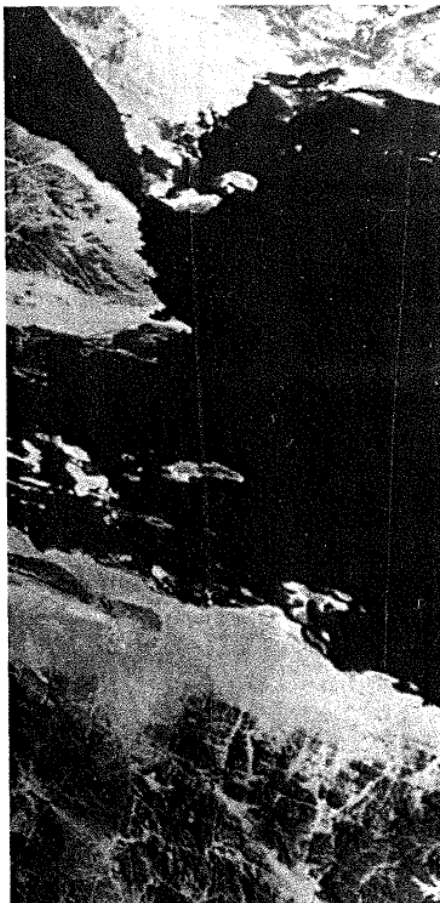


McGraw-Hill DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS

Fourth Edition



Sybil P. Parker

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On the cover: Pattern produced from white light by a computer-generated diffraction plate containing 529 square apertures arranged in a 23×23 array. (R. B. Hoover, Marshall Space Flight Center)

On the title pages: Aerial photograph of the Sinai Peninsula made by Gemini spacecraft. (NASA)

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suspended formwork [CIV ENG] Formwork suspended from supports for the floor being cast. {sə'spen-dəd 'fɔrm,wɜ:k}

suspended load [GEOL] The part of the stream load that is carried for a long time in suspension. Also known as suspension load. {sə'spen-dəd 'lɒd}

suspended solids See suspension. {sə'spen-dəd 'sɒl-ɪdʒ}

suspended span [CIV ENG] A simple span supported from the free ends of cantilevers. {sə'spen-dəd 'span}

suspended transformation [THERMO] The cessation of change before true equilibrium is reached, or the failure of a system to change immediately after a change in conditions, such as in supercooling and other forms of metastable equilibrium. {sə'spen-dəd ,tranz-fər'mə'shən}

suspended tray conveyor [MECH ENG] A vertical conveyor having pendant trays or other carriers on one or more endless chains. {sə'spen-dəd 'træ kən'və-ər}

suspended tubing [MIN ENG] A permanent method of lining a circular shaft, in which the tubing (German type) is temporarily suspended from the next wedging curb above and for which no temporary supports are required; slurry is run in behind the tubing by means of a funnel passing through the holes provided in the segments. {sə'spen-dəd 'tʌbɪŋ}

suspended water See vadose water. {sə'spen-dəd 'wɒd-ər}

suspension [CHEM] A mixture of fine, nonsettling particles of any solid within a liquid or gas, the particles being the dispersed phase, while the suspending medium is the continuous phase. Also known as suspended solids. [ENG] A fine wire or coil spring that supports the moving element of a meter. [MIN ENG] The bolting of rock to secure fragments or sections, such as small slabs barred down after blasting blocks of rock broken by fracture or joint patterns, which may subsequently loosen and fall. {sə'spen-shən}

suspension bridge [CIV ENG] A fixed bridge consisting of either a roadway or a truss suspended from two cables which pass over two towers and are anchored by backstays to a firm foundation. {sə'spen-shən ,brɪdʒ}

suspension cable [ENG] A freely hanging cable; may carry mainly its own weight or a uniformly distributed load. {sə'spen-shən ,kæbəl}

suspension current See turbidity current. {sə'spen-shən ,kə-rənt}

suspension feeder [ZOO] An animal that feeds on small particles suspended in water; particles may be minute living plants or animals, or products of excretion or decay from these or larger organisms. {sə'spen-shən 'fɛd-ər}

suspension insulator [ELEC] A type of insulator used to support a conductor of an overhead transmission line, consisting of one or a string of insulating units suspended from a pole or tower, with the conductor attached to the end. {sə'spen-shən ,ɪn-sə-ləd-ər}

suspension load See suspended load. {sə'spen-shən 'lɒd}

suspension roast See flash roast. {sə'spen-shən 'rɒst}

suspension roof [BUILD] A roof that is supported by steel cables. {sə'spen-shən ,rʊf}

suspension system [MECH ENG] A system of springs, shock absorbers, and other devices supporting the upper part of a motor vehicle on its running gear. {sə'spen-shən ,sɪs-təm}

suspensor [BOT] A mass of cells in higher plants that pushes the embryo down into the embryo sac and into contact with the nutritive tissue. [MYCOL] A hypha which bears an apical gametangium in fungi of the Mucorales. {sə'spen-sər}

sussexite [MINERAL] $MnBO_2OH$ A white mineral composed of basic manganese borate occurring in fibrous veins. {sə'sɪks,ɪt}

sustained oscillation [CONT SYS] Continued oscillation due to insufficient attenuation in the feedback path. [PHYS] Oscillation in which forces outside the system, but controlled by the system, maintain a periodic oscillation of the system at a period or frequency that is nearly the natural period of the system. {sə'stænd ,ɒs-ə-lə'shən}

sustained rate of fire [ORD] Actual rate of fire that a weapon can continue to deliver for an indefinite length of time without seriously overheating. {sə'stænd 'ræt əv 'fɪr}

sustained yield [BIOL] In a biological resource such as timber or grain, the replacement of a harvest yield by growth or reproduction before another harvest occurs. {sə'stænd 'jɪld}

sustainer rocket engine [AERO ENG] A rocket engine that maintains the velocity of a rocket vehicle once it has achieved

its programmed velocity by use of a booster or other engine. {sə'stæn-ər 'ræk-ət ,en-ʃən}

sustentacular cell [HISTOL] One of the supporting cells of an epithelium as contrasted with other cells with special function, as the nonnervous cells of the olfactory epithelium or the Sertoli cells of the seminiferous tubules. {sə'stən'tak-yə-lər ,sel}

SU₃ symmetry [PARTIC PHYS] A unitary symmetry based on a fundamental multiplet of three equivalent particles—in particular, the approximate symmetry based on the up, down, and strange quarks, and the exact symmetry based on the three differently colored quarks of a given flavor. {sə'yü ,səb,θrə 'sɪm-ə-trē}

SU_n symmetry [PARTIC PHYS] A unitary symmetry based on a fundamental multiplet of n equivalent particles—in particular, n quarks. {sə'yü ,səb,θrə 'sɪm-ə-trē}

Sutherland's formula [STAT MECH] 1. The absolute viscosity of a gas is proportional to $T^{3/2}/(C + T)$, where T is the absolute temperature and C is a constant for a given gas.

2. The mean free path of a molecule in a gas is proportional to $1/[nd\sqrt{1 + (C/T)}]$, where n is the number of molecules per unit volume, d is the diameter of a molecule, T is the absolute temperature, and C is a constant. {səθ-ər-lənʒ ,fɔrm-yə-lə}

Sutro weir [CIV ENG] A dam with at least one curved side and horizontal crest, so formed that the head above the crest is directly proportional to the discharge. {sü-trō ,wer}

suture [BIOL] A distinguishable line of union between two closely united parts. [MED] A fine thread used to close a wound or surgical incision. {sü-char}

sutured [PETR] Referring to rock texture in which mineral grains or irregularly shaped crystals interfere with their neighbors, producing interlocking, irregular contacts without interstitial spaces. {sü-chərd}

svabite [MINERAL] $Ca_5(AsO_4)_3F$ A colorless, yellow, rose, or reddish-brown mineral composed of fluoride-arsenate of calcium. {s'fä,bɪt}

svanbergite [MINERAL] $SrAl_2(PO_4)(SO_4)(OH)_6$ A colorless to yellow mineral composed of basic phosphate and sulfate of strontium and aluminum; it is isomorphous with corkite, hinsdalite, and woodhouseite. {s'fän,bərg,ɪt}

svedberg [PHYS CHEM] A unit of sedimentation coefficient, equal to 10^{-13} second. {s'fed,bərg}

Svedberg equation [STAT MECH] An equation which states that the amplitude of vibration of a particle which exhibits Brownian motion is proportional to its period. {s'fed,bərg ,i,kwə-zən}

sverdrup [FL MECH] A unit of volume transport equal to 1,000,000 cubic meters per second. {s'fədrəp}

SW See switch.

swab [MIN ENG] 1. A pistonlike device provided with a rubber cap ring that is used to clean out debris inside a borehole or casing. 2. The act of cleaning the inside of a tubular object with a swab. [PETRO ENG] In petroleum drilling, to pull the drill string so rapidly that the drill mud is sucked up and overflows the collar of the borehole, thus leaving an undesirably empty borehole. {swäb}

swage bolt [DES ENG] A bolt having indentations with which it can be gripped in masonry. {swäj ,bɒlt}

swaging [MET] Tapering a rod or tube or reducing its diameter by any of several methods, such as forging, squeezing, or hammering. {swäj-ɪŋ}

swale [GEOL] 1. A slight depression, sometimes swampy, in the midst of generally level land. 2. A shallow depression in an undulating ground moraine due to uneven glacial deposition. 3. A long, narrow, generally shallow, troughlike depression which lies between two beach ridges and is aligned roughly parallel to the coastline. {swäl}

swallow buoy See swallow float. {swä-lō ,bɔɪ}

swallow float [ENG] A tubular buoy used to measure current velocities; it can be adjusted to be neutrally buoyant and to drift at a selected density level while being tracked by shipboard listening devices. Also known as neutrally buoyant float; swallow buoy. {swä-lō ,flɒt}

swallow hole [GEOL] An opening that occurs occasionally at the bottom of a sinkhole which permits direct drainage from the surface into an underground channel. {swäl-ō ,hɒl}

swamp [ECOL] A waterlogged land supporting a natural vegetation predominantly of shrubs and trees. {swämp}

swamp buggy [MECH ENG] A wheeled vehicle that runs on

SUSPENSION BRIDGE



Verrazano-Narrows Bridge, New York City, an example of a suspension bridge. (Triborough Bridge and Tunnel Authority)