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Fifth Edition

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Dictionary of
Scientific and
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Terms

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Editor in Chief

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On the cover: Photomicrograph of crystals of vitamin B₁.
(Dennis Kunkel, University of Hawaii)

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aspiration [MED] The removal of fluids from a cavity by suction. [MICROBIO] The use of suction to draw up a sample in a pipette. [SCI TECH] Act or the result of removing, carrying along, or drawing by suction. { ,as'pə'rā'shən }

aspiration condenser [NUCLEO] An ion-counter collecting element consisting of a cylindrical condenser which when charged produces a radial field that collects ions from the aspirated air. { ,as'pə'rā'shən kən,densər }

aspiration meteorograph [ENG] An instrument for the continuous recording of two or more meteorological parameters, with the ventilation being provided by a suction fan. { ,as'pə'rā'shən ,mēd'ēr-ə,graf }

aspiration psychrometer [ENG] A psychrometer in which the ventilation is provided by a suction fan. { ,as'pə'rā'shən ,sī'krām-əd-ər }

aspiration thermograph [ENG] A thermograph in which ventilation is provided by a suction fan. { ,as'pə'rā'shən 'thərm-ə,graf }

aspirator [ENG] Any instrument or apparatus that utilizes a vacuum to draw up gases or granular materials. [MIN ENG] A device made of wire gauze, of cloth, or of a fibrous mass held between pieces of meshed material and used to cover the mouth and nose to keep dusts from entering the lungs. { 'as'pə,rād-ər }

aspirin See acetylsalicylic acid. { 'as'prən }

aspire [GEOL] A cratered volcano with the base wide in relation to the height; for example, Mauna Loa. { 'as,pīt }

asporogenic mutant [MICROBIO] A bacillus that is unable to form spores due to alterations at any of several gene loci. { ,ā,spōr-ə'jen'ik 'myūt-ənt }

asporogenous [BOT] Not producing spores, especially of certain yeasts. { ,ā,spō'rāj-ə'nəs }

Aspredinidae [VERT ZOO] A family of salt-water catfishes in the order Siluriformes found off the coast of South America. { ,as'prəd'in-ə'dē }

ASROC See antisubmarine rocket. { 'as,räk }

ass [VERT ZOO] Any of several perissodactyl mammals in the family Equidae belonging to the genus *Equus*, especially *E. hemionus* and *E. asinus*. { as }

assault [ORD] 1. Final phase of an attack; closing with the enemy in hand-to-hand fighting. 2. The landing of troops for attack on the enemy's beach defenses. 3. The landing of parachute and glider elements on unsecured and unprepared drop zones and landing zones to attack and seize an airhead. 4. A short, violent, but well-ordered attack against a local objective, such as a gun emplacement, fort, or machine gun nest. { ə'səlt }

assault aircraft [AERO ENG] Powered aircraft, including helicopters, which move assault troops and cargo into an objective area and which provide for their resupply. { ə'səlt 'er,kraft }

assault boat [NAV ARCH] A small boat that can easily be transported on land; used for amphibious military attacks or to cross lakes and rivers in land warfare. { ə'səlt ,bōt }

assault fire [ORD] 1. Fire delivered by attacking troops as they close with an enemy to engage him at close range or in hand-to-hand fighting, usually delivered from the hip or the standing position at a sustained rate. Also known as advancing fire. 2. In artillery, extremely accurate, short-range destruction fire at point targets. { ə'səlt ,fir }

assault gun [ORD] Any of various sizes and types of guns that are self-propelled or mounted on tanks and are used for direct fire from close range against point targets. { ə'səlt ,gən }

assault-landing model [ORD] A special form of assault model designed specifically for planning amphibious landings. Also known as amphibious-assault landing model. { ə'səlt 'land-ŋ ,mäd-əl }

assault model [ORD] Vehicle designed to provide direct fire in combat. { ə'səlt ,mäd-əl }

assay [ANALY CHEM] Qualitative or quantitative determination of the components of a material, as an ore or a drug. { 'a,sā }

assay balance [ENG] A sensitive balance used in the assaying of gold, silver, and other precious metals. { 'a,sā ,bal-əns }

assay bar [MET] A bar of pure or nearly pure gold and silver; used by a government as a standard. { 'a,sā ,bär }

assay plan [MIN ENG] A mine map showing the assay, stope, width, and so forth of samples taken from positions marked. { 'a,sā ,plan }

assay pound [MIN ENG] A weight which varies from time to time but is sometimes 0.5 gram, and is used by assayers to proportionately represent a pound. { 'a,sā ,paund }

assay ton [MIN ENG] A unit of weight of ore equal to 29,167 milligrams; the number of milligrams of precious metal in this measure equals the number of troy ounces in a short ton. { 'a,sā ,tən }

assay value [MIN ENG] The amount of gold or silver as shown by assay of any given sample and represented by ounces per ton of ore. { 'a,sā ,val-yü }

assay walls [MIN ENG] The planes to which an ore body can be profitably mined, the limiting factor being the metal content of the country rock as determined from assays. { 'a,sā ,wōlz }

assemblage [ARCHEO] All related cultural traits and artifacts associated with one archeological manifestation. [ECOL] A group of organisms sharing a common habitat by chance. [ORD] A collection of items designed to accomplish one general function and identified and issued as a single item. [PALEON] A group of fossils occurring together at one stratigraphic level. { ə'semb'blj }

assemblage zone [PALEON] A biotstratigraphic unit defined and identified by a group of associated fossils rather than by a single index fossil. { ə'semb'blj ,zōn }

assembled stone [MATER] A stone made of two or more gem materials, whether genuine or imitation. { ə'semb'bold 'stōn }

assembler [COMPUT SCI] A program designed to convert symbolic instruction into a form suitable for execution on a computer. Also known as assembly program; assembly routine. { ə'semb'lər }

assembler directive [COMPUT SCI] A statement in an assembler-language program that gives instructions to the assembler and does not generate machine language. { ə'semb'lər dī,rek'tiv }

assembler language See assembly language. { ə'semb'lər ,læŋ'gwjz }

assembler program [COMPUT SCI] A program that is written in assembly language. { ə'semb'lər ,prō'grəm }

assembling bolt [CIV ENG] A threaded bolt for holding together temporarily the several parts of a structure during riveting. { ə'semb'blj ,bōlt }

assembly [COMPUT SCI] The automatic translation into machine language of a computer program written in symbolic language. [MECH ENG] A unit containing the component parts of a mechanism, machine, or similar device. { ə'semb'blē }

assembly drawing [GRAPHICS] A working-type engineering drawing depicting a complete unit, usually included with detail drawings of all parts in a set of working drawings. { ə'semb'blē ,drō'ŋ }

assembly language [COMPUT SCI] A low-level computer language one step above the binary machine language. Also known as assembler language. { ə'semb'blē ,læŋ'gwjz }

assembly line [IND ENG] A mass-production arrangement whereby the work in process is progressively transferred from one operation to the next until the product is assembled. { ə'semb'blē ,līn }

assembly-line balancing [IND ENG] Assigning numbers of operators or machines to each operation of an assembly line so as to meet the required production rate with a minimum of idle time. { ə'semb'blē ,līn 'bal-əns-ŋ }

assembly list [COMPUT SCI] A printed list which is the by-product of an assembly procedure; it lists in logical instruction sequence all details of a routine, showing the coded and symbolic notation next to the actual notations established by the assembly procedure; this listing is highly useful in the debugging of a routine. { ə'semb'blē ,list }

assembly machine [MECH ENG] A machine in a manufacturing facility that produces a configuration of some practical value from discrete components. { ə'semb'blē mə,shēn }

assembly method [IND ENG] The technique used to assemble a manufactured product, such as hand assembly, progressive line assembly, and automatic assembly. { ə'semb'blē ,meth-əd }

assembly program See assembler. { ə'semb'blē 'prō'grəm }

assembly robot [COMPUT SCI] A robot that positions, mates, fits, and assembles components or parts and adjusts the finished product to function as intended. { ə'semb'blē ,rō,bāt }

assembly routine See assembler. { ə'semb'blē rūtēn }

assembly system [COMPUT SCI] An automatic programming software system with a programming language and machine-language programs that aid the programmer by performing dif-

compo board See composition board. ['kəm,pə,bɔ:d]

compole See commutating pole. ['kəm,pəʊl]

component [CHEM] 1. A part of a mixture. 2. The smallest number of chemical substances which are able to form all the constituents of a system in whatever proportion they may be present. [ELEC] Any electric device, such as a coil, resistor, capacitor, generator, line, or electron tube, having distinct electrical characteristics and having terminals at which it may be connected to other components to form a circuit. Also known as circuit element; element. [MATH] 1. In a graph system, a connected subgraph which is not a subgraph of any other connected subgraph. 2. For a set *S*, a connected subset of *S* that is not a subset of any other connected subset of *S*. [SCI TECH] A constituent part of a system; examples are a vector term which when added to others gives a vector sum, an ingredient of a chemical system, or the mineral portion of a rock. [kəm'pɒnənt]

component bar chart [STAT] A bar chart which shows within each bar the components that make up the bar; each component is represented by a section proportional in size to its representation in the total of each bar. [kəm'pɒnənt 'bɜːtʃ,ʃɑːt]

component distillation [CHEM ENG] A distillation process in which a fraction that cannot normally be separated by distillation is removed by forming an azeotropic mixture. [kəm'pɒnənt dɪ'stə'leɪʃən]

component-failure-impact analysis [SYS ENG] A study that attempts to predict the consequences of failures of the major components of a system. Abbreviated CFIA. [kəm'pɒnənt 'fɛɪl-yər 'ɪm,pækt ə,næl-ə'səs]

component name See metavariable. [kəm'pɒnənt 'næm]

component-substances law [CHEM] The law that each substance, singly or in mixture, composing a material exhibits specific properties that are independent of the other substances in that material. [kəm'pɒnənt 'sʌb'stəns-əs lɔː]

component symbol [ELEC] A graphical design used to represent a component in a circuit diagram. [kəm'pɒnənt 'sɪm-bəl]

component vectors [MATH] Vectors parallel to specified (usually perpendicular) axes whose sum equals a given vector. [kəm'pɒnənt 'vektəz]

composing rule See composing stick. [kəm'pəʊz-ɪŋ ,rʊl]

composing stick [GRAPHICS] A tool designed for holding type which is being assembled and justified. [kəm'pəʊz-ɪŋ ,stɪk]

Compositae [BOT] The single family of the order Asterales; perhaps the largest family of flowering plants, it contains about 19,000 species. [kəm'pəʊz-ɪ-ti]

composite [ENG ACOUS] A re-recording consisting of at least two elements. [MATER] A material that results when two or more materials, each having its own, usually different characteristics, are combined, giving useful properties for specific applications. Also known as composite material. [kəm'pəʊz-ət]

composite balance [ELEC] An electric balance made by modifying the Kelvin balance to measure amperage, voltage, or wattage. [kəm'pəʊz-ət 'bæl-əns]

composite beam [CIV ENG] Beam action of two materials joined to act as a unit, especially that developed by a concrete slab resting on a steel beam and joined by shear connectors. [kəm'pəʊz-ət 'bi:m]

composite cable [ELEC] Cable in which conductors of different gauges or types are combined under one sheath. [kəm'pəʊz-ət 'kæ-bəl]

composite circuit [ELECTR] A circuit used simultaneously for voice communication and telegraphy, with frequency-discriminating networks serving to separate the two types of signals. [kəm'pəʊz-ət 'sɜːkət]

composite color signal [COMMUN] The color television picture signal plus all blanking and synchronizing signals. Also known as composite picture signal. [kəm'pəʊz-ət 'kɔːlə 'sɪɡ-nəl]

composite color sync [COMMUN] The signal comprising all the synchronization signals necessary for proper operation of a color television receiver. [kəm'pəʊz-ət 'kɔːlə 'sɪŋk]

composite column [CIV ENG] A concrete column having a structural-steel or cast-iron core with a maximum core area of 20. [kəm'pəʊz-ət 'kɔːləm]

composite compact [MET] A powder compact composed of

more than one layer of different components with each layer retaining its identity. [kəm'pəʊz-ət 'kɔːləm,pækt]

composite cone [GEOL] A large volcanic cone constructed of lava and pyroclastic material in alternating layers. [kəm'pəʊz-ət 'kɔːn]

composite defense [ORD] In anti-aircraft artillery, a defense that employs two or more types of fire units which are integrated into a single defense. [kəm'pəʊz-ət dɪ'fens]

composite dialing [COMMUN] Method of dialing between distant offices over one leg of a composite set. [kəm'pəʊz-ət 'dɪ-ɪŋ]

composite dike [GEOL] A dike consisting of several intrusions differing in chemical and mineralogical composition. [kəm'pəʊz-ət 'diːk]

composite electrode [MET] A filler-metal electrode composed of more than one metal. [kəm'pəʊz-ət i'lekt,rəd]

composite explosive [MATER] A mixture of substances which consume and give off oxygen, together with one or several simple explosives; dynamite is an example. [kəm'pəʊz-ət ik'splɔːsɪv]

composite filter [ELECTR] A filter constructed by linking filters of different kinds in series. [kəm'pəʊz-ət 'fɪltə]

composite flash [GEOPHYS] A lightning discharge which is made up of a series of distinct lightning strokes with all strokes following the same or nearly the same channel, and with successive strokes occurring at intervals of about 0.05 second. Also known as multiple discharge. [kəm'pəʊz-ət 'flæʃ]

composite fold [GEOL] A fold having smaller folds on its limbs. [kəm'pəʊz-ət 'fəʊld]

composite fuel [MATER] A broad class of solid chemical fuels composed of a fuel and oxidizer and used as propellants in rockets; an example of a fuel is phenol formaldehyde, and an oxidizer is ammonium perchlorate. Also known as composite propellant. [kəm'pəʊz-ət 'fjuːl]

composite function [MATH] A function of one or more independent variables that are themselves functions of one or more other independent variables. [kəm'pəʊz-ət 'fʌŋk-ʃən]

composite gene [GEN] Any gene arising by recombination between two nonallelic genes, located on two nonhomologous chromosomes, and containing portions of both genes. [kəm'pəʊz-ət 'dʒi:n]

composite gneiss [PETR] A banded rock formed by intimate penetration of magma into country rocks. [kəm'pəʊz-ət 'niːs]

composite grain [GEOL] A sedimentary clast formed of two or more original particles. [kəm'pəʊz-ət 'ɡreɪn]

composite group [MATH] A group that contains normal subgroups other than the identity element and the whole group. [kəm'pəʊz-ət 'ɡrʊp]

composite hypothesis [STAT] A hypothesis that specifies a range of values for the distribution of the observed random variables. [kəm'pəʊz-ət hɪ'pɔːtə-səs]

composite I-beam bridge [CIV ENG] A beam bridge in which the concrete roadway is mechanically bonded to the I beams by means of shear connectors. [kəm'pəʊz-ət 'ɪ,bɛm,'brɪdʒ]

composite joint [MET] A joint connected by welding in conjunction with one or more mechanical means. [kəm'pəʊz-ət 'dʒɔɪnt]

composite macromechanics [ENG] The study of composite material behavior wherein the material is presumed homogeneous and the effects of the constituent materials are detected only as averaged apparent properties of the composite. [kəm'pəʊz-ət 'mak-rə-mə'kænɪks]

composite map [MIN ENG] A map in which several levels of a mine are shown on a single sheet. [kəm'pəʊz-ət 'mæp]

composite material See composite. [kəm'pəʊz-ət mæ'tɪri-əl]

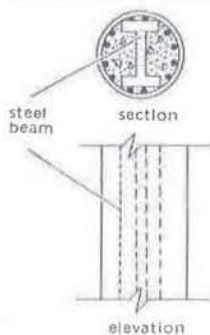
composite micromechanics [ENG] The study of composite material behavior wherein the constituent materials are studied on a microscopic scale with specific properties being assigned to each constituent; the interaction of the constituent materials is used to determine the properties of the composite. [kəm'pəʊz-ət 'mik-rə-mə'kænɪks]

composite nerve [PHYSIO] A nerve containing both sensory and motor fibers. [kəm'pəʊz-ət 'nɜːv]

composite number [MATH] Any positive integer which is not prime. Also known as composite quantity. [kəm'pəʊz-ət 'nəm-bər]

composite photograph [GRAPHICS] An assembly of separate photographs, made by several lenses of a multiple-lens camera

COMPOSITE COLUMN



Gross section and elevation of a composite column.

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