscow, Tsaritsyn and Astrakhan, he embarked on the Caspian on the 22nd of November, and arrived at Astrabad on the 18th of December. Here his goods were seized by Mohammed Hassan Beg, and it was only after great privations that he reached the camp of Nadir Shah, under whose protection he recovered most (85%) of his property. His return journey was embarrassed by sickness (at Resht), by attacks from pirates, and by six weeks' quarantine; and he only reappeared at St Petersburg on the 1st of January 1745. He again left the Russian capital on the 9th of July 1750 and travelled through Germany and Holland to England (28th of October). The rest of his life was mostly spent in London, where the narrative of his travels (published in 1753) soon made him a man of note, and where he devoted himself to philanthropy and good citizenship. In 1756 he founded the Marine Society, to keep up the supply of British seamen; in 1758 he became a governor of the Foundling, and established the Magdalen, hospital; in 1761 he procured a better system of parochial birth-registration in London; and in 1762 he was appointed a commissioner for victualling the navy (10th of July); this office he held till October 1783. He died, unmarried, on the 5th of September 1786. He was the first Londoner, it is said, to carry an umbrella, and he lived to triumph over all the hackney coachmen who tried to hoot and hustle him down. He attacked "vail-giving," or tipping, with some temporary success; by his onslaught upon tea-drinking he became involved in controversy with Johnson and Goldsmith. His last efforts were on behalf of little chimney-sweeps. His advocacy of solitary confinement for prisoners and opposition to Jewish naturalization were more questionable instances of his activity in social matters.

Hanway left seventy-four printed works, mostly pamphlets; the only one of literary importance is the *Historical Account of British Trade over the Caspian Sea, with a Journal of Travels*, &c. (London, 1753). On his life, see also Pugh, *Remarkable Occurrences in the Life of Jonas Hanway* (London, 1787); *Gentleman's Magazine*, vol. xxxii. p. 342; vol. lvi. pt. ii. pp. 812-814, 1090, 1143-1144; vol. lxv. pt. ii. pp. 721-722, 834-835; *Notes and Queries*, 1st series, i. 436, ii. 25; 3rd series, vii. 311; 4th series, viii. 416.

HANWELL, an urban district in the Brentford parliamentary division of Middlesex, England, 10½ m. W. of St Paul's cathedral, London, on the river Brent and the Great Western railway. Pop. (1891) 6139; (1901) 10,438. It ranks as an outer residential suburb of London. The Hanwell lunatic asylum of the county of London has been greatly extended since its erection 1831, and can accommodate over 2500 inmates. The extensive cemeteries of St Mary Abbots, Kensington, and St George, Hanover Square, London, are here. In the churchyard of St Mary's church was buried Jonas Hanway (d. 1786), traveller, philanthropist, and by repute, introducer of the umbrella into England. The Roman Catholic Convalescent Home for women and children was erected in 1865. Before the Norman period the manor of Hanwell belonged to Westminster Abbey.

HAPARANDA (Finnish *Haaparanta*, "Aspen Shore"), a town of Sweden in the district (*län*) of Norbotten, at the head of the Gulf of Bothnia. Pop. (1900) 1568. It lies about 1½ m. from the

mouth of the Torne river, on the frontier with Russia (Finland), opposite the town of Torneå which has belonged to Russia since 1809. The towns are divided by a marshy channel, formerly the bed of the Torne, but the main stream is now east of the Russian town. Haparanda was founded in 1812, and at first bore the name of Karljohannstad. It received its municipal constitution in 1842. Shipbuilding is prosecuted. Sea-going vessels load and unload at Salmio, 7 m. from Haparanda. Since 1859 the town has been the seat of an important meteorological station. Annual mean temperature, 32.4° Fahr.; February 10.5°; July 58.8°. Rainfall, 16.5 in. annually. Up the Torne valley (54 m.) is the hill Avasaxa, whither pilgrimages were formerly made in order to stand in the light of the sun at midnight on St John's day (June 24).

HAPLODRILI (so called by Lankester), often called Archiannelida (Hatschek), the name provisionally given to a number of interesting lowly-organized marine worms, whose affinities are very doubtful (see CHAETOPODA.) *Polygordius* and *Protodrilus* live in sand, but while the former moves by means of the contraction of its body-wall muscles, *Protodrilus* can progress by the action of the bands of cilia surrounding its segments, and of the longitudinal ciliated ventral groove. *Saccocirrus*, which also lives in sand, and more closely resembles the Polychaeta, has throughout the greater length of its body on each segment a pair of small uniramous parapodia bearing a bunch of simple setae. No other member of the group is known to have any trace of setae or parapodia at any stage of development.

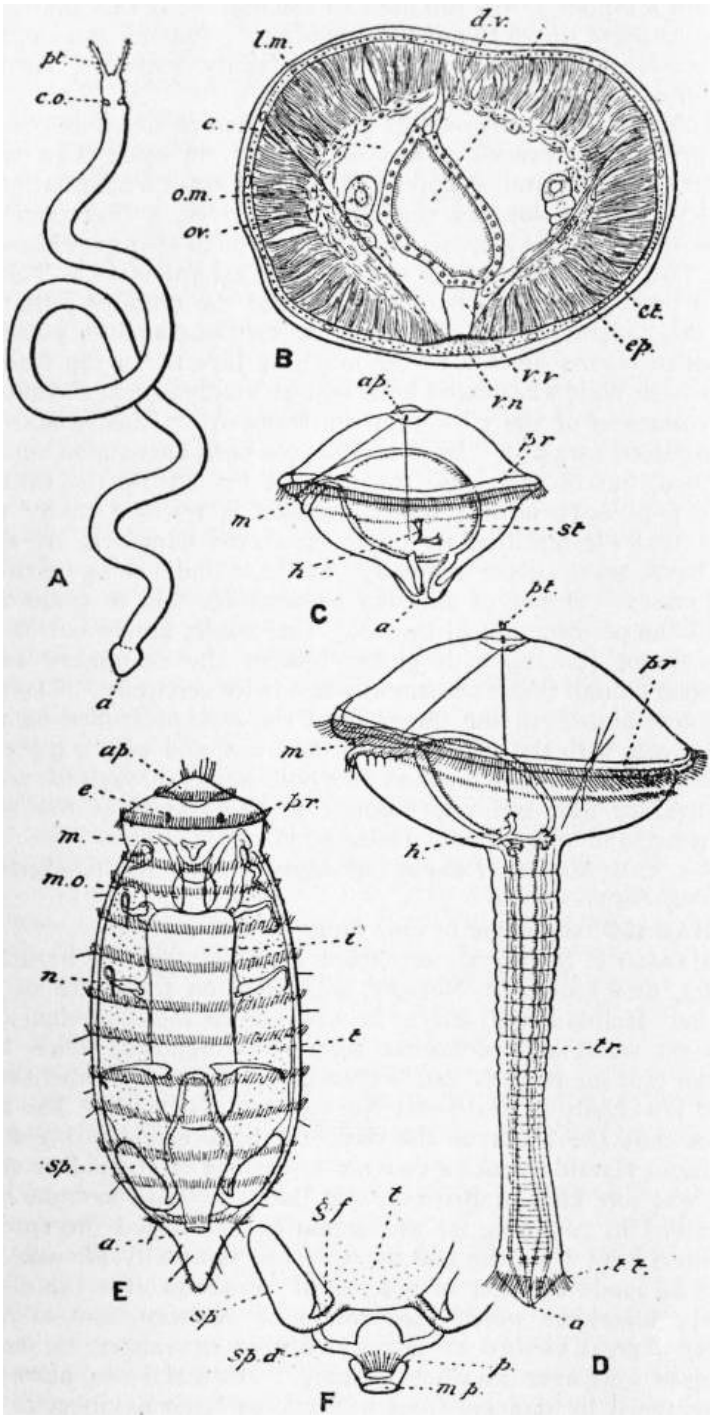

FIG. 1.

A, *Polygordius neapolitanus*. (From Fraipont.)

B, Transverse section of *Polygordius*. (From Fraipont.)

C, Trochophore of *Polygordius*. and D, later stage of the same, showing the development of the trunk. (From Hatschek.)

E, Dorsal view of *Dinophilus taeniatus*.

F, Male apparatus of the same (From Harmer.)

a, Anus.
ap, Apical organ.
c, Coelom.
c.o, Ciliated pit.
c.t, Cuticle.
d.v, Dorsal vessel.
e, Eye.
ep, Epidermis.
g.f, Genital funnel.
h, "Head kidney," with second
l.m, Longitudinal muscles.
m, Mouth.
m.o, Muscular pharyngeal organ.
m.p, Male pore.
n, Nephridium.
o.m, Oblique muscles.
ov, Ovary.
p, Penis.
pr, Prototroch.
pt, Prostomial tentacle.
sp, Sperm-sac.
spd, Sperm-duct.
st, Stomach.
t, Testes.
tr, Trunk segment.
tt, Telotroch.
v.n, Ventral nerve cord.
v.v, Ventral vessel.

nephridium just below it.
i, Intestine.

These three genera have the following characters in common. The body is composed of a large number of segments; the prostomium bears a pair of tentacles; the nervous system consists of a brain and longitudinal ventral nerve cords closely connected with the epidermis (without distinct ganglia), widely separated in *Saccocirrus*, closely approximated in *Protodrilus*, fused together in *Polygordius*; the coelom is well developed, the septa are distinct, and the dorsal and ventral longitudinal mesenteries are complete; the nephridia are simple, and open into the coelom. Polygordius differs from *Protodrilus* and *Saccocirrus* in the absence of a distinct suboesophageal muscular pouch, and in the absence of a peculiar closed cavity in the head region, which is especially well developed in *Saccocirrus*, and probably represents the specialized coelom of the first segment. Moreover, in *Saccocirrus* the genital organs, present in the majority of the trunk segments, have become much complicated (fig. 2). In the female there is in every fertile segment a pair of spermathecae opening at the nephridiopores. In the male there are a right and a left protrusible penis in every genital segment, into which opens the nephridium and a sperm-sac. The wide funnels of the nephridia of this region are possibly of coelomic origin.

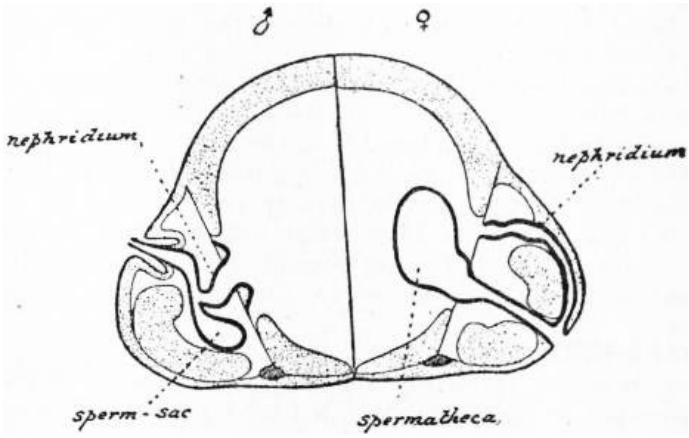

FIG. 2.—Diagram of a transverse section of *Saccocirrus* showing on the left side the organs in a genital segment of a male, and on the right side the organs in a genital segment of a female. (From Goodrich.)

Dinophilus is a free-swimming form without tentacles, and with segmental bands of cilia (fig. 1). The parasitic *Histriodritus* (Histriobdella) feeds on the eggs of the lobster. It resembles *Dinophilus* in the possession of a ventral pharyngeal pouch (which bears teeth in *Histriodrilus* only), the small number of segments, and absence of distinct septa, the absence of a vascular system, the presence of distinct ganglia on the ventral nerve cords, and of small nephridia which do not appear to open internally. *Histriodrilus* resembles *Saccocirrus* in the possession of two posterior adhesive processes, and to some extent in the structure of the complex genital organs, which, however, are restricted to a single segment. In *Dinophilus*, there is also only a single pair of genital ducts behind; and in the male there are sperm-sacs and a median penis. In some species of *Dinophilus* there is pronounced sexual dimorphism (the male being small and without gut) as in the Rotifera. The resemblance of *Dinophilus* to the Rotifera is, however, quite superficial, and the general structure of this genus with distinct traces of segmentation, especially in the embryo, points to its close affinity, if not to *Polygordius* in particular, at all events to the Annelida.

That *Polygordius*, *Protodrilus* and *Saccocirrus* are on the whole primitive forms, and related to each other, there can be little doubt, but their place amongst the Annelida is difficult to determine. The development of *Polygordius* alone is well known, having been studied by Hatschek, Fraipont and others. The larva (fig. 1, C and D) is a typical but very specialized form of trochophore, provided with a branching nephridium bearing solenocytes. The trunk develops on the lower surface of the disk-like larva, which undergoes a more or less sudden metamorphosis into the young worm (fig. 1). There appears to be little either in the development or in the structure of the Haplodrili to warrant the view held by Hatschek and Fraipont that *Polygordius* and *Protodrilus* are exceedingly primitive forms, ancestral to the whole group of seta-bearing Annelids (Oligochaeta, Polychaeta, Hirudinea and Echiuroidea). Whatever may be the conclusion as to the position of *Dinophilus* and *Histriodrilus*, it seems only reasonable to suppose that *Polygordius* and *Protodrilus*, so far from representing a stage in the phylogeny of the Annelida before setae were developed, have lost the setae, which are already in a reduced state in *Saccocirrus*.

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(E. S. G.)

HAPTARA (lit. *conclusion*), the Hebrew title given to the prophetic lessons with which the ancient Synagogue service concluded. In the time of Christ these prophetic lessons were already in vogue, and Christ himself read the lessons and discoursed on them in the synagogues of Galilee. In the modern synagogue these readings from the prophets are regularly included in the ritual of Sabbaths, festivals and some other occasions.

A list of the current lessons is given in the *Jewish Encyclopedia*, vol. vi. pp. 136-137.

(I. A.)

HAPUR, a town of British India in the Meerut district of the United Provinces, 18 m. S. of Meerut. Pop. (1901) 17,796. It is said to have been founded in the 10th century, and was granted by Sindhia to his French general Perron at the end of the 18th century. Several fine groves surround the town, but the wall and ditch have fallen out of repair, and only the names of the five gates remain. Considerable trade is carried on in sugar, grain, cotton, timber, bamboos and brass utensils.

HARA-KIRI (Japanese *hara*, belly, and *kiri*, cutting), self-disembowelment, primarily the method of suicide permitted to offenders of the noble class in feudal Japan, and later the national form of honourable suicide. Hara-kiri has been often translated as “the happy dispatch” in confusion with a native euphemism for the act. More usually the Japanese themselves speak of hara-kiri by its Chinese synonym, *Seppuku*. Hara-kiri is not an aboriginal Japanese custom. It was a growth of medieval militarism, the act probably at first being prompted by the desire of the noble to escape the humiliation of falling into an enemy’s hands. By the end of the 14th century the custom had become a much valued privilege, being formally established as such under the Ashi-Kaga dynasty. Hara-kiri was of two kinds, obligatory and voluntary. The first is the more ancient. An official or noble, who had broken the law or been disloyal, received a message from the emperor, couched always in sympathetic and gracious tones, courteously intimating that he must die. The mikado usually sent a jewelled dagger with which the deed might be done. The suicide had so many days allotted to him by immemorial custom in which to make dignified preparations for the ceremony, which was attended by the utmost formality. In his own baronial hall or in a temple a daïs 3 or 4 in. from the ground was constructed. Upon this was laid a rug of red felt. The suicide, clothed in his ceremonial dress as an hereditary noble, and accompanied by his second or “Kaishaku,” took his place on the mat, the officials and his friends ranging themselves in a semicircle round the daïs. After a minute’s prayer the weapon was handed to him with many obeisances by the mikado’s representative, and he then made a public confession of his fault. He then stripped to the waist. Every movement in the grim ceremony was governed by precedent, and he had to tuck his wide sleeves under his knees to prevent himself falling backwards, for a Japanese noble must die falling forward. A moment later he plunged the dagger into his stomach below the waist on the left side, drew it across to the right and, turning it, gave a slight cut upward. At the same moment the Kaishaku who crouched at his friend’s side, leaping up, brought his sword down on the outstretched neck. At the conclusion of the ceremony the bloodstained dagger was taken to the mikado as a proof of the consummation of the heroic act. The performance of hara-kiri carried with it certain privileges. If it was by order of the mikado half only of a traitor’s property was forfeited to the state. If the gnawings of conscience drove the disloyal noble to voluntary suicide, his dishonour was wiped out, and his family inherited all his fortune.

Voluntary hara-kiri was the refuge of men rendered desperate by private misfortunes, or was

committed from loyalty to a dead superior, or as a protest against what was deemed a false national policy. This voluntary suicide still survives, a characteristic case being that of Lieutenant Takeyoshi who in 1891 gave himself the “belly-cut” in front of the graves of his ancestors at Tōkyo as a protest against what he considered the criminal lethargy of the government in not taking precautions against possible Russian encroachments to the north of Japan. In the Russo-Japanese War, when faced by defeat at Vladivostock, the officer in command of the troops on the transport “Kinshu Maru” committed hara-kiri. Hara-kiri has not been uncommon among women, but in their case the mode is by cutting the throat. The popularity of this self-immolation is testified to by the fact that for centuries no fewer than 1500 hara-kiris are said to have taken place annually, at least half being entirely voluntary. Stories of amazing heroism are told in connexion with the performance of the act. One noble, barely out of his teens, not content with giving himself the customary cuts, slashed himself thrice horizontally and twice vertically. Then he stabbed himself in the throat until the dirk protruded on the other side with the sharp edge to the front, and with a supreme effort drove the knife forward with both hands through his neck. Obligatory hara-kiri was obsolete in the middle of the 19th century, and was actually abolished in 1868.

See A. B. Mitford, *Tales of Old Japan*; Basil Hall Chamberlain, *Things Japanese* (1898).

HARALD, the name of four kings of Norway.

Harald I. (850-933), surnamed Haarfager (of the beautiful hair), first king over Norway, succeeded on the death or his father Halfdan the Black in A.D. 860 to the sovereignty of several small and somewhat scattered kingdoms, which had come into his father’s hands through conquest and inheritance and lay chiefly in south-east Norway (see Norway). The tale goes that the scorn of the daughter of a neighbouring king induced Harald to take a vow not to cut nor comb his hair until he was sole king of Norway, and that ten years later he was justified in trimming it; whereupon he exchanged the epithet “Shockhead” for the one by which he is usually known. In 866 he made the first of a series of conquests over the many petty kingdoms which then composed Norway; and in 872, after a great victory at Hafrsfjord near Stavanger, he found himself king over the whole country. His realm was, however, threatened by dangers from without, as large numbers of his opponents had taken refuge, not only in Iceland, then recently discovered, but also in the Orkneys, Shetlands, Hebrides and Faeroes, and in Scotland itself; and from these winter quarters sallied forth to harry Norway as well as the rest of northern Europe. Their numbers were increased by malcontents from Norway, who resented Harald’s claim of rights of taxation over lands which the possessors appear to have previously held in absolute ownership. At last Harald was forced to make an expedition to the west to clear the islands and Scottish mainland of Vikings. Numbers of them fled to Iceland, which grew into an independent commonwealth, while the Scottish isles fell under Norwegian rule. The latter part of Harald’s reign was disturbed by the strife of his many sons. He gave them all the royal title and assigned lands to them which they were to govern as his representatives; but this arrangement did not put an end to the discord, which continued into the next reign. When he grew old he handed over the supreme power to his favourite son Erik “Bloody Axe,” whom he intended to be his successor. Harald died in 933, in his eighty-fourth year.

HARALD II., surnamed Graafeld, a grandson of Harald I., became, with his brothers, ruler of the western part of Norway in 961; he was murdered in Denmark in 969.

Harald III. (1015-1066), king of Norway, surnamed Haardraade, which might be translated “ruthless,” was the son of King Sigurd and half-brother of King Olaf the Saint. At the age of fifteen he was obliged to flee from Norway, having taken part in the battle of Stiklestad (1030), at which King Olaf met his death. He took refuge for a short time with Prince Yaroslav of Novgorod (a kingdom founded by Scandinavians), and thence went to Constantinople, where he took service under the empress Zoe, whose Varangian guard he led to frequent victory in Italy, Sicily and North Africa, also penetrating to Jerusalem. In the year 1042 he left Constantinople, the story says because he was refused the hand of a princess, and on his way back to his own country he married Ellisif or Elizabeth, daughter of Yaroslav of Novgorod. In Sweden he allied himself with the defeated Sven of Denmark against his nephew Magnus, now king of Norway, but soon broke faith with Sven and accepted an offer from Magnus of half his kingdom. In return for this gift Harald is said to have shared with Magnus the enormous treasure which he had amassed in the East. The death of Magnus in 1047 put an end to the growing jealousies between the two kings, and Harald turned all his attention to the task of subjugating Denmark, which he ravaged year after year; but he met with such stubborn resistance from Sven that in 1064 he gave up the attempt and made peace. Two years afterwards, possibly instigated by the banished

Earl Tostig of Northumbria, he attempted the conquest of England, to the sovereignty of which his predecessor had advanced a claim as successor of Harthacnut. In September 1066 he landed in Yorkshire with a large army, reinforced from Scotland, Ireland and the Orkneys; took Scarborough by casting flaming brands into the town from the high ground above it; defeated the Northumbrian forces at Fulford; and entered York on the 24th of September. But the following day the English Harold arrived from the south, and the end of the long day's fight at Stamford Bridge saw the rout of the Norwegian forces after the fall of their king (25th of September 1066). He was only fifty years old, but he was the first of the six kings who had ruled Norway since the death of Harald Haarfager to reach that age. As a king he was unpopular on account of his harshness and want of good faith, but his many victories in the face of great odds prove him to have been a remarkable general, of never-failing resourcefulness and indomitable courage.

HARALD IV. (d. 1136), king of Norway, surnamed Gylle (probably from *Gylle Krist*, *i.e.* servant of Christ), was born in Ireland about 1103. About 1127 he went to Norway and declared he was a son of King Magnus III. (Barefoot), who had visited Ireland just before his death in 1103, and consequently a half-brother of the reigning king, Sigurd. He appears to have submitted successfully to the ordeal of fire, and the alleged relationship was acknowledged by Sigurd on condition that Harald did not claim any share in the government of the kingdom during his lifetime or that of his son Magnus. Living on friendly terms with the king, Harald kept this agreement until Sigurd's death in 1130. Then war broke out between himself and Magnus, and after several battles the latter was captured in 1134, his eyes were put out, and he was thrown into prison. Harald now ruled the country until 1136, when he was murdered by Sigurd Slembi-Diakn, another bastard son of Magnus Barefoot. Four of Harald's sons, Sigurd, Ingi, Eysteinn and Magnus, were subsequently kings of Norway.

HARBIN, or KHARBIN, town of Manchuria, on the right bank of the river Sungari. Pop. about 20,000. Till 1896 there was only a small village here, but in that year the town was founded in connexion with surveys for the Chinese Eastern railway company, at a point which subsequently became the junction of the main line of the Manchurian railway with the branch line southward to Port Arthur. Occupying such a position, Harbin became an important Russian military centre during the Russo-Japanese War. The portion of the town founded in 1896 is called Old Harbin, but the centre has shifted to New Harbin, where the chief public buildings and offices of the railway administration are situated. The river-port forms a third division of the town, industrially the most important; here are railway workshops, factories and mercantile establishments. Trade is chiefly in the hands of the Chinese.

HARBINGER, originally one who provides a shelter or lodging for an army. The word is derived from the M. E. and O. Fr. *herbergere*, through the Late Lat. *heribergator*, formed from the O. H. Ger. *heri*, mod. Ger. *Heer*, an army, and *bergen*, shelter or defence, cf. "harbour." The meaning was soon enlarged to include any place where travellers could be lodged or entertained, and also by transference the person who provided lodgings, and so one who goes on before a party to secure suitable lodgings in advance. A herald sent forward to announce the coming of a king. A Knight Harbinger was an officer in the royal household till 1846. In these senses the word is now obsolete. It is used chiefly in poetry and literature for one who announces the immediate approach of something, a forerunner. This is illustrated in the "harbinger of spring," a name given to a small plant belonging to the Umbelliferae, which has a tuberous root, and small white flowers; it is found in the central states of North America, and blossoms in March.

HARBOUR (from M. E. *hereberge*, *here*, an army; cf. Ger. *Heer* and -*beorg*, protection or shelter. Other early forms in English were *herberwe* and *harborow*, as seen in various place

names, such as Market Harborough. The French *auberge*, an inn, derived through *heberger*, is thus the same word), a place of refuge or shelter. It is thus used for an asylum for criminals, and particularly for a place of shelter for ships.

Sheltered sites along exposed sea-coasts are essential for purposes of trade, and very valuable as refuges for vessels from storms. In a few places, natural shelter is found in combination with ample depth, as in the Bay of Rio de Janeiro, New York Harbour (protected by Long Island), Portsmouth Harbour and Southampton Water (sheltered by the Isle of Wight), and the land-locked creeks of Milford Haven and Kiel Harbour. At various places there are large enclosed areas which have openings into the sea; but these lagoons for the most part are very shallow except in the main channels and at their outlets. Access to them is generally obstructed by a bar as at the lagoon harbour of Venice (fig. 1), and similar harbours, like those of Poole and Wexford; and such harbours usually require works to prevent their deterioration, and to increase the depth near their outlet. Generally, however, harbours are formed where shelter is provided to a certain extent by a bay, creek or projecting headland, but requires to be rendered complete by one or more breakwaters (see BREAKWATER), or where the approach to a river, a ship-canal or a seaport, needs protection. A refuge harbour is occasionally constructed where a long length of stormy coast, near the ordinary track of vessels, is entirely devoid of natural shelter. Naval harbours are required by maritime powers as stations for their fleets, and dockyards for construction and repairs, and also in some cases as places of shelter from the night attacks of torpedoes. Commercial harbours have to be provided for the formation of ports within their shelter on important trade routes, or for the protection of the approaches from the sea of ports near the sea-coast, or maritime waterways running inland, in some cases at points on the coast devoid of all natural shelter. A greater latitude in the selection of suitable sites is, indeed, possible for refuge and naval harbours than for commercial harbours; but these three classes of harbours are very similar in their general outline and the works protecting them, only differing in size and internal arrangements according to the purpose for which they have been constructed, the chief differences being due to the local conditions.

Harbours may be divided into three distinct groups, namely, lagoon harbours, jetty harbours and sea-coast harbours, protected by breakwaters, including refuge, naval and commercial harbours.

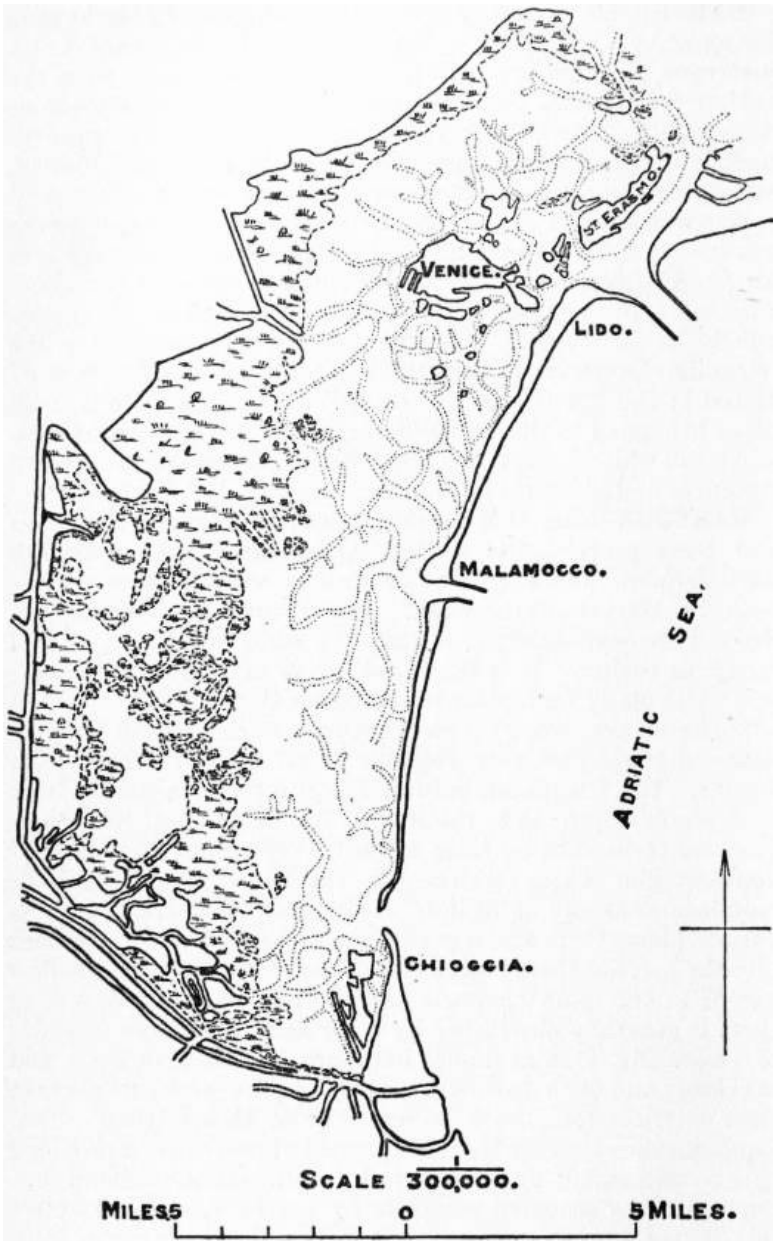

FIG. 1.—Venetian Lagoon Harbour.

Lagoon Harbours.—A lagoon, consisting of a sort of large shallow lake separated from the sea by a narrow belt of coast, formed of deposit from a deltaic river or of sand dunes heaped up by on-shore winds along a sandy shore, possesses good natural shelter; and, owing to the large expanse which is filled and emptied at each tide, even when the tidal range is quite small, together with the discharge from any rivers flowing into the lagoon, one or more fairly deep outlets are maintained through the fringe of coast, which afford navigable access to the lagoon; whilst channels formed inside by the currents lead to ports on its banks. Lagoons, however, are liable to be gradually silted up, if rivers flowing into them bring down considerable quantities of alluvium, which is readily deposited in their fairly still waters; and their outlet channels are in danger of becoming shallower, by the sea in storms forming additional outlets by breaking through the narrow barrier separating them from the sea. Moreover, the approach from the sea to these channels through the fringe of coast is generally impeded by a bar, owing to the scour of the issuing current through these outlet channels becoming gradually too enfeebled, on entering the open sea, to overcome the heaping-up action of the waves along the shore, which tends to form a continuous beach across these openings. Rivers, accordingly, whose discharge is very valuable in maintaining a lagoon if their waters are free from sediment, must, if possible, be diverted from a lagoon if they bring down large amounts of silt; whilst the narrow belt of land in front of the lagoon must be protected from erosion by the waves, on its sea face, by groynes or revetments. The depth over the bar in front of an outlet can be improved by concentrating the current through the outlet by jetties on each side, and prolonging the jetties, and consequently the scour, out to the bar so as to lower it, and by supplementing the scouring action, if necessary, by dredging.

Jetty Harbours.—Several small ports were formed on the sea-coast long ago at points where flat marshy ground lying below the level of high-water, and shut off from the sandy beach by dikes or sand dunes, was connected with the sea by a small creek or river. Such ports presented in their original condition a slight resemblance to lagoons on a very small scale. Several examples are to be found on the sandy shores of the English Channel and North Sea, such as Dieppe, Boulogne, Calais, Dunkirk, Nieuport and Ostend, where the influx and efflux of the

water from these enclosed tide-covered areas, through a narrow opening, sufficed to maintain a shallow channel to the sea across the beach, deep enough near high-water for vessels of small draught. When the increase in draught necessitated the provision of an improved channel, the scour of the issuing current was concentrated and prolonged by erecting parallel jetties across the beach, raised solid to a little above low water of neap tides, with open timber-work above to indicate the channel and guide the vessels. Even this low obstruction, however, to the littoral drift of sand caused an advance of the low water line as the jetties were carried out, so that further extensions of the jetties had eventually to be abandoned, as occurred at Dunkirk (see DOCK). Moreover, reclamation of the low-lying areas was gradually effected, thus reducing the tidal scour; and sluicing basins were excavated in part of the low ground, into which the tide flowed through the entrance channel, and the water being shut in at high tide by gates at the outlet of the basin, was released at low water, producing a rapid current through the channel as a compensation for the loss of the former natural scour. The current, however, from the sluicing basin gradually lost its velocity in passing down the channel, and besides, being most effective near the outlet of the basin, could only scour the channel down to a moderate depth below low water, on account of the increase in the volume of still water in the channel at low tide as its deepening progressed. Lastly, about 1880, improvements in suction dredgers (see DREDGE AND DREDGING) led to the adoption of sand-pump dredging in the outer part of the channel, and across the foreshore in front to deep water; and at Dunkirk, docks were formed on the site of the sluicing basin; whilst at Calais sluicing was abandoned in favour of dredging. Ostend is the only jetty harbour in which a large sluicing basin has been recently constructed, but it can only provide for the maintenance of deep-water quays in its vicinity; and dredging is relied upon to an increasing extent, both for the maintenance and further deepening of the outer portion of the approach channel, and for maintaining the direct channel dredged to deep water across the Stroombank extending in front of Ostend (fig. 2).

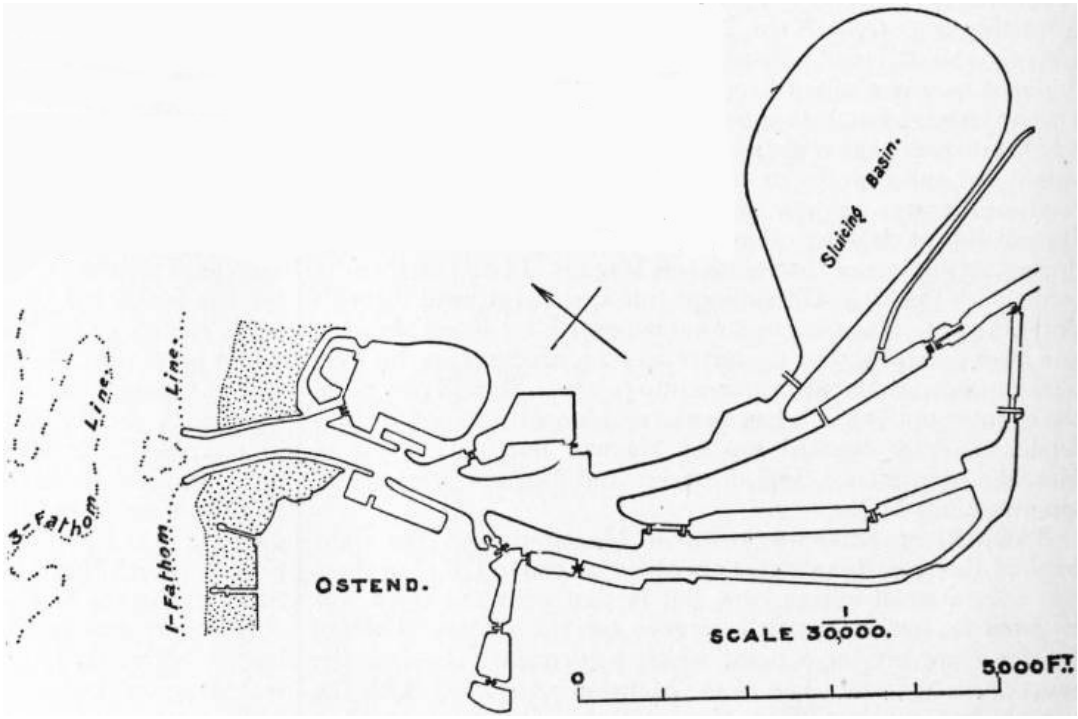

FIG. 2.—Ostend Harbour and Jetty Channel.

Similar methods of improving the entrance channel to ports possessing an extensive backwater have been adopted on a large scale in the United States. For instance at Charleston, converging jetties, about 2¾ m. long, have been extended across the bar to concentrate the scour due to a small tidal range expanding over the enclosed backwater, 15 sq. m. in extent, and to protect the channel from littoral drift; but these jetties have caused an advance of the foreshore, and a progression seawards of the bar, necessitating dredging beyond the ends of the jetties to maintain the requisite depth.

Parallel jetties, moreover, across the beach, combined with extensive sand-pump dredging, have been employed with success at some of the ports situated at the outlet of rivers, enclosed bays, or lagoons, on the sandy shores of south-east Africa, for improving the access to them across encumbering shoals, where the littoral drift is too great to allow of the projection of breakwaters from the shore to shelter an approach channel.

Harbours Protected by Breakwaters.—The design for a harbour on the sea-coast must depend on the configuration of the adjacent coast-line, the extent and direction of the exposure, the amount of sheltered area required and the depth obtainable, the prospect of the accumulation of drift or the occurrence of scour from the proposed works, and the best position for an entrance in respect of shelter and depth of approach.

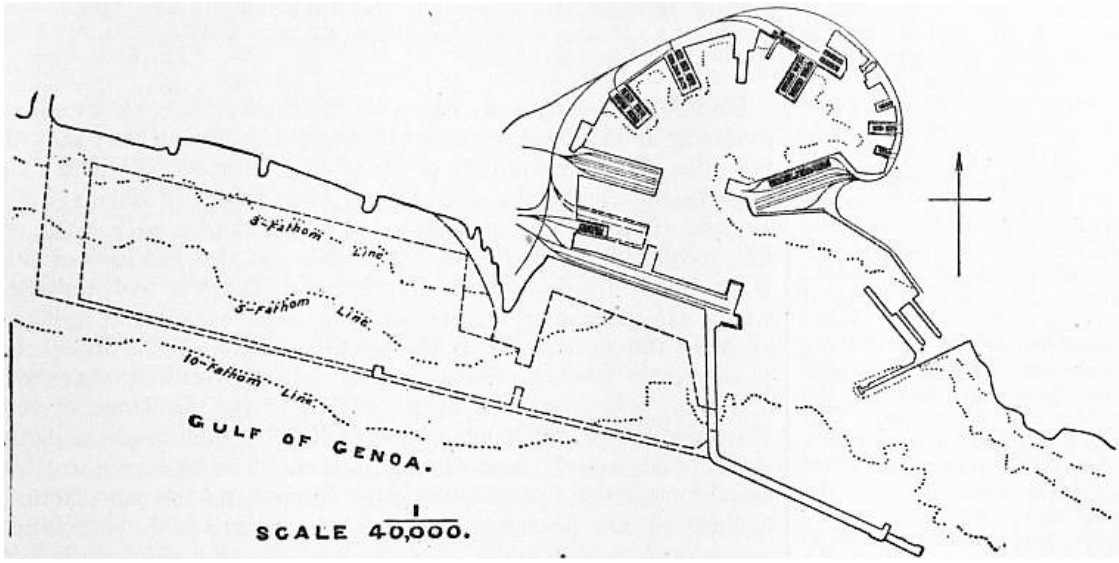

FIG. 3.—Genoa Harbour and Extensions.

Completion of Shelter of Harbours in Bays.—In the case of a deep, fairly land-locked bay, a detached breakwater across the outlet completes the necessary shelter, leaving an entrance between each extremity and the shore, provided there is deep enough water near the shore, as effected at Plymouth harbour, and also across the wider but shallower bay forming Cherbourg harbour. A breakwater may instead be extended across the outlet from each shore, leaving a single central entrance between the ends of the breakwaters; and if one breakwater placed somewhat farther out is made to overlap an inner one, a more sheltered entrance is obtained. This arrangement has been adopted at the existing Genoa harbour within the bay (fig. 3), and for the harbour at the mouth of the Nervion (see RIVER ENGINEERING). The adoption of a bay with deep water for a harbour does not merely reduce the shelter to be provided artificially, but it also secures a site not exposed to silting up, and where the sheltering works do not interfere with any littoral drift along the open coast. A third method of sheltering a deep bay is that adopted for forming a refuge harbour at Peterhead (fig. 4), where a single breakwater is extended out from one shore for 3250 ft. across the outlet of the bay, leaving a single entrance between its extremity and the opposite shore and enclosing an area of about 250 acres at low tide, half of which has a depth of over 5 fathoms.

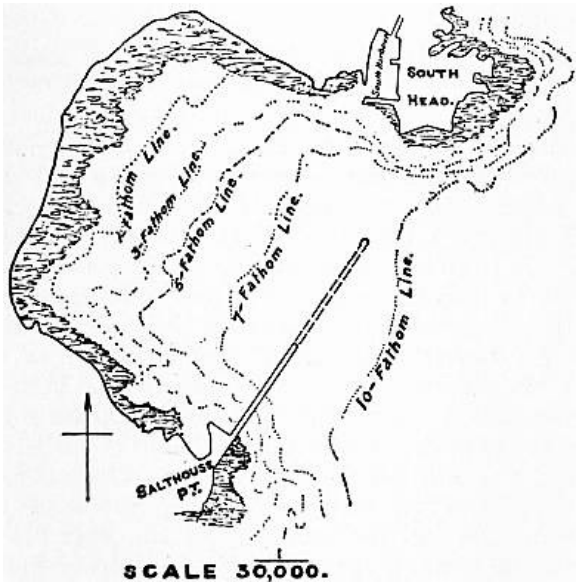

FIG. 4.—Peterhead Harbour of Refuge.

Harbours possessing partial Natural Shelter.—The most common form of harbour is that in which one or more breakwaters supplement a certain amount of natural shelter. Sometimes, where the exposure is from one direction only, approximately parallel with the coast-line at the site, and there is more or less shelter from a projecting headland or a curve of the coast in the opposite direction, a single breakwater extending out at right angles to the shore, with a slight curve or bend inwards near its outer end, suffices to afford the necessary shelter. As examples of this form of harbour construction may be mentioned Newhaven breakwater, protecting the approach to the port from the west, and somewhat sheltered from the moderate easterly storms by Beachy Head, and Table Bay breakwater, which shelters the harbour from the north-east, and is somewhat protected on the opposite side by the wide sweep of the coast-line known as Table

Bay. Generally, however, some partial embayment, or abrupt projection from the coast, is utilized as providing shelter from one quarter, which is completed by breakwaters enclosing the site, of which Dover and Colombo (fig. 5) harbours furnish typical and somewhat similar examples.

Harbours formed on quite Open Seacoasts.—Occasionally harbours have to be constructed for some special purpose where no natural shelter exists, and where on an open, sandy shore considerable littoral drift may occur. Breakwaters, carried out from the shore at some distance apart, and converging to a central entrance of suitable width, provide the requisite shelter, as for instance the harbour constructed to form a sheltered approach to the river Wear and the Sunderland docks (fig. 6). If there is little littoral drift from the most exposed quarter, the amount of sand brought in during storms, which is smaller in proportion to the depth into which the entrance is carried, can be readily removed by dredging; whilst the scour across the projecting ends of the breakwaters tends to keep the outlet free from deposit. Where there is littoral drift in both directions on an open, sandy coast, due to winds blowing alternately from opposite quarters, sand accumulates in the sheltered angles outside the harbour between each converging breakwater and the shore. This has happened at Ymuiden harbour at the entrance to the Amsterdam ship-canal on the North Sea, but there the advance of the shore appears to have reached its limit only a short distance out from the old shore-line on each side; and the only evidence of drift consists in the advance seawards of the lines of soundings alongside, and in the considerable amount of sand which enters the harbour and has to be removed by dredging. The worst results occur where the littoral drift is almost wholly in one direction, so that the projection of a solid breakwater out from the shore causes a very large accretion on the side facing the exposed quarter; whilst owing to the arrest of the travel of sand, erosion of the beach occurs beyond the second breakwater enclosing the harbour on its comparatively sheltered side. These effects have been produced at Port Said harbour at the entrance to the Suez Canal from the Mediterranean, formed by two converging breakwaters, where, owing to the prevalent north-westerly winds, the drift is from west to east, and is augmented by the alluvium issuing from the Nile. Accordingly, the shore has advanced considerably against the outer face of the western breakwater; and erosion of the beach has occurred at the shore end of the eastern breakwater, cutting it off from the land. The advance of the shore-line, however, has been much slower during recent years; and though the progress seawards of the lines of soundings close to and in front of the harbour continues, the advance is checked by the sand and silt coming from the west passing through some apertures purposely left in the western breakwater, and falling into the approach channel, from which it is readily dredged and taken away. Madras harbour, begun in 1875, consists of two breakwaters, 3000 ft. apart, carried straight out to sea at right angles to the shore for 3000 ft., and completed by two return arms inclined slightly seawards, enclosing an area of 220 acres and leaving a central entrance, 550 ft. wide, facing the Indian Ocean in a depth of about 8 fathoms. The great drift, however, of sand along the coast from south to north soon produced an advance of the shore against the outside of the south breakwater, and erosion beyond the north breakwater; and the progression of the foreshore has extended so far seawards as to produce shoaling at the entrance. Accordingly, the closing of the entrance, and the formation of a new entrance through the outer part of the main north breakwater, facing north and sheltered by an arm starting from the angle of the northern return arm and running north parallel to the shore, round the end of which vessels would turn to enter, have been recommended, to provide a deep entrance beyond the influence of the advancing foreshore.

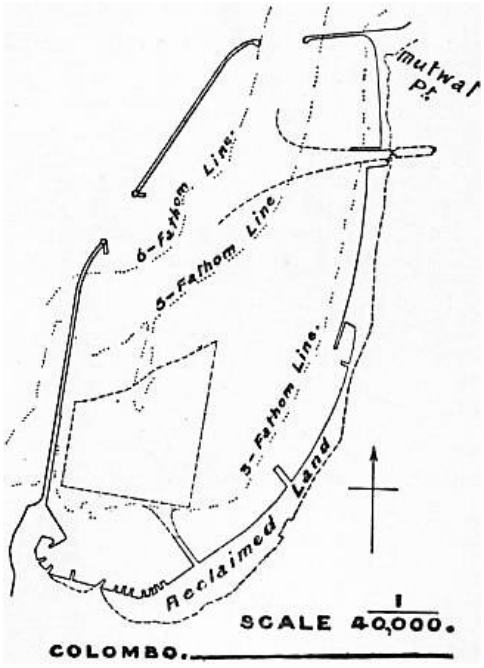

FIG. 5.—Colombo Harbour.

Proposals have been made from time to time to evade this advance of the foreshore against a solid obstacle, by extending an open viaduct across the zone of littoral drift, and forming a closed harbour, or a sheltering breakwater against which vessels can lie, beyond the influence of accretion. This principle was carried out on a large scale at the port of call and sheltering breakwater constructed in front of the entrance to the Bruges ship-canal, at Zeebrugge on the sandy North Sea coast, where a solid breakwater, provided with a wide quay furnished with sidings and

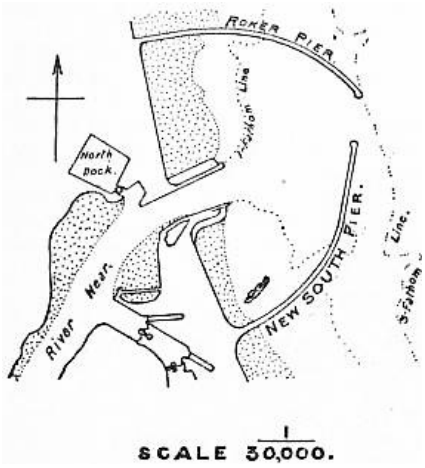

FIG. 6.—Sunderland Harbour.

sheds, and curving round so as to overlap thoroughly the entrance to the canal and shelter a certain water-area, is approached by an open metal viaduct extending out 1007 ft. from low water into a depth of 20 ft. (fig. 7). It is hoped that by thus avoiding interference with the littoral drift close to the shore, coming mainly from the west, the accumulation of silt to the west of the harbour, and also in the harbour itself, will be prevented; and though it appears probable that some accretion will occur within the area sheltered by the breakwater, it will to some extent be disturbed by the wash of the steamers approaching and leaving the quays, and can readily be removed under shelter by dredging.

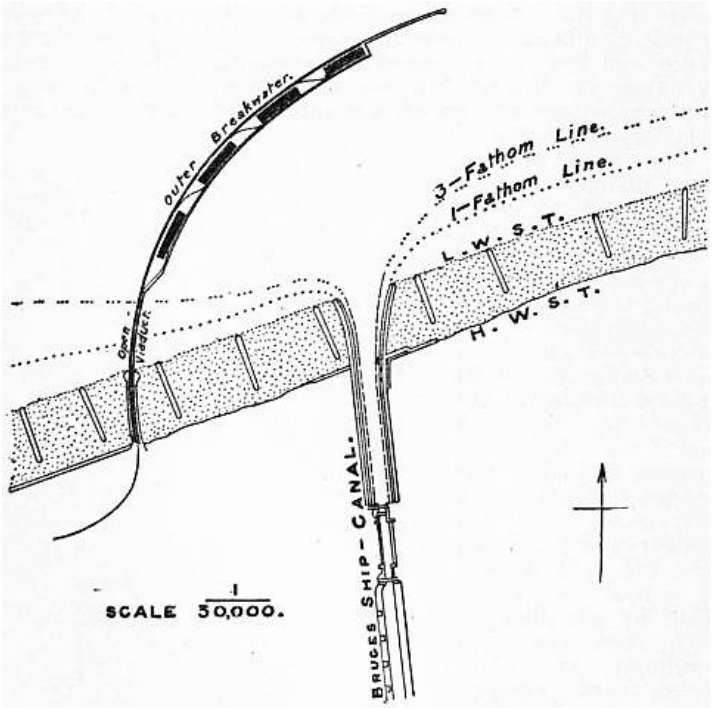

FIG. 7.—Zeebrugge Harbour.

Entrances to Harbours.—Though captains of vessels always wish for wide entrances to harbours as affording greater facility of safe access, it is important to keep the width as narrow as practicable, consistent with easy access, to exclude waves and swell as much as possible and secure tranquillity inside. At Madras, the width of 550 ft. proved excessive for the great exposure of the entrance, and moderate size of the harbour, which does not allow of the adequate expansion of the entering swell. Where an adequately easy and safe approach can be secured, it is advantageous to make the entrance face a somewhat sheltered quarter by the overlapping of the end of one of the breakwaters, as accomplished at Bilbao and Genoa harbours (fig. 3), and at the southern entrance to Dover harbour. Occasionally, owing to the comparative shelter afforded by a bend in the adjacent coast-line, a very wide entrance can be left between a breakwater and the shore; typical examples are furnished by the former open northern entrance to Portland harbour, now closed against torpedoes, and the wide entrances at Holyhead and Zeebrugge (fig. 7). With a large harbour and the adoption of a detached breakwater, it is possible to gain the advantage of two entrances facing different quarters, as effected at Dover and Colombo, which enables vessels to select their entrance according to the state of the wind and weather; where there is a large tidal rise they reduce the current through the entrances, and they may, under favourable conditions, create a circulation of the water in the harbour, tending to check the deposit of silt.

(L. F. V.-*H.)

HARBURG, a seaport town of Germany, in the Prussian province of Hanover, on the left bank of the southern arm of the Elbe, 6 m. by rail S. of Hamburg. Pop. (1885), 26,320; (1905)—the

area of the town having been increased since 1895—55,676. It is pleasantly situated at the foot of a lofty range of hills, which here dip down to the river, at the junction of the main lines of railway from Bremen and Hanover to Hamburg, which are carried to the latter city over two grand bridges crossing the southern and the northern arms of the Elbe. It possesses a Roman Catholic and two Protestant churches, a palace, which from 1524 to 1642 was the residence of the Harburg line of the house of Brunswick, a high-grade modern school, a commercial school and a theatre. The leading industries are the crushing of palm-kernels and linseed and the manufacture of india-rubber, phosphates, starch, nitrate and jute. Machines are manufactured here; beer is brewed, and shipbuilding is carried on. The port is accessible to vessels drawing 18 ft. of water, and, despite its proximity to Hamburg, its trade has of late years shown a remarkable development. It is the chief mart in the empire for resin and palm-oil. The Prussian government proposes establishing here a free port, on the lines of the *Freihafen* in Hamburg.

Harburg belonged originally to the bishopric of Bremen, and received municipal rights in 1297. In 1376 it was united to the principality of Lüneburg, along with which it fell in 1705 to Hanover, and in 1806 to Prussia. In 1813 and 1814 it suffered considerably from the French, who then held Hamburg, and who built a bridge between the two towns, which remained standing till 1816.

See Ludewig, *Geschichte des Schlosses und der Stadt Harburg* (Harburg, 1845); and Hoffmeyer, *Harburg und die nächste Umgegend* (1885).

HARCOURT, a village in Normandy, now a commune in the department of Eure, arrondissement of Bernay and canton of Brionne, which gives its name to a noble family distinguished in French history, a branch of which was early established in England. Of the lords of Harcourt, whose genealogy can be traced back to the 11th century, the first to distinguish himself was Jean II. (d. 1302) who was marshal and admiral of France. Godefroi d'Harcourt, seigneur of Saint Sauveur le Vicomte, surnamed "Le boiteux" (the lame), was a marshal in the English army and was killed near Coutances in 1356. The fief of Harcourt was raised to the rank of a countship by Philip of Valois, in favour of Jean IV., who was killed at the battle of Creçy (1346). His son, Jean V. (d. 1355) married Blanche, heiress of Jean II., count of Aumale, and the countship of Harcourt passed with that of Aumale until, in 1424, Jean VIII., count of Aumale and Mortain and lieutenant-general of Normandy, was killed at the battle of Verneuil, and with him the elder branch became extinct in the male line. The heiress, Marie, by her marriage with Anthony of Lorraine, count of Vaudémont, brought the countship of Harcourt into the house of Lorraine. The title of count of Harcourt was borne by several princes of this house. The most famous instance was Henry of Lorraine, count of Harcourt, Brionne, and Armagnac, and nicknamed "Cadet la perle" (1601-1666). He distinguished himself in several campaigns against Spain, and later played an active part in the civil wars of the Fronde. He took the side of the princes, and fought against the government in Alsace; but was defeated by Marshal de la Ferté, and made his submission in 1654.

The most distinguished among the younger branches of the family are those of Montgomery and of Beuvron. To the former belonged Jean d'Harcourt, bishop of Amiens and Tournai, archbishop of Narbonne and patriarch of Antioch, who died in 1452; and Guillaume d'Harcourt, count of Tancarville, and viscount of Melun, who was head of the administration of the woods and forests in the royal domain (*souverain maître et réformateur des eaux et forêts de France*) and died in 1487.

From the branch of the marquises of Beuvron sprang Henri d'Harcourt, marshal of France, and ambassador at the Spanish court, who was made duke of Harcourt (1700) and a peer of France (1709); also François Eugène Gabriel, count, and afterwards duke, of Harcourt, who was ambassador first in Spain, and later at Rome, and died in 1865. This branch of the family is still in existence.

See G. A. de la Rogne, *Histoire généalogique de la maison d'Harcourt* (4 vols., Paris, 1662); P. Anselme, *Histoire généalogique de la maison de France*, v. 114, &c.; and Dom le Noir, *Preuves généalogiques et historiques de la maison de Harcourt* (Paris, 1907).

(M. P.*)

HARCOURT, SIMON HARCOURT, 1st Viscount (*c.* 1661-1727), lord chancellor of England, only son of Sir Philip Harcourt of Stanton Harcourt, Oxfordshire, by his first wife, Anne, daughter of Sir William Waller, was born about 1661 at Stanton Harcourt, and was educated at a school at Shilton, Oxfordshire, and at Pembroke College, Oxford. He was called to the bar in 1683, and soon afterwards was appointed recorder of Abingdon, which borough he represented as a Tory in parliament from 1690 to 1705. In 1701 he was nominated by the Commons to conduct the impeachment of Lord Somers; and in 1702 he became solicitor-general and was knighted by Queen Anne. He was elected member for Bossiney in 1705, and as commissioner for arranging the union with Scotland was largely instrumental in promoting that measure. Harcourt was appointed attorney-general in 1707, but resigned office in the following year when his friend Robert Harley, afterwards earl of Oxford, was dismissed. He defended Sacheverell at the bar of the House of Lords in 1710, being then without a seat in parliament; but in the same year was returned for Cardigan, and in September again became attorney-general. In October he was appointed lord keeper of the great seal, and in virtue of this office he presided in the House of Lords for some months without a peerage, until, on the 3rd of September 1711, he was created Baron Harcourt of Stanton Harcourt; but it was not till April 1713 that he received the appointment of lord chancellor. In 1710 he had purchased the Nuneham-Courtney estate in Oxfordshire, but his usual place of residence continued to be at Cokethorpe near Stanton Harcourt, where he received a visit in state from Queen Anne. In the negotiations preceding the peace of Utrecht, Harcourt took an important part. There is no sufficient evidence for the allegations of the Whigs that Harcourt entered into treasonable relations with the Pretender. On the accession of George I. he was deprived of office and retired to Cokethorpe, where he enjoyed the society of men of letters, Swift, Pope, Prior and other famous writers being among his frequent guests. With Swift, however, he had occasional quarrels, during one of which the great satirist bestowed on him the sobriquet of “Trimming Harcourt.” He exerted himself to defeat the impeachment of Lord Oxford in 1717, and in 1723 he was active in obtaining a pardon for another old political friend, Lord Bolingbroke. In 1721 Harcourt was created a viscount and returned to the privy councils; and on several occasions during the king’s absences from England he was on the council of regency. He died in London on the 23rd of July 1727. Harcourt was not a great lawyer, but he enjoyed the reputation of being a brilliant orator; Speaker Onslow going so far as to say that Harcourt “had the greatest skill and power of speech of any man I ever knew in a public assembly.” He was a member of the famous Saturday Club, frequented by the chief *literati* and wits of the period, with several of whom he corresponded. Some letters to him from Pope are preserved in the *Harcourt Papers*. His portrait by Kneller is at Nuneham.

Harcourt married, first, Rebecca, daughter of Thomas Clark, his father’s chaplain, by whom he had five children; secondly, Elizabeth, daughter of Richard Spencer; and thirdly, Elizabeth, daughter of Sir Thomas Vernon. He left issue by his first wife only. His son, Simon (1684-1720), married Elizabeth, sister of Sir John Evelyn of Wotton, by whom he had one son and four daughters, one of whom married George Venables Vernon, afterwards Lord Vernon (see Harcourt, Sir William—footnote). Simon Harcourt predeceased his father, the lord chancellor, in 1720, leaving a son Simon Harcourt (1714-1777), 1st Earl Harcourt, who succeeded his grandfather in the title of viscount in 1727. He was educated at Westminster school. In 1745, having raised a regiment, he received a commission as a colonel in the army; and in 1749 he was created Earl Harcourt of Stanton Harcourt. He was appointed governor to the prince of Wales, afterwards George III., in 1751; and after the accession of the latter to the throne he was appointed, in 1761, special ambassador to Mecklenburg-Strelitz to negotiate a marriage between King George and the princess Charlotte, whom he conducted to England. After holding a number of appointments at court and in the diplomatic service, he was promoted to the rank of general in 1772; and in October of the same year he succeeded Lord Townsend as lord lieutenant of Ireland, an office which he held till 1777. His proposal to impose a tax of 10% on the rents of absentee landlords had to be abandoned owing to opposition in England; but he succeeded in conciliating the leaders of Opposition in Ireland, and he persuaded Henry Flood to accept office in the government. Resigning in January 1777, he retired to Nuneham, where he died in the following September. He married, in 1735, Rebecca, daughter and heiress of Charles Samborne Le Bas, of Pipewell Abbey, Northamptonshire, by whom he had two daughters and two sons, George Simon and William, who succeeded him as 2nd and 3rd earl respectively.

See Lord Campbell, *Lives of the Lord Chancellors*, vol. v. (London, 1846); Edward Foss, *The Judges of England*, vol. viii. (London, 1848); Gilbert Burnet, *Hist. of his own Time* (with notes by earls of Dartmouth and Hardwicke, &c., Oxford, 1833); Earl Stanhope, *Hist. of England, comprising the reign of Queen Anne until the Peace of Utrecht* (London, 1870). In addition to the above-mentioned authorities many particulars concerning the 1st Viscount Harcourt, and also of his grandson, the 1st earl, will be found in the *Harcourt Papers*. For the earl, see also Horace Walpole, *Memoirs of the Reign of George II.* (3 vols., 2nd ed., London, 1847), *Memoirs of the Reign of George III.* (4 vols., London, 1845, 1894); also, for his vice-royalty of Ireland, see Henry Grattan, *Memoirs of the Life and Times of the Right Hon. H. Grattan* (5 vols., London, 1839-1846); Francis Hardy, *Memoirs of J. Caulfield, Earl of Charlemont* (2 vols., London, 1812); and for his genealogy, see Sir John Bernard Burke, *Genealogical History of Dormant and Extinct*

Peerages (London, 1883).

(R. J. M.)

HARCOURT, SIR WILLIAM GEORGE GRANVILLE VENABLES VERNON (1827-1904). English statesman, second son of the Rev. Canon William Vernon Harcourt (*q.v.*), of Nuneham Park, Oxford, was born on the 14th of October 1827. Canon Harcourt was the fourth son and eventually heir of Edward Harcourt (1757-1847), archbishop of York, who was the son of the 1st Lord Vernon (d. 1780), and who took the name of Harcourt alone instead of Vernon on succeeding to the property of his cousin, the last Earl Harcourt, in 1831.[1] The subject of this biography was therefore born a Vernon, and by his connexion with the old families of Vernon and Harcourt was related to many of the great English houses, a fact which gave him no little pride. Indeed, in later life his descent from the Plantagenets[2] was a subject of some banter on the part of his political opponents. He was educated at Trinity College, Cambridge, graduating with first-class honours in the classical tripos in 1851. He was called to the bar in 1854, became a Q.C. in 1866, and was appointed Whewell professor of international law, Cambridge, 1869. He quickly made his mark in London society as a brilliant talker; he contributed largely to the *Saturday Review*, and wrote some famous letters (1862) to *The Times* over the signature of "Historicus," in opposition to the recognition of the Southern States as belligerents in the American Civil War. He entered parliament as Liberal member for Oxford, and sat from 1868 to 1880, when, upon seeking re-election after acceptance of office, he was defeated by Mr Hall. A seat was, however, found for him at Derby, by the voluntary retirement of Mr Plimsoll, and he continued to represent that constituency until 1895, when, having been defeated at the general election, he found a seat in West Monmouthshire. He was appointed solicitor-general and knighted in 1873; and, although he had not shown himself a very strenuous supporter of Mr Gladstone during that statesman's exclusion from power, he became secretary of state for the home department on the return of the Liberals to office in 1880. His name was connected at that time with the passing of the Ground Game Act (1880), the Arms (Ireland) Act (1881), and the Explosives Act (1883). As home secretary at the time of the dynamite outrages he had to take up a firm attitude, and the Explosives Act was passed through all its stages in the shortest time on record. Moreover, as champion of law and order against the attacks of the Parnellites, his vigorous speeches brought him constantly into conflict with the Irish members. In 1884 he introduced an abortive bill for unifying the municipal administration of London. He was indeed at that time recognized as one of the ablest and most effective leaders of the Liberal party; and when, after a brief interval in 1885, Mr Gladstone returned to office in 1886, he was made chancellor of the exchequer, an office which he again filled from 1892 to 1895.

Between 1880 and 1892 Sir William Harcourt acted as Mr Gladstone's loyal and indefatigable lieutenant in political life. A first-rate party fighter, his services were of inestimable value; but in spite of his great success as a platform speaker, he was generally felt to be speaking from an advocate's brief, and did not impress the country as possessing much depth of conviction. It was he who coined the phrase about "stewing in Parnellite juice," and, when the split came in the Liberal party on the Irish question, even those who gave Mr Gladstone and Mr Morley the credit of being convinced Home Rulers could not be persuaded that Sir William had followed anything but the line of party expediency. In 1894 he introduced and carried a memorable budget, which equalized the death duties on real and personal property. After Mr Gladstone's retirement in 1894 and Lord Rosebery's selection as prime minister Sir William became the leader of the Liberal party in the House of Commons, but it was never probable that he would work comfortably in the new conditions. His title to be regarded as Mr Gladstone's successor had been too lightly ignored, and from the first it was evident that Lord Rosebery's ideas of Liberalism and of the policy of the Liberal party were not those of Sir William Harcourt. Their differences were patched up from time to time, but the combination could not last. At the general election of 1895 it was clear that there were divisions as to what issue the Liberals were fighting for, and the effect of Sir William Harcourt's abortive Local Veto Bill on the election was seen not only in his defeat at Derby, which gave the signal for the Liberal rout, but in the set-back it gave to temperance legislation. Though returned for West Monmouthshire (1895, 1900), his speeches in debate only occasionally showed his characteristic spirit, and it was evident that for the hard work of Opposition he no longer had the same motive as of old. In December 1898 the crisis arrived, and with Mr John Morley he definitely retired from the counsels of the party and resigned his leadership of the Opposition, alleging as his reason, in letters exchanged between Mr Morley and himself, the cross-currents of opinion among his old supporters and former colleagues. The split excited considerable comment, and resulted in much heart-burning and a more or less open division between the section of the Liberal party following Lord Rosebery (*q.v.*) and those who disliked that statesman's Imperialistic views.

Though now a private member, Sir William Harcourt still continued to vindicate his opinions in his independent position, and his attacks on the government were no longer restrained by even the semblance of deference to Liberal Imperialism. He actively intervened in 1899 and 1900, strongly condemning the government's financial policy and their attitude towards the Transvaal; and throughout the Boer War he lost no opportunity of criticizing the South African developments in a pessimistic vein. One of the readiest parliamentary debaters, he savoured his speeches with humour of that broad and familiar order which appeals particularly to political audiences. In 1898-1900 he was conspicuous, both on the platform and in letters written to The *Times*, in demanding active measures against the Ritualistic party in the Church of England; but his attitude on that subject could not be dissociated from his political advocacy of Disestablishment. In March 1904, just after he had announced his intention not to seek election again to parliament, he succeeded, by the death of his nephew, to the family estates at Nuneham. But he died suddenly there on the 1st of October in the same year. He married, first, in 1859, Thérèse (d. 1863), daughter of Mr T. H. Lister, by whom he had one son, Lewis Vernon Harcourt (b. 1863), afterwards first commissioner of works both in Sir Henry Campbell-Bannerman's 1905 ministry (included in the cabinet in 1907) and in Mr Asquith's cabinet (1908); and secondly, in 1876, Elizabeth, widow of Mr T. Ives and daughter of Mr. J. L. Motley, the historian, by whom he had another son, Robert (b. 1878).

Sir William Harcourt was one of the great parliamentary figures of the Gladstonian Liberal period. He was essentially an aristocratic type of late 19th century Whig, with a remarkable capacity for popular campaign fighting. He had been, and remained, a brilliant journalist in the non-professional sense. He was one of those who really made the *Saturday Review* in its palmy days, and in the period of his own most ebullient vigour, while Mr Gladstone was alive, his sense of political expediency and platform effectiveness in controversy was very acute. But though he played the game of public life with keen zest, he never really touched either the country or his own party with the faith which creates a personal following, and in later years he found himself somewhat isolated and disappointed, though he was free to express his deeper objections to the new developments in church and state. A tall, fine man, with the grand manner, he was, throughout a long career, a great personality in the life of his time.

(H. Ch.)

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1 William, 3rd and last Earl Harcourt (1743-1830), who succeeded his brother in the title, was a soldier who distinguished himself in the American War of Independence by capturing General Charles Lee, and commanded the British forces in Flanders in 1794, eventually becoming a field-marshal. He was a son of Simon, 1st earl (1714-1777), created viscount and earl in 1749, a soldier, and from 1772 to 1777 viceroy of Ireland, who was grandson and heir of Simon, Viscount Harcourt (1661-1727), lord chancellor—the "trimming Harcourt" of Swift—the purchaser of the Nuneham-Courtney estates in Oxfordshire, and son of Sir Philip Harcourt of Stanton Harcourt. The knights of Stanton Harcourt, from the 13th century onwards, traced their descent to the Norman de Harcourts, a branch of that family having come over with the Conqueror; and the pedigree claims to go back to Bernard of Saxony, who in 876 acquired the lordships of Harcourt, Castleville and Beaufícel in Normandy. Viscount Harcourt's second son Simon, who was father of the 1st earl, was also father of Martha, who married George Venables Vernon, of Sudbury, created 1st Baron Vernon in 1762. The latter was a descendant of Sir Richard Vernon (d. 1451), speaker of the Leicester parliament (1425) and treasurer of Calais, a member of a Norman family which came over with the Conqueror.

2 The Plantagenet descent (see *The Blood Royal of Britain*, by the marquis of Ruvigny, 1903, for tables) could be traced through Lady Anna Leveson Gower (wife of Archbishop Harcourt) to Lady Frances Stanley, the wife of the 1st earl of Bridgewater (1579-1649), and so to Lady Eleanor Brandon, wife of the earl of Cumberland (1517-1570), and daughter of Mary Tudor (wife of Charles Brandon, duke of Suffolk, 1484-1545), the daughter of Henry VII. and grand-daughter of Edward IV.

HARCOURT, WILLIAM VERNON (1789-1871), founder of the British Association, was born at Sudbury, Derbyshire, in 1789, a younger son of Edward Vernon [Harcourt], archbishop of York (see above). Having served for five years in the navy he went up to Christ Church, Oxford, with a view to taking holy orders. He began his clerical duties at Bishopthorpe, Yorkshire, in 1811, and having developed a great interest in science while at the university, he took an active part in the foundation of the Yorkshire Philosophical Society, of which he was the first president. The laws and the plan of proceedings for the British Association for the Advancement of Science were drawn up by him; and Harcourt was elected president in 1839. In 1824 he became canon of York and rector of Wheldrake in Yorkshire, and in 1837 rector of Bolton Percy. The Yorkshire school for the blind and the Castle Howard reformatory both owe their existence to his energies. His spare time until quite late in life was occupied with scientific experiments. Inheriting the Harcourt estates in Oxfordshire from his brother in 1861, he removed to Nuneham, where he

died in April 1871.

HARDANGER FJORD, an inlet on the west coast of Norway, penetrating the mainland for 70 m. apart from the deep fringe of islands off its mouth, the total distance from the open sea to the head of the fjord being 114 m. Its extreme depth is about 350 fathoms. The entrance at Torö is 50 m. by water south of Bergen, 60° N., and the general direction is N.E. from that point. The fjord is flanked by magnificent mountains, from which many waterfalls pour into it. The main fjord is divided into parts under different names, and there are many fine branch fjords. The fjord is frequented by tourists, and the principal stations have hotels. The outer fjord is called the Kvindherredsfjord, flanked by the Melderskin (4680 ft.); then follow Sildefjord and Bonde Sund, separated by Varalds island. Here Mauranger-fjord opens on the east; from Sundal on this inlet the great Folgefond snowfield may be crossed, and a fine glacier (Bondhusbrae) visited. Bakke and Vikingnaes are stations on Hisfjord, Nordheimsund and Östensö on Ytre Samlen, which throws off a fine narrow branch northward, the Fiksensund. There follow Indre Samlen and Utnefjord, with the station of Utne opposite Oxen (4120 ft.), and its northward branch, Gravenfjord, with the beautiful station of Eide at its head, whence a road runs north-west to Vossevangen. From the Utne terminal branches of the fjord run south and east; the Sörfjord, steeply walled by the heights of the Folgefond, with the frequented resort of Odde at its head; and the Eidfjord, with its branch Osefjord, terminating beneath a tremendous rampart of mountains, through which the sombre Simodal penetrates, the river flowing from Daemmevand, a beautiful lake among the fields, and forming with its tributaries the fine falls of Skykje and Rembesdal. Vik is the principal station on Eidfjord, and Ulvik on a branch of the Ose, with a road to Vossevangen. At Vik is the mouth of the Björeia river, which, in forming the Vöringfos, plunges 520 ft. into a magnificent rock-bound basin. A small stream entering Sörfjord forms in its upper course the Skjaeggedalsfos, of equal height with the Vöringfos, and hardly less beautiful. The natives of Hardanger have an especially picturesque local costume.

HARDEE, WILLIAM JOSEPH (1815-1873), American soldier, was born in Savannah, Georgia, on the 10th of November 1815 and graduated from West Point in 1838. As a subaltern of cavalry he was employed on a special mission to Europe to study the cavalry methods in vogue (1839). He was promoted captain in 1844 and served under Generals Taylor and Scott in the Mexican War, winning the brevet of major for gallantry in action in March 1847 and subsequently that of lieut.-colonel. After the war he served as a substantive major under Colonel Sidney Johnston and Lieut.-Colonel Robert Lee in the 2nd U.S. cavalry, and for some time before 1856 he was engaged in compiling the official manual of infantry drill and tactics which, familiarly called “Hardee’s Tactics,” afterwards formed the text-book for the infantry arm in both the Federal and the Confederate armies. From 1856 to 1861 he was commandant of West Point, resigning his commission on the secession of his state in the latter year. Entering the Confederate service as a colonel, he was shortly promoted brigadier-general. He distinguished himself very greatly by his tactical leadership on the field of Shiloh, and was immediately promoted major-general. As a corps commander he fought under General Bragg at Perryville and Stone River, and for his distinguished services in these battles was promoted lieutenant-general. He served in the latter part of the campaign of 1863 under Bragg and in that of 1864 under J. E. Johnston. When the latter officer was superseded by Hood, Hardee was relieved at his own request, and for the remainder of the war he served in the Carolinas. When the Civil War came to an end in 1865 he retired to his plantation near Selma, Alabama. He died at Wytheville, Virginia, on the 6th of November 1873.

HARDENBERG, KARL AUGUST VON, Prince (1750-1822), Prussian statesman, was born at Essenroda in Hanover on the 31st of May 1750. After studying at Leipzig and Göttingen he entered the Hanoverian civil service in 1770 as councillor of the board of domains (*Kammerrat*); but, finding his advancement slow, he set out—on the advice of King George III.—on a course of

travels, spending some time at Wetzlar, Regensburg (where he studied the mechanism of the Imperial government), Vienna and Berlin. He also visited France, Holland and England, where he was kindly received by the king. On his return he married, by his father's desire, the countess Reventlow. In 1778 he was raised to the rank of privy councillor and created a count. He now again went to England, in the hope of obtaining the post of Hanoverian envoy in London; but, his wife becoming entangled in an *amour* with the prince of Wales, so great a scandal was created that he was forced to leave the Hanoverian service. In 1782 he entered that of the duke of Brunswick, and as president of the board of domains displayed a zeal for reform, in the manner approved by the enlightened despots of the century, that rendered him very unpopular with the orthodox clergy and the conservative estates. In Brunswick, too, his position was in the end made untenable by the conduct of his wife, whom he now divorced; he himself, shortly afterwards, marrying a divorced woman. Fortunately for him, this coincided with the lapsing of the principalities of Ansbach and Bayreuth to Prussia, owing to the resignation of the last margrave, Charles Alexander, in 1791. Hardenberg, who happened to be in Berlin at the time, was on the recommendation of Herzberg appointed administrator of the principalities (1792). The position, owing to the singular overlapping of territorial claims in the old Empire, was one of considerable delicacy, and Hardenberg filled it with great skill, doing much to reform traditional anomalies and to develop the country, and at the same time labouring to expand the influence of Prussia in South Germany. After the outbreak of the revolutionary wars his diplomatic ability led to his appointment as Prussian envoy, with a roving commission to visit the Rhenish courts and win them over to Prussia's views; and ultimately, when the necessity for making peace with the French Republic had been recognized, he was appointed to succeed Count Goltz as Prussian plenipotentiary at Basel (February 28, 1795), where he signed the treaty of peace.

In 1797, on the accession of King Frederick William III., Hardenberg was summoned to Berlin, where he received an important position in the cabinet and was appointed chief of the departments of Magdeburg and Halberstadt, for Westphalia, and for the principality of Neuchâtel. In 1793 Hardenberg had struck up a friendship with Count Haugwitz, the influential minister for foreign affairs, and when in 1803 the latter went away on leave (August-October) he appointed Hardenberg his *locum tenens*. It was a critical period. Napoleon had just occupied Hanover, and Haugwitz had urged upon the king the necessity for strong measures and the expediency of a Russian alliance. During his absence, however, the king's irresolution continued; he clung to the policy of neutrality which had so far seemed to have served Prussia so well; and Hardenberg contented himself with adapting himself to the royal will. By the time Haugwitz returned, the unyielding attitude of Napoleon had caused the king to make advances to Russia; but the mutual declarations of the 3rd and 25th of May 1804 only pledged the two powers to take up arms in the event of a French attack upon Prussia or of further aggressions in North Germany. Finally, Haugwitz, unable to persuade the cabinet to a more vigorous policy, resigned, and on the 14th of April 1804 Hardenberg succeeded him as foreign minister.

If there was to be war, Hardenberg would have preferred the French alliance, which was the price Napoleon demanded for the cession of Hanover to Prussia; for the Eastern powers would scarcely have conceded, of their free will, so great an augmentation of Prussian power. But he still hoped to gain the coveted prize by diplomacy, backed by the veiled threat of an armed neutrality. Then occurred Napoleon's contemptuous violation of Prussian territory by marching three French corps through Ansbach; King Frederick William's pride overcame his weakness, and on the 3rd of November he signed with the tsar Alexander the terms of an ultimatum to be laid before the French emperor. Haugwitz was despatched to Vienna with the document; but before he arrived the battle of Austerlitz had been fought, and the Prussian plenipotentiary had to make the best terms he could with the conqueror. Prussia, indeed, by the treaty signed at Schönbrunn on the 15th of December 1805, received Hanover, but in return for all her territories in South Germany. One condition of the arrangement was the retirement of Hardenberg, whom Napoleon disliked. He was again foreign minister for a few months after the crisis of 1806 (April-July 1807); but Napoleon's resentment was implacable, and one of the conditions of the terms granted to Prussia by the treaty of Tilsit was Hardenberg's dismissal.

After the enforced retirement of Stein in 1810 and the unsatisfactory interlude of the feeble Altenstein ministry, Hardenberg was again summoned to Berlin, this time as chancellor (June 6, 1810). The campaign of Jena and its consequences had had a profound effect upon him; and in his mind the traditions of the old diplomacy had given place to the new sentiment of nationality characteristic of the coming age, which in him found expression in a passionate desire to restore the position of Prussia and crush her oppressors. During his retirement at Riga he had worked out an elaborate plan for reconstructing the monarchy on Liberal lines; and when he came into power, though the circumstances of the time did not admit of his pursuing an independent foreign policy, he steadily prepared for the struggle with France by carrying out Stein's far-reaching schemes of social and political reorganization. The military system was completely reformed, serfdom was abolished, municipal institutions were fostered, the civil service was thrown open to all classes, and great attention was devoted to the educational needs of every section of the community.

When at last the time came to put these reforms to the test, after the Moscow campaign of 1812, it was Hardenberg who, supported by the influence of the noble Queen Louise, determined Frederick William to take advantage of General Yorck's loyal disloyalty and declare against France. He was rightly regarded by German patriots as the statesman who had done most to encourage the spirit of national independence; and immediately after he had signed the first peace of Paris he was raised to the rank of prince (June 3, 1814) in recognition of the part he had played in the War of Liberation.

Hardenberg now had an assured position in that close corporation of sovereigns and statesmen by whom Europe, during the next few years, was to be governed. He accompanied the allied sovereigns to England, and at the congress of Vienna (1814-1815) was the chief plenipotentiary of Prussia. But from this time the zenith of his influence, if not of his fame, was passed. In diplomacy he was no match for Metternich, whose influence soon overshadowed his own in the councils of Europe, of Germany, and ultimately even of Prussia itself. At Vienna, in spite of the powerful backing of Alexander of Russia, he failed to secure the annexation of the whole of Saxony to Prussia; at Paris, after Waterloo, he failed to carry through his views as to the further dismemberment of France; he had weakly allowed Metternich to forestall him in making terms with the states of the Confederation of the Rhine, which secured to Austria the preponderance in the German federal diet; on the eve of the conference of Carlsbad (1819) he signed a convention with Metternich, by which—to quote the historian Treitschke—"like a penitent sinner, without any formal *quid pro quo*, the monarchy of Frederick the Great yielded to a foreign power a voice in her internal affairs." At the congresses of Aix-la-Chapelle, Troppau, Laibach and Verona the voice of Hardenberg was but an echo of that of Metternich.

The cause lay partly in the difficult circumstances of the loosely-knit Prussian monarchy, but partly in Hardenberg's character, which, never well balanced, had deteriorated with age. He continued amiable, charming and enlightened as ever; but the excesses which had been pardonable in a young diplomatist were a scandal in an elderly chancellor, and could not but weaken his influence with so pious a *Landesvater* as Frederick William III. To overcome the king's terror of Liberal experiments would have needed all the powers of an adviser at once wise and in character wholly trustworthy. Hardenberg was wise enough; he saw the necessity for constitutional reform; but he clung with almost senile tenacity to the sweets of office, and when the tide turned strongly against Liberalism he allowed himself to drift with it. In the privacy of royal commissions he continued to elaborate schemes for constitutions that never saw the light; but Germany, disillusioned, saw only the faithful henchman of Metternich, an accomplice in the policy of the Carlsbad Decrees and the Troppau Protocol. He died, soon after the closing of the congress of Verona, at Genoa, on the 26th of November 1822.

See L. v. Ranke, *Denkwürdigkeiten des Staatskanzlers Fürsten von Hardenberg* (5 vols., Leipzig, 1877); J. R. Seeley, *The Life and Times of Stein* (3 vols., Cambridge, 1878); E. Meier, *Reform der Verwaltungsorganisation unter Stein und Hardenberg* (*ib.*, 1881); Chr. Meyer, *Hardenberg und seine Verwaltung der Fürstentümer Ansbach und Bayreuth* (Breslau, 1892); Koser, *Die Neuordnung des preussischen Archivwesens durch den Staatskanzler Fürsten v. Hardenberg* (Leipzig, 1904).

HARDERWYK, a seaport in the province of Gelderland, Holland, on the shores of the Zuider Zee, 17 m. by rail N.N.E. of Amersfoort. Pop. (1900) 7425. It is a quaint old town, approached by a fine avenue of trees, and standing in the midst of a patch of fertile ground. Harderwyk is chiefly important as being the depot for recruits for the Dutch colonial army. It contains a small fort and large barracks. The principal buildings are the town hall, with some ancient furniture, a large 15th century church with a notable square tower, a municipal orphanage, and the Nassau-Veluwe gymnasium. Agriculture, fishing, and a few domestic industries form the only employment of the inhabitants. As a seaport its trade is now confined exclusively to the Zuider Zee.

HARDICANUTE [more correctly HARDACNUT] (*c.* 1010-1042), son of Canute, king of England, by his wife Ælfgifu or Emma, was born about 1019. In the contest for the English crown which followed the death of Canute in 1035 the claims of Hardicanute were supported by Emma and

her ally, Godwine, earl of the West Saxons, in opposition to those of Harold, Canute's illegitimate son, who was backed by the Mercian earl Leofric and the chief men of the north. At a meeting of the witan at Oxford a compromise was ultimately arranged by which Harold was temporarily elected regent of all England, pending the final settlement of the question on the return of Hardicanute from Denmark. The compromise was strongly opposed by Godwine and Emma, who for a time forcibly held Wessex in Hardicanute's behalf. But Harold's party rapidly increased; and early in 1037 he was definitely elected king. Emma was driven out and took refuge at Bruges. In 1039 Hardicanute joined her, and together they concerted an attack on England. But next year Harold died; and Hardicanute peacefully succeeded. His short reign was marked by great oppression and cruelty. He caused the dead body of Harold to be dug up and thrown into a fen; he exacted so heavy a geld for the support of his foreign fleet that great discontent was created throughout the kingdom, and in Worcestershire a general uprising took place against those sent to collect the tax, whereupon he burned the city of Worcester to the ground and devastated the surrounding country; in 1041 he permitted Edwulf, earl of Northumbria, to be treacherously murdered after having granted him a safe-conduct. While "he stood at his drink" at the marriage feast of one of his flegns he was suddenly seized with a fit, from which he died a few days afterwards on the 8th of June 1042.

HARDING, CHESTER (1792-1866), American portrait painter, was born at Conway, Massachusetts, on the 1st of September 1792. Brought up in the wilderness of New York state, Harding, as a lad of splendid physique, standing over 6 ft. 3 in., marched as a drummer with the militia to the St Lawrence in 1813. He became subsequently chairmaker, peddler, inn-keeper, and house-painter, painting signs in Pittsburg, Pa., and eventually going on the road, self-taught, as an itinerant portrait painter. He made enough money to take him to the schools at the Philadelphia Academy of Design, and he soon became proficient enough to gain a competency, so that later he went to England and set up a studio in London. There he met with great success, painting royalty and the nobility, and, despite the lackings of an early education and social experience, he became a favourite in all circles. Returning to the United States, he settled in Boston and painted portraits of many of the prominent men and women of his time. He died on the 1st of April 1866.

HARDING, JAMES DUFFIELD (1798-1863), English landscape painter, was the son of an artist, and took to the same vocation at an early age, although he had originally been destined for the law. He was in the main a water-colour painter and a lithographer, but he produced various oil-paintings both at the beginning and towards the end of his career. He frequently contributed to the exhibitions of the Water-Colour Society, of which he became an associate in 1821, and a full member in 1822. He was also very largely engaged in teaching, and published several books developing his views of art—amongst others, *The Tourist in Italy* (1831); *The Tourist in France* (1834); *The Park and the Forest* (1841); *The Principles and the Practice of Art* (1845); *Elementary Art* (1846); *Scotland Delineated in a Series of Views* (1847); *Lessons on Art* (1849). He died at Barnes on the 4th of December 1863. Harding was noted for facility, sureness of hand, nicety of touch, and the various qualities which go to make up an elegant, highly trained, and accomplished sketcher from nature, and composer of picturesque landscape material; he was particularly skilful in the treatment of foliage.

HARDINGE, HENRY HARDINGE, Viscount (1785-1856), British field marshal and governor-general of India, was born at Wrotham in Kent on the 30th of March 1785. After being at Eton, he entered the army in 1799 as an ensign in the Queen's Rangers, a corps then stationed in Upper Canada. His first active service was at the battle of Vimiera, where he was wounded; and at Corunna he was by the side of Sir John Moore when he received his death-wound. Subsequently he received an appointment as deputy-quartermaster-general in the Portuguese army from Marshal Beresford, and was present at nearly all the battles of the Peninsular War,

being wounded again at Vittoria. At Albuera he saved the day for the British by taking the responsibility at a critical moment of strongly urging General Cole's division to advance. When peace was again broken in 1815 by Napoleon's escape from Elba, Hardinge hastened into active service, and was appointed to the important post of commissioner at the Prussian headquarters. In this capacity he was present at the battle of Ligny on the 16th of June 1815, where he lost his left hand by a shot, and thus was not present at Waterloo, fought two days later. For the loss of his hand he received a pension of £300; he had already been made a K.C.B., and Wellington presented him with a sword that had belonged to Napoleon. In 1820 and 1826 Sir Henry Hardinge was returned to parliament as member for Durham; and in 1828 he accepted the office of secretary at war in Wellington's ministry, a post which he also filled in Peel's cabinet in 1841-1844. In 1830 and 1834-1835 he was chief secretary for Ireland. In 1844 he succeeded Lord Ellenborough as governor-general of India. During his term of office the first Sikh War broke out; and Hardinge, waiving his right to the supreme command, magnanimously offered to serve as second in command under Sir Hugh Gough; but disagreeing with the latter's plan of campaign at Ferozeshah, he temporarily reasserted his authority as governor-general (see Sikh Wars). After the successful termination of the campaign at Sobraon he was created Viscount Hardinge of Lahore and of King's Newton in Derbyshire, with a pension of £3000 for three lives; while the East India Company voted him an annuity of £5000, which he declined to accept. Hardinge's term of office in India was marked by many social and educational reforms. He returned to England in 1848, and in 1852 succeeded the duke of Wellington as commander-in-chief of the British army. While in this position he had the home management of the Crimean War, which he endeavoured to conduct on Wellington's principles—a system not altogether suited to the changed mode of warfare. In 1855 he was promoted to the rank of field marshal. Viscount Hardinge resigned his office of commander-in-chief in July 1856, owing to failing health, and died on the 24th of September of the same year at South Park near Tunbridge Wells. His elder son, Charles Stewart (1822-1894), who had been his private secretary in India, was the 2nd Viscount Hardinge; and the latter's eldest son succeeded to the title. The younger son of the 2nd Viscount, Charles Hardinge (b. 1858), became a prominent diplomatist (see Edward VII.), and was appointed governor-general of India in 1910, being created Baron Hardinge of Penshurst.

See C. Hardinge, *Viscount Hardinge* (Rulers of India series, 1891); and R. S. Rait, *Life and Campaigns of Viscount Gough* (1903).

HARDOI, a town and district of British India, in the Lucknow division of the United Provinces. The town is 63 m. N.E. of Lucknow by rail. Pop. (1901) 12,174. It has a wood-carving industry, saltpetre works, and an export trade in grain.

The District of Hardoi has an area of 2331 sq. m. It is a level district watered by the Ganges, Ramganga, Deoha or Garra, Sukheta, Sai, Baita and Gumti—the three rivers first named being navigable by country boats. Towards the Ganges the land is uneven, and often rises in hillocks of sand cultivated at the base, and their slopes covered with lofty *munj* grass. Several large *jhils* or swamps are scattered throughout the district, the largest being that of Sāndi, which is 3 m. long by from 1 to 2 m. broad. These *jhils* are largely used for irrigation. Large tracts of forest jungle still exist. Leopards, black buck, spotted deer, and *nilgai* are common; the mallard, teal, grey duck, common goose, and all kinds of waterfowl abound. In 1901 the population of the district was 1,092,834, showing a decrease of nearly 2% in the decade. The district contains a larger urban population than any other in Oudh, the largest town being Shahabad, 20,036 in 1901. It is traversed by the Oudh and Rohilkhand railway from Lucknow to Shahjahanpur, and its branches. The chief exports are grain, sugar, hides, tobacco and saltpetre.

The first authentic records of Hardoi are connected with the Mussulman colonization. Bāwan was occupied by Sayyid Sālār Masāūd in 1028, but the permanent Moslem occupation did not begin till 1217. Owing to the situation of the district, Hardoi formed the scene of many sanguinary battles between the rival Afghan and Mogul empires. Between Bīlgrām and Sāndi was fought the great battle between Humāyun and Sher Shāh, in which the former was utterly defeated. Hardoi, along with the rest of Oudh, became British territory under Lord Dalhousie's proclamation of February 1856.

HARDOUIN, JEAN (1646-1729), French classical scholar, was born at Quimper in Brittany. Having acquired a taste for literature in his father's book-shop, he sought and obtained about his sixteenth year admission into the order of the Jesuits. In Paris, where he went to study theology, he ultimately became librarian of the Collège Louis le Grand in 1683, and he died there on the 3rd of September 1729. His first published work was an edition of Themistius (1684), which included no fewer than thirteen new orations. On the advice of Jean Garnier (1612-1681) he undertook to edit the *Natural History* of Pliny for the Delphin series, a task which he completed in five years. His attention having been turned to numismatics as auxiliary to his great editorial labours, he published several learned works in that department, marred, however, as almost everything he did was marred, by a determination to be at all hazards different from other interpreters. It is sufficient to mention his *Nummi antiqui populorum et urbium illustrati* (1684), *Antirrheticus de nummis antiquis coloniarum et municipiorum* (1689), and *Chronologia Veteris Testamenti ad vulgatam versionem exacta et nummis illustrata* (1696). By the ecclesiastical authorities Hardouin was appointed to supervise the *Conciliorum collectio regia maxima* (1715); but he was accused of suppressing important documents and foisting in apocryphal matter, and by the order of the parlement of Paris (then at war with the Jesuits) the publication of the work was delayed. It is really a valuable collection, much cited by scholars. Hardouin declared that all the councils supposed to have taken place before the council of Trent were fictitious. It is, however, as the originator of a variety of paradoxical theories that Hardouin is now best remembered. The most remarkable, contained in his *Chronologiae ex nummis antiquis restitutae* (1696) and *Prolegomena ad censuram veterum scriptorum*, was to the effect that, with the exception of the works of Homer, Herodotus and Cicero, the *Natural History* of Pliny, the *Georgics* of *Virgil*, and the *Satires and Epistles of Horace*, all the ancient classics of Greece and Rome were spurious, having been manufactured by monks of the 13th century, under the direction of a certain Severus Archontius. He denied the genuineness of most ancient works of art, coins and inscriptions, and declared that the New Testament was originally written in Latin.

See A. Debacker, *Bibliothèque des écrivains de la Compagnie de Jésus* (1853).

HARDT, HERMANN VON DER (1660-1746), German historian and orientalist, was born at Melle, in Westphalia, on the 15th of November 1660. He studied oriental languages in Jena and in Leipzig, and in 1690 he was called to the chair of oriental languages at Helmstedt. He resigned his position in 1727, but lived at Helmstedt until his death on the 28th of February 1746. Among his numerous writings the following deserve mention: *Autographa Lutheri aliorumque celebrium virorum, ab anno 1517 ad annum 1546*, *Reformationis aetatem et historiam egregie illustrantia* (1690-1691); *Magnum oecumenicum Constantiense concilium* (1697-1700); *Hebraeae linguae fundamenta* (1694); *Syriacae linguae fundamenta* (1694); *Elementa Chaldaica* (1693); *Historia litteraria reformationis* (1717); *Enigmata prisci orbis* (1723). Hardt left in manuscript a history of the Reformation which is preserved in the Helmstedt Juleum.

See F. Lamey, *Hermann von der Hardt in seinen Briefen* (Karlsruhe, 1891).

HARDT, THE, a mountainous district of Germany, in the Bavarian palatinate, forming the northern end of the Vosges range. It is, in the main, an undulating high plateau of sandstone formation, of a mean elevation of 1300 ft., and reaching its highest point in the Donnersberg (2254 ft.). The eastern slope, which descends gently towards the Rhine, is diversified by deep and well-wooded valleys, such as those of the Lauter and the Queich, and by conical hills surmounted by the ruins of frequent feudal castles and monasteries. Noticeable among these are the Madenburg near Eschbach, the Trifels (long the dungeon of Richard I. of England), and the Maxburg near Neustadt. Three-fifths of the whole area is occupied by forests, principally oak, beech and fir. The lower eastern slope is highly cultivated and produces excellent wine.

HARDWAR, or HURDWAR, an ancient town of British India, and Hindu place of pilgrimage, in the Saharanpur district of the United Provinces, on the right bank of the Ganges, 17 m. N.E. of Rurki, with a railway station. The Ganges canal here takes off from the river. A branch railway to Dehra was opened in 1900. Pop. (1901), 25,597. The town is of great antiquity, and has borne many names. It was originally known as Kapila from the sage Kapila. Hsūan Tsang, the Chinese Buddhist pilgrim, in the 7th century visited a city which he calls Mo-yu-lo, the remains of which still exist at Mayapur, a little to the south of the modern town. Among the ruins are a fort and three temples, decorated with broken stone sculptures. The great object of attraction at present is the Hari-ka-charan, or bathing *ghat*, with the adjoining temple of Gangadwara. The *charan* or foot-mark of Vishnu, imprinted on a stone let into the upper wall of the *ghat*, forms an object of special reverence. A great assemblage of people takes place annually, at the beginning of the Hindu solar year, when the sun enters Aries; and every twelfth year a feast of peculiar sanctity occurs, known as a *Kumbh-mela*. The ordinary number of pilgrims at the annual fair amounts to 100,000, and at the Kumbh-mela to 300,000; in 1903 there were 400,000 present. Since 1892 many sanitary improvements have been made for the benefit of the annual concourse of pilgrims. In early days riots and also outbreaks of cholera were of common occurrence. The Hardwar meeting also possesses mercantile importance, being one of the principal horse-fairs in Upper India. Commodities of all kinds, Indian and European, find a ready sale, and the trade in grain and food-stuffs forms a lucrative traffic.

HARDWICKE, PHILIP YORKE, 1ST EARL OF (1690-1764), English lord chancellor, son of Philip Yorke, an attorney, was born at Dover, on the 1st of December 1690. Through his mother, Elizabeth, daughter and co-heiress of Richard Gibbon of Rolvenden, Kent, he was connected with the family of Gibbon the historian. At the age of fourteen, after a not very thorough education at a private school at Bethnal Green, where, however, he showed exceptional promise, he entered an attorney's office in London. Here he gave some attention to literature and the classics as well as to law; but in the latter he made such progress that his employer, Salkeld, impressed by Yorke's powers, entered him at the Middle Temple in November 1708; and soon afterwards recommended him to Lord Chief Justice Parker (afterwards earl of Macclesfield) as law tutor to his sons. In 1715 he was called to the bar, where his progress was, says Lord Campbell, "more rapid than that of any other débutant in the annals of our profession," his advancement being greatly furthered by the patronage of Macclesfield, who became lord chancellor in 1718, when Yorke transferred his practice from the king's bench to the court of chancery, though he continued to go on the western circuit. In the following year he established his reputation as an equity lawyer in a case in which Sir Robert Walpole's family was interested, by an argument displaying profound learning and research concerning the jurisdiction of the chancellor, on lines which he afterwards more fully developed in a celebrated letter to Lord Kames on the distinction between law and equity. Through Macclesfield's influence with the duke of Newcastle Yorke entered parliament in 1719 as member for Lewes, and was appointed solicitor-general, with a knighthood, in 1720, although he was then a barrister of only four years' standing. His conduct of the prosecution of Christopher Layer in that year for treason as a Jacobite further raised Sir Philip Yorke's reputation as a forensic orator; and in 1723, having already become attorney-general, he passed through the House of Commons the bill of pains and penalties against Bishop Atterbury. He was excused, on the ground of his personal friendship, from acting for the crown in the impeachment of Macclesfield in 1725, though he did not exert himself to save his patron from disgrace largely brought about by Macclesfield's partiality for Yorke himself. He soon found a new and still more influential patron in the duke of Newcastle, to whom he henceforth gave his political support. He rendered valuable service to Walpole's government by his support of the bill for prohibiting loans to foreign powers (1730), of the increase of the army (1732) and of the excise bill (1733). In 1733 Yorke was appointed lord chief justice of the king's bench, with the title of Lord Hardwicke, and was sworn of the privy council; and in 1737 he succeeded Talbot as lord chancellor, thus becoming a member of Sir Robert Walpole's cabinet. One of his first official acts was to deprive the poet Thomson of a small office conferred on him by Talbot.

Hardwicke's political importance was greatly increased by his removal to the House of Lords, where the incompetency of Newcastle threw on the chancellor the duty of defending the measures of the government. He resisted Carteret's motion to reduce the army in 1738, and the resolutions hostile to Spain over the affair of Captain Jenkins's ears. But when Walpole bent before the storm and declared war against Spain, Hardwicke advocated energetic measures for its conduct; and he tried to keep the peace between Newcastle and Walpole. There is no sufficient ground for Horace Walpole's charge that the fall of Sir Robert was brought about by

Hardwicke's treachery. No one was more surprised than himself when he retained the chancellorship in the following administration, and he resisted the proposal to indemnify witnesses against Walpole in one of his finest speeches in May 1742. He exercised a leading influence in the Wilmington Cabinet; and when Wilmington died in August 1743, it was Hardwicke who put forward Henry Pelham for the vacant office against the claims of Pulteney. For many years from this time he was the controlling power in the government. During the king's absences on the continent Hardwicke was left at the head of the council of regency; it thus fell to him to concert measures for dealing with the Jacobite rising in 1745. He took a just view of the crisis, and his policy for meeting it was on the whole statesmanlike. After Culloden he presided at the trial of the Scottish Jacobite peers, his conduct of which, though judicially impartial, was neither dignified nor generous; and he must be held partly responsible for the unnecessary severity meted out to the rebels, and especially for the cruel, though not illegal, executions on obsolete attainders of Charles Radcliffe and (in 1753) of Archibald Cameron. He carried, however, a great reform in 1746, of incalculable benefit to Scotland, which swept away the grave abuses of feudal power surviving in that country in the form of private heritable jurisdictions in the hands of the landed gentry. On the other hand his legislation in 1748 for disarming the Highlanders and prohibiting the use of the tartan in their dress was vexatious without being effective. Hardwicke supported Chesterfield's reform of the calendar in 1751; in 1753 his bill for legalizing the naturalization of Jews in England had to be dropped on account of the popular clamour it excited; but he successfully carried a salutary reform of the marriage law, which became the basis of all subsequent legislation on the subject.

On the death of Pelham in 1754 Hardwicke obtained for Newcastle the post of prime minister, and for reward was created earl of Hardwicke and Viscount Royston; and when in November 1756 the weakness of the ministry and the threatening aspect of foreign affairs compelled Newcastle to resign, Hardwicke retired with him. He played an important and disinterested part in negotiating the coalition between Newcastle and Pitt in 1757, when he accepted a seat in Pitt's cabinet without returning to the woolsack. After the accession of George III. Hardwicke opposed the ministry of Lord Bute on the peace with France in 1762, and on the cider tax in the following year. In the Wilkes case Hardwicke condemned general warrants, and also the doctrine that seditious libels published by members of parliament were protected by parliamentary privilege. He died in London on the 6th of March 1764.

Although for a lengthy period Hardwicke was an influential minister, he was not a statesman of the first rank. On the other hand he was one of the greatest judges who ever sat on the English bench. He did not, indeed, by his three years' tenure of the chief-justiceship of the king's bench leave any impress on the common law; but Lord Campbell pronounces him "the most consummate judge who ever sat in the court of chancery, being distinguished not only for his rapid and satisfactory decision of the causes which came before him, but for the profound and enlightened principles which he laid down, and for perfecting English equity into a systematic science." He held the office of lord chancellor longer than any of his predecessors, with a single exception; and the same high authority quoted above asserts that as an equity judge Lord Hardwicke's fame "has not been exceeded by that of any man in ancient or modern times. His decisions have been, and ever will continue to be, appealed to as fixing the limits and establishing the principles of the great juridical system called Equity, which now not only in this country and in our colonies, but over the whole extent of the United States of America, regulates property and personal rights more than the ancient common law."[1] Hardwicke had prepared himself for this great and enduring service to English jurisprudence by study of the historical foundations of the chancellor's equitable jurisdiction, combined with profound insight into legal principle, and a thorough knowledge of the Roman civil law, the principles of which he scientifically incorporated into his administration of English equity in the absence of precedents bearing on the causes submitted to his judgment. His decisions on particular points in dispute were based on general principles, which were neither so wide as to prove inapplicable to future circumstances, nor too restricted to serve as the foundation for a coherent and scientific system. His recorded judgments—which, as Lord Campbell observes, "certainly do come up to every idea we can form of judicial excellence"—combine luminous method of arrangement with elegance and lucidity of language.

Nor was the creation of modern English equity Lord Hardwicke's only service to the administration of justice. Born within two years of the death of Judge Jeffreys his influence was powerful in obliterating the evil traditions of the judicial bench under the Stuart monarchy, and in establishing the modern conception of the duties and demeanour of English judges. While still at the bar Lord Chesterfield praised his conduct of crown prosecutions as a contrast to the former "bloodhounds of the crown"; and he described Sir Philip Yorke as "naturally humane, moderate and decent." On the bench he had complete control over his temper; he was always urbane and decorous and usually dignified. His exercise of legal patronage deserves unmixed praise. As a public man he was upright and, in comparison with most of his contemporaries, consistent. His domestic life was happy and virtuous. His chief fault was avarice, which perhaps

makes it the more creditable that, though a colleague of Walpole, he was never suspected of corruption. But he had a keen and steady eye to his own advantage, and he was said to be jealous of all who might become his rivals for power. His manners, too, were arrogant. Lord Waldegrave said of Hardwicke that “he might have been thought a great man had he been less avaricious, less proud, less unlike a gentleman.” Although in his youth he contributed to the *Spectator* over the signature “Philip Homebred,” he seems early to have abandoned all care for literature, and he has been reproached by Lord Campbell and others with his neglect of art and letters. He married, on the 16th of May 1719, Margaret, daughter of Charles Cocks (by his wife Mary, sister of Lord Chancellor Somers), and widow of John Lygon, by whom he had five sons and two daughters. His eldest daughter, Elizabeth, married Lord Anson; and the second, Margaret, married Sir Gilbert Heathcote. Three of his younger sons attained some distinction. Charles Yorke (*q.v.*), the second son, became like his father lord chancellor; the third, Joseph, was a diplomatist, and was created Lord Dover; while James, the fifth son, became bishop of Ely.

Hardwicke was succeeded in the earldom by his eldest son, Philip Yorke (1720-1795), 2nd earl of Hardwicke, born on the 19th of March 1720, and educated at Cambridge. In 1741 he became a fellow of the Royal Society. With his brother, Charles Yorke, he was one of the chief contributors to *Athenian Letters; or the Epistolary Correspondence of an agent of the King of Persia residing at Athens during the Peloponnesian War* (4 vols., London, 1741), a work that for many years had a considerable vogue and went through several editions. He sat in the House of Commons as member for Reigate (1741-1747), and afterwards for Cambridgeshire; and he kept notes of the debates which were afterwards embodied in Cobbett’s *Parliamentary History*. He was styled Viscount Royston from 1754 till 1764, when he succeeded to the earldom. In politics he supported the Rockingham Whigs. He held the office of teller of the exchequer, and was lord-lieutenant of Cambridgeshire and high steward of Cambridge University. He edited a quantity of miscellaneous state papers and correspondence, to be found in MSS. collections in the British Museum. He died in London, on the 16th of May 1790. He married Jemima Campbell, only daughter of John, 3rd earl of Breadalbane, and grand-daughter and heiress of Henry de Grey, duke of Kent, who became in her own right marchioness de Grey.

In default of sons, the title devolved on his nephew, Philip Yorke (1757-1834), 3rd earl of Hardwicke, eldest son of Charles Yorke, lord chancellor, by his first wife, Catherine Freman, who was born on the 31st of May 1757 and was educated at Cambridge. He was M.P. for Cambridgeshire, following the Whig traditions of his family; but after his succession to the earldom in 1790 he supported Pitt, and took office in 1801 as lord lieutenant of Ireland (1801-1806), where he supported Catholic emancipation. He was created K.G. in 1803, and was a fellow of the Royal Society. He married Elizabeth, daughter of James Lindsay, 5th earl of Balcarres, in 1782, but left no son.

He was succeeded in the peerage by his nephew, Charles Philip Yorke (1799-1873), 4th earl of Hardwicke, English admiral, eldest son of Admiral Sir Joseph Sydney Yorke (1768-1831), who was second son of Charles Yorke, lord chancellor, by his second wife, Agneta Johnson. Charles Philip was born at Southampton on the 2nd of April 1799 and was educated at Harrow. He entered the royal navy in 1815, and served on the North American station and in the Mediterranean, attaining the rank of captain in 1825. He represented Reigate (1831) and Cambridgeshire (1832-1834) in the House of Commons; and after succeeding to the earldom in 1834, was appointed a lord in waiting by Sir Robert Peel in 1841. In 1858 he retired from the active list with the rank of rear-admiral, becoming vice-admiral in the same year, and admiral in 1863. He was a member of Lord Derby’s cabinet in 1852 as postmaster-general and lord privy seal in 1858. In 1833 he married Susan, daughter of the 1st Lord Ravensworth, by whom he had five sons and three daughters. His eldest son, Charles Philip Yorke (1836-1897), 5th earl of Hardwicke, was comptroller of the household of Queen Victoria (1866-1868) and master of the buckhounds (1874-1880). He married in 1863, Sophia Georgiana, daughter of the 1st Earl Cowley. He was succeeded by his only son Albert Edward Philip Henry Yorke (1867-1904), 6th earl of Hardwicke, who, after holding the posts of under-secretary of state for India (1900-1902) and for war (1902-1903), died unmarried on the 29th of November 1904; the title then went to his uncle, John Manners Yorke (1840-1909), 7th earl of Hardwicke, second son of Charles Philip, the 4th earl, who joined the royal navy and served in the Baltic and in the Crimea (1854-1855). This earl died on the 13th of March 1909 and was succeeded by his son Charles Alexander (b. 1869) as 8th earl.

The contemporary authorities for the life of Lord Chancellor Hardwicke are voluminous, being contained in the memoirs of the period and in numerous collections of correspondence in the British Museum. See, especially, the *Hardwicke Papers*; the *Stowe MSS.*; *Hist. MSS. Commission* (Reports 2, 3, 4, 6, 8, 9, 11); Horace Walpole, *Letters* (ed. by P. Cunningham, 9 vols., London, 1857-1859); *Letters to Sir H. Mann* (ed. by Lord Dover, 4 vols., London, 1843-1844); *Memoirs of the Reign of George II.* (ed. by Lord Holland, 2nd ed. revised, London, 1847); *Memoirs of the Reign of George III.* (ed. by G. F. R. Barker, 4 vols., London, 1894); *Catalogue of Royal and Noble Authors of England, Scotland and Ireland* (ed. by T. Park, 5 vols., London, 1806). Horace Walpole

was violently hostile to Hardwicke, and his criticism, therefore, must be taken with extreme reserve. See also the earl Waldegrave, *Memoirs 1754-1758* (London, 1821); Lord Chesterfield, *Letters* (ed. by Lord Mahon, 5 vols., London, 1892); Richard Cooksey, *Essay on John, Lord Somers, and Philip, Earl of Hardwicke* (Worcester, 1791); William Coxe, *Memoirs of Sir R. Walpole* (4 vols., London, 1816); *Memoirs of the Administration of Henry Pelham* (2 vols., London, 1829); Lord Campbell, *Lives of the Lord Chancellors*, vol. v. (8 vols., London, 1845); Edward Foss, *The Judges of England*, vols. vii. and viii. (9 vols., London, 1848-1864); George Harris, *Life of Lord Chancellor Hardwicke; with Selections from his Correspondence, Diaries, Speeches and Judgments* (3 vols., London, 1847). The last-named work may be consulted for the lives of the 2nd and 3rd earls. For the 3rd earl see also the duke of Buckingham, *Memoirs of the Court and Cabinets of George III.* (4 vols., London, 1853-1855). For the 4th earl see *Charles Philip Yorke*, by his daughter, Lady Biddulph of Ledbury (1910).

(R. J. M.)

1 Lord Campbell, *Lives of the Lord Chancellors*, v. 43 (London, 1846).

HARDY, ALEXANDRE (1569?-1631), French dramatist, was born in Paris. He was one of the most fertile of all dramatic authors, and himself claimed to have written some six hundred plays, of which, however, only thirty-four are preserved. He seems to have been connected all his life with a troupe of actors headed by a clever comedian named Valleran-Lecomte, whom he provided with plays. Hardy toured the provinces with this company, which gave some representations in Paris in 1599 at the Hôtel de Bourgogne. Valleran-Lecomte occupied the same theatre in 1600-1603, and again in 1607, apparently for some years. In consequence of disputes with the Confrérie de la Passion, who owned the privilege of the theatre, they played elsewhere in Paris and in the provinces for some years; but in 1628, when they had long borne the title of "royal," they were definitely established at the Hôtel de Bourgogne. Hardy's numerous dedications never seem to have brought him riches or patrons. His most powerful friend was Isaac de Laffemas (d. 1657), one of Richelieu's most unscrupulous agents, and he was on friendly terms with the poet Théophile, who addressed him in some verses placed at the head of his *Théâtre* (1632), and Tristan l'Hermite had a similar admiration for him. Hardy's plays were written for the stage, not to be read; and it was in the interest of the company that they should not be printed and thus fall into the common stock. But in 1623 he published *Les Chastes et loyales amours de Théagène et Cariclée*, a tragi-comedy in eight "days" or dramatic poems; and in 1624 he began a collected edition of his works, *Le Théâtre d'Alexandre Hardy, parisien*, of which five volumes (1624-1628) were published, one at Rouen and the rest in Paris. These comprise eleven tragedies: *Didon se sacrifiant*, *Scédase ou l'hospitalité violée*, *Panthée*, *Méléagre*, *La Mort d'Achille*, *Coriolan*, *Marianne*, a trilogy on the history of Alexander, *Alcméon, ou la vengeance féminine*; five mythological pieces; thirteen tragi-comedies, among them *Gésippe*, drawn from Boccaccio; *Phraarte*, taken from Giraldi's *Cent excellentes nouvelles* (Paris, 1584); *Cornélie*, *La Force du sang*, *Félismène*, *La Belle Égyptienne*, taken from Spanish subjects; and five pastorals, of which the best is *Alphée, ou la justice d'amour*. Hardy's importance in the history of the French theatre can hardly be over-estimated. Up to the end of the 16th century medieval farce and spectacle kept their hold on the stage in Paris. The French classical tragedy of Étienne Jodelle and his followers had been written for the learned, and in 1628 when Hardy's work was nearly over and Rotrou was on the threshold of his career, very few literary dramas by any other author are known to have been publicly represented. Hardy educated the popular taste, and made possible the dramatic activity of the 17th century. He had abundant practical experience of the stage, and modified tragedy accordingly, suppressing chorus and monologue, and providing the action and variety which was denied to the literary drama. He was the father in France of tragi-comedy, but cannot fairly be called a disciple of the romantic school of England and Spain. It is impossible to know how much later dramatists were indebted to him in detail, since only a fraction of his work is preserved, but their general obligation is amply established. He died in 1631 or 1632.

The sources for Hardy's biography are extremely limited. The account given by the brothers Parfaict in their *Hist. du théâtre français* (1745, &c., vol. iv. pp. 2-4) must be received with caution, and no documents are forthcoming. Many writers have identified him with the provincial playwright picturesquely described in chap. xi. of *Le Page disgrâcié* (1643), the autobiography of Tristan l'Hermite, but if the portrait is drawn from life at all, it is more probably drawn from Théophile. See *Le Théâtre d'Alexandre Hardy*, edited by E. Stengel (Marburg and Paris, 1883-1884, 5 vols.); E. Lombard, "Étude sur Alexandre Hardy," in *Zeitschr. für neufranz. Spr. u. Lit.* (Oppeln and Leipzig, vols. i. and ii., 1880-1881); K. Nagel, *A. Hardy's Einfluss auf Pierre Corneille* (Marburg, 1884); and especially E. Rigal, *Alexandre Hardy ...* (Paris, 1889) and *Le Théâtre français avant la période classique* (Paris, 1901.)

HARDY, THOMAS (1840-), English novelist, was born in Dorsetshire on the 2nd of June 1840. His family was one of the branches of the Dorset Hardys, formerly of influence in and near the valley of the Frome, claiming descent from John Le Hardy of Jersey (son of Clement Le Hardy, lieutenant-governor of that island in 1488), who settled in the west of England. His maternal ancestors were the Swetman, Childs or Child, and kindred families, who before and after 1635 were small landed proprietors in Melbury Osmond, Dorset, and adjoining parishes. He was educated at local schools, 1848-1854, and afterwards privately, and in 1856 was articled to Mr John Hicks, an ecclesiastical architect of Dorchester. In 1859 he began writing verse and essays, but in 1861 was compelled to apply himself more strictly to architecture, sketching and measuring many old Dorset churches with a view to their restoration. In 1862 he went to London (which he had first visited at the age of nine) and became assistant to the late Sir Arthur Blomfield, R.A. In 1863 he won the medal of the Royal Institute of British Architects for an essay on *Coloured Brick and Terra-cotta Architecture*, and in the same year won the prize of the Architectural Association for design. In March 1865 his first short story was published in *Chambers's Journal*, and during the next two or three years he wrote a good deal of verse, being somewhat uncertain whether to take to architecture or to literature as a profession. In 1867 he left London for Weymouth, and during that and the following year wrote a "purpose" story, which in 1869 was accepted by Messrs Chapman and Hall. The manuscript had been read by Mr George Meredith, who asked the writer to call on him, and advised him not to print it, but to try another, with more plot. The manuscript was withdrawn and re-written, but never published. In 1870 Mr Hardy took Mr Meredith's advice too literally, and constructed a novel that was all plot, which was published in 1871 under the title *Desperate Remedies*. In 1872 appeared *Under the Greenwood Tree*, a "rural painting of the Dutch school," in which Mr Hardy had already "found himself," and which he has never surpassed in happy and delicate perfection of art. *A Pair of Blue Eyes*, in which tragedy and irony come into his work together, was published in 1873. In 1874 Mr Hardy married Emma Lavinia, daughter of the late T. Attersoll Gifford of Plymouth. His first popular success was made by *Far from the Madding Crowd* (1874), which, on its appearance anonymously in the *Cornhill Magazine*, was attributed by many to George Eliot. Then came *The Hand of Ethelberta* (1876), described, not inaptly, as "a comedy in chapters"; *The Return of the Native* (1878), the most sombre and, in some ways, the most powerful and characteristic of Mr Hardy's novels; *The Trumpet-Major* (1880); *A Laodicean* (1881); *Two on a Tower* (1882), a long excursion in constructive irony; *The Mayor of Casterbridge* (1886); *The Woodlanders* (1887); *Wessex Tales* (1888); *A Group of Noble Dames* (1891); *Tess of the D'Urbervilles* (1891), Mr Hardy's most famous novel; *Life's Little Ironies* (1894); *Jude the Obscure* (1895), his most thoughtful and least popular book; *The Well-Beloved*, a reprint, with some revision, of a story originally published in the *Illustrated London News* in 1892 (1897); *Wessex Poems*, written during the previous thirty years, with illustrations by the author (1898); and *The Dynasts* (2 parts, 1904-1906). In 1909 appeared *Time's Laughing-stocks and other Verses*. In all his work Mr Hardy is concerned with one thing, seen under two aspects; not civilization, nor manners, but the principle of life itself, invisibly realized in humanity as sex, seen visibly in the world as what we call nature. He is a fatalist, perhaps rather a determinist, and he studies the workings of fate or law (ruling through inexorable moods or humours), in the chief vivifying and disturbing influence in life, women. His view of women is more French than English; it is subtle, a little cruel, not as tolerant as it seems, thoroughly a man's point of view, and not, as with Mr Meredith, man's and woman's at once. He sees all that is irresponsible for good and evil in a woman's character, all that is untrustworthy in her brain and will, all that is alluring in her variability. He is her apologist, but always with a reserve of private judgment. No one has created more attractive women of a certain class, women whom a man would have been more likely to love or to regret loving. In his earlier books he is somewhat careful over the reputation of his heroines; gradually he allows them more liberty, with a franker treatment of instinct and its consequences. *Jude the Obscure* is perhaps the most unbiassed consideration in English fiction of the more complicated questions of sex. There is almost no passion in his work, neither the author nor his characters ever seeming able to pass beyond the state of curiosity, the most intellectually interesting of limitations, under the influence of any emotion. In his feeling for nature, curiosity sometimes seems to broaden into a more intimate communion. The heath, the village with its peasants, the change of every hour among the fields and on the roads of that English countryside which he has made his own—the Dorsetshire and Wiltshire "Wessex"—mean more to him, in a sense, than even the spectacle of man and woman in their blind and painful and absorbing struggle for existence. His knowledge of woman confirms him in a suspension of judgment; his knowledge of nature brings him nearer to the unchanging and consoling element in the world. All the entertainment which he gets out of life comes to him from his contemplation of the peasant, as himself a rooted part of the earth, translating the dumbness of the fields into humour. His peasants have been compared with Shakespeare's; he has the Shakespearean sense

of their placid vegetation by the side of hurrying animal life, to which they act the part of chorus, with an unconscious wisdom in their close, narrow and undistracted view of things. The order of merit was conferred upon Mr Hardy in July 1910.

See Annie Macdonell, *Thomas Hardy* (London, 1894); Lionel P. Johnson, *The Art of Thomas Hardy* (London, 1894).

(A. Sy.)

HARDY, SIR THOMAS DUFFUS (1804-1878), English antiquary, was the third son of Major Thomas Bartholomew Price Hardy, and belonged to a family several members of which had distinguished themselves in the British navy. Born at Port Royal in Jamaica on the 22nd of May 1804, he crossed over to England and in 1819 entered the Record Office in the Tower of London. Trained under Henry Petrie (1768-1842) he gained a sound knowledge of palaeography, and soon began to edit selections of the public records. From 1861 until his death on the 15th of June 1878 he was deputy-keeper of the Record Office, which just before his appointment had been transferred to its new London headquarters in Chancery Lane. Hardy, who was knighted in 1873, had much to do with the appointment of the Historical Manuscripts Commission in 1869.

Sir T. Hardy edited the Close Rolls, *Rotuli litterarum clausarum, 1204-1227* (2 vols., 1833-1844), with an introduction entitled "A Description of the Close Rolls, with an Account of the early Courts of Law and Equity"; and the Patent Rolls, *Rotuli litterarum patentium, 1201-1216* (1835), with introduction, "A Description of the Patent Rolls, to which is added an Itinerary of King John." He also edited the *Rotuli de oblatis et finibus* (1835), which deal also with the time of King John; the *Rotuli Normanniae, 1200-1205*, and *1417-1418* (1835), containing letters and grants of the English kings concerning the duchy of Normandy; the Charter Rolls, *Rotuli chartarum, 1199-1216* (1837), giving with this work an account of the structure of charters; the Liberate Rolls, *Rotuli de liberate ac de misis et praestitis regnante Johanne* (1844); and the *Modus tenendi parliamentum*, with a translation (1846). He wrote *A Catalogue of Lords Chancellors, Keepers of the Great Seal, Masters of the Rolls and Officers of the Court of Chancery* (1843); the preface to Henry Petrie's *Monumenta historica Britannica* (1848); and *Descriptive Catalogue of Materials relating to the History of Great Britain and Ireland* (3 vols., 1862-1871). He edited William of Malmesbury's *De gestis regum anglorum* (2 vols., 1840); he continued and corrected John le Neve's *Fasti ecclesiae Anglicanae* (3 vols., Oxford, 1854); and with C. T. Martin he edited and translated *L'Estorie des Engles* of Geoffrey Gaimar (1888-1889). He wrote *Syllabus in English of Documents in Rymer's Foedera* (3 vols., 1869-1885), and gave an account of the history of the public records from 1837 to 1851 in his *Memoirs of the Life of Henry, Lord Langdale* (1852), Lord Langdale (1783-1851), master of the rolls from 1836 to 1851, being largely responsible for the erection of the new Record Office. Hardy took part in the controversy about the date of the Athanasian creed, writing *The Athanasian Creed in connection with the Utrecht Psalter* (1872); and *Further Report on the Utrecht Psalter* (1874).

His younger brother, Sir William Hardy (1807-1887), was also an antiquary. He entered the Record Office in 1823, leaving it in 1830 to become keeper of the records of the duchy of Lancaster. In 1868, when these records were presented by Queen Victoria to the nation, he returned to the Record Office as an assistant keeper, and in 1878 he succeeded his brother Sir Thomas as deputy-keeper, resigning in 1886. He died on the 17th of March 1887.

Sir W. Hardy edited Jehan de Waurin's *Recueil des croniques et anchiennes istories de la Grant Bretaigne* (5 vols., 1864-1891); and he translated and edited the *Charters of the Duchy of Lancaster* (1845).

HARDY, SIR THOMAS MASTERMAN, Bart. (1769-1839), British vice-admiral, of the Portisham (Dorsetshire) family of Hardy, was born on the 5th of April 1769, and in 1781 began his career as a sailor. He became lieutenant in 1793, and in 1796, being then attached to the "Minerve" frigate, attracted the attention of Nelson by his gallant conduct. He continued to serve with distinction, and in 1798 was promoted to be captain of the "Vanguard," Nelson's flagship. In the "St George" he did valuable work before the battle of Copenhagen in 1801, and his association with Nelson was crowned by his appointment in 1803 to the "Victory" as flag-captain, in which capacity he was engaged at the battle of Trafalgar in 1805, witnessed Nelson's will, and was in close attendance on him at his death. Hardy was created a baronet in 1806. He

was then employed on the North American station, and later (1819), was made commodore and commander-in-chief on the South American station, where his able conduct came prominently into notice. In 1825 he became rear-admiral, and in December 1826 escorted the expeditionary force to Lisbon. In 1830 he was made first sea lord of the admiralty, being created G.C.B. in 1831. In 1834 he was appointed governor of Greenwich hospital, where thenceforward he devoted himself with conspicuous success to the charge of the naval pensioners; in 1837 he became vice-admiral. He died at Greenwich on the 20th of September 1839. In 1807 he had married Anne Louisa Emily, daughter of Sir George Cranfield Berkeley, under whom he had served on the North American station, and by her he had three daughters, the baronetcy becoming extinct.

See Marshall, *Royal Naval Biography*, ii. and iii.; Nicolas, *Despatches of Lord Nelson*; Broadley and Bartelot, *The Three Dorset Captains at Trafalgar* (1906), and *Nelson's Hardy, his Life, Letters and Friends* (1909).

HARDYNG or **HARDING, JOHN** (1378-1465), English chronicler, was born in the north, and as a boy entered the service of Sir Henry Percy (Hotspur), with whom he was present at the battle of Shrewsbury (1403). He then passed into the service of Sir Robert Umfraville, under whom he was constable of Warkworth Castle, and served in the campaign of Agincourt in 1415 and in the sea-fight before Harfleur in 1416. In 1424 he was on a diplomatic mission at Rome, where at the instance of Cardinal Beaufort he consulted the chronicle of Trogus Pompeius. Umfraville, who died in 1436, had made Hardyng constable of Kyme in Lincolnshire, where he probably lived till his death about 1465. Hardyng was a man of antiquarian knowledge, and under Henry V. was employed to investigate the feudal relations of Scotland to the English crown. For this purpose he visited Scotland, at much expense and hardship. For his services he says that Henry V. promised him the manor of Geddington in Northamptonshire. Many years after, in 1439, he had a grant of £10 a year for similar services. In 1457 there is a record of the delivery of documents relating to Scotland by Hardyng to the earl of Shrewsbury, and his reward by a further pension of £20. It is clear that Hardyng was well acquainted with Scotland, and James I. is said to have offered him a bribe to surrender his papers. But the documents, which are still preserved in the Record Office, have been shown to be forgeries, and were probably manufactured by Hardyng himself. Hardyng spent many years on the composition of a rhyming chronicle of England. His services under the Percies and Umfravilles gave him opportunity to obtain much information of value for 15th century history. As literature the chronicle has no merit. It was written and rewritten to suit his various patrons. The original edition ending in 1436 had a Lancastrian bias and was dedicated to Henry VI. Afterwards he prepared a version for Richard, duke of York (d. 1460), and the chronicle in its final form was presented to Edward IV. after his marriage to Elizabeth Woodville in 1464.

The version of 1436 is preserved in Lansdowne MS. 204, and the best of the later versions in Harley MS. 661, both in the British Museum. Richard Grafton printed two editions in January 1543, which differ much from one another and from the now extant manuscripts. Stow, who was acquainted with a different version, censured Grafton on this point somewhat unjustly. Sir Henry Ellis published the longer version of Grafton with some additions from the Harley MS. in 1812.

See Ellis' preface to Hardyng's *Chronicle*, and Sir F. Palgrave's *Documents illustrating the History of Scotland* (for an account of Hardyng's forgeries).

(C. L. K.)

HARE, AUGUSTUS JOHN CUTHBERT (1834-1903), English writer and traveller, was born at Rome in 1834. He was educated at Harrow school and at University College, Oxford. His name is familiar as the author of a large number of guide-books to the principal countries and towns of Europe, most of which were written to order for John Murray. They were made up partly of the author's own notes of travel, partly of quotations from others' books taken with a frankness of appropriation that disarmed criticism. He also wrote *Memorials of a Quiet Life*—that of his aunt by whom he had been adopted when a baby (1872), and a tediously long autobiography in six volumes, *The Story of My Life*. He died at St Leonards-on-Sea on the 22nd of January 1903.

HARE, SIR JOHN (1844-), English actor and manager, was born in Yorkshire on the 16th of May 1844, and was educated at Giggleswick school, Yorkshire. He made his first appearance on the stage at Liverpool in 1864, coming to London in 1865, and acting for ten years with the Bancrofts. He soon made his mark, particularly in T. W. Robertson's comedies, and in 1875 became manager of the Court theatre. But it was in association with Mr and Mrs Kendal at the St James's theatre from 1879 to 1888 that he established his popularity in London, in important "character" and "men of the world" parts, the joint management of Hare and Kendal making this theatre one of the chief centres of the dramatic world for a decade. In 1889 he became lessee and manager of the Garrick theatre, where (though he was often out of the cast) he produced several important plays, such as Pinero's *The Profligate* and *The Notorious Mrs Ebbsmith*, and had a remarkable personal success in the chief part in Sydney Grundy's *A Pair of Spectacles*. In 1897 he took the Globe theatre, where his acting in Pinero's *Gay Lord Quex* was another personal triumph. He became almost as well known in the United States as in England, his last tour in America being in 1900 and 1901. He was knighted in 1907.

HARE, JULIUS CHARLES (1795-1855), English theological writer, was born at Valdagno, near Vicenza, in Italy, on the 13th of September 1795. He came to England with his parents in 1799, but in 1804-1805 spent a winter with them at Weimar, where he met Goethe and Schiller, and received a bias to German literature which influenced his style and sentiments throughout his whole career. On the death of his mother in 1806, Julius was sent home to the Charterhouse in London, where he remained till 1812, when he entered Trinity College, Cambridge. There he became fellow in 1818, and after some time spent abroad he began to read law in London in the following year. From 1822 to 1832 he was assistant-tutor at Trinity College. Turning his attention from law to divinity, Hare took priest's orders in 1826; and, on the death of his uncle in 1832, he succeeded to the rich family living of Hurstmonceaux in Sussex, where he accumulated a library of some 12,000 volumes, especially rich in German literature. Before taking up residence in his parish he once more went abroad, and made in Rome the acquaintance of the Chevalier Bunsen, who afterwards dedicated to him part of his work, *Hippolytus and his Age*. In 1840 Hare was appointed archdeacon of Lewes, and in the same year preached a course of sermons at Cambridge (*The Victory of Faith*), followed in 1846 by a second, *The Mission of the Comforter*. Neither series when published attained any great popularity. Archdeacon Hare married in 1844 Esther, a sister of his friend Frederick Maurice. In 1851 he was collated to a prebend in Chichester; and in 1853 he became one of Queen Victoria's chaplains. He died on the 23rd of January 1855.

Julius Hare belonged to what has been called the "Broad Church party," though some of his opinions approach very closely to those of the Evangelical Arminian school, while others again seem vague and undecided. He was one of the first of his countrymen to recognize and come under the influence of German thought and speculation, and, amidst an exaggerated alarm of German heresy, did much to vindicate the authority of the sounder German critics. His writings, which are chiefly theological and controversial, are largely formed of charges to his clergy, and sermons on different topics; but, though valuable and full of thought, they lose some of their force by the cumbrous German structure of the sentences, and by certain orthographical peculiarities in which the author indulged. In 1827 *Guesses at Truth by Two Brothers*[1] appeared. Hare assisted Thirlwall, afterwards bishop of St David's, in the translation of the 1st and 2nd volumes of Niebuhr's *History of Rome* (1828 and 1832), and published a *Vindication of Niebuhr's History* in 1829. He wrote many similar works, among which is a *Vindication of Luther against his recent English Assailants* (1854). In 1848 he edited the *Remains of John Sterling*, who had formerly been his curate. Carlyle's *Life of John Sterling* was written through dissatisfaction with the "Life" prefixed to Archdeacon Hare's book. *Memorials of a Quiet Life*, published in 1872, contain accounts of the Hare family.

1 Julius Hare's co-worker in this book was his brother Augustus William Hare (1792-1834), who, after a distinguished career at Oxford, was appointed rector of Alton Barnes, Wiltshire. He died prematurely at Rome in 1834. He was the author of *Sermons to a Country Congregation*, published in 1837.

HARE, the name of the well-known English rodent now designated *Lepus europaeus* (although formerly termed, incorrectly, *L. timidus*). In a wider sense the name includes all the numerous allied species which do not come under the designation of rabbits (see Rabbit). Over the greater part of Europe, where the ordinary species (fig. 1) does not occur, its place is taken by the closely allied Alpine, or mountain hare (fig. 2), the true *L. timidus* of Linnaeus, and the type of the genus *Lepus* and the family *Leporidae* (see Rodentia). The second is a smaller animal than the first, with a more rounded and relatively smaller head, and the ears, hind-legs and tail shorter. In Ireland and the southern districts of Sweden it is permanently of a light fulvous grey colour, with black tips to the ears, but in more northerly districts the fur—except the black ear-tips—changes to white in winter, and still farther north the animal appears to be white at all seasons of the year. The range of the common or brown hare, inclusive of its local races, extends from England across southern and central Europe to the Caucasus; while that of the blue or mountain species, likewise inclusive of local races, reaches from Ireland, Scotland and Scandinavia through northern Europe and Asia to Japan and Kamchatka, and thence to Alaska.

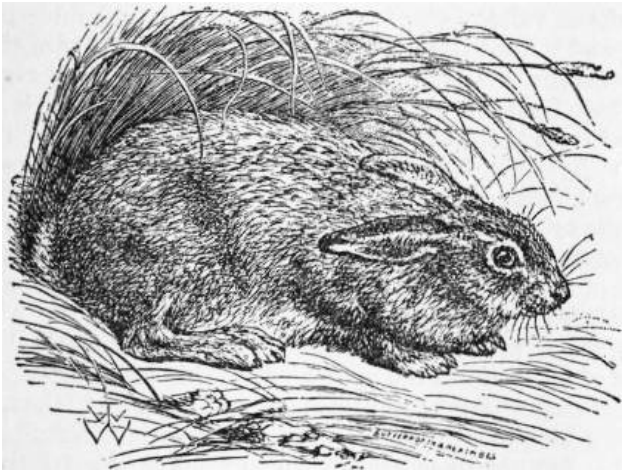


Fig. 1.—The Hare (*Lepus europaeus*).

The brown hare is a night-feeding animal, remaining during the day on its “form,” as the slight depression is called which it makes in the open field, usually among grass. This it leaves at nightfall to seek fields of young wheat and other cereals whose tender herbage forms its favourite food. It is also fond of gnawing the bark of young trees, and thus often does great damage to plantations. In the morning it returns to its form, where it finds protection in the close approach which the colour of its fur makes to that of its surroundings; should it thus fail, however, to elude observation it depends for safety on its extraordinary fleetness. On the first alarm of danger it sits erect to reconnoitre, when it either seeks concealment by clapping close to the ground, or takes to flight. In the latter case its great speed, and the cunning endeavours it makes to outwit its canine pursuers, form the chief attractions of coursing. The hare takes readily to the water, where it swims well; an instance having been recorded in which one was observed crossing an arm of the sea about a mile in width. Hares are remarkably prolific, pairing when scarcely a year old, and the female bringing forth several broods in the year, each consisting of from two to five leverets (from the Fr. *lièvre*), as the young are called. These are born covered with hair and with the eyes open, and after being suckled for a month are able to look after themselves. In Europe this species has seldom bred in confinement, although an instance has recently been recorded. It will interbreed with the blue hare. Hares (and rabbits) have a cosmopolitan distribution with the exception of Madagascar and Australasia; and are now divided into numerous genera and subgenera, mentioned in the article Rodentia. Reference may here be made to a few species. Asia is the home of numerous species, of which the Common Indian *L. ruficaudatus* and the black-necked hare *L. nigricollis*, are inhabitants of the plains of India; the latter taking its name from a black patch on the neck. In Assam there is a small spiny hare (*Caprolagus hispidus*), with the habits of a rabbit; and an allied species (*Nesolagus nitscheri*) inhabits Sumatra, and a third (*Pentalagus furnessi*) the Liu-kiu Islands. The plateau of Tibet is very rich in species, among which *L. hypsibius* is very common.

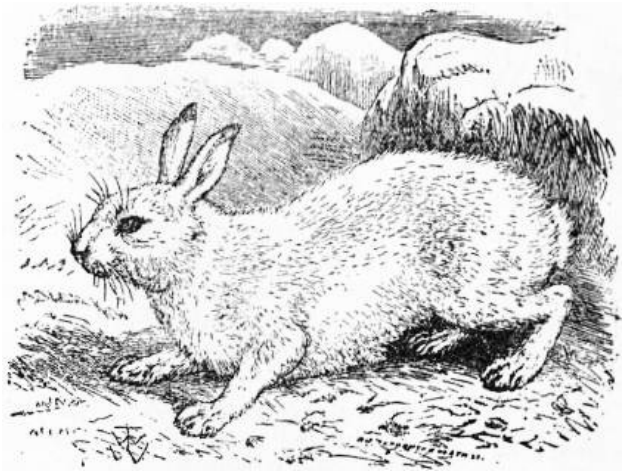


FIG. 2.—The Blue or Mountain Hare (*Lepus timidus*) in winter dress.

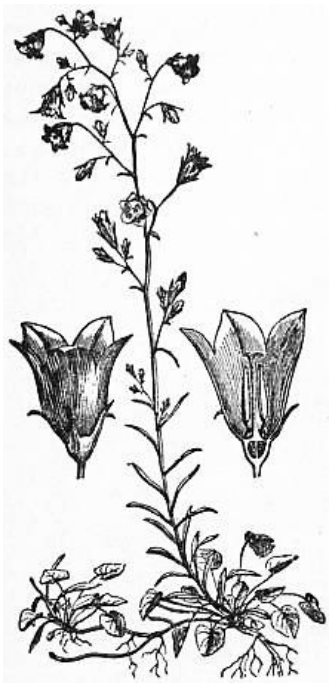
Of African species, the Egyptian Hare (*L. aegyptius*) is a small animal, with long ears and pale fur; and in the south there are the Cape hare (*L. capensis*), the long-eared rock-hare (*L. saxatilis*) and the diminutive *Pronolagus crassicaudatus*, characterized by its thick red tail.

North America is the home of numerous hares, some of which are locally known as "cotton-tails" and others as "jack-rabbits." The most northern are the Polar hare (*L. arcticus*), the Greenland hare (*L. groenlandicus*) and the Alaska hare (*L. timidus tschuktschorum*), all allied to the blue hare. Of the others, two, namely the large prairie-hare (*L. campestris*) and the smaller varying hare (*L.* [*Poecilolagus*] *americanus*), turn white in winter; the former having long ears and the whole tail white, whereas in the latter the ears are shorter and the upper surface of the tail is dark. Of those which do not change colour, the wood-hare, grey-rabbit or cotton-tail, *Sylvilagus floridanus*, is a southern form, with numerous allied kinds. Distantly allied to the prairie-hare or white-tailed jack-rabbit, are several forms distinguished by having a more or less distinct black stripe on the upper surface of the tail. These include a buff-bellied species found in California, N. Mexico and S.W. Oregon (*L.* [*Macrotolagus*] *californicus*), a large, long-legged form from S. Arizona and Sonora (*L.* [*M.*] *alleni*), the Texan jack-rabbit (*L.* [*M.*] *texanus*) and the black-eared hare (*L.* [*M.*] *melanotis*) of the Great Plains, which differs from the third only by its shorter ears and richer coloration. In S. America, the small tapiti or Brazilian hare (*Sylvilagus brasiliensis*) is nearly allied to the wood-hare, but has a yellowish brown under surface to the tail.

See also COURSING.

(R. L.*)

HAREBELL (sometimes wrongly written HAIRBELL), known also as the blue-bell of Scotland, and witches' thimbles, a well-known perennial wild flower, *Campanula rotundifolia*, a member of the natural order Campanulaceae. The harebell has a very slender slightly creeping root-stock, and a wiry, erect stem. The radical leaves, that is, those at the base of the stem, to which the specific name *rotundifolia* refers, have long stalks, and are roundish or heart-shaped with crenate or serrate margin; the lower stem leaves are ovate or lanceolate, and the upper ones linear, subsessile, acute and entire, rarely pubescent. The flowers are slightly drooping, arranged in a panicle, or in small specimens single, having a smooth calyx, with narrow pointed erect segments, the corolla bell-shaped, with slightly recurved segments, and the capsule nodding, and opening by pores at the base. There are two varieties:—(*a*) *genuina*, with slender stem leaves, and (*b*) *montana*, in which the lower stem-leaves are broader and somewhat elliptical in shape. The plant is found on heaths and pastures throughout Great Britain and flowers in late summer and in autumn; it is widely spread in the north temperate zone. The harebell has



Harebell (*Campanula rotundifolia*).

ever been a great favourite with poets, and on account of its delicate blue colour has been considered as an emblem of purity.

HAREM, less frequently Haram or Harim (Arab *harīm*—commonly but wrongly pronounced hārĕm—"that which is illegal or prohibited"), the name generally applied to that part of a house in Oriental countries which is set apart for the women; it is also used collectively for the women themselves. Strictly the women's quarters are the *haremlik* (*lik*, belonging to), as opposed to *selamlik* the men's quarters, from which they are in large houses separated by the *mabein*, the private apartments of the householder. The word *harem* is strictly applicable to Mahommedan households only, but the system is common in greater or less degree to all Oriental communities, especially where polygamy is permitted. Other names for the women's quarters are Seraglio (Ital. *serraglio*, literally an enclosure, from Lat. *sera*, a bar; wrongly narrowed down to the sense of harem through confusion with Turkish *serāi* or *sarāi*, palace or large building, cf. *caravanserai*); Zenana (strictly *zanana*, from Persian *zan*, woman, allied with Gr. γυνή), used specifically of Hindu harems; Andarūn (or Anderoon), the Persian word for the "inner part" (*sc.* of a house). The Indian harem system is also commonly known as *pardah* or *purdah*, literally the name of the thick curtains or blinds which are used instead of doors to separate the women's quarters from the rest of the house. A male doctor attending a zenana lady would put his hand between the *purdah* to feel her pulse.

The seclusion of women in the household is fundamental to the Oriental conception of the sex relation, and its origin must, therefore, be sought far earlier than the precepts of Islam as set forth in the Koran, which merely regulate a practically universal Eastern custom.[1] It is inferred from the remains of many ancient Oriental palaces (Babylonian, Persian, &c.) that kings and wealthy nobles devoted a special part of the palace to their womankind. Though in comparatively early times there were not wanting men who regarded polygamy as wrong (*e.g.* the prophets of Israel), nevertheless in the East generally there has never been any real movement against the conception of woman as a chattel of her male relatives. A man may have as many wives and concubines as he can support, but each of these women must be his exclusive property. The object of this insistence upon female chastity is partly the maintenance of the purity of the family with special reference to property, and partly to protect women from marauders, as was the case with the people of India when the Mahommedans invaded the country and sought for women to fill their harems. In Mahommedan countries theoretically a woman must veil her face to all men except her father, her brother and her husband; any violation of this rule is still regarded by strict Mahommedans as the gravest possible offence, though among certain Moslem communities (*e.g.* in parts of Albania) women of the poorer classes may appear in public unveiled. If any other man make his way into a harem he may lose his life; the attempted escape of a harem woman is a capital offence, the husband having absolute power of life and death, to such an extent that, especially in the less civilized parts of the Moslem world, no one would think of questioning a man's right to mutilate or kill a disobedient wife or concubine.

Turkish Harems.—A good deal of misapprehension, due to ignorance combined with strong prejudice against the whole system, exists in regard to the system in Turkey. It is often assumed, for example, that the sultan's seraglio is typical, though on a uniquely large scale, of all Turkish households, and as a consequence that every Turk is a polygamist. This is far from being the case, for though the Koran permits four wives, and etiquette allows the sultan seven, the man of average possessions is perforce content with one, and a small number of female servants. It is, therefore, necessary to take the imperial seraglio separately.

Though the sultan's household in modern times is by no means as numerous as it used to be, it is said that the harem of Abdul Hamid contained about 1000 women, all of whom were of slave origin. This body of women form an elaborately organized community with a complete system of officers, disciplinary and administrative, and strict distinctions of status. The real ruler of this society is the sultan's mother, the *Sultana Validé*, who exercises her authority through a female superintendent, the *Kyahya Khatun*. She has also a large retinue of subordinate officials (*Kalfas*) ranging downwards from the *Hasnadar ousta* ("Lady of the Treasury") to the "Mistress of the Sherbets" and the "Chief Coffee Server." Each of these officials has under her a number of pupil-slaves (*alaiks*), whom she trains to succeed her if need be, and from whom the service is recruited. After the sultana validé (who frequently enjoys considerable political power and is a mistress of intrigue) ranks the mother of the heir-apparent; she is called the *Bash Kadin Effendi* ("Her excellency the Chief Lady"), and also *hasseki* or *kasseky*, and is distinguished from the other three chief wives who only bear the title *Kadin Effendi*. Next come the ladies who have

borne the younger children of the sultan, the *Hanum Effendis*, and after them the so-called Odalisks or Odalisques (a perversion of *odalik*, from *odah*, chamber). These are subdivided, according to the degree of favour in which they stand with the sultan or padishah, into *Ikbals* ("Favourites") and *Geuzdés* (literally the "Eyed" ones), those whom the sultan has favourably noticed in the course of his visits to the apartments of his wives or his mother. All the women are at the disposal of the sultan, though it is contrary to etiquette for him actually to select recruits for his harem. The numbers are kept up by his female relatives and state officials, the latter of whom present girls annually on the evening before the 15th of Ramadan.

Every odalisk who has been promoted to the royal couch receives a *daïra*, consisting of an allowance of money, a suite of apartments, and a retinue, in proportion to her status. It should be noted that, since all the harem women are slaves, the sultans, with practically no exceptions, have never entered into legal marriage contracts. Any slave, in however menial a position, may be promoted to the position of a kadin effendi. Hence all the slaves who have any pretension to beauty are carefully trained, from the time they enter the harem, in deportment, dancing, music and the arts of the toilette: they are instructed in the Moslem religion and learn the daily prayers (*namaz*); a certain number are specially trained in reading and writing for secretarial work. Discipline is strict, and continued disobedience leads to corporal punishment by the eunuchs. All the women of the harem are absolutely under the control of the sultana validé (who alone of the harem of her dead husband is not sent away to an older palace when her son succeeds), and owe her the most profound respect, even to the point of having to obtain permission to leave their own apartments. Her financial secretary, the *Haznadar Ousta*, succeeds to her power if she dies. The sultan's foster-mother also is a person of importance, and is known as the *Taia Kadin*.

The security of the harem is in the hands of a body of eunuchs both black and white. The white eunuchs have charge of the outer gates of the seraglio, but they are not allowed to approach the women's apartments, and obtain no posts of distinction. Their chief, however, the *kapu aghasi* ("master of the gates") has part control over the ecclesiastical possessions, and even the vizier cannot enter the royal apartments without his permission. The black eunuchs have the right of entering the gardens and chambers of the harem. Their chief, usually called the *kislar aghasi* ("master of the maidens"), though his true title is *darus skadet aga* ("chief of the abode of felicity"), is an official of high importance. His appointment is for life. If he is deprived of his post he receives his freedom; and if he resigns of his own accord he is generally sent to Egypt with a pension of 100 francs a day. His secretary keeps count of the revenues of the mosques built by the sultans. He is usually succeeded by the second eunuch, who bears the title of treasurer, and has charge of the jewels, &c., of the women. The number of eunuchs is always a large one. The sultana validé and the sultana hasseki have each fifty at their service, and others are assigned to the kadins and the favourite odalisks.

The ordinary middle-class household is naturally on a very different scale. The *selamlik* is on the ground floor with a separate entrance, and there the master of the house receives his male guests; the rest of the ground floor is occupied by the kitchen and perhaps the stables. The *haremlik* is generally (in towns at least) on the upper floor fronting on and slightly overhanging the street; it has a separate entrance, courtyard and garden. The windows are guarded by lattices pierced with circular holes through which the women may watch without being seen. Communication with the *haremlik* is effected by a locked door, of which the Effendi keeps the key and also by a sort of revolving cupboard (*dutap*) for the conveyance of meals. The furniture, of the old-fashioned harems at least, is confined to divans, rugs, carpets and mirrors. For heating purposes the old brass tray of charcoal and wood ash is giving way to American stoves, and there is a tendency to import French furniture and decoration without regard to their suitability.

The presence of a second wife is the exception, and is generally attributable to the absence of children by the first wife. The expense of marrying a free woman leads many Turks to prefer a slave woman who is much more likely to be an amenable partner. If a slave woman bears a child she is often set free and then the marriage ceremony is gone through.

The harem system is, of course, wholly inconsistent with any high ideal of womanhood. Certain misapprehensions, however, should be noticed. The depravity of the system and the vapid idleness of harem life are much exaggerated by observers whose sympathies are wholly against the system. In point of fact much depends on the individuals. In many households there exists a very high degree of mutual consideration and the standard of conduct is by no means degraded. Though a woman may not be seen in the streets without the *yashmak* which covers her face except for her eyes, and does not leave her house except by her husband's permission, none the less in ordinary households the harem ladies frequently drive into the country and visit the shops and public baths. Their seclusion has very considerable compensations, and legally they stand on a far better basis in relation to their husbands than do the women of monogamous Christian communities. From the moment when a woman, free or slave, enters into any kind of

wifely relation with a man, she has a legally enforceable right against him both for her own and for her children's maintenance. She has absolute control over her personal property whether in money, slaves or goods; and, if divorce is far easier in Islam than in Christendom, still the marriage settlement must be of such amount as will provide suitable maintenance in that event.

On the other hand, of course, the system is open to the gravest abuse, and in countries like Persia, Morocco and India, the life of Moslem women and slaves is often far different from that of middle class women of European Turkey, where law is strict and culture advanced. The early age at which girls are secluded, the dulness of their surroundings, and the low moral standard which the system produces react unfavourably not only upon their moral and intellectual growth but also upon their capacity for motherhood and their general physique. A harem woman is soon passée, and the lot of a woman past her youth, if she is divorced or a widow, is monotonous and empty. This is true especially of child-widows.

Since the middle of the 19th century familiarity with European customs and the direct influence of European administrators has brought about a certain change in the attitude of Orientals to the harem system. This movement is, however, only in its infancy, and the impression is still strong that the time is not ripe for reform. The Oriental women are in general so accustomed to their condition that few have any inclination to change it, while men as a rule are emphatically opposed to any alteration of the system. The Young Turkish party, the upper classes in Egypt, as also the Babists in Persia, have to some extent progressed beyond the orthodox conception of the status of women, but no radical reform has been set on foot.

In India various attempts have been made by societies, missionary and other, as well as by private individuals, to improve the lot of the zenana women. Zenana schools and hospitals have been founded, and a few women have been trained as doctors and lawyers for the special purposes of protecting the women against their own ignorance and inertia. Thus in 1905 a Parsee Christian lady, Cornelia Sorabjee, was appointed by the Bengal government as legal adviser to the court of wards, so that she might give advice to the widowed mothers of minors within the harem walls. Similarly trained medical women are introduced into zenanas and harems by the Lady Dufferin Association for medical aid to Indian women. Gradually native Christian churches are making provision for the attendance of women at their services, though the sexes are rigorously kept apart. In India, as in Turkey, the introduction of Western dress and education has begun to create new ideas and ambitions, and not a few Eastern women have induced English women to enter the harems as companions, nurses and governesses. But training and environment are extremely powerful, and in some parts of the Mahommedan world, the supply of Asiatic, European and even American girls is so steady, that reform has touched only the fringe of the system.

Among the principal societies which have been formed to better the condition of Indian and Chinese women in general with special reference to the zenana system are the Church of England Zenana Missionary Society and the Zenana Bible and Medical Mission. Much information as to the medical, industrial and educational work done by these societies will be found in their annual reports and other publications. Among these are J. K. H. Denny's *Toward the Uprising*; Irene H. Barnes, *Behind the Pardah* (1897), an account of the former society's work; the general condition of Indian women is described in Mrs Marcus B. Fuller's *Wrongs of Indian Womanhood* (1900), and Maud Dover's *The Englishwoman in India* (1909); see also article Missions.

Authorities.—The literature of the subject is very large, though a great deal of it is naturally based on insufficient evidence, and coloured by Western prepossessions. Among useful works are A. van Sommer and Zwerner, *Our Moslem Sisters* (1907), a collection of essays by authors acquainted with various parts of the Mahommedan world and strongly opposed to the whole harem system; Mrs W. M. Ramsay, *Everyday Life in Turkey* (1897), cc. iv. and v., containing an account of a day in a harem near Afium-Kara-Hissar; cf. *e.g.* art. "Harem" in Hughes, *Dictionary of Islam*; Mrs S. Harvey's *Turkish Harems and Circassian Homes* (1871); for Mahomet's regulations, see R. Bosworth Smith's *Mohammed and Mohammedanism* (1889); for Egypt, Lane, *Manners and Customs of the Modern Egyptians* (1837); and E. Lott, *Harem Life in Egypt and Constantinople* (1869); for the sultan's household in the 18th century, Lady Wortley Montagu's *Letters*, with which may be compared S. Lane-Poole, *Turkey* (ed. 1909); G. Dorys, *La Femme turque* (1902); especially Lucy M. J. Garnett (with J. S. Stuart-Glennie), *The Women of Turkey* (London, 1901), and *The Turkish People* (London, 1909). For the attempts which have been made to modify and improve the Indian zenana system, see *e.g.* the reports of the Dufferin Association and other official publications. Other information will be found in Hoffman's article in Ersch and Gruber's *Encyclopädie*; Flandin in *Revue des deux mondes* (1852) on the harem of the Persian prince Malik Kasim Mirza; the count de Beauvoir, in *Voyage round the World* (1870), on Javanese and Siamese harems; Häntzsche in *Zeitschrift für allgemeine Erdkunde* (Berlin, 1864).

(J. M. M.)

1 In Africa also, among the non-Mahommedan negroes of the west coast and the Bahima of the Victoria Nyanza, the seclusion of women of the upper classes has been practised in states (*e.g.* Ashanti and Buganda) possessing a considerable degree of civilization.

HARFLEUR, a port of France in the department of Seine-Inférieure, about 6 m. E. of Havre by rail. Pop. (1906) 2864. It lies in the fertile valley of the Lézarde, at the foot of wooded hills not far from the north bank of the estuary of the Seine. The port, which had been rendered almost inaccessible owing to the deposits of the Lézarde, again became available on the opening of the Tancarville canal (1887) connecting it with the port of Havre and with the Seine. Vessels drawing 18 ft. can moor alongside the quays of the new port, which is on a branch of the canal, has some trade in coal and timber, and carries on fishing. The church of St Martin is the most remarkable building in the town, and its lofty stone steeple forms a landmark for the pilots of the river. It dates from the 15th and 16th centuries, but the great portal is the work of the 17th, and the whole has undergone modern restoration. Of the old castle there are only insignificant ruins, near which, in a fine park, stands the present castle, a building of the 17th century. The old ramparts of the town are now replaced by manufactories, and the fosses are transformed into vegetable gardens. There is a statue of Jean de Grouchy, lord of Montérollier, under whose leadership the English were expelled from the town in 1435. The industries include distilling, metal founding and the manufacture of oil and grease.

Harfleur is identified with *Caracotinum*, the principal port of the ancient Calates. In the middle ages, when its name, Herosfloth, Harofluet or Hareflot, was still sufficiently uncorrupted to indicate its Norman derivation, it was the principal seaport of north-western France. In 1415 it was captured by Henry V. of England, but when in 1435 the people of the district of Caux rose against the English, 104 of the inhabitants opened the gates of the town to the insurgents, and thus got rid of the foreign yoke. The memory of the deed was long perpetuated by the bells of St Martin’s tolling 104 strokes. Between 1445 and 1449 the English were again in possession; but the town was recovered for the French by Dunois. In the 16th century the port began to dwindle in importance owing to the silting up of the Seine estuary and the rise of Havre. In 1562 the Huguenots put Harfleur to pillage, and its registers and charters perished in the confusion; but its privileges were restored by Charles IX. in 1568, and it was not till 1710 that it was subjected to the “taille.”

HARIANA, a tract of country in the Punjab, India, once the seat of a flourishing Hindu civilization. It consists of a level upland plain, interspersed with patches of sandy soil, and largely overgrown with brushwood. The Western Jumna canal irrigates the fields of a large number of its villages. Since the 14th century Hissar has been the local capital. During the troubled period which followed on the decline of the Mogul empire, Hariana formed the battlefield where the Mahrattas, Bhattis and Sikhs met to settle their territorial quarrels. The whole country was devastated by the famine of 1783. In 1797-1798 Hariana was overrun by the famous Irish adventurer George Thomas, who established his capital at Hansi; in 1801 he was dispossessed by Sindhia’s French general Perron; in 1803 Hariana passed under British rule. On the conquest of the Punjab Hariana was broken up into the districts of Hissar, Rohtak and Sirsa, which last has in its turn been divided between Hissar and Ferozepore.

HARINGTON, SIR JOHN (1561-1612), English writer, was born at Kelston, near Bath, in 1561. His father, John Harington, acquired considerable estates by marrying Etheldreda, a natural daughter of Henry VIII., and after his wife’s death he was attached to the service of the Princess Elizabeth. He married Isabella Markham, one of her ladies, and on Mary’s accession he and his wife were imprisoned in the Tower with the princess. John, the son of the second marriage, was Elizabeth’s godson. He studied at Eton and at Christ’s College, Cambridge, where he took the degree of M.A., his tutor being John Still, afterwards bishop of Bath and Wells, formerly reputed to be the author of *Gammer Gurton’s Needle*. He came up to London about

1583 and was entered at Lincoln's Inn, but his talents marked him out for success at court rather than for a legal career. Tradition relates that he translated the story of Giocondo from Ariosto and was reproved by the queen for acquainting her ladies with so indiscreet a selection. He was to retire to his seat at Kelston until he completed the translation of the entire work. *Orlando Furioso* in English heroical verse was published in 1591 and reprinted in 1607 and 1634. Harington was high sheriff of Somerset in 1592 and received Elizabeth at his house during her western progress of 1591. In 1596 he published in succession *The Metamorphosis of Ajax*, *An Anatomie of the Metamorphosed Ajax*, and *Ulysses upon Ajax*, the three forming collectively a very absurd and indecorous work of a Pantagruelistic kind. An allusion to Leicester in this book threw the writer into temporary disgrace, but in 1598 he received a commission to serve in Ireland under Essex. He was knighted on the field, to the annoyance of Elizabeth. Harington saved himself from being involved in Essex's disgrace by writing an account of the Irish campaign which increased Elizabeth's anger against the unfortunate earl. Among some papers found in the chapter library at York was a *Tract on the Succession to the Crown* (1602), written by Harington to secure the favour of the new king, to whom he sent the gift of a lantern constructed to symbolize the waning glory of the late queen and James's own splendour. This pamphlet, which contains many details of great interest about Elizabeth and gives an unprejudiced sketch of the religious question, was edited for the Roxburghe Club in 1880 by Sir Clements Markham. Harington's efforts to win favour at the new court were unsuccessful. In 1605 he even asked for the office of chancellor of Ireland and proposed himself as archbishop. The document in which he preferred this extraordinary request was published in 1879 with the title of *A Short View of the State of Ireland written in 1605*. Harington was before his time in advocating a policy of generosity and conciliation towards that country. He eventually succeeded in obtaining a position as one of the tutors of Prince Henry, for whom he annotated Francis Godwin's *De praesulibus Angliae*. Harington's grandson, John Chetwind, found in this somewhat scandalous production an argument for the Presbyterian side, and published it in 1653, under the title of *A Briefe View of the State of the Church, &c.*

Harington died at Kelston on the 20th of November 1612. His *Epigrams* were printed in a collection entitled *Alcilia* in 1613, and separately in 1615. The translation of the *Orlando Furioso* was carried out with skill and perseverance. It is not to be supposed that Harington failed to realize the ironic quality of his original, but he treated it as a serious allegory to suit the temper of Queen Elizabeth's court. He was neither a very exact scholar nor a very poetical translator, and he cannot be named in the same breath with Fairfax. The *Orlando Furioso* was sumptuously illustrated, and to it was prefixed an *Apologie of Poetrie*, justifying the subject matter of the poem, and, among other technical matters, the author's use of disyllabic and trisyllabic rhymes, also a life of Ariosto compiled by Harington from various Italian sources. Harington's Rabelaisian pamphlets show that he was almost equally endowed with wit and indelicacy, and his epigrams are sometimes smart and always easy. His works include *The Englishman's Doctor, Or the School of Salerne* (1608), and *Nugae antiquae*, miscellaneous papers collected in 1779.

A biographical account of Harington is prefixed to the Roxburghe Club edition of his tract on the succession mentioned above.

ḤARĪRĪ [Abū Maḥommed ul-Qāsim ibn 'Ali ibn Maḥommed al-Ḥarīrī,] *i.e.* "the manufacturer or seller of silk"] (1054-1122), Arabian writer, was born at Baṣra. He owned a large estate with 18,000 date-palms at Mashān, a village near Baṣra. He is said to have occupied a government position, but devoted his life to the study of the niceties of the Arabic language. On this subject he wrote a grammatical poem the *Mulḥat ul-'Irāb* (French trans. *Les Récréations grammaticales* with notes by L. Pinto, Paris 1885-1889; extracts in S. de Sacy's *Anthologie arabe*, pp. 145-151, Paris, 1829); a work on the faults of the educated called *Ḍurrat ul-Ghawwās* (ed. H. Thorbecke, Leipzig, 1871), and some smaller treatises such as the two letters on words containing the letters *sin* and *shin* (ed. in Arnold's *Chrestomathy*, pp. 202-9). But his fame rests chiefly on his fifty *maqāmas* (see ARABIA: *Literature*, section "Belles Lettres"). These were written in rhymed prose like those of Hamadhānī, and are full of allusions to Arabian history, poetry and tradition, and discussions of difficult points of Arabic grammar and rhetoric.

The Maqāmas have been edited with Arabic commentary by S. de Sacy (Paris, 1822, 2nd ed. with French notes by Reinaud and J. Derenbourg, Paris, 1853); with English notes by F. Steingass (London, 1896). An English translation with notes was made by T. Preston (London, 1850), and another by T. Chenery and F. Steingass (London, 1867 and 1898). Many editions have been published in the East with commentaries, especially with that of Sharīshī (d. 1222).

(G. W. T.)

HARI-RUD, a river of Afghanistan. It rises in the northern slopes of the Koh-i-Baba to the west of Kabul, and finally loses itself in the Tejend oasis north of the Trans-Caspian railway and west of Merv. It runs a remarkably straight course westward through a narrow trough from Daolatyar to Obeh, amidst the bleak wind-swept uplands of the highest central elevations in Afghanistan. From Obeh to Kuhsan 50 m. west of Herat, it forms a valley of great fertility, densely populated and highly cultivated; practically all its waters being drawn off for purposes of irrigation. It is the contrast between the cultivated aspect of the valley of Herat and the surrounding desert that has given Herat its great reputation for fertility. Three miles to the south of Herat the Kandahar road crosses the river by a masonry bridge of 26 arches now in ruins. A few miles below Herat the river begins to turn north-west, and after passing through a rich country to Kuhsan, it turns due north and breaks through the Paropamisan hills. Below Kuhsan it receives fresh tributaries from the west. Between Kuhsan and Zulfikar it forms the boundary between Afghanistan and Persia, and from Zulfikar to Sarakhs between Russia and Persia. North of Sarakhs it diminishes rapidly in volume till it is lost in the sands of the Turkman desert. The Hari-Rud marks the only important break existing in the continuity of the great central water-parting of Asia. It is the ancient Arius.

(T. H. H.*)

HARISCHANDRA, in Hindu mythology, the 28th king of the Solar race. He was renowned for his piety and justice. He is the central figure of legends in the Aitareyabrahmana, Mahabharata and the Markandeyapurana. In the first he is represented as so desirous of a son that he vows to Varuna that if his prayer is granted the boy shall be eventually sacrificed to the latter. The child is born, but Harischandra, after many delays, arranges to purchase another's son and make a vicarious sacrifice. According to the Mahabharata he is at last promoted to Paradise as the reward for his munificent charity.

ḤĀRITH IBN ḤILLIZA UL-YASHKURĪ, pre-Islamic Arabian poet of the tribe of Bakr, famous as the author of one of the poems generally received among the Mo'allakāt (*q.v.*). Nothing is known of the details of his life.

ḤARIZI, JUDAH BEN SOLOMON (13th cent.), called also al-Ḥarizi, a Spanish Hebrew poet and traveller. He translated from the Arabic to Hebrew some of the works of Maimonides (*q.v.*) and also of the Arab poet Ḥariri. His own most considerable work was the *Taḥkemoni*, composed between 1218 and 1220. This is written in Hebrew in unmetrical rhymes, in what is commonly termed "rhymed prose." It is a series of humorous episodes, witty verses, and quaint applications of Scriptural texts. The episodes are bound together by the presence of the hero and of the narrator, who is also the author. Ḥarizi not only brought to perfection the art of applying Hebrew to secular satire, but he was also a brilliant literary critic and his *makame* on the Andalusian Hebrew poets is a fruitful source of information.

See, on the *Taḥkemoni*, Kaempf, *Nicht-andalusische Poesie andalusischer Dichter* (Prague, 1858). In that work a considerable section of the *Taḥkemoni* is translated into German.

(I. A.)

HARKNESS, ALBERT (1822-1907), American classical scholar, was born at Mendon, Massachusetts, on the 6th of October 1822. He graduated at Brown University in 1842, taught in the Providence high school in 1843-1853, studied in Berlin, Bonn (where in 1854 he was the first American to receive the degree of Ph.D.) and Göttingen, and was professor of Greek language and literature in Brown University from 1855 to 1892, when he became professor emeritus. He was one of the founders in 1869 of the American Philological Association, of which he was president in 1875-1876, and to whose *Transactions* he made various contributions; was a member of the Archaeological Institute's committee on founding the American School of Classical Studies at Athens, and served as the second director of that school in 1883-1884. He studied English and German university methods during trips to Europe in 1870 and 1883, and introduced a new scholarly spirit into American teaching of Latin in secondary schools with a series of Latin text-books, which began in 1851 with a *First Latin Book* and continued for more than fifty years. His *Latin Grammar* (1864, 1881) and *Complete Latin Grammar* (1898) are his best-known books. He was a member of the board of fellows of Brown University from 1904 until his death, and in 1904-1905 was president of the Rhode Island Historical Society. He died in Providence, Rhode Island, on the 27th of May 1907.

His son, Albert Granger Harkness (1857-), also a classical scholar, was born in Providence, Rhode Island, on the 19th of November 1857. He graduated at Brown University in 1879, studied in Germany in 1879-1883, and was professor of German and Latin at Madison (now Colgate) University from 1883 to 1889, and associate professor of Latin at Brown from 1889 to 1893, when he was appointed to the chair of Roman literature and history there. He was director of the American School of Classical Studies in Rome in 1902-1903.

HARKNESS, ROBERT (1816-1878), English geologist, was born at Ormskirk, Lancashire, on the 28th of July 1816. He was educated at the high school, Dumfries, and afterwards (1833-1834) at the university of Edinburgh where he acquired an interest in geology from the teachings of Robert Jameson and J. D. Forbes. Returning to Ormskirk he worked zealously at the local geology, especially on the Coal-measures and New Red Sandstone, his first paper (read before the Manchester Geol. Soc. in 1843) being on *The Climate of the Coal Epoch*. In 1848 his family went to reside in Dumfries and there he commenced to work on the Silurian rocks of the S.W. of Scotland, and in 1849 he carried his investigations into Cumberland. In these regions during the next few years he added much to our knowledge of the strata and their fossils, especially graptolites, in papers read before the Geological Society of London. He wrote also on the New Red rocks of the north of England and Scotland. In 1853 he was appointed professor of geology in Queen's College, Cork, and in 1856 he was elected F.R.S. During this period he wrote some articles on the geology of parts of Ireland, and exercised much influence as a teacher, but he returned to England during his vacations and devoted himself assiduously to the geology of the Lake district. He was also a constant attendant at the meetings of the British Association. In 1876 the syllabus for the Queen's Colleges in Ireland was altered, and Professor Harkness was required to lecture not only on geology, palaeontology, mineralogy and physical geography, but also on zoology and botany. The strain of the extra work proved too much, he decided to relinquish his post, and had retired but a short time when he died, on the 4th of October 1878.

"Memoir," by J. G. Goodchild, in *Trans. Cumberland Assoc.* No. viii. (with portrait). In memory of Professor Harkness his sister established two Harkness scholarships. One scholarship (of the value of about £35 a year, tenable for three years) for women, tenable at either Girton or Newnham College, Cambridge, is awarded triennially to the best candidate in an examination in geology and palaeontology, provided that proficiency be shown; the other, for men, is vested in the hands of the university of Cambridge, and is awarded annually, any member of the university being eligible who has graduated as a B.A., "provided that not more than three years have elapsed since the 19th day of December next following his final examination for the degree of bachelor of arts."

HARLAN, JAMES (1820-1899), American politician, was born in Clark county, Illinois, on the 26th of August 1820. He graduated from Indiana Asbury (now De Pauw) University in 1845, was president (1846-1847) of the newly founded and short-lived Iowa City College, studied law, was first superintendent of public instruction in Iowa in 1847-1848, and was president of Iowa

Wesleyan University in 1853-1855. He took a prominent part in organizing the Republican party in Iowa, and was a member of the United States Senate from 1855 to 1865, when he became secretary of the interior. He had been a delegate to the peace convention in 1861, and from 1861 to 1865 was chairman of the Senate committee on public lands. He disapproved of President Johnson's conservative reconstruction policy, retired from the cabinet in August 1866, and from 1867 to 1873 was again a member of the United States Senate. In 1866 he was a delegate to the loyalists' convention at Philadelphia. One of his principal speeches in the Senate was that which he made in March 1871 in reply to Sumner's and Schurz's attack on President Grant's Santo Domingan policy. He was presiding judge of the court of commissioners of Alabama claims (1882-1885). He died in Mount Pleasant, Iowa, on the 5th of October 1899.

HARLAN, JOHN MARSHALL (1833-), American jurist, was born in Boyle county, Kentucky, on the 1st of June 1833. He graduated at Centre College, Danville, Ky., in 1850, and at the law department of Transylvania University, Lexington, in 1853. He was county judge of Franklin county in 1858-1859, was an unsuccessful candidate for Congress on the Whig ticket in 1859, and was elector on the Constitutional Union ticket in 1860. On the outbreak of the Civil War he recruited and organized the Tenth Kentucky United States Volunteer Infantry, and in 1861-1863 served as colonel. Retiring from the army in 1863, he was elected by the Union party attorney-general of the state, and was re-elected in 1865, serving from 1863 to 1867, when he removed to Louisville to practise law. He was the Republican candidate for governor in 1871 and in 1875, and was a member of the commission which was appointed by President Hayes early in 1877 to accomplish the recognition of one or other of the existing state governments of Louisiana (*q.v.*); and he was a member of the Bering Sea tribunal which met in Paris in 1893. On the 29th of November 1877 he became an associate justice of the United States Supreme Court. In this position he showed himself a liberal constructionist. In opinions on the Civil Rights cases and in the interpretation of the 13th, 14th and 15th Amendments to the Constitution, he dissented from the majority of the court and advocated increasing the power of the Federal government. He supported the constitutionality of the income tax clause in the Wilson Tariff Bill of 1894, and he drafted the decision of the court in the Northern Securities Company Case, which applied to railways the provisions of the Sherman Anti-Trust Law. In 1889 he became a professor in the Law School of the Columbian University (afterwards George Washington University) in Washington, D.C.

HARLAND, HENRY (1861-1905), American novelist, was born in St Petersburg, Russia, in March 1861, and was educated in New York and at Harvard. He went to Europe as a journalist, and, after publishing several novels, mainly of American-Jewish life (under the name of Sidney Luska), first made his literary reputation in London as editor of the *Yellow Book* in 1894. His association with this clever publication, and his own contributions to it, brought his name into prominence, but it was not till he published *The Cardinal's Snuff-box* (1900), followed by *The Lady Paramount* (1902), that his lightly humorous touch and picturesque style as a novelist brought him any real success. His health was always delicate, and he died at San Remo on the 20th of December 1905.

HARLAY DE CHAMPVALLON, FRANÇOIS DE (1625-1695), 5th archbishop of Paris, was born in that city on the 14th of August 1625. Nephew of François de Harlay, archbishop of Rouen, he was presented to the abbey of Jumièges immediately on leaving the Collège de Navarre, and he was only twenty-six when he succeeded his uncle in the archiepiscopal see. He was transferred to the see of Paris in 1671, he was nominated by the king for the cardinalate in 1690, and the domain of St Cloud was erected into a duchy in his favour. He was commander of the order of the Saint Esprit and a member of the French Academy. During the early part of his political career he was a firm adherent of Mazarin, and is said to have helped to procure his return from exile. His private life gave rise to much scandal, but he had a great capacity for

business, considerable learning, and was an eloquent and persuasive speaker. He definitely secured the favour of Louis XIV. by his support of the claims of the Gallican Church formulated by the declaration made by the clergy in assembly on the 19th of March 1682, when Bossuet accused him of truckling to the court like a valet. One of the three witnesses of the king's marriage with Madame de Maintenon, he was hated by her for using his influence with the king to keep the matter secret. He had a weekly audience of Louis XIV. in company with Père la Chaise on the affairs of the Church in Paris, but his influence gradually declined, and Saint-Simon, who bore him no good will for his harsh attitude to the Jansenists, says that his friends deserted him as the royal favour waned, until at last most of his time was spent at Conflans in company with the duchess of Lesdiguières, who alone was faithful to him. He urged the revocation of the edict of Nantes, and showed great severity to the Huguenots at Dieppe, of which he was temporal and spiritual lord. He died suddenly, without having received the sacraments, on the 6th of August 1695. His funeral discourse was delivered by the Père Gaillard, and Mme de Sévigné made on the occasion the severe comment that there were only two trifles to make this a difficult matter—his life and his death.

See Abbé Legendre, *Vita Francisci de Harlay* (Paris, 1720) and *Éloge de Harlay* (1695); Saint-Simon, *Mémoires* (vol. ii., ed. A. de Boislisle, 1879), and numerous references in the *Lettres* of Mme de Sévigné.

HARLECH (perhaps for *Hardd lech*, fair slate, or *Harleigh*, an Anglicized variant), a town of Merionethshire, Wales, 38 m. from Aberystwyth, and 29 from Carnarvon on the Cambrian railway. Pop. 900. Ruins of a fortress crown the rock of Harlech, about half a mile from the sea. Discovery of Roman coins makes it probable that it was once occupied by the Romans. In the 3rd century Bronwen (white bosom), daughter of Bran Fendigaid (the blessed), is said to have stayed here, perhaps by force; and there was here a tower, called Twr Bronwen, and replaced about A.D. 550 by the building of Maelgwyn Gwynedd, prince of North Wales. In the early 10th century, Harlech castle was, apparently, repaired by Colwyn, lord of Ardudwy, founder of one of the fifteen North Wales tribes, and thence called Caer Colwyn. The present structure dates, like many others in the principality, from Edward I., perhaps even from the plans of the architect of Carnarvon and Conway castles, but with the retention of old portions. It is thought to have been square, each side measuring some 210 ft., with towers and turrets. Glendower held it for four years. Here, in 1460, Margaret, wife of Henry VI., defeated at Northampton, took refuge. Dafydd ap Ieuan ap Einion held it for the Lancastrians, until famine, rather than Edward IV., made him surrender. From this time is said to date the air "March of the men of Harlech" (*Rhyfelgerdd gwyr Harlech*). The castle was alternately Roundhead and Cavalier in the civil war. Edward I. made Harlech a free borough, and it was formerly the county town. It is in the parish of Llandanwg (pop. in 1901, 931). Though interesting from an antiquarian point of view, the district around, especially Dyffryn Ardudwy (the valley), is dreary and desolate, *e.g.* Drws (the door of) Ardudwy, Rhinog fawr and Rhinog fach (cliffs); an exception is the verdant Cwm bychan (little combe or hollow). The Meini gwyr Ardudwy (stones of the men of Ardudwy) possibly mark the site of a fight.

HARLEQUIN, in modern pantomime, the posturing and acrobatic character who gives his name to the "harlequinade," attired in mask and parti-coloured and spangled tights, and provided with a sword like a bat, by which, himself invisible, he works wonders. It has generally been assumed that Harlequin was transferred to France from the "Arlecchino" of Italian medieval and Renaissance popular comedy; but Dr Driesen in his *Ursprung des Harlekins* (Berlin, 1904) shows that this is incorrect. An old French "Harlekin" (Herlekin, Hellequin and other variants) is found in folk-literature as early as 1100; he had already become proverbial as a ragamuffin of a demoniacal appearance and character; in 1262 a number of harlekins appear in a play by Adam de la Halle as the intermediaries of King Hellekin, prince of Fairyland, in courting Morgan le Fay; and it was not till much later that the French Harlekin was transformed into the Italian Arlecchino. In his typical French form down to the time of Gottsched, he was a spirit of the air, deriving thence his invisibility and his characteristically light and aery whirlings. Subsequently he returned from the Italian to the French stage, being imported by Marivaux into light comedy; and his various attributes gradually became amalgamated into the latter form taken in pantomime.

HARLESS (originally HARLES), **GOTTLIEB CHRISTOPH** (1738-1815), German classical scholar and bibliographer, was born at Culmbach in Bavaria on the 21st of June 1738. He studied at Halle, Erlangen and Jena. In 1765 he was appointed professor of oriental languages and eloquence at the Gymnasium Casimirianum in Coburg, in 1770 professor of poetry and eloquence at Erlangen, and in 1776 librarian of the university. He held his professorship for forty-five years till his death on the 2nd of November 1815. Harless was an extremely prolific writer. His numerous editions of classical authors, deficient in originality and critical judgment, although valuable at the time as giving the student the results of the labours of earlier scholars, are now entirely superseded. But he will always be remembered for his meritorious work in connexion with the great *Bibliotheca Graeca* of J. A. Fabricius, of which he published a new and revised edition (12 vols., 1790-1809, not quite completed),—a task for which he was peculiarly qualified. He also wrote much on the history and bibliography of Greek and Latin literature.

His life was written by his son, Johann Christian Friedrich Harless (1818).

HARLESS, GOTTLIEB CHRISTOPH ADOLF VON (1806-1879), German divine, was born at Nuremberg on the 21st of November 1806, and was educated at the universities of Erlangen and Halle. He was appointed professor of theology at Erlangen in 1836 and at Leipzig in 1845. He was a strong Lutheran and exercised a powerful influence in that direction as court preacher in Dresden and as president of the Protestant consistory at Munich. His chief works were *Theologische Encyklopädie und Methodologie* (1837) and *Die christliche Ethik* (1842, Eng. trans. 1868). He died on the 5th of September 1879, having, a few years earlier, written an autobiography under the title *Bruchstücke aus dem Leben eines süddeutschen Theologen*.

HARLINGEN, a seaport in the province of Friesland, Holland, on the Zuider Zee, and the terminus of the railway and canal from Leeuwarden (15½ m. E.). It is connected by steam tramway by way of Bolswaard with Sneek. Pop. (1900) 10,448. Harlingen has become the most considerable seaport of Friesland since the construction of the large outer harbour in 1870-1877, and in addition to railway and steamship connexion with Bremen, Amsterdam, and the southern provinces there are regular sailings to Hull and London. Powerful sluices protect the inner harbour from the high tides. The only noteworthy buildings are the town hall (1730-1733), the West church, which consists of a part of the former castle of Harlingen, the Roman Catholic church, the Jewish synagogue and the schools of navigation and of design. The chief trade of Harlingen is the exportation of Frisian produce, namely, butter and cheese, cattle, sheep, fish, potatoes, flax, &c. There is also a considerable import trade in timber, coal, raw cotton, hemp and jute for the Twente factories. The local industries are unimportant, consisting of saw-mills, rope-yards, salt refineries, and sail-cloth and margarine factories.

HARMATTAN, the name of a hot dry parching wind that blows during December, January and February on the coast of Upper Guinea, bringing a high dense haze of red dust which darkens the air. The natives smear their bodies with oil or fat while this parching wind is blowing.

HARMODIUS, a handsome Athenian youth, and the intimate friend of Aristogeiton.

Hipparchus, the younger brother of the tyrant Hippias, endeavoured to supplant Aristogeiton in the good graces of Harmodius, but, failing in the attempt, revenged himself by putting a public affront on Harmodius's sister at a solemn festival. Thereupon the two friends conspired with a few others to murder both the tyrants during the armed procession at the Panathenaic festival (514 B.C.), when the people were allowed to carry arms (this licence is denied by Aristotle in *Ath. Pol.*). Seeing one of their accomplices speaking to Hippias, and imagining that they were being betrayed, they prematurely attacked and slew Hipparchus alone. Harmodius was cut down on the spot by the guards, and Aristogeiton was soon captured and tortured to death. When Hippias was expelled (510), Harmodius and Aristogeiton became the most popular of Athenian heroes; their descendants were exempted from public burdens, and had the right of public entertainment in the Prytaneum, and their names were celebrated in popular songs and scolia (after-dinner songs) as the deliverers of Athens. One of these songs, attributed to a certain Callistratus, is preserved in Athenaeus (p. 695). Their statues by Antenor in the agora were carried off by Xerxes and replaced by new ones by Critius and Nesiotes. Alexander the Great afterwards sent back the originals to Athens. It is not agreed which of these was the original of the marble tyrannicide group in the museum at Naples, for which see article Greek Art, Pl. I. fig. 50.

See Köpp in *Neue Jahrb. f. klass. Altert.* (1902), p. 609.

HARMONIA, in Greek mythology, according to one account the daughter of Ares and Aphrodite, and wife of Cadmus. When the government of Thebes was bestowed upon Cadmus by Athena, Zeus gave him Harmonia to wife. All the gods honoured the wedding with their presence. Cadmus (or one of the gods) presented the bride with a robe and necklace, the work of Hephaestus. This necklace brought misfortune to all who possessed it. With it Polyneices bribed Eriphyle to persuade her husband Amphiaraus to undertake the expedition against Thebes. It led to the death of Eriphyle, of Alcmaeon, of Phegeus and his sons. Even after it had been deposited in the temple of Athena Pronoia at Delphi, its baleful influence continued. Phayllus, one of the Phocian leaders in the Sacred War (352 B.C.) carried it off and gave it to his mistress. After she had worn it for a time, her son was seized with madness and set fire to the house, and she perished in the flames. According to another account, Harmonia belonged to Samothrace and was the daughter of Zeus and Electra, her brother Iasion being the founder of the mystic rites celebrated on the island (Diod. Sic. v. 48). Finally, Harmonia is rationalized as closely allied to Aphrodite Pandemos, the love that unites all people, the personification of order and civic unity, corresponding to the Roman Concordia.

Apollodorus iii. 4-7; Diod. Sic. iv. 65, 66; Parthenius, *Erotica*, 25; L. Preller, *Griech. Mythol.*; Crusius in Roscher's *Lexikon*.

HARMONIC. In acoustics, a harmonic is a secondary tone which accompanies the fundamental or primary tone of a vibrating string, reed, &c.; the more important are the 3rd, 5th, 7th, and octave (see Sound; Harmony). A harmonic proportion in arithmetic and algebra is such that the reciprocals of the proportionals are in arithmetical proportion; thus, if a, b, c be in harmonic proportion then $1/a$, $1/b$, $1/c$ are in arithmetical proportion; this leads to the relation $2/b = ac/(a + c)$. A harmonic progression or series consists of terms whose reciprocals form an arithmetical progression; the simplest example is: $1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \ldots$ (see Algebra and Arithmetic). The occurrence of a similar proportion between segments of lines is the foundation of such phrases as harmonic section, harmonic ratio, harmonic conjugates, &c. (see Geometry: II. *Projective*). The connexion between acoustical and mathematical harmonicals is most probably to be found in the Pythagorean discovery that a vibrating string when stopped at ½ and ⅔ of its length yielded the octave and 5th of the original tone, the numbers, $1\frac{2}{3}$, ½ being said to be, probably first by Archytas, in harmonic proportion. The mathematical investigation of the form of a vibrating string led to such phrases as harmonic curve, harmonic motion, harmonic function, harmonic analysis, &c. (see Mechanics and Spherical Harmonics).

HARMONICA, a generic term applied to musical instruments in which sound is produced by friction upon glass bells. The word is also used to designate instruments of percussion of the Glockenspiel type, made of steel and struck by hammers (Ger. *Stahlharmonika*).

The origin of the glass-harmonica tribe is to be found in the fashionable 18th century instrument known as musical glasses (Fr. *verrillon*), the principle of which was known already in the 17th century.[1] The invention of musical glasses is generally ascribed to an Irishman, Richard Pockrich, who first played the instrument in public in Dublin in 1743 and the next year in England, but Eisel[2] described the *verrillon* and gave an illustration of it in 1738. The *verrillon* or *Glassspiel* consisted of 18 beer glasses arranged on a board covered with cloth, water being poured in when necessary to alter the pitch. The glasses were struck on both sides gently with two long wooden sticks in the shape of a spoon, the bowl being covered with silk or cloth. Eisel states that the instrument was used for church and other solemn music. Gluck gave a concert at the "little theatre in the Haymarket" (London) in April 1746, at which he performed on musical glasses a concerto of his composition with full orchestral accompaniment. E. H. Delaval is also credited with the invention. When Benjamin Franklin visited London in 1757, he was so much struck by the beauty of tone elicited by Delaval and Pockrich, and with the possibilities of the glasses as musical instruments, that he set to work on a mechanical application of the principle involved, the eminently successful result being the glass harmonica finished in 1762. In this the glass bowls were mounted on a rotating spindle, the largest to the left, and their under-edges passed during each revolution through a water-trough. By applying the fingers to the moistened edges, sound was produced varying in intensity with the pressure, so that a certain amount of expression was at the command of a good player. It is said that the timbre was extremely enervating, and, together with the vibration caused by the friction on the finger-tips, exercised a highly deleterious effect on the nervous system. The instrument was for many years in great vogue, not only in England but on the Continent of Europe, and more especially in Saxony, where it was accorded a place in the court orchestra. Mozart, Beethoven, Naumann and Hasse composed music for it. Marianne Davies and Marianna Kirchgessner were celebrated virtuosi on it. The curious vogue of the instrument, as sudden as it was ephemeral, produced emulation in a generation unsurpassed for zeal in the invention of musical instruments. The most notable of its offspring were Carl Leopold Röllig's improved harmonica with a keyboard in 1786, Chladni's euphon in 1791 and clavicylinder in 1799, Ruffelsen's melodicon in 1800 and 1803, Franz Leppich's panmelodicon in 1810, Buschmann's uranion in the same year, &c. Of most of these nothing now remains but the name and a description in the *Allgemeine musikalische Zeitung*, but there are numerous specimens of the Franklin type in the museums for musical instruments of Europe. One specimen by Emanuel Pohl, a Bohemian maker, is preserved in the Victoria and Albert Museum, London.

For the steel harmonica see GLOCKENSPIEL.

(K. S.)

1 See G. P. Harsdörfer, *Math. und philos. Erquickstunden* (Nuremberg, 1677), ii. 147.

2 *Musicus* αὐτοδίδακτος (Erfurt, 1738), p. 70.

HARMONIC ANALYSIS, in mathematics, the name given by Sir William Thomson (Lord Kelvin) and P. G. Tait in their treatise on *Natural Philosophy* to a general method of investigating physical questions, the earliest applications of which seem to have been suggested by the study of the vibrations of strings and the analysis of these vibrations into their fundamental tone and its harmonics or overtones.

The motion of a uniform stretched string fixed at both ends is a periodic motion; that is to say, after a certain interval of time, called the fundamental period of the motion, the form of the string and the velocity of every part of it are the same as before, provided that the energy of the motion has not been sensibly dissipated during the period.

There are two distinct methods of investigating the motion of a uniform stretched string. One of these may be called the wave method, and the other the harmonic method. The wave method is founded on the theorem that in a stretched string of infinite length a wave of any form may be propagated in either direction with a certain velocity, V, which we may define as the "velocity of propagation." If a wave of any form travelling in the positive direction meets another travelling in the opposite direction, the form of which is such that the lines joining corresponding points of the two waves are all bisected in a fixed point in the line of the string, then the point of the string corresponding to this point will remain fixed, while the two waves pass it in opposite directions. If we now suppose that the form of the waves travelling in the positive direction is

periodic, that is to say, that after the wave has travelled forward a distance l, the position of every particle of the string is the same as it was at first, then l is called the wave-length, and the time of travelling a wave-length is called the periodic time, which we shall denote by T, so that l = VT.

If we now suppose a set of waves similar to these, but reversed in position, to be travelling in the opposite direction, there will be a series of points, distant ½l from each other, at which there will be no motion of the string; it will therefore make no difference to the motion of the string if we suppose the string fastened to fixed supports at any two of these points, and we may then suppose the parts of the string beyond these points to be removed, as it cannot affect the motion of the part which is between them. We have thus arrived at the case of a uniform string stretched between two fixed supports, and we conclude that the motion of the string may be completely represented as the resultant of two sets of periodic waves travelling in opposite directions, their wave-lengths being either twice the distance between the fixed points or a submultiple of this wave-length, and the form of these waves, subject to this condition, being perfectly arbitrary.

To make the problem a definite one, we may suppose the initial displacement and velocity of every particle of the string given in terms of its distance from one end of the string, and from these data it is easy to calculate the form which is common to all the travelling waves. The form of the string at any subsequent time may then be deduced by calculating the positions of the two sets of waves at that time, and compounding their displacements.

Thus in the wave method the actual motion of the string is considered as the resultant of two wave motions, neither of which is of itself, and without the other, consistent with the condition that the ends of the string are fixed. Each of the wave motions is periodic with a wave-length equal to twice the distance between the fixed points, and the one set of waves is the reverse of the other in respect of displacement and velocity and direction of propagation; but, subject to these conditions, the form of the wave is perfectly arbitrary. The motion of a particle of the string, being determined by the two waves which pass over it in opposite directions, is of an equally arbitrary type.

In the harmonic method, on the other hand, the motion of the string is regarded as compounded of a series of vibratory motions (*normal modes* of vibration), which may be infinite in number, but each of which is perfectly definite in type, and is in fact a particular solution of the problem of the motion of a string with its ends fixed.

A simple harmonic motion is thus defined by Thomson and Tait (§ 53):—When a point Q moves uniformly in a circle, the perpendicular QP, drawn from its position at any instant to a fixed diameter AA′ of the circle, intersects the diameter in a point P whose position changes by a *simple harmonic motion*.

The amplitude of a simple harmonic motion is the range on one side or the other of the middle point of the course.

The period of a simple harmonic motion is the time which elapses from any instant until the moving-point again moves in the same direction through the same position.

The phase of a simple harmonic motion at any instant is the fraction of the whole period which has elapsed since the moving-point last passed through its middle position in the positive direction.

In the case of the stretched string, it is only in certain particular cases that the motion of a particle of the string is a simple harmonic motion. In these particular cases the form of the string at any instant is that of a curve of sines having the line joining the fixed points for its axis, and passing through these two points, and therefore having for its wave-length either twice the length of the string or some submultiple of this wave-length. The amplitude of the curve of sines is a simple harmonic function of the time, the period being either the fundamental period or some submultiple of the fundamental period. Every one of these modes of vibration is dynamically possible by itself, and any number of them may coexist independently of each other.

By a proper adjustment of the initial amplitude and phase of each of these modes of vibration, so that their resultant shall represent the initial state of the string, we obtain a new representation of the whole motion of the string, in which it is seen to be the resultant of a series of simple harmonic vibrations whose periods are the fundamental period and its submultiples. The determination of the amplitudes and phases of the several simple harmonic vibrations so as to satisfy the initial conditions is an example of harmonic analysis.

We have thus two methods of solving the partial differential equation of the motion of a string. The first, which we have called the wave method, exhibits the solution in the form containing an arbitrary function, the nature of which must be determined from the initial conditions. The second, or harmonic method, leads to a series of terms involving sines and cosines, the coefficients of which have to be determined. The harmonic method may be defined in a more general manner as a method by which the solution of any actual problem may be obtained as the sum or resultant of a number of terms, each of which is a solution of a particular case of the

problem. The nature of these particular cases is defined by the condition that any one of them must be conjugate to any other.

The mathematical test of conjugacy is that the energy of the system arising from two of the harmonics existing together is equal to the sum of the energy arising from the two harmonics taken separately. In other words, no part of the energy depends on the product of the amplitudes of two different harmonics. When two modes of motion of the same system are conjugate to each other, the existence of one of them does not affect the other.

The simplest case of harmonic analysis, that of which the treatment of the vibrating string is an example, is completely investigated in what is known as Fourier's theorem.

Fourier's theorem asserts that any periodic function of a single variable period p, which does not become infinite at any phase, can be expanded in the form of a series consisting of a constant term, together with a double series of terms, one set involving cosines and the other sines of multiples of the phase.

Thus if $\varphi(\xi)$ is a periodic function of the variable ξ having a period p, then it may be expanded as follows:

$$\varphi(\xi) = A_0 + \Sigma_1^{\infty\ i} A_i \cos \frac{2i\pi\xi}{p} + \Sigma_1^{\infty\ i} B_i \sin \frac{2i\pi\xi}{p}. \qquad (1)$$

The part of the theorem which is most frequently required, and which also is the easiest to investigate, is the determination of the values of the coefficients A_0, A_i, B_i. These are

$$A_0 = \frac{1}{p}\int_0^p \varphi(\xi)d\xi; \qquad A_i = \frac{2}{p}\int_0^p \varphi(\xi)\cos\frac{2i\pi\xi}{p}\,d\xi; \qquad B_i = \frac{2}{p}\int_0^p \varphi(\xi)\sin\frac{2i\pi\xi}{p}\,d\xi.$$

This part of the theorem may be verified at once by multiplying both sides of (1) by $d\xi$, by $\cos(2i\pi\xi/p)/d\xi$ or by $\sin(2i\pi\xi/p)/d\xi$, and in each case integrating from 0 to p.

The series is evidently single-valued for any given value of ξ. It cannot therefore represent a function of ξ which has more than one value, or which becomes imaginary for any value of ξ. It is convergent, approaching to the true value of $\varphi(\xi)$ for all values of ξ such that if ξ varies infinitesimally the function also varies infinitesimally.

Lord Kelvin, availing himself of the disk, globe and cylinder integrating machine invented by his brother, Professor James Thomson, constructed a machine by which eight of the integrals required for the expression of Fourier's series can be obtained simultaneously from the recorded trace of any periodically variable quantity, such as the height of the tide, the temperature or pressure of the atmosphere, or the intensity of the different components of terrestrial magnetism. If it were not on account of the waste of time, instead of having a curve drawn by the action of the tide, and the curve afterwards acted on by the machine, the time axis of the machine itself might be driven by a clock, and the tide itself might work the second variable of the machine, but this would involve the constant presence of an expensive machine at every tidal station.

(J. C. M.)

For a discussion of the restrictions under which the expansion of a periodic function of ξ in the form (1) is valid, see Fourier's Series. An account of the contrivances for mechanical calculation of the coefficients A_i, B_i ... is given under Calculating Machines.

A more general form of the problem of harmonic analysis presents itself in astronomy, in the theory of the tides, and in various magnetic and meteorological investigations. It may happen, for instance, that a variable quantity $f(t)$ is known theoretically to be of the form

$$f(t) = A_0 + A_1 \cos n_1 t + B_1 \sin n_1 t + A_2 \cos n_2 t + B_2 \sin n_2 t + \ldots \qquad (2)$$

where the periods $2\pi/n_1$, $2\pi/n_2$, ... of the various simple-harmonic constituents are already known with sufficient accuracy, although they may have no very simple relations to one another. The problem of determining the most probable values of the constants A_0, A_1, B_1, A_2, B_2, ... by means of a series of recorded values of the function $f(t)$ is then in principle a fairly simple one, although the actual numerical work may be laborious (see Tide). A much more difficult and delicate question arises when, as in various questions of meteorology and terrestrial magnetism, the periods $2\pi/n_1$, $2\pi/n_2$, ... are themselves unknown to begin with, or are at most conjectural. Thus, it may be desired to ascertain whether the magnetic declination contains a periodic element synchronous with the sun's rotation on its axis, whether any periodicities can be detected in the records of the prevalence of sun-spots, and so on. From a strictly mathematical standpoint the problem is, indeed, indeterminate, for when all the symbols are at our disposal, the representation of the observed values of a function, over a finite range of time, by means of a series of the type (2), can be effected in an infinite variety of ways. Plausible inferences can, however, be drawn, provided the proper precautions are observed. This question has been treated most systematically by Professor A. Schuster, who has devised a remarkable mathematical method, in which the action of a diffraction-grating in sorting out the various periodic constituents of a heterogeneous beam of light is closely imitated. He has further applied

the method to the study of the variations of the magnetic declination, and of sun-spot records.

The question so far chiefly considered has been that of the representation of an arbitrary function of the *time* in terms of functions of a special type, viz. the circular functions cos nt, sin nt. This is important on dynamical grounds; but when we proceed to consider the problem of expressing an arbitrary function of *space-co-ordinates* in terms of functions of specified types, it appears that the preceding is only one out of an infinite variety of modes of representation which are equally entitled to consideration. Every problem of mathematical physics which leads to a linear differential equation supplies an instance. For purposes of illustration we will here take the simplest of all, viz. that of the transversal vibrations of a tense string. The equation of motion is of the form

$$\rho \frac{\partial^2 y}{\partial t^2} = T \frac{\partial^2 y}{\partial x^2}, \tag{3}$$

where T is the tension, and ρ the line-density. In a “normal mode” of vibration y will vary as e^{int}, so that

$$\frac{\partial^2 y}{\partial x^2} + k^2 y = 0, \tag{4}$$

where

$$k^2 = n^2 \rho / T. \tag{5}$$

If ρ, and therefore k, is constant, the solution of (4) subject to the condition that y = 0 for x = 0 and x = l is

$$y = B \sin kx \tag{6}$$

provided

$$kl = s\pi, \ [s = 1, 2, 3, \ldots]. \tag{7}$$

This determines the various *normal modes* of free vibration, the corresponding periods (2π/n) being given by (5) and (7). By analogy with the theory of the free vibrations of a system of *finite* freedom it is inferred that the most general free motions of the string can be obtained by superposition of the various normal modes, with suitable amplitudes and phases; and in particular that any arbitrary initial form of the string, say y = f(x), can be reproduced by a series of the type

$$f(x) = B_1 \sin \frac{\pi x}{l} + B_2 \sin \frac{2\pi x}{l} + B_3 \sin \frac{3\pi x}{l} + \ldots \tag{8}$$

So far, this is merely a restatement, in mathematical language, of an argument given in the first part of this article. The series (8) may, moreover, be arrived at otherwise, as a particular case of Fourier’s theorem. But if we no longer assume the density ρ of the string to be uniform, we obtain an endless variety of new expansions, corresponding to the various laws of density which may be prescribed. The normal modes are in any case of the type

$$y = Cu(x)e^{int} \tag{9}$$

where u is a solution of the equation

$$\frac{d^2 u}{dx^2} + \frac{n^2 \rho}{T} u = 0. \tag{10}$$

The condition that u(x) is to vanish for x = 0 and x = l leads to a transcendental equation in n (corresponding to sin kl = 0 in the previous case). If the forms of u(x) which correspond to the various roots of this be distinguished by suffixes, we infer, on physical grounds alone, the possibility of the expansion of an arbitrary initial form of the string in a series

$$f(x) = C_1 u_1(x) + C_2 u_2(x) + C_3 u_3(x) + \ldots \tag{11}$$

It may be shown further that if r and s are different we have the *conjugate* or *orthogonal* relation

$$\int_0^l \rho u_r(x) \, u_s(x) \, dx = 0. \tag{12}$$

This enables us to determine the coefficients, thus

$$C_r = \int_0^l \rho f(x) \, u_r(x) dx \div \int_0^1 \rho \, \{u_r(x)\}^2 \, dx. \tag{13}$$

The extension to spaces of two or three dimensions, or to cases where there is more than one dependent variable, must be passed over. The mathematical theories of acoustics, heat-

conduction, elasticity, induction of electric currents, and so on, furnish an indefinite supply of examples, and have suggested in some cases methods which have a very wide application. Thus the transverse vibrations of a circular membrane lead to the theory of Bessel's Functions; the oscillations of a spherical sheet of air suggest the theory of expansions in spherical harmonics, and so forth. The physical, or intuitional, theory of such methods has naturally always been in advance of the mathematical. From the latter point of view only a few isolated questions of the kind had, until quite recently, been treated in a rigorous and satisfactory manner. A more general and comprehensive method, which seems to derive some of its inspiration from physical considerations, has, however, at length been inaugurated, and has been vigorously cultivated in recent years by D. Hilbert, H. Poincaré, I. Fredholm, E. Picard and others.

REFERENCES.—Schuster's method for detecting hidden periodicities is explained in *Terrestrial Magnetism* (Chicago, 1898), 3, p. 13; *Camb. Trans.* (1900), 18, p. 107; *Proc. Roy. Soc.* (1906), 77, p. 136. The general question of expanding an arbitrary function in a series of functions of special types is treated most fully from the physical point of view in Lord Rayleigh's *Theory of Sound* (2nd ed., London, 1894-1896). An excellent detailed historical account of the matter from the mathematical side is given by H. Burkhardt, *Entwicklungen nach oscillierenden Funktionen* (Leipzig, 1901). A sketch of the more recent mathematical developments is given by H. Bateman, *Proc. Lond. Math. Soc.* (2), 4, p. 90, with copious references.

(H. LB.)

HARMONICHORD, an ingenious kind of upright piano, in which the strings were set in vibration not by the blow of the hammer but by indirectly transmitted friction. The harmonichord, one of the many attempts to fuse piano and violin, was invented by Johann Gottfried and Johann Friedrich Kaufmann (father and son) in Saxony at the beginning of the 19th century, when the craze for new and ingenious musical instruments was at its height. The case was of the variety known as *giraffe*. The space under the keyboard was enclosed, a knee-hold being left in which were two pedals used to set in rotation a large wooden cylinder fixed just behind the keyboard over the levers, and covered with a roll-top similar to those of modern office desks. The cylinder (in some specimens covered with chamois leather) tapered towards the treble-end. When a key was depressed, a little tongue of wood, one end of which stopped the string, was pressed against the revolving cylinder, and the vibrations produced by friction were transmitted to the string and reinforced as in piano and violin by the soundboard. The adjustment of the parts and the velocity of the cylinder required delicacy and great nicety, for if the little wooden tongues rested too lightly upon the cylinder or the strings, harmonics were produced, and the note jumped to the octave or twelfth. Sometimes when chords were played the touch became so heavy that two performers were required, as in the early medieval organistrum, the prototype of the harmonichord. Carl Maria von Weber must have had some opinion of the possibilities of the harmonichord, which in tone resembled the glass harmonica, since he composed for it a concerto with orchestral accompaniment.

(K. S.)

HARMONIUM (Fr. *harmonium*, *orgue expressif*; Ger. *Physharmonika*, *Harmonium*), a wind keyboard instrument, a small organ without pipes, furnished with free reeds. Both the harmonium and its later development, the American organ, are known as free-reed instruments, the musical tones being produced by tongues of brass, technically termed "vibrators" (Fr. *anche libre*; Ger. *durchschlagende Zunge*; Ital. *ancia* or *lingua libera*). The vibrator is fixed over an oblong, rectangular frame, through which it swings freely backwards and forwards like a pendulum while vibrating, whereas the beating reeds (similar to those of the clarinet family), used in church organs, cover the entire orifice, beating against the sides at each vibration. A reed or vibrator, set in periodic motion by impact of a current of air, produces a corresponding succession of air puffs, the rapidity of which determines the pitch of the musical note. There is an essential difference between the harmonium and the American organ in the direction of this current; in the former the wind apparatus forces the current upwards, and in the latter sucks it downwards, whence it becomes desirable to separate in description these varieties of free-reed instruments.

The *harmonium* has a keyboard of five octaves compass when complete,

, and a simple action controlling the valves, &c. The necessary pressure of wind is generated by bellows worked by the feet of the performer upon foot-boards or treadles. The air is thus forced up the wind-trunks into an air-chamber called the wind-chest, the pressure of it being equalized by a reservoir, which receives the excess of wind through an aperture, and permits escape, when above a certain pressure, by a discharge valve or pallet. The aperture admitting air to the reservoir may be closed by a drawstop named “expression.” The air being thus cut off, the performer depends for his supply entirely upon the management of the bellows worked by the treadles, whereby he regulates the compression of the wind. The character of the instrument is then entirely changed from a mechanical response to the player’s touch to an expressive one, rendering what emotion may be communicated from the player by increase or diminution of sound through the greater or less pressure of wind to which the reeds may be submitted. The drawstops bearing the names of the different registers in imitation of the organ, admit, when drawn, the wind from the wind-chest to the corresponding reed compartments, shutting them off when closed. These compartments are of about two octaves and a half each, there being a division in the middle of the keyboard scale dividing the stops into bass and treble. A stop being drawn and a key pressed down, wind is admitted by a corresponding valve to a reed or vibrator (fig. 1). Above each reed in the so-called sound-board or pan is a channel, a small air-chamber or cavity, the shape and capacity of which have greatly to do with the colour of tone of the note it reinforces. The air in this resonator is highly compressed at an even or a varying pressure as the expression-stop may not be or may be drawn. The wind finally escapes by a small pallet-hole opened by pressing down the corresponding key. In Mustel and other good harmoniums, the reed compartments that form the scheme of the instrument are eight in number, four bass and four treble, of three different pitches of octave and double octave distance. The front bass and treble rows are the “diapason” of the pitch known as 8 ft., and the bourdon (double diapason), 16 ft. These may be regarded as the foundation stops, and are technically the front organ. The back organ has solo and combination stops, the principal of 4 ft. (octave higher than diapason), and bassoon (bass) and oboe (treble), 8 ft. These may be mechanically combined by a stop called full organ. The French maker, Mustel, added other registers for much-admired effects of tone, viz. “harpe éolienne,” two bass rows of 2 ft. pitch, the one tuned a beat too sharp, the other a beat too flat, to produce a waving tremulous tone that has a certain charm; “musette” and “voix celeste,” 16 ft.; and “baryton,” a treble stop 32 ft., or two octaves lower than the normal note of the key. The “back organ” is usually covered by a swell box, containing louvres or shutters similar to a Venetian blind, and divided into fortes corresponding with the bass and treble division of the registers. The fortes are governed by knee pedals which act by pneumatic pressure. Tuning the reeds is effected by scraping them at the point to sharpen them, or near the shoulder or heel to flatten them in pitch. Air pressure affects the pitch but slightly, being noticeable only in the larger reeds, and harmoniums long retain their tuning, a decided advantage over the organ and the pianoforte. Mechanical contrivances in the harmonium, of frequent or occasional employment, besides those already referred to, are the “percussion,” a small pianoforte action of hammer and escapement which, acting upon the reeds of the diapason rows at the moment air is admitted to them, gives prompter response to the depression of the key, or quicker speech; the “double expression,” a pneumatic balance of great delicacy in the wind reservoir, exactly maintaining by gradation equal pressure of the wind; and the “double touch,” by which the back organ registers speak sooner than those of the front that are called upon by deeper pressure of the key, thus allowing prominence or accentuation of certain parts by an expert performer. “Prolongement” permits selected notes to be sustained after the fingers have quitted their keys. Dawes’s “melody attachment” is to give prominence to an air or treble part by shutting off in certain registers all notes below it. This notion has been adapted by inversion to a “pedal substitute” to strengthen the lowest bass notes. The “tremolo” affects the wind in the vicinity of the reeds by means of small bellows which increase the velocity of the pulsation according to pressure; and the “sourdine” diminishes the supply of wind by controlling its admission to the reeds.

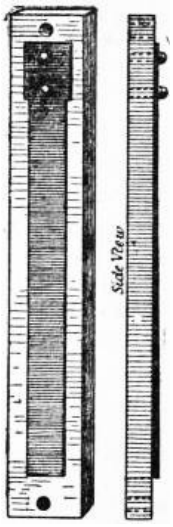


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Fig. 1.—Free Reed Vibrator, Alexandre Harmonium.

The American Organ acts by wind exhaustion. A vacuum is practically created in the air-chamber by the exhausting power of the footboards, and a current of air thus drawn downwards passes through any reeds that are left open, setting them in vibration. This instrument has therefore exhaust instead of force bellows. Valves in the board above the air-chamber give communication to reeds (fig. 2) made more slender than those of the harmonium and more or less bent, while the frames in which they are fixed are also differently shaped, being hollowed rather in spoon fashion. The channels, the resonators above the reeds, are not varied in size or shape as in the harmonium; they exactly correspond with the reeds, and are collectively known as the “tube-board.” The swell “fortes” are in front

of the openings of these tubes, rails that open or close by the action of the knees upon what may be called knee pedals. The American organ has a softer tone than the harmonium; this is sometimes aided by the use of extra resonators, termed pipes or qualifying tubes, as, for instance, in Clough & Warren's (of Detroit, Michigan, U.S.). The blowing being also easier, ladies find it much less fatiguing. The expression stop can have little power in the American organ, and is generally absent; the "automatic swell" in the instruments of Mason & Hamlin (of Boston, U.S.) is a contrivance that comes the nearest to it, though far inferior. By it a swell shutter or rail is kept in constant movement, proportioned to the force of the air-current. Another very clever improvement introduced by these makers, who were the originators of the instrument itself, is the "vox humana," a smaller rail or fan, made to revolve rapidly by wind pressure; its rotation, disturbing the air near the reeds, causes interferences of vibration that produce a tremulous effect, not unlike the beatings heard from combined voices, whence the name. The arrangement of reed compartments in American organs does not essentially differ from that of harmoniums; but there are often two keyboards, and then the solo and combination stops are found on the upper manual. The diapason treble register is known as "melodia"; different makers occasionally vary the use of fancy names for other stops. The "sub-bass," however, an octave of 16 ft. pitch and always apart from the other reeds, is used with great advantage for pedal effects on the manual, the compass of American organs being usually down to F (FF, 5 octaves). In large instruments there are sometimes foot pedals as in an organ, with their own reed boxes of 8 and 16 ft. the lowest note being then CC. Blowing for pedal instruments has to be done by hand, a lever being attached for that purpose. The "celeste" stop is managed as in the harmonium, by rows of reeds tuned not quite in unison, or by a shade valve that alters the air-current and flattens one row of reeds thereby.

By courtesy of Metzler & Co.

FIG. 2.—Free Reed Vibrator, Mason & Hamlin American Organ.

Harmoniums and American organs are the result of many experiments in the application of free reeds to keyboard instruments. The principle of the free reed became widely known in Europe through the introduction of the Chinese cheng[1] during the second half of the 18th century, and culminated in the invention of the harmonium and kindred instruments. The first step in the invention of the harmonium is due to Professor Christian Gottlieb Kratzenstein of Copenhagen, who had had the opportunity of examining a cheng sent to his native city and of testing its merits.[2] In 1779 the Academy of Science of St Petersburg had offered a prize for an essay on the formation of the vowel sounds on an instrument similar to the "vox humana" in the organ, which should be capable of reproducing these sounds faithfully. Kratzenstein made as a demonstration of his invention a small pneumatic organ fitted with free reeds, and presented it to the Academy of St Petersburg.[3] His essay was crowned and was republished with diagrams in Paris[4] in 1782. Meanwhile, in 1780, a countryman of Kratzenstein's, an organ-builder named Kirsnick, established in St Petersburg, adapted these reed pipes to some of his organs and to an instrument of his invention called organochordium, an organ combined with piano. When Abt Vogler visited St Petersburg in 1788, he was so delighted with these reeds that in 1790 he induced Rackwitz, an assistant of Kirsnick's, to come to him and adapt some to an organ he was having built in Rotterdam. Three years later Abt Vogler's orchestrion, a chamber organ containing some 900 pipes, was completed, and, according to Rackwitz,[5] was fitted with free-reed pipes. Vogler himself, however, does not mention the free reed when describing this wonderful instrument and his system of "simplification" for church organs.[6] To Abt Vogler, who travelled all over Germany, Scandinavia and the Netherlands, exhibiting his skill on his orchestrion and reconstructing many organs, is due the credit of making Kratzenstein's invention known and inducing the musical world to appreciate the capabilities of the free reed. The introduction of free-reed stops into the organ, however, took a secondary place in his scheme for reform.[7] Friedrich Kaufmann[8] of Dresden states that Vogler told him he had imparted to J. N. Mälzel of Vienna particulars as to the construction of free-reed pipes, and that the latter used them in his panharmonicon,[9] which he exhibited during his stay in Paris from 1805 to 1807. Kaufmann suggests that it was through him that G. J. Grenié obtained the knowledge which led to his experiments with free reeds in organs. It is more likely that Grenié had read Kratzenstein's essay and had experimented independently with free reeds. In 1812 his first *orgue expressif* was finished. It was a small organ with one register of free reeds—the expression stop, in fact, added to the pipe organ and having a separate wind-chest and bellows. It would seem from his description of the orchestrion in *Data zur Akustik* that Vogler knew of no such device. He used the swell shutter borrowed from England and a threefold screen of canvas covered with a blanket arranged *outside the instrument*, neither of which is capable of increasing the volume of sound from the organ, or at least only after having first damped the sound to a pianissimo. Vogler explains minutely the apparatus used to conceal the working of the screen from the eyes of the public.[10] The credit of discovering in the free reed the capability of dynamic expression was undoubtedly due to Grenié, although Abt Vogler claims to have used compression in 1796,[11] and Kaufmann in his choraulodion in 1816. A larger *orgue expressif* was

begun by Grenié for the Conservatoire of Paris in 1812, the construction of which was interrupted and then continued in 1816. Descriptions of Grenié's instrument have been published in French and German.[12] The organ of the Conservatoire had a pedal free-reed stop of 16 ft., with vibrators 0.240 m. long, 0.035 m. wide, and 0.003 m. thick.[13] Two compressors, one for the treble and the other for the bass, worked by treadles, enabled the performer to regulate the pressure of wind on the reeds and therefore to obtain the gradations of forte and piano which gained for his instrument the name of *orgue expressif*. Grenié's instrument was a pipe organ, the pipes terminating in a cone with a hemispherical cap in the top of which was a small hole. There were eight registers including the pedal, and the positive on the first keyboard had reed stops furnished with beating reeds. Biot insists on the Importance of the regulating wires (Fr. *rasettes*; Ger. *Krücken*) for determining the vibrating length of the reed tongue and maintaining it invariable. These are clearly shown in his diagram (see article Free Reed Vibrator, fig. 1); they do not essentially differ from those used with the beating-reed stops in his organ (fig. 76, pl. II.), or indeed from those figured by Praetorius.

Isolated specimens of the cheng must have found their way to Europe during the 15th and 16th centuries, for Mersenne[14] depicts part of one showing the free reed. It would seem that still earlier in the 17th century there was an organ in a monastery in Hesse with free reeds for the *Posaune* stop, for Praetorius gives a description of the "extraordinary" reed (p. 169); there is no record of the inventor in this case.

During the first half of the 19th century various tentative efforts in France and Germany, and subsequently in England, were made to produce new keyboard instruments with free reeds, the most notable of these being the physharmonica[15] of Anton Häckel, invented in Vienna in 1818, which, improved and enlarged, has retained its hold on the German people. The modern physharmonica is a harmonium without stops or percussion action; it does not therefore speak readily or clearly. It has a range of five to six octaves. Other instruments of similar type are the French melophone and the English seraphine, a keyboard harmonica with bellows but no channels for the tongues, for which a patent was granted to Myers and Storer in 1839; the aeoline or aelodicon[16] of Eschenbach; the melodicon[17] of Dietz; the melodica[18] of Rieffelson; the apollonicon;[19] the new cheng[20] of Reichstein; the terpodion[21] of Buschmann, &c. None of these has survived to the present day.

The inventor of the harmonium was indubitably Alexandre Debain, who took out a patent for it in Paris in 1840. He produced varied timbre registers by modifying reed channels, and brought these registers on to one keyboard. Unfortunately he patented too much, for he secured even the name *harmonium*, obliging contemporary and future experimenters to shelter their improvements under other names, and the venerable name of organ becoming impressed into connexion with an inferior instrument, we have now to distinguish between reed and pipe organs. The compromise of reed organ for the harmonium class of instruments must therefore be accepted. Debain's harmonium was at first quite mechanical; it gained expression by the expression-stop already described. The Alexandres, well-known French makers, by the ingenuity of one of their workmen, P. A. Martin, added the percussion and the prolongement. The melody attachment was the invention of an English engineer; the introduction of the double touch, now used in the harmoniums of Mustel, Bauer and others—also in American organs—was due to Tamplin, an English professor.

The principle of the American organ originated with the Alexandres, whose earliest experiments are said to have been made with the view of constructing an instrument to exhaust air. The realization of the idea proving to be more in consonance with the genius of the American people, to whom what we may call the devotional tone of the instrument appealed, the introduction of it by Messrs Mason and Hamlin in 1861 was followed by remarkable success. They made it generally known in Europe by exhibiting it at Paris in 1867, and from that time instruments have been exported in large numbers by different makers.

(A. J. H.; K. S.)

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1 See *Allg. musik. Ztg.* (Leipzig, 1821), Bd. xxiii. pp. 369-374. The cheng was made known in France by Père Amiot, who published a careful description of the instrument in *Mémoire sur la musique des Chinois*, p. 80 seq., with excellent diagrams.

2 Ib., Bd. xxv. p. 152.

3 The essay was published in *Acta Acad. Petrop.* (1780).

4 "Essai sur la naissance et sur la formation des voyelles" in Rozier's *Observations sur la physique* (Paris, 1782), *Supplément*, xxi. 358 seq.,, with two plates. The description of the instrument begins on p. 374, § xxii.

5 See "Über die Erfindung der Rohrwerke mit durchschlagenden Zungen," by Wilke, in *Allg. musik. Ztg.* (Leipzig, 1823), Bd. xxv. pp. 152-153 and Bd. xxvii. p. 263; also Thos. Ant. Kunz, "Orchestrion," id., Bd. i. p. 88 and Bd. ii. pp. 514, 542; and Dr Karl Emil von Schafhäutl, *Abt Georg Joseph Vogler* (Augsburg, 1888), p. 37.

6 *Data zur Akustik, eine Abhandlung vorgelesen bey der Sitzung der naturforschenden Freunde in Berlin, den 15ten Dezember 1800* (Offenbach, 1801); also published in *Allg. musik. Ztg.* (1801), Bd. iii.

pp. 517, 533, 565. See also an excellent article by the Rev. J. H. Mee on Vogler in Grove's *Dictionary of Music and Musicians*.

7 See *Data zur Akustik*, and a pamphlet by Vogler, "Über die Umschaffung der St Marien Orgel in Berlin nach dem Voglerschen Simplifikations-System, eine Nachahmung des Orchestrion" (Berlin); also "Kurze Beschreibung der in der Stadtpfarrkirche zu St Peter zu München nach dem Voglerschen Simplifikations-System neuerbauten Orgel" (Munich, 1809).

8 See *Allg. musik. Ztg.* (1823), Bd. xxv. pp. 153 and 154 note, and 117-118 note.

9 A description of Mälzel's panharmonicon before the addition of the clarinet and oboe stops with free reeds is to be found in the *Allg. musik. Ztg.* (1800), Bd. ii. pp. 414-415.

10 In the article in Grove's *Dictionary* the screen is said to have been in the wind-trunk.

11 See *Allg. musik. Ztg.* Bd. iii. p. 523.

12 See J. B. Biot, *Précis élémentaire de physique expérimentale* (Paris, 1817), tome i. p. 386, and his *Traité de physique* (Paris, 1816), tome ii. p. 172 et seq., pl. ii.; "Über die Crescendo und Diminuendo Züge an Orgeln," by Wilke and Kaufmann, *Allg. musik. Ztg.* (1823), Bd. xxv. pp. 113-122; and *Allg. musik. Ztg.* Bd. xxiii. pp. 133-139 and 149-154, with diagrams on p. 167 which are not absolutely correct in small details.

13 J. B. Biot, *Traité*, tome ii. p. 174.

14 *Harmonie universelle* (Paris, 1636), livre v., prop. xxxv.

15 *Wien. musik. Ztg.* Bd. v. Nos. 39 and 87.

16 *Allg. musik. Ztg.* Bd. xxii. p. 505, and Bd. xxxv. p. 354.

17 Id. Bd. viii. pp. 526 and 715.

18 Id. Bd. xi. p. 625.

19 *Allg. musik. Ztg.* Bd. ii. p. 767, and *Wien. musik. Ztg.* Bd. i. No. 501.

20 Id. Bd. xxxi. p. 489.

21 Id. Bd. xxxiv. pp. 856 and 858; and *Cäcilia*, Bd. xiv. p. 259.

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