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**McGRAW-HILL
DICTIONARY OF
SCIENTIFIC AND
TECHNICAL
TERMS**

**Sixth
Edition**

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On the cover: Representation of a fullerene molecule with a noble gas atom trapped inside. At the Permian-Triassic sedimentary boundary the noble gases helium and argon have been found trapped inside fullerenes. They exhibit isotope ratios quite similar to those found in meteorites, suggesting that a fireball meteorite or asteroid exploded when it hit the Earth, causing major changes in the environment. (Image copyright © Dr. Luann Becker. Reproduced with permission.)

Over the six editions of the Dictionary, material has been drawn from the following references: G. M. Garrity et al., *Taxonomic Outline of the Prokaryotes*, Release 2, Springer-Verlag, January 2002; D. W. Linzey, *Vertebrate Biology*, McGraw-Hill, 2001; J. A. Pechenik, *Biology of the Invertebrates*, 4th ed., McGraw-Hill, 2000; U.S. Air Force *Glossary of Standardized Terms*, AF Manual 11-1, vol. 1, 1972; F. Casey, ed., *Compilation of Terms in Information Sciences Technology*, Federal Council for Science and Technology, 1970; *Communications-Electronics Terminology*, AF Manual 11-1, vol. 3, 1970; P. W. Thrush, comp. and ed., *A Dictionary of Mining, Mineral, and Related Terms*, Bureau of Mines, 1968; *A DOD Glossary of Mapping, Charting and Geodetic Terms*, Department of Defense, 1967; J. M. Gilliland, *Solar-Terrestrial Physics: A Glossary of Terms and Abbreviations*, Royal Aircraft Establishment Technical Report 67158, 1967; W. H. Allen, ed., *Dictionary of Technical Terms for Aerospace Use*, National Aeronautics and Space Administration, 1965; *Glossary of Stinfo Terminology*, Office of Aerospace Research, U.S. Air Force, 1963; *Naval Dictionary of Electronic, Technical, and Imperative Terms*, Bureau of Naval Personnel, 1962; R. E. Huschke, *Glossary of Meteorology*, American Meteorological Society, 1959; *ADP Glossary*, Department of the Navy, NAVSO P-3097; *Glossary of Air Traffic Control Terms*, Federal Aviation Agency; *A Glossary of Range Terminology, White Sands Missile Range, New Mexico*, National Bureau of Standards, AD 467-424; *Nuclear Terms: A Glossary*, 2d ed., Atomic Energy Commission.

**McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS,
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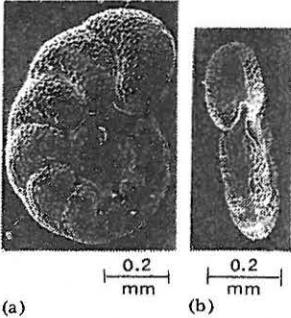
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ANOMALINACEA



Scanning electron micrographs of the foraminiferan *Holmanella*, from the Miocene of California. (a) Spiral view and (b) edge view of bivalvolute planispiral test, with a coarsely perforate granular margin, and a slitlike aperture extending up the terminal face. (R. B. MacAdam, Chevron Oil Field Research Co.)

Anomalinacea [INV ZOO] A superfamily of marine and benthic sarcodine protozoans in the order Foraminiferida. { əˈnām-ə-ləˈnās-ē-ə }

anomalistic month [ASTRON] The average period of revolution of the moon from perigee to perigee, a period of 27 days 13 hours 18 minutes 33.2 seconds. { əˈnām-ə-lis-tik ˈmɒnθ }

anomalistic period [ASTRON] The interval between two successive perigee passages of a satellite in orbit about a primary. Also known as perigee-to-perigee period. { əˈnām-ə-lis-tik ˈpɪr-ē-əd }

anomalistic year [ASTRON] The period of one revolution of the earth about the sun from perihelion to perihelion; 365 days 6 hours 13 minutes 53.0 seconds in 1900 and increasing at the rate of 0.26 second per century. { əˈnām-ə-lis-tik ˈjɪr }

anomalon [NUC PHYS] A nuclear fragment, produced in the collision of a projectile nucleus at relativistic energy with a target nucleus at rest, that has an anomalously short mean free path, comparable to that of a uranium nucleus. { əˈnām-ə-lən }

anomaloscope [OPTICS] An optical instrument for testing color vision, in which a yellow light whose intensity may be varied is matched against red and green lights whose intensity is fixed. { əˈnām-ə-lə-skɒp }

anomalous [SCI TECH] Deviating from the normal; irregular. { əˈnām-ə-ləs }

anomalous Barkhausen effect [ELECTROMAG] The occurrence of large steps in the magnetization of an iron-aluminum alloy at temperature above about 400°C (750°F). { əˈnām-ə-ləs ˈbɑːk-haʊz-ən i,fekt }

anomalous dispersion [OPTICS] Extraordinary behavior in the curve of refractive index versus wavelength which occurs in the vicinity of absorption lines or bands in the absorption spectrum of a medium. { əˈnām-ə-ləs dɪsˈpɜːr-zhən }

anomalous expansion [THERMO] An increase in the volume of a substance that results from a decrease in its temperature, such as is displayed by water at temperatures between 0 and 4°C (32 and 39°F). { əˈnām-ə-ləs ɪkˈspæn-shən }

anomalous Funkel effect [ELECTR] Current fluctuations in an electron tube resulting from positive ions entering the space-charge region in front of the cathode. { əˈnām-ə-ləs ˈfʌŋ-kəl i,fekt }

anomalous Hall effect [ELECTROMAG] 1. In a current-carrying conductor in a magnetic field, development of a transverse voltage resulting from the deflection of positive charge carriers (hole states) by the Lorentz force. 2. The Hall effect in ferromagnetic metals, which arises from the unsymmetrical scattering of conduction electrons at magnetic moments. { əˈnām-ə-ləs ˈhɒl i,fekt }

anomalous magma [GEOL] Magma formed or obviously changed by assimilation. { əˈnām-ə-ləs ˈmæg-mə }

anomalous magnetic moment [PARTIC PHYS] The difference between the observed magnetic moment and the value predicted by Dirac's theory. { əˈnām-ə-ləs magˈnet-ik ˈmɒmənt }

anomalous series [ATOM PHYS] A series of spectral lines associated with atomic energy levels whose Rydberg corrections do not vary smoothly with total quantum number, generally because they involve excitation of two electrons. Also known as abnormal series. { əˈnām-ə-ləs ˈsɪr-ēz }

anomalous skin effect [ELEC] The skin effect at very low temperatures and high frequencies at which the thickness of the conducting skin layer is less than the electron mean free path, so that the classical theory of electrical conductivity breaks down. { əˈnām-ə-ləs ˈskɪn i,fekt }

anomalous trichromatism [PHYSIO] A mild defect in red-green color vision in which the subject, when asked to mix red and green light to match a certain shade of yellow, produces a different shade than does someone with normal color vision. { əˈnām-ə-ləs trɪˈkrɒm-ə,tɪz-əm }

anomalous viscosity See non-Newtonian viscosity. { əˈnām-ə-ləs vɪzˈkəs-əd-ē }

anomalous Zeeman effect [SPECT] A type of splitting of spectral lines of a light source in a magnetic field which occurs for any line arising from a combination of terms of multiplicity greater than one; due to a nonclassical magnetic behavior of the electron spin. { əˈnām-ə-ləs ˈzē,mən i,fekt }

Anomaluridae [VERT ZOO] The African flying squirrels, a small family in the order Rodentia characterized by the climbing

organ, a series of scales at the root of the tail. { əˈnām-ə-ljūr-ə,dē }

anomaly [ASTRON] In celestial mechanics, the angle between the radius vector to an orbiting body from its primary (the focus of the orbital ellipse) and the line of apsides of the orbit, measured in the direction of travel, from the point of closest approach to the primary (perifocus). Also known as true anomaly. [BIOL] An abnormal deviation from the characteristic form of a group. [GEOL] A local deviation from the general geological properties of a region. [MED] Any part of the body that is abnormal in its position, form, or structure. [METEOROL] The deviation of the value of an element (especially temperature) from its mean value over some specified interval. [OCEANOGR] The difference between conditions actually observed at a serial station and those that would have existed had the water all been of a given arbitrary temperature and salinity. [SCI TECH] A deviation beyond normal variations. { əˈnām-ə-lē }

anomaly detection [COMPUT SCI] The technology that seeks to identify an attack on a computer system by looking for behavior that is out of the norm. { əˈnām-ə-lē dɪ,tɛk-shən }

anomaly finder [ENG] A computer-controlled data-plotting system used on ships to measure and record seismic, gravity, magnetic, and other geophysical data and water depth, time, course, and speed. { əˈnām-ə-lē ˈfɪnd-ər }

anomaly of geopotential difference See dynamic-height anomaly. { əˈnām-ə-lē əv ʤe-ɔː-pəʊ-ten-shəl ˈdɪf-rəns }

anomer [ORG CHEM] One of a pair of isomers of cyclic carbohydrates; resulting from creation of a new point of symmetry when a rearrangement of the atoms occurs at the aldehyde or ketone position. { ˈæn-ə-mər }

anomeric carbon [BIOCHEM] The carbon about which anomers rotate. { ˈæn-ə-mɪr-ɪk ˈkɑːr-bən }

anomic aphasia [PSYCH] A subtype of fluent aphasia in which principal nouns and verbs cannot be recalled by the individual; typically caused by injury at the temporo-parietal junction. { əˈnām-ɪk əˈfæz-ə }

anomie [PSYCH] Apathy, alienation, and personal distress resulting from a lack of purpose or ideals. { ˈæn-ə-mē }

anomite [MINERAL] A variety of biotite different only in optical orientation. { ˈæn-ə-mɪt }

Anomocoela [VERT ZOO] A suborder of toadlike amphibians in the order Anura characterized by a lack of free ribs. { ˈæn-ə-mɔːsē-lə }

anomocoelous [ANAT] Describing a vertebra with a centrum that is concave anteriorly and flat or convex posteriorly. { ˈæn-ə-mɔːsē-ləs }

Anomphalacea [PALEON] A superfamily of extinct gastropod mollusks in the order Aspidobranchia. { əˈnām-fəˈlæʃ-ə }

Anomura [VERT ZOO] A section of the crustacean order Decapoda that includes lobsterlike and crablike forms. { ˈæn-ə-mjūr-ə }

anonymous dimensionless group 1-4 [CHEM ENG] Four of the dimensionless groups, used to solve problems in transfer processes, gas absorption in wetted-wall columns, and laminar boundary-layer flow. { əˈnæn-ə-məs dɪˈmɛn-shən-ləs ˈgrʊp ˈwʌn tə ˈfɔːr }

anonymous FTP [COMPUT SCI] A public FTP (file transfer protocol) site at which users can log in and download documents by entering "anonymous" as their user ID, and their e-mail address as password. { əˈnæn-ə-məs ˈefˌtɪpˈpē }

anoopsia [MED] Strabismus in which the eye is turned upward. { ˈæn-ɔːp-sē-ə }

Anopheles [INV ZOO] A genus of mosquitoes in the family Culicidae; members are vectors of malaria, dengue, and filariasis. { əˈnəf-ə-lēz }

anopheline [INV ZOO] Pertaining to mosquitoes of the genus *Anopheles* or a closely related genus. { əˈnəf-ə-lən }

Anopla [INV ZOO] A class or subclass of the phylum Rhynchocoela characterized by a simple tubular proboscis and by having the mouth opening posterior to the brain. { ˈæn-ə-plə }

Anoplocephalidae [INV ZOO] A family of tapeworms in the order Cyclophyllida. { ˈæn-ə-plə-səˈfal-ə,dē }

Anoplura [INV ZOO] The sucking lice, a small group of mammalian ectoparasites usually considered to constitute an order in the class Insecta. { ˈæn-ə-pljūr-ə }

anorexia [MED] Loss of appetite. { ˈæn-əˈrɛk-sē-ə }

anorexia nervosa [PSYCH] A disorder in which dramatic