

McGraw-Hill
DICTIONARY OF
SCIENTIFIC AND
TECHNICAL
TERMS
Fifth Edition

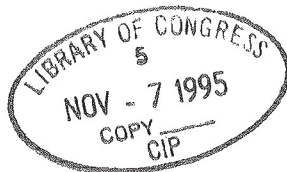
Sybil P. Parker
Editor in Chief

McGraw-Hill, Inc.

New York San Francisco Washington, D.C.
Auckland Bogotá Caracas Lisbon London Madrid Mexico City Milan
Montreal New Delhi San Juan Singapore Sydney Tokyo Toronto

MYLAN V. BAXTER
IPR2016-00218

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



Q123
.M34
1994

Included in this Dictionary are definitions which have been published previously in the following works: P. B. Jordain, *Condensed Computer Encyclopedia*, Copyright © 1969 by McGraw-Hill, Inc. All rights reserved. J. Markus, *Electronics and Nucleonics Dictionary*, 4th ed., Copyright © 1960, 1966, 1978 by McGraw-Hill, Inc. All rights reserved. J. Quick, *Artists' and Illustrators' Encyclopedia*, Copyright © 1969 by McGraw-Hill, Inc. All rights reserved. *Blakiston's Gould Medical Dictionary*, 3d ed., Copyright © 1956, 1972 by McGraw-Hill, Inc. All rights reserved. T. Baumeister and L. S. Marks, eds., *Standard Handbook for Mechanical Engineers*, 7th ed., Copyright © 1958, 1967 by McGraw-Hill, Inc. All rights reserved.

In addition, material has been drawn from the following references: R. E. Huschke, *Glossary of Meteorology*, American Meteorological Society, 1959; *U.S. Air Force Glossary of Standardized Terms*, AF Manual 11-1, vol. 1, 1972; *Communications-Electronics Terminology*, AF Manual 11-1, vol. 3, 1970; W. H. Allen, ed., *Dictionary of Technical Terms for Aerospace Use*, 1st ed., National Aeronautics and Space Administration, 1965; J. M. Gilliland, *Solar-Terrestrial Physics: A Glossary of Terms and Abbreviations*, Royal Aircraft Establishment Technical Report 67158, 1967; *Glossary of Air Traffic Control Terms*, Federal Aviation Agency; *A Glossary of Range Terminology, White Sands Missile Range, New Mexico*, National Bureau of Standards, AD 467-424; *A DOD Glossary of Mapping, Charting and Geodetic Terms*, 1st ed., Department of Defense, 1967; P. W. Thrush, comp. and ed., *A Dictionary of Mining, Mineral, and Related Terms*, Bureau of Mines, 1968; *Nuclear Terms: A Glossary*, 2d ed., Atomic Energy Commission; F. Casey, ed., *Compilation of Terms in Information Sciences Technology*, Federal Council for Science and Technology, 1970; *Glossary of Stinfo Terminology*, Office of Aerospace Research, U.S. Air Force, 1963; *Naval Dictionary of Electronic, Technical, and Imperative Terms*, Bureau of Naval Personnel, 1962; *ADP Glossary*, Department of the Navy, NAVSO P-3097.

**McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS,
Fifth Edition**

Copyright © 1994, 1989, 1984, 1978, 1976, 1974 by McGraw-Hill, Inc. All rights reserved. Printed in the United States of America. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of the publisher.

2 3 4 5 6 7 8 9 0 DOW/DOW 9 9 8 7 6 5 4

ISBN 0-07-042333-4

Library of Congress Cataloging-in-Publication Data

McGraw-Hill dictionary of scientific and technical terms /
Sybil P. Parker, editor in chief. —5th ed.
p. cm.
ISBN 0-07-042333-4
1. Science—Dictionaries. 2. Technology—Dictionaries.
I. Parker, Sybil P.
Q123.M34 1993
503—dc20 93-34772
CIP

INTERNATIONAL EDITION

Copyright © 1994. Exclusive rights by McGraw-Hill, Inc. for manufacture and export. This book cannot be re-exported from the country to which it is consigned by McGraw-Hill. The International Edition is not available in North America.

When ordering this title, use ISBN 0-07-113584-7.

by replacement of other coordinated groups in the complex. { ɔ'kwāshən }

aquatone [GRAPHICS] An offset printing process utilizing a zinc plate that is gelatin-coated and hardened and sensitized to print type, line drawings, and fine-screen halftones. { 'ak-wə,tɒn }

aqueduct [CIV ENG] An artificial tube or channel for conveying water. { 'ak-wə,dəkt }

Aquent [GEOL] A suborder of the soil order Entisol, bluish gray or greenish gray in color; under water until very recent times; located at the margins of oceans, lakes, or seas. { 'ākwənt }

aqueous [SCI TECH] Relating to or made with water. { 'āk-wē-əs }

aqueous desert [ECOL] A marine bottom environment with little or no macroscopic invertebrate shelled life. { 'āk-wē-əs 'dezərt }

aqueous electron See hydrated electron. { 'āk-wē-əs i'lek,tɹən }

aqueous humor [PHYSIO] The transparent fluid filling the anterior chamber of the eye. { 'āk-wē-əs 'yü-mər }

aqueous lava [GEOL] Mud lava produced by the mixing of volcanic ash with condensing volcanic vapor or other water. { 'āk-wē-əs 'lāv-ə }

aqueous rock [PETR] A sedimentary rock deposited by or in water. Also known as hydrogenic rock. { 'āk-wē-əs 'rāk }

aqueous solution [CHEM] A solution with the solvent as water. { 'āk-wē-əs sə'lüshən }

Aquept [GEOL] A suborder of the soil order Inceptisol, wet or drained, which lacks silicate clay accumulation in the soil profiles; surface horizon varies in thickness. { 'ak-wəpt }

aquiclude [GEOL] A porous formation that absorbs water slowly but will not transmit it fast enough to furnish an appreciable supply for a well or spring. { 'ak-wə,klüd }

aquiculture [BIOL] Cultivation of natural faunal resources of water. Also spelled aquaculture. { 'ak-wə,kəl'chər }

aquifer [GEOL] A permeable body of rock capable of yielding quantities of groundwater to wells and springs. [HYD] A subsurface zone that yields economically important amounts of water to wells. { 'ak-wə-fər }

Aquifoliaceae [BOT] A family of woody flowering plants in the order Celastrales characterized by pendulous ovules, alternate leaves, imbricate petals, and drupeaceous fruit; common members include various species of holly (*Ilex*). { ,ak-wə,'fɔl-ē'ās-ē-ē }

aquifuge [GEOL] An impermeable body of rock which contains no interconnected openings or interstices and therefore neither absorbs nor transmits water. { 'ak-wə,'fyüj }

aquiherbosa [ECOL] Herbaceous plant communities in wet areas, such as swamps and ponds. { ,ak-wē,hər'bōs-ə }

Aquila [ASTRON] A constellation with a right ascension of 20 hours and declination of 5°N. Abbreviated Aql; Aql. { 'ak-wə-lə }

α Aquilae See Altair. { ,al-fə 'ak-wə,lē }

aquiprata [ECOL] Communities of plants which are found in areas such as wet meadows where groundwater is a factor. { ɔ'kwiprəd-ə }

Aquitanian [GEOL] Lower lower Miocene or uppermost Oligocene geologic time. { ,ak-wə'tæn-ē-ən }

aquitar [GEOL] A bed of low permeability adjacent to an aquifer; may serve as a storage unit for groundwater, although it does not yield water readily. { 'ak-wə,'tärd }

Aquod [GEOL] A suborder of the soil order Spodosol, with a black or dark brown horizon just below the surface horizon; seasonally wet; it occupies depressions or wide flats from which water cannot escape easily. { 'ak-wəd }

aquo ion [CHEM] Any ion containing one or more water molecules. { 'akwō 'i,än }

Aquoll [GEOL] A suborder of the soil order Mollisol, with thick surface horizons; formed under wet conditions, it may be under water at times, but is seasonally rather than continually wet. { 'ak-wól }

Aquox [GEOL] A suborder of the soil order Oxisol, seasonally wet, found chiefly in shallow depressions; deeper soil profiles are predominantly gray, sometimes mottled, and contain nodules or sheets of iron and aluminum oxides. { 'ak-wəks }

Aquult [GEOL] A suborder of the soil order Ultisol; seasonally wet, it is saturated with water a significant part of the year unless drained; surface horizon of the soil profile is dark and varies in

thickness, grading to gray in the deeper portions; it occurs in depressions or on wide upland flats from which water drains very slowly. { 'ak-wəlt }

Ar See argon.

Ar₁ [MET] The temperature at which conversion of austenite to ferrite or to ferrite plus cementite is completed upon cooling a steel.

Ar₃ [MET] The temperature at which austenite begins to convert to ferrite upon cooling a steel.

Ar₄ [MET] The temperature at which delta ferrite is converted to gamma iron (austenite) upon cooling a steel.

Ar_{cm} [MET] The temperature at which austenite is converted to cementite upon cooling a hypereutectoid steel.

Ara [ASTRON] A constellation with a right ascension of 17 hours and declination of 55°S. Also known as Altar. { 'ärə }

Arabellidae [INV ZOO] A family of polychaete worms belonging to the Errantia. { ,ar-ə'bel-ə,dē }

arabic numerals [MATH] The numerals 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9. { 'ar-ə'bik 'nüm-rəlz }

arabine See harman. { 'ar-ə'bēn }

arabinose [BIOCHEM] C₅H₁₀O₅ A pentose sugar obtained in crystalline form from plant polysaccharides such as gums, hemicelluloses, and some glycosides. { ɔ'rab-ə,nōs }

arabite See arabitol. { 'ar-ə'bīt }

arabitol [ORG CHEM] CH₂OH(CHOH)₃CH₂OH An alcohol that is derived from arabinose; a sweet, colorless crystalline material present in D and L forms; soluble in water; melts at 103°C. Also known as arabite. { ɔ'rab-ə,tól }

Araceae [BOT] A family of herbaceous flowering plants in the order Arales; plants have stems, roots, and leaves, the inflorescence is a spadix, and the growth habit is terrestrial or sometimes more or less aquatic; well-known members include dumb cane (*Dieffenbachia*), jack-in-the-pulpit (*Arisaema*), and *Philodendron*. { ɔ'rās-ē-ē }

arachic acid See eicosanoic acid. { ɔ'rak-ik 'as-əd }

arachidic acid See eicosanoic acid. { ,arə'kid-ik 'as-əd }

arachidonate [BIOCHEM] A salt or ester of arachidonic acid. { ,a'rak-ə'dän,ät }

arachidonic acid [BIOCHEM] C₂₀H₃₂O₂ An essential unsaturated fatty acid that is a precursor in the biosynthesis of prostaglandins, thromboxanes, and leukotrienes. { ɔ'rak-ə'dan-ik 'as-əd }

arachis oil See peanut oil. { 'ar-ə'kəs ,ɔil }

Arachnia [MICROBIO] A genus of bacteria in the family Actinomycetaceae; branched diphtheroid rods and branched filaments form filamentous microcolonies; facultatively anaerobic; the single species is a human pathogen. { ɔ'rak-nē-ə }

Arachnida [INV ZOO] A class of arthropods in the subphylum Chelicerata characterized by four pairs of thoracic appendages. { ɔ'rak-nəd-ə }

arachnodactyly [MED] A rare congenital defect of the skeletal system marked by abnormally long hand and foot bones. { ɔ'rak-nə'dak-tə-lē }

arachnoid [ANAT] A membrane that covers the brain and spinal cord and lies between the pia mater and dura mater. [BOT] Of cobweblike appearance, caused by fine white hairs. Also known as araneose. [INV ZOO] Any invertebrate related to or resembling the Arachnida. { ɔ'rak,nɔid }

arachnoidal granulations [ANAT] Projections of the arachnoid layer of the cerebral meninges through the dura mater. Also known as arachnoid villi; Pacchionian bodies. { ,a,rak,nɔid-əl ,gran-yə'lär-shenz }

Arachnoidea [INV ZOO] The name used in some classification schemes to describe a class of primitive arthropods. { ,a,rak'nɔid-ē-ə }

arachnoid villi See arachnoidal granulations. { ɔ'rak,nɔid 'vil-ē }

arachnology [INV ZOO] The study of arachnids. { ,a,rak'näl-ə-jē }

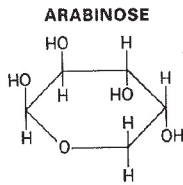
arachnophobia [PSYCH] Abnormal fear of spiders. { ɔ'rak-nō'fɔb-ē-ə }

Aradidae [INV ZOO] The flat bugs, a family of hemipteran insects in the superfamily Aradoidea. { ɔ'rad-ə,dē }

Aradoidea [INV ZOO] A small superfamily of hemipteran insects belonging to the subdivision Geocorisae. { ,arə'dɔid-ē-ə }

Araeoscelidia [PALEON] A provisional order of extinct reptiles in the subclass Euryapsida. { ɔ'rē-ə'səl'id-ē-ə }

araeostyle [ARCH] Having an intercolumnation alternately of



The structural formula of β-L-arabinose.