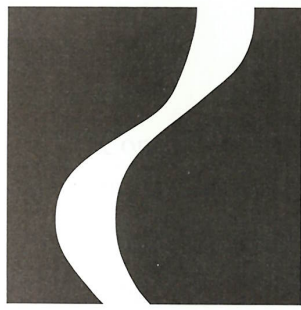


Academic Press Dictionary of Science and Technology





Academic Press Dictionary of Science and Technology

Edited by
Christopher Morris



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electroluminescent panel *Electronics*. a panel that produces a low-intensity light when an alternating current is applied to the phosphor centered between its two electrodes.

electrolysis [i lek'trāl'ə sis] *Physical Chemistry*. a process in which the passage of an electric current through an electrolytic solution or other suitable medium produces a chemical reaction, such as that which occurs in a battery. Also, **ELECTROLYTIC PROCESS**. *Medicine*. the destruction of tumors by an electric current.

electrolyte [i lek'trə lit'] *Physical Chemistry*. any liquid or solid substance that while in solution or in its pure state will conduct an electric current by means of the movement of ions; usually it is a solution of water and acids or metal salts. Also, **BATTERY ELECTROLYTE**. *Physiology*. any of certain inorganic compounds, such as sodium, potassium, magnesium, and calcium, which dissociate fluids into ions that conduct electric currents and that constitute the major force in controlling fluid balance within the body. The careful monitoring of electrolytes and replacement of fluid and electrolytes are important in the care of many illnesses.

electrolyte acid *SEE BATTERY ACID*.

electrolyte-activated battery *Electricity*. a reserve battery with an aqueous electrolyte kept in a separate chamber, from which a mechanism forces it into the cells of the battery for activation.

electrolyte balance *Medicine*. the equilibrium between electrolytes in the body.

electrolytic [i lek'trə lit'ik] *Physical Chemistry*. relating to, causing, or involving electrolysis.

electrolytic analysis *Analytical Chemistry*. a method of analysis based on determining the amount of chemical change that takes place at an electrode.

electrolytic capacitor *Electricity*. a capacitor in which an electrolyte serves as a plate; the other plate is wound aluminum foil. A thin layer of oxidation on the foil is the dielectric. Electrolytic capacitors have comparatively high values of capacitance for their size; however, they also have high leakage current and carry the requirement to observe polarity. Also, **POLARIZED CAPACITOR**.

electrolytic cell *Physical Chemistry*. an electrochemical cell in which the reactions are driven by the use of an external potential greater than the thermodynamic or reversible potential of the cell.

electrolytic conductance *Physical Chemistry*. the movement of charged particles through a medium.

electrolytic conductivity *Physical Chemistry*. the ability of charged particles to move through a medium.

electrolytic copper *Metallurgy*. refined copper produced by electrodeposition.

electrolytic dissociation *Chemistry*. the ionization of a solute in solution. *Physical Chemistry*. the breaking up of a neutral ionic compound into two or more oppositely charged ions, usually by the effect of dissolution.

electrolytic grinding *Mechanical Engineering*. a combined grinding and machining operation in which the abrasive cathodic grinding wheel is in contact with the anodic surface of an electrolyte; used with a metal-bonded and diamond-impregnated grinding wheel.

electrolytic interrupter *Electricity*. an interrupter component that is tilted to change the current through it.

electrolytic machining *Mechanical Engineering*. an electrochemical process, similar to electroplating, in which the workpiece acts as an anode and the tool as a cathode.

electrolytic mercaptan process *Chemical Engineering*. a procedure used to remove mercaptans from refinery streams by using an electrolytic solution.

electrolytic model *Petroleum Engineering*. a laboratory-model simulation of steady-state fluid flow through porous media found in a reservoir. Also, **POTENTIOMETRIC MODEL**, **OIL-FIELD MODEL**, **GELATIN MODEL**.

electrolytic pickling *Metallurgy*. the process of removing surface oxides from a metallic product by electrochemical means.

electrolytic plating *SEE ELECTROPLATING*.

electrolytic potential *Physical Chemistry*. the smallest difference in electronic energy between an electrolytic solution and an electrode that is immersed in the solution that will lead to the acceptance or donation of electrons.

electrolytic powder *Metallurgy*. the metallic powder produced by electrodeposition, either directly or by comminuting a bulk electrodeposit.

electrolytic process *Physical Chemistry*. *SEE ELECTROLYSIS*.

electrolytic recording *Electronics*. a document created by passing an electric current through a stylus onto chemically treated paper.

electrolytic rectifier *Electricity*. a rectifier with an electrolytic conductor between its electrodes.

electrolytic rheostat *Electricity*. a variable rheostat whose electrodes are submerged in a conducting liquid.

electrolytic separation *Physical Chemistry*. a process in which a charged electrode collects ions from a solution.

electrolytic solution *Physical Chemistry*. a liquid that contains a solvent, usually water, and an associated ionic compound, such as an acid.

electrolytic switch *Electricity*. a switch whose terminals are submerged in an electrolytic substance.

electrolytic tank *Engineering*. a structure that serves as a model for an electron-tube system or an aerodynamic system, in which voltages are applied to test electron-tube design or to aid in computing ideal fluid flow.

electrolytic tough pitch *Metallurgy*. the electrolytic copper intentionally alloyed with a controlled amount of oxygen which internally oxidizes harmful impurities and improves electrical conductivity.

electromachining *Mechanical Engineering*. the use of electric power to shape an object or remove material from a workpiece.

electromagnet [i lek'trə mag'nət] *Electromagnetism*. a magnet, consisting of a coil wrapped about a soft iron or steel core, which becomes strongly magnetized when current flows through the coil.

electromagnetic [i lek'trə mag'net'ik] *Physics*. 1. of or relating to the interaction of electric and magnetic fields, both static and dynamic. 2. of or relating to the science of electromagnetism.

electromagnetic amplifying lens *Electromagnetism*. a system composed of several waveguides arranged symmetrically about an excitation medium so that they are excited with equal amplitude and phase to provide an effective energy gain.

electromagnetic brake *SEE ELECTRIC BRAKE*.

electromagnetic cathode ray tube *Electronics*. a cathode ray tube in which the beam of electrons produced in the tube's filament is deflected by a magnetic field.

electromagnetic clutch *Mechanical Engineering*. a friction clutch that operates by the action of electric power from a dynamo on a magnetic coupling between conductors.

electromagnetic compatibility *Electronics*. the ability of radio equipment to operate efficiently in a given electromagnetic environment.

electromagnetic complex *Electromagnetism*. an electromagnetic configuration of an installation that includes all radiators of significant amounts of energy.

electromagnetic coupling *Electromagnetism*. a coupling between circuits or conductors that are mutually affected by the same electromagnetic field.

electromagnetic current *Electronics*. the movement of charged particles in the atmosphere that give rise to electric and magnetic fields, such as those in the ionosphere that transmit radio signals.

electromagnetic deflection *Electronics*. the use of a magnetic field or external horizontal- and vertical-deflection coils to deflect an electron beam in a television picture tube or an oscilloscope.

electromagnetic disturbance *Electricity*. a random or periodic electromagnetic phenomenon that is superimposed on a desired signal.

electromagnetic field *Electromagnetism*. an oscillating electric field and its associated magnetic field acting at right angles to each other and at right angles to their direction of motion.

electromagnetic field tensor *Electromagnetism*. an antisymmetric second-rank tensor whose elements are proportional to the electric and magnetic fields.

electromagnetic flowmeter *Engineering*. an instrument that measures the rate of flow, without interruption of the flow, by producing an electromagnetic field in a liquid that creates an interior current (proportional to the actual flow rate), which is detected by two electrodes.

electromagnetic focusing *Electronics*. a method of adjusting the electron beam in a television picture tube by varying the direct current flowing through the coils attached to the tube, thus altering the surrounding magnetic field.

electromagnetic induction *Electromagnetism*. the generation of an electromotive force by changing the magnetic flux through a closed loop circuit or by moving a conductor across the magnetic field.

electromagnetic inertia *Electromagnetism*. the characteristic delay of response in an electric circuit as it reaches its maximum or zero value after the source voltage is applied or removed.

electromagnetic interaction *Particle Physics*. a long-range force involving the electric and magnetic properties of elementary particles.

electromagnetic interference *Electricity.* the harmful impairment of a desired electromagnetic signal by an electromagnetic disturbance.

electromagnetic lens *Electronics.* a device in which the magnetic field surrounding a coil forces an electron beam passing through the coil to refract in a manner similar to light passing through an optical lens.

electromagnetic log *Engineering.* an instrument used to measure and record the movement rate of a vessel through water, having an electromagnetic sensing element that hangs from the vessel and produces a voltage which is directly proportional to the vessel's speed.

electromagnetic logging *Engineering.* a system that measures and records electromagnetic currents within a formation that is being drilled.

electromagnetic mass *Electromagnetism.* the mass of a moving charge whose kinetic energy appears to account for the discrepancy between the total field energy and the field energy of a purely static electric field.

electromagnetic mirror *Electromagnetism.* a surface or region that is capable of reflecting electromagnetic waves.

electromagnetic moment *Electromagnetism.* the vector magnetic moment of a current-carrying coil, equal to the product of the current, the number of turns, and the area of the coil. The direction is given by the right hand rule.

electromagnetic momentum *Electromagnetism.* the momentum associated with electromagnetic radiation; its volume density is given by the Poynting vector divided by the speed of light squared.

electromagnetic mixing *Metallurgy.* the process of mixing molten metals or alloys by applying an electromagnetic field to produce eddies.

electromagnetic noise *Electricity.* any undesired electromagnetic disturbance.

electromagnetic oscillograph *Electromagnetism.* an oscillograph that records signal waveforms by means of a moving-coil galvanometer.

electromagnetic potential *Electromagnetism.* the electrostatic scalar potential plus the magnetic vector potential.

electromagnetic propulsion *Space Technology.* any form of rocket propulsion possessing both magnetic and electric properties, especially one in which the propellant is accelerated by an electromagnetic field. *Aviation.* specifically, such power in a flight vehicle generated by the electromagnetic acceleration of a plasma fluid.

electromagnetic pulse *Electromagnetism.* an electromagnetic reaction of large magnitude resulting from a thermonuclear explosion.

electromagnetic pump *Electricity.* a device that moves conductive liquid through a pipe by sending current through the liquid; used in a nuclear reactor cooling system for liquid alkali metal circulation.

electromagnetic radiation *Electromagnetism.* the emission and propagation of radiation associated with a periodically varying electric and magnetic field traveling at the speed of light, including gamma rays, X-rays, and ultraviolet, light, infrared, and radio waves.

electromagnetic reconnaissance *Electronics.* 1. the process of locating electromagnetic radiation devices, such as radar or missile-guidance systems, operated by hostile forces. 2. the use of electromagnetic equipment to locate enemy activity in a particular region.

electromagnetic relay *Electromagnetism.* a switch that opens and closes contacts by the action of an electromagnetic element.

electromagnetic rocket see PLASMA ROCKET.

electromagnetic separator *Electromagnetism.* a device that separates ions of different mass by passing them through a combination of electric and magnetic fields.

electromagnetic shielding *Electromagnetism.* a means of preventing two circuits from electromagnetically coupling by placing at least one of the circuits in a grounded enclosure of magnetic conductive material.

electromagnetic shock wave *Electromagnetism.* an intense electromagnetic wave resulting from the coincidence of several waves of different velocities in a nonlinear dispersive medium.

electromagnetic spectrum *Electromagnetism.* the total range of the frequencies or wavelengths of electromagnetic radiation, ranging from the longest radio waves to the shortest cosmic rays.

electromagnetic surveying *Engineering.* a method of surveying a subsurface area in which electromagnetic waves at the surface penetrate the earth and produce new waves according to the ore bodies they contact; the waves are detected and recorded by instruments.

electromagnetic susceptibility *Electricity.* a measure of the tolerance of a circuit to undesired electromagnetic energy.

electromagnetic system of units *Electromagnetism.* a unit system, based on the cgs system, in which the unit of current is that which produces a force of 2 dyn per cm of length between two parallel, infinitely long conductors separated by 1 cm.

electromagnetic theory of light *Electromagnetism.* a theory stating that light consists of electromagnetic radiation and therefore obeys Maxwell's equations.

electromagnetic unit *Electromagnetism.* a unit based primarily on the magnetic effect of an electric current.

electromagnetic wave *Electromagnetism.* a wave generated by the oscillation of a charged particle and characterized by periodic variations of electric and magnetic fields.

electromagnetic wave filter *Electromagnetism.* a device that allows electromagnetic waves of certain frequencies to pass while effectively attenuating others.

electromagnetism [i lek'trō mag'nē tiz əm] *Physics.* 1. the interaction between magnetism and electricity, and the phenomena produced by the interaction. 2. the study and application of electromagnetic phenomena.

Electromagnetism

Electromagnetism underlies such a wide range of phenomena—from the wiggle of a compass needle to the X-rays taken by your family dentist—that we employ several vocabularies to describe our encounters with it. Electromagnetism (EM) effects include the “static” forces that electric charges and currents exert on one another, the radio waves we depend upon for much of worldwide communication, the light we see by, and, at the highest energies, the gamma rays generated in stars and particle accelerators.

The first great step toward a unified understanding of EM came in 1864, when James Maxwell conceived his electromagnetic theory of light, a phenomenon then imagined as mechanical vibrations of a pervasive medium called the “luminiferous ether.” Maxwell's theory, as described in the set of elegantly powerful equations which bears his name, not only accounted for all the known phenomena, but also predicted that oscillating electric currents would produce electromagnetic waves traveling at the speed of light. Heinrich Hertz's 1887 experiments verified this prediction and seemed to settle the issue.

But twentieth-century scientists took these matters further. Most notably, Albert Einstein's explanation of the photoelectric effect showed that the generation and absorption of light is best described in terms of streams of wave-packets, or photons, each of which contains an amount of energy precisely related to its frequency. These photons, which constitute the building blocks of electromagnetic phenomena, exhibit a duality of form, combining the classical behavior of both waves and particles. At long wavelengths, their wavelike behavior manifests itself in resonant microwave cavities, much like organ pipes, while at the shortest wavelengths, a single photon can slam an electron right out of its orbit, like a well-executed billiard shot.

Most recently, quantum electrodynamics has provided us with a formulation which unites classical electromagnetic theory with quantum mechanics. Today, for example, physics students are taught that charged particles repel (and attract) one another by the constant exchange of virtual photons, like children in rowboats playing “catch,” albeit with very tiny “baseballs” (and “boomerangs”).

Arno Penzias
Vice President, Research
AT&T Bell Laboratories
Nobel Laureate in Physics

- information theory** *Artificial Intelligence*. the branch of learning that is concerned with the study of information representation and transmission. *Mathematics*. a branch of mathematics that ascribes a notion of information carried by certain classes of functions, including the study of the amount of information and its efficiency of representation. Information theory forms the basis of modern signal-processing techniques.
- information unit** *Telecommunications*. a unit of information content, equal to a nit, bit, or hartley, depending on the base of the logarithm used.
- information utility** *Computer Technology*. a service that updates and provides data bank information for public use.
- informed** *Artificial Intelligence*. describing the quality of information provided by a heuristic; a heuristic that gives more accurate estimates is called more informed.
- informed consent** *Medicine*. permission to perform a specific procedure or test, given by a patient who has been properly informed of the facts and risks involved.
- infosome** *Cell Biology*. a ribonucleoprotein particle that is believed to pass from the nucleus into the cytoplasm, found in the egg cytoplasm of certain echinoderm and fish species.
- infra-** a combining form meaning "below" or "beneath," as in *infra-costal*, *infrastructure*.
- infrabranchial** *Vertebrate Zoology*. of or relating to structures located below or inferior to the gills or throat region in a vertebrate animal.
- infracambrian** see EOCAMBRIAN.
- infracerebral gland** *Invertebrate Zoology*. a glandular structure lying below the brain in annelid worms.
- infraciliature** *Invertebrate Zoology*. the neuromotor system of ciliates.
- infraclass** *Systematics*. a taxonomic rank below a subclass and above a cohort.
- infraclavicle** *Vertebrate Zoology*. a small bone found in the pectoral girdle of certain fish.
- infraclavicular** *Anatomy*. beneath a clavicle. *Vertebrate Zoology*. of or relating to an infraclavicle.
- infracostal** *Anatomy*. below a rib or ribs.
- infracture** *Medicine*. an incomplete fracture of a bone, without displacement of the fragments.
- infradian** *Biology*. of or relating to biological cycles or rhythms that recur less often than once per day.
- infraduction** *Physiology*. the downward rotation of an eye.
- infradyne receiver** *Electronics*. a device that raises the frequency of audio or video signals to enhance selectivity.
- infraglacial** see SUBGLACIAL.
- infraglenoid** *Anatomy*. lying below the glenoid cavity of the scapula.
- infraglenoid tubercle** *Anatomy*. a roughened area on the scapula, just below the glenoid cavity that anchors the origin of the triceps muscle.
- infralateral tangent arcs** *Meteorology*. a pair of oblique, colored arcs that are convex to the sun and tangent to the halo of 46° at points below the sun's altitude; produced by refraction in hexagonal columnar ice crystals with principal axes that are horizontal but randomly directed in the azimuth, they appear only if the elevation of the sun is less than approximately 68°.
- infralow frequency** *Telecommunications*. a frequency that lies in the range from 300 hertz to 3 kilohertz in the radio spectrum.
- infraneritic** *Oceanography*. a subdivision of the neritic zone that refers to the pelagic environment in water 40–200 meters deep.
- infraorbital** *Anatomy*. lying under or on the floor of the orbit.
- infraorder** *Systematics*. a taxonomic rank below a suborder and above a superfamily.
- infrapatellar** *Anatomy*. beneath the patella.
- infrared** [in frə red'] *Electromagnetism*. 1. the portion of the invisible spectrum consisting of electromagnetic radiation with wavelengths in the range from 750 nanometers to 1 millimeter. 2. relating to such rays.
- infrared absorption** *Electromagnetism*. the absorption of infrared radiation by a medium through which the radiation is passing; causing the excitation of vibration modes or electronic transitions.
- infrared astronomy** *Astronomy*. the study of astronomical objects at wavelengths from about 0.8 micrometer (8000 angstroms) to about 1000 micrometers.
- infrared background radiation** *Astronomy*. diffuse radiation at wavelengths of about 10 to 200 micrometers that comes from many sources, mostly dust in the solar system, around stars, and in the Milky Way, plus infrared radiation from other galaxies.
- infrared beacon** *Navigation*. a navigational beacon that shines in the infrared, providing greater penetration of some atmospheric conditions.
- infrared binoculars** *Optics*. an instrument that views and enlarges infrared images and resembles ordinary binoculars.
- infrared bolometer** *Electronics*. a device whose sensitivity to heat has been adjusted for infrared radiation detection, as opposed to one adjusted for microwave radiation detection.
- infrared catastrophe** *Quantum Mechanics*. a prediction of quantum electrodynamics that the radiation of charged particles approaches infinity at low frequencies. This problem disappeared in later refinements to the theory. Also, INFRARED PROBLEM.
- infrared cirrus** *Astronomy*. streaky sources of infrared radiation detected by the Infrared Astronomy Satellite at wavelengths of 60 to 100 micrometers; the cirrus is believed to be composed of clouds of dusty gas in the galaxy as well as sources in the solar system.
- infrared detector** *Electronics*. a device that responds to infrared radiation, commonly used to detect the presence of fire or heat in machinery, vehicles, or people.
- infrared emission** *Physics*. the radiation of waves having wavelengths in the range of 0.8 to 1000 micrometers.
- infrared-emitting diode** *Electronics*. a device in which current flowing across a junction produces radiant energy in the infrared region.
- infrared excess** *Astronomy*. infrared emission from a celestial object that is greater than the object would produce if it were radiating solely as a black body; the excess usually indicates the presence of dust in the object's vicinity that has been warmed as it absorbs shorter wavelength radiation from the object.
- infrared film** *Graphic Arts*. a specially sensitive film used in infrared photography.
- infrared filter** *Optics*. a filter that transmits infrared radiation while absorbing other forms of radiation; used for long-distance, medical, forensic, and unobtrusive flash photography.
- infrared galaxy** *Astronomy*. a dust-laden galaxy that appears bright at infrared wavelengths; many such are visible only in the infrared.
- infrared heating** *Engineering*. heating by means of focused, intense infrared radiation; used for baking or drying.
- infrared heterodyne detector** *Electronics*. a device that makes infrared signals audible by combining them with signals generated by a local oscillator.
- infrared homing** *Engineering*. tracking by means of the infrared radiation emitted by a target.
- infrared image converter** *Electronics*. a device that transforms invisible infrared images into visible ones through a system of light-sensitive components. Also, **infrared imaging device**, **infrared image tube**.
- infrared jamming** *Electronics*. the use of infrared radiation to reduce the effectiveness of heat-seeking missiles by overloading their detectors.
- infrared lamp** *Electricity*. a specialized incandescent lamp designed to produce radiant thermal energy in the infrared electromagnetic spectrum.
- infrared laser** *Physics*. a laser that emits a beam of infrared radiation.
- infrared maser** *Physics*. a maser that radiates or detects infrared radiation.
- infrared microscope** *Spectroscopy*. a microscope that uses radiation from the infrared region of the spectrum to illuminate details of objects which are opaque to visible radiation. Thus, **infrared microscopy**.
- infrared nuclear magnetic resonance** *Spectroscopy*. a spectroscopic technique for studying nuclei and chemical changes in which nuclear magnetic resonance is employed in a spectrometer over a range of infrared frequencies.
- infrared optical material** *Electromagnetism*. any material that transmits infrared radiation.
- infrared phosphor** *Solid-State Physics*. a type of phosphor that, after exposure to infrared radiation, emits the same spectrum as that of the dominant activator.
- infrared photoconductor** *Electronics*. a device that transmits electricity when exposed to infrared radiation.
- infrared photography** *Graphic Arts*. a photographic method requiring special film and equipment that can record the infrared spectrum, used especially for photographing in very low light.
- infrared problem** see INFRARED CATASTROPHE.
- infrared radiation** *Electromagnetism*. electromagnetic radiation lying in the infrared spectrum, with wavelengths between 750 nanometers and 1 millimeter.
- infrared receiver** *Electronics*. a device that intercepts infrared radiation thought to be carrying intelligence.
- infrared scanner** *Electronics*. a device that reacts to infrared radiation in such a way that it can be used to scan a field of view line by line.

Infrared searchlight *Optics*. a device that emits infrared radiation over an area so that the scene may then be viewed through an infrared image-converter tube.

Infrared soldering *Metallurgy*. soldering in which the heat is supplied by infrared radiation. Similarly, **infrared brazing**.

Infrared spectrometer *Spectroscopy*. a spectrometer used to detect and measure absorption in the infrared region, especially for the quantitative analysis of organic compounds and to indicate the presence of heteroatomic elements and functional groups in molecules.

Infrared spectrophotometry *Spectroscopy*. the photometric measurement of the wavelengths in the infrared region that are absorbed by molecules and that correspond to rotational and vibrational transitions.

Infrared spectroscopy *Spectroscopy*. the study of the infrared radiation characteristically absorbed by molecular substances.

Infrared spectrum *Electromagnetism*. the portion of the electromagnetic spectrum that lies between radio waves and visible light.

Infrared star *Astronomy*. a star whose radiation is wholly or primarily at infrared wavelengths; indicates a dusty environment for the star.

Infrared telescope *Optics*. a telescope that transmits and converts infrared images into enlarged, visible images.

Infrared thermistor *Electronics*. a resistor that responds to heat in a predictable manner, used to measure the intensity of infrared radiation.

Infrared thermometer *Engineering*. an instrument that determines the temperature of a subject by measuring the infrared energy emitted.

Infrared vidicon *Electronics*. a television camera forming an electron beam that scans a charged-density pattern formed and stored on the surface of a photoconductor that is sensitive to infrared radiation.

Infrared window *Geophysics*. any region from 1.0 to about 20 micrometers in the infrared part of the electromagnetic spectrum in which the earth's atmosphere is partly or largely transparent, and in which transmission of electromagnetic radiation through the atmosphere is good.

Infra roentgen rays *Radiology*. the soft, poorly penetrating X-rays with a wavelength of approximately 2 angstroms, ranging between X-rays and ultraviolet rays on the electromagnetic spectrum, that are often used to treat lesions of the skin. Also, **GRENZ RAYS**.

Infrascapular *Anatomy*. beneath the scapula.

Infrasonic *Acoustics*. describing sound waves of low frequency, below the normal range of human hearing (about 20 hertz). Also, **SUBSONIC**.

Infrasonics *Acoustics*. the study of infrasonic sound waves.

Infrasound *Acoustics*. slow vibrations of about 20 hertz or less.

Infraspecific *Systematics*. of or relating to taxa below the rank of species.

Infraspinous *Anatomy*. beneath the spine of the scapula.

Infraspinous fossa *Anatomy*. a large depression lying below the spine of the scapula.

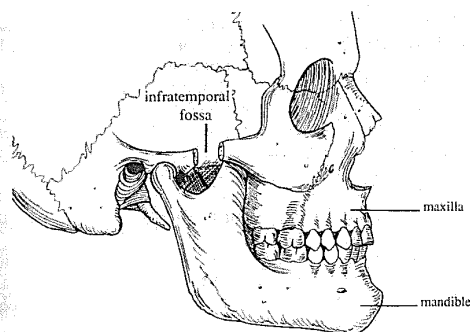
Infrasternal *Anatomy*. beneath the sternum.

Infrastructure *Civil Engineering*. the basic facilities of a country or region, such as roads, bridges, water delivery, and sewage treatment. *Design Engineering*. broadly, the underlying structure of any system.

Infrasubspecific *Systematics*. of or relating to taxa below the rank of subspecies.

Infratemporal *Anatomy*. below the temporal fossa.

Infratemporal fossa *Anatomy*. the cavity on the lateral side of the skull, bounded by the zygomatic arch laterally, the temporal bone posteriorly, the sphenoid bone medially, and the zygomatic process of the maxilla anteriorly.



infratemporal fossa

Infundibular *Biology*. funnel-shaped. Also, **infundibuliform**. *Anatomy*. of or relating to an infundibulum.

Infundibular canal *Invertebrate Zoology*. a canal in cephalopods that conducts water from the mantle cavity through the funnel.

Infundibulum *Anatomy*. a funnel-shaped structure, such as the stalk connecting the hypothalamus to the pituitary gland, the cavity surrounded by fimbriae at the proximal end of the oviduct, the opening at the upper end of the cochlear canal in the inner ear, and the tube that connects the frontal sinus to the middle nasal meatus. *Invertebrate Zoology*. a funnel-shaped structure, such as the siphon of a cephalopod or the flattened gastric cavity of a ctenophore.

Infusion *Chemistry*. the soluble constituent that is derived by steeping a substance in water (usually hot) for a period of time. *Medicine*. 1. the therapeutic introduction of a fluid other than blood into a vein by gravity. By comparison, an **injection** is forced in by a syringe. 2. any medicinal preparation. *Biology*. a suspension of decaying organic or inorganic material in a liquid, used as a culture medium.

Infusoria *Bacteriology*. a former term for various microorganisms, especially *Ciliophora*, that are found in brackish water and decayed organic matter.

Infusorial earth *Geology*. an obsolete, technically incorrect term for diatomaceous earth.

Infusoriform larva *Invertebrate Zoology*. the final larval stage in the life cycle of mesozoans.

Infusorigen *Invertebrate Zoology*. a developmental stage in the life cycle of mesozoans with germ cells that produce an infusoriform larva.

Ingenhousz, Jan 1730–1799, Dutch engineer and naturalist; discovered the workings of photosynthesis and the carbon cycle.

ingesta *Biology*. the total intake of substances into the body.

ingestion *Biology*. 1. the action of taking in food material; feeding; 2. consumption.

Ingolfiellidea *Invertebrate Zoology*. a suborder of amphipod crustaceans found in fresh and cave waters in tropical and warm temperate regions.

ingot *Metallurgy*. a casting used as a starting stock for working or for remelting; not used in the as-cast conditions.

ingot casting *Metallurgy*. a method of mold-casting metals into approximately square cross sections, with rounded corners and tapered sides.

ingot iron *Metallurgy*. a term for commercially pure iron.

ingrain color see **AZOIC DYE**.

ingress *Science*. the process of entering. *Astronomy*. the instant at which a celestial object begins immersion.

ingrown *Medicine*. referring to a condition in which the free tip or edge of a hair or nail grows inwardly and is embedded in the skin.

ingrown meander *Hydrology*. a stream meander that forms when the rate of downcutting is slow enough to allow for lateral erosion, resulting in an incised meander that expands or grows continually in place.

inguen see **INGUINAL REGION**.

inguinal *Anatomy*. relating to or located in the inguinal region, or groin.

inguinal canal *Anatomy*. the opening from the lower abdominal wall that carries the round ligament in females and the spermatic cord in males, and through which the testes descend in a developing male fetus.

inguinal fold *Developmental Biology*. an elevation on the posterior abdominal wall of an embryo, extending caudally from the caudal pole of the gonad and containing the upper portion of the gubernaculum. Also, **EPIGONAL FOLD**, **GUBERNACULAR FOLD**.

inguinal gland *Anatomy*. any of numerous lymph nodes lying in the inguinal region, draining lymph fluid from the buttocks, external genitals, lower limb, and skin of the lower abdomen.

inguinal hernia *Medicine*. a hernia of the intestine at the inguinal or groin region, the most common type of hernia, usually repaired surgically.

inguinal ligament *Anatomy*. the tough, fibrous cord extending from the anterior superior iliac spine to the pubic tubercle.

inguinal region *Anatomy*. the region of the trunk lying between the abdomen and the thigh. Also, **GROIN**, **INGUEN**.

inhabited building distance *Engineering*. the minimum distance allowed between the site of a possible explosion and the nearest building or area of assemblage.

inhalant *Medicine*. a drug or other substance that may be taken into the body by way of the nose and trachea, or through the respiratory system.

inhalant canal see **INCURRENT CANAL**.

inhalant siphon *Invertebrate Zoology*. a tubular structure that brings water into the mantle of bivalve mollusks. Also, **INCURRENT SIPHON**.

lifting reentry *Space Technology.* the return of a space vehicle into the atmosphere using aerodynamic lift rather than free-fall in order to slow the vehicle's descent and thereby increase control of its temperature and landing site.

lift-off *Space Technology.* in a vertical ascent, the action of a rocket vehicle as it separates from the launch pad. (In an ascent other than vertical, such an action is called a takeoff.) Also, **LIFT**.

lift pump *Mechanical Engineering.* a pump in which a liquid is lifted (by a vacuum, for example), as distinguished from being forced upward.

lift-slab construction *Civil Engineering.* a method of forming reinforced concrete floor and roof slabs at ground level and installing them after the process by means of lifting jacks.

lift truck *Mechanical Engineering.* a dolly or truck used for lifting or moving, especially of palletized loads.

lift valve *Mechanical Engineering.* a valve that moves in a direction perpendicular to the plane of the valve seat.

lig. ligament; ligamentum.

ligament *Histology.* a type of white fibrous connective tissue that surrounds and holds bones together at joints. *Engineering.* the solid material piece of a tube sheet between adjacent holes. (Going back to a Latin word meaning "to tie.")

ligament of Bigelow see ILIOFEMORAL LIGAMENT.

ligamentous *Histology.* relating to or in the form of a ligament.

ligamentum plural, **ligamenta.** *Histology.* the anatomical term for a ligament.

ligand *Chemistry.* a functional group, atom, or molecule that is attached to the central atom of a coordination compound, particularly a non-metallic substance that combines with another substance in solution to form a coordination compound. Also, **COMPLEXING AGENT**.

ligand membrane *Chemistry.* a solvent that is immiscible both in water and in another reagent and that acts as both an ionic extractant and a complexing agent.

ligase *Enzymology.* one of the six main classes of enzymes that serve to catalyze the bond formation between two compounds using ATP or other energy donors. Also, **SYNTHETASE**.

ligation *Surgery.* the tying off of a blood vessel or duct with a suture or wire ligature. *Molecular Biology.* the formation of a phosphodiester bond joining two nucleotides.

ligature *Surgery.* any substance such as catgut, cotton, silk, or wire used to tie a vessel or strangle a part. *Graphic Arts.* a type character consisting of two or more conjoined letters, such as *x* or *ffi*.

ligg. ligaments or ligamenta.

light something that makes things visible; specific uses include: *Optics.* 1. a type of electromagnetic radiation to which the organs of sight react, ranging from about 400 to 700 nm in wavelength and propagated at 186,282 miles per second. 2. a similar radiation that does not affect the organs of sight, including X-rays, ultraviolet, visible, infrared, radio waves, and radar sources. *Architecture.* a window or windowpane.

light absorption *Optics.* the value that expresses the ability of an object to take in light without reflection or transmission.

light-activated silicon controlled rectifier *Electronics.* a device that uses light rather than current to control its operations, used to convert alternating current into direct current. Also, **PHOTO-SCR**, **PHOTO-THYRISTOR**.

light adaptation *Physiology.* the adjustment in sensitivity of the dark-adapted eye to a high-light level, such as that occurring when a person emerges into daylight after being in a darkened movie theater.

light air *Meteorology.* a term for a wind of 1-3 miles per hour.

light amplifier *Electronics.* a circuit that responds to a light image by producing a brighter version of the image. Also, **IMAGE INTENSIFIER**.

light antiaircraft artillery *Ordnance.* conventional antiaircraft artillery, usually under 90 mm and weighing 20,000 lbs or less in a trailed mount with on-carriage fire control.

Light Armored Vehicle *Ordnance.* an eight-wheeled armored reconnaissance car used by U.S. military forces.

light artillery *Ordnance.* 1. artillery with a caliber of less than 155 mm. 2. smaller artillery in general, such as light antiaircraft weapons. Also, **light field artillery**.

light beacon *Navigation.* a navigational beacon that emits a visible light signal.

light-beam galvanometer see D'ARSONVAL GALVANOMETER.

light-beam oscillograph *Electromagnetism.* an apparatus used to detect low-frequency oscillation; constructed of a moving coil galvanometer with a small mirror mounted on it that can reflect a beam of focused light onto a moving sheet of photographic film.

light-beam pickup *Acoustical Engineering.* a pickup for a phonograph wherein the signal is transmitted to the transducer by means of a beam of light.

light blasting *Engineering.* the use of explosives to break up surface rock or boulders.

light bomber *Aviation.* any bomber aircraft that is considered to be relatively light in weight, especially one whose gross weight is less than 100,000 pounds, such as the B-26 or B-45.

light breeze *Meteorology.* a term for a wind of 4-7 miles per hour.

light carrier injection *Electronics.* 1. a process by which the intensity of a light beam is varied so as to bring it into harmony with a modulating signal. 2. a process by which the intensity of light is varied, generally at audio-frequency range, in motion picture sound systems. Also, **LIGHT MODULATION**.

light-case bomb *Ordnance.* a general-purpose bomb with a light metal casing that has a high charge-weight ratio; designed to cause damage by the force of its explosion.

light chain *Immunology.* the smaller of the two polypeptide chains that occur in immunoglobulins. Also, **L CHAIN**.

light chopper *Electronics.* a device that interrupts a light beam directed at a phototube in order to facilitate amplification of the tube's output.

light climate see ILLUMINATION CLIMATE.

light cone *Physics.* the set of all points in space-time that are reached by signals traveling at the speed of light from a specified point.

light crude *Petroleum Engineering.* a crude oil of light color that flows freely at atmospheric temperatures, having predominant low-viscosity, low-molecular-weight hydrocarbons.

light cruiser *Naval Architecture.* a cruiser of under 6000 tons displacement, mounting no larger than 6-inch guns, as defined by naval treaties between the World Wars. The distinction between light and heavy cruisers is no longer applied to modern ships.

light curve *Astronomy.* the changes in brightness of a variable star plotted over time.

light distribution photometer *Optics.* a device that gauges the luminosity of a light source from a number of directions.

light-drawn *Metallurgy.* describing the attribute of a material that has been cold reduced less than a hard-drawn product.

lighted buoy *Navigation.* a floating navigational aid that includes a light.

light-emitting diode *Electronics.* a semiconductor diode that converts electrical energy into light when an alternating current is applied. Also, **SOLID-STATE LAMP**.

light end *Petroleum Engineering.* any of the more volatile, lower-boiling products of petroleum refining, such as butane and propane.

lightening *Medicine.* the feeling of reduced distention of the abdomen during the latter stages of pregnancy (two or three weeks before labor) as the uterus descends into the pelvic cavity.

lighter *Mechanical Devices.* any of various devices used to light something, especially such a device used to light cigarettes. Thus, **lighter fluid**.

lighter *Naval Architecture.* an open, unpowered, bargelike vessel used to transfer cargo between the shore and a ship, or between two ships.

lighterage *Industrial Engineering.* the use of lighters in loading and unloading ships and transporting goods for short distances.

lighter-than-air *Aviation.* of or relating to lighter-than-air craft or to gases such as helium that are used to support them.

lighter-than-air craft *Aviation.* an aircraft, such as a dirigible, that weighs less than the air it displaces, so that its lift is due to aerostatic buoyancy.

light exposure *Optics.* a measure of the total light reaching a surface. Also, **EXPOSURE**.

lightface *Graphic Arts.* a style of type that has thinner, lighter characters than the regular weight of the same typeface.

light freeze *Meteorology.* a condition characterized by a brief drop in surface air temperature to below 32°F, adversely affecting tender plants.

light-gating cathode-ray tube *Electronics.* a cathode-ray tube in which the electron beam alters the transmission or reflection properties of the screen by exposing it to an external light source.

light gun *Electronics.* a device that generates electricity from light in order to assist and direct specific computer functions.

light-harvesting complex *Biochemistry.* a set of photosynthetic pigment molecules that absorb light and channel the energy to the photosynthetic reaction center, where photosynthesis occurs.

light homing *Ordnance.* the process of guiding a missile by using light emanating from the target.

light horse *Ordnance*. a historic term for the section of the cavalry carrying light arms and equipment.

lighthouse *Navigation*. a tower or other structure on land that flashes a bright light to warn ships of dangerous areas, guide them in certain routes, and so on.

light howitzer *Ordnance*. a howitzer with a bore diameter greater than 30 mm but not exceeding 125 mm.

light hydrogen *Nuclear Physics*. the ordinary light hydrogen isotope, consisting of one proton and one electron. Also, PROTIUM.

lighting branch circuit *Electricity*. a circuit aboard ships that supplies energy to lighting outlets and to various portable appliances of fewer than 600 watts.

lighting-off torch *Engineering*. an iron rod wrapped in an oil-drenched cloth, used to ignite a fuel-oil burner.

light-inspection car *Mechanical Engineering*. a railway motorcar that weighs between 400 and 600 pounds and has a capacity of 650 to 800 pounds.

light ion see SMALL ION.

light list *Navigation*. a publication that catalogs marine navigational lights and sound signals and related information.

light list number *Navigation*. the number assigned to a given marine navigational light or sound-emitting device in the light list.

light machine gun *Ordnance*. 1. in U.S. military usage, any machine gun of .30 caliber or less, excluding fully submachine guns, automatic rifles, and machine pistols. 2. in general usage, any machine gun or fully automatic rifle weighing approximately 20 to 30 pounds with its mount.

light meromyosin *Biochemistry*. the terminal tail fragment of a myosin molecule.

light metal *Metallurgy*. a metal, such as aluminum beryllium, or titanium, having density below about 5 grams per cubic centimeter.

light meter *Engineering*. a device that detects and measures incident white light or illumination.

light microsecond *Electromagnetism*. the distance traversed in free space by light in one-millionth of a second.

light mineral *Mineralogy*. 1. a rock-forming mineral with a specific gravity less than 2.85. 2. any light-colored mineral.

light mineral oil *Materials*. a mineral oil of a specified lighter density, with a specific gravity of 0.818 to 0.880.

light modulation see LIGHT CARRIER INJECTION.

light modulator *Electronics*. a device that reproduces an optical sound track on motion picture film by combining source light with an optical system, and then varying the resulting light beam.

light-negative *Electronics*. describing a material whose ability to conduct electricity decreases when the material is exposed to light.

Lightning *Aviation*. a popular name for the P-38 pursuit (fighter) aircraft.

lightning *Geophysics*. a luminous, high-current, electric discharge with a long path that flows between a cloud and the ground, between two clouds, or between two parts of the same cloud.



lightning

lightning arrester *Electricity*. a protective device that allows voltages higher than a certain value to be discharged to ground.

lightning bug see FIREFLY.

lightning channel *Geophysics*. the superheated, irregular, ionized pathway in the atmosphere created by the passage of a lightning bolt.

lightning conductor *Electricity*. 1. any pathway that lightning can follow to ground, such as the trunk of a tree, a power line, or a communication antenna. 2. see LIGHTNING ROD.

lightning discharge *Geophysics*. the neutralization of a large electric potential in the atmosphere by means of a lightning stroke.

lightning flash *Geophysics*. the observable light or luminosity that accompanies a lightning discharge.

lightning generator *Electricity*. a generator that produces surge voltages similar to lightning, for testing insulators and other high-voltage components.

lightning protection *Electricity*. any means used to protect personnel and equipment from the hazardous effects of lightning damage.

lightning rod *Electricity*. a grounded metal electrode placed on the roof of a building to protect the structure from lightning.

lightning stone see FULGURITE.

lightning surge *Electricity*. a transient electric disturbance in an electric circuit produced by lightning.

lightning switch *Electricity*. a manually operated switch that is employed during electrical storms to connect a radio antenna to ground rather than to the radio receiver. Also, GROUND SWITCH.

light oil *Materials*. 1. a fractional distillate from coal tar, boiling at a range of 110–210°C; a source of benzene, solvent naphthas, toluene, and phenol. 2. any of various oils from other sources with the same boiling range.

light-operated switch *Electronics*. a device that is activated by pulses or beams of light, such as a light-activated silicon-controlled switch.

light pen *Electronics*. a pencil-like device that senses light pulses on a cathode-ray tube screen. *Computer Technology*. such a device that is connected to a computer display unit and used by an operator to change or modify an image displayed by touching the pen to the screen.

light pillar see SUN PILLAR.

light pipe *Optics*. a cylindrical filament that is formed from a transparent material with a high index of refraction and that is used to conduct light through flexible pathways.

light pollution *Optics*. a term for the presence of unwanted or harmful light, such as objectionably bright neon signs or streetlights. *Astronomy*. specifically, the presence of artificial light in the night sky to such an extent that it impairs the observation or photography of faint astronomical objects.

light-positive *Electronics*. describing a material whose ability to conduct electricity increases when the material is exposed to light.

light projector *Optics*. a device that generates beams of light over long distances.

light-proof *Optics*. not allowing light to penetrate; impervious to light.

light-rail rapid transit *Transportation Engineering*. a light-rail transit system operating on its own exclusive right-of-way.

light-rail transit *Transportation Engineering*. a system using self-propelled electric rail cars, usually on conventional railway lines.

light rate *Astrophysics*. the factor (2.512, or the fifth root of 100) by which one magnitude differs in brightness from another.

light ray *Optics*. a line in space matching the direction of the flow of radiant energy.

light-red silver ore see PROUSTITE.

light reflex *Physiology*. an involuntary change in the constriction or dilation of the pupil that occurs in response to changes in light intensity.

light relay see PHOTOELECTRIC RELAY.

light repair see PHOTOREACTIVATION.

light ruby silver see PROUSTITE.

light scattering *Optics*. a change in the spatial distribution of a beam of light when it interacts with a surface; a process that causes no change in wavelength.

light section car *Mechanical Engineering*. a railway motorcar that weighs between 750 and 900 pounds and that is propelled by a 4- to 6-horsepower engine.

light sector *Navigation*. a horizontal arc in which a navigational light is visible or has a distinctive color.

light-sensitive *Electronics*. describing a material that exhibits photoelectric effects when exposed to light. *Medicine*. having eyesight that is unusually or abnormally sensitive to daylight or ordinary room light.

light-sensitive detector see PHOTODETECTOR.

lightship *Navigation*. a distinctive vessel that is moored at a charted position and displays a major navigational light.

light source *Optics*. a term for a source of visible forms of electromagnetic radiation such as the sun, a laser, a light bulb, or a light-emitting diode. *Graphic Arts*. any artificial or natural source of light used in photography, such as sunlight, a flash bulb, or a reflector.

light stability *Computer Technology*. the resistance of an image in optical character recognition to changes in its appearance after exposure to radiant energy.

light station *Navigation*. the complex of buildings associated with a lighthouse.

light-time *Astronomy*. the distance between two objects measured by the time it would take light to travel between them.

light transmission *Optics*. the process by which light passes through a material without being absorbed or reflected.

light valve *Electronics*. a device that varies its light transmission in relation to the application of an external electrical quantity, such as voltage, current, or an electron beam.

light water *Materials Science*. 1. ordinary water, H_2O , as distinguished from heavy water (deuterium oxide or tritium oxide). 2. a fire-fighting agent consisting of a water solution of perfluorocarbon compounds mixed with a water-soluble thickener of the polyoxyethylene type. *Nuclear Science*. water in which only the two hydrogen isotopes have a proton.

light waterline *Naval Architecture*. the waterline at which a vessel floats when empty of cargo.

light-water reactor *Nuclear Science*. a nuclear reactor that uses ordinary water to remove heat from the reactor core; used to generate electricity.

light watt *Optics*. a unit of light intensity in which the wavelength determines the ratio of luminance.

lightweight concrete *Materials*. a concrete of low weight and good insulating capability, containing lightweight aggregates such as vermiculite or perlite. Also, **lightweight aggregate**.

light-year *Astronomy*. the distance that light would travel in a vacuum in one year, 9.46 trillion kilometers or 5.8 trillion miles; used in measuring astronomical distances.

Ligidæ *Invertebrate Zoology*. a family of primitive terrestrial isopod crustacea in the suborder Oniscoidea.

lignans *Organic Chemistry*. plant products of low molecular weight, representing the dimer intermediate between monomeric propylphenol and lignin; formed mainly by oxidative linking of *p*-hydroxyphenyl-propene units, which may be bridged with oxygen.

ligneous *Biology*. formed of or resembling wood; woody.

lignicolous *Botany*. growing on or in wood, as some fungi.

lignify *Botany*. of plant cell walls, to harden, thicken, and become woody due to the deposition of lignin.

lignin *Cell Biology*. a complex polymer that forms an extensive network within the cell walls of certain plants and that confers strength and rigidity to the cell wall; one of the chief substances found in wood. *Materials Science*. a brown to transparent crystalline form of this substance, derived from paper-pulp sulfate liquor; used as a corrosion inhibitor, adhesive, coating, and fertilizer, and as a binder of compressed wood. (From the Latin word for wood.)

ligninase *Enzymology*. any one of several enzymes that break down lignin, the major component of wood.

lignin net *Cell Biology*. the structure that lignin forms in a cell.

lignin plastic *Organic Chemistry*. a plastic made from lignin resins; used as a binder or extender.

lignin sulfonate *Organic Chemistry*. a metallic sulfonate salt occurring as a tan to dark brown powder, derived from the lignin of sulfite, softwood pulp-mill liquids; it is nonhygroscopic and is insoluble in all organic substances; it decomposes above 200°C; used as a dispersing agent, extender, and ore flotation agent. Also, **lignosulfonate**.

lignite *Geology*. a brownish-black coal at the intermediate stage of coalification between peat and bituminous coal.

lignite A see BLACK LIGNITE.

lignite B see BROWN LIGNITE.

lignite wax see MONTAN WAX.

lignitious coal *Mineralogy*. any coal containing 75–84% carbon.

lignocellulose *Biochemistry*. a heterohexosan that is formed in the cell walls of woody plants; composed of cellulose and lignin.

lignosa *Botany*. woody plant matter.

lignum vitae or **lignumvitæ** *Botany*. the common name for members of the genus *Guaiaecum*, hardwood trees that produce exceptionally dense, tough wood and a resin known as gum guaiac.

ligulate *Botany*. 1. shaped like a strap. 2. bearing ligules.

ligule *Botany*. 1. a strap-shaped corolla found especially in the Compositae. 2. an appendage on the upper sheath of certain grass leaves.

likelihood function *Statistics*. the probability of observing a given sample regarded as a function of the unknown parameter in a population. *Mathematics*. a probability density function, except that its integral over the sample space need not be normalized to equal 1.

likelihood ratio *Statistics*. the ratio between the likelihood at the maximum value under the null hypothesis to the likelihood at its maximum value under the alternative hypothesis. The null hypothesis is rejected for small values of the statistic.

lilac *Botany*. any of various trees or shrubs belonging to the genus *Syringa* of the family Oleaceae, especially *S. vulgaris*, the common lilac, widely grown as an ornamental tree or shrub for its large, showy purple or white flowers.

Liliaceae *Botany*. an extensive family of monocotyledonous herbs belonging to the order Liliales, having a six-membered perianth, six stamens, and narrow leaves with parallel veins. It includes such common ornamental flowers as the lilies, hyacinths, and tulips; wildflowers such as the asphodel, trillium, and dogtooth violet; and agricultural plants such as asparagus, aloe, and the onion and related plants.

Liliales *Botany*. an order of monocotyledonous plants belonging to the subclass Liliidae, characterized by actinomorphic flowers and syncarpous ovaries.

Liliidae *Botany*. a subclass of the Liliopsida, characterized by cyclic flowers with six-membered perianths.

Liliopsida *Botany*. in some classification systems, another name for the Monocotyledoneae, whose members have a single cotyledon and parallel-veined leaves.

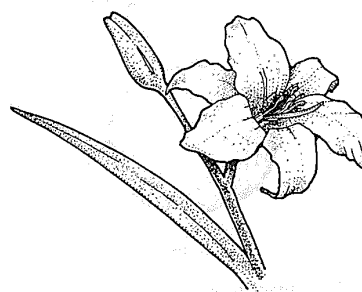
lillianite *Mineralogy*. $Pb_3Bi_2S_6$, a steel-gray, opaque, metallic orthorhombic mineral occurring in long platy crystals, having a specific gravity of 7.02 to 7.16 and a hardness of 2 to 3 on the Mohs scale; found in tungsten deposits.

Lilliputian hallucination see MICROPSIA.

Lilly controller *Mechanical Engineering*. a device on steam or electric winding engines that protects equipment and personnel against hazards such as motor overspeed, overwind, and other conditions.

LILO see FIFO.

lily *Botany*. the common name for various members of the genus *Lilium*, perennial bulbous herbs of the family Liliaceae, which grow widely as garden flowers or wildflowers throughout the world. Among the many familiar species or subspecies are the tiger lily, *L. tigrinum*; the leopard lily, *L. pardalinum*; the Madonna lily, *L. candidum*; and the Easter lily, *L. longiflorum eximium*.



lily

lily family *Botany*. the common name for the family Liliaceae.

lily of the valley *Botany*. a common garden flower, *Convallaria majalis*, of the family Liliaceae; noted for its clusters of small, bell-shaped white flowers.

lily trotter see JACANA.

LIM *Aviation*. the airport code for Lima, Peru.

Limacidae *Invertebrate Zoology*. slugs, a family of shell-less gastropod mollusks including many plant pests.

Limacodidae see EUCLEIDAE.

limaçon [lim'ə sōn'] *Mathematics*. a conchoid of a circle of radius $a/2$ and center at $(a/2, 0)$, with the origin as pole; equation in polar coordinates: $r = a \cos \theta + b$. When $a < b$, the origin is an isolated point of the limaçon. When $a > b$, the origin is a double point. When $a = b$, the origin is a cusp. Also, **limaçon of Pascal**.