

Collier's
Encyclopedia

3

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Collier's Encyclopedia

with Bibliography and Index

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The following three tools are indispensable to the user of Collier's Encyclopedia if he is to take full advantage of its resources. They may be found by consulting the Table of Contents on Page iii of Volume 24.

HOW TO USE THE BIBLIOGRAPHY HOW TO USE THE INDEX NOTE ON THE PRONUNCIATION SYSTEM

The Pronunciation System

The system employed to indicate pronunciation in this encyclopedia is based on the alphabet of the International Phonetic Association. This alphabet has two notable advantages over other pronunciation systems: it is widely known beyond the bounds of any one nation, and it is readily applicable to all the languages of the world.

In the application of the system in the encyclopedia, the phonetic symbols are printed in square brackets following the article heading, and stresses are indicated by accents placed immediately after stressed vowels, a heavy or a light accent indicating respectively a primary or a secondary stress.

a	arm, father, shot	i	eve, heat, baby	s	saw, also, pass
ā	(Fr.) <i>elan</i> , <i>emploi</i> ¹	ɪ	if, sting	ʃ	she, ration, hash
a	(Fr.) <i>attacher</i> , <i>bal</i>	k	cane, broken, lake	tʃ	chin, hatchet, reach
æ	at, back, can	χ	(Ger.) <i>ich</i> , <i>ach</i> ²	t	two, matter, hat
ǣ	(Fr.) <i>ainsi</i> , <i>vin</i> ¹	l	lot, allow, real	θ	three, ether, bath
ai	ice, spine, cry	m	me, farmer, him	ð	this, other, bathe
au	ounce, loud, cow	ɱ	mo , funny, in	u	rule, loop, shoe
b	bat, rabbit, tab	ŋ	ang , ing	ü	(Fr.) <i>cru</i> ; (Ger.) <i>grün</i> ⁵
d	do, ladder, had	o	od, note, go	ʊ	bull, book
e	elite, fate, pray	ö	(Fr.) <i>eux</i> ; (Ger.) <i>schön</i> ⁴	ʌ	up, but, son
ɛ	end, yet	ɔ	orb, ball, saw	v	vine, avid, live
ə	ago, maker, charity ³	ō	(Fr.) <i>bon</i> , <i>rompre</i> ¹	w	we, awake
ɜ	earth, first, burn	œ	(Fr.) <i>leur</i> ; (Ger.) <i>können</i> ⁴	y	yes, cure
f	for, effort, life	œ	(Fr.) <i>brun</i> , <i>lundi</i> ¹	ʀ	(Fr.) <i>montagne</i> ⁶
g	go, figure, bag	ɔi	oil, point, toy	z	zoo, dazzle, raise
h	hot, behave	p	pat, upper, mop	ʒ	pleasure, rouge
		r	red, worry, hear	dʒ	joke, fudge

¹ The tilde (~) indicates that the vowel above which it appears is nasalized.

² The schwa (ə) is used to indicate a vowel sound common in unstressed syllables in English. It is closely akin to ʌ, the vowel sound in *but*.

³ The single symbol χ has been used to represent both the consonant sounds found in the German words *ich* and *ach*. Since, as a rule, the vowel that precedes this sound makes it either palatal or velar, it is unnecessary to indicate the distinction by phonetic symbols.

⁴ The symbol ö may be approximated by pronouncing the vowel sound in *urn* or *fir* but with the *r* silent, as in Southern speech. The symbol œ represents the same sound, but shortened.

⁵ The ü sound may be approximated by rounding the lips as if to pronounce u while saying i.

⁶ The symbol ʀ, which occurs with some frequency in French and Russian names, represents a consonantal *v*, approximated by pronouncing all but the last two sounds of the word *ouyon*.

ART NOUVEAU to BEETLE

ART NOUVEAU [ar nu'vo'], a style in architecture and the applied and decorative arts, as well as painting and sculpture, probably the last unified style of the western world. It developed during the 1890's when artists made a conscious effort to break with what they regarded as worn-out formulas of the past. Painters and sculptors rejected the imitation of nature; architects and designers denounced the imitation of styles of the past. They sought a unified style in which paintings or tapestries on the wall were echoed by furniture in the room, glass and flatware on the table, and even dress and jewelry.

Chief characteristics of the style were evocative and richly symbolic forms and meanings that were emphatically decorative and two-dimensional; sinuously curving lines; and preoccupation with flat pattern. It mattered little whether such linear decoration was applied to a book title or a building façade.

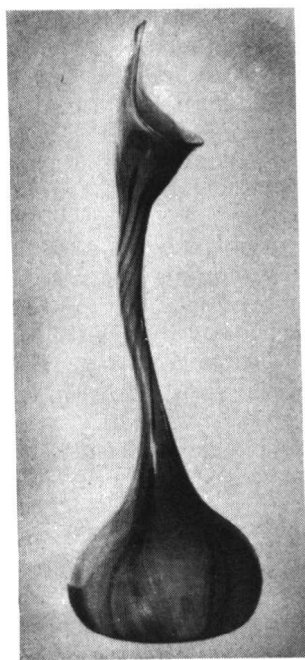
The sources of Art Nouveau were manifold. The rococo, the Celtic art of Ireland and Scotland, the later or Flamboyant Gothic style, Javanese batiks, Etruscan vases, and particularly Japanese woodcuts were of great importance to the originators of the style. Most directly, however, Art Nouveau derived from the English arts-and-crafts movement of the 1880's. The movement was thoroughly international, spreading rapidly throughout the European continent, Great Britain, and the two Americas.

In Great Britain book design ever since the early 1880's showed manifestations characteristic of the new style. One of the most influential Art Nouveau graphic artists was

Aubrey Vincent Beardsley (1872-1898), whose eccentric drawings did not illustrate specific scenes but served as commentaries that started where the text ended.

Charles Rennie Mackintosh (1868-1928), the Scottish architect who was active as designer of everything from buildings to silverware and wallpapers, was the dominant British representative of the Art Nouveau style. Mackintosh's work was also a major influence on artistic and architectural developments on the Continent.

In France, where the term Art Nouveau was first coined, the style was closely allied to the Symbolist movement in poetry and in painting. Paul Gauguin (1848-1903) and his friends were among the originators of the French Art Nouveau. Henri de Toulouse-Lautrec (1864-1901) was the most important figure: especially in his posters and lithographs, Toulouse-Lautrec yielded to the Art Nouveau arabesque, permitting the line to move with a spirited and vivacious flow. While Toulouse-Lautrec was doing posters for the Moulin Rouge cabaret, the architect Hector Guimard designed the Paris Metro stations with their cast-iron orchid-like stalks which were part of the Paris street scene in the late 1890's. The important Belgian architects Henry van de Velde and Victor Horta assumed a prominent place in the Art Nouveau movement, and Brussels was, in fact, the center of the style during its early days. Art Nouveau had a great many followers in Germany. There, under the name *Jugendstil*, it reached its greatest popularity. In Spain the architect Antonio Gaudí achieved the most personal and the most original variation on the Art Nouveau theme.



LILLIAN NASSAU

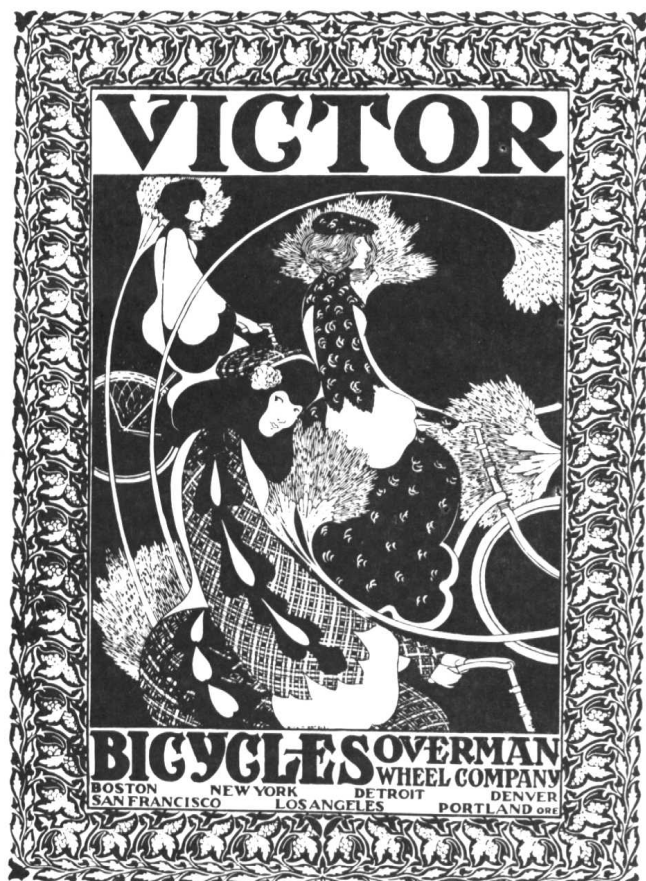


BETTMANN ARCHIVE

THE ART NOUVEAU STYLE dominated all of the visual arts for about 20 years beginning in the early 1890's. Glassware, such as this Louis Tiffany vase, employed its swirling organic line. Its intricate embellishment appears even on the hands of a bank clock done by the American architect Louis Sullivan. The lithograph *Rose* by the Czech illustrator Alphonse Mucha uses for pure decorative effect its rich and sinuous curves.



LILLIAN NASSAU



BETTMANN ARCHIVE

POSTER by the American illustrator Will Bradley uses the sweeping lines and involvement with pattern of the late 19th-century Art Nouveau.

In the United States the architect Louis Sullivan (1856-1924) was the most significant precursor of the style and Louis Comfort Tiffany (1848-1933), the glass designer and jeweler, was its leading exponent.

The Art Nouveau style reached its high point around 1900 but was then quickly discarded, as the leading architects and designers turned toward simplicity and precision and were more interested in the possibilities of machine technology than in hand-craftsmanship. The rich decoration of the 1890's made way for the geometric, unembellished surfaces of the early twentieth century and Art Nouveau went out of fashion, only to be rediscovered fifty years later.

PETER SELZ

ARTOIS [a'rtwa'], formerly a province in northwestern France, bounded by the provinces of Flanders on the northeast and Picardy on the south and southwest and by the English Channel on the northwest. Like Flanders, it was divided into Walloon and Flemish sections by the Lys River. The terrain is mostly flat but is traversed from southeast to northwest by low hills forming the watershed between the basin of the North Sea and the English Channel. The name Artois was derived from the Atrebrates, who inhabited it at the time of Caesar. The capital was Arras. When Baldwin I, count of Flanders, married Judith, daughter of the Carolingian king, Charles the Bald, he received Artois as Judith's dowry. It belonged to the counts of Flanders until 1180, when Philip Augustus of France married Isabel, daughter of Count Thierry d'Alsace, and received Artois as her dowry. In 1322 Artois passed to the House of Burgundy as a result of the marriage of Otto (Otto) IV to the daughter of Philip V of France. It passed with

part of the Burgundian domains to the royal house of Austria in 1477. Louis XI claimed Artois with other parts of Burgundy in the same year, on the death of the duke of Burgundy, but it was retained by the Austrian royal house. The French conquered Artois, and the conquest was recognized in the Treaty of the Pyrenees in 1659. After the French Revolution, Artois was formed into most of the department of Pas-de-Calais. See also BURGUNDY; PAS-DE-CALAIS.

SAMUEL VAN VALKENBURG

ARTSYBASHEV, MIKHAIL PETROVITCH [a'rtsi-ba'fəf] (1878-1927), Russian novelist, was born in the Ukraine, Oct. 18, 1878, and died as a political émigré in Warsaw, Mar. 3, 1927. His ancestry, like that of many Russians, shows a complex origin, with a strong strain of Tatar blood. His mother was Polish.

Artsybashev at first followed a career as a painter, even attaining some repute as a caricaturist, but subsequently devoted himself to the writing of short stories, followed by novels and plays. His first short story, *Pasha Tumanov*, was published in 1901.

Like many other expressions of the realistic school, his writings show Russian life frankly and even brutally. Very often his literary expression, although deep and vividly colored, degenerates into a quite naked exhibit of a society of dissolution, a morbidly exaggerated picture of crime and sexual folly. Some of his novels deal with incurable tuberculars, as, for instance, in *Bunt* ("Mutiny"), *Smert Lande* ("Death of Lande"), or *Sanin*. At the age of twenty-five he published his first substantial novel, *Sanin*, which at once gained him a national reputation. This work showed him already in revolt against social restraints, away from oppression and conventional regimentation.

Among Artsybashev's important novels and plays are *Rabotchi Shevyrev* ("Worker Shevyrev"), *Poslednei Tcherty* ("At the Extreme Limit"), *Revnost* ("Jealousy"), and *Voyna* ("War"). Some of his writings deal with episodes taken from the bloody repression of revolutionary movements by the Tsarist government. Such are *Krovavoye Pyatno* ("Bloody Spot"), *Na Byelom Snyegu* ("On the White Snow"), *Odin Den* ("One Day"), *Tchelovyecheskaya Volna* ("Human Wave"), and other short stories.

For having attempted to discredit revolutionary ardor by acknowledging revolutionary frustration in some of his writings, Artsybashev was expelled from Russia in 1923 by the Soviet government. He was repeatedly sued before courts, and his novels, in many instances, were confiscated as immoral. He was the father of Boris Artzybasheff, Russo-American illustrator and writer.

K. V. GRINIUS

ARTZYBASHEFF, BORIS [artsiba'fəf] (1899-1965), American illustrator known especially for his imaginative representations of the disquieting confrontation between modern man and his awesome technology. Artzybasheff, son of the Russian writer Mikhail Petrovich Artsybashev was born in Kharkov, Russia, on May 25, 1899. In 1919 he emigrated to the United States, where he worked first in an engraving plant and later as a draftsman and cartoonist. In time he acquired a reputation as an advertising artist and illustrator for books and periodicals.

Artzybasheff's work, always a model of meticulous draftsmanship, ranged from gentle animal illustrations prepared for such children's books as his *Aesop's Fables* (1933) to the bizarre fantasy of his numerous covers for *Time* magazine. He was perhaps at his best in his renderings of machines, which he whimsically endowed with faces, limbs, and per-



STANDARD OIL COMPANY OF NEW JERSEY

ARUBA, a small, rocky, semiarid island near the coast of Venezuela, in the Netherlands Antilles. The divi-divi tree shown here is commonly known as the one-way tree because the winds, blowing constantly from the northeast, cause it to lean in one direction.

sonalities. A frequent theme was the diminution of man by the uncanny products of his ingenuity: giant computers that wildly spew endless yards of punched tape from gaping mouths; orbiting satellites that leer smugly. Many such drawings appear in *As I See* (1955). Artzybasheff died in Lyme, Conn., July 16, 1965.

NAHUM WAXMAN

ARUBA [əru'ba], an island of 69 square miles (179 sq km), in the Caribbean Sea, 165 miles (266 km) northeast of Maracaibo, Venezuela, and 50 miles (80 km) north of the island of Curaçao. Aruba with Curaçao and Bonaire forms the Leeward Islands group of the Netherlands Antilles. Aruba was formed by a capping of limestone on top of ancient crystalline rocks. Much of the softer limestone has been eroded, leaving a series of low limestone hills and ridges. The highest elevation on the island is a little more than 600 feet (183 meters). The northeastern and northern coasts are cliffed, and the southern coast is fringed by coral. The island is within the path of the Northeast Trade Winds, but because of its low elevation these winds deposit little moisture. The average annual rainfall is about 20 inches (500 mm) and November is the wet month, with about 5 inches (125 mm). The average temperature is 81°F., (27°C.), varying between 78°F. (26°C.) in January and 83°F. (28°C.) in September. The island is semiarid, and vegetation is limited to grass, cacti, agaves, mangrove swamps, and palms. Lack of water is a problem, but a government distillation plant converts seawater into drinking water.

A major economic activity on the island is oil refining. Since 1925, U.S., British, and Dutch firms have refined crude oil from Venezuela's Maracaibo oil field on Aruba, then shipped the refineries' products, including gasoline, to Europe and the United States. The oil companies have built houses, schools, roads, and other facilities for their employees. Machinery, consumer goods, and foodstuffs are imported. Agriculture, hampered by the lack of rain, is limited largely to household and small truck gardens. Goats are the most important domestic animal. Tourism has become increasingly important, and several large hotels have been built. A rapidly growing population (3,792 in 1870; 9,204 in 1915; and 61,300 in 1972) and reduced job opportunities because of automation in the oil industry have produced economic difficulties, which the government has tried to solve by promoting industry, agriculture, and tourism.

The population is cosmopolitan in character, including

North and South Americans, Europeans, Chinese, and East Indians. Dutch, Papiamentu (a local dialect), English, and Spanish are spoken. The capital and chief city is Oranjestad.

The Spanish occupied Aruba early in the 16th century but in 1634 were driven out by the Dutch, who have since held the island continuously except for a period of British rule during the Napoleonic Wars.

In the mid-1970's the party controlling Aruba's local government council called for independence and separation from the other Netherlands Antilles. In an island-wide referendum in 1977 this proposal won heavy approval. See also NETHERLANDS ANTILLES. For color map, see PUERTO RICO.

JOHNSON E. FAIRCHILD AND NORA MARY SIFFLEET

ARUM [ε'rum], also called aroids, a large family of plants with possibly 100 genera and about 1500 species. They are chiefly tropical, although the jack-in-the-pulpit, *Arisaema triphyllum*, and skunk cabbage, *Simplocarpus foetidus*, are found in eastern North America. The western skunk cabbage, *Lysichiton camtschatcense*, is found on the Pacific Coast. Many species are grotesque in appearance. What is usually considered the flower is actually a spathe, or modified leaf, protecting the clublike spadix, on which are crowded the tiny true flowers. Some species, like the calla lily, *Zantedeschia aethiopica*, are ornamental, and a few yield important food products. The tuberous roots often contain starch, and become edible after cooking removes the bitter taste of the raw root. Dasheens and taros, genus *Colocasia*, are the staple food of millions of people in tropical areas. Various species of *Xanthosoma*, known as vauta or malanga and native to tropical America, are cultivated like taro. In Hawaii taro tubers are often fermented and made into an edible paste called poi. Arum is also the common name for species in the genus *Arum*. In England, the cuckoopint, or wake-robin, *A. maculatum*, is sometimes cultivated. Its root yields an edible starch called British arrow-root or Portland sago.

JOHN C. WISTER

JACK-IN-THE-PULPIT, a species of the arum family, is a wild flower which appears in the spring. Its "flower" actually consists of the spadix surrounded by the green-striped spathe.



THE AMERICAN MUSEUM OF NATURAL HISTORY



WILD CALLA, another North American plant of the arum family, has a pure white spathe beneath the spadix with its cluster of tiny flowers.

THE AMERICAN MUSEUM OF NATURAL HISTORY

ARUNDEL [æ'rʌndl], England, a small town and municipal borough in West Sussex, 58 miles (93 km) southwest of London and 4 miles (6 km) inland from the Channel coast. At the time of the Domesday Book (1086) it was a prosperous port and town. William the Conqueror granted it to Roger de Montgomery, who built the castle overlooking the gap of the river Arun in the South Downs. The castle, extensively restored in the late 19th century, is the seat of the Duke of Norfolk, Earl Marshal of England. Pop. 1971, 2,400. A. E. SMAILES

ARVADA, a city in north central Colorado, in Jefferson Co., on Ralston Creek, a tributary of the South Platte River. Incorporated in 1904, Arvada, a suburb of Denver, is a business and residential city at the foot of the Front Range. Manufactures include sheet metal, steel products, and parts and fuels for the aerospace industry. Pop. 1970, 49,083.

ARVIDA, a city in Quebec, Canada, in Chicoutimi Co., situated on the Saguenay River about 65 miles (105 km) from its confluence with the St. Lawrence River and 115 miles (185 km) north of Quebec, on the Canadian National Railways. Because of the excellent water-power resources of the Saguenay River, this site was chosen for the erection of the largest aluminum refinery in the world, to which the ore is brought by ship from Guyana. Arvida was established and incorporated in 1926. Pop. 1971, 18,448.

DONALD F. PUTNAM

ASA [e'sə], a king of Judah, ruling from 915 to 875 B.C. He opposed every form of idolatry and removed the idols that his father had introduced into the land. He was attacked by Baasha, king of Israel, but his ally Ben-hadad, king of Syria, came to his assistance and forced Baasha to leave Judah in peace. Asa died after reigning 41 years, and was succeeded by his son Jehoshaphat.

MORRIS A. GUTSTEIN

ASAFETIDA [æsəf'e'tidə], also called devil's dung or food-of-the-gods, a gum resin obtained from the rhizomes and roots of *Ferula assafoetida* and of other species of *Ferula*, plants found in Iran, Turkestan, and Afghanistan. The soft mass or irregular lumps have a garliclike odor and bitter taste. In medicine, asafetida is used as a carminative to relieve intestinal flatulence. JOHN A. BORNEMAN, JR.

ASAHIGAWA [asahi'gawə], the principal city in interior Hokkaido, the most northern of the Japanese islands. It lies on the upper course of the Ishikari River, in the west central part of the island. Asahigawa has a mean annual temperature of 41°F. (5°C.); the temperature in January, the coldest month, averages 14°F. (-10°C.). An average of 42 inches (1,070 mm) of rain falls every year, and snow falls heavily in winter. Because the Asahigawa district has a warmer and somewhat less cloudy summer season than the rest of Hokkaido, it produces a variety of agricultural crops, including rice (the major crop), oats, potatoes, beans, peas, buckwheat, rye, and a little wheat. Since the city is a railroad center and the main rail junction of interior Hokkaido, it has railroad yards and shops. It is also an administrative center, and was a military headquarters and a horse procurement center for the Japanese army toward the end of World War II. Asahigawa is noted for its right-angled street pattern. There is a small gas company in the city, as well as an alcohol plant, paper pulp mills, an aluminum-casting plant, a power station, and a radio station. Just north of the city is an airport. Principal products are lum-

ber, sake (rice wine), woodenware, cotton textiles, machinery, and tools.

An ancient Ainu village was long situated near the site of Asahigawa; a remnant of this village exists about 2.5 miles (4 km) outside the city. The modern development of the city of Asahigawa started late in the 19th century, after the introduction of railroads. The nearby 40-acre (16-hectare) Tokiwa Park is a winter resort and a popular ski center. Pop. (est. 1976), 320,500. JOHNSON E. FAIRCHILD

ASANSOL [u'sanso'l], a city in eastern India, located in west Bengal, near the Bihar-Bengal boundary line, 132 railroad miles northwest of Calcutta. The city is near the Damodar River, at the eastern edge of the Chota Nagpur Plateau. It has a cool, dry winter season, the average January temperature being 60°F. (15°C.). The rest of the year is either hot and dry, or hot and wet. Between 50 and 100 inches (1,300-2,500 mm) of rain fall in summer. Asansol is a large railway center and the hub of a highly industrialized area; its principal industries are iron and steel refractories and the manufacture of ceramics, electric cables, locomotives, glass, aluminum, cycles, cotton textiles, and articles from by-products of coal. There are numerous coal mines around the city, and one of the few pig-iron- and steel-producing centers of India is at nearby Burnpur-Kulti. During World War II there was a large Indian and U.S. military establishment at Asansol. Pop. 1971, 155,968.

JOHNSON E. FAIRCHILD AND MARGUERITE RANDHAWA

ASAPH [e'saf], in the Old Testament, a Levite and musician, whom King David appointed as chief of certain Levites who were "to minister before the ark of the Lord, and to record, and to thank and praise the Lord..." (I Chron. xvi:4-7). The name of Asaph appears in the superscription of twelve of the Psalms (1 and lxxiii-lxxxiii). The Sons of Asaph, a group of Levites tracing their ancestry and function to Asaph, were active as singers in the first temple in the days of Solomon (II Chron. v:12) and King Josiah (II Chron. xxxv:15) and in the second temple in the days of Ezra and Nehemiah (Ezra ii:41; Nehemiah vii:44).

Asaph is also the name of a recorder in the court of King Hezekiah (II Kings xviii:18; Isa. xxxvi:22) and of the keeper of King Artaxerxes' forests to whom Artaxerxes addressed a letter directing him to supply Nehemiah with timber for the rebuilding of Jerusalem (Neh. ii:8). In addition there is a group of Korahite Levites, called the Sons of Asaph, of whom some acted as doorkeepers (II Chronicles xxvi:1).

MORRIS A. GUTSTEIN

ASBESTOS, a town in Quebec, Canada, in Richmond Co., 95 miles (153 km) east of Montreal, in the hilly region usually known as the Eastern Townships. The Canadian National Railways furnishes transportation. Its chief industry is the quarrying and processing of asbestos fiber. Pop. 1976, 9,075. DONALD F. PUTNAM

ASBESTOS, any of several varieties of fibrous minerals whose fibers may be spun or felted to make fabrics, panels, or coatings that are resistant to heat and chemical action. Asbestos is also valued for its electrical insulating properties.

History. Asbestos was known in ancient times. Pliny the Elder describes shrouds of woven asbestos used in cremation of the nobility. Pausanias' *Tour of Greece* describes a lamp wick not consumed by flame as being made of "Carpasian linen," a cloth of mineral fiber from Carpasius, a district of Cyprus. Plutarch records "perpetual lamp

wicks" in the temples of vestal virgins. Charlemagne is fabled to have amazed guests by tossing an asbestos tablecloth into the fire to be cleansed. Marco Polo reported asbestos cloth in Central Asia. The modern asbestos industry began with the working of an Italian mine, in 1868, and large-scale production began with the discovery of asbestos in Quebec, Canada.

Occurrence and Varieties. Asbestos occurs in the form of veins and lenses within rock bodies. It is a product of metamorphism.

There are two main types of asbestos minerals: *serpentine* and *amphibole*.

Serpentine asbestos, known as *chrysotile*, is a hydrated magnesium silicate, $2\text{SiO}_2 \cdot 3\text{MgO} \cdot 2\text{H}_2\text{O}$. It makes up about 95% of all asbestos, and is commercially the most important variety. Its fibers are of superior length, flexibility, fineness, and tensile strength. Ordinarily, when asbestos is referred to, the chrysotile variety is meant. Chrysotile is found in rock as lustrous greenish veins. Its fibers are so fine that a single pound of this mineral provides almost six miles of asbestos thread. The fiber has a tensile strength that equals some grades of steel (80,000 to 100,000 lb per sq in.). Chrysotile asbestos possesses excellent resistance to heat, but it becomes progressively more brittle as temperature rises to about 400° C.

Among the amphibole asbestos varieties that are commercially useful are *crocidolite*, *anthophyllite*, *amosite*, *tremolite*, and *actinolite*.

Crocidolite, a soda-iron amphibolite, $\text{Na}_2\text{O} \cdot 3\text{FeO} \cdot \text{Fe}_2\text{O}_3 \cdot 8\text{SiO}_2 \cdot \text{H}_2\text{O}$, is also known as blue, or Cape blue, asbestos because of its dull-blue color. Its fibers are of higher tensile strength (100,000 to 300,000 lb per sq in.) than those of chrysotile, but it fuses at relatively low temperatures.

Anthophyllite, a magnesium-iron silicate, $7(\text{MgO}, \text{FeO}) \cdot 8\text{SiO}_2 \cdot \text{H}_2\text{O}$, is composed of long coarse fibers of low tensile strength. The iron-rich anthophyllite, amosite ($\text{FeO}, \text{MgO} \cdot \text{SiO}_2$), is a gray-to-brown variety.

Tremolite, $2\text{CaO} \cdot 5\text{MgO} \cdot 8\text{SiO}_2 \cdot \text{H}_2\text{O}$, composed of fine, silky fibers, is gray to white in color and is the variety to which the name asbestos was first given. When iron substitutes for as much as 2% of the magnesium in tremolite, the resultant mineral is called actinolite.

Mining. Asbestos is both quarried in open pits and mined in tunnels. The asbestos is initially removed manually from large pieces of quarried or mined rock matrix with the aid of a small hammer in an operation called "cobbing." In later stages, the asbestos fibers are removed from the crushed and screened matrix by air streams.

Uses. Crude asbestos is graded according to fiber length, fineness, flexibility, tensile strength, and infusibility. The longer fibers are carded and spun, sometimes with the addition of cotton thread. The spun fiber is woven into asbestos fabrics of varying thicknesses and densities. The smallest fibers, along with the rock dust from the matrix, are used to make asbestos cement. The amphibolite asbestos varieties all possess excellent resistance to chemical action, and are used to make filter pads and pipe-joint packing in chemical plants. They are also used as fillers in welding rods and plastics.

Asbestos board, a construction or insulating material, is made of asbestos and portland cement molded into sheets by pressure. Asbestos paper is a thin sheeting of asbestos fibers bonded usually with a solution of sodium silicate. It is white, flexible, strong, and fireproof.

Belts of asbestos woven with fine brass wire are used as brake linings and to convey blast furnace slag, cement

clinker, and other hot materials. Spun asbestos is made into fireproof ropes. Asbestos threads are woven into fireproof theater curtains and made into gloves for workers who must handle hot materials.

Production. Canada, the largest asbestos-producing country, produces mostly chrysotile. South African asbestos is mostly amosite and crocidolite. Other important asbestos-producing countries are the U.S.S.R., Italy, and China. In the United States, Arizona, Vermont, and California produce chrysotile asbestos.

M. L. KEEN

ASBJØRNSSEN, PETER CHRISTEN [ɑ'sbyørnsən] (1812-1885), Norwegian folk-tale collector, was born in Oslo, Norway, Jan. 15, 1812. Though he spent most of his life as a forester, zoologist, and popular scientific writer, he is remembered chiefly for his collaboration with Jørgen Moe in the collection of folk tales. Their joint collection, *Norske Folkeeventyr* (1841) ("Norwegian Folk Tales"), was followed by Asbjørnsen's unaided compilations, *Norske Huldreeventyr og Folkesagn* (1845-1847) ("Norwegian Fairytale and Folklore") and *Norske Folkeeventyr* (1871). These collections were a treasure house for Norwegian authors, particularly for Ibsen in his *Peer Gynt*, and changed the course of Norwegian literary style. Asbjørnsen died in Oslo, Jan. 5, 1885. See also MOE, JØRGEN INGEBRETSSEN.

ENAR HAUGEN

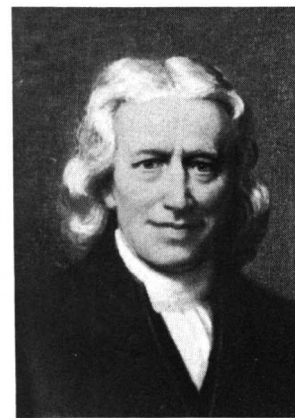
ASBURY, FRANCIS [ɑ'zberi] (1745-1816), Anglo-American preacher and first bishop of the Methodist Episcopal Church in the United States, was born near Birmingham, England, on Aug. 20 or 21, 1745. He was the son of Joseph and Elisabeth Asbury. He became a Wesleyan preacher at the age of eighteen, and in 1771 was sent by John Wesley to America, landing at Philadelphia on October 22. Asbury had been preceded by two other missionaries and several lay preachers, and there were half a dozen Methodist "societies" with about one thousand members in the colonies.

In New York Asbury discovered that his colleagues did not want to leave the cities, but he realized that the hope of the movement lay in "circulation of preachers." He wrote in his journal, "I think I will show them the way," and thus became the first of the circuit riders. He lived the rest of his life on the road, traveling 275,000 miles over the frontier trails.

At the approach of the American Revolution the other missionaries left, but Asbury remained. For a period of time he fell under suspicion of Tory sympathies and went into semi-seclusion in the home of Judge Thomas White near Dover, Del.

After the war there was a split over the ordinances, which the lay preachers were forbidden to administer. Then in 1784 John Wesley took an important step. Believing that bishops and presbyters were of the same order, he "set aside" Dr. Thomas Coke as superintendent for America and sent him to consecrate Francis Asbury.

Asbury insisted on election, and at the Christmas Conference in Lovely Lane Chapel at Baltimore, the Methodist Church was organized and Asbury was elected and conse-



WORLD METHODIST BUILDING
FRANCIS ASBURY

crated. Deacons and elders were ordained, missionaries were appointed to Canada and the West Indies, and Cokesbury College was founded at Abingdon, Md.

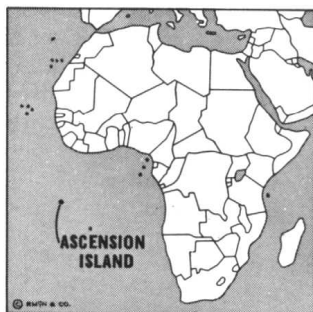
This group represented the first independent Methodist denomination in the world and Asbury was the first bishop consecrated on American soil. The Church had 83 preachers, 43 circuits, and 15,000 members, nearly all in Maryland and southward. The first annual conference was held at the home of the Rev. Major Green Hill near Louisburg, N.C., on Apr. 20, 1785.

Francis Asbury was the unquestioned leader. He formed conferences and circuits, appointed preachers, founded schools, set up a publishing house, and carried Methodism to the Mississippi. He traveled as far west as Ohio, Kentucky, and Tennessee, crossing the mountains more than sixty times. He ruled in kindly but autocratic fashion and created an organization almost perfectly adapted to the conditions of the times. Asbury was on his way to the General Conference at Baltimore when he collapsed on the road; he died in the home of George Arnold in Spotsylvania County, Va., on Mar. 31, 1816. Asbury left a church of 400 circuits, 700 preachers, and 215,000 members. A month later his body was removed to Baltimore, where a giant funeral was held at the General Conference. His remains were placed under the pulpit of the Eutaw Street Church, and 40 years later were removed to Mount Olivet Cemetery. An equestrian statue of Francis Asbury stands in Washington and he was selected by the National Historical Publications Commission and Congress as one of the 60 great Americans whose works should be collected and published.

ELMER T. CLARK

ASBURY PARK, a resort city on the Atlantic coast in east central New Jersey, in Monmouth Co., 50 miles (80 km) south of New York City. Founded in 1871 and named after Bishop Francis Asbury, it was chartered as a city in 1897. The major economic activity is the summer tourist trade, which increases the population to an estimated 100,000. Local industries produce clothing, food products, beverages, and radio, television, and electronic equipment. A convention hall and a casino on the boardwalk are open all year. Pop. 1970, 16,533.

ASCENSION [əse'nʃən], a small, volcanic, oval island resting on the submarine Challenger Ridge. It is 34 square miles (88 sq km) in area. Situated in the South Atlantic at 7°53' south latitude and 14°18' west longitude, it lies halfway between Africa and South America. It was discovered by Juan de Nova, a Portuguese mariner, on Ascension Day in 1501. In 1815 the English took possession of the still-uninhabited island and stationed a garrison there to block Napoleon's escape from St. Helena, which is 700 miles to the southeast. With the death of Napoleon in 1821, the garrison was removed. The island was administered by the British Admiralty until November 1922, when the administration was transferred to the Colonial Office and annexed to the colony of St. Helena. The island lies in the path of the southeast trade winds and has a mild climate with temperatures between 70°F. and 90°F. (21°C. to 32°C.). Green Mountain, the principal peak, about 2,870 feet (875



meters), is surrounded by a tableland, 1,200 feet (365 meters), which is covered with extinct volcanoes. The peak has fertile soil, but Ascension is mostly bare and hilly, receives little rainfall, and consists mostly of volcanic cinders, craters, and lava fields. The Quartermaster of the United States Army Air Forces in 1944 selected the desolate island as the first place to test the practicality of hydroponic gardening. Five vegetables—cucumbers, lettuce, radishes, tomatoes, and green peppers—were successfully raised in black cinder beds which were irrigated with distilled sea water mixed with chemicals. Ascension's strategic importance on the main route to the East declined when the Suez Canal was opened in 1869. In World War II it became a major airbase on the airline between South America and Africa and played an important role in winning the Battle of Africa. British civilians maintain a cable station with St. Helenian labor. Georgetown in the northwestern part of the island is the only settlement. The local manager of Cable and Wireless Ltd. serves as resident magistrate and local representative of the governor of St. Helena. In 1957 a station was constructed and manned on Ascension as part of the United States chain of observing posts for guided missiles. The island is famous as a breeding ground for sea turtles and the sooty tern or "wideawake." Pop. 1971, St. Helenians, 674; others, 557.

JAMES HARFORD

ASCENSION DAY, the Thursday, 40 days after Easter, on which is commemorated Christ's ascension, placed by tradition at Mount Olivet near Bethany. The earliest documentary evidence for the observance of the feast is of the fifth century, which presents it as already long observed. Pictorial representations of the event narrated in the Acts are found in fifth-century diptychs (hinged tablets) and frescoes. The Eastern Churches know the feast as the Analepsis (taking up); the Roman liturgy ranks the day among the highest feasts, and marks its celebration with a vigil and an octave. Connected with the liturgical solemnity were certain customs, including the blessing of beans and grapes during the Canon of the Mass, the extinction of the paschal candle, triumphal processions, and, in some churches, the elevation of a figure of Christ through an opening in the church roof, symbolizing the Ascension.

ASCETICISM [əse'tɪzɪzəm], the principles or the way of life of the ascetics. The word is derived from the Greek *ἀσκησις*, which meant originally the training of athletes but was applied by the Stoics to moral discipline. It connotes always a variable amount of austerity. Asceticism is found among the primitives and in several religions or cultures like Islam, Buddhism, and others. It often derives from dualistic conceptions which assume that there is an unavoidable tension between spirit and matter, the latter being regarded usually as evil. Self-inflicted chastisements, fasting, abstaining from certain foods, refraining from luxury or from pleasurable activities, and observing silence are common practices.

Christian ascetics, while sharing in these mortifications, are inspired by specific desires for ethical and religious perfection. Their purpose is to bring human sinfulness under control and to discipline the body and to make it an organ fit for a Christlike life; as a rule they consider austerity and penance merely as means toward these ends. Extraordinary mortifications have been and still are regarded by some as having special merit, or as constituting a propitiation for the guilt of sin; but such views are radical deviations from Christian asceticism as such.

GEORGE A. BARROS

ASCHAFFENBURG [aʃə'fənbʊɹʃ], an industrial and commercial town in northwest Bavaria, in the Federal Republic of Germany (West Germany), 25 miles (40 km) southeast of Frankfurt. It lies on the navigable Main River at the west foot of the Spessart forested highlands. Aschaffenburg originated as a Germanic settlement on the frontier of the Roman Empire. From about A.D. 982 until 1803 it belonged to the archbishops and electors of Mainz, and in 1814 it became part of Bavaria. The city suffered extensive damage during World War II, but its important monuments have since been restored. Of special interest are the Romanesque-Gothic Collegiate Church, which contains valuable statuary and paintings, some of the work of Mathias Grünewald; the massive 17th-century castle, an important example of German Renaissance architecture; the Pompeianum, a mid-19th-century reproduction of a Roman dwelling built for Ludwig I; and Schonbusch Park, laid out in 1776 and Germany's first classic landscape garden.

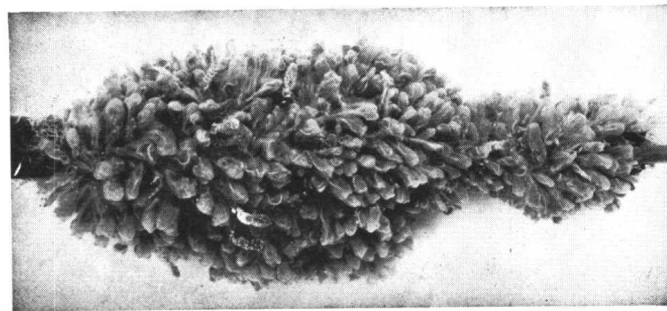
There is considerable traffic on the river port. The city's extensive industries produce clothing, cellulose, paper, metal products, and beer. Pop. (est. 1972), 55,300.

KLAUS SCHROEDER AND HELMUT ARNTZ

ASCHAM, ROGER [æ'skəm] (1515-1568), English scholar, was born in Kirby Wiske, Yorkshire, in 1515. About 1530 he entered St. John's College, Cambridge, where he studied under Sir John Cheke and was appointed to a fellowship upon his graduation. In 1545 he published *Toxophilus*, a dialogue on bodily exercise and recreations, with special reference to archery, and the next year he succeeded Sir John Cheke as public orator of the university. In 1548 he became tutor to Princess (later Queen) Elizabeth and served, 1550-1553, as secretary to Sir Richard Morrison, ambassador to Charles V. Upon his return home from extensive travel on the Continent, he was, despite his professed Protestantism, made Latin secretary to Queen Mary. In 1553 he wrote a *Report . . . of the Affaires of Germany*, published in 1570, and in 1555 resumed his Greek studies with Princess Elizabeth. In 1563 he began *The Scholemaster*, completed just before his death on Dec. 23, 1568, and published by his widow in 1570—an influential work concerned with the private education of young gentlemen and with a method of teaching Latin by "double translation." Ascham's attacks on rhyme, medieval romances, and Italian books and travel, and his discussion of "quick and hard wits" and of literary imitation are noteworthy features of the work. His style marks a distinct advance in English prose in its purity of diction and its well-constructed, trenchant sentences. His Latin and Greek works were published posthumously.

VIRGIL B. HELTZEL

ASCIDIANS or **SEA SQUIRTS** [æsi'diənz], a class of tunicates which is exclusively marine, obscurely related to vertebrates. Ascidians attach their bases to surfaces of rocks, wharves, and ship bottoms. They are found throughout the world, from the intertidal zone to the edge of the continental shelf, and a few forms are found even in the oceanic abyss. Solitary and compound forms are equally common, the latter usually forming encrusting mats consisting of numerous small individuals embedded in a common matrix and derived from a single egg. Every individual, whether large and solitary or a minute constituent zooid of a compound colony, has two apertures. One of these serves as the mouth, leading into the branchial chamber with its perforated walls through which the sea water is filtered. The strained water is ejected through the second, or exhalant, aperture, and the trapped food particles are



THE AMERICAN MUSEUM OF NATURAL HISTORY

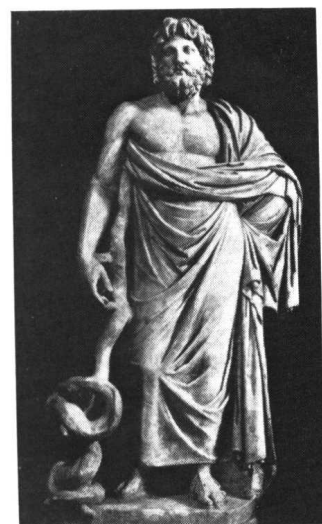
SEA SQUIRTS, or ascidians, are small marine animals, many of which form colonies such as this one attached to a log. Although stationary as adults, as larvae they are free-swimming individuals.

wrapped into a cord of mucus and passed on to the intestine. The blood is peculiar in containing large concentrations of salts of the element vanadium. All are hermaphroditic, having functional ovaries and testes in the same individual. The eggs develop, not directly into anything resembling the adult, but into tiny tadpolelike larvae possessing the forerunner of the vertebrate backbone and other features suggestive of their relationship to the vertebrates. The larvae live for a few days at the most and then settle on the sea floor to metamorphose into the attached condition of sea squirts. Many are able also to reproduce by a process of budding, forming either social groups of common parentage or true colonial organisms. Colors are usually drab, but some species found in tropical waters are among the most vivid and beautifully colored of all marine animals. N. J. BERRILL

ASCLEPIUS [æskli'piəs], the patron-hero of ancient Greek medicine. He was not originally a god, although he later became one. In Homer's *Iliad* he is a man, dead before the start of the Trojan War in which his sons Machaon and Podalirius took part. In mythology he is a son of Apollo by Coronis, daughter of Phlegyas. When Coronis was unfaithful to Apollo, he, or Artemis, killed her but extracted the child from her body and sent him to Chiron the centaur, who taught him medicine. Asclepius' skill was so great that he undertook to bring the dead to life, whereupon Zeus killed him with a thunderbolt. His cult becomes important from the late fifth century B.C. His best-known shrine was at Epidaurus in the Argolid, of which there are extensive remains. The sick resorted to his temples in hopes either of a miraculous cure or of revelation in dreams of the proper treatment for their ailments, and considerable records of wonderful cures survive on Epidaurian inscriptions. Probably strong faith and the healthy, restful atmosphere of the shrines caused genuine improvement in many cases.

In 293 B.C. a plague moved the Romans to adopt his cult. He was known in Latin as Aesculapius, and his temple stood on Tiber island, its site being now occupied by the hospital of St. Bartholomew.

In art Asclepius is shown as a mature man of grave and



BETTMANN ARCHIVE

ASCLEPIUS, the ancient Greek patron-hero of the art of healing. His shrine was at Epidaurus.

kindly aspect, holding a staff entwined with serpents, the regular attendants of heroes and other underworld powers; harmless snakes were kept in his temples. H. J. Rose

ASCOLI PICENO [a'skoli pit'e'no], a province and its capital, in an agricultural area in the southern Marches of central Italy.

The City. Ascoli Piceno, 53 miles (85 km) south of Ancona, is situated in an excellent defensive position on a wedge-shaped tongue of land at the confluence of the Tronto and Castellano rivers, at an altitude of 500 feet (152 meters) above sea level. The city is on the eastern side of the Sibillini Mountains, part of the Apennines, and lies 16 miles (26 km) west of the Adriatic Sea. There is a considerable variation of temperature between summer and winter, and the average annual rainfall is 36 inches (914 mm). Ascoli is connected by bus with the main Adriatic coastal railroad at Porto d'Ascoli.

Ascoli Piceno is not only an important commercial center for a wide agricultural area but is an industrial city as well. Electricity is produced from the waters of the Tronto at the Venamartello-Acquasanta plant, and there are electric furnaces and chemical- and food-processing plants in the city. Textiles, shoes, paper, and pottery are also made. The city was known for its scientific production of silkworm eggs. In the period before World War II it was the source of two thirds of Italy's total output of silkworm eggs, for which the climatic conditions in the Tronto Valley are especially propitious.

The city lies along the Via Salaria, shortest route from Rome to the Adriatic. It contains several interesting Roman monuments, such as the Porta Binata and the Roman bridge over the Tronto. The Palazzo del Popolo and the churches of San Francesco and San Vincenzo e Anastasio date from the Middle Ages. The cathedral was started in the 15th century and the baptistry in the 16th century. After World War I the new Vittorio Veneto quarter was created across the Tronto, and during this period much building activity was carried on by the Fascist government. Among the city's schools are a classical lyceum, the Stabili, and a professional school, the Sgarilia.

Ascoli Piceno was, as its name indicates, a center of the Piceni. In 286 B.C. it fell to Rome. The city took a leading part against Rome in the Social War between Rome and its former Italian allies (90 B.C.-88 B.C.). After the disintegration of the Roman Empire, Ascoli Piceno came under the rule of the Goths, then the Lombards, who included it in their Duchy of Spoleto. Later, local bishops set up their own temporal rule, but by 1185 Ascoli Piceno became a free commune. As elsewhere in central Italy, the political life of the city was kept in turmoil by contending families and parties, including the division between Guelphs and Ghibellines. When Ascoli acquired a port on the Adriatic, the neighboring city of Fermo was stirred into a bitter enmity that led to two and a half centuries of wars between the rival cities. In the 14th and 15th centuries a series of *signori* ruled Ascoli, but in 1502 papal dominion was established and, with the exception of the period of Napoleonic rule, lasted until 1860. At this time the Marches joined the newly established kingdom of Italy. Pop. (est. 1970), city, 43,000; commune, 55,900.

The Province. The province of Ascoli Piceno contains 73 communes and has an area of 805 square miles (2,085 sq km). It extends from the lower Tronto to the lower Chienti River and from the Adriatic to the Apennines, which at Mount Vettore attain an altitude of more than 8,000 feet

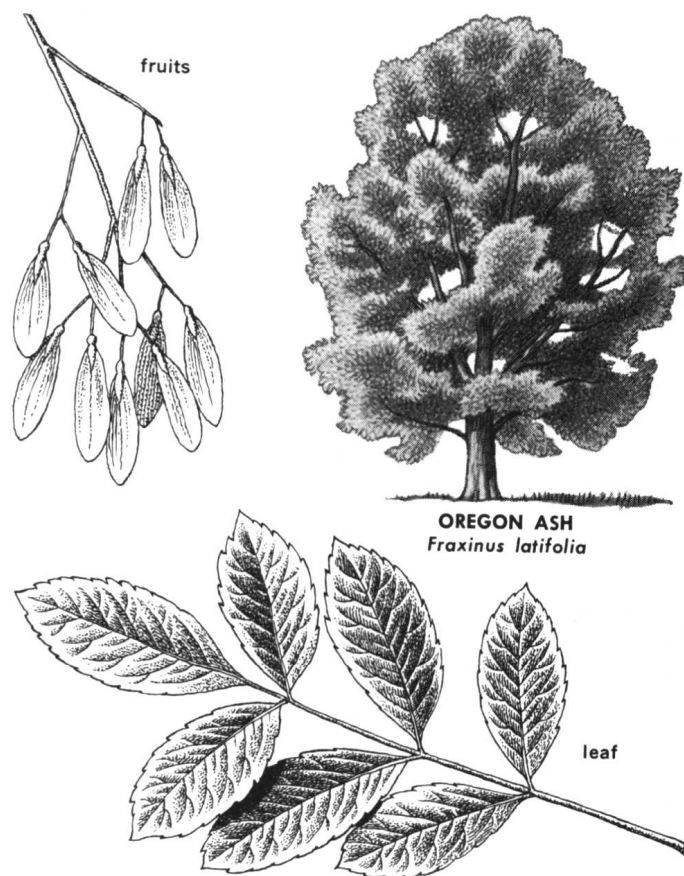
(2,400 meters). The terrain is partly mountainous and partly hilly, with a narrow coastal zone. The river valleys are narrow. Farming is the chief occupation, and wheat, corn, grapes, and potatoes are the leading crops. Industrial and commercial activities are, however, becoming even more important. The port city of Porto San Giorgio and S. Benedetto del Tronto, the foremost Adriatic fishing port, are also manufacturing centers. Like Grottammare, they are beach resorts as well. Manufacturing is also carried on in Fermo, about 25 miles to the northeast, which is beautifully situated on top of a steep hill overlooking the Adriatic. Pop. (est. 1970), 344,300.

ROBERT GALE WOOLBERT

ASEN [ase'n], or Assen, the most important medieval Bulgarian dynasty (1186-1258), which was established by the twin brothers Ivan Asen (d. 1195) and Peter Asen (d. 1196). By 1187 the brothers had won control of northern Bulgaria. Kaloyan, their younger brother, ruled 1197-1207. He finished the conquest of Bulgaria in 1201 and established friendly relations with Pope Innocent III. The greatest ruler of the dynasty was Ivan Asen II, who, during his reign from 1218 to 1241, conquered Macedonia, Epirus, and most of Albania and Serbia. The last of the Asenid house was Kaliman II, who ruled in 1257-1258.

ROSALIE FELTENSTEIN

ASH, a rapidly growing timber, ornamental, and shade tree, genus *Fraxinus*, belonging to the olive family. There are about 65 species of ash, largely restricted to temperate regions of the Northern Hemisphere, and about 20 species are native to the United States. While a few are shrubby, they are mostly small to medium-sized trees, and some grow to timber size, attaining heights of 60 to 120 feet and trunk diameters of 2½ to 6 feet. They are characterized by a thick,



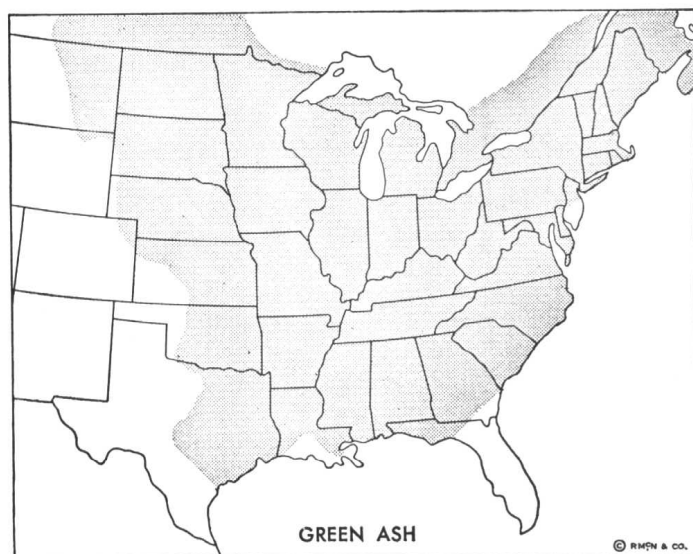
OREGON ASH, a North American variety of ash found along the Pacific coast and valued for its timber. Its thin fruit is called a samara.

furrowed bark, yellow-green-colored branchlets with deciduous, opposite, odd-pinnately compound leaves, small flowers in clusters, and a narrow winged fruit called a samara.

Most species of ash bear inconspicuous greenish flowers, but the Himalayan ash, *F. floribunda*, of Central Asia, the two-petal ash, *F. dipetala*, of the California mountains, and the fragrant ash, *F. cuspidata*, of the Mexican-U.S. border, bear showy white flowers.

The ash fruit is important in the identification of ash species. In the white ash, *F. americana*, the wing of the samara is terminal while in the red, *F. pennsylvanica*, and the green, *F. pennsylvanica* var. *lanceolata*, it extends along the sides of the samara. The white and green ash have smooth branchlets. In the red ash, which is a smaller, more slender-branched tree, found in moist places, the branchlets are downy. In these species the leaflets have stalks but in the black ash, *F. nigra*, the leaflets are attached by the base. The blue ash, *F. quadrangulata*, of the Central States, has 4-sided branchlets and an oblong samara with broad wings.

The total stand of ash saw timber in the United States has been estimated at 8,016,200,000 board feet. Of the seven



timber-producing species in the United States, four furnish more than 90 per cent of the ash lumber cut. White ash and green ash which grow over nearly all of the eastern United States and adjacent Canada provide the "white ash" of commerce, which is heavy, hard, strong, stiff, and tough and is especially adapted for shovel and spade handles and long handles for forks, hoes, and rakes. It is also valued highly for baseball bats, snowshoes, tennis racket frames, paddles and oars. Black ash of the northeastern United States furnishes wood that is somewhat lighter and less strong and tough than "white ash" and is suitable for interior finish of houses and offices and furniture and cabinet work in general. Oregon ash, *F. latifolia*, of the Pacific coast, has broad leaflets of which all except the terminal ones are attached by the base. It is one of the most valuable deciduous-leaved timber trees of Pacific North America. The wood is used for handles, cooperage, and furniture.



The white ash is frequently planted for shade and ornament in the eastern United States, as are also the European ash, *F. excelsior*, an important timber tree sometimes 120 feet high with numerous foliage varieties, and the flowering ash, *F. ornus*, of southern Europe. The waxy exudations from the trunk and leaves of the last-named species furnish the manna used in medicine. The Chinese ash, *F. chinensis*, yields the Chinese white wax.

The name ash is applied to various nonrelated trees: the mountain ash, *Sorbus* species, of the rose family; the poison ash, *Rhus vernix*, of the cashew family; the cape ash, *Ekebergia capensis*, of the mahogany family; the bitter ash, *Simaruba excelsa*, of the quassia family; and the mountain ash or giant eucalyptus, *Eucalyptus regnans*, of the myrtle family.

ARTHUR H. GRAVES

ASHANTI [əʃɑˈnti], a historic region of West Africa; formerly an independent kingdom. It became a protectorate within the British dependency of the Gold Coast (in the early 20th century. In 1959 it was divided into the Ashanti and Brong-Ahafo regions of Ghana. Situated in the central part of the republic, historic Ashanti has an area of 24,379 square miles (63,141 sq km) of which about 9,700 (25,123 sq km) are in the contemporary Ashanti region. Kumasi, the largest city (pop., 1970, 342,986), is both the traditional Ashanti capital and capital of the Ashanti region. It is a city of great wealth, derived from cocoa farming and related trading activities, and is at the head of the main railway lines running to Accra and Sekondi-Takoradi.

The Black Volta, a major river about 800 miles (1,290 km) long, rising in Upper Volta, forms the northern boundary of historic Ashanti before its confluence with the White Volta. Below a 50-mile (80-km) stretch through the Northern Region, the Volta proper becomes the northeastern and eastern border of Ashanti. The Pra River, emptying into the Atlantic near Sekondi, forms part of the southern boundary of Ashanti. The northern edge of forest area, which gives Ashanti its economic importance, follows the Volta and Afram rivers, thence proceeds northwest to the Ivory Coast. The forest belt is seasonally well watered, warm, and humid. The terrain consists of steep, timbered ridges. North of the forest belt is open grassland, with rivers bordered by dense trees. Except for the pronounced scarp running south from Kintampo to Mampong and then south-eastward along the Afram River to the Volta, there are few notable mountains or highlands.

The economic importance of the forest area derives from its hardwoods, its gold and bauxite deposits, and particularly from its cocoa farms. Nearly half of Ghana's cocoa is grown in this area.

History. The people of Ashanti created a distinctive kingdom that flourished from the 17th century to the end of the 19th century. From small beginnings they extended their authority by arms and diplomacy, creating a splendid military organization that was rarely defeated. The fundamental explanation of their expansion, once the initial union was achieved, must be seen in terms of the desire for economic aggrandizement. At first their aim was to secure control over the supply of slaves and gold to the coastal markets and of the distribution of European imports received in exchange. Later, at the beginning of the 19th century, came the desire to eliminate the coastal middlemen and determine the terms of trade directly with the Europeans on the coast. An early contact with the British occurred in 1806 when the Ashantis reached the coast during a war with the Fantis. During the 19th century the British engaged in

a series of wars against Ashanti, but the latter retained the upper hand until 1874.

Kumasi had a British resident, later withdrawn, in 1817. In 1874 Sir Garnet Wolseley, in a brief campaign, captured and burned Kumasi and concluded the Treaty of Fomena. In 1896, following a threatened invasion of the Gold Coast, Sir Francis Scott marched to Kumasi, encountering no resistance. A resident was established there, and Prempeh, the asantehene ("king"), was exiled to the Seychelles. In 1900 a serious uprising caused the British to renew military operations against Ashanti. Ashanti was formally annexed by the British in 1901 and then joined to the Gold Coast colony and to the Northern Territories protectorate, established to the north of Ashanti. Frequent petitions for the return of Prempeh were submitted. In 1924 these were granted, and in 1926 he became head chief (omanhene) of Kumasi, being succeeded upon his death in 1931 by his nephew, Osei A. Prempeh II. Upon restoration of the Ashanti Confederacy in 1935, Prempeh II became asantehene.

Under the constitution of 1951, a federal relationship was established between Ashanti and the rest of the Gold Coast. As the country moved towards independence, Kwame Nkrumah and his Convention People's Party (CPP) gained strong support in Ashanti areas for their centralist views.



GHANA INFORMATION SERVICE

ASANTEHENE PREMPEH II and lesser Ashanti chiefs and commoners.

However, many chiefs were disaffected, and a crisis developed after the 1954 elections when the government marketing board refused to pay producers more for cocoa even though the price it received for cocoa in the world market had soared. Angry Ashanti cocoa farmers formed the National Liberation Movement (NLM) with the blessing of the Ashanti chiefs. The NLM found allies among other tribal groups opposed to CPP centralism. Violence occurred, and the British ordered new elections, in 1956, which the CPP again won. In February 1957 Prempeh II urged the chiefs to accept centralization. *See also* GHANA.

ASHBURTON, ALEXANDER BARING, 1ST BARON [æ'fɒrtən] (1774-1848), English financier, politician, and statesman, was born in London on Oct. 27, 1774. He sat in the House of Commons from 1806 to 1835 and supported free trade, though in later years he changed



ALEXANDER BARING, BARON ASHBURTON

his opinion. He was strongly against parliamentary reform. He was president of the Board of Trade from 1834 to 1835 under Sir Robert Peel and in 1835 he was made 1st Baron Ashburton of the second creation. In 1842 he was sent to the United States, where he negotiated the Webster-Ashburton Treaty, which settled the disputed boundary between Maine and Canada. Ashburton died at Longleat, May 13, 1848.

E. R. ADAIR

ASHDOD [ɑf'dɒd], a port situated on the eastern shore of the Mediterranean, 25 miles (40 km) south of Tel Aviv-Jaffa, on Israel's southern coastal plain. The town is located 3 miles (5 km) north of the site of ancient Ashdod, one of the five main political centers of the Philistines. A number of Philistine campaigns against the Israelis were staged from Ashdod (I Sam. 1:5). Ashdod was captured by the Assyrians (Isa. 20:1) in 722 B.C. and later became a Hellenistic town. It was incorporated into the Jewish Hasmonean kingdom in 147 B.C. During the Crusades, the town's castle and harbor were an important battlefield. Ashdod declined under Turkish and British rule. The village was the site of a major battle during the Arab-Israeli war in 1948.

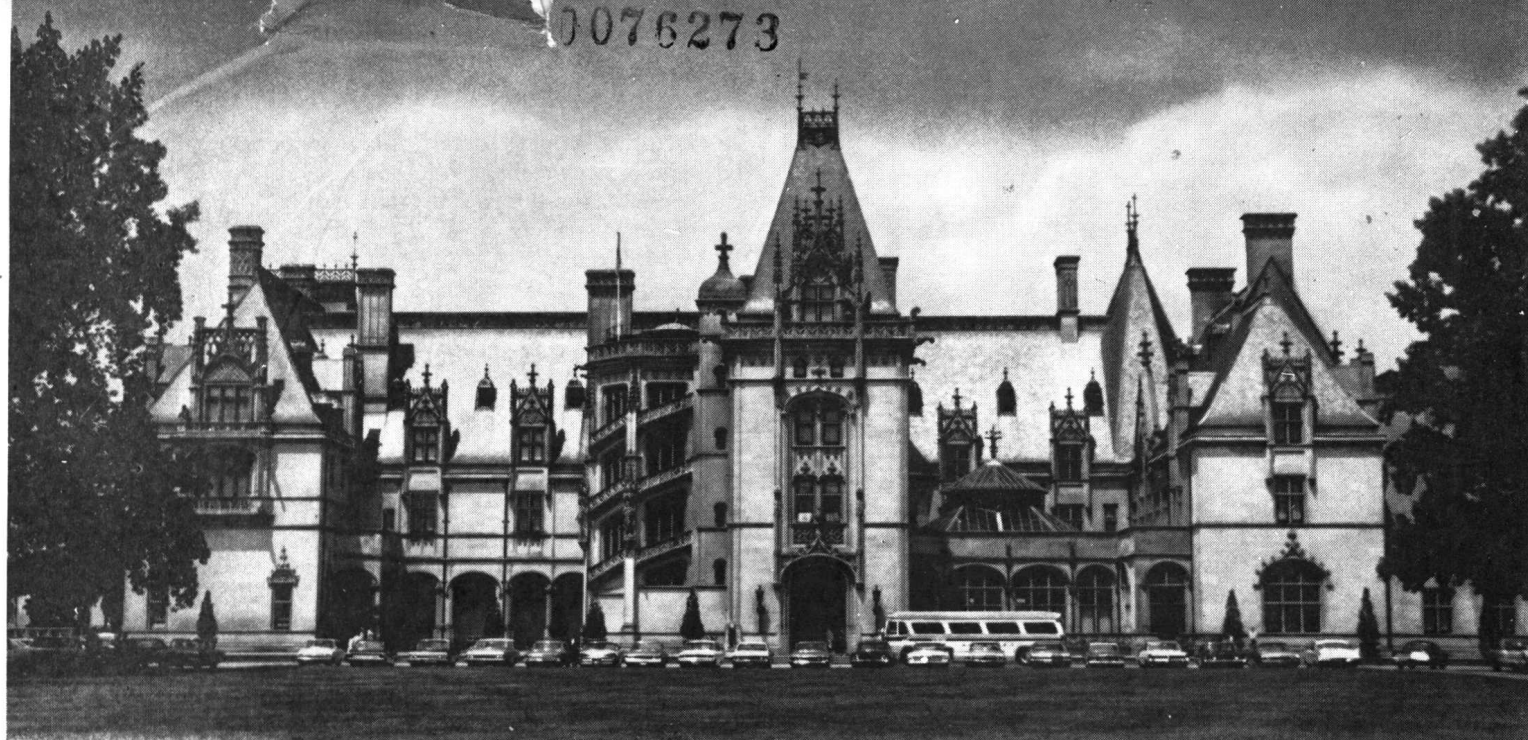
The need for a second deep-water port on the Mediterranean led to the revival of Ashdod in the 1950's. A port was built and opened there in 1965. It assumed all the activity of the port at Tel Aviv-Jaffa, which was then closed. In the late 1960's Ashdod handled nearly two fifths of Israel's total cargo, including exports of citrus fruit, copper ores, phosphates from the Negev, and potash from the Dead Sea.

To the south of the port is the rapidly expanding town. To the east is a developing industrial area with plants for assembling automobiles, manufacturing synthetic fibers, and refining petroleum. One of the largest power stations in Israel is directly north of Ashdod. Pop. (est. 1975), 52,500.

ARI SHAHAR

ASHEBORO, a city in central North Carolina, the seat of Randolph Co., 25 miles (40 km) south of Greensboro. Tobacco; grains, hogs, poultry, sheep, and beef and dairy cattle are raised in the area. Asheboro's manufactures include hosiery, electric blankets and batteries, furniture, clothing, shoes, pottery, and concrete blocks. Asheboro was once the home of Andrew Jackson. The city was incorporated in 1796 and is governed by a city manager, mayor, and commission. It is the seat of Asheboro Commercial College and the Randolph Technical Institute. Pop. 1970, 15,351.

ASHER [æ'ʃər], in the Old Testament, the eighth son of Jacob, borne to him by Zilpah, the handmaid of Leah. He was head of a large tribe, numbering 41,500 fighting men at the time of the Exodus from Egypt (Num. 1:41). This number increased to 53,400 before the invasion of Palestine



BLACK STAR

ASHEVILLE'S BILTMORE HOUSE, built between 1890 and 1895 in French Renaissance style as a country home for George W. Vanderbilt.

(Num. xxvi:47). The tribe of Asher seems to have enjoyed a prosperity that was derived from the fertile land near the Phoenician cities.

MORRIS A. GUTSTEIN

ASHEVILLE, a city in western North Carolina, the seat of Buncombe Co., situated on a plateau in the Blue Ridge Mountains at the junction of the Swannanoa and French Broad rivers. The site was once the hunting grounds of the Cherokee Indians. It was first platted in 1794 by John Burton and called Morristown; after its incorporation in 1797 it was renamed Asheville in honor of Samuel Ashe, a governor of the state. From its first years as a rough mountain town it has grown steadily in prominence as a summer and health resort. Among the points of interest in the vicinity are the Biltmore estate, the rhododendron gardens at Craggy Mountain, and a Cherokee Indian reservation. The Thomas Wolfe Memorial in Asheville is one of the most famous of America's literary shrines. Asheville is the seat of the University of North Carolina—Asheville Campus and of the Plunk School of Creative Arts. It is a center for handicraft industries and for the folk culture of the mountain people. Each year the city sponsors the Craftman's Fair and the Mountain Dance and Folk Festival. Asheville serves as a market for the surrounding agricultural, mining, and lumber districts. Its industries produce furniture, paper, cellophane, cotton products, flour and feed, textiles, blankets, mica products, and glassware. There has also been extensive development in the electronics industries. Civic improvements include an impounding dam holding 5.5 billion gallons (20.8 billion liters) of water. Pop. 1970, 61,210.

ASHI [æʃɪ] (352-427), Babylonian amora, and editor of the Babylonian Talmud. He became head of the Sura rabbinical academy, a position he held for over fifty years. His prestige as a scholar and a man of wealth and eminent social position restored the importance of the academy and made of Sura a political and religious center. He is said to have spent close to sixty years in compiling all the material on the *Mishnah* and adding the *Gemara*, or commentary. His work was completed by Rabina, two generations later, and their redaction of the Babylonian Talmud, or *Babli*, is considered definitive.

CALEB W. DAVIS

ASHIKAGA, TAKAUJI [aʃɪkaga] (1305-1358), Japanese military leader, was the founder of the Ashikaga shogunate (military dictatorship ruling in the name of the emperor). During the Hojo regency, Takauji betrayed the Hojos by deserting to Emperor Daigo II in Daigo's successful attempt to capture power in 1333. Takauji then betrayed Daigo, driving him from Kyoto in 1336 after the Battle of Minato-gawa and setting up Emperor Komyo in his place. Takauji became shogun in 1338. The remainder of his life was spent in fighting a civil war to maintain his shogunate. He died in 1358, and because of his betrayal of Daigo Takauji became a despised figure in Japanese history.

PAUL S. DULL

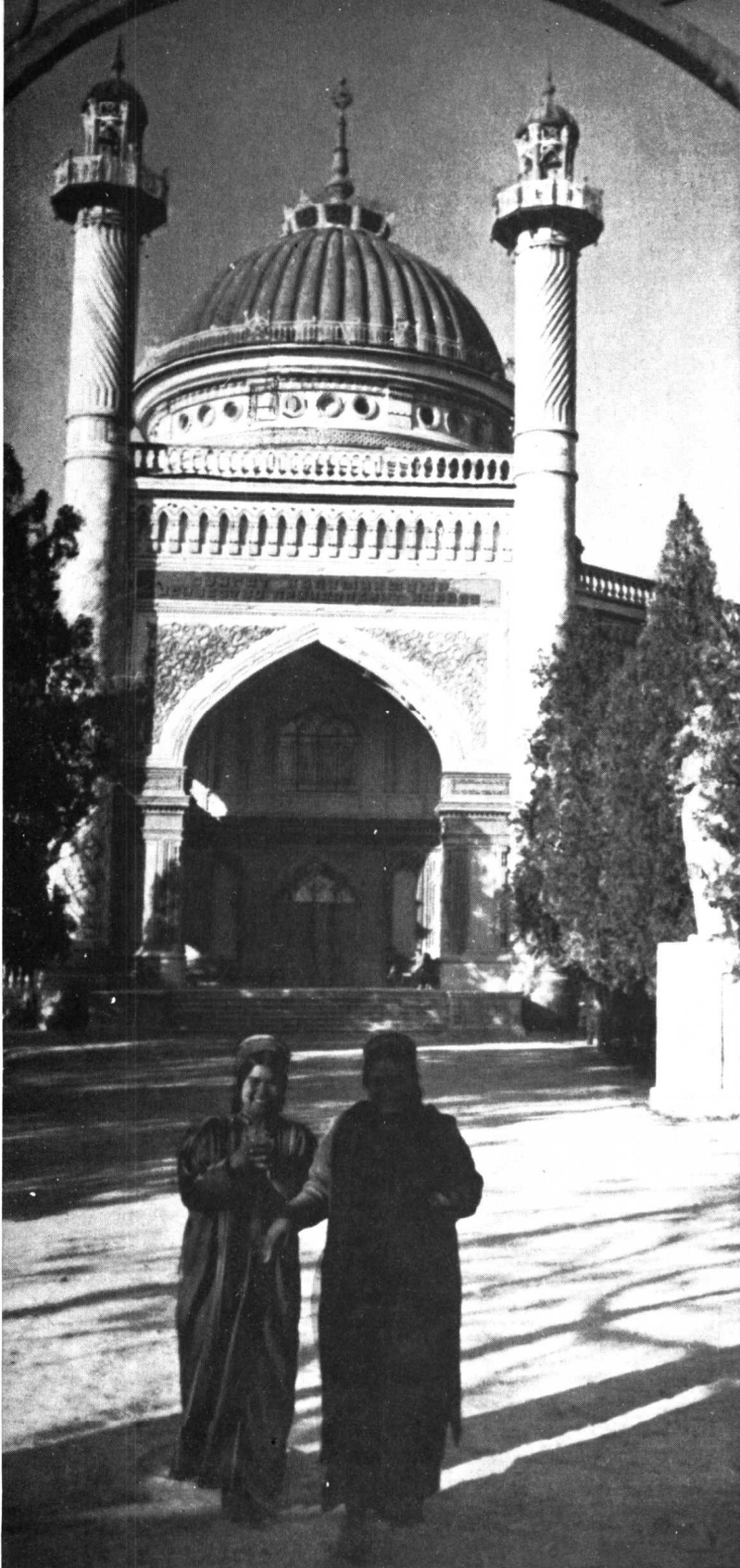
ASHIKAGA, a city in central Honshu, the main island of Japan, located in the Tochigi Prefecture near the northwestern end of the Kwanto Plain. It is on a tributary of the Tone River about 50 miles (80 km) northwest of Tokyo. Formerly, the city was a cultural center with a classical school, the Ashikaga Gakko, founded in the ninth century and enlarged in 1429. Some of the school's ancient Chinese books can be found in the local library, which, together with a temple to Confucius, occupies the site of the Ashikaga Gakko. The city has long been a commercial center for silk and cotton mills and today is the country's largest producer of silk textiles for export. Mufflers, scarves, lingerie, and handkerchiefs of spun silk crepe, Fuji silk, organdy, and taffeta are the most notable of Ashikaga's exports. Pop. 1975, 162,400.

REIKICHI KOJIMA

ASHKENAZIM [æʃkənæ'zɪm], the name applied to German and East European Jews and to all Jews who follow the religious rites and customs established by them.

The term Ashkenazim is often used in contradistinction to Sephardim, or those who use the Spanish and Portuguese ritual. Ashkenazim also differ from Sephardim in their pronunciation of Hebrew. The expulsion of the Jews from France in 1306 forced a great number of them into Germany, which became the new center of Jewish life, and gradually they went to Bohemia, Hungary, and other parts of Europe. Today by far the greatest number of Jews are Ashkenazim.

HERBERT BLOOM



ASHKhabad's PICTORIAL ARTS MUSEUM, formerly a mosque. The architecture of the ancient buildings of the city, which is situated just across the border from Iran, was strongly influenced by Muslim style.

ASHKhabad [a'ʃxaba'd], the capital and economic center of the Turkmen Soviet Socialist Republic, in the Central Asian region of the Soviet Union, located in the fertile Kopet-Dag foothills near the Iranian border. The city was founded in 1881 as an administrative center and flourished as a base for trade with Iran. It now has a textile industry, with cotton mills and silk-spinning plants, as well as glass

factories, a meat-packing plant, wineries, metal and leather works, flour mills, a film studio, and a carpet workshop that produces the famed Turkmen carpets. Ashkhabad is the site of the Turkmen S.S.R. Academy of Sciences, the Turkmen A.M. Gorky State University, and institutes of medicine and agriculture. Ashkhabad is also a cultural center, with several theaters, two museums, a philharmonic orchestra, and many cinemas. Located in an active seismic zone, the city was heavily damaged in a 1948 earthquake and was quickly rebuilt. Pop. (est. 1977), 302,000.

ASHLAND, a city in northeastern Kentucky, in Boyd Co., on the Ohio River 123 miles (198 km) east of Frankfort and 130 miles (209 km) southeast of Cincinnati, Ohio. A picturesque park of 47 acres (19 hectares) contains several ancient Indian mounds and is the center around which the city is built. Among the deposits of the region are coal, oil and gas, and limestone. Ashland's industries produce sheet-metal steel, petroleum products, coke and other coal by-products, sole leather, bricks, tiles, and chemicals. The city is the seat of Ashland Community College, a branch of the University of Kentucky. Pop. 1970, 29,245.

ASHLAND, a town in east-central Massachusetts, in Middlesex Co., near the Sudbury River, 17 miles (27 km) east of Worcester and 22 miles (35 km) southwest of Boston. Manufactures include electrical equipment and metal products. Ashland State Park is nearby. Founded about 1750, Ashland was incorporated in 1846. Pop. 1970, 8,882.

ASHLAND, a city in north-central Ohio, the seat of Ashland Co., in a fertile farming area 53 miles (85 km) southeast of Cleveland. It was laid out in 1815 as Uniontown; in 1822 it was renamed Ashland. It was incorporated in 1844. Ashland College, a coeducational institute, was chartered in 1878. Manufactures include rubber goods, stock and poultry feeds and remedies, agricultural equipment, paper boxes, and automobile parts. Another Ashland industry is commercial printing. Pop. 1970, 19,872.

ASHLAND, a town in southwestern Oregon, in Jackson Co., on Bear Creek, a tributary of the Rogue River, near the California state line, 12 miles (19 km) southeast of Medford. The city lies in a fertile valley just north of the Siskiyou Mountains. It is a trade center in an area where hay, fruit, and lumber are produced. Ashland is the home of the Oregon Shakespearean Festival and Southern Oregon College. The city was founded in 1852 and was incorporated in 1874. Pop. 1970, 12,342.

ASHLAND, a borough in east-central Pennsylvania, in Schuylkill Co., about 88 miles (142 km) northwest of Philadelphia. The borough was incorporated in 1857. The Ashland area has many coal deposits, but most of the mines have been closed. Local factories produce mine pumps and perforated metal. Pop. 1970, 4,737.

ASHLAND, a city and port of entry in northern Wisconsin, the seat of Ashland Co., situated on Chequamegon Bay, on Lake Superior, 65 miles (105 km) east of Duluth, Minn. It was settled in 1854 and incorporated in 1887. It is the seat of Northland College. A Chippewa Indian reservation is nearby. Diversified economic activities include wholesale trade, the shipping of coal and iron ore, and the production of paper and wood products, heavy machinery, explosives, clothing, and dairy products. Pop. 1970, 9,615.

ASHLEY, a borough in central Pennsylvania, in Luzerne Co., just south of Wilkes-Barre. Founded in 1810, the community adopted its present name in 1871. Manufactures include lace, clothing, and cigars. Pop. 1970, 4,095.

ASHTABULA [æʃtəbyuˈlə], a city and port of entry in northeastern Ohio, in Ashtabula Co., situated on Lake Erie, at the mouth of the Ashtabula River, 55 miles (90 km) northeast of Cleveland. Ashtabula is an Indian name meaning "river of many fish." First settled in 1801, Ashtabula was incorporated as a borough in 1831 and as a city in 1891. The city's harbor serves as a transfer point for lake-shipped iron ore bound for Pittsburgh and for coal from Pennsylvania and Ohio being hauled to lake markets. Ashtabula's harbor also handles much international shipping that uses the St. Lawrence Seaway. The products of Ashtabula's diverse industries include fiberglass-reinforced plastics, chemicals, steel products, aluminum siding, motor vehicle brakes, electric motors, and ladies' garments. Nearby farms produce dairy products, fruits, and vegetables. Ashtabula has the elected city manager and council form of municipal government. Pop. 1970, 24,313.

ASHTAROTH [æʃˈtərəθ], the plural of the Hebrew 'Ashtōreth, the Phoenician-Canaanite goddess Astarte, deity of fertility, reproduction, and war. The use of the plural form probably indicates a general designation for the collective female deities of the Canaanites, just as the plural Baalim refers to the male deities. Certain passages in the Old Testament (I Sam. xii:10 and I Sam. xxxi:10) suggest the possibility that "Ashtaroth" was used as a plural of majesty, so that the goddess was glorified through her own name by her adherents. The word "Ashtaroth" was also used as a place-name to designate the shrine of the goddess; its site has been identified with Tell Ashtarath in Syria, 21 miles (34 km) east of Lake Galilee. EDWARD J. JURJ

ASHTAVAKRA [ɑʃtəvəˈkrə], hero of a story in the *Mahābhārata*, longest of the Hindu epic poems, was the son of a man named Kahoda, who was so absorbed in his studies that he neglected his wife. Ashtavakra, even before he was born, rebuked his father for this. To punish him, Kahoda condemned him to be born crooked. Ashtavakra (*ashtan* meaning "eight" and *vakra* meaning "crooked") consequently was born crooked in eight places. Later, at the court of King Janaka, Kahoda and a Buddhist sage met in a verbal duel. It was held on the condition that the man who lost the argument would be drowned, and Kahoda paid the penalty. When Ashtavakra reached the age of 12, he determined to avenge his father. He defeated the Buddhist sage and demanded that he be drowned. The Buddhist then confessed that he was the son of Varuna, the water god, and that he had been sent by his father in the guise of a Buddhist sage to obtain, in the manner described, Brahmans to officiate at Varuna's sacrifices. Kahoda was restored to life, and he asked his son to bathe in the Samanga River. As soon as Ashtavakra did so, his crookedness disappeared and he became straight. ELSIE B. ALLEN

ASHTON-UNDER-LYNE, an industrial town and municipal borough in the metropolitan county of Greater Manchester, England, 6.5 miles (8 km) east of Manchester. The final part of its name, from the Latin *subter lineam* (under the line), refers to the town's location south of the ancient boundary between Northumbria and Mercia. With the Industrial Revolution the town grew rapidly as a cotton

manufacturing center, served by a local coal field and the Ashton Canal (no longer in use). Its industries are devoted to general manufacturing and engineering. Pop. (est. 1976), 222,100. A. E. SMAILES

ASHURBANIPAL [ɑʃˈurbəˈnɪpəl], king of Assyria from 669 to 626 B.C. During his long reign the Assyrian Empire attained its farthest limits, although the period saw also the beginnings of imperial disintegration. Early in his reign Ashurbanipal held Assyria, Babylonia, Syria, Palestine, and Egypt; to this realm he added the territory of Elam. Perhaps the first warning of the impending fall of Assyria was the successful revolt of Egypt shortly before 660 B.C. This was followed eight years later by a Babylonian insurrection led by the Assyrian governor, Ashurbanipal's own brother. The expense of quelling this revolt and of carrying out the Elamite campaign which followed was probably the immediate cause for the recession of Assyrian power. Although Ashurbanipal was as fierce and warlike as any of the Assyrian kings who preceded him, he was also well-educated and a patron of culture. His forty-three-year reign, marked by excessive wealth and splendor, also saw the rise of art and literature. In his inscriptions he boasted that he had "a large ear for learning," that he learned to read and write, to interpret the language of the stars, and to penetrate the mysteries of multiplication and division. One of his own tablets reads: "The beautiful writings in Sumerian that are obscure, in Akkadian that are difficult to bear in mind, it was my joy to repeat." Many students of antiquity regard Ashurbanipal's own inscriptions as among the finest examples of early writing still in existence. He founded two large libraries at Nineveh containing important historical records and religious texts, as well as the royal correspondence. The Nineveh libraries also included a heretofore unrivaled collection of poetry, history, science, religion, lexicography, and works on grammar. TOM B. JONES

ASHURNASIRPAL II [ɑʃˈurnəˈzɪrpəl], king of Assyria, reigned from about 885 to 860 B.C. As a great warrior king, he advanced and strengthened the frontiers of Assyria. He also carried the Assyrian standards to the shores of the Mediterranean and brought back 15,000 Aramaean captives. The palace Ashurnasirpal built at Calah (Kalakh) was a magnificent structure with bronze-plated gates and was furnished with objects of gold, silver, and ivory. Many inscriptions and sculptured reliefs now adorning museums in the United States and Europe came from Ashurnasirpal's palace at Calah. TOM B. JONES

ASH WEDNESDAY, the first day of the Lenten fast, the Day of Ashes, so called because on this day the faithful, according to ancient custom, receive on the forehead the sign of the cross marked with blessed ashes. This sacramental of the Roman Catholic Church recalls to the faithful their final end and symbolizes the need of contrition and penance during Lent. The blessed palms which remain from the previous Palm Sunday are burned, and the ashes obtained are blessed for the ceremony before the principal Mass on the Day of Ashes. In the ancient Church the ceremony was marked by a penitential procession after the distribution of ashes. For several centuries only public penitents received the blessed ashes. This custom of the Church is not without precedent in the Old Testament, which frequently describes the penitent sinner as wearing a penitential garb of sackcloth and sprinkling himself with ashes as a sign of humility and sorrow for sin. ROBERT J. O'CONNELL