

McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS

**Sixth
Edition**

CC LIBRARY

SEP 25 2010

LAURENCE J. KATZ

McGraw-Hill

New York Chicago San Francisco
Lisbon London Madrid Mexico City
Milan New Delhi San Juan Seoul Singapore Sydney Toronto

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,
Sixth Edition**

Copyright © 2003, 1994, 1989, 1984, 1978, 1976, 1974 by The McGraw-Hill Companies, Inc. All rights reserved. Printed in the United States of America. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of the publisher.

1 2 3 4 5 6 7 8 9 0 DOW/DOW 0 8 7 6 5 4 3 2

ISBN 0-07-042313-X

Library of Congress Cataloging-in-Publication Data

McGraw-Hill dictionary of scientific and technical terms--6th ed.

p. cm.

ISBN 0-07-042313-X (alk. paper)

1. Science--Dictionaries. 2. Technology--Dictionaries. I. Title: Dictionary of scientific and technical terms.

Q123.M15 2002

503--dc21

cavition [m,pi:v] A region of a plasma having reduced mass density and enhanced wave energy density. ['kav-i-ti:n]

cavity [bi:ol] A hole or hollow space in an organ, tissue, or other body part [ELECTROMAG] See cavity resonator. ['kav-i-əd-ē]

cavity charge See shaped charge. ['kav-i-əd-ē, 'tʃɜ:rdʒ]

cavity coupling [ELECTROMAG] The extraction of electromagnetic energy from a resonant cavity, either waveguide or coaxial, using loops, probes, or apertures. ['kav-i-əd-ē, 'kʌp-lɪŋ]

cavity filter [ELECTROMAG] A microwave filter that uses quarter-wavelength-coupled cavities inserted in waveguides or coaxial lines to provide band-pass or other response characteristics at frequencies in the gigahertz range. ['kav-i-əd-ē, 'fɪlt-ər]

cavity frequency meter [ENG] A device that employs a cavity resonator to measure microwave frequencies. ['kav-i-əd-ē, 'frɛ-kwən-sɛ, 'mɛd-ər]

cavity impedance [ELECTR] The impedance of the cavity of a microwave tube which appears across the gap between the cathode and the anode. ['kav-i-əd-ē, 'ɪm-ped-əns]

cavity magnetron [ELECTR] A magnetron having a number of resonant cavities forming the anode; used as a microwave oscillator. ['kav-i-əd-ē, 'mæg-nə-trɒn]

cavity oscillator [ELECTR] An ultra-high-frequency oscillator whose frequency is controlled by a cavity resonator. ['kav-i-əd-ē, 'as-ə-ləd-ər]

cavity radiator [THERMO] A heated enclosure with a small opening which allows some radiation to escape or enter; the escaping radiation approximates that of a blackbody. ['kav-i-əd-ē, 'ræd-ē, 'ad-ər]

cavity resonance [ELECTROMAG] The resonant oscillation of the electromagnetic field in a cavity. [ENG ACOUS] The natural resonant vibration of a loudspeaker baffle, if in the audio range, it is evident as unpleasant emphasis of sounds at that frequency. ['kav-i-əd-ē, 'rez-ə-nəns]

cavity resonator [ELECTROMAG] A space totally enclosed by a metallic conductor and excited in such a way that it becomes a source of electromagnetic oscillations. Also known as cavity; microwave cavity; microwave resonance cavity; resonant cavity; resonant chamber; resonant element; rumbatron; tuned cavity; waveguide resonator. ['kav-i-əd-ē, 'rez-ə-nəd-ər]

cavity ringdown laser absorption spectroscopy [SPECT] A direct absorption technique used for measuring short-lived species and for trace-gas analysis in which the rate of decay of light, injected with a pulsed laser and trapped in a cavity formed by two highly reflective mirrors, is measured, allowing the calculation of the amount of light absorbed by the sample. Abbreviated CRLAS. ['kav-i-əd-ē, 'rɪŋ, 'daʊn, 'lā-zər, əb'sɔ:p-shən, 'spek'trəs kə-pē]

cavity tuning [ELECTROMAG] Use of an adjustable cavity resonator as a tuned circuit in an oscillator or amplifier, with tuning usually achieved by moving a metal plunger in or out of the cavity to change the volume, and hence the resonant frequency of the cavity. ['kav-i-əd-ē, 'tʊn-ɪŋ]

cavity-type diode amplifier See diode amplifier. ['kav-i-əd-ē, 'tɪp, 'di-əd, 'am-plə-faɪ-ər]

cavity wall [BUILD] A wall constructed in two separate thicknesses with an air space between; provides thermal insulation. Also known as hollow wall. ['kav-i-əd-ē, 'wɔ:l]

CAVU [AERO ENG] An operational term commonly used in aviation, which designates a condition wherein the ceiling is more than 10,000 feet (3048 meters) and the visibility is more than 10 miles (16 kilometers). Derived from ceiling and visibility unlimited.

cavy [VERT ZOO] Any of the rodents composing the family Caviidae, which includes the guinea pig, rock caviens, mountain caviens, capybara, salt desert cavy, and mara. ['kə-ve]

CAW See channel address word.

c-axis [CRYSTAL] A vertically oriented crystal axis, usually the principal axis; the unique symmetry axis in tetragonal and hexagonal crystals. [GEOL] The reference axis perpendicular to the plane of movement of rock or mineral strata. [MACH ENG] The angle that specifies the rotation of a machining tool about the z-axis. ['sɛ, 'æks-əs]

cay [GEOL] 1. A flat coral island. 2. A flat mound of sand built up on a reef slightly above high tide. 3. A small, low coastal islet or emergent reef composed largely of sand or coral. ['kɪ]

Cayley algebra [MATH] The nonassociative division algebra consisting of pairs of quaternions, it may be identified with an eight-dimensional vector space over the real numbers. ['keɪ, 'al-jə-brə]

Cayley-Hamilton theorem [MATH] The theorem that a linear transformation or matrix is a root of its own characteristic polynomial. Also known as Hamilton-Cayley theorem. ['keɪ, 'eɪ, 'hæm-i-ltən, 'θi-r-əm]

Cayley-Klein parameters [MATH] A set of four complex numbers used to describe the orientation of a rigid body in space, or equivalently, the rotation which produces that orientation, starting from some reference orientation. ['keɪ, 'kleɪn, 'pə, 'ræm-i-d-əz]

Cayley numbers [MATH] The members of a Cayley algebra. Also known as octonions. ['keɪ, 'eɪ, 'nɒm-bəz]

Cayley's sextic [MATH] A plane curve with the equation $r = 4a \cos^3(\theta/3)$, where r and θ are radial and angular polar coordinates and a is a constant. ['keɪ, 'lez, 'sek-sɪk]

Cayley's theorem [MATH] A theorem that any group G is isomorphic to a subgroup of the group of permutations on G . ['keɪ, 'lez, 'θi-r-əm]

cay sandstone [GEOL] Firmly cemented or friable sand formed near the base of coral reef cays. ['kə, 'sænd-stən]

Caytoniales [PALEBOT] An order of Mesozoic plants. ['keɪ, 'tɒn-ē-ə, 'leɪz]

Cayugan [GEOL] Upper Silurian geologic time. ['keɪ, 'yʊ-gən]

Cazenovian [GEOL] Lower Middle Devonian geologic time. ['kæz-ə'nɒv-ē-ən]

C band [COMMUN] A band of radio frequencies extending from 4 to 8 gigahertz. ['se, 'bænd]

C-band fixed satellite service [COMMUN] Satellite communication at frequencies in and near the C band, with the uplink frequency in a band from 5.85 to 7.075 gigahertz and the downlink frequency in bands from 3.4 to 4.2 gigahertz and 4.5 to 4.8 gigahertz. ['se, 'bænd, 'fɪksɪt, 'sæt-ə-lɪt, 'sær-vɪs]

C-band waveguide [ELECTROMAG] A rectangular waveguide, with dimensions 3.48 by 1.58 centimeters, which is used to excite only the dominant mode (TE₀₁) for wavelengths in the range 3.7-5.1 centimeters. ['se, 'bænd, 'wæv, 'ɡaɪd]

C battery [ELEC] The battery that supplies the steady bias voltage required by the control-grid electrodes of electron tubes in battery-operated equipment. Also known as grid battery. ['se, 'bæt-ə-rɛ]

CBC See cipher block chaining.

C bias See grid bias. ['se, 'bi-əs]

C boundary See causal boundary. ['se, 'baʊn-drɪ]

CBP See CREB-binding protein.

CBX See computerized branch exchange.

Cc See circumcubus cloud.

CCD See calcite compensation depth; charge-coupled device.

C cells [HISTOL] Calcitonin-secreting cells located in the thyroid gland in mammals and in the ultimobranchial body in lower animals. ['se, 'selz]

C chart [IND ENG] A quality-control chart showing number of defects in subgroups of constant size; gives information concerning quality level, its variability, and evidence of assignable causes of variation. ['se, 'tʃɑ:t]

CCIS See common-channel interoffice signaling.

CCIT2 code [COMMUN] A printing-telegraph code in which each character is represented by five binary digits. Also known as international telegraph alphabet; International Telegraphic Consultative Committee code 2. ['se, 'si, 'ti, 'kɒd]

C core [ELECTROMAG] A spirally wound magnetic core that is formed to a desired rectangular shape before being cut into two C-shaped pieces and placed around a transformer or magnetic amplifier coil. ['se, 'kɔ:r]

CCR process See cyclic catalytic reforming process. ['se, 'seɪ, 'præs-əs]

CCRS [MED] Belonging to the seven-transmembrane class of G-protein receptor family, the major cofactor for primary immunodeficiency virus-1 strains.

CCTV See closed-circuit television.

CCU See communications control unit.

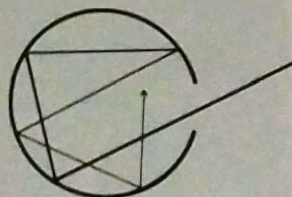
CCW See channel command word.

Cd See cadmium.

CD See circular dichroism.

CDC gene See cell-division-cycle gene. ['seɪ, 'di, 'vɪ, 'ʃən]

CAVITY RADIATOR



A drawing of a cavity radiator showing the almost complete absorption of entering radiation energy because of the multiple reflections it encounters.

elongation factor [BIOCHEM] Any of several proteins required for elongation of growing polypeptide chains during protein synthesis. ['ē,lōŋ'gē'shān, 'lōŋ'gē]

Eloplidae [VERT ZOO] A family of fishes in the order Elopiformes, including the tarpon, ladyfish, and machete. ['ē'lāp'ē,dē]

Elopliformes [VERT ZOO] A primitive order of actinopterygian fishes characterized by a single dorsal fin composed of soft rays only, cycloid scales, and toothed maxillae. ['ē,lāp'ē'fōr,mēz]

elpasolite [MINERAL] K_2NaAlF_6 Mineral composed of sodium potassium aluminum fluoride. ['ē'l'pās'ā,līt]

elplidite [MINERAL] $Na_2ZrSi_2O_7 \cdot 3H_2O$ A white to light red mineral composed of hydrated sodium zirconium silicate. ['ē'l'pā,dīt]

ELR scale See equal listener response scale. ['ē'l'ē'r,skāl]

Elssasser's radiation chart [METEOROL] A radiation chart developed by W. M. Elssasser for the graphical solution of the radiative transfer problems of importance in meteorology; given a radiosonde record of the vertical variation of temperature and water vapor content, one can find with this chart such quantities as the effective terrestrial radiation, net flux of infrared radiation at a cloud base or a cloud top, and radiative cooling rates. ['ē'l'zās'sarz'rād'ē'shān,čhārt]

ELSE instruction [COMPUT SCI] An instruction in a programming language which tells a program what actions to take if previously specified conditions are not met. ['ēls'īn'strāk'shān]

ELSE rule [COMPUT SCI] A convention in decision tables which spells out which action to take in the case specified conditions are not met. ['ēls'rul]

Elster-Geitel effect [PHYS] The phenomenon in which a heated conductor acquires a positive or negative electric charge in the presence of a gas, while in a vacuum it always acquires a negative charge. ['ēl'stār'gēit'əl'ē,fekt]

ELT See emergency locator transmitter.

El Tor vibrio [MICROBIO] Any of the rod-shaped paracolonial vibrios; many strains can be agglutinated with anticholera serum. ['ēl'tōr'vīb'rē-ō]

eluant [CHEM] A liquid used to extract one material from another, as in chromatography. ['ē'l'yā-wānt]

eluant gas See carrier gas. ['ē'l'yū-ānt'gās]

eluate [CHEM] The solution that results from the elution process. ['ē'l'yā,wāt]

elusive ulcer See Hunner's ulcer. ['ē'l'ūsiv'əl'sər]

elution [CHEM] The removal of adsorbed species from a porous bed or chromatographic column by means of a stream of liquid or gas. ['ē'l'ū'shān]

elutriation [CHEM ENG] The process of removing substances from a mixture through washing and decanting. [ENG] In a mixture, the separation of finer lighter particles from coarser heavier particles through a slow stream of fluid moving upward so that the lighter particles are carried with it. [GEOL] The washing away of the lighter or finer particles in a soil, especially by the action of raindrops. ['ē,lū-trē'ā'shān]

elutriator [ENG] An apparatus used to separate suspended solid particles according to size by the process of elutriation. ['ē'lū-trē,ad'ər]

eluvial [GEOL] Of, composed of, or relating to eluvium. ['ē'lūv'ē-əl]

eluvial placer [GEOL] A placer deposit that is concentrated near the decomposed outcrop of the source. ['ē'lūv'ē-əl'plāsər]

eluviation [HYD] The process of transporting dissolved or suspended materials in the soil by lateral or downward water flow when rainfall exceeds evaporation. ['ē,lū-ve'ā'shān]

eluvium [GEOL] Disintegrated rock material formed and accumulated in situ or moved by the wind alone. ['ē'lū-vē-əm]

elve [METEOROL] A transient luminous event that occurs over a thunderstorm, constituting a broad disk of illumination typically at an altitude of 85–90 kilometers (51–54 miles) with a thickness of about 6 kilometers (4 miles). ['ēlv]

elvegust [METEOROL] A cold descending squall in the upper parts of Norwegian fjords. Also known as sno. ['ēlv-ə,gəst]

elytron [INV ZOO] 1. One of the two sclerotized or leathery anterior wings of beetles which serve to cover and protect the

membranous hindwings. 2. A dorsal scale of certain Polychaeta. ['ē'l'ā-trān]

em [GRAPHICS] A unit of linear measurement used in printing which is equal to the point size of the type; for example, an em in 6-point type is 6 points wide. ['ēm]

emaciation [MED] A wasted condition of the body, the process of losing flesh so as to become extremely lean. ['ēm-ē'shān]

emagram [THERMO] A graph of the logarithm of the pressure of a substance versus its temperature, when it is held at constant volume, in meteorological investigations, the potential temperature is often the parameter. ['ēm-ə'grām]

e-mail See electronic mail. ['ē,mēl]

emanating power [NUCLEO] The fraction of radon atoms formed in a solid or solution, which escape. ['ēm-ə'nā-ŋ'pā-ər]

emanation See radioactive emanation. ['ēm-ə'nā'shān]

emanation security [ELECTR] The protection resulting from all measures designed to deny unauthorized persons information of value which might be derived from unintentional emissions from other than telecommunications systems. ['ēm-ə'nā'shān sək'yūr-ē-tē]

emanometer [ENG] An instrument for the measurement of the radon content of the atmosphere; radon is removed from a sample of air by condensation or adsorption on a surface, and is then placed in an ionization chamber and its activity determined. ['ēm-ə'nīm-əd'ər]

emanometry [NUCLEO] The collective techniques for ionization-chamber determination of the amounts of radioactive gases escaping into the lower atmosphere from the earth's surface; in emanometric measurements, the objective is to count, by typical ionization-chamber methods, all of the ions produced by the alpha particles emitted by the one or more radioactive gases contained in the chamber. ['ēm-ə'nīm-ə'trē]

emarginate [BIOL] Having a margin that is notched or slightly forked. ['ē'mār'jə,nāt]

embacle [HYD] The piling up of ice in a stream after a refreeze, and the pile so formed. ['ēm'bək-əl]

EMB agar [MICROBIO] A culture medium containing sugar, eosin, and methylene blue, used in the confirming test for coliform bacteria. ['ē'm'bē'āg-ər]

Emballonuridae [VERT ZOO] The sheath-tailed bats, a family of mammals in the order Chiroptera. ['ēm,bāl-ə'nur'ē-dē]

embalm [MED] To treat a cadaver with antiseptics and preservatives to prevent decay, before burial or dissection. ['ēm'bām]

embankment [CIV ENG] 1. A ridge constructed of earth, stone, or other material to carry a roadway or railroad at a level above that of the surrounding terrain. 2. A ridge of earth or stone to prevent water from passing beyond desirable limits. Also known as bank. ['ēm'bank-mənt]

embarkation [ORD] The loading of troops with their supplies and equipment into ships or aircraft. ['ēm,bark'ā'shān]

embata [METEOROL] A local onshore southwest wind caused by the reversal of the northeast trade winds in the lee of the Canary Islands. ['ēm'bā-tā]

embatholithic [GEOL] Pertaining to ore deposits associated with a batholith where exposure of the batholith and country rock is about equal. ['ēm,bath-ə'lith'ik]

embayed [GEOGR] Formed into a bay. [NAV] Pertaining to a vessel in a bay unable to put to sea or to put to sea safely because of wind, current, or sea. ['ēm'bād]

embayed coastal plain [GEOL] A coastal plain that has been partly sunk beneath the sea, thereby forming a bay. ['ēm'bād'kōst-əl'plān]

embayed mountain [GEOL] A mountain that has been depressed enough for sea water to enter the bordering valleys. ['ēm'bād'maūn,tān]

embayment [GEOGR] Indentation in a shoreline forming a bay. [GEOL] 1. Act or process of forming a bay. 2. A fragment of sedimentary rock into a crystalline mass. ['ēm'bā-mənt]

Emden-Meyerhof pathway See glycolytic pathway. ['ēm-dən'mē-ər'hof'path,wā]

embed Also spelled imbed. [BIOL] To prepare a specimen for sectioning for microscopic examination by infiltrating with or enclosing in paraffin or other supporting material. [SECT]

TECTI] 1. To enclose in a matrix. 2. To closely surround.

[em'bed] **embedability** [MEI] The ability of a metal to enclose foreign particles within itself. [em'bed-ə'bɪl-əd-i]

embedded command [COMPUT SCI] In word processing, a code inserted in a text document that instructs the printer to change its print attributes. [em'bed-əd kə'mənd]

embedded pointer [COMPUT SCI] A pointer set in a data record instead of in a directory. [em'bed-əd 'pɔɪnt-ər]

embedded system [COMPUT SCI] A computer system that cannot be programmed by the user because it is preprogrammed for a specific task and embedded within the equipment which it serves. [em'bed-əd 'sɪs-təm]

embedding [MATH] An injective homomorphism between two algebraic systems of the same type. [em'bed-ɪŋ]

embedment anchor [NAV ARCH] An anchor that uses a charge of powder or hydrostatic or pneumatic pressure to drive the fluke into the sea floor. [em'bed-mənt ˈæŋ-kər]

Embiolina [INV ZOO] An equivalent name for Embioptera. [em'bi-ə'ɔɪ-nə]

Embioptera [INV ZOO] An order of silk-spinning, orthopteroid insects resembling the grasshoppers; commonly called the embiids or web-spinners. [em'bi-ə'pt-ər-i-ə]

Embiotocidae [VERT ZOO] The surfperches, a family of perciform fishes in the suborder Percoidae. [em'bi-ə'ti-əs-i-ə-de]

embolotomy [MED] Surgical removal of an embolus. [em'bə'lek-tə-mi]

embolism [MED] The blocking of a blood vessel by an embolus. [em'bə'liz-əm]

emboite [MINERAL] Ag(Cl,Br) A yellow-green mineral resembling cerargyrite; composed of native silver chloride and silver bromide. [em'bə'ɔɪt]

Embolomeri [PALEON] An extinct side branch of slender-bodied, fish-eating aquatic antracosaurs in which intercentra as well as centra form complete rings. [em'bə'li-mə-r-i]

embolus [MED] A clot or other mass of particulate matter foreign to the bloodstream which lodges in a blood vessel and causes obstruction. [em'bə'ləs]

emboly [EMBRYO] Formation of a gastrula by the process of invagination. [em'bə'li]

embossed plate printer [COMPUT SCI] In character recognition, a data preparation device which accomplishes printing by allowing a raised character behind the paper to push the paper against the printing ribbon in front of the paper. [em'bɔst 'plæt 'prɪnt-ər]

embossing [GRAPHICS] Producing a raised pattern on the surface of paper or wood by means of a die. [em'bɔs-ɪŋ]

embossing die [GRAPHICS] A die used for embossing. [em'bɔs-ɪŋ di]

embossing stylus [ENG ACOUS] A recording stylus with a rounded tip that forms a groove by displacing material in the recording medium. [em'bɔs-ɪŋ stɪ-ləs]

embouchure [GEOL] 1. The mouth of a river. 2. A river valley widened into a plain. [jəm'bʊʃər]

embrasure [ARCH] 1. Opening in a wall or parapet, especially one through which a gun is fired. 2. An opening such as for a door or window with sloping or beveled sides. [em'brɪ-zhər]

embrechites [PETR] A type of migmatite in which structural features of crystalline shifts are preserved but often partially obliterated by metablastesis. [em'brɛ-kɪts]

Embrithopoda [PALEON] An order established for the unique Oligocene mammal *Arsinoitherium*, a herbivorous animal that resembled the modern rhinoceros. [em'brɪθə'pɔ-də]

embrittlement [MECH] Reduction or loss of ductility or toughness in a metal or plastic with little change in other mechanical properties. [em'brɪd-əl-mənt]

embryo [BOT] The young sporophyte of a seed plant.

embryo [EMBRYO] 1. An early stage of development in multicellular organisms. 2. The product of conception up to the third month of human pregnancy. [em'brɪ-ə]

Embryobionta [BOT] The land plants, a subkingdom of the Plantae characterized by having specialized conducting tissue in the sporophyte (except bryophytes), having multicellular sex organs, and producing an embryo. [em'brɪ-ə-bɪ'ɔn-tə]

embryogenesis [EMBRYO] The formation and development of an embryo from an egg. [em'brɪ-ə'jən-ə-səs]

embryoid [BOT] An embryolike structure originating from

somatic cells, such as immature plant embryos, inflorescences, or leaves cultivated in culture. [em'brɪ-ɔɪd]

embryology [BIOL] The study of the development of the organism from the zygote, or fertilized egg. [em'brɪ-ɔɪ-l-ə-jɪ]

embryoma of the ovary See dysgerminoma. [em'brɪ-ə'mə-əv 'tʃe 'ɔv-ər-i]

embryonal cell lipoma See liposarcoma. [em'brɪ-ə-nəl sel lɪ'pɔ-mə]

embryonate [EMBRYO] 1. To differentiate into a zygote. 2. Containing an embryo. [em'brɪ-ə-ni]

embryonated egg culture [VIROL] Embryonated hen's eggs inoculated with animal viruses for the purpose of identification, isolation, titration, or for quantity cultivation in the production of viral vaccines. [em'brɪ-ə-ni-əd 'eg kəl-ʃər]

embryonic differentiation [EMBRYO] The process by which specialized and diversified structures arise during embryogenesis. [em'brɪ-ə-nɪk dɪ-f-ə'ren-che'i-ə-shən]

embryonic inducer [EMBRYO] The acting system in embryos, which contributes to the formation of specialized tissues by controlling the mode of development of the reacting system. [em'brɪ-ə-nɪk in'dü-sər]

embryonic induction [EMBRYO] The influence of one cell group (inducer) over a neighboring cell group (induced) during embryogenesis. Also known as induction. [em'brɪ-ə-nɪk in'dak-shən]

embryonic stem cell [EMBRYO] Undifferentiated cell derived from the inner cell mass of the blastocyst that can give rise to any of the three embryonic germ layers, and thus can form any cell or tissue type of the body, but cannot give rise to the full spectrum of cells required to complete fetal development. [em'brɪ-ə-nɪk 'stem sel]

embryopathy [MED] Any abnormal development of an embryo, either morphological or biochemical. [em'brɪ-ə'p-ə-thi]

Embryophyta [BOT] The equivalent name for Embryobionta. [em'brɪ-ə'f-ə-d-ə]

embryo rescue [GEN] A technique for crossing wild and domestic species of plants in which the wild species is used as the male parent, and the embryos are excised approximately one month after pollination and placed on an artificial medium, where a small fraction survive. [em'brɪ-ə 'res-kyü]

embryo sac [BOT] The female gametophyte of a seed plant, containing the egg, synergids, and polar and antipodal nuclei; fusion of the antipodals and a pollen generative nucleus forms the endosperm. [em'brɪ-ə 'sæk]

embryotomy [MED] Any mutilation of the fetus in the uterus to aid in its removal when natural delivery is impossible. [em'brɪ-ə'də-mi]

Emden equation [ASTROPHYS] An equation for stellar structure which arises in a model based on the assumption that the star is a gaseous sphere in adiabatic equilibrium, in which the pressure is proportional to $\rho\gamma$, where ρ is the density and γ is a constant; the equation is $d^2y/dx^2 + (2/x)dy/dx + y^n = 0$, where $n = 1/(\gamma - 1)$, x is proportional to the distance from the center of the sphere, and y is proportional to $\rho^{1/n}$. Also known as Lane-Emden equation. [em'dən i,kwə-zhən]

Emden function [ASTROPHYS] A solution of the Emden equation with the boundary conditions $y = 1$ and $dy/dx = 0$ at $x = 0$. Also known as Lane-Emden function. [em'dən ˈfʌŋk-shən]

emerald [MINERAL] $Al_2(Be_2Si_6O_{18})$ A brilliant-green to grass-green gem variety of beryl that crystallizes in the hexagonal system; green color is caused by varying amounts of chromium. Also known as smaragd. [em-rəld]

emerald cut [LAP] A step cut in which the gem girdle outline is square or rectangular and the steps of elongated facets are parallel to the girdle, with sets on each of the four sides and at the corners. [em-rəld kət]

emerged bog [ECOL] A bog which grows vertically above the water table by drawing water up through the mass of plants. [emərjɪd 'bæg]

emerged shoreline See shoreline of emergence. [emərjɪd 'shɔr,lɪn]

emergence [GEOL] 1. Dry land which was part of the ocean floor. 2. The act or process of becoming an emergent land mass. [HYD] See resurgence. [em-ər-jəns]

emergency alert system [COMMUN] A system of radio,

EMBIOPTERA



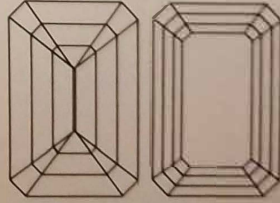
Body form of a typical embiid (*Parahagadochir trachelia*). (From E. S. Ross, *Insects Close Up*; University of California Press, 1953).

EMBRITHOPODA



Arsinoitherium, the early Oligocene embrithopod from Egypt.

EMERALD CUT



Emerald-cut gemstones. (Gemological Institute of America)

Any swelling or fragmentation of the brain. (en'seif-ə-lō-mi'ā-lī-ə-s) (en'seif-ə-lō-mi'ā-lī-ə-s)

encephalomyelitis (MED) Inflammation of the brain and spinal cord. (en'seif-ə-lō-mi'ā-lī-ə-s)

encephalomyelitis (MED) An acute febrile RNA virus disease accompanied by pharyngitis, stiff neck, and hyperactive deep reflexes; certain species of wild rats are the reservoir; human infections range from a mild febrile illness to a severe encephalomyelitis. (en'seif-ə-lō-mi'ā-kīl'rīd-ās)

encephalopathy (MED) Any disease of the brain. (en'seif-ə-lō-pā-thē)

Encephalozoa (INV ZOO) A superfamily of nematodes of the order Dorylaimida, characterized by two circlets of cephalic sense organs on the lips, pouchlike amphids with slitlike openings, a stoma armed with an axial spear, and a body cuticle marked by widely spaced annulations giving a platelike appearance. (en-kō-lō-mō'id-ē-ō)

enchondroma (MED) A benign tumor composed of dysplastic cartilage cells, occurring in the metaphysis of cylindric bones, especially of the hands and feet. (en,kān'drō-mā)

enchondromatosis (MED) A rare disorder principally involving tubular bones, especially those of the feet and hands, characterized by hamartomatous proliferation of cartilage in the metaphysis, indistinguishable in single lesions from enchondromas. Also known as chondrodysplasia; dyschondroplasia; Ollier's disease. (en,kān'drō-mā'tō-sīs)

enchymatous (PHYSIO) Of gland cells, distended with secreted material. (en'kim-əd-əs)

encipher (COMMUN) To convert a plain-text message into unintelligible language by means of a cryptosystem. Also known as encrypt. (en'sī-fər)

enciphered facsimile communications (COMMUN) Communications in which security is accomplished by mixing pulses produced by a key generator with the output of the facsimile converter; plain text is recovered by subtracting the identical key at the receiving terminal; unauthorized listeners are unable to reconstruct the plain text unless they have an identical key generator and the daily key setting. (en'sī-fərd fak'sim-ə-lē-lā-myūn-ə-kī-shanz)

Encke division (ASTRON) A faint line that splits the outer ring of Saturn into two. (en'kə dā-vīz-ən)

Encke roots (MATH) For any two numbers a_1 and a_2 , the numbers $-x_1$ and $-x_2$, where x_1 and x_2 are the roots of the equation $x^2 + a_1x + a_2 = 0$, with $|x_1| < |x_2|$. (en'kə-rūts)

Encke's Comet (ASTRON) A very faint comet with the shortest period of any known comet, 3.3 years. (en'kəz 'kām-ət)

enclave See domain. (än,klēv)

enclosed arc lamp (ELEC) An arc lamp in which the arc produced by carbon electrodes is protected from the atmosphere by a translucent enclosure. (en'klōzd 'ärk-lamp)

enclosure compound See clathrate. (en'klō-zhər-kām-paund)

encode (COMMUN) To express given information by means of a code. (COMPUT SCI) To prepare a routine in machine language for a specific computer. (en'kōd)

encoded abstract (COMPUT SCI) An abstract prepared to be accessed by automatic electronic machines. (en'kōd-əd 'ab-strakt)

encoded question (COMPUT SCI) A question set up and encoded in the form appropriate for operating, programming, or conditioning a searching device. (en'kōd-əd 'kwes-chən)

encoder (COMPUT SCI) In character recognition, that class of printer which is usually designed for the specific purpose of printing a particular type font in predetermined positions on certain size forms. (ELECTR) In an electronic computer, a network or system in which only one input is excited at a time and each input produces a combination of outputs. See matrix. (en'kōd-ər)

encoding strip (COMPUT SCI) In character recognition, the area reserved for the inscription of magnetic-ink characters, as in bank checks. (en'kōd-īng 'stri:p)

encounter (PHYS CHEM) A group of collisions, each of which consists of two molecules that collide without reacting and do not separate immediately because of the cage of surrounding molecules. (en'kaun-tər)

encrinal limestone (GEOL) A limestone consisting of more than 10% but less than 50% of fossil crinoidal fragments. (en'krīn-əl 'līm-stōn)

encrinite (PALEON) One of certain fossil crinoids, especially of the genus *Encrinurus*. (en'krīn-ait)

encroachment (MIN ENG) Extraction of coal beyond the boundary that divides one mine area from another. (en'krō-č-mənt)

encroachment (ENV) Replacement of oil or gas being withdrawn from a reservoir by groundwater. (en'krō-č-mənt)

encrustation (IND) The buildup of slag or other material inside furnaces and kilns. (en'krō-stā-shən)

encrypt See encipher. (en'kript)

encryption (COMPUT SCI) The coding of a clear text message by a transmitting unit so as to prevent unauthorized eavesdropping along the transmission line; the receiving unit uses the same algorithm as the transmitting unit to decode the incoming message. (en'krip-shən)

Encyrtidae (INV ZOO) A family of hymenopteran insects in the superfamily Chalcidoidea. (en'sīrd-ē-dē)

encystment (BIOL) The process of forming or becoming enclosed in a cyst or capsule. (en'sist-mənt)

end See warp. (end)

Endamoeba (INV ZOO) The type genus of the Endamoebidae comprising insect parasites and, in some systems of classification, certain vertebrate parasites. (end ə'mē-bē)

end-and-end (TEXT) Pertaining to a weave with a masculine check effect made by alternating white and colored warp yarns. Also known as end-to-end. (end ən 'end)

endarch (BOT) Formed outward from the center, referring to xylem or its development. (en'därk)

end-around carry (COMPUT SCI) A carry from the most significant digit place to the least significant digit place. (end ə'raund 'kar-ē)

end-around shift See cyclic shift. (end ə'raund 'shift)

endarteritis (MED) Inflammation of the lining (tunica intima) of an artery. (end,ärt-ə'rīd-əs)

endarteritis obliterans (MED) Endarteritis, particularly of small arteries, accompanied by degeneration of the intima, leading to occlusion of the blood vessel. Also known as obliterating endarteritis. (end,ärt-ə'rīd-əs ə'bli-tər-ānz)

end-bearing pile (CIV ENG) A bearing pile that is driven down to hard ground so that it carries the full load at its point. Also known as a point-bearing pile. (end ,ber-īng ,pil)

end bulb See bouton. (end ,bälb)

end bulb of Krause See Krause's corpuscle. (end ,bälb əv 'kräus)

end cell (ELEC) One of a group of cells in series with a storage battery, which can be switched in to maintain the output voltage of the battery when it is not being charged. (end ,sel)

end-cell rectifier (ELECTR) Small trickle charge rectifier used to maintain voltage of the storage battery end cells. (end ,sel 'rek-tā-fī-ər)

end construction (CIV ENG) Structural blocks or tiles laid so that the hollow cells run vertically. (end kən-strək-shən)

end-construction tile (MATER) A type of structural clay tile designed to receive its principal stress parallel to the axis of the cells. (end kən-strək-shən ,tīl)

end correction (ACOUST) A correction that must be made to the assumption that an antinode exists at an open end of a pipe in which air is vibrating, in order to take into account the radiation of sound waves from the pipe. (end kə-rek-shən)

end cut See heavy fraction. (end ,kət)

end distortion (COMMUN) The displacement of trailing edges of marking pulses transmitted over a teletypewriter circuit relative to the leading edge of the start pulse. (end dī-s-tōr-shən)

end effect (ELECTROMAG) The effect of capacitance at the ends of an antenna; it requires that the actual length of a half-wave antenna be about 5% less than a half wavelength. (end i,fekt)

end effector (CONT SYS) The component of a robot that comes into contact with the workpiece and does the actual work on it. Also known as hand. (end i,fek-tər)

Endelidae (INV ZOO) A family of marine arthropods in the subphylum Pycnogonida. (en'dē-ē-dē)

endellite (MINERAL) $Al_2Si_2O_5(OH)_4 \cdot 4H_2O$ Term used in the United States for a clay mineral, the more hydrous form of halloysite. Also known as hydrated halloysite; hydrohalloysite; hydrokaolin. (en'dē-līt)

endemic (MED) Peculiar to a certain region, specifically