



ra by Guido Reni, Palazzo Pallavicini Galleria, Alinari from Art Reference Bureau aroratarataratarataratara Aurora, Roman Goddess of the Dawn, Opened the Gates of Heaven for the Sun God Apollo Each Morning.

The technical name for Aureomycin is chlortetracycline. It belongs to the group of tetracycline antibiotics. Related antibiotics include Terramycin (uxytetracy cline) and Achromycin (tetracycline). The activity of Aureomycin is typical of the tetracycline group. It was produced in 1948 by B. M. Duggar of the Lederle KENNETH B. RAPER Laboratories at Pearl River, N.Y. See also ANTIBIOTIC; FOOD PRESERVATION (Anti-

biotics).

AURICLE. See EAR (The Outer Ear).

AURIGA, aw RY gub, or THE WAGONER OF CHARI-OTEER, is the name of a constellation. It lies between the constellations Perseus and Gemini. Capella is the brightest star in Auriga (see CAPELLA). In mythology, the Charioteer often represents Phaëthon, son of Helios (see PHAETHON).

The Constellation Auriga is Also Cailed The Wagoner.



AUROCHS, AWR ahks, is the name applied to both a wild ox of Europe and the European bison, or wisent. The wild ox, or urus, became extinct centuries ago. The wisent resembles the American buffalo, but it is slightly larger, usually about 6 feet (1.8 meters) in height. Short, curly brown hair covers its head and shoulders. The few survivors of the wisent are kept in game preserves in eastern Europe. See also BISON; BUFFALO.

Scientific Classification. The ox belongs to the family Bovidae. The wild ox is genus Bos, species B. primigentus. DONALD F. HOFFMEISTER The wisent is Bison bonasus.

AURORA, aw RAWR uh, the goddess of dawn in Roman mythology, opened the gates of heaven for the sun god every morning. The ancient Greeks called her Eos. She and the mortal, Tithonus, had a son, Memnon. Morning dewdrops on the grass are the tears Aurora shed when Memnon was killed at Troy (see MEMNON). Aurora also loved the hunter, Orion, and restored his sight (see ORION). She is said to be the mother of the winds. The word, aurora, refers to the first light of dawn. VAN JOHNSON See also BOREAS.

AURORA BOREALIS, aw RAWR uh BAWR & AL ihs, also called Northern LIGHTS, is a glowing or flickering natural light seen at night in the sky of the Northern Hemisphere. A similar light that occurs in the Southern Hemisphere is called aurora australis.

Auroral displays probably occur when protons and electrons are shot from the sun, striking the earth's upper atmosphere. The earth's magnetic held directs the particles toward the magnetic poles. As the particles move, they collide with atmospheric particles and change their electrical charge. They glow much like the charged particles in a fluorescent tube.

The aurora borealis and australis occur most frequently in far northern and far southern regions. Beautiful displays have been seen in the northern United States and as far south as Mexico. Most of them occur in September and October, and in March and April.

Auroral displays usually take place about 70 miles (110 kilometers) above the earth's surface, and are sometimes several times that height. There are many kinds of auroral displays. Some extend in an arc for hundreds of miles or kilometers. Long, thin rays form







Candytuft Blossoms. The name comes from Candia, the old English name for Crete in the Mediterranean.

CANDYTUFT is any one of several flowering plants that belong to the mustard family. Gardeners often use the perennial, *evergreen candytuft*, as a border plant. It grows about 12 inches (30 centimeters) high, has small narrow leaves, and pure white flowers borne on upright heads. Another popular candytuft for gardens is the annual globe candytuft. It may grow 16 inches (41 centimeters) high and bears lavender, pink, or red blossoms.

Scientific Classification. Candytufts belong to the mustard family, *Gruciferae*. They make up the genus *Iberis*. The edging candytuft is genus *Iberis*, species *I. sempervirens*: The globe candytuft is *I. umbellata*. DONALD WYMAN

CANE SUGAR. See SUGAR (Making Cane Sugar).

CANEBRAKE is a dense growth, or thicket, of cane often seen in swamps and along river beds in the southern United States. The canes may grow 25 feet (7.6 meters) high.

CANFIELD, DOROTHY. See FISHER, DOROTHY C. CANIFF, MILTON ARTHUR. See CARTOON (Comic

Strips and Panels).

140

CANINE. See TEETH (Permanent Teeth); Dog (1 erms). CANIS MAJOR, KAY nis, is a constellation in the Southern Hemisphere. It contains Sirius, the Dog Star,



The Constellation Canis Major Contains the Dog Star.

Canis A(a)01 is the Great Dog, companion of the great hunter. Orion, who stands nearby. The three familiar stars that form the belt of Orion point to Sirius, an ornament in the collar of the dog. Sirius is one of the stars nearest to Earth, yet it is so distant that its light takes almost nine years to reach us.

See also Astronomy (Skies of the Seasons); Orion; Procyon; Sirius.

CANIS MINOR. See PROCYON.

CANISIUS, kuh NIHSH uhs, SAINT PETER (1521-1597), was the founder of the first German house of Jesuits, and the foremost promoter of the reform of the Roman Catholic Church in Germany, Austria. and Bohemia. Saint Ignatius Loyola, founder of the Jesuits, sent him as a missionary to help check the spread of Lutheranism in Germany. There Saint Canisius founded Jesuit colleges to meet the need for educated Roman Catholics.

His most effective tool in strengthening the Roman Catholic faith was his Summa Doctrinae Christianae (1555), a catechism with more than 200 editions in 12 languages. His teaching and preaching contributed greatly to halting the spread of Protestantism in Germany, Austria, and Bohemia. Canisius was born in Nijmegen, now in The Netherlands. He was canonized in 1925. Jones A. Conserts and Future J. Sheen

CANISIUS COLLEGE is a Roman Catholic liberal arts college in Buffalo, N.Y. It is conducted by the Jesuits, and operates three divisions: day, evening, and graduate It offers programs leading to A.B., B.S., M.A., and M.S. degrees. It has a cooperative program in engineering with the University of Detroit. The college has the only seismological station in western New York. There is an ROTC unit on campus. Canisius was founded in 1870. For enrollment, see UNIVERSITIES AND COLLEGES (table). JAMES J. MCGINLEY

CANKER, KANG kuhr, is a small, usually painful, sore or ulceration in the mouth or at the corner of the lips. The word comes from the Latin *cancer*, which means *ulcer*. Often these cankers form on the inside of one or both sides of the cheek. Sometimes they form on the roof or the floor of the mouth. The sores usually have a cuplike center, and are inflamed and discolored. No one knows what causes cankers. They usually heal by themselves. Lous D. Bosnes

CANKERWORM is the

iarva(caterpillar) of a moth. It crawls by humping its back and bringing its hind feet up to its forefeet to make a loop of its body. Then it pushes the front feet forward again. Two kinds of cankerworms damage orchards and shade trees. They are the spring cankerworm and the fall cankerworm. The adult females of both these insects have no wings. They climb trees to lay their eggs. The spring cankerworm hatches about the



eggs. The spring cankerworm hatches about the groody entor. It ettacks fruit time the clm leaves grow, trees and shade trees.

¢



the city into three parts. The central part lies on the peninsula between the rivers, and is the business and social center of Lyon. The old town is on the west bank of the Saône, and includes a large library. The new town, on the east bank of the Rhône, includes the university, many fine residences, and manufacturing plants. For location, see FRANCE (political map).

Lyon is a busy, modern city, but it has many streets and buildings that date from the Middle Ages. The Cathedral of Saint Jean, a fine example of Gothic architecture, was begun in 1110. The Church of Saint Martin d'Ainay dates from the 800's. Other interesting buildings in Lyon include the Palace of Commerce, the Town Hall, and the Church of Notre Dame de Fourvières.

Along the river front, Lyon has many docks and warchouses. The city is in a region where the manufacture of textiles ranks as the chief industry. Spinning, weaving, dyeing, and chemical plants in Lyon employ thousands of workers. Lyon is also an important center of trade for many products, including coal, charcoal, metal goods, wine, cheese, and chestnuts.

In the days of the Roman Empire, Lyon was a town called *Lugdunum*. Later it became a stronghold for Christianity in the West. Its silk industry rose to importance during the 1400's. The invention of the Jacquard loom for weaving figured silks brought new prosperity in the 1800's.

Lyon suffered heavy damage during World War II. The city strongly resisted German attempts at occupation, but was forced to surrender. Resistance leaders continued their activities during the German occupation. These leaders, aided by French and American armies, freed Lyon in 1944. ROBERT E. DICKINSON

LYON, MARY (1797-1849), pioneered in providing higher education for women. She founded Mount Holyoke College, which opened as Mount Holyoke Seminary in 1837, and served as president of the school until her death. She aimed, through educational opportunities, to help young women develop their abilities and talents and to use them in service to others. Miss Lyon because a teacher at the age of 17. With her savinge, she later attended school in Amherst. She was born in Buckland, Mass. CLAUDE A. EGGERTSEN

LYRA, or THE HARP, is a small constellation of stars located west of the Northern Cross. It contains Vega, the fifth brightest star visible, excluding the sun, and the third brightest star in the northern celestial hemisphere. Because of the precession of the equinoxes, Vega will be considered the North Star in approximately 12,000 years.

Lyra has several double stars. One of them, *Epsilon* Lyrae, is visible to the keen eye as a pair of stars. Through a telescope, each of these stars is seen to be double. The Ring, or Annular Nebula, is another beautiful sight in Lyra. It is one of a class of objects that astronomers believe originated when central stars threw off great waves of gaseous material. See also DOUBLE STAR.

LYRE, *lire*, is a musical instrument dating far back in history. It was used by the Greeks and probably came from Asia. It was made of a hollow sounding board from which two armlike pieces stretched upward. These arms held a crosspiece, or yoke, with 3 to 10 strings attached to it. The musical sound of the instrument



The Metropolitan Museum of Art. New York

Woman Playing a Greek Lyre, painted on a vase about 350 B.C. Apollo, the god of music, was usually painted holding a lyre.

was made by plucking the strings with the fingers or a pick.

The lyre was the symbol of Apollo, the god of music and pocury. It was a favorite among the Greeks for accompanying songs and recitations. The words *lyric*



The Constellation Lyra, or the Harp.





đ

7 24 2

he Winds of a Cyclone spiral in toward a low-pressure center. , the Northern Hemisphere, they blow counterclockwise as the w-pressure center moves from southwest to northeast.



WORLD BOOK diagrams

A Cyclonic Storm often develops at a low-pressure center. The neavy cold air along an advancing cold front lifts the lighter, warmer air along a warm front. Clouds form, and rain begins to fall when the water vapor in the warm air condenses.

western United States. Cold-core cyclones are coldest near the center and warmer near the edges. These cyclones may be very deep, and are more intense several thousand feet in the air than they are at the surface of GEORGE F. TAYLOR the earth.

See also Hurricane: Tornado; Weather; Wind. CYCLONITE. See RDX.

CYCLOPEDIA. See ENCYCLOPEDIA.

CYCLOPROPANE. See Anesthesia.

CYCLOPS. SY klahps, was one of a race of giant shepherds in Greek mythology. They lived in Sicily, and each of them had only one eve in the center of his forehead. They made weapons and armor for the gods. Apollo destroyed them because they made the thunderbolt used to kill his son Asclepius. See also ASCLEPIUS; PADRAIC COLUM Apollo; Polyphemus.

CYCLORAMA, sy kloh RAHM uh, is a painting done on a curved surface. It usually pictures a scenic panorama or an historical event. The painting is realistic and is designed to make viewers feel that they are a part of the scene represented. The cyclorama is usually in a large circular room, with lighting designed to heighten the realistic effect of the work.

Cycloramas on the Civil War include one at Atlanta. Ga., which depicts the Battle of Atlanta, and one at Cettysburg, Pa., picturing the Battle of Gettysburg. Λ . N 法当所 きつちゃかいがい

CYLINDER

defeat at Waterloo. Cyclorama also refers to the backdrop curtain on a theater stage. WILLIAM M. MILLIKEN See also CIVIL WAR (picture); DIORAMA.

CYCLOTRON is a particle accelerator, or atom-smashing machine. The American physicist, Ernest O. Lawrence, invented the cyclotron in 1930. He had the idea that a charged particle such as a proton could be bent into a circular path by the action of an intense magnetic field, instead of accelerating it in a straight line, as is done in a linear accelerator. He put a vacuum chamber containing two D-shaped electrodes, called dees, between the poles of a powerful magnet. A highfrequency voltage (rapidly changing electrical charges) was applied to the electrodes. Protons were started out at the center of the chamber. As they moved into the space between the dees, the change of charge acted like a push on a swing and speeded them up. The magnetic field kept them going in a circular path so that they entered the next dee. Each time they crossed the dee separation, they acquired another boost in energy. Their increased speed caused them to spiral farther away toward the outer edge of the chamber. Finally, at their maximum energy, they hit a target near the edge of the chamber. Many cyclotrons have been built in this country and in foreign lands. They are used to accelerate helium nuclei, or alpha particles, to as high as 50 million electron volts (mev); deuterons, or nuclei of heavy hydrogen, to 25 mev; and protons to 10 mev. Extremely heavy ions may be accelerated up to 200 mey. These particles can be made to emerge from the cyclotron as a beam. When they bombard various elements, they produce radioisotopes. RALPH E. LAPP See also PARTICLE ACCELERATOR; DEUTERIUM.

CYGNET. See SWAN.

CYGNUS, SIHG nuhs, is a constellation in the North-

ern Hemisphere. Its most prominent feature is the Northern Cross, which is formed by its five brightest stars. The brightest star, Deneb, marks the upper end of the cross toward the northeast. The double star Albireo marks the foot of the cross toward the southwest.

In mythology, Cygnus often stands for the swan into which Jupiter (Zeus) changed himself in order to court Leda. I. M. LEVIL

CYLINDER. See GASOLINE_ENGINE.

CYLINDER, SILL in duhr, is a solid bounded by a curved lateral surface, or side, and two flat surfaces called bases. The two bases have the same area and are bounded by circles or other closed curves. Objects with cylindrical shapes, although usually not solids, may be seen every day. A tin can and a water pipe each have a cylindrical shape. Solid cylinders include a rake handle or a tence post made from a log. See CIRCLE.

You can easily test whether an object is a cylinder. Place a pencil so that it touches the curved surface in a the second of this straight line die Horista



Cygnus



" 经资料



very in Brazil. This action rt of the great landowners. sim and formed a republic. Janeiro. DONALD E. WORCESTER ILVA, JOSÉ BONIFÁCIO DE; Empire).

See PANAMA CANAL (The S Locks).

π.

RIVER rises as the Yadkin ountains of North Carolina, ver after it passes through a the western boundary of id after flowing across the e North Carolina [physriver flows 435 miles (700 ty into Winyah Bay, on the Little Pee Dee River of a tributary. Electric-power Yadkin rivers are a chief linas. HUGH T. LEFLER 850), was a famous British : London police force in called bobbies, after Peel's

the son of a wealthy textile ted at Harrow School and University, where he won ematics. When he was 21, ech in the House of Comis appointment as underonies.

thief secretary, Peel ruled He maintained order by orce, whose members were is strong opposition to a Catholics to vote kept that until 1829. Such personal rew up between Peel and leader, that the two nearly

mmission to study British important reforms which r currency system. He be-22, but resigned in 1827 te prime minister, because an Catholic question. In inder the duke of Wellingn police force in 1829 to aid which he helped revise and political situation caused Roman Catholic question. he Catholic Emancipation s to Roman Catholics.

• Peel went out of office = of Wellington's ministry m Bill, designed to give and better representation = member of the minority Commons, he formed the old Tory Party. Although in regard to the British make the party concerned PEGASUS

As leader of the Conservative Party, Peel became prime minister for a short time in 1834. He became prime minister again in 1841, and remained in this office until 1846.

Prime Minister. Under his leadership, certain important tax reforms were made. Circumstances caused him to change his mind in regard to the Corn Laws, which worked to the advantage of landowners by keeping food prices high. In 1842, Peel

caused the laws to be amended so that prices would be lower. Then a famine in Ireland, which also resulted in great hardship in England, led him to favor repeal of the Corn Laws. He admitted that he could no longer answer the arguments of Richard Cobden of the Anti-Corn Law League, and he argued for free trade (see CORN LAWS). Soon after the Corn Laws were repealed in 1846, Peel went out of office.

PEELER. See PEEL, SIR ROBERT. **PEEPER.** See TREE FROG.

PEER GYNT. See GRIEG, EDVARD; IBSEN, HENRIK.

PEERCE, JAN (1904-), became one of the most successful American opera and concert tenors of his day. His faultless musicianship won praise from Arturo Toscanini and other leading conductors. Peerce was the tenor in several of the famous Toscanini-NBC opera radio broadcasts. The broadcasts were later transferred to commercial recordings. Peerce's excellent though not spectacular voice retained its power even when he was more than 60 years old.

Peerce was born in New York City. His real name was Jacob Pincus Perelmuth. Peerce played the violin in dance orchestras before he became a tenor at Radio City in 1933. He made his operatic debut in 1937 in Phila delphia as the duke in Giuseppe Verdi's *Rigoletto*. Peerce appeared in a New York recital in 1939, and made his debut with the Metropolitan Opera in 1941 in Verdi's *La Traviata*.

PEESASH. See SANDSTORM.

PEEWIT. See LAPWING.

PEGASUS, *PEG uh sus*, was a winged horse in Greek mythology. Perseus, a son of Zeus. cut off the head of the Gorgon Medusa, and Pegasus was born from the trickling blood. The horse flew up to join the gods, and was caught by the goddess Athena. Athena tamed the horse with a golden bridle.

Athena gave this bridle to Bellerophon before he started out to fight the Chimera (see CHIMERA). Bellerophon also tamed Pegasus with it, and rode the winged horse to conquer the Chimera and the Amazons. But Bellerophon became proud. Pegasus threw Bellerophon off and flew into the sky. Zeus made the horse into a constellation.

Another legend about Pegasus is that the Muses were holding a contest of song. The music charmed the streams and made Mount Helicon grow toward the





Sir Robert Peel

JAMES L. GODFREY





azzo Spada, Rome (Anderson from Art Reference Bureau)

Pegasus, the Winged Horse, is watered by his master Bellerophon in this marble bas-relief by an unknown artist.

heavens. The god Poseidon ordered Pegasus to make it stop growing by striking it with his hoof. Pegasus did this, and the fountain Hippocrene sprang forth. Its waters inspired people to write poetry. Two other fountains of inspiration, Aganippe and Pieria, were also made by the hoof of Pegasus. In this way, Pegasus is connected with poetry. A poet is said to mount his Pegasus when he begins to write.

PEGASUS is a constellation of the Northern Celestial Hemisphere, found well up in the evening sky of autumn.

A large square called The Great Square of Pegasus marks it in the sky. A line drawn down the east side of the square and extended an equal distance south indicates the point where the sun stands on March 21, the day spring begins. The name Pegasus comes from the mythical Greek winged horse that was turned into a constellation by the god Zeus. I. M. LEVITT

See also Andromeda. **PEGMATITE.** See Beryl; Feldspar.

PEIPING, See PEKING.

PEIPUS, LAKE. See LAKE PEIPUS.

PEIRCE, *purs*, **CHARLES SANDERS** (1839-1914), was an American philosopher. He helped lead a philosophical movement called *pragmatism* (see PRAGMATISM).

202

also helpes develop sometics, the study of the use signs and symbols, including words.

Peirce discussed the basic ideas of his pragmatism i an essay called "How to Make Our Ideas Clear" (1878 To understand an idea, he declared, we must considthe behavior of objects to which the idea refers. For example, if we say that a diamond is "hard," we shoul want to know what this idea means. Therefore, we should find out what a diamond can do—such scratch a piece of glass without being scratched itsel We understand what we mean by a diamond if we know what it does do, could do, and might do under various circumstances. The meaning of an object according to Peirce, also includes how we are likely the behave in its presence.

Like other pragmatists, Peirce wanted to connect thought and action. He believed thought should preduce beliefs upon which we can act confidently. If we are in doubt, we hesitate. Doubt forces us to inquir into things until we have a belief. If we cannot cleaup our doubts with further inquiry, we must act on the belief that is most likely to be true.

Peirce was born in Cambridge, Mass. His father, the famous mathematician Benjamin Peirce, introduce him to the study of science and philosophy. Peirce graduated from Harvard University in 1859 and discientific work for the United States Coast Survey from 1861 to 1891. These scientific studies stimulated hinterest in philosophy. During his career, Charles Peirce also expressed original ideas about evolution, the rol of chance in the universe, the human mind, and the reality of God.

Peirce did not present his philosophy in an organize fashion, and so he received little recognition during h lifetime. Years after his death, several philosophe published his works in eight volumes as *The Collecte Papers of Charles Sanders Peirce*. JOHN E. SMIT **PEIXOTO, FLORIANO.** See BRAZIL (The Republic)

The Constellation Pegasus, the Winged Horse







the first volume of his four-volume The Colonial Period of American History (1934-1938.. He also wrote on the historical development of Europe, and contributed to the Cambridge History of the British Empire. At Yale University, he served as professor of American history from 1910 to 1931, when he became director of historical publications for the school.

Andrews was born in Wethersfield, Conn. He graduated from Trinity College. MERLE CURTI

ANDREWS, FRANK MAXWELL (1884-1943), an American Army officer, was one of the first advocates of airpower. He was the first commander of the Army's General Headquarters Air Force, the first U.S. strategic bombing force, from 1935 to 1939. This group laid the foundation for the U.S. bombing effort in World War II. Andrews commanded U.S. forces in the Caribbean Sea in 1940 and in Europe in 1943. Andrews was born in Nashville, Tenn. ROBERT B. HOTZ

ANDREWS, ROY CHAPMAN (1884-1960), became famous as an explorer and leader of expeditions for the American Museum of Natural History. Early in life he established himself as an authority on whales. From 1921 to 1930 he led six expeditions into central Asia. In the Gobi Desert, they discovered fossil fields that yielded the first dinosaur eggs found by human beings. They also found evidence of a prehistoric civilization and the remains of the earth's largest land animals, thought to be 95 million years old.

Andrews was born in Beloit, Wis. He graduated from Beloit College. His books include Whale Hunting with Gun and Camera (1916), On the Trail of Ancient Man (1926), The New Conquest of Central Asia (1932), and This Amazing Planet (1940). RICHARD F. DEMPEWULFF

ANDREWS AIR FORCE BASE, Md., is the site of the United States Air Force Systems Command headquarters. The jet transport planes that carry the President of the United States are also based there. The base lies 11 miles (18 kilometers) southeast of Washington, D.C., and covers 4,279 acres (1,732 hectares). Andrews AFB was opened as a military airfield in 1943. It is named after Lt. Gen. Frank M. Andrews (see ANDREWS, FRANK MAXWELL). RICHARD M. SKINNER

ANDREWS' RAID. See Civil WAR (Raids).

ANDREYEV, un DRYAY yuf, LEONID NIKOLAYE-VICH (1871-1919), was a Russian short-story writer, novelist, and dramatist. He became famous for his pessimistic view of life. Andreyev's stories about loneliness were collected in The Blue Angel (1916). He also wrote two powerful short novels, The Red Laugh (1904) and The Seven That Were Hanged (1908). The most famous of his plays are Life of Man (1906) and He Who Gets Slapped (1916). Andrevev was born in Orel. He hated Communism and fled from Russia to Finland after the Bolshevik revolution. IOHN W. GASSNER

See also Russian LITERATURE (Symbolism).

ANDRIĆ, IVO. See YUGOSLAVIA (The Arts).

ANDROCLES, AN droh kleez, or ANDROCLUS, was a Roman slave who ran away from his master and hid in a cave. He took a thorn from the paw of a suffering lion. Later, Androcles faced the same lion in the Roman arena. The lion recognized him and refused to harm him. George Bernard Shaw's play Androcles and the Laon (1912) is based on this story. THOMAS A. BRADY

mones): STLACTO (The Sex Storoids).

ANDROMACHE, an DRAHM uh kee, is the wife the Trojan Hector in Homer's Iliad. One of Home finest passages is Hector's farewell to Andromache an their son Astyanax as Hector goes to battle. Another Andromache's lament over Hector's death. Achille son Neoptolemus took Andromache to Greece as siave. She was released, and married Hector's broth Helenus See also HECTOR; ILIAD. Pintar W. Ha

ANDROMEDA, an DRAHM ee duh, is a constellation

of the Northern Celestial Hemisphere. It extends from the constellation Perseus to the northwest corner of the great square of the constellation Pegasus. The star at this corner of the square is actually the toe of Andromeda's foot, and not a part of Pegasus. The nearest of the great spiral galaxies can be seen in Andromeda. Andromeda was a character in Greek mythology. See also NEBULA. 1. M. LEVITT



ANDROMEDA, a maiden in ancient Greek mythol ogy, was the daughter of Cassiopeia and Cepheur rulers of Ethiopia. Cassiopeia dared to compare her own beauty to that of the Nereids (sea nymphs) who attended Poseidon. In anger, Poseidon sent a sea monster tr attack Ethiopia. An oracle said that Andromeda should be sacrificed to the serpent to save the land. Perseus saw Andromeda chained to a rock, fell in love with her, and killed the monster (see PERSEUS). After her death, Andromeda became a constellation. H. L. STOW

ANDROPOV, an DRO pov, YURI VLADIMIROVICH), became head of Russia's secret police in (1914 -1967. That year, he also became an alternate (nonvot ing) member of the Communist Party's policy-making Politburo. He was appointed to full membership in 1973. He was a secretary in the party's Central Committee from 1962 to 1967. He worked on problems related to the Chinese-Soviet split. From 1957 to 1962, he headed the committee's department for relations with Communist-bloc countries. His early career was spent in Komsomol (Young Communist League) activities. He joined the Communist Party in 1939. WALTER C. CLEMENS, JR.

ANDROS, AN drus, SIR EDMUND (1637-1714), was an English soldier and administrator. He served as governor of New York colony from 1674 to 1681.

In 1686, he became governor of several northern colonies, called the Dominion of New England. He went to Hartford, Conn., to demand the charter that gave the people of that colony the right to govern themselves. They refused to surrender it. According to legend, they hid the charter in a tree, which came to be called the Charter Oak (see CHARTER OAK).

The northern colonists thought Andros unjust. In 1689, after King James II was overthrown, Boston citizens imprisoned Andros. He was sent to England for trial, but was not tried. He returned in 1692 as governor of Virginia. WILLARD M. WALLACE

ANDROS ISLAND. See BAHAMAS; CYCLADES.







_

_____•__...

if agriculture and fertility. The Greeks also called Persephone *Kore*. The Romans called her *Proserpina*. An important myth describes Demeter's search for Persephone after the girl was kidnaped by Hades, god of the dead.

One day, while Persephone was picking flowers in a neadow, the earth opened up. Hades seized her and fartied her to his underworld kingdom to become queen of the dead. Demeter was heartbroken at the loss of her daughter and wandered the earth looking for her.

Demeter became angry with the gods for allowing Persephone to be carried off. In revenge, Demeter refused to permit crops to grow. To return fertility to the earth, the god Zeus asked Hades to return Persephone to her mother. But while Persephone was living in the inderworld, she had caten some seeds of the pome granate, a fruit that symbolized marriage. By eating the eeds, Persephone entered into a marriage with Hades hat could not be ended.

Zeus ananged a compromise between Demeter and Hades. Persephone would spend two-thirds of each year with her mother and the remaining third with Hades. While Persephone lived with Hades, the earth became old and barren, reflecting Demeter's unhappiness. But while Demeter and Persephone lived together, crops fourished. The Greeks and Romans used this myth to explain the changes in the seasons. See also DEMETER; HADES.

PERSEPOLIS, pur SEHP oh lis, was a ceremonial cener of the Persian Empire during the days of Darius I and his successors. The ruins of the once magnificent buildings lie in southwestern Iran, near the present city Shiraz. Archaeologists have uncovered remains of tairways, columns, and sculptured figures. King Camyses may have started building Persepolis about 528 c. Persepolis flourished until Alexander the Great deroyed it about 330 B.C. See also DARIUS (picture); KAN (picture); SCULPTURE (picture: Lion Fighting a ull); Persia, Ancient (pictures). Richard Nelson Frye PERSEUS, PUR syoos, or PUR see us, was the son of cus and Danaë in Greek mythology. The evil king olydectes tricked him into going after the head of the orgon Medusa. Perseus succeeded because Hermes and Athena came to his aid. Hermes led him to the raeae, the hags of the sea. They told him how to obain winged sandals, a magic case in which to carry Medusa's head, and Hades' helmet, which would hake him invisible. Hermes then gave him a sword, d Athena gave him a shiny shield.

Perseus did not dare look directly at Medusa's face, he would have turned to stone. He used the shield a mirror and cut off Medusa's head. He later rescued bedromeda and matried her. When Perseus returned one, he turned Polydectes to stone. PHERP W. HARSH

Related Articles in World Book include: Indromeda Gorgon Hermes Pegasus Ithena Hades Medusa

PERSEUS is a constellation of the northern celestial misphere, west of the constellation Auriga. Perseus ontains the binary star Algol (see ALGOL). The two ars of Algol periodically eclipse one another, so that Agol appears alternately tainter and brighter. In Greek stythology, Perseus, son of Zeus, won this place among the stars. See also CONSTELLATION; STAR (picture: An apploding Star) Perseus Cut Off the Head of the Monster Medusa, above. The Greeks named the constellation Perseus, below, after him.











FILLRIGA Q

DETS: 20,82/17,131/26,145/36,142/86,154/109,117/52,74/SFF

LINES: 20,85, 18,129/18,134,24,144/29,145,34,142/20,131,84,154/ 88,152, 109, 120/108,115, 55,105/ 50,105,23,82/>FF

NAME: LIRA O

DOTS: 38,130/42,142/52,131/81,126/86,112/58,117/>FF

LINES: 40, 133, 42, 140/45, 141, 51, 134/50, 131, 41, 130/ 55, 132, 79, 127/83, 124, 85, 115/84, 112, 61, 117/ 57, 120, 54, 129/ >FF

5 PEGASUS

- DOTS: 24,72/ 66,60/69,117/31,120/24,138/17,160/ 42,132/46,134/44,168/77,135/81,139/
- LINES: 25, 75, 31, 118/27, 72, 64, 61/67, 64, 69, 115/ 67, 118, 34, 120/30, 123, 25, 136/24, 141, 18, 158/ 34, 122, 40, 130/44, 133, 45, 134/47, 137, 44, 166/ 44, 171, 43, 177/72, 119, 77, 133/79, 136, 80, 137/>FF

NAME: <u>CETUS</u>

DOTS: 35,96/33,107/22,109/19,119/23,130/29,127/34,123/ 41,124/48,136/65,155/78,158/90,145/>FF

LINES: 36,99,34,105/31,107,25,108/22,112,21,117/ 21,122,23,128/26,130,27,129/32,126,33,125/ 35,120,34,110/37,123,39,124/43,127,47,134/ 50,139,64,153/68,156,76,166/81,157,89,148/~PF



DOTS: 16,151/36,142/34,103/51,114/80,64/69,94/70,133/ 93,155/>FF

LINES: 19,151,34,144/38,140,51,117/49,112,37,105/ 80,67,71,92/67,97,54,112/54,116,69,131/ 73,135,91,153/>FF

NAME: TRIANGULUM (7)

.

DOTS: 28,108/20,134/81,152/>FF

LINES: 28,111, 21, 132/23,135,79,131/81,130,31,108/>FF

**

٠.

CANIS MAJOR 3

DUTS: 20, 156/33, 136/44, 163/53, 195/56, 173/72, 123/80, 136/84, 108/ 87, 94/100, 80/94, 116/107, 120/108, 170/>FF

LINES: a1, 154, 32, 139/35, 139, 44, 161/23, 157, 42, 162/46, 166, 54, 172/57, 176, 54, 193/46, 161, 71, 126/74, 121, 83, 106, 83, 106, 83, 106, 83, 106, 83, 109, 92, 92, 98, 82/87, 109, 92, 114/97, 118, 105, 120/87, 111, 108, 168/ 85, 111, 80, 134/79, 139, 59, 122/ > FF

NAME: PERSEUS Q

DOTS: 18,126/24,118/28,125/39,118/36,106/40,97/38,80/35,76/30,83/ 57,93/62,84/75,80/89,82/88,90/53,115/66,116/74,118/77,128/+

LINES: 21, 124, 23, 121/27, 117, 34,109/38, 104, 39, 100/40, 95, 39, 83/ 38, 79, 37, 78/34, 79, 33, 81/43, 96, 55, 93/59, 91 61, 87/65, 84, 73, 81, 78, 81, 87, 82/89, 85, 86, 88/21, 127, 26, 126/31, 125, 37, 120/42, 118, 51, 116/56, 115, 64, 117/69, 116, 72, 118/74, 121, 73, 126/2FF

TELESCOPIUM

DOTS: 84,73/67,163/47,163/47,182/>FF

LINES: 84,76, 67, 161/65, 164, 50, 164/47, 166, #047, 180/>FF

NAME: ANDROMESA

.

DOTS: 31,67/21,104/23,155/54,103/45,115/59,129/ 69,126/73,149/93,119/>FF

LINIES: 33,70,53,101/24,106,43,114/26,153,57,131/ 57,106,68,125/48,117,58,127/70,129,73,147/ 61,132,72,148/72,126,91,120/>FF