

EXHIBIT 1

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McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS,

Third Edition

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crystallographic axes. **2.** The plane of the optic axis of an optically biaxial crystal. [GEOL] A plane that intersects the crest or trough in such a manner that the limbs or sides of the fold are more or less symmetrically arranged with reference to it. Also known as axial surface.

axial plane cleavage [GEOL] Rock cleavage essentially parallel to the axial plane of a fold.

axial plane foliation [GEOL] Foliation developed in rocks parallel to the axial plane of a fold and perpendicular to the chief deformational pressure.

axial plane schistosity [GEOL] Schistosity developed parallel to the axial planes of folds.

axial plane separation [GEOL] The distance between axial planes of adjacent anticline and syncline.

axial quadrupole See longitudinal quadrupole.

axial rake [MECH ENG] The angle between the face of a blade of a milling cutter or reamer and a line parallel to its axis of rotation.

axial ratio [CRYSTAL] The ratio obtained by comparing the length of a crystallographic axis with one of the lateral axes taken as unity. [ELECTR] The ratio of the major axis to the minor axis of the polarization ellipse of a waveguide. Also known as ellipticity.

axial relief [MECH ENG] The relief behind the end cutting edge of a milling cutter.

axial runout [MECH ENG] The total amount, along the axis of rotation, by which the rotation of a cutting tool deviates from a plane.

axial skeleton [ANAT] The bones composing the skull, vertebral column, and associated structures of the vertebrate body.

axial stream [HYD] **1.** The chief stream of an intermontane valley, the course of which is along the deepest part of the valley and is parallel to its longer dimension. **2.** A stream whose course is along the axis of an anticlinal or a synclinal fold.

axial surface See axial plane.

axial symmetry [MATH] Property of a geometric configuration which is unchanged when rotated about a given line.

axial trace [GEOL] The intersection of the axial plane of a fold with the surface of the earth or any other specified surface; sometimes such a line is loosely and incorrectly called the axis.

axial trough [GEOL] Distortion of a fold axis downward into a form similar to a syncline.

axial-type mass flowmeter [ENG] An instrument in which fluid in a pipe is made to rotate at a constant speed by a motor-driven impeller, and the torque required by a second, stationary impeller to straighten the flow again is a direct measurement of mass flow.

axial vector See pseudovector.

axial winding [MATER] A winding used in filament-wound fiberglass-reinforced plastic construction in which the filaments run along the axis at a zero helix angle.

axiation [EMBRYO] The formation or development of axial structures, such as the neural tube.

Axiidae [INV ZOO] A family of decapod crustaceans, including the hermit crabs, in the suborder Reptantia.

axil [BIOL] The angle between a structure and the axis from which it arises, especially for branches and leaves.

axilla [ANAT] The depression between the arm and the thoracic wall; the armpit. [BOT] An axil.

axillary [ANAT] Of, pertaining to, or near the axilla or armpit. [BOT] Placed or growing in the axis of a branch or leaf.

axillary bud [BOT] A lateral bud borne in the axil of a leaf.

axillary sweat gland [ANAT] An apocrine gland located in the axilla.

Axinellina [INV ZOO] A suborder of sponges in the order Clavaxinellida.

axinite [MINERAL] $H_2(Ca, Fe, Mn)_4(BO)Al_2(SiO_4)_5$ Brown, blue, green, gray, or purplish gem mineral that commonly forms glassy triclinic crystals. Also known as glass schorl.

axinitization [GEOL] The replacement of rocks by axinite, as in the border zones of some granites.

axiolite [MINERAL] A variety of elongated spherulite in which there is an aggregation of minute acicular crystals arranged at right angles to a central axis.

axiom [MATH] Any of the assumptions upon which a mathematical theory (such as geometry, ring theory, and the real numbers) is based. Also known as postulate.

axiomatic S-matrix theory [PARTIC PHYS] An approach to

the study of elementary particles that seeks to formulate S-matrix theory in a rigorous manner based on a few fundamental axioms that include Lorentz invariance, unitarity, analyticity near the physical values of the energy and momentum variables, and singularities in the physical region that correspond to known particles and scattering thresholds.

axion [PARTIC PHYS] A hypothetical neutral pseudoscalar boson with mass roughly of order 100 keV to 1 MeV, postulated to preserve the parity and time-reversal invariance of strong interactions, despite the effects of instantons.

axis [ANAT] **1.** The second cervical vertebra in higher vertebrates; the first vertebra of amphibians. **2.** The center line of an organism, organ, or other body part. [GEOL] **1.** A line where a folded bed has maximum curvature. **2.** The central portion of a mountain chain. [GRAPHICS] The locus of intersection of two pencils of lines in perspective position. [MATH] **1.** In a coordinate system, the line determining one of the coordinates, obtained by setting all other coordinates to zero. **2.** A line of symmetry for a geometric figure. [MECH] A line about which a body rotates.

axis cylinder [CYTOL] **1.** The central mass of a nerve fiber. **2.** The core of protoplasm in a medullated nerve fiber.

axis of abscissas [MATH] The horizontal or x axis of a two-dimensional cartesian coordinate system, parallel to which abscissas are measured.

axis of acoustic symmetry [ACOUS] An axis such that the three-dimensional directivity pattern of a transducer may be generated by rotating a two-dimensional directivity pattern around it. Also known as acoustic axis.

axis of freedom [DES ENG] An axis in a gyro about which a gimbal provides a degree of freedom.

axis of homology [MAP] The intersection of the plane of the photograph with the horizontal plane of the map or the plane of reference of the ground. Also known as axis of perspective; map parallel; perspective axis.

axis of ordinates [MATH] The vertical or y axis of a two-dimensional cartesian coordinate system, parallel to which ordinates are measured.

axis of pelvis [ANAT] A curved line which forms right angles to the pelvic-cavity planes.

axis of perspective See axis of homology.

axis of rotation [MECH] A straight line passing through the points of a rotating rigid body that remain stationary, while the other points of the body move in circles about the axis.

axis of sighting [ENG] A line taken through the sights of a gun, or through the optical center and centers of curvature of lenses in any telescopic instrument.

axis of symmetry [MECH] An imaginary line about which a geometrical figure is symmetric. Also known as symmetry axis.

axis of the bore [ORD] The imaginary central line of the bore of a gun.

axis of thrust See thrust axis.

axis of tilt [GRAPHICS] A line through the perspective center perpendicular to the principal plane.

axis of trunnions [ORD] The axis about which a gun is rotated in elevation to increase or decrease the range of fire.

axis of weld [MET] A line along a weld used to describe the positions of the localized welds.

axisymmetric flow See axial flow.

axle [MECH ENG] A supporting member that carries a wheel and either rotates with the wheel to transmit mechanical power to or from it, or allows the wheel to rotate freely on it.

axle box [ENG] A bushing through which an axle passes in the hub of a wheel.

axle grease [MATER] A lubricating grease containing suspended lime particles and thickened with rosin soap.

axoblast [INV ZOO] **1.** The germ cell in mesozoans; cells are linearly arranged in the longitudinal axis and produce the primary nematogens. **2.** The individual scleroblasts of the axis epithelium which produces spicules in octocorals.

axocoel [INV ZOO] The anterior pair of coelomic sacs in the dipleurula larval ancestral stage of echinoderms.

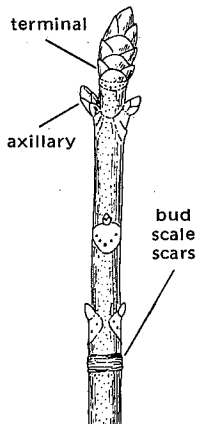
axogamy [BOT] Having sex organs on a leafy stem.

axolemma [CYTOL] The plasma membrane of an axon.

axolotl [VERT ZOO] The neotenic larva of some salamanders in the family Ambystomidae.

axolotl unit [BIOL] A unit for the standardization of thyroid extracts.

AXILLARY BUD



Position of axillary bud in the buckeye.

ning. **2.** Path traced by the scanning or recording spot in one sweep across the subject copy or record sheet.

scanning linearity [ELECTR] In television, the uniformity of scanning speed during the trace interval.

scanning line frequency See stroke speed.

scanning loss [ELECTROMAG] In a radar system employing a scanning antenna, the reduction in sensitivity (usually expressed in decibels) due to scanning across the target, compared with that obtained when the beam is directed constantly at the target.

scanning proton microprobe [ENG] An instrument used for determining the spatial distribution of trace elements in samples, in which a beam of energetic protons is focused on a narrow spot which is swept over the sample, and the characteristic x-rays emitted from the target are measured.

scanning radio [ELECTR] A radio receiver that automatically scans across public service, emergency service, or other radio bands and stops at the first preselected station which is on the air. Also known as radio scanner.

scanning radiometer [ENG] An image-forming system consisting of a radiometer which, by the use of a plane mirror rotating at 45° to the optical axis, can see a circular path normal to the instrument.

scanning sequence [ENG] The order in which the points in a region are scanned; for example, in television the picture is scanned horizontally from left to right and vertically from top to bottom.

scanning sonar [ENG] Sonar in which all targets of interest are shown simultaneously, as on a radar PPI (plan position indicator) display or sector display; the sound pulse may be transmitted in all directions simultaneously and picked up by a rotating receiving transducer, or transmitted and received in only one direction at a time by a scanning transducer.

scanning speed See spot speed.

scanning spot See picture element.

scanning switch See commutator switch.

scanning transmission electron microscope [ELECTR] A type of electron microscope which scans with an extremely narrow beam that is transmitted through the sample; the detection apparatus produces an image whose brightness depends on atomic number of the sample. Abbreviated STEM.

scanning yoke See deflection yoke.

scansorial [BOT] Adapted for climbing.

scantlings [BUILD] Sections of timber measuring less than 8 inches (20 centimeters) wide and from 2 to 6 inches (5.1 to 15 centimeters) thick; used for studding. [NAV ARCH] The dimensions and material thicknesses of frames, shell plating, deck plating, and other structures of a ship, together with the suitability of the means for protecting openings and making them sufficiently watertight or weathertight.

Scapanorhynchidae [VERT ZOO] The goblin sharks, a family of deep-sea galeoids in the suriid line having long, sharp teeth and a long, pointed rostrum.

scapha [ANAT] The furrow of the auricle between the helix and the antihelix.

Scaphidiidae [INV ZOO] The shining fungus beetles, a family of coleopteran insects in the superfamily Staphylinoidea.

scaphocephaly [MED] A condition of the skull characterized by elongation and narrowing, and a projecting, keel-like sagittal suture, caused by its premature closure.

scaphoid [ANAT] A boat-shaped bone of the carpus or of the tarsus.

Scaphopoda [INV ZOO] A class of the phylum Mollusca in which the soft body fits the external, curved and tapering, nonchambered, aragonitic shell which is open at both ends.

scapolite [MINERAL] A white, gray, or pale-green complex aluminosilicate of sodium and calcium belonging to the tectosilicate group of silicate minerals; crystallizes in the tetragonal system and is vitreous; hardness is 5-6 on Mohs scale, and specific gravity is 2.65-2.74. Also known as wernerite.

scapolitization [GEOL] Introduction of or replacement by scapolite.

scapula [ANAT] The large, flat, triangular bone forming the back of the shoulder. Also known as shoulder blade.

scapulet [INV ZOO] In some medusae, fringed outgrowths on the outer surfaces of the arms near the bell.

scapulus [INV ZOO] A modified submarginal region in some sea anemones.

scapus [BIOL] The stem, shaft, or column of a structure.

scar [GEOL] 1. A steep, rocky eminence, such as a cliff or

precipice, where bare rock is well exposed. Also known as scarp; scaw. **2.** See shore platform. [MED] A permanent mark on the skin or other tissue, formed from connective-tissue replacement of tissue destroyed by a wound or disease process.

Scarabaeidae [INV ZOO] The lamellicorn beetles, a large cosmopolitan family of coleopteran insects in the superfamily Scarabaeoidea including the Japanese beetle and other agricultural pests.

Scarabaeoidea [INV ZOO] A superfamily of Coleoptera belonging to the suborder Polyphaga.

scarabiasis [MED] Invasion of the intestine by the dung beetle, characterized by anorexia, emaciation, and disturbance of the gastrointestinal tract.

scarfing [MET] 1. Cutting away of surface defects on metals by use of a gas torch. **2.** A forging process in which the ends of two pieces to be joined are tapered to avoid an enlarged joint.

scarf joint [DES ENG] A joint made by the cutting of overlapping mating parts so that the joint is not enlarged and the patterns are complementary, and securing them by glue, fasteners, welding, or other joining method.

Scaridae [VERT ZOO] The parrotfishes, a family of perciform fishes in the suborder Percoidae which have the teeth of the jaw generally coalescent.

scarification [MED] The operation of making numerous small, superficial incisions in skin or other tissue.

scarifier [ENG] An implement or machine with downward projecting tines for breaking down a road surface 2 feet (60 centimeters) or less.

scarious [BOT] Having a thin, membranous texture.

scarlet See scarlet red.

scarlet fever [MED] An acute, contagious bacterial disease caused by *Streptococcus hemolyticus*; characterized by a papular, or rough, bright-red rash over the body, with fever, sore throat, headache, and vomiting occurring 2-3 days after contact with a carrier.

scarlet fever streptococcus antitoxin [IMMUNOL] A sterile aqueous solution of antitoxins obtained from the blood of animals immunized against group A beta hemolytic streptococci toxin; formerly used in the treatment of, and to produce immunity against, scarlet fever.

scarlet fever streptococcus toxin [IMMUNOL] Toxic filtrate of cultures of *Streptococcus pyogenes* responsible for the characteristic rash of scarlet fever; the toxin is used in the Dick test.

scarlet red [ORG CHEM] $\text{CH}_3\text{C}_6\text{H}_4\text{H}:\text{NC}_6\text{H}_5\text{CH}_3\text{N}:\text{NC}_{10}\text{H}_5\text{OH}$ A brown, water-insoluble powder, used as a dye in ointments. Also known as Biebrich red; scarlet.

scarp See escarpment.

Scarpa's fascia [ANAT] The deep, membranous layer of the superficial fascia of the lower abdomen.

scarped plain [GEOL] A terrain characterized by a succession of faintly inclined or gently folded strata.

scarp face See scarp slope.

scarp-foot spring [HYD] A spring that flows onto the land surface at or near the foot of an escarpment.

scarpland [GEOGR] A region marked by a succession of nearly parallel cuestas separated by lowlands.

scarplet See piedmont scarp.

scarpline [GEOL] A relatively straight line of cliffs of considerable extent, produced by faulting or erosion along a fault.

scarp slope [GEOL] The steep face of a cuesta, or asymmetric ridge, facing in an opposite direction to the dip of the strata. Also known as front slope; inface; scarp face.

scarp stream [HYD] An obsequent stream flowing down a scarp, such as down the scarp slope of a cuesta.

scar tissue [MED] Contracted, dense connective tissue that is formed by the healing process of a wound or diseased tissue.

SC asphalt See slow-curing liquid asphaltic material.

Scatopsidae [INV ZOO] The minute black scavenger flies, a family of orthorrhaphous dipteran insects in the series Nematocera.

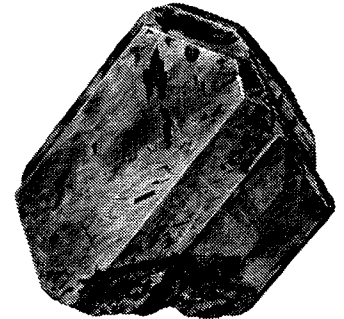
scatter angle See scattering angle.

scatter band [COMMUN] In pulse interrogation systems, the total bandwidth occupied by the frequency spread by numerous interrogations operating on the same nominal radio frequency.

scatter diagram [PETR] See point diagram. [STAT] A plot of the pairs of values of two variates in rectangular coordinates.

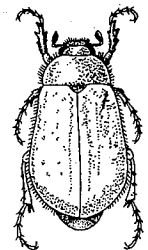
scattered [METEOROL] Descriptive of a sky cover of 0.1 to 0.5 (5 to 54%), applied only when clouds or obscuring phe-

SCAPOLITE



Crystal of scapolite, a member of the tectosilicate minerals, taken from Pierrepont, New York. (Specimen from Department of Geology, Bryn Mawr College)

SCARABAEIDAE



A drawing of a lamellicorn beetle. (From T. I. Storer and R. L. Usinger, *General Zoology*, 3d ed., McGraw-Hill, 1957)