

McGraw-Hill Fifth Edition

Sybil P. Parker Editor in Chief

McGraw-Hill, Inc.

New York

San Francisco Washington, D.C.

Bogotá Auckland

Caracas Lisbon London

Madrid Mexico City Milan

acterize

dē ki'ne

bradykii

forms a

from pla

known

Bradyo

fishes (

sharks.

bradyp

brad Bradyp

Edenta

bradyte

or occu

'brād

Bragg 8

at which

crystal.

Bragg

Bragg

numbe

oenerg

throug

curve

particle

velocit

Bragg

cordin

irradia

ening

effect

Bragg

shan

bragg

Bragg

Bragg

eleme

atomi

are kr

Bragg

Bragg

which

is inv

Also

Brago

trons

const

Brag

tion.

Bragg

Bragg

unde

mum

law.

of cr

on th

inas

spec

trom

braic

that

braid

conc

tene

braid

Brai

blin

the

Brail

brain

sys

the humerus, the elbow joint, the forearm, and the hand. { 'brakē•əl 'ärd•ə•тē }

brachial cavity [INV ZOO] The anterior cavity which is located inside the valves of brachiopods and into which the brachia are withdrawn. { 'brā·kē·əl 'kav·əd·ē }

brachial plexus [ANAT] A plexus of nerves located in the neck and axilla and composed of the anterior rami of the lower four cervical and first thoracic nerves. { 'brā·kē·əl 'plek·səs } Brachiata [INV ZOO] A phylum of deuterostomous, sedentary bottom-dwelling marine animals that live encased in tubes. { .bra·kē'ad·ə }

brachiate [BOT] Possessing widely divergent branches. [zoo] Having arms. { 'bra·kē,āt }

brachiating motion [CONT SYS] A type of robotic motion that employs legs or other equipment to help the manipulator move in its working environment. { 'brā·kē ād·iŋ 'mō·shən }

brachiating robot [CONT SYS] A robot that is capable of moving over the surface of an object. { 'brā·kē'ād·iŋ ro,bät } brachiolaria [INV 200] A transitional larva in the development of certain starfishes that is distinguished by three anterior processes homologous with those of the adult. { ,bra·kē·ō'la·

Brachiopoda [INV 200] A phylum of solitary, marine, bi-valved coelomate animals. { ,brā·kē'ā·pə·də }

brachioradialis [ANAT] The muscle of the arm that flexes the elbow joint; origin is the lateral supracondylar ridge of the humerus, and insertion is the lower end of the radius. { 'brā·kē· ō,rā·dē'äl·əs }

brachistochrone [MECH] The curve along which a smoothsliding particle, under the influence of gravity alone, will fall from one point to another in the minimum time. { brə'kistə,krön }

brachium [ANAT] The upper arm or forelimb, from the shoulder to the elbow. [INV 200] 1. A ray of a crinoid. 2. A tentacle of a cephalopod. 3. Either of the paired appendages constituting the lophophore of a brachiopod. { 'brā·kē·əm }

Brachyarchus [MICROBIO] A genus of bacteria of uncertain affiliation; rod-shaped cells bent in a bowlike configuration and usually arranged in groups of two, four, or more cells. { 'brakē'är•kəs }

brachyaxis [CRYSTAL] The shorter lateral axis, usually the a axis, of an orthorhombic or triclinic crystal. Also known as

brachydiagonal. ['bra kē'ak səs]
brachyblast [Bot] A short shoot often bearing clusters of leaves. { 'bra kə blast }

brachycephalic [ANTHRO] Being short- or broad-headed, that is, having a cephalic index of over 80. { |brak-i-sə'fal-ik } brachycephaly [ANTHRO] The state of being brachycephalic. { brak·i'sef·ə·lē }

brachycerebral [ANTHRO] Having a round or short brain. { _brak·i·sə'rē·brəl }

brachycranial [ANTHRO] Being short- or broad-skulled, that is, with a cephalic index of over 80. { brak-i'krā-nē-əl }

brachydactylia [MED] Abnormal shortening of fingers or toes. { brak·i·dak'til·ē·ə }

brachydiagonal See brachyaxis. { ,brak·i·dī'ag·ə·nəl } brachydont [ANAT] Of teeth, having short crowns, well-developed roots, and narrow root canals; characteristic of humans. { 'brak·ə,dänt }

brachyfacial [ANTHRO] Having a short or broad face. { ,brak·ə'fāsh·əl }

Brachygnatha [INV ZOO] A subsection of brachyuran crustaceans to which most of the crabs are assigned. { bra'kig no tha }

brachypinacoid [GEOL] A pinacoid parallel to the vertical and the shorter lateral axis. { brak-i'pin-ə,koid }

Brachypsectridae [INV 200] A family of coleopteran insects in the superfamily Cantharoidea represented by a single species. { ,bra·kip'sek·trə,dē }

Brachypteraciidae [VERT 200] The ground rollers, a family of colorful Madagascan birds in the order Coraciiformes. { bra,kip·ter·a'sī·a,dē }

brachypterous [INV 200] Having rudimentary or abnormally small wings, referring to certain insects. { brə kip tə rəs }

brachysclereid [BOT] A sclereid that is more or less isodiametric and is found in certain fruits and in the pith, cortex, and bark of many stems. Also known as stone cell. { ,brak i'sklir

brachyskelic [ANTHRO] Having legs short in proportion trunk length, with a skelic index of 75–80. ('brak'i skelic brachysm [BOT] Plant dwarfing in which there is shorten of the internodes only. { 'bra,kiz əm }

brachysyncline [GEOL] A broad, short syncline. i'sin,klīn }

brachytherapy [MED] Radiation treatment using a solid enclosed radioisotopic source on the surface of the body or a short distance from the area to be treated. { 'brak'i'therap Brachythoraci [PALEON] An order of the joint-neckfine now extinct. { ,brak·i'thór·ə·sī }

Brachyura [INV ZOO] The section of the crustacean or Decapoda containing the true crabs. [,bra·kē'yūr-ə] bracing [ENG] The act or process of strengthening or main rigid. { 'brās in }

brackebuschite [MINERAL] Pb₄MnFe(VO₄)₄·2H₂O A_{de} brown to black, monoclinic mineral consisting of a hydravanadate of lead, manganese, and iron. ('bra-kə,bu,shīt) bracket [BUILD] A vertical board to support the tread of stair. [CIV ENG] A projecting support. [ORD] 1. The tance between two strikes or series of strikes, one of which over the target and the other short of it, or one of which is too right and the other to the left of the target. 2. A group of she (or bombs) which fall both over and short of the target. [bag

bracket fungus [MYCOL] A basidiomycete characterizedh shelflike sporophores, sometimes seen on tree trunks. ['brake fəŋ·gəs }

bracketing method [ORD] A method of adjusting artilled and mortar fire in which a bracket is established by obtaining an over and a short strike, with respect to the observer, the successively splitting the bracket in half until a target hit obtained or the smallest practicable range change has been made. { 'brak-əd-in ,meth-əd }

bracketing salvo [ORD] A series of shots in which the number of shots going over the target equals the number falling short { 'brak·əd·in sal·vō }

Brackett series [SPECT] A series of lines in the infrared spec trum of atomic hydrogen whose wave numbers are given by $R_H[(1/16)-(1/n^2)]$, where R_H is the Rydberg constant for h drogen and n is any integer greater than 4. ('brak ot sirez brackish [HYD] 1. Of water, having salinity values ranging from approximately 0.50 to 17.00 parts per thousand. 2.0 water, having less salt than sea water, but undrinkable. [brake ish }

Braconidae [INV ZOO] The braconid wasps, a family of hy menopteran insects in the superfamily Ichneumonoida { brəˈkän•ə.dē }

bract [BOT] A modified leaf associated with plant reprodu tive structures. { brakt }

bracteolate [BOT] Having bracteoles. { brak'të o lat bracteole [BOT] A small bract, especially if on the floral axis Also known as bractlet. { 'brak-tē,ōl }

bractlet See bracteole. { 'brak-lət }

brad [DES ENG] A small finishing nail whose body either is a uniform thickness or is tapered. { brad }

bradding [ENG] A distortion of a bit tooth caused by the application of excessive weight, causing the tooth to become dull so that its softer inner portion caves over the harder care area. { 'brad·in }

Bradfordian [GEOL] Uppermost Devonian geologic time { .brad'ford·ē·ən }

Bradley aberration [ASTRON] Stellar aberration with a marimum of 20.5 seconds of arc; can be used to compute an ap proximate velocity for light. ['brad·lē ab·ə'rā·shən]

bradleyite [MINERAL] Na3Mg(PO4)(CO3) A light gray min eral consisting of a phosphate-carbonate of sodium and material nesium; occurs as fine-grained masses. { 'brad·lē,īt }

bradyauxesis [BIOL] Allometric growth in which a part lap behind the body as a whole in development. { 'brā·dē·òg' br

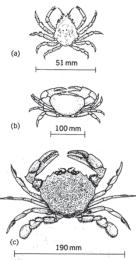
bradycardia [MED] Slow heart rate. { 'brād·i'kard·ē'ə } bradydiastole [MED] Prolongation of diastole beyond normal limits. { |brā·dē·dī'as·tə·lē }

bradyesthesia [MED] Retardation in the transmission of set sory impressions. { ,brā·dē·es thēzh·yə }

bradykinesia [MED] Extreme slowness in movement. [] dē·kə'nēzh·və

bradykinetic syndrome [MED] A neurologic condition char

BRACHYGNATHA



Representative crabs of the Brachygnatha: (a) spider crab, Mithrax acuticornis; (b) freshwater crab, Epilobocera sinuatifrons; (c) swimming crab, Ovalipes ocellatus. flame excitation [SPECT] Use of a high-temperature flame (such as oxyacetylene) to excite spectra emission lines from alkali and alkaline-earth elements and metals. { 'flām ,ek·sī'tā-

flame gouging [MET] A form of oxygen cutting by means of a cutting torch with a slightly curved tip, enabling the flame to strike the metal surface at a low angle and making shallow cuts possible. Also known as oxygen gouging. ['flām ,gauj'in] | flame hardening [MET] A method for local surface hardening of steel by passing an oxyacetylene or similar flame over the work at a predetermined rate. ['flām ,härd'an-in']

work at a predetermined rate. { 'flām ,hārd-ən-iŋ } flameholder [AERO ENG] A device that sustains combustion in a flowing mixture within the combustion chamber of some

types of jet engines. { 'flām,hōl·dər }

flame ionization detector [ANALY CHEM] A device in which the measured change in conductivity of a standard flame (usually hydrogen) due to the insertion of another gas or vapor is used to detect the gas or vapor. { 'flām ,ī-ɔ-nɔ'zā-shən di,tek-tər } flame laser [OPTICS] A molecular gas laser in which gases such as carbon disulfide and oxygen are mixed at low pressures and ignited; the flame is then self-sustaining and produces car-

bon monoxide laser emission. { 'flām ,lā·zər } flameout [AERO ENG] The extinguishing of the flame in a

reaction engine, especially in a jet engine. { 'flām,aut } flame photometer [SPECT] One of several types of instruments used in flame photometry, such as the emission flame photometer and the atomic absorption spectrophotometer, in each of which a solution of the chemical being analyzed is vaporized; the spectral lines resulting from the light source going through the vapors enters a monochromator that selects the band or bands of interest. { 'flām, fo'tām·əd·ər }

flame photometry [SPECT] A branch of spectrochemical analysis in which samples in solution are excited to produce line emission spectra by introduction into a flame. { 'flām fə'täm-

a-tre)

 $\begin{tabular}{ll} flame plate & [ENG] & One of the plates on a boiler firebox which are subjected to the maximum furnace temperature. & 'flam plat' & [Flam of the plate of the plates of the plat$

flame plating [MET] Coating a thin layer of refractory material on a surface by exploding a mixture of plating powder, oxygen, and acetylene. Also known as flame coating. { 'flām, plād-in' }

flame propagation [CHEM] The spread of a flame in a combustible environment outward from the point at which the combustion started. { ',flām ,prāp-ə'gā-shən }

flame retardant [CHEM ENG] A substance that can suppress, reduce, or delay the propagation of a flame through a polymer material; may be inserted chemically into the polymer molecule or blended in after polymerization. { 'flām ri,tärd'ənt }

flame-retarded resin [MATER] A resin which is compounded with certain chemicals to reduce or eliminate its tendency to hum. I flam rigidad flamen

burn. { 'flām ri,tārd əd 'rez ən } flame repellent [TEXT] Referring to a fabric that has been rendered resistant to flash or sustained burning by chemical treatment. { 'flām ri,pel ənt }

flame spectrometry [SPECT] A procedure used to measure the spectra or to determine wavelengths emitted by flame-excited substances. { 'flām spek'träm'ə'trē }

flame spectrophotometry [spect] A method used to determine the intensity of radiations of various wavelengths in a spectrum emitted by a chemical inserted into a flame. ['flam | spek-tra-fa-tam-a-trē]

flame spectrum [SPECT] An emission spectrum obtained by evaporating substances in a nonluminous flame. ['flām ,spektram']

flame speed [CHEM] The rate at which combustion moves through an explosive mixture. { 'flām ,spēd }

flame spraying [ENG] 1. A method of applying a plastic coating onto a surface in which finely powdered fragments of the plastic, together with suitable fluxes, are projected through a cone of flame. 2. Deposition of a conductor on a board in molten form, generally through a metal mask or stencil, by means of a spray gun that feeds wire into a gas flame and drives the molten particles against the work. { 'flām ,sprā·iŋ }

flame straightening [MET] Correcting distorted structural metal to a straight form by local application of a gas-flame heat. ['flām strāt'ən-iŋ }

flamethrower [ENG] A device used to project ignited fuel

from a nozzle so as to cause casualties to personnel or to destroy material such as weeds or insects. { 'flām,thrō·ər }

flame trap [ENG] A device that prevents a gas flame from entering the supply pipe. { 'flām, trap } flame treating [ENG] A method of rendering inert thermo-

flame treating [ENG] A method of rendering inert thermoplastic objects receptive to inks, lacquers, paints, or adhesives, in which the object is bathed in an open flame to promote oxidation of the surface. { 'flām ,trēd·in }

flamingo [VERT ZOO] Any of various long-legged and longnecked aquatic birds of the family Phoenicopteridae characterized by a broad bill resembling that of a duck but abruptly bent downward and rosy-white plumage with scarlet coverts. { flə'miŋ·gō }

flammability [CHEM] A measure of the extent to which a material will support combustion. Also known as inflamma-

bility. { flam-ə'bil-əd-ē }

flammability limits [CHEM] The stoichiometric composition limits (maximum and minimum) of an ignited oxidizer-fuel mixture what will burn indefinitely at given conditions of temperature and pressure without further ignition. { ,flam-o'bil·odē. Jim-ots }

flammable [MATER] Of a material, capable of supporting combustion. { 'flam:a:bal }

flammable liquid [MATER] A liquid which gives off combustible vapors. { 'flam·ə·bəl 'lik·wəd }

Flamsteed's number [ASTRON] A number sometimes used with the possessive form of the Latin name of the constellation to identify a star, for example, 72 Ophiuchi. { 'flam, stēdz, nombor }

flan [METEOROL] In Scotland, a sudden gust or squall of wind from land. { flan }

Flanders storm [METEOROL] In England, a heavy fall of snow coming with the south wind. { 'flan-dərz , stōrm }

Flandrian transgression [OCEANOGR] The rapid rise of the North Sea between 8000 and 3000 B.C. from about 180 feet (55 meters) below to about 20 feet (6 meters) below its present level. { 'flandrē-en tranz'gresh-en }

flange [SCI TECH] A projecting rim of an organism or mechanical part. { flanj }

flanged pipe [DES ENG] A pipe with flanges at the ends; can be bolted end to end to another pipe. { 'flanjd 'pīp }

flange isolator *See* short-waveguide isolator. { 'flanj 'ī·səˌlād-ər }

flange union [ENG] A pair of flanges that are screwed to the ends of pipes and then bolted or welded together to hold two pipes together. { 'flanj ,yün-yən }

flangeway [CIV ENG] Open way through a rail or track structure that provides a passageway for the flange of a wheel. { 'flanj,wa }

flanging [ENG] A forming process in which the edge of a metal part is bent over to make a flange at a sharp angle to the

body of the part. { 'flanj:in }

flank [crv eng] The outer edge of a carriageway. [DES ENG]

1. The end surface of a cutting tool, adjacent to the cutting edge.

2. The side of a screw thread. [GEOL] See limb. [VERT ZOO]

The part of a quadruped mammal between the ribs and the pelvic girdle. { flank }

flank angle [DES ENG] The angle made by the flank of a screw thread with a line perpendicular to the axis of the screw. { 'flank ,an gol }

flank hole [MIN ENG] 1. A hole bored in advance of a working place when approaching old workings. 2. A borehole driven from the side of an underground excavation, not parallel with the center line of the excavation, to detect water, gas, or other danger. { 'flank, hol }

flank observation [ORD] Observation of fire from a place on, or near, the flank of the target; the angle at the target between the gun and the observer is between 75 and 105°. { |flank abzər'vā·shən }

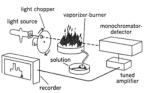
flank wear [ENG] Loss of relief on the flank of a tool behind the cutting edge. { 'flank ,wer }

flannel [TEXT] A loosely woven, generally wool fabric with the weave concealed by a napped surface. { 'flan-al }

flannelette [TEXT] Plain cotton weave finished with a nap on one side. Also known as kimono flannel. { 'flan-ol'et }

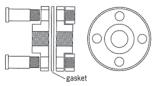
flap [AERO ENG] 1. Any control surface, such as a speed brake, dive brake, or dive-recovery brake, used primarily to increase the lift or drag on an airplane, or to aid in recovery from a dive.

FLAME PHOTOMETER



Schematic diagram of atomic absorption spectrophotometer for determining metal concentrations.

FLANGE UNION



Components of a flange union.