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How to use this volume

This is one of the ten volumes of the *Ready Reference and Index*, or Micropædia (Volumes I through X).

Begin all reference searches here.

To satisfy a reference inquiry quickly.

To learn what *The New Encyclopædia Britannica* contains in its many articles.

Enter these volumes at any alphabetical point. The entries have been designed to provide information or to direct readers elsewhere in ways that are self-evident. But knowledge of a few editorial conventions will provide fuller understanding of what is offered:

1. Cross references appear often—identified by *see*, *see also*, or *q.v.* (*quod vide*, for “which see”), or as RELATED ENTRIES—and always refer to other entries in the *Ready Reference and Index* in alphabetical order (Volumes I-X).
2. Entries are alphabetized as if they were one word, up to the comma, regardless of the number of words in the title. Thus *mountaineering* precedes *mountain goat*, whereas *charge*, *electron* precedes *chargé d'affaires*.
3. Directions, or *Index* references, are given to the page in the Macropædia (Volumes 1-19) on which a subject or aspect of a subject may be found in the longer articles.

Volume and page numbers immediately following the title of an entry always refer to a comprehensive article in volumes 1 through 19.

All other volume and page references follow the text and cite *sections* of the longer (Macropædia) articles: the small, or lowercase, letters following page numbers—a, b, c, d, and e, f, g, h—identify the quarter of the column in which a reference begins. See marginal illustration.

Another point about index references: *Major ref.* (for “major reference”) followed by a volume and page number always cites a reference that is more comprehensive than the references following and should be considered the principal place to look for broad coverage of the topic under discussion.

All other references carry brief descriptive phrases so that the reader may know what he may expect to find.

Index volume-and-page references are preceded by a small dot [.]. Underscored phrases are headings under which several index references are grouped.

ephedrine, an alkaloid compound formerly derived from the leaves of several species of Chinese shrubs of the genus *Ephedra* of the family Ephedraceae (*q.v.*, order Gnetales), but now made synthetically. It is used as a decongestant drug (*q.v.*).

Johnson, Samuel 10:244 (b. Sept. 18, 1709, Lichfield, Staffordshire—d. Dec. 13, 1784, London), poet, essayist, critic, journalist, lexicographer, and conversationalist, is one of the outstanding figures of English 18th-century life and letters.

REFERENCES in other text articles:
• Addison's prose style and fame 1:84a
• advertising criticism 1:103h
• book publishing history 15:228e
• Boswell's friendship and biographical work 3:61h

a	e
b	f
c	g
d	h

Anglo-Norman literature, the writings in the French dialect of medieval England, also known as Norman-French or Anglo-French. Beginning effectively with the Norman Conquest (1066), it became the vernacular of the court, the law, the church, the schools and universities, Parliament, and, later, of municipalities and trade. *Major ref.* 10:1105d.
• chansons de geste and the Tristan tale 15:1021d *passim* to 1022g

Å (unit of wavelength): see angstrom.

A-4: see V-2 rocket.

AAA: see Agricultural Adjustment Administration; Amateur Athletic Association; American Automobile Association.

AABC: see American Amateur Baseball Congress.

Aabenraa (Denmark): see Åbenrå.

Aachen, French AIX-LA-CHAPELLE, Dutch Aken, city, Nordrhein-Westfalen Land, north-western West Germany. Its municipal boundaries coincide on the west with the frontiers of Belgium and The Netherlands. It was a Roman spa, called Aquisgranum, and rose to prominence in the 8th century as the favourite residence of Charlemagne, becoming the second city of his empire and a centre of Western culture and learning. From the coronation of Otto I in 936 until the 16th century, most German kings were crowned at Aachen. Fortified



Eisenbrunnen, a spa, with Aachen cathedral in the background, Aachen, W. Ger.

Hans Huber

in the late 12th century and granted municipal rights in 1166 and 1215, Aachen became a free imperial city c. 1250. It began to decline in the 16th century because of its insecure position near the French frontier and its distance from the centre of the Holy Roman Empire. The coronation site was changed to Frankfurt am Main in 1562.

Aachen was the scene of several peace conferences, including those ending the War of Devolution (1668) and the War of the Austrian Succession (1748). Occupied by the French in 1794 and annexed by France in 1801, it was given to Prussia after the Congress of Vienna (1814-15). The Congress of Aix-la-Chapelle (q.v.; 1818) was one of those that regulated the affairs of Europe after the Napoleonic Wars. The city was occupied for a period by the Belgians after World War I; it suffered severe damage in World War II and was the first large German city to fall to the Allies (Oct. 20, 1944).

The noteworthy medieval churches of St. Foillan, St. Paul, and St. Nicholas were demolished or heavily damaged in World War II, but they have been reconstructed. The Rathaus (town hall), built c. 1530 on the ruins of Charlemagne's palace and containing the magnificent hall of the emperors, has been restored.

The cathedral suffered relatively little damage. It incorporates two distinct styles: the Palace Chapel of Charlemagne (built 790-805), modelled on S. Vitale at Ravenna, is Carolingian-Romanesque; and the choir (c. 1355) is Gothic. In the gallery (Hochmünster) around the chapel is the marble *Königsstuhl* (royal chair) of Charlemagne, long used for coronations. Charlemagne's tomb is marked by a stone slab over which hangs a bronze chandelier presented by Frederick I Barbarossa in 1168. The rich cathedral treasury contains examples of fine medieval workmanship and sacred relics that are displayed to pilgrims about every seven years.

Other notable landmarks are the Suermondt Museum of Art and the fountain, surmounted by a statue of Charlemagne, in the market square. There are numerous educational institutions, including the Rhenish-Westphalian

Technical University, founded in 1870. The sulfur springs are much frequented; Schwertbad-Quelle, in the suburb of Burtscheid, is the warmest in Germany (169° F [76° C]).

Aachen is a rail hub and industrial and commercial centre of a coal-mining region; almost every branch of the iron and steel industry is carried on in the vicinity. Other products include textiles, furniture, glass, and needles and pins. Pop. (1978 est.) 243,282.

50°47' N, 6°05' E

·Charlemagne's church and palace 4:45h

·learning centre under Charlemagne 6:335a

·map, Federal Republic of Germany 8:47

·Nordrhein-Westfalen's administration 13:144c

·Palace Chapel design and decoration 19:349e; illus.

AAFC: see All America Football Conference.

Aaiún (Western Sahara): see el-Aaiún.

a-ak (ancient Korean court music): see gagaku.

Aakjaer, Jeppe (b. Sept. 10, 1866, Aakjaer, Den.—d. April 22, 1930, Jenle), poet and novelist, leading exponent of Danish regional literature, which, in his work, was at one with the literature of social consciousness. He grew up in the Jutland farming area and so was well aware of the harsh conditions endured by farm labourers in his country. His early novels deal primarily with this theme. As a young man he studied in Copenhagen, earning his living as a proofreader and later as a journalist. *Vredens børn, et tyendes saga* (1904; "Children of Wrath: A Hired Man's Saga"), which is considered to be his most powerful novel, was a strong plea for the betterment of the farm labourer's lot. The book initiated much public discussion and helped lead the way to some minimal reforms. Aakjaer was best known, however, for his poems, especially those collected in *Rugens sange* (1906; "Songs of the Rye"). Several modern Danish composers have set Aakjaer's poems to music; his "Jens Vejmand" (music by Carl Nielsen) is virtually a modern folk song. Only a few of his poems have been translated into English.

·Danish literature in the 20th century 10:1248e

Aaland Islands (Finland): see Åland Islands.

Aalborg (Denmark): see Ålborg.

Aalen, town, Baden-Württemberg Land, southern West Germany, on the Kocher River, at the northern foot of the Schwäbische Alb (Swabian Alps), north of Ulm. It originated around a large Roman fort, much of which remains; nearby are the remains of the Roman *limes* (frontier wall). It became a free imperial city in 1360 and was severely damaged by fire in 1634. It passed to Württemberg in 1802. The old town hall dates from 1636 and the church of St. Nikolaus from 1765.

The Limesmuseum of Roman remains was opened in 1964. A communications centre, Aalen also has metal, textile, and chemical industries. Pop. (1978 est.) 63,194.

48°50' N, 10°05' E

·map, Federal Republic of Germany 8:47

A'ali an-Nil (Sudan): see Upper Nile.

Aalsmeer, municipality, Noord-Holland province, western Netherlands, southwest of Amsterdam, on the Ring Canal and Westeinder Lake, a remnant of Haarlem Lake. Once known for its eels (*aal*, "eel"; *meer*, "lake"), it is the flower-growing centre of The Netherlands, with numerous nurseries, two flower auctions, and a state experimental station for floriculture. The older part of the town is on peaty soil at about sea level, surrounded by polders with loamy soil 9-15 ft (3-5 m) below sea level. Blooms include carnations, cut roses, lilacs, freesias, chrysanthemums, and

potted plants such as cyclamens and begonias. Many flowers are exported by air, and there is a thriving trade in seeds and nursery plants. Pop. (1977 est.) 21,880.

52°16' N, 4°45' E

·map, The Netherlands 12:1061

Aalst, French Alost, municipality, East Flanders province, north central Belgium, on the Dender River, southeast of Ghent. The town hall (begun 1200), with its 52-bell carillon, is the oldest in Belgium, and its archives include 12th-century manuscripts. The first printing shop in the Low Countries was established there in 1473 by Thierry Martens (later a professor at the University of Louvain). The French took Aalst in 1667 during the War of Devolution, which gave southern Flanders to France. The Germans occupied the town in both world wars.

Industry is dominated by the manufacture of textiles, clothing, and textile machinery. The surrounding region supplies hops for long-established breweries. The unfinished Gothic St. Martin's Church (begun c. 1480) has vault paintings, a picture by Rubens, and a remarkable tabernacle (1605) containing sculptures executed by Hieronymus Duquesnoy the Elder. Pop. (1977 est.) 81,422.

50°56' N, 4°02' E

·map, Belgium 2:819

Aalto, (Hugo) Alvar (Henrik) 1:1 (b. Feb. 3, 1898, Kuortane, Fin.—d. May 11, 1976, Helsinki), architect, city planner, and furniture designer whose work, stressing informality and personal expression, exemplified the best of 20th-century Scandinavian design.

Abstract of text biography. Aalto interrupted his architectural studies to participate in the War of Independence (1917-19). After graduating in 1921, he toured Europe and then returned to Finland. His reputation was secured with three public buildings in Finland (1930-35); in the Municipal Library at Viipuri, he established such elements of his style as manipulation of floor levels and use of natural materials, skylights, and irregular forms. During this period Aalto also began to design furniture of laminated ribbons of wood. He served as professor of architecture at the Massachusetts Institute of Technology (1945-49). Aalto's many commissions after 1950 included an apartment building in Bremen (1958); a church in Bologna, Italy (1966); an art museum in Iran (1970); and the library at Mount Angel Abbey near Salem, Ore. (1970). His numerous projects in Finland are epitomized by the Säynätsalo town hall group (1950-52).

REFERENCES in other text articles:

·architectural contributions and

influence 7:309e

·modern Scandinavian architecture 19:468h

·Säynätsalo town hall, illus., 1:Architecture,

Art of, Plate 1

A'ana, political district, Western Samoa. Pop. (1976 prelim.) 20,935.

·Samoa area and population table 16:206

Aapswa (people): see Abkhaz.

Aarau, capital of Aargau canton, northern Switzerland, at the southern foot of the Jura Mountains, on the right bank of the Aare River, west of Zürich. Founded about 1240 by the counts of Kyburg, it passed to the Habsburgs in 1264 and was taken by the Bernese in 1415. In 1798 it became the capital of the Helvetic Republic. Notable landmarks include several 13th-century towers, the town church (1471), the town hall (1762), and the fine cantonal library, containing a Bible with marginal notes made by the religious reformer Huldrych Zwingli. To the northeast is the ruined Habsburg, or Habichtsburg (Hawk's Castle), the original home of the Habsburg family. There is considerable industry in the

newer parts; manufactures include electrical goods, bells, precision instruments, shoes, cotton textiles, and chemicals. The population (1980, 15,788) is largely German-speaking and nearly 75 percent Protestant.

47°23' N, 8°03' E

·map, Switzerland 17:868

aardvark, also called **AFRICAN ANT BEAR**, heavily built mammal, *Orycteropus afer*, ranging south of the Sahara in forest or plain. It constitutes the family Orycteropodidae and the order Tubulidentata. Its common name—Afrikaans for “earth pig”—refers to its stout, piglike body, up to 180 centimetres (6 feet) long, including the 60-centimetre tail. Its coat varies from glossy black and full to sandy yellow and scant. The aardvark has a long snout, rabbitlike ears, and short legs. The toes are long and armed with large, flattened claws; the second and third toes are webbed.

One young is born in summer. The aardvark excavates a burrow, in which it rests by day, venturing out at night to rip open ant and termite nests and lap up the insects with its sticky 30-centimetre tongue. Although not aggres-



Aardvark (*Orycteropus afer*)

Shostal

sive, the aardvark can fend off lions and leopards by parrying with its claws.

Formerly classified with the true anteaters, sloths, and armadillos in the order Edentata, aardvarks differ from them and from all other mammals in having permanent teeth traversed by tubules that radiate from a central pulp cavity; hence, the ordinal name. The tubulidentate line may be 60,000,000 years old. Fossil relatives have been uncovered in the southwestern Soviet Union, the Aegean island of Samos, and southern France. The relationship of tubulidentates to other orders of mammals remains to be settled.

·convergent evolution of insectivores 6:303e

·Cucurbitales seed dispersal 5:363f

·seed dispersal agents 16:484d

·Tubulidentata evolution and relationships 11:413h; illus. 414

aardvark cucumber (*Cucumis humifructus*), plant of southern Africa, the only member of the Cucurbitales (gourd) order that has underground fruit. The fruit is eaten by the aardvark, which, while burying its dung, unwittingly plants the seeds of the gourd.

·seed dispersal by aardvarks 5:363f

·seed dispersal mechanisms 16:484d

aardwolf (*Proteles cristatus*), African carnivore generally placed in the family Hyainidae but separated by some authorities as the family Protelidae. The aardwolf, whose name in Afrikaans means “earth wolf,” resembles a small striped hyena. It is yellowish with vertical black stripes and a bushy, black-tipped tail, and it bears a long, coarse mane of erectile hairs along the length of its back.

It has longer front than hind legs, large ears, a pointed muzzle, and weak jaws and teeth. Length varies from 55 to 80 centimetres (22–32 inches) exclusive of the 20–30-centimetre (8–12-inch) tail.

The aardwolf lives in the dry, open parts of eastern and southern Africa. It is nocturnal,



Aardwolf (*Proteles cristatus*)

Simon Trevor—Bruce Coleman Ltd

lives in a burrow, and feeds largely on termites. It is usually solitary but sometimes forages in small packs. The litter generally consists of three or four young. The aardwolf is harmless and very shy; when attacked, it emits a musky smelling fluid and may fight.

·anatomy and feeding behaviour 3:935e

Aare (**AAR**) **River**, tributary of the Rhine and the longest stream (183 mi [295 km]) entirely within Switzerland, where it drains an area of 6,865 sq mi (17,779 sq km). The river rises in the Aare Glacier of the Berner Alpen in Bern canton, below the Finsteraarhorn and west of the Grimselpass. Near there, a 7-mi-long lake was created by two dams, which control the flow of water to the underground Grimsel (Handegg II) power station. Below the Handegg Falls (q.v.), the Aare drains the Upper Aare Valley; a power station was built in the river's gorge at Innertkirchen. Flowing north past Meiringen, the river cuts through the scenic Aare Gorge and, after turning west, expands into the glacial Lake Brienz, on the southern shore of which is the spectacular Giessbachfall. The river is canalized at Interlaken above its entry into Lake Thun, at the lower end of which is the medieval castle town of Thun. From there the river flows northwest in a deeply entrenched valley and almost encircles the medieval core of the city of Bern. It then turns west and north to Aarberg, where it is diverted west by the Hagneckkanal into Lake Biel. Continuing northeastward, the river parallels the foot of the Jura Mountains and passes the castle towns of Solothurn, Olten, and Aarau. The Aare joins the Rhine River at Koblenz.

47°37' N, 8°13' E

·map, Switzerland 17:868

Aargau, French **ARGOVIE**, canton, northern Switzerland, bordering West Germany to the north and bounded by the cantons of Basel and Solothurn (west), Luzern (south), and Zug and Zürich (east). It has an area of 542 sq mi (1,404 sq km) and forms the northeastern section of the great Swiss Plateau between the Alps and the Jura Mountains, taking in the lower course of the Aare River, whence its name. In 1415 the region was taken by the Swiss Confederation from the Habsburgs, whose ancestral seat was near Aarau (q.v.), now the cantonal capital. Bern kept the southwestern portion. In 1798 the Bernese part became Aargau canton of the Helvetic Republic, and the remainder formed the canton of Baden. In 1803 the two halves (and Frick, ceded to the Helvetic Republic by Austria in 1802) were united, and the combination was admitted to membership of the Swiss Confederation as Aargau canton.

One of the most fertile parts of Switzerland, it includes among its principal economic activities agriculture, dairying, fruit growing, and straw plaiting. Industries include electrical engineering, the manufacture of precision instruments, textiles, cement, and cigars, and the mining and refining of salt. The picturesque landscape, ancient castles, and rich museums of the canton attract considerable tourist traffic, as do the hot springs at Schinznach Bad and Baden. The population is al-

most exclusively German-speaking with a small Protestant majority. Pop. (1980) 453,442.

47°30' N, 8°10' E

·area and population table 17:874

·map, Switzerland 17:868

·Swiss history 17:879e

Aargau, Peace of (Aug. 11, 1712), agreement that ended the Second Villmergen War between Protestant and Catholic cantons of Switzerland.

·Villmergen Wars' settlement 17:884e

Aarhus (Denmark): see Århus.

Aarlen (Belgium): see Arlon.

Aar Massif, mountain mass in the Swiss Alps.

46°31' N, 8°03' E

·Alpine geology and geography 1:634d

Aaron 1:2 (fl. c. 14th century BC), the traditional founder and head of the Jewish priesthood, who, with his brother Moses, led the Israelites out of Egypt.

Abstract of text biography. Aaron spoke for Moses, who was a stammerer, in asking the Pharaoh for the release of the Israelites from Egypt. He and his sons were anointed priests “by a perpetual statute,” but he made the golden calf that was idolatrously worshipped by the people. He spoke against Moses because he had married a foreigner but stood by him in the rebellion of Korah the Levite. The figure of Aaron as it is now found in the Pentateuch is built up from several sources of traditions. In the Talmud and Midrash he is seen as the leading personality at the side of Moses. He has appeared in different roles in Christian thought.

REFERENCES in other text articles:

·Moses and the Exodus 12:488f

·priesthood of Judaism establishment 14:1010b

·priestly type of Christ in Letter to the

Hebrews 2:968d

·priestly worship in Leviticus 2:901g *passim* to 903d

Aaron, Hank, in full HENRY LOUIS AARON (b. Feb. 5, 1934, Mobile, Ala.), U.S. professional baseball player who, during 23 seasons in the major leagues, surpassed batting records that had been set by some of the greatest hitters in the game, including Babe Ruth, Ty Cobb, and Stan Musial.

Aaron, a righthander six feet tall and weighing 180 pounds, began his professional career in 1952, playing a few months as a shortstop with the Indianapolis Clowns of the Negro American League. His contract was bought by the Boston Braves of the National League, who assigned him to minor-league teams, first at Eau Claire, Wis., then at Jacksonville, Fla. He joined the Braves, who meanwhile had moved to Milwaukee, in 1954, thereafter playing mostly as an outfielder. In 1956 he won the league batting championship with an average of .328 and in 1957, leading his team to victory in the World Series, was named the league's most valuable player. Before the Braves moved to Atlanta, at the end of 1965, Aaron had hit 398 home runs. In Atlanta on April 8, 1974, he hit his 715th, breaking Babe Ruth's record, which had stood since 1935. After the 1974 season, he was traded to the Milwaukee Brewers of the American League. After the 1976 season, Aaron retired as a player and rejoined the Atlanta Braves as vice president in charge of player development and scouting. He was elected to the Baseball Hall of Fame on Jan. 13, 1982.

Aaron's batting records include totals of 755 home runs, 1,477 extra-base hits, 2,297 runs batted in, and 12,364 times at bat in 3,298 games. His hits (3,771) and runs scored (2,174) were exceeded only by Ty Cobb. Aaron's lifetime batting average was .305.

Aaron ben Elijah (b. 1328/30, Nicomedia, modern İzmit, Tur.—d. 1369), theologian of Constantinople (now Istanbul), the only scholar to seek a philosophical basis for Karaite beliefs. Karaism, a Jewish movement

originating in 8th-century Persia, rejected the oral tradition and challenged the authority of the Talmud, the rabbinical compendium of law, lore, and commentary.

Aaron ben Elijah's views are summarized in his compilation of Karaite lore, in three books. In the first book, *'Etz Hayyim* (1346; "Tree of Life"), modelled after the 12th-century Jewish philosopher Maimonides' *Moreh nevukhim* (*Guide of the Perplexed*), he attempts to create a Karaite counterpart to Maimonides' Aristotelian outlook. In the second book, *Gan Eden* (1354; "The Garden of Eden"), he attempts to justify the Karaite code of law. The third book, *Keter Torah* (1362; "Crown of Law"), is a commentary on the Pentateuch based on literal interpretations of the text.

Aaron ben Meir (fl. 10th century), a *gaon*, or head of a Talmudic academy, was prominent in the Jewish calendar controversy of 921. Claiming the old Palestinian prerogative as a descendant of the patriarchs, he urged that the timing of the new year should not be deferred.

·Jewish calendar dispute 16:111c

Aaronic priesthood, in the Church of Jesus Christ of Latter-day Saints, the lesser of the two categories of priests; its priests, teachers, and deacons are concerned principally with church finances and administration.

·Mormon practices and church structure 12:443e

Aaronites, in Old Testament tradition, the chief priests of ancient Israel, contrasted with Levites, the lesser priests.

·rivalry with Levites 10:305a

Aaron Manby, first iron steamer built (1821) by the British.

·Seine River service 16:681c

·steamship development 18:654e

Aaron's Rod (1922), novel by D.H. Lawrence.

·theme and reality connection 10:723c

Aas, Roald Edgar, Norwegian ice skater, winner of a gold medal in the 1,500-metre men's speed skating event in the 1960 Olympic Winter Games (tied for first place with Yevgeny Grishin of the Soviet Union).

Aasen, Ivar (Andreas) (b. Aug. 5, 1813, Sunnmøre, Nor.—d. Sept. 23, 1896, Christiania, now Oslo), language scholar and dialectologist; constructed *Landsmål* (now called Nynorsk, or New Norwegian), one of the two official languages of Norway.

After learning Old Norwegian, Aasen surveyed the contemporary Norwegian dialects, which he judged to be the true offshoots of Old Norwegian, rather than the Danish-influenced written language of Norway. The results of his research were published in *Det norske folkesprog grammatik* (1848; "Grammar of the Norwegian Dialects") and *Ordbog over det norske folkesprog* (1850; "Dictionary of the Norwegian Dialects"), texts that prepared the way for the wide cultivation of *Landsmål*. Believing that the proper literary language for Norway's writers should be more purely Norwegian in tradition than the official Dano-Norwegian, the dialectologist composed poems and plays in his composite dialect and continued to enlarge and improve his grammar and dictionary. In 1864 his definitive grammar appeared, followed in 1873 by the definitive dictionary of *Landsmål*. With certain modifications, the language Aasen constructed, which bears the most resemblance to Norway's western dialects, rapidly gained national importance, eventually achieving co-official status with Dano-Norwegian. Quite early in his career (1842) Aasen received a stipend to enable him to give his entire attention to his linguistic investigations.

·invention of Nynorsk 8:28c

AATUF: see All-African Trade Union Federation.

AAU: see Amateur Athletic Union of the United States.

AAUP: see American Association of University Professors.

AB: see Aid to the Blind.

ab- (physical units prefix): see electromagnetism system of units.

ABA: see American Basketball Association.

Aba, town, Umuahia Province, Central-Eastern State, southern Nigeria, on the west bank of the Aba River; it lies on the railroad from Port Harcourt, 36 mi (58 km) southwest, and at the intersection of roads from Port Harcourt, Owerri, Umuahia, Ikot Ekpene, and Opobo. Aba was a traditional market town for the Ibo people of the tropical rain forest before the establishment of a British military post there in 1901. With the construction of the railway in 1915 from Port Harcourt, it became a major collecting point for agricultural produce (especially palm oil and palm kernels). By the 1930s it was a settled urban community and is now the province's largest industrial centre. The modern town is compact, well planned, and laid out around its main thoroughfare, Asa Road.

An 18½-mi pipeline from the Imo River natural-gas field provides power for Aba's industrial estate, which lies north of the town between the river and the railroad sidings. Textiles, pharmaceuticals, soap, plastics, and furniture are manufactured. There is also a brewery. Aba is the seat of a teacher-training school and several technical and trade institutes; its Roman Catholic, Ibibio (Qua Iboe) tribal, and Apostolic Christian missions also sponsor secondary schools. The town is noted for its handicrafts. It has a television station and several hospitals and maternity clinics. Latest pop. est. 163,610.

5°06' N, 7°21' E

·map, Nigeria 13:86

aba, also known as 'abā, Arab and Hebrew mantle.

·design, use, and colours 5:1019d

'Abābdah, Egyptian ethnic group.

·racial and social characteristics 6:451b

abaca, common name for *Musa textilis*, a plant of the family Musaceae, and for its fibre, second in importance among the group called leaf fibres (*q.v.*). Abaca fibre, unlike most other leaf fibres, is obtained from the plant leaf stalks (petioles). Although sometimes called Manila hemp, Cebu hemp, or Davao hemp, it is not related to true hemp.

The plant, native to the Philippines, achieved importance as a source of cordage fibre in the 19th century. In 1925 the Dutch began cultivation in Sumatra, and the United States Department of Agriculture established plantings



Stripping fibre from abaca (*Musa textilis*) in the Philippines

Charles W. Miller—Shostal Associates

in Central America. A small commercial operation was started in British North Borneo (now Sabah, part of Malaysia) in 1930. During World War II, with Philippine abaca no longer available to the Allies, American production greatly increased.

The plant, closely related to and resembling the banana plant (*Musa sapientum*), grows from rootstock that produces up to about 25 fleshy, fibreless stalks, forming a circular cluster called a mat, or hill. Each stalk is about 2 inches (5 centimetres) in diameter, and produces some 12–25 leaves with overlapping leaf stalks, or petioles, sheathing the plant stalk to form a herbaceous (nonwoody) false trunk, about 12–16 inches (30–40 centimetres) in diameter. The oblong, pointed leaf blade topping each petiole is bright green on the upper surface and yellowish green below and grows to about 3–8 feet (1–2.5 metres) in length and 8–12 inches (20–30 centimetres) in width at its widest portion.

The first petioles grow from the plant stalk base; others develop from successively higher points on the stalk, so that the oldest leaves are on the outside and the youngest on the inside, extending to the top, which eventually reaches a height of 15–25 feet (4.6–7.6 metres). The position of the petiole determines its colour and the colour of the fibre it yields, with outer sheaths being darkest and inner sheaths lightest. When the plant stalk has its full complement of sheathing petioles, the large flower spike emerges from its top. The small flowers, cream to dark rose in colour, occur in dense clusters; the inedible, banana-shaped fruits, about 3 inches (7.6 centimetres) long and ¾–1 inch (2.0–2.5 centimetres) in diameter, have green skins and white pulp; the seeds are fairly large and black.

Plants grow best in fairly rich, loose, loamy soil, with good drainage, and at elevations below 1,500 feet (460 metres). Suitable temperatures average 80°–85° F (27°–29° C), not falling below 70° F (21° C); desirable rainfall is evenly distributed, averaging 100–110 inches (250–280 centimetres) per year; and winds must be gentle to avoid toppling the shallow-rooted plants. Propagation is mainly from pieces of mature rootstock, planted 8–10 feet (2.4–3 metres) apart, usually at the start of the rainy season. Within 18–24 months after planting, two to three of the plant stalks in each mat are ready for harvesting, and two to four stalks can be harvested at intervals of four to six months thereafter. The stalk, with its surrounding petioles, is cut off close to the ground, usually at the time of blossoming. Petiole size and number increase as the plant grows older, reaching a maximum in the sixth year and beginning to decline in the eighth. Plants are generally replaced within 10 years.

In the Philippines the fibre-bearing outer layer is usually removed from the petiole by a tuxying operation in which strips, or tuxies, are freed at one end and pulled off. In the cleaning operation that follows, pulpy material is scraped away by hand or machine, freeing the fibre strands, which are dried in the sun. In machine decortication, widely practiced in Central America, the stalks, cut into lengths of 2–6 feet (0.6–1.8 metres), are crushed and scraped by machine; and the fibre strands are dried mechanically.

The strands average 3–9 feet (0.9–2.7 metres) in length, depending upon petiole size and the processing method employed. The lustrous fibre ranges in colour from white through brown, red, purple, or black, depending upon plant variety and stalk position; and the strongest fibres are obtained from the outer sheaths.

Abaca fibre, valued for its strength, flexibility, buoyancy, and resistance to damage in saltwater, is chiefly employed for ships' hawsers and cables, fishing lines, hoisting and power-transmission ropes, well-drilling cables,

and fishing nets. Some abaca is used in carpets, table mats, and paper. Inner fibres can be used without spinning to manufacture lightweight, strong fabrics.

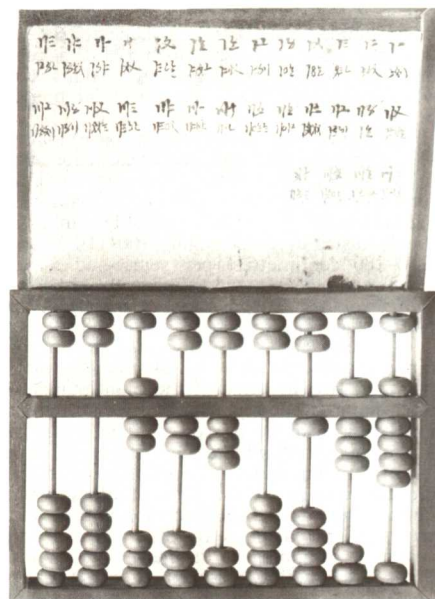
World production in the mid-1970s averaged more than 90,000 metric tons, with the Philippines producing over 90 percent; leading importers included the United States, the United Kingdom, and Japan. *Major ref.* 7:281e

- Philippine farm economy and exports 14:236d
- rope making suitability and fibre preparation 15:1145g
- Zingiberales general features 19:1150h

abacus, calculating device, probably of Babylonian origin, long important in commerce, and the ancestor of the modern calculating machine and computer.

The word is probably derived, through its Greek form *abakos*, from a Semitic word such as the Hebrew *ibeq* ("to wipe the dust"; noun *abaq*, "dust"). The sand ("dust") surface, apparently used for general writing purposes, probably evolved into the board marked with lines and equipped with counters whose positions indicated numerical values—i.e., ones, tens, hundreds, and so on. In the Roman abacus the board was given grooves to facilitate moving the counters in the proper files. Another form, common today, has the counters strung on wires.

In the Chinese abacus (*hsüan-pan*, or *suan-pan*) shown, each of the two beads in the upper section of the frame represents five units, and



Chinese abacus, the *hsüan-pan* ("computing tray")
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each of the five beads in the lower section one unit (of the numerical order represented by the file). In performing addition, appropriate beads are moved to the dividing bar. The number represented on the bar in the picture is 7,230,189.

The abacus, generally in the form of a large calculating board, was in universal use in the Middle Ages throughout the European and Arab worlds as well as in Asia. In the 16th century it reached Japan, where a variety known as *soroban* still is widely used. The introduction of the Hindu-Arabic notation, with its place value and zero, gradually replaced the abacus, though it was still used in Europe as late as the 17th century and survives today in the Middle East and Japan; an expert practitioner can compete against a calculating machine.

- computer history and early machines 4:1046a; illus.

- history and commercial function 13:512b
- mathematical calculation theory and use 11:691c

Abadan, also transliterated *Ābādān*, city, Khūzestān *ostān* (province), Iran, on an island



Oil refineries, Abadan, Iran
Charles Lenars—Pix

of the same name in the Shatt (river) al-Arab, 33 mi (53 km) from the Persian Gulf.

Persia and Turkey long disputed its possession, but Persia acquired it in 1847. In 1909 the Anglo-Persian Oil Company (nationalized in 1951 as the National Iranian Oil Company) established its pipeline terminus refinery there. With an economy centred on petroleum refining and shipping, it is served by pipelines from oil fields to the north; pipelines have been constructed also to Tehrān and to Shirāz. Abadan has an international airport.

The city has several well-built compounds for the oil company's staff, which contrast with a lively local bazaar and poor housing quarters for unemployed immigrants. Pop. (1972 est.) 306,000.

30°20' N, 48°16' E
·map, Iran 9:822

Abae, ancient town in the northeast corner of Phocis, Greece, where one of the oracles of Apollo was consulted by the Lydian king Croesus. Although the Persians sacked and burned the temple in 480 bc, the oracle was still consulted; e.g., by the Thebans before the Battle of Leuctra (371 bc). The temple, burned again during the Sacred War (355–346 bc), was partly restored by the Roman emperor Hadrian. Ruins of the town walls and the acropolis remain on the town's site.

Abahai, reign titles T'IENTS'UNG and CH'UNG-TE (b. Nov. 28, 1592, Manchuria—d. Sept. 21, 1643, Manchuria), Manchurian tribal leader who, in 1636, proclaimed himself emperor and established the Ch'ing dynasty, which ruled China from 1644 to 1911. Abahai was the eighth son of Nurhachi (1559–1626), the great Manchu leader who extended his people's rule over the tribes of the Central Asian steppes and organized his tribesmen into a bureaucratic Chinese-style state.

Soon after his father's death, Abahai eliminated his brothers as rivals and consolidated his personal rule. He was successful largely because of his extraordinary ability as a military leader. He led armies into Inner Mongolia and Korea and made those countries vassal states of the Manchus. With the increased monetary and food supplies available from Korea and with the additional manpower and horses from the Mongols, he perfected the mighty military machine known as the Eight Banners. After four expeditions he finally occupied the formerly Chinese-controlled Amur region of northern Manchuria and three times broke through the Great Wall on raids into North China.

As more Chinese were captured and taken into Manchu service, the government was able to duplicate more exactly the organizational structure of its Chinese counterpart. Thus other talented Chinese were induced to join. On the advice of his Chinese advisers, Abahai changed the dynastic name of his empire to Ch'ing (Pure) and began the conquest of the Ming dynasty (1368–1644). Although he died

before his goal was realized, his reign greatly strengthened the foundations of Manchu rule. A year after his death the Manchus conquered Peking, the Ming capital, and a short time later subdued the remainder of the country.

- Chien-chou conquest of Manchuria 11:436f
- Ch'ing power consolidation 4:354b
- Dorgon's rise to power 5:958c

Abaiang Atoll, also known as *APIA* and *APIANG*, formerly *CHARLOTTE ISLAND*, coral atoll of the Gilbert Islands, a British crown colony in the west central Pacific Ocean. Comprising six islets in the northern Gilberts with a total land area of 6 sq mi (16 sq km), the atoll has a lagoon (16 mi by 5 mi) that provides sheltered anchorage. It was discovered (1788) by the British navigator John Marshall. The area's first missionary, Hiram Bingham, of the Boston Board of Foreign Missions, arrived there in 1857. The atoll, occupied by the Japanese in 1941–43, was subsequently used by U.S. forces as a base for attacking the Marshall Islands. The administrative centre and main village is Taburao. Copra is exported. Pop. (1973) 3,296.
1°43' N, 173°00' E

Abailard, Pierre (French philosopher): *see* Abelard, Peter.

Abajo Mountains, segment of the Colorado Plateau, in San Juan County, southeastern Utah. U.S. Abajo Peak (11,360 ft [3,463 m]) is the highest point in the mountains, which are embraced by the Manti-LaSal National Forest. Mining and lumbering are the main economic activities of the region.
37°50' N, 109°25' W

Abakaliki, town, administrative headquarters of Abakaliki Division, Anambra State (until 1976 East-Central State), southeastern Nigeria, at the intersection of roads from Enugu, Afikpo, and Ogoja.

An agricultural trade centre (yams, cassava, rice, and palm oil and kernels) for the Ibo people, the town lies in an area known for its lead, zinc, and limestone deposits. Although lead has been mined since precolonial times, the deposits are worked only when the world market price is high. Limestone is quarried for the cement plant at Nkalagu, 22 mi (35 km) west-northwest. The town has several hospitals and maternity clinics and secondary schools sponsored by Roman Catholic and Presbyterian missions. Its government farm promotes egg and poultry production. Pop. (1971 est.) 37,685.

- map, Nigeria 13:87

Abakan, administrative centre of the Khakass autonomous *oblast* (region), south central Russian Soviet Federated Socialist Republic, on the left bank of the Abakan River at its confluence with the Yenisey. A rail junction, it has metalworking, footwear, and food-processing industries. Coal and iron ore are mined in the vicinity. Pop. (1975 est.) 116,000.
53°43' N, 91°26' E

- map, Soviet Union 17:323

Abakanowicz, Bruno Abdank (1852–1900), Lithuanian mathematician known for the invention c. 1880 of the integrator, an instrument for plotting the indefinite integral of a graphically defined function.

Abakan River, river rising in the Altai Mountains in the Khakass autonomous *oblast*, U.S.S.R., and flowing northeastward for 319 mi (514 km) to join the Yenisey.
53°43' N, 91°30' E

- Yenisey River tributaries 19:1089g

abalone, marine snail of the subclass Prosobranchia (class Gastropoda) comprising the genus *Haliotis* and family Haliotidae, in which the dishlike shell has a row of holes on the outer edge. The large foot of the abalone is eaten as a steak. Abalones frequent the coasts of the northern Pacific Ocean, Aus-



Abalone (*Haliotis*)
Jacques Six

tralia, and South Africa. Largest is the 30-centimetre (12-inch) red abalone (*H. rufescens*) of the U.S. western coast.

- commercial importance 7:348g
- locomotor organ and shell structure 7:953a
- passim to 954f
- protective pigmentation 4:913g

Abancay, capital of Apurímac department and of Abancay province, southern Peru, on the bank of the Río Marino at 7,798 ft (2,377 m) above sea level, in a cool, dry intermontane basin. The exact date of the founding of Abancay (from the Quechua Indian *amankay*, a wild flower similar to a white lily) is unknown, but it was a leading commercial centre during the colonial era (1533–1821). Proclaimed a town in 1873, it was given city status in 1874. In addition to its political, religious, and commercial significance, Abancay is the agricultural and industrial centre of much of Apurímac. The growing and milling of sugar, liquor and rum distilling, copper mining, and sericulture are important.

About 300 mi (480 km) east-southeast of Lima, Abancay is fairly isolated; roads link it to the Andean cities of Ayacucho and Cuzco and to the coastal Pan-American Highway at Nazca. Pop. (1972 prelim.) 12,172.
13°35' S, 72°55' W
·map, Peru 14:128

A band (in muscle), dark-appearing band in a myofibril (one of the column-like arrays of filaments, called myofilaments, that make up a skeletal-muscle fibre).

- anatomic relationships in myofilaments 12:623b; illus. 622g
- muscle contraction mechanisms 12:629f

abandonment, in Anglo-American property law, the relinquishment of possession of property with an intent to terminate all ownership interests in that property. Abandonment may occur by throwing away the property, by losing it and making no attempt to retrieve it, by vacating the property with no intention of returning to it, or by any other act manifesting a complete disclaimer of ownership in the property. The general effect of abandonment is to give full ownership of the property to the first taker.

In the French and civil-law systems, the term abandonment is more technical and means the surrender by a debtor of his property to be used in satisfaction of claims by his creditors.
·fire and marine insurance provisions 9:646a
·maritime limitations of ship liability 11:502e
·trademark loss, intention, and use 18:561c

Abandonment, Act of (1581): see Abjuration, Act of.

abangan, the larger of two major divisions of Javanese Muslims, the other is the *santri*.
·Javanese Muslim lack of observance 17:227a

Abaroi (people): see Avars.

Abas, name of several characters in classical literature and mythology.

Abas, son of Lynceus and Hypermetra (daughter of Danaus), was 12th king of Argos and founder of Abae in Phocis. He was noted for his shield, which had been consecrated by Danaus to Hera but was given to Abas by his father on his report of Danaus' death.

Three persons named Abas appear in Ovid's *Metamorphoses*: a centaur, a friend of Perseus, and a companion of Diomedes who was turned into a swanlike bird by the goddess Aphrodite.

Abasiyanik, Sait Faik (b. 1907, Adapazarı, Tur.—d. May 11, 1954, Istanbul), considered one of the greatest short-story writers in modern Turkish literature.

Educated in Istanbul and Bursa, he spent four years in France from 1931 to 1935, mainly in Grenoble. On his return to Turkey, he began to publish his short stories in *Varlık* ("Existence"), the leading avant-garde periodical.

Abasiyanik's stories were written in a style new to Turkish literature; despite their formlessness and lack of a conventional story line, his tales are compelling, conveying in a single episode a wide range of human emotions. In 1936 he published his first volume of short stories, *Semaver* ("The Samovar"). A dozen others followed, including *Lüzumsuz adam* (1948; "The Useless Man"), *Kumpanya* (1951; "The Company"), and *Alemdağda var bir yılan* (1953; "There's a Snake at Alem Mountain"). He also wrote an experimental novel, *Bir takım insanlar* (1952; "A Group of People"), which was censored because it dealt strongly with class differences. A nonconformist, he rejected conventional life. The subjects of his powerful sketches and stories are taken from the life of simple people in humble occupations: fishermen, peddlers, petty bureaucrats, and small merchants. His characters are at once starkly realistic and richly poetic. His deep insight into the problems of ordinary men made him one of the most widely read authors of his day.

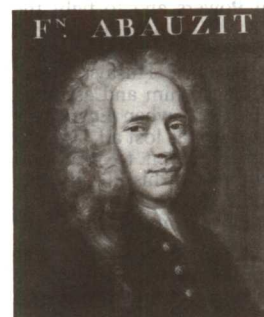
Abastor: see hoop snake.

Abate, Niccolò dell' (Italian painter): see Abbate, Niccolò dell'.

abatement, in law, interruption of a legal proceeding upon the pleading by a defendant of a matter that prevents the plaintiff from going forward with the action at that time or in that form. Pleas in abatement raise such matters as objections to the place, mode, or time of the plaintiff's claim. At one time, abatement of proceedings in equity differed from abatement in law in that the former merely suspended the action, subject to revival when the defect was cured, whereas the latter terminated it. The latter is now the more common usage.

The term abatement is also used in law to mean the removal or control of annoyance, as in nuisance or noise abatement.

Abauzit, Firmin (b. Nov. 11, 1679, Uzès, Fr.—d. March 20, 1767, Geneva), theologian



Abauzit, detail of an oil painting by Robert Gardelle, 1741; in the Bibliothèque Publique et Universitaire, Geneva

By courtesy of the Bibliothèque Publique et Universitaire, Geneva; photograph, Jean Aillaud

remembered for his contribution to an updated French version of the New Testament and other religious writings. In order to help Abauzit flee the religious tyranny that was taking root in France during the 17th century, his mother arranged his escape to Switzer-

land. In his later years, he travelled extensively and visited Germany, the Netherlands, and England, and along the way he met such prominent people as Pierre Bayle and Isaac Newton. In 1723 he was offered a professorship at a university in Geneva, which he turned down, but in 1727 he accepted an offer to work as a librarian there. In the same year, he was made a citizen. In the years that followed, he started writing. His article on "Apocalypse" was printed in the *Encyclopédie*, edited by Diderot, a French philosopher and man of letters.

abayah, a Turkish cloak.

- design, use, and style changes 5:1019g

Abaza, a Caucasian people of the Karachay-Cherkess Autonomous Oblast, Russian S.F.S.R.

- Soviet Union nationalities table 17:338

Abaza Hasan (d. 1658), pasha of Aleppo, Syria.

- Köprülü suppression of revolt 10:505e

Abaza language, spoken by about 25,000 people in the Karachay-Cherkess Autonomous Oblast in the western part of the northern Caucasus, is related to Abkhaz, Adyghean, Kabardian (Circassian), and Ubykh, which constitute the Abkhazo-Adyghean, or Northwest Caucasian, language group. These languages are noted for the great number of distinctive consonants and the limited number of distinctive vowels in their sound systems. Abaza, like Abkhaz, has no grammatical cases. Abaza is written as well as spoken.

- comparative phonology and grammar 3:1012h

Abba Arika (2nd–3rd century AD), head of the academy of *amoraim* at Sura in Babylonia.

- rabbinic and Mishna development 10:317f

'Abbāids, Muslim Arab dynasty of Andalusia that arose in Seville in the 11th century, in the period of the party kings (*mulūk al-ṭawā'if*) following the downfall of the caliphate of Córdoba.

In 1023 the *qādī* (religious judge) Abū al-Qāsim Muḥammad ibn 'Abbād declared Seville independent of Córdoba. His son 'Abbād, known as al-Mu'taḍid (1042–69), forcibly annexed the minor kingdoms of Mertola, Niebla, Huelva, Saltés, Silves, and Santa Maria de Algarve.

A poet and patron of poets, al-Mu'taḍid also had a reputation for ruthlessness and cruelty; in 1053 he suffocated a number of Berber chiefs of southern Andalusia in a steam bath in Seville, then seized their kingdoms of Arcos, Morón, and Ronda.

The last member of the dynasty, the poet-king Muḥammad ibn 'Abbād al-Mu'tamid (1069–95), made Seville a brilliant centre of Spanish Muslim culture. In 1071 he took Córdoba, maintaining a precarious hold on the city until 1075; he held it again, 1078–91, while Ibn 'Ammār, his vizier and fellow poet, conquered Murcia.

The 'Abbāids' position was weakened, however, by an outbreak of hostilities with the Castilian king Alfonso VI; Christian progress in Aragon and Valencia and the fall of Toledo (1085), together with pressure from religious enthusiasts at home, forced al-Mu'tamid to seek an alliance with Yūsuf ibn Tāshufin of the Almoravid dynasty. Despite 'Abbād support of Ibn Tāshufin at the Battle of Zallāqah in 1086, Ibn Tāshufin later turned against his ally and besieged Seville; the city was betrayed by Almoravid sympathizers in 1091 after a heroic defense by al-Mu'tamid.

- Seville's development under dynasty 16:581a

Abbadie, Antoine-Thomson d' and Arnaud-Michel d' (respectively b. Jan. 3, 1810, Dublin—d. March 19, 1897, Pirine, Italy; b.

July 24, 1815, Dublin—d. Nov. 13, 1893, Urugne, Fr.), French brothers, geographers and travellers who conducted extensive investigations of the geography, geology, archaeology, and natural history of Ethiopia. Their expedition began when they landed at Mitsiwa (Massawa) in 1838 and ended when they returned to France in 1848.

Antoine d'Abbadie published a classified list and description of 234 Ethiopian manuscripts (1859), topographical findings (1860–73), and part of a geography of Ethiopia (1890). He became involved in controversies regarding his geographical findings, but subsequent explorers proved that his facts were correct, though he erred in contending that the Blue Nile was the main head stream of the Nile. In 1873 he published, along with findings from his stay in Ethiopia, the results of a scientific mission to Brazil made in 1836.

Arnaud d'Abbadie, in addition to his main Ethiopian venture, visited the country again in 1853. A general account of the expedition that he undertook with his brother was included in his work *Douze ans de séjour dans la Haute Éthiopie* (1868; "Twelve Years in Upper Ethiopia").

Abbagnano, Nicola (1901–), Italian Existentialist philosopher.

·Existentialist schools and theories 7:73h
·passim to 77g

Abbahu (c. 279–320), rabbinic scholar of the Jewish academy at Caesarea Palaestinae.
·Palestinian Talmud beginnings 10:317b

'Abbās I the Great, of Persia 1:3 (b. Jan. 27, 1571—d. Jan. 19, 1629), Šafavid *shāh* of Persia from 1588 to 1629, strengthened the dynasty by expelling Ottoman and Uzbek troops from Persian soil and by creating a standing army. He also made Isfahan the capital of Persia and fostered commerce and the arts, so that Persian artistic achievement reached a high point in his reign.

Abstract of text biography. Overcoming the unfavourable military and political circumstances prevailing in Persia when he ascended the throne, 'Abbās took the measures necessary to strengthen the central government and to expel foreign armies of occupation. In 1598 he transferred the Persian capital from Kazvin to Isfahan. His sponsorship of architecture and the arts was paralleled by his concern for the welfare of his people. 'Abbās' ill treatment of his own family, however (he blinded his father, brothers, and two sons, and executed another son), left him without an heir capable of succeeding him.

REFERENCES in other text articles:

- Armenian population relocation 18:1043e
- capture of Qandahār from the Mughals 9:383e
- diplomatic and cultural policies 9:936b
- Isfahan's architectural design 9:1007c
- Isfahan's golden age 9:111b
- Šafavid progress and prosperity 9:859a
- territorial gains and Ottoman expulsion 13:782h

'Abbās I (b. 1813—d. July 13, 1854, Banhā, Egypt), viceroy (khedive) of Egypt under the Ottomans from 1848 to 1854. During his reign he deliberately opposed change, such as the Western-inspired reforms initiated by his grandfather Muḥammad 'Alī Pasha (vicerey 1805–48).

'Abbās, distrustful of Europeans and European-educated Egyptians, reacted to the reforms of Muḥammad 'Alī by closing down or neglecting the public and military schools and factories. He reduced the armed forces, stopped the construction of the Delta Dam, and opposed the construction of the Suez Canal proposed by the French. He allowed the construction, however, of the Alexandria–Cairo Railway by the British, who in return assisted him in his dispute with the Ottoman

government over the application of the Western-inspired reforms (*tanẓimat*) in Egypt. Though opposed to the reforms, 'Abbās showed his loyalty by sending an expeditionary force to assist the Ottomans in the Crimean War (1853); he also abolished the state trade monopolies, which had defied the Ottoman treaties with the European powers.

Although 'Abbās' aversion to reforms won him the reputation of a reactionary, his curtailment of government spending benefitted the poorer classes, who received tax remissions and suffered less from compulsory labour and conscription into the army. A man of secretive nature, 'Abbās lived in isolation in his palace at Banhā, where he was strangled by two of his servants.

·autonomy issues with sultan 6:494h

'Abbās II, called 'ABBĀS HILMĪ PASHA (b. July 14, 1874, Alexandria, Egypt—d. Dec. 20, 1944, Geneva), last khedive (vicerey) of Egypt, from 1892 to 1914, when British rule was established. His opposition to British hegemony over Egypt made him prominent in the nationalist movement.

At the beginning of his reign, 'Abbās attempted to rule independently of Lord Cromer, the British agent and consul general in Egypt. Encouraged by popular discontent with the increasing British influence over Egypt and the enthusiastic support of the nationalists, he appointed a prime minister who was well-known for his opposition to the British. In January 1894, at a parade of troops at Wadi Halfa (a garrison station on the Sudanese border), he criticized the military efficiency of the British troops. Viewing these incidents as a threat to British control, Lord Cromer took steps to curb the Viceroy's independence of action.

After 1894, although 'Abbās no longer headed the nationalist movement, he provided financial assistance to the pan-Islāmic and anti-British daily *al-Mu'ayyad*. When in 1906 the nationalists demanded constitutional government for Egypt, however, 'Abbās, now reconciled with the British, rejected their demands. The next year he agreed to the formation of the National Party, headed by Muṣṭafā Kāmil, to counter the Ummah Party of the moderate nationalists, which was supported by the British. With the appointment of Lord Kitchener as consul general (1912–14), the leaders of the National Party were exiled or imprisoned, and 'Abbās' authority was curtailed.

At the beginning of World War I, 'Abbās was in Istanbul recuperating from wounds received when he was shot by an Egyptian student (July 1914). From Istanbul he issued an appeal to the Egyptians and the Sudanese to support the Central Powers and to fight the British. On Dec. 18, 1914, Britain declared Egypt its protectorate and deposed 'Abbās the following day. His uncle Husayn Kāmil (reigned 1914–17) replaced him and assumed the title of sultan. In 1922, when Egypt was declared independent, 'Abbās lost all rights to the throne and was forbidden to return to Egypt. He passed the rest of his life in exile, mainly in Switzerland. *Major ref.* 6:497b

·Egyptian nationalist movement 2:723d

Abbas, Ferhat (b. Oct. 24, 1899, Taher, near Constantine, Alg.), politician and leader of the national independence movement who served as the first president of the Provisional Government of the Algerian Republic.

Son of a Muslim official in the Algerian civil service, Abbas received an entirely French education at Philippeville (now Skikda) and Constantine and at the University of Algiers; as a result, he could never speak fluent Arabic. After two years' service with the French Army, he became a pharmacist at Sétif and was elected first to the municipal council of Sétif and then to the general council in Constantine. Early in his political career, he advocated collaboration with the French, the as-

similation of the "native element in French society," and the abolition of colonialism to bring about the emancipation of the Algerian Muslims as French citizens. Disillusioned by the French in 1938, he organized the Union Populaire Algérienne, which proposed equal rights for French and Algerians while preserving the Algerian culture and language. Nevertheless, at the outbreak of World War II, Abbas enlisted in the medical corps of the French Army.

On Feb. 10, 1943, the "Manifesto of the Algerian People," prepared by Abbas, was proclaimed. It was subsequently presented to the



Ferhat Abbas

Camera Press Ltd.—Pictorial Parade

French and the Allied authorities in North Africa. The manifesto, which reflected a fundamental change in its author's political position, not only condemned French colonial rule but also called for the application of the principle of self-determination and demanded an Algerian constitution granting equality to all inhabitants of Algeria. In May, Abbas, along with a number of his colleagues, wrote an addendum to the manifesto, which envisioned a sovereign Algerian nation. It was presented to the French on June 26. On its rejection by the French governor general, Ferhat Abbas and an Algerian working-class leader, Messali Hadj, formed the Amis du Manifeste et de la Liberté (AML; Friends of the Manifesto and Liberty), which envisioned an Algerian autonomous republic federated to a renewed, anti-colonial France. After the suppression of the AML and a year's imprisonment, in 1946 he founded the Union Démocratique du Manifeste Algérien (UDMA; Democratic Union of the Algerian Manifesto), which advocated cooperation with France in the formation of the Algerian state. Abbas' moderate and conciliatory attempts failed to evoke a sympathetic response from the French colonial officials, however, and in 1956 he escaped to Cairo to join the Front de Libération Nationale (FLN), an Algerian organization committed to revolutionary struggle for independence from France.

On Sept. 18, 1958, the Provisional Government of the Algerian Republic was formed with Ferhat Abbas as president. He resigned in 1961 but was elected president of the Algerian Constituent Assembly in 1962, when Algeria gained independence. Despite his political alliance with the revolutionary and Socialist FLN, he remained an exponent of parliamentary institutions and constitutionalism. To protest the drafting of the Algerian constitution by FLN outside the Constituent Assembly, he resigned his post as the assembly's president in August 1963 and was expelled from the FLN. An opponent of the then-president, Ahmed Ben Bella, he was placed under house arrest in 1964 but was released the following year.

Ferhat Abbas described the Algerian War of Independence in *La Nuit coloniale* (1962; "The Colonial Night"), the first volume of a projected three-volume work entitled *Guerre et révolution d'Algérie* ("The Algerian War and Revolution"). He is also the author of *Le Jeune Algérien: de la colonie vers la province* (1931; "The Young Algerian: From Colony

to Province"). Further information about Ferhat Abbas may be found in David C. Gordon's *Passing of French Algeria* (1966) and Joan Gillespie's *Algeria: Rebellion and Revolution* (1960).

·Algerian demands for autonomy 13:164e

·**Abbās Hilmi Pasha**: see 'Abbās II.

·**Abbāsids**, second of the two great dynasties of the Muslim Empire of the Caliphate, overthrew the Umayyad caliphate in AD 750 and reigned as the 'Abbāsīd caliphate until destroyed by the Mongol invasion in 1258. The name is derived from that of the uncle of the Prophet Muḥammad, al-'Abbās (d. c. 653), of the Hashemite clan of the Quraysh tribe in Mecca. From c. 718 members of his family worked to gain control of the empire, and by skillful propaganda won much support, especially from Shi'ī Arabs and Persians in Khorāsān. Open revolt in 747, under the leadership of Abū Muslim, led to the defeat of Marwān II, the last Umayyad caliph, at the Battle of the Great Zab River (750), and to the proclamation of the first 'Abbāsīd caliph, Abū al-'Abbās as-Saffāh.

Under the 'Abbāsīds the caliphate entered a new phase. Instead of focussing, as the Umayyads had done, on the West—on North Africa, the Mediterranean, and relations with southern Europe—the caliphate now turned eastward. The capital was moved to the new city of Baghdad, and events in Persia and Transoxania were closely watched. For the first time the caliphate was not coterminous with Islām; in Egypt, North Africa, Spain, and elsewhere, local dynasties claimed caliphal status. With the rise of the 'Abbāsīds the base for influence in the empire became international, emphasizing membership in the community of believers rather than Arab nationality. Since much support for the 'Abbāsīds came from Persian converts, it was natural for them to take over much of the Persian (Sāsānīan) tradition of government. Support by pious Muslims likewise led the 'Abbāsīds to acknowledge publicly the embryonic Islāmic law and to profess to base their rule on the religion of Islām. Between 750 and 833 the 'Abbāsīds raised the prestige and power of the empire, promoting commerce, industry, arts, and science, particularly during the reigns of al-Manṣūr, Hārūn ar-Rashīd, and al-Ma'mūn. Their temporal power, however, began to decline when al-Mu'taṣim (q.v.) introduced non-Muslim Berber, Slav, and especially Turkish mercenary forces into his personal army. Although these troops were converted to Islām, the base of imperial unity through religion was gone, and some of the new army officers quickly learned to control the caliphate through assassination of any caliph who would not accede to their demands.

The power of the army officers had already weakened through internal rivalries when the Iranian Būyids (q.v.) entered Baghdad in 945, demanding of al-Mustakfī (944–946) that they be recognized as the sole rulers of the territory they controlled. This event initiated a century-long period in which much of the empire was ruled by local secular dynasties. In 1055 the 'Abbāsīds were overpowered by the Seljuqs, who took what temporal power may have been left to the caliph but respected his position as religious leader, restoring the authority of the caliphate, especially during the reigns of al-Mustashīd (1118–35), al-Muqtafi (q.v.), and an-Nāṣir. Soon after, in 1258, the dynasty fell during a Mongol siege of Baghdad. *Major ref.* 3:635a; map 637

·al-Ma'mūn's attempted reforms 11:417f

·al-Manṣūr's consolidation of power 11:461c

·Arabian rule in midst of conflict 1:1047e

arts

·architecture and visual arts 9:985b

·glass decorative techniques and motifs 8:183g

·literary climate and achievements 9:959c

·pottery technique innovations 14:901d

·visual art forms, illus., 9: Islāmic Peoples, Arts of, Plate I

·Baghdad's construction and growth 2:585f

·Barmakīd rise and fall 2:723h

·Baybars' political designs 2:774a

·educational contributions and

distinctions 6:332a

·Egyptian variable allegiance 6:488c *passim* to 490g

·Fātimid overthrow attempt 7:193b

·Hārūn ar-Rashīd caliphate distinctions 8:659d

·Independent Eastern churches

treatment 6:137f

·Iranian rule and policies 9:853a

·Iraq under the caliphate 11:991h

·Islāmic politics and cultural change 9:929h

·Manichaeism and Muslim persecution 11:444c

·Mā Warā' an-Nahr culture and

conflicts 18:793b

·Mu'tazilite early political sanction 9:1015c

·North African loose Muslim rule 13:156d

·Ottoman cultural influences 13:775g

·overthrow of Umayyad rule 3:631f

·Seljuq military assistance 16:504b

·Syria's decline in importance 17:952d

·**Abbās Mirzā** (b. Sept. 1789, Navā, Iran—d. Oct. 25, 1833, Meshed), crown prince of the Qājār dynasty of Iran who was responsible for introducing European military techniques into his country.

Although he was not the eldest son of Fath 'Alī Shāh, 'Abbās Mirzā was named crown prince and appointed governor of the province of Azerbaijan in 1798 or 1799. When war broke out between Russia and Iran in 1804, he was made commander of the Iranian expeditionary force of 30,000 men. The war (1804–13) resulted in the loss of most of Iran's Georgian territory and showed 'Abbās Mirzā the necessity of reforming the Qājār military forces. To model a new army along European lines, however, he would have to renovate whole sectors that gave society its essential services. He began sending Iranian students to Europe to learn Western techniques; a first group was sent to England in 1811, and a second group followed in 1815. In 1812 a printing press was established in Tabriz, the capital of Azerbaijan, and the translation of European military handbooks was encouraged. A gunpowder factory and an artillery foundry were also started in Tabriz.

The new army was drilled by British military advisers, who taught such tactics as the use of infantry formations and close cooperation between infantry and artillery. This army distinguished itself in campaigns against the Ottoman Turks in 1821–23. During the second Russo-Iranian war (1826–28) 'Abbās Mirzā again led the Iranian forces. In the first year of the war he was able to recapture all of Iran's lost territory; his new army, especially the artillery arm, was more than a match for the

Russian troops. In the end, however, Russian numerical superiority and discipline, coupled with Fath 'Alī Shāh's refusal to reinforce and replace 'Abbās Mirzā's losses, led to a disastrous defeat. At the cessation of hostilities (1828), Iran had lost all its Georgian and Caucasian territories.

'Abbās Mirzā was shattered by this defeat. He lost interest in military reform and spent the last five years of his life trying to maintain his own position as crown prince and feuding with his 60 brothers. Broken in spirit as well as in health, he died leading a punitive expedition against rebels in Khorāsān.

Abbate (ABATE), **Niccolò dell'** (b. c. 1512, Modena, Italy—d. 1571, Fontainebleau, Fr.), painter of the Bolognese school who, along with others, introduced the post-Renaissance Italian style of painting known as Mannerism to France and helped to inspire the French classical school of landscape painting.

He began his career in Modena as a student of the sculptor Antonio Begarelli. His "Martyrdom of St. Peter and St. Paul" in the church of S. Pietro, Modena (1547), probably established his reputation. During his stay in Bologna (1548–52), his style matured, influenced by his contemporaries Correggio and Parmigianino. His stucco-surface landscapes in the Poggi (now Palazzo dell'Università) survive to show his understanding of nature.

In 1552 Abbate was called to the court of the king of France, Henry II, at Fontainebleau, and remained in France for the rest of his life. With Francesco Primaticcio he composed immense murals, most of them later lost. His easel works, which included an enormous number of lyrical landscapes based upon pagan themes, were burned in 1643 by the Austrian regent, Anna. Among his later paintings executed for Charles IX were a series of landscapes with mythologies that influenced the 17th-century French painters Claude Lorrain and Nicolas Poussin. He also designed a series of tapestries, "Les Mois arabesques"; and some of his designs were adopted by the painted enamel industry of Limoges. His last works are believed to be 16 murals (1571) in which he was assisted by his son, Giulio Camillo. His work in France is recognized as a principal contribution to the first significant, wholly secular movement in French painting, the Fontainebleau style.

Abbey River (Ethiopia and The Sudan): see Blue Nile River.

Abbazia (Yugoslavia): see Opatija.



"The Story of Aristaeus," oil painting by Niccolò dell'Abbate; in the National Gallery, London

By courtesy of the trustees of the National Gallery, London; photograph, A.C. Cooper Ltd.

Abbe, Cleveland (b. Dec. 3, 1838, New York City—d. Oct. 28, 1916, Chevy Chase, Md.), meteorologist who pioneered in the foundation and growth of the U.S. Weather Bureau, later renamed the National Weather Service.

Trained as an astronomer, he was appointed director of the Cincinnati (Ohio) Observatory in 1868. His interest gradually turned to meteorology, however, and he inaugurated a public weather service that served as a model for the national weather service that was organized shortly thereafter as a branch of the Signal Service. In 1871 he was appointed chief meteorologist of that branch (which, in 1891, was reorganized under civilian control as the U.S. Weather Bureau) and served in that capacity for more than 45 years.

Abbe, Ernst (b. Jan. 23, 1840, Eisenach, now in East Germany—d. Jan. 14, 1905, Jena), physicist whose theoretical and technical innovations in optical theory led to great improvements in microscope design (such as the use of a condenser to provide strong, even illumination, introduced in 1870) and clearer understanding of magnification limits. He discovered the optical formula now called the Abbe sine condition, one of the requirements that a lens must satisfy if it is to form a sharp image, free from the blurring or distortion caused by coma and spherical aberration. In 1863 he joined the University of Jena, rising to professor of physics and mathematics (1870) and director of the astronomical and meteorological observatories (1878). In 1866 he became research director of the German industrialist Carl Zeiss's optical works (see Zeiss, Carl). Two years later Abbe invented the apochromatic lens system for microscopes, which eliminates both the primary and secondary colour distortion of light.

In 1891 Abbe set up and endowed the Carl Zeiss Foundation for research in science and social improvement. Five years later he reorganized the Zeiss optical works into a cooperative, with management, workmen, and the university sharing in the profits.

·biological sciences development 2:1021h
·microscope theory and lens development 12:128d *passim* to 131c
·optical engineering innovations 13:603d
·optics theory 13:619b

Abbe number: see constringence.

abbess, the title of a superior of certain communities of nuns following the Benedictine Rule, of convents of the Second Order of St. Francis (Poor Clares), and of certain communities of canonesses. The first historical record of the name is on a Roman inscription dated c. 514.

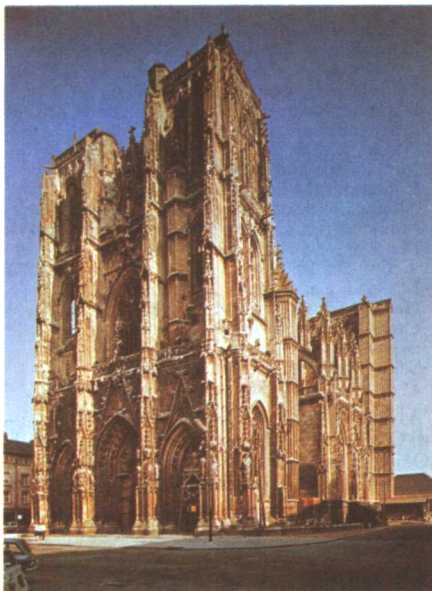
To be elected, an abbess must be at least 40 years old and a professed nun for at least 10 years. She is solemnly blessed by the diocesan bishop in a rite similar to that of the blessing of abbots. Her blessing gives her the right to certain pontifical insignia: the ring and sometimes the crosier.

In medieval times abbesses occasionally ruled double monasteries of monks and nuns and enjoyed various privileges and honours. See also abbot.

Abbeville, town, Somme département, Picardy, northern France, near the mouth of the canalized Somme, northwest of Amiens. Stone Age artifacts unearthed by Boucher de Crèvecœur de Perthes in 1844 attest to early occupation of the site. The town originated as Abbatis Villa, a 9th-century dependency of the abbots of Saint-Riquier, and was chartered in 1184. Under the English (1272-1435), it was capital of Ponthieu. Louis XII's marriage (1514) to Mary, sister of Henry VIII of England, took place there.

The Gothic church of Saint-Vulfran (15th-17th centuries) and the town hall with its

13th-century tower survived air bombardment during World War II.



Gothic church of Saint-Vulfran, Abbeville, Fr.

Club Iris

Abbeville has carpet factories (dating from the 17th century), sugar refineries, breweries, and ironworks. Latest census 23,770.

50°06' N, 1°50' E

·map, France 7:584

Abbeville, town, seat (1854) of Vermilion Parish, southern Louisiana, U.S., on the Vermilion River. Founded in 1843 by a Capuchin missionary, Abbé A.D. Mégrét, who patterned it after a French Provençal village, it was first called La Chapelle and was settled by Acadians and Mediterranean immigrants. St. Marie Madeleine Church now occupies Mégrét's chapel. A trade centre for agricultural produce (especially rice) and seafood, it provides services for nearby oil and gas fields. Abbeville is linked with the Gulf of Mexico via the Freshwater Bayou Deepwater Channel. Avery Island, with a bird sanctuary and salt dome, is 15 mi (24 km) southeast. Inc. town, 1850. Pop. (1980) 12,391. 29°58' N, 92°08' W

Abbeville, city, seat of Abbeville County, northwestern South Carolina, U.S. French Huguenots in 1764 settled the site, which was named for Abbeville, Fr., by John de la Howe. The city is regarded by some as the "Birthplace and Deathbed of the Confederacy"; it was there that a Secessionist meeting was held (Nov. 22, 1860, on what is now Secession Hill) and there that the Confederate president, Jefferson Davis, held one of his last Cabinet meetings (May 2, 1865, at Burt House). John C. Calhoun was born on an outlying farm. A textile-based economy prevails. The Long Cane Division of the Sumter National Forest is nearby. Inc. 1895. Pop. (1980) 5,863.

34°11' N, 82°23' W

Abbevillian industry, prehistoric stone tool assemblage generally considered to represent the oldest occurrence in Europe of a bifacial (hand ax) technology. The term includes what was formerly called Chelllean industry. It was recovered from high terrace sediments of the lower Somme valley in a suburb of Abbeville, Picardy, France. The occurrence dates from a still ill-determined part of the Middle Pleistocene, somewhat less than 700,000 years ago. The distinctive stone tools include massive core tools (hand axes), bifacially flaked, with deep flake scars and sinuous or jagged edges, and with thick, usually unretouched flakes. The assemblage is usually considered closely related to the Acheulian industry (*q.v.*) and

may, in fact, represent merely a variant or temporal expression of it.

·archaeological time scale 5:501e; illus. 500

·hand tool industries 8:608g

·Paleolithic era culture correlation chart 8:1051

abbey, group of buildings for a self-contained monastic religious community, centred on an abbey church or a cathedral. Major monastic establishments, under the direction of an abbot or an abbess, were known as abbeys, though the term is loosely used to cover priories, smaller monasteries under a prior. In England, since the dissolution of the monasteries under Henry VIII, all that remains in many cases is the abbey church, now simply called an abbey; Westminster Abbey is the best known example.

Monasteries originally developed in the Near East and Greece from the earlier streets of hermits' huts, or lauras. Walls were built for defense, and the cells were later constructed against the walls, leaving a central space for church, chapels, fountain, and dining hall, or refectory. This Eastern type of monastery can be seen at Mt. Athos in Greece.

The first European abbey was Monte Cassino (see Cassino) in Italy, founded in 529 by St. Benedict of Nursia, who wrote the order that formed the basic foundation of monastic life in the Western world. His plan for an ideal abbey was circulated (about 820) to orders throughout Europe, and abbeys were generally built in accord with it in subsequent centuries. The cloister (*q.v.*) linked the most important elements of the abbey together and also served the monks for their contemplative meditation; it was usually an open, arcaded court, surfaced with grass or paving and sometimes with a fountain in the centre. The side adjoining the nave of the church had book presses and formed an open-air but sheltered library. The dormitory was often built over the refectory on the east side of the cloister and was linked to the central church by a "day-stair," which led to the arcaded cloister and so into the church, and by a "night-stair," which led directly to the church. To one side of the latter passage there was sometimes a "warming room," where the monks could warm themselves before entering the unheated church for midnight mass. The church assembly room, the chapter house (*q.v.*), was often attached to the chancel near the eastern side of the cloister.

The western side of the cloister provided for dealings with the outside world. There was the almonry, for example, where gifts of money or clothing were made to the poor, and guest rooms, lay brothers' quarters, cellars, and stables. The abbot's rooms were near the gatehouse, which controlled the only opening to the outer courtyard, where the general public was permitted. In wet weather or under the hot summer sun, the worshippers assembled before mass under an arcaded porch, or galilee (see porch), which was often added to the west end of the church. On the south side of the cloisters were workshops for smiths,



Abbey of Sainte-Marie de la Tourette, Evéux-sur-L'Arbresle, Fr., designed by Le Corbusier, 1957-61

Bernard Beaujour—Rapho/Photo Researchers

enamellers, coopers, shoemakers, and saddlers; a central kitchen; and a brewery.

An important building within the inner walls housed the novitiate and the infirmary. In the manner of an early isolation hospital, it had its own chapel, bathhouse, refectory, kitchen, and garden. The doctor's house, with its physic garden of essential medicinal herbs and with small sickrooms, was nearby.

Buildings for the intensive agriculture practiced by most orders were to the south of the other buildings.

In the 12th and 13th centuries, many abbeys were built in England, Scotland, Spain, Italy, Germany, and Austria. In France the monastic movement flourished to a greater extent than in any other country. Perhaps the most remarkable abbey was established by the Benedictines on the rocky island of Le Mont-Saint-Michel (q.v.) in 966. The buildings spiralled around the rock, finally rising to a pinnacle above it with the church, rooftop cloister, refectory, and terraced garden. A good example of the eremitical style—i.e., tending toward the pattern of Eastern monasticism, with individual hermit cells—is the Carthusian monastery of Porte-Sainte-Marie near Clermont-Ferrand. The Cistercian demand for simplicity is seen at the well-preserved abbey of Fontenay, with its low, straightforward church and almost entire absence of decoration.

Few new abbeys were built in the 19th and 20th centuries.

·Pope Sylvester II's control 17:899h

Abbey, Edwin Austin (1852–1911), U.S. painter, one of the foremost illustrators of his day. He spent many of his most productive years in England, where he was elected (1883) to the Royal Institute of Painters in Water-Colours. He became a member of the National Academy of Design in 1902. Works include the official picture of the coronation of King Edward VII of England (1902).

Abbey Theatre, in Dublin, originated in 1902 when the work of the Irish Literary Theatre (founded in 1898 by W.B. Yeats and Lady Gregory and devoted to fostering Irish poetic drama) was taken over by the Irish National Dramatic Society, led by W.G. and Frank J. Fay and formed to present Irish actors in Irish plays. In 1903 this became the Irish National Theatre Society, with which many leading figures of the Irish literary renaissance (q.v.) were closely associated. The quality of its productions was quickly recognized, and in 1904 an Englishwoman, Annie Horniman, a friend of Yeats, paid for the conversion of an old theatre in Abbey Street, Dublin, into the Abbey Theatre. The Abbey opened in December of that year with a bill of plays by Yeats, Lady Gregory, and J.M. Synge (who joined the other two as co-director). Founder members included W.G. and Frank J. Fay, Arthur Sinclair, and Sara Allgood.

The Abbey's staging of J.M. Synge's satire *The Playboy of the Western World*, on Jan. 26, 1907, stirred up so much resentment in the audience over its portrayal of the Irish peasantry that there was a riot. When the Abbey players toured the United States for the first time in 1911, similar protests and disorders were provoked when the play opened in New York City and Philadelphia.

The years 1907–09 were difficult times for the Abbey. Changes in personnel affected the future management of the theatre, and the Fay brothers, who grew disenchanted with the Abbey's progress, left and went to the United States. Miss Horniman withdrew her financial support, and the management of the theatre changed hands several times with little success until the post was filled by the playwright-director Lennox Robinson (q.v.) in 1910. The onset of World War I and the Irish Rebellion of 1916 almost caused the closing of the theatre. Its luck changed, however, in 1924 when it became the first state-subsidized theatre in the English-speaking world. The emergence of the playwright Sean O'Casey

also stimulated new life in the theatre, and from 1923 to 1926, the Abbey staged three of his plays: *The Shadow of a Gunman*, *Juno and the Paycock*, and *The Plough and the Stars*, the last a provocative dramatization of the Easter Rising of 1916. In the early 1950s the Abbey company moved to the nearby Queen's Theatre after a fire had destroyed its playhouse. A new Abbey Theatre, housing a smaller, experimental theatre, was completed in 1966 on the original site. Although the Abbey has broadened its repertory, it continues to rely primarily on Irish plays.

·Craig's scenic innovation and influence 17:548h

·founding, location, and importance 18:231c

·Irish cultural renaissance 5:1073a

·restoration and performances 9:888c

·set concept utilization 5:232b

·Yeats's contributions 19:1077a

abbhūṭadhamma, Sanskrit ADBHUTADHARMA, in the Pāli canon of Buddhist sacred writings, one of the nine *aṅgās* (q.v.). *Abbhūṭadhamma* writings are characterized by their emphasis on supernatural events, miracles, etc.

·Buddhist sacred text classification 3:432h

Abbiategrosso, town, Milano province, Lombardy region, northern Italy, west-southwest of Milan. It is a market and industrial centre with dairies, rice-processing plants, and glass, textile, and soap factories. The church of Sta. Maria Nuova and the castle of the Visconti family date from the late 14th century. Pop. (1974 est.) mun., 27,312.

45°24' N, 8°54' E

·map, Italy 9:1088

Abbon (ABBO) of Fleury, Saint (c. 945–1004), French scholar, monk, and, from 988, reforming abbot of the Benedictine monastery of Fleury on the Loire River.

abbot, an official title of the superior of a monastic community that follows the Benedictine Rule (Benedictines, Cistercians, Camaldolese, Trappists) and of certain other orders (Premonstratensians, canons regular of the Lateran). The word derives from the Aramaic *ab* ("father") or *aba* ("my father"), which in the Septuagint (the Greek translation of the Old Testament) and in New Testament Greek was written *abbas*. Early Christian Egyptian monks renowned for age and sanctity were called *abbas* by their disciples, but, when monasticism became more organized, superiors were called *proestos* ("he who rules") in the East and the Latin equivalent, *praepositus*, in the West.

St. Benedict of Nursia (c. 480–c. 547) restored the word *abbas* in his rule, and to this early concept of spiritual fatherhood through teaching, he added the concept of *patria potestas*, authority wielded by a father according to Roman law. Thus, the abbot has full authority to rule the monastery in both temporal and spiritual matters.

An abbot is elected by the chapter of the monastery in secret ballot. He must be at least 30 years old, of legitimate birth, professed at least 10 years, and an ordained priest. He is elected for life except in the English congregation, where he is elected for a term of 8–12 years. The election must be confirmed by the Holy See or by some other designated authority. The bishop of the diocese in which the monastery is situated confers the abbatial blessing, assisted by two abbots.

Chief among the privileges of an abbot are the power to administer tonsure and minor orders to his own subjects and the right to celebrate the liturgy according to pontifical rite, to give many blessings normally reserved to a bishop, and to use the pontifical insignia.

In Eastern monasticism, self-governing monasteries are ruled by several elder monks, whose leader is called abbot. See also abbeys.

·Benedictine Rule and advice 2:835a

·origin of office 15:991c

Abbot, Charles Greeley (1872–1973), U.S. astrophysicist who served as secretary (1928–

44) of the Smithsonian Institution of Washington, D.C. He selected observatory sites for the Smithsonian, designed instruments for solar studies and solar heating experiments, and measured the solar constant.

Abbott, Ezra (1819–84), U.S. New Testament scholar of Harvard University and one of the original members of the New Testament Committee for Revision of the English Bible, in charge of the Revised Version of the Bible.

Abbott, George (1562–1633), English archbishop of Canterbury (from 1611) and the recognized leader of the Calvinists during the early part of the 17th century.

Abbott, Henry Larcom (1831–1927), U.S. soldier and engineer.

·stream discharge 6:83e

Abbotsford, former home of the 19th-century novelist Sir Walter Scott, situated on the right bank of the River Tweed, district of Roxburgh, Borders region, Scotland. Scott purchased the original small farm (then known as Clarty Hole) in 1811 and renamed it, enlarged it, and planted it with trees. He rebuilt the farmhouse (1817–25) as a Gothic-



Home of Sir Walter Scott, Abbotsford, Roxburgh
Colour Library International

style baronial mansion, very much his own creation, even installing gas-lighting as early as 1823.

Still the home of Scott's direct descendants, Abbotsford remains virtually unchanged; containing his valuable library and interesting collection of historical relics, it is open to the public during the summer.

Abbotsholme, school for boys in Derbyshire, founded in 1889.

·philosophy and innovations 6:374d

Abbotsinch, international airport 6 mi (10 km) west of Glasgow.

·foreign and domestic services 16:408e

Abbott, George (1887–), U.S. playwright and director.

·staging unity of musical comedy 17:550h

Abbott, Grace (b. Nov. 17, 1878, Grand Island, Neb.—d. June 19, 1939, Chicago), social worker, public administrator, educator, and reformer, was especially important in the field of child-labour legislation.

In 1908 she became director of the newly formed Immigrants' Protective League, Chicago, and lived for a time at Hull House, the pioneer settlement house founded by Jane Addams, with whom she was closely associated. In a series of weekly articles ("Within the City's Gates," 1909–10) in the *Chicago Evening Post*, she attacked the exploitation of immigrants. Later she wrote *The Immigrant and the Community* (1917).

As director of the child-labour division, U.S. Children's Bureau (1917–19), she administered the first federal statute limiting the employment of juveniles, the Keating-Owen Act (1916). This law was declared unconstitutional by the U.S. Supreme Court in 1918, but she

secured a continuation of its policy by having a child-labour clause inserted into all war-goods contracts between the federal government and private industries. Subsequently she was director of the entire Children's Bureau (1921–34), succeeding Julia Lathrop, a former associate at Hull House. She worked hard to secure public approval of a constitutional amendment against child labour, submitted to the states in 1924 but never ratified. While serving as professor of public welfare at the University of Chicago (1934–39), she was also U.S. delegate to the International Labour Organisation (1935, 1937). Her book *The Child and the State* (2 vol.) appeared in 1938.

Her sister Edith Abbott (1876–1957) was dean of the University of Chicago School of Social Service Administration (1924–42).

Abbott, Jacob (b. Nov. 14, 1803, Hallowell, Maine—d. Oct. 31, 1879, Farmington), teacher and writer, best known for his many books for young readers, including the "Rollo" series. He attended Hallowell Academy and Bowdoin College and studied at Andover Newton Theological School. After teaching at Amherst College, Abbott moved in 1829 to Boston, where he founded and was the first principal of the Mount Vernon School, a secondary school for girls.

Abbott was sole author of 180 books and co-author or editor of 31 others, notably the "Rollo" series (28 vol.). To accompany the earlier books (*Rollo at Work*, *Rollo at Play*), Abbott wrote a volume for teachers, *The Rollo Code of Morals; or, The Rules of Duty for Children, Arranged with Questions for the Use of Schools* (1841). In following Rollo's travels about the world with his all-knowing Uncle George, the young reader could improve his knowledge of ethics, geography, science, and history. Abbott also wrote 22 volumes of biographical histories and the *Franconia Stories* (10 vol.).

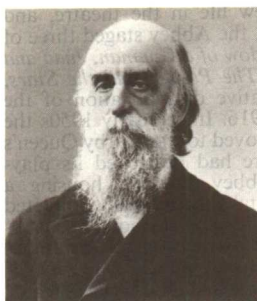
Abbott, Sir John (Joseph Caldwell) (b. March 12, 1821, St. Andrews, Lower Canada, now St. Andrews East—d. Oct. 30, 1893, Montreal), lawyer, statesman, and prime minister of Canada from 1891 to 1892.

Educated at McGill University, Montreal, Abbott became a lawyer in 1847 and was made queen's counsel in 1862. A recognized authority on commercial law in Lower Canada (Quebec province), he served as dean of the McGill faculty of law from 1855 to 1880. He was elected to the Legislative Assembly of the then united province of Canada in 1857 and continued to represent his native county, Argenteuil, until 1887, except during 1874–80. In 1862 he served briefly as solicitor general in the Liberal administration of Sir John Macdonald and Louis Sicotte, before going over to the Conservatives in 1865.

As legal adviser to the shipping magnate Sir Hugh Allan, Abbott was implicated in the Canadian Pacific Scandal of 1873, in which Prime Minister Macdonald was accused of awarding a railway construction contract to Allan in return for campaign funds. Abbott accordingly was defeated in the 1874 election and was not re-elected to the House of Commons until 1880. Seven years later he was appointed to the Senate, in which he was made government leader.

On the death of Macdonald in June 1891, Abbott was compromise choice for prime minister, but he resigned the following year because of ill health.

Abbott, Lyman (b. Dec. 18, 1835, Roxbury, Mass.—d. Oct. 22, 1922, New York City), Congregationalist minister and a leading exponent of the Social Gospel movement. He left law practice to study theology and was ordained in 1860. After serving in two pastorates he became associate editor of *Harper's Magazine* and in 1870 editor of the *Illustrated Christian Weekly*. In 1876 he joined Henry



Lyman Abbott, 1901

By courtesy of the Library of Congress, Washington, D.C.

Ward Beecher's *Christian Union*, a non-denominational religious weekly, and in 1881 became its editor in chief. He succeeded in 1888 to Beecher's pulpit in the Plymouth Congregational Church, Brooklyn, where he served until 1899.

Abbott early became interested in industrial problems. Under his editorship the *Christian Union* (renamed *Outlook* in 1893) promulgated the Social Gospel, which sought to apply Christianity to social and industrial problems. His *Christianity and Social Problems* (1897), *The Rights of Man* (1901), *The Spirit of Democracy* (1910), and *America in the Making* (1911) present his moderate sociological views, which rejected both socialism and laissez-faire economics.

On other problems Abbott presented the viewpoint of liberal evangelical Protestantism. He sought to interpret, rather than condemn, the effect of the theory of evolution on religion. Abbott also popularized the objective scholarly study of the Bible.

Abbott, Samuel Warren (b. June 12, 1837, Woburn, Mass.—d. Oct. 22, 1904), physician, statistician, and pioneer of public health.

Taking his degree at Harvard Medical School in 1862, he saw service in the Federal navy and army in the Civil War and then began the practice of medicine in Woburn. He soon became interested in problems of public health, and in 1886 he became secretary of the Massachusetts Board of Health, holding the position for the rest of his life. There he established himself as a leader of the public health movement. Abbott's interest in vital statistics, a study that was only then getting seriously under way, was one of the foundations of his work, and his published works on vital statistics in Massachusetts and in New England became models of their kind. Abbott's best-known work was *Past and Present Condition of Public Hygiene and State Medicine in the United States* (1900).

Abbott, William Osler (1902–43), U.S. physician.

·advances in abdominal surgery 11:839a

Abbottābād, headquarters of Hazāra District, Peshāwar Division, Northwest Frontier Province, Pakistan, northeast of Rāwālpindi. A hill station (4,120 ft [1,256 m]), it lies on a saucer-shaped plateau at the southern corner of the Rāsh (Orāsh) Plain and is the gateway to the picturesque Kāgān Valley. Connected by road with the Indus Plain and Kashmir and by railhead (at Haveliān, 10 mi [16 km] south) with Peshāwar, it serves as a district market centre. Founded in 1853 and named after Maj. James Abbott, the first British deputy commissioner of Hazāra, it contains two parks, a preparatory school, two colleges affiliated with the University of Peshāwar, and a forest research centre. The Pakistan Military Academy is at Kākul, 5 mi northeast. Pop. (1972) 27,969.

34°09' N, 73°13' E

·map, Pakistan 13:893

Abbott Academy, in Andover, Mass., the oldest incorporated private school for girls in New England, established in 1829. It is now college preparatory, with grades 9 through 12.

Abboud, Ibrahim (1900–), Sudanese army officer, president of The Sudan 1958–64.

·military revolt against civilian rule 13:115b

abbozzo, or **ABOZZO** (Italian: "sketch"), used in the visual arts as a term referring to the first rough outline of a more complex work. In painting the composition is sketched out on the canvas, usually with a weak solution, paint, or charcoal. In sculpture *abbozzo* refers to a block of wood or stone that has been reduced to a rough form of the finished work.

ABC art: see Minimal art.

ABC of Aristotle (word game): see crambo.

ABC powers, an informal association between the three major nations of South America—Argentina, Brazil, and Chile.

Their informal association began about 1905. A non-aggression pact signed by the three nations in 1915 was never put into effect. In 1914 the three powers tried to mediate a dispute between the United States and Mexico, which was at that time torn by revolution. The ABC powers and Canada sponsored a conference at Niagara Falls, Ontario (May–August), which provided an opportunity for the two antagonists to negotiate, should conducive conditions arise. By that July a change in the leadership of the Mexican government along the lines desired by the U.S. president, Woodrow Wilson, smoothed the way to a settlement.

By identifying their diplomatic interests the ABC powers showed that even distant South Americans are sensitive to North American intrusion in Latin America, and they thus strengthened their reputation as major participants in the affairs of the Western Hemisphere.

'Abd al-'Aziz, Muslim emir of Crete (ruled c. 949–c. 961).

·Nicephorus II's military conquest 13:64h

Abd al-Aziz, in full 'ABD AL-'AZIZ IBN AL-HASAN IBN MUHAMMAD AL-HASANI AL-'ALAWI (b. Feb. 24, 1878, or Feb. 18, 1881—d. June 10, 1943, Tangier, Morocco), sultan of Morocco from 1894 to 1908, whose reign was marked by an unsuccessful attempt to introduce European administrative methods in an atmosphere of increasing foreign influence. After the death in 1900 of his grand vizier, Ba Ahmed (Ahmad ibn Musa), Abd al-Aziz sought European advice in an attempt to modernize the country and in particular to reform the methods of taxation. These endeavours, defeated because of the complete lack of administrators trained in modern practices, caused great resentment among influential notables of the old school. Abd al-Aziz's brother, Moulay Hafid (Abd al-Hafid), raised the standard of revolt in Marrakech in 1907 and defeated Abd al-Aziz in battle on Aug. 19, 1908. Two days later the Sultan abdicated. Pensioned by his brother, he spent the rest of his life at Tangier. The Franco-Spanish occupation of Morocco followed his abdication by four years.

·Moroccan rebellion against

Westernizing 13:168f

'Abd al-'Aziz ibn 'Abd ar-Rahmān ibn Faysal ibn Turki 'Abd Allāh ibn Muḥammad Al Sa'ūd: see Ibn Sa'ūd.

'Abd al-Ghani (ibn Ismā'il) an-Nābulusi (b. March 19, 1641, Damascus—d. March 5, 1731), mystic prose and verse writer on the cultural and religious thought of his time.

Orphaned at an early age, he joined the mystical orders of the Qādiriyyah and the Naqshbandiyyah. He then spent seven years in isolation in his house, studying the mystics on their expression of divine experiences. 'Abd al-Ghani travelled extensively throughout the Islāmic world, visiting Istanbul in 1664, the Lebanon in 1688, Jerusalem and Palestine in 1689, Egypt and Arabia in 1693, and Tripoli in 1700.

His more than 200 written works can be divided into three categories: Šūfism (mysticism, largely within the main body of Islām, the Sunnis); travel accounts; and miscellaneous subjects, including prophecy and the question of the lawfulness of use of tobacco. The main components in his Šūfī writing are the concepts of *wahdat al-wujūd* ("divine existential unity" of God and the universe and, hence, of man). His travel accounts are the most important of his writings; the descriptions of his journeys provide vital information on the customs, beliefs, and practices of the peoples and places he visited.

Abdālī, the former name of one of the two chief tribal confederations of Afghanistan. When Aḥmad Khān Abdālī became king of Afghanistan and changed his name to Aḥmad Shāh Durrānī, the entire tribe also changed its name to Durrānī. *See further* Durrānī.

·Afghanistan and anti-Persian nationalism 1:174e

'Abd al-Ilāh (b. 1913, at-Ṭā'if, now in Saudi Arabia—d. July 14, 1958, Baghdad, Iraq), regent of Iraq (1939–53) and crown prince to 1958. Son of the Hashemite king 'Alī ibn Ḥusayn of the Hejaz (northwestern Arabia), who



'Abd al-Ilāh

Radio Times Hulton Picture Library

was driven from Arabia by Ibn Sa'ūd, he accompanied his father to Iraq in 1925. Upon King Ghāzī's death in 1939, 'Abd al-Ilāh was appointed regent for his four-year-old cousin and nephew, Fayṣal II. 'Abd al-Ilāh ruled Iraq for 14 turbulent years, loyally serving the throne and supporting the Allies during World War II. In April 1941, faced with an uprising of army officers led by Rashid Ali al-Gailani, who was sympathetic to Germany and Italy, the Regent was forced to leave Iraq. With British assistance, however, the revolt was suppressed by the end of May, and 'Abd al-Ilāh returned to Baghdad. Thereafter, in close collaboration with Nuri as-Said, he pursued a policy of moderate Iraqi nationalism and maintained strong ties with the West. When King Fayṣal reached legal age on May 23, 1953, the Regent relinquished his functions but remained as the young king's chief adviser and companion until both were killed during the Iraq revolution of 1958.

'Abdali Sultanate, former semi-independent state in the southern Arabian Peninsula, in what is now Yemen (Aden). Located just north of Aden city, it was one of the most important tribal areas of the Aden Protectorate, the forerunner of independent Yemen (Aden); its capital was Lahij. The sultanate was earlier tributary to Yemen (now Yemen [Ṣan'ā']), but gained its independence in 1728. The 'Abdali tribal people then seized Aden and remained independent until 1839, when they signed the first of several treaties with the British that led to the formation of the Aden Protectorate.

The sultanate was held by the Turks during World War I. The Ṣubayḥī (Subeihi) tribal area to the west came under 'Abdali jurisdiction in 1948, and the sultanate became part of Yemen (Aden) in 1967. The lands comprise a fertile area that has a settled population and produces fruit, grain, and other crops.

'Abd al-Karīm Qasim (Iraqi soldier): *see* Kassem, Abdul Karim.

'Abd al-Karīm Quṭb ad-Dīn ibn Ibrāhīm al-Jilī: *see* Jilī, al-.

'Abd al-Kūrī, island in the Indian Ocean, about 65 mi (105 km) southwest of Socotra (of which it is a dependency) and about 70 mi (110 km) east-northeast of Cape Guardafui. It is about 22 mi (35 km) long and about 3 mi (5 km) wide and supports fisheries. 12°12' N, 52°15' E

'Abd Allāh (712?–764), 'Abbāsī leader.

·al-Manṣūr's political rivals 11:461e

'Abd Allāh, ruler of the Umayyad dynasty in Spain (ruled 888–912).

·muwallad and Banū Qasī revolts 17:415d

'Abd Allāh, in full 'ABD ALLĀH IBN MUḤAMMAD AT-ṬĀ'ĪSHĪ, called 'ABDULLĀHĪ (b. 1846, Sudan—d. Nov. 24, 1899, Kordofan, Sudan), political and religious leader who succeeded Muḥammad Aḥmad—the Mahdī—as head of a religious movement and state within the Sudan.

'Abd Allāh followed his family's vocation for religion. In about 1880 he became a disciple of Muḥammad Aḥmad, who announced that he had a divine mission, became known as the Mahdī, and appointed 'Abd Allāh a caliph (*khalīfah*). When the Mahdī died in 1885, 'Abd Allāh became leader of the Mahdist movement. His first concern was to establish his authority on a firm basis. The Mahdī had clearly designated him as successor, but the Ashraf, a portion of the Mahdī's supporters, tried to reverse this decision. By promptly securing control of the vital administrative positions in the movement and obtaining the support of the most religiously sincere group of the Mahdī's followers, 'Abd Allāh neutralized this opposition. 'Abd Allāh could not claim the same religious inspiration as had the Mahdī, but, by announcing that he received divine instruction through the Mahdī, he tried to assume as much of the aura as was possible.

'Abd Allāh believed he could best control the disparate elements that supported him by maintaining the expansionist momentum begun by the Mahdī. He launched attacks against the Ethiopians and began an invasion of Egypt. But 'Abd Allāh had greatly overestimated the support his forces would receive from the Egyptian peasantry and underestimated the potency of the Anglo-Egyptian military forces, and in 1889 his troops suffered a crushing defeat in Egypt.

A feared Anglo-Egyptian advance up the Nile did not materialize. Instead 'Abd Allāh suffered famine and military defeats in the eastern Sudan. The most serious challenge to his authority came from a revolt of the Ashraf in November 1891, but he kept this from reaching extensive proportions and reduced his opponents to political impotence.

During the next four years, 'Abd Allāh ruled securely and was able to consolidate his authority. The famine and the expense of large-scale military campaigns came to an end. 'Abd Allāh modified his administrative policies, making them more acceptable to the people. Taxation became less burdensome. 'Abd Allāh created a new military corps, the *mulazimīyah*, of whose loyalty he felt confident.

But in 1896 Anglo-Egyptian forces began their reconquest of the Sudan. Although 'Abd Allāh resisted for almost two years, he could not prevail against British machine guns. In September 1898 he was forced to flee his capi-

tal, Omdurman, but he remained at large with a considerable army. Many Egyptians and Sudanese resented the Condominium Agreement of January 1899, by which the Sudan became almost a British protectorate, and 'Abd Allāh hoped to rally considerable support. But on Nov. 24, 1899, a British force engaged the Mahdist remnants, and 'Abd Allāh died in the fighting.

·al-Mahdī's succession 11:349b

·consolidation and holy war 13:113a

'Abd Allāh ibn al-'Abbās, often cited as IBN ABBĀS, called AL-ḤIBR ("the Doctor") or AL-BAḤR ("the Sea") (b. c. AD 619—d. 687/688, at-Ṭā'if, now in Saudi Arabia), one of the greatest scholars of early Islām and the first exegete of the Qur'ān.

In the early struggles for the caliphate, Ibn 'Abbās supported 'Alī and was rewarded with the governorship of Baṣra. Subsequently he defected and withdrew to Mecca. During the reign of Mu'āwiyah he lived in the Hejaz, going to Damascus, the capital, only occasionally. After the death of Mu'āwiyah he was in opposition to Ibn az-Zubayr and forced to flee to at-Ṭā'if, where he died.

'Abd Allāh ibn az-Zubayr (b. May 624, Medina, now in Saudi Arabia—d. November 692, Mecca), leader of a rebellion against the Umayyad ruling dynasty of the Islāmic empire, and the most prominent representative of the Muslim nobility of faith, which resented the Umayyad assumption of caliphal authority. As a youth he went on many of the military campaigns that marked the initial expansion of Islām, and in 651 he was nominated by the caliph (the titular leader of the Islāmic empire) 'Uthmān to aid in compiling an official recension of the Qur'ān. Subsequently remaining politically inactive, he took little part in the civil wars that followed the death of 'Uthmān in 656. Resenting the Umayyad victory that resulted from the civil wars, he refused to take an oath of allegiance to Yazīd, the son and heir presumptive of Mu'āwiyah, the first Umayyad caliph. When Yazīd became caliph in 680, Ibn az-Zubayr still refused the oath of allegiance and fled to Mecca. There he secretly gathered an army. Yazīd learned of this and dispatched forces of his own, which besieged Ibn az-Zubayr in Mecca. In 683 Yazīd died, and the besieging army withdrew. Ibn az-Zubayr was left in peace until 692, when the caliph 'Abd al-Malik sent an army to Mecca to force him to submit. Mecca was again besieged, and Ibn az-Zubayr was killed in the fighting.

'Abd Allāh ibn Ḥusayn: *see* Abdullah.

'Abd Allāh ibn Iskandar (b. 1532/33, Afrinkant—d. 1598, near Samarkand, both now in Uzbek S.S.R.), Shaybānīd ruler who unified the Uzbek people and brought his dynasty to the zenith of its power.

After conquering Bukhara and establishing his capital there in 1557, 'Abd Allāh deposed his uncle (1561) and declared that the ruler of the Uzbeks was to be his father, Iskandar, though he held real power himself. Because his authority over the Uzbeks was often challenged, he conducted military campaigns to subjugate those who did not accept Shaybānīd sovereignty, and so his reign was characterized by continued warfare. He captured Balkh, in Afghanistan, in 1573–74, Samarkand in 1578, and Tashkent and its hinterland in 1582–83. Although the Shaybānīds could hold the urban areas, they were unable to control the nomads of the steppes despite punitive expeditions to break their power, and it was this weakness that led to the extinction of the dynasty.

Ascending the throne after his father's death, 'Abd Allāh initiated administrative reforms, improved the currency, and authorized projects to build caravansaries and bridges.

The Shaybānids were orthodox Sunni Muslims and opposed the Shi'ism (the second major branch of Islām) of the Šafāvid dynasty of Iran. 'Abd Allāh's alliance against the Šafāvids was therefore sought by the other major Sunni powers, the Ottoman Turks in the west and the Mughal rulers of India. Attempting to subjugate the Shi'ites, he conducted raids into Iran in 1593–94 and 1595–96, but failed each time.

Toward the end of 'Abd Allāh's life a schism occurred in the dynasty when his son 'Abd al-Mu'min, governor of Balkh, challenged his authority; only with difficulty were father and son eventually reconciled. Taking advantage of this schism, the nomads defeated a Shaybānid army between Tashkent and Samarkand. 'Abd Allāh was killed during a punitive expedition against the rebels, and the death of his son six months later marked the decline of Shaybānid fortunes to their lowest point.

'Abd Allāh ibn Lutf Allāh ibn 'Abd ar-Rashid al-Bihdādini Hāfiz-i Abrū: see Hāfiz-i Abrū.

'Abd Allāh ibn Mu'āwiyah (d. AD 746/747), Shi'ite leader.

·Abbāsīd use of 'Alid sympathies 3:631h

'Abd Allāh ibn Sa'd ibn Abi Sarh (d. c. AD 656), governor of Upper (southern) Egypt for the Muslim caliphate during the reign of 'Uthmān (644–656), was the co-founder, with the future caliph Mu'āwiyah I, of the first Muslim navy, which seized Cyprus (647–649), Rhodes, and Cos (Dodecanese Islands) and defeated a Byzantine fleet off Alexandria in 652. He shared in the direction of the Muslim fleet that defeated the Byzantine navy in the battle of Dhāt aš-Šawārī, off the Lycian coast, in 655.

As governor in Egypt, Ibn Abi Sarh attacked the Christian Nubian Kingdom, in 651–652, and forced the Nubians to sue for peace. He was an enemy of 'Amr ibn al-Ās, who had conquered Egypt for the Umayyads and was governor of Lower Egypt.

·Nubian military expeditions 13:110b

'Abdallah ibn Ubayy (7th century AD), Muḥammad's opponent.

·Muḥammad's weakening of opposition 12:607h

'Abd Allāh ibn Yāsīn (d. c. 1060), Islāmic scholar and an early leader of the Almoravid (al-Murābiṭūn) reform movement, which spread over North Africa and Spain in the 11th century.

·Almoravid Sunni teachings 9:931e

·Moroccan Islāmic education attempt 13:157g

'Abd al-Malik ibn Marwān 1:5 (b. AD 646 or 647, Medina, now in Saudi Arabia—d. October 705, Damascus, now in Syria), fifth caliph (reigned 685–705) of the Umayyad Arab dynasty (661–750), the power of which he consolidated internally and externally by wise and tenacious rule.

Abstract of text biography. In 683 'Abd al-Malik and his father were exiled by Medinese rebels against the Umayyad central government in Damascus, but a Syrian Umayyad army, aided by 'Abd al-Malik, soon recaptured the city. After his father's brief rule (684–685) as caliph, 'Abd al-Malik acceded to the throne. His warfare against Northern Arab tribes, various Iraqi groups, and other forces opposing the dynasty resulted in their final pacification (691–692). The Umayyad conquest of North Africa was assured when Carthage was captured (697). In the administrative, cultural, and linguistic aspects of his internal reforms he showed favouritism to Arab Muslims, thereby fostering discontent with Umayyad rule.

REFERENCES in other text articles:

·Iraq under the caliphate 11:991f

·political and military career 3:628d

'Abd al-Mu'min (ibn 'Alī ibn Makhlūf ibn Yu'la ibn Marwān) 1:6, also called ABŪ MUḤAMMAD AL-KUMI (b. Tāgrā, now in Algeria—d. 1163, Rabat, now in Morocco), Berber caliph of the Almohad dynasty, conqueror and organizer of a Berber Islāmic empire that in the later 12th and early 13th centuries extended over most of North Africa and Spain.

Abstract of text biography. Rising from humble origins, 'Abd al-Mu'min was inspired by the puritanical Almohad religious reformer Ibn Tūmart, of whom he became the spiritual and political heir. Assuming the title of caliph in 1130, he continued the Almohads' struggle against the Almoravids. His 15-year campaign in the mountains of Morocco culminated in the capture of Marrakesh (1147), a massacre of the Almoravids, and the selection of Marrakesh as the capital of an empire. These events were followed by his conquest of a coalition of Arab tribes (1151) and of Tunisia and Tripolitania (1158–59); the rallying of nearly all of Muslim Spain to his cause; and finally his unification of the Berber clans of North-west Africa.

REFERENCES in other text articles:

·Almohad cultural history 9:932b

·Muslim political unity 17:417d

·North African Berber empire creation 13:158f

'Abd al-Muṭṭalib (d. 578), Muḥammad's paternal grandfather.

·Meccan prominence 12:606a

'Abd al-Qādir: see Abdelkader.

'Abd al-Qādir al-Jilāni (d. 1166), founder of the Qādiriyyah order of the mystical Šūfi branch of Islām. The Qādiriyyah functioned as an economic guild and social centre that, over and above the mosque and orthodox doctrine, created a cohesive identity for Šūfis by relating them to an eminent Muslim.

·Islāmic legendary attributes 9:951b

·Islāmic pilgrimage places 9:920a

·Šūfi humanitarian activity 9:922g

'Abd al-Qādir ibn Muḥyi ad-Din ibn Muṣṭafa al-Ḥasanī al-Jazā'iri (Algerian leader): see Abdelkader.

Abd al-Qadir wad az-Zayn, 19th-century Sudanese leader.

·Ottoman administration over Sudan 13:111e

'Abd al-Wādids, also known as ZAYYĀNIDS or BANŪ ZAYYĀN, dynasty of Zanātah Berbers (1236–1550), successors to the Almohad empire in northwestern Algeria. In 1236, the Zanātahs, former allies of the Almohads, gained the support of other Berber tribes and nomadic Arabs and set up a kingdom at Tilimsān (Tlemcen), headed by the Zanātah amir Yaghmurāsān (ruled 1236–83). Yaghmurāsān was able to maintain internal peace through the successful control of the rival Berber factions, and, in the face of the Marinid threat in the west, he allied with the sultan of Granada and the king of Castile.

After his death, however, the Marinid sultan Abū Ya'qūb besieged Tilimsān for eight years (1298–1306). The city was finally taken in 1337 by Abū al-Hasan, and a 10-year period of Marinid domination followed. Recaptured by the 'Abd al-Wādids in 1348, Tilimsān was again stormed by the Marinids in 1352, who ruled for another seven years.

'Abd al-Wādid attempts at expansion eastward into Hafsid Tunis also proved disastrous, and, for a time in the early 15th century, they were virtual vassals of the Hafsid state.

The kingdom's chronic weakness may be traced to its lack of geographical and cultural unity, the absence of fixed frontiers, and constant internal rebellions. It further suffered from a shortage of manpower, having to rely on intractable Arab nomads for soldiers. Its economic prosperity was based on the position of Tilimsān along the trade route between the Mediterranean ports and Saharan oases. The 'Abd al-Wādid state collapsed in 1550, when Tilimsān was seized by the Ottoman

Turks after a half century of alternating Spanish-Turkish suzerainty.

·empire location map 13:159

·North African rule amidst fragmentation 13:159d

'Abd ar-Rahmān I, called AD-DĀKHIL RAHMĀN (fl. 750–788), member of the Umayyad ruling family of Syria who founded an Umayyad dynasty in Spain.

When the 'Abbāsids overthrew the Umayyad Caliphate in 750 and sought to kill as many of the Umayyad family as possible, 'Abd ar-Rahmān fled, eventually reaching Spain. The Iberian Peninsula had for some time been occupied by Muslim Arab forces, and he saw political opportunity for himself in the rivalries of the Qais and Yaman, the dominant Arab factions there. By shifting alliances and using mercenary support, he placed himself in a position of power, attacking and defeating the Governor of al-Andalus in 755 and making Córdoba his capital. As news of his success spread eastward, men who had previously worked in the Umayyad administrative system came to Spain to work with 'Abd ar-Rahmān, and his administrative system came to resemble that formerly operative in Damascus.

'Abd ar-Rahmān secured his realm against external attack by defeating armies sent by Charlemagne and the 'Abbāsīd caliph. Although he faced a series of rebellions by Muslim Spaniards, Berbers from the mountainous areas, and various Arab clans, his authority and dynasty remained firmly in power.

·'Abd al-Malik's strategy and victory 1:5e

·Córdoba's importance in caliphate 5:171f

·Iraq under the caliphate 11:991e

·opposition to Umayyad rule 3:627h *passim* to 628f

·Umayyad influence in Spain 3:631d

·Umayyad victory and Meccan sage 1:1047f

'Abd ar-Rahmān II, fourth Umayyad ruler of Muslim Spain who enjoyed a reign (822–852) of brilliance and prosperity, the importance of which has been underestimated by some historians.

'Abd ar-Rahmān II was the grandson of his namesake, founder of the Umayyad dynasty in Spain. His reign was an administrative watershed. As the influence of the 'Abbāsīd Caliphate, then at the peak of its splendour, grew, Córdoba's administrative system increasingly came into accord with that of Baghdad, the 'Abbāsīd capital. 'Abd ar-Rahmān carried out a vigorous policy of public works, made additions to the Great Mosque in Córdoba, and patronized poets, musicians, and men of religion. Although palace intrigues surrounded his death in 852, they did not diminish his accomplishments.

·cultural achievements and vassal revolt 17:414h

·Sevillian architectural enrichment 16:581a

'Abd ar-Rahmān III al-Nāṣir 1:7, in full 'ABD AR-RAHMĀN IBN MUḤAMMAD IBN 'ABD AL-LĀH IBN MUḤAMMAD IBN 'ABD AR-RAHMĀN IBN AL-ḤAKAM AR-RABĪ' IBN HISHĀM IBN 'ABD AR-RAHMĀN AD-DĀKHIL, also known as AN-NĀSIR AL-UMAWI (b. January 891—d. Oct. 15, 961, Córdoba), first caliph and greatest ruler of the Umayyad Arab Muslim dynasty of Spain. He reigned as hereditary amir (prince) of Córdoba from October 912, and took the title of caliph in 929.

Abstract of text biography. Immediately after his accession to power, 'Abd ar-Rahmān began to suppress rebels and to establish the authority of his capital, the Andalusian city of Córdoba. In the course of his struggle against the crypto-Christian rebel 'Umar Ibn Hafṣūn and other opponents, he captured Seville (913) and other cities, and finally seized Toledo (933), the last Muslim centre of resistance to his rule. He also commenced campaigns against the Christian armies of León and Navarre in northern Spain (920), capturing Pamplona, capital of Navarre (924). King Ramiro II of León, however, inflicted on the Córdoba forces at Simancas (939) a reverse from

which 'Abd ar-Rahmān barely escaped with his life. In North Africa he pursued a policy of opposition to the Fātimid dynasty of al-Qayrawān (now in Tunisia).

As a civil ruler, 'Abd ar-Rahmān achieved success in promoting Córdoba prosperity, fostering architecture and the arts, organizing an efficient administration, securing toleration for his Christian and Jewish subjects, and spreading the fame of Córdoba throughout the Mediterranean world.

REFERENCES in other text articles:

- 'Abbasid decline and rival caliphates 3:640b
- Christian conversion and loss of force 17:415d
- Seville's recapture 16:581a

Abd ar-Rahman, Moulay, Arabic transliteration 'ABD AR-RAHMĀN IBN HISHĀM (b. 1789/90—d. Aug. 28, 1859, Meknes, Mor.), 24th ruler of the 'Alawid dynasty of Morocco, whose reign was marked by both peaceful and hostile contacts with European powers.

Having succeeded to the throne without internal conflict, he became an able administrator and active builder of public works. During his long reign his authority was often challenged by dissident tribes and disaffected notables; he suppressed revolts in 1824, 1828, 1831, 1843, 1849, and 1853.

The more serious challenge to his kingdom came from abroad. The traditional policy of the 'Alawids of encouraging piracy to raise funds led to conflict with the European powers. As a reprisal for seizing their ships, the English blockaded Tangier, and the Austrians bombarded the ports of Arzila, Larache (al-'Arā'ish), and Tétouan. The port of Salé was bombarded in 1851, again as a reprisal for Moroccan piracy. Abd ar-Rahman attempted to expand his influence eastward by supporting Abdelkader, leader of Algerian resistance against the French. This policy led to a disastrous war with France in 1844. By the Treaty of Tangier, October 1844, Abd ar-Rahman was obliged to recognize France's dominant position in Algeria. During his reign, however, he also signed a number of commercial treaties with the European powers, and he preserved Moroccan independence by his astute diplomacy.

- Moroccan role in French-Algerian war 13:168d

'Abd ar-Rahmān ibn Rustam, 8th-century Muslim ruler of Tahart.

- North African Berber dynasty 13:156g

'Abd ar-Rahmān Sanchuelo, 11th-century Umayyad caliph.

- Umayyad dynasty decline 17:416c

Abdelkader 1:7, in full 'ABD AL-QĀDIR IBN MUḤYI AD-DĪN IBN MUṢTAFĀ AL-HASANĪ AL-JAZĀ'IRI (b. Sept. 6, 1808, near Mascara, Algeria—d. May 26, 1883, Damascus), military and religious leader of the Algerians in their 19th-century struggle against French domination and founder of an Algerian state.

Abstract of text biography. Elected (1832) to succeed his father as leader of one of the Algerian religious brotherhoods, Abdelkader established control, as emir, over the interior of the Oran region. He scored military successes against the French, and he rallied many Algerians to his support. His conclusion of the Treaty of Tafna (1837) with the French further increased his power. He then was able to organize an Algerian state and to extend his authority over new territories, reaching to the Moroccan border. The breakdown of his agreement with the French was followed by his protracted struggle (1840–46) with French forces led by Gen. T.R. Bugeaud, his surrender to the French, and his subsequent imprisonment by them. Freed in 1852, Abdelkader lived thereafter in Damascus.

- REFERENCE in other text article:
- Algerian nationalism 13:163c

Abd el-Krim, full name in Arabic MUHAMMAD IBN 'ABD AL-KARIM AL-KHATTĀBĪ (b. 1882, Ajdir, near Melilla, Mor.—d. Feb. 6, 1963,

Cairo), leader of a resistance movement against Spanish and French rule in North Africa and founder of the short-lived Republic of the Rif (1921–26). A skilled tactician and a capable organizer, he led a liberation movement that made him the hero of the Maghrib (northwest Africa). Designated by Ho Chi Minh, first president of North Vietnam, as the "precursor" of armed struggle for independence, Abd el-Krim was defeated only by the military and technological superiority of the colonial powers.

Son of an influential member of the Berber tribe Banū Uriaghel, Abd el-Krim received a Spanish education in addition to the traditional Muslim schooling. He was employed as a secretary in the Bureau of Native Affairs. In 1915 he was appointed the *qāḍī al-quḍāt* ("chief Muslim judge") for the district of Melilla, where he also taught at a Hispano-Arabic school and was the editor of an Arabic section of *El Telegrama del Rif*.

During his employment with the Spanish protectorate administration he began to be disillusioned with Spanish rule, eventually opposed Spanish policies, and was imprisoned. He escaped and in 1918 was made chief Muslim judge at Melilla again, but he left the post in 1919 to return to Ajdir.

Soon Abd el-Krim, joined by his brother, who later became his chief adviser and commander of the Rif army, was organizing tribal resistance against foreign domination of Morocco. In July 1921 at Annoual he defeated a Spanish army commanded by Gen. Fernández Silvestre, pursuing them to the suburbs of Melilla. At that time the Republic of the Rif was founded with Abd el-Krim as its president. Overcoming tribal rivalries, he began organizing a centralized administration based upon traditional Berber tribal institutions. He defeated another Spanish army in 1924; in 1925 he almost reached the ancient city of Fez (modern Fès) in his drive against French forces that had captured his supply base in the Wargha valley.

Faced with Abd el-Krim's successes and seeing in his movement a threat to their colonial possessions in North Africa, the Franco-Spanish conference meeting in Madrid decided upon joint action. As a Spanish force landed at Alhucemas near Ajdir, a French army of 160,000 men under Marshal Philippe Pétain attacked from the south. Confronted with this combined Franco-Spanish force of 250,000 men with overwhelming technological superiority, Abd el-Krim surrendered on May 27, 1926, and was exiled to the island of Réunion in the Indian Ocean. Receiving permission in 1947 to live in France, he left Réunion and was granted political asylum en route by the Egyptian government; for five years he presided over the Liberation Committee of the Arab West (sometimes called the Maghrib Bureau) in Cairo. After the restoration of Moroccan independence, King Muhammad V invited him to return to Morocco, which he refused to do as long as French troops remained on North African soil. Further information about Abd el-Krim may be found in David S. Woolman's *Rebels in the Rif: Abd el Krim and the Rif Rebellion* (1968) and in Rupert Furneaux's *Abdel Krim: Emir of the Rif* (1967).

- Spanish-French victory 17:440d

Abdera, modern ÁVDIRA in the *nomós* of Xánthi in Greece, ancient town on the coast of Thrace near the mouth of the Néstos River. The people of Teos, evacuating Ionia when it was overrun by the Persians under Cyrus (c. 540 BC), succeeded in establishing a colony there that developed a brisk trade with the Thracian interior. Abdera was a prosperous member of the Delian League in the 5th century but was crippled early in the 4th century BC by Thracian incursions and declined sharply in importance. The philosophers Protagoras and Democritus were citizens of Abdera.

- Archaic Greek settlements 8:332b; map 326
- map, Greece 8:314

Abdi-Ashirta, 14th-century-BC king of Amurru.

- expansionist military policies 17:935f

Abdias the Proselyte, also known as OBA-DYA HA-GER, 12th-century Italian monk and music copyist who converted to Judaism.

- style and modernity of works 10:206h

Abdillahi Ise (1922–), prime minister of Italian Somaliland 1956–60.

- election and independence leadership 6:102e

'Abd Manāf, house of, Quraysh tribal group.

- tribal economic dominance 1:1046f

'Abd ol-Bahā' (1844–1921), eldest son of Bahā' Allāh and early leader of the Bahā'ī community.

- Bahā'ī leadership and development 2:588d
- *passim* to 589g

abdomen, in vertebrates, portion of the body between the chest and the pelvis (see abdominal cavity). In arthropods (e.g., spiders), it is the posterior part of the body, containing the reproductive organs and the rear portion of the digestive system.

invertebrate

- Araneida body structure 1:1070c; illus.
- beetle anatomy and appearance 4:832g
- insect anatomy and function 9:615d; illus. 614
- Lepidoptera anatomy and functions 10:825h; illus. 820
- scorpion anatomy and stinger 16:402f; illus.

vertebrate

- cranial nerve distributions 12:1020f
- digestive system diseases and treatment 5:799a
- injuries from explosions 4:1043e
- muscle adaptation in human evolution 12:637b
- peritoneal function and disease 2:1179c; illus.
- spinal nerve distributions 12:1023g
- surgical procedures 11:837g

abdominal aorta, a major artery, the section of the aorta that supplies blood to the abdominal organs and, after branching, to the pelvic organs and legs.

- human cardiovascular system anatomy 3:883a

abdominal cavity, largest hollow space of the body. Its upper boundary is the diaphragm, a sheet of muscle and connective tissue that separates it from the chest cavity; its lower boundary is the upper plane of the pelvic cavity. Vertically it is enclosed by the vertebral column and the abdominal and other muscles. The abdominal cavity contains the greater part of the digestive tract, the liver and pancreas, the spleen, the kidneys, and the adrenal glands located above the kidneys. Most of these structures, as well as the inner surface of the abdominal cavity, are covered with the peritoneum, a well-lubricated and extensive membrane that holds the abdominal structures in position.

- ascites involvement in liver disease 10:1272a
- blood circulation and pressure 2:1132a
- peritoneal function and disease 2:1179c; illus.
- uterine changes during pregnancy 14:970d

abdominal delivery (childbirth): see cesarean section.

abdominal pregnancy: see pregnancy.

abdominis muscles, muscles of the anterolateral walls of the abdominal cavity, composed of three flat muscular sheets, from without inward: external oblique, internal oblique, and transverse abdominis, supplemented in front on each side of the midline by rectus abdominis.

The first three muscle layers extend between the vertebral column behind, the lower ribs above, and the iliac crest and pubis of the hip bone below. Their fibres all merge toward the midline, where they surround the rectus ab-