

cists, and petrologists. The result, not surprisingly, is a voluminous literature of extraordinary diversity. This literature includes far-ranging new discoveries, some of dramatic significance, others important only insofar as they provide a data base for new hypotheses. It lays some old superstitions, but replaces some of these with new ones. It represents, withal, a vast extension of our insights into and understanding of the complexities of the natural occurrences of this seemingly simple group of minerals. Milliman has attacked this literary morass with courage and vigor and produced an exceptional book that goes far beyond his stated objective, "to synthesize our present-day knowledge about calcium carbonate in the marine environment."

The book does provide such a synthesis, one that is concise, readable, accurate, and unusually complete. It is also an illustrated manual for the sedimentary petrographer and a critical, annotated bibliography of approximately 1300 primary references. It serves as an index to the carbonate literature, affording multiple access paths, abundant internal cross-references, and a highly flexible organization.

Milliman has maintained commendable objectivity throughout the book. Although his treatment of certain controversial matters clearly reflects his own interpretations, the discussions and choice of references are evenhanded and balanced. Indeed, Milliman might be criticized (mildly) for being unduly tolerant of some hypotheses that seem best consigned to the dustbin of geological mythology. Beneath the scholarly and impartial narrative, a careful reader will detect the whisper of scientific controversy, the shadow of unfulfilled investigative promise, and occasional bits of whimsy. But these are sidelights in what is first and foremost an encyclopedic synthesis of recent advances in the field.

Milliman does not deal with one major subject of recent study, the physiology of organic calcification, but he treats virtually every other aspect of carbonate deposition and diagenesis in the marine ambient. Some readers may find the opening chapter on carbonate chemistry and mineralogy disappointingly brief, but much of the material that has been omitted here will be found in later sections of the book dealing with the particular subjects to which it is most relevant (diagenesis, cementation, dolomitization).

Carbonate mineralogy is also specifically developed in a book that must stand as a companion volume, F. Lippmann's *Sedimentary Carbonates* (Springer-Verlag, 1973), which is too recent to appear in the bibliography.

It is regrettable that numerous typographical errors have escaped the proofreader's eye, many of them in the bibliographic entries; none of these, however, appears to be of more than irritational significance. The book will prove invaluable to students and investigators in a wide range of fields. It will be, I believe, the definitive source book on marine carbonates in the late 20th century, complementing and extending earlier definitive works by Schmidt and Cayeux.

ROBERT F. SCHMALZ

*Department of Geosciences,
Pennsylvania State University,
University Park*

Books Received

Advances in Neurology. Vol. 5. Proceedings of the Second Canadian-American Conference on Parkinson's Disease. Fletcher H. McDowell and André Barbeau, Eds. Raven Press, New York, 1974. xvi, 512 pp., illus. \$22.50.

Almost All About Waves. John R. Pierce. MIT Press, Cambridge, Mass. 1974. x, 214 pp., illus. \$8.95.

Annual Review of Pharmacology. Vol. 14. Henry W. Elliott, Ronald Okun, and Robert George, Eds. Annual Reviews, Palo Alto, Calif., 1974. x, 594 pp., illus. \$12.

Botany. Michael Neushul. Hamilton (Wiley), Santa Barbara, Calif., 1974. xvi, 532 pp. illus. + plates. \$13.95.

Cambrian of the British Isles, Norden, and Spitsbergen. C. H. Holland, Ed. Wiley-Interscience, New York, 1974. viii, 300 pp., illus. \$29.95.

Catheter Center. Martin Hanig. Boxwood Press, Pacific Grove, Calif., 1973. x, 142 pp. Paper, \$2.95.

The Cerebellum, Epilepsy, and Behavior. Proceedings of a symposium, Bronx, N.Y., Aug. 1973. Irving S. Cooper, Manuel Riklan, and Ray S. Snider, Eds. Plenum, New York, 1974. xii, 402 pp., illus. \$17.50.

Chemical Principles in the Laboratory with Qualitative Analysis. Emil J. Slowinski, Wayne C. Wolsey, and William L. Masterton. Saunders, Philadelphia, 1974. x, 352 pp., illus. Paper, \$6.25. Saunders Golden Series, Teacher's Guide available.

Chemical Zoology. Vol. 8, Deuterostomians, Cyclostomes, and Fishes. Marcel Florin and Bradley T. Scheer, Eds. Academic Press, New York, 1974. xxii, 682 pp., illus. \$57.

Dye Lasers. F. P. Schäfer, Ed. Springer-Verlag, New York, 1973. xii, 286 pp., illus. \$25.10. Topics in Applied Physics, vol. 1.

Ecology with Special Reference to

Animals and Man. S. Charles Kendeigh. Prentice-Hall, Englewood Cliffs, N.J., 1974. vi, 474 pp., illus. \$16.95.

Electrochemistry for Ecologists. J. O'M. Bockris and Z. Nagy. Plenum, New York, 1974. xvi, 204 pp., illus. \$12.50.

Electronic and Ionic Impact Phenomena. Vol. 4, Recombination and Fast Collisions of Heavy Particles. H. S. W. Massey and H. B. Gilbody. Clarendon (Oxford University Press), New York, ed. 2, 1974. xxvi + pp. 2115-3122 + index, illus. \$85. International Series of Monographs on Physics.

A Field Guide to Wildflowers of Northeastern and North-central North America. Roger Tory Peterson and Margaret McKenny. Illustrated by Roger Tory Peterson. Houghton Mifflin, Boston, 1974. xxviii, 420 pp. Paper, \$3.95. Reprint of the 1968 edition. Peterson Field Guide Series, vol. 17.

Fracture Mechanics of Ceramics. Proceedings of a symposium, University Park, Pa., July 1973. R. C. Bradt, D. P. H. Hasselman, and F. F. Lange, Eds. Plenum, New York, 1974. Two volumes, illus. Vol. 1, Concepts, Flaw, and Fractography. xiv + pp. 1-444. Vol. 2, Microstructure, Materials, and Applications. xvi + pp. 445-938. Each volume, \$28; the set, \$50.

Frontiers in Catecholamine Research. Proceedings of a symposium, Strasbourg, France, May 1973. Earl Usdin and Solomon H. Snyder, Eds. Pergamon, New York, 1973. xvi, 1220 pp., illus. \$50.

Gambling with Truth. An Essay on Induction and the Aims of Science. Isaac Levi. MIT Press, Cambridge, Mass., 1974. xiv, 252 pp. Paper, \$3.95. Reprint of the 1967 edition.

Genetics. Roger Baldwin. Wiley, New York, 1973. viii, 296 pp., illus. Paper, \$3.95. Wiley Self-teaching Guides.

Homogeneous Catalysis by Metal Complexes. Vol. 1, Activation of Small Inorganic Molecules. M. M. Taqui Khan and Arthur E. Martell. Academic Press, New York, 1974. xiv, 422 pp., illus. \$42.

Hospital Engineering Handbook. American Hospital Association, Chicago, Ill., 1974. x, 318 pp., illus. \$8.75.

How to Build and Use Electronic Devices without Frustration, Panic, Mountains of Money, or an Engineering Degree. Stuart A. Hoenig and F. Leland Payne. Little, Brown, Boston, 1973. xiv, 260 pp., illus. \$9.95.

The Human Potential. An Essay on its Cultivation. William T. Couch. Duke University Press, Durham, N.C., 1974. xii, 410 pp. \$9.75.

Hydrographic History and Relict Fishes of the North-Central Great Basin. Carl L. Hubbs, Robert Rush Miller, and Laura C. Hubbs. California Academy of Sciences, San Francisco, Calif., 1974. vi, 260 pp., illus. Paper, \$10. Memoirs of the California Academy of Sciences, vol. 7.

Ice Age Lost. Gwen Schultz. Anchor/Doubleday, New York, 1974. xviii, 342 pp. + plates. \$10.

Individual Differences. Abilities and Motivational Directions. Leona E. Tyler Appleton-Century-Crofts (Prentice-Hall), New York, 1974. viii, 248 pp., illus. \$6.95. Century Psychology Series.

Initial Reports of the Deep Sea Drilling Project. Joint Oceanographic Institutions for Deep Earth Sampling (JOIDES). Vol.

23. Mar.-May 1972. Prepared for the National Science Foundation by the Scripps Institution of Oceanography, La Jolla, Calif., 1974. (available from the Superintendent of Documents, Washington, D.C.). xx, 1180 pp., illus. + charts. \$19.30.

An Introduction to Personality. Research, Theory, and Applications. Donn Byrne. Prentice-Hall, Englewood Cliffs, N.J., ed. 2, 1974. xiv, 592 pp., illus. \$11.95. Prentice-Hall Psychology Series.

Introduction to Plant Physiology. Jacob Levitt. Mosby, St. Louis, ed. 2, 1974. x, 448 pp., illus. \$12.95.

Introduction to Seismology. Markus Båth. Translated from the Swedish edition (Stockholm, 1970). Halsted (Wiley), New York, 1974. 396 pp., illus. \$19.75.

Loneliness. The Experience of Emotional and Social Isolation. Robert S. Weiss. MIT Press, Cambridge, Mass., 1973. xxiv, 236 pp. \$8.95.

Marine Molluscan Genera of Western North America. An Illustrated Key. A. Myra Keen and Eugene Coan. Stanford University Press, Stanford, Calif., ed. 2, 1974. x, 208 pp., illus. \$8.75.

Mathematics for Engineers and Scientists. A Students' Course Book. A. C. Bajpai, I. M. Calus, and J. A. Fairley. Wiley, New York, 1973. 2 vols., illus. Vol. 1. xvi, 778 pp. Paper, \$9.50. Vol. 2. xvi, 762 pp. Paper, \$12.50.

A Medical Laboratory for Developing Countries. Maurice King. Oxford University Press, New York, 1973. Various pages, illus. + plates. \$11.25.

Molecular Orbital Methods in Organic Chemistry. HMO and PMO. An Introduction. William B. Smith, Dekker, New York, 1974. xvi, 162 pp., illus. \$14.50. Studies in Organic Chemistry, vol. 2.

Molecular Structure and Function of Food Carbohydrate. Proceedings of a symposium, Surrey, England, Apr. 1973. G. G. Birch and L. F. Green, Eds. Applied Science Publishers, London, 1973 (U.S. distributor, Halsted [Wiley], New York). xii, 308 pp., illus. \$32.50.

My Father's Watch. Aspects of the Physical World. Donald F. Holcomb and Philip Morrison. Prentice-Hall, Englewood Cliffs, N.J., 1974. xxvi, 390 pp., illus. \$11.50.

Narcotic Antagonists. Papers from a conference, Warrenton, Va., Nov. 1972. Monique C. Braude, Louis S. Harris, Everett L. May, Jean Paul Smith, and Julian E. Villarreal, Eds. Raven Press, New York, 1973. xviii, 592 pp., illus. \$29.50. Advances in Biochemical Psychopharmacology, vol. 8.

National Science Policies in Africa. Situation and Future Outlook. United Nations Educational, Scientific and Cultural Organization, Paris, 1974. 390 pp., illus. Paper, \$15.85. Science Policies and Documents Series, No. 31.

Nonverbal Communication. Readings with Commentary. Shirley Weitz, Ed. Oxford University Press, New York, 1974. x, 352 pp., illus. Cloth, \$10; paper, \$4.95.

Oilfields of the World. E. N. Tiratsoo. Scientific Press, Beaconsfield, England, and Gulf Publishing, Houston, Texas, 1973. viii, 376 pp., illus. + plates. \$25.

Optical Information Processing and Holography. W. Thomas Cathey. Wiley,

New York, 1974. xvi, 398 pp., illus. \$18.95. Wiley Series in Pure and Applied Optics.

Philosophical Problems of Space and Time. Adolf Grünbaum. Reidel, Boston. ed. 2, 1973. xxiv, 884 pp. Paper, \$17.90.

Philotherapy. A New Approach to Psychotherapy. I. Emery Breiter. Institute of Human Relations Press, Old Bethpage, N.Y. 1974. 106 pp., illus. \$5.95.

Physical Acoustics. R. Bruce Lindsay, Ed. Dowden, Hutchinson and Ross, Stroudsburg, Pa., 1974. xiv, 480 pp., illus. \$24. Benchmark Papers in Acoustics.

Planets, Stars and Nebulae Studied with Photopolarimetry. T. Gehrels, Ed. University of Arizona Press, Tucson, 1974. xvi, 1134 pp., illus. \$27.50.

Planning and Human Need. Phil Heywood. Praeger, New York, 1973. 192 pp. \$8.50. People, Plans and Problems Series.

Plants and Environment. A Textbook of Plant Autecology. R. F. Daubenmire. Wiley New York, ed. 3, 1974. x, 422 pp., illus. \$13.50.

Polymer-Plastics Technology and Engineering. Vol. 2. Louis Naturman, Ed. Dekker, New York, 1974. viii, 262 pp., illus. \$25.50.

Principles of Drug Action. The Basis of Pharmacology. Avram Goldstein, Lewis Aronow, and Sumner M. Kalman, Eds. Wiley, New York, ed. 2, 1974. xvi, 854 pp., illus. \$21.50. Wiley Biomedical-Health Publication.

Psychobiology of Convulsive Therapy. Papers from a conference, San Juan, Puerto Rico, Apr. 1972. Max Fink, Seymour Kety, James McGaugh, and Thomas A. Williams, Eds. Winston, Washington, D.C., 1973 (distributor, Halsted [Wiley], New York). xii, 312 pp., illus. \$11.95.

The Psychology of Motivation. Abraham K. Korman. Prentice-Hall, Englewood Cliffs, N.J., 1974. x, 292 pp., illus. \$8.95.

Purine Metabolism in Man. Proceedings of a symposium, Tel Aviv, Israel, June 1973. Oded Sperling, Andre De Vries, and James B. Wyngaarden, Eds. Plenum, New York, 1974. Two volumes, illus. Vol. 1, Enzymes and Metabolic Pathways. xxiv + pp. 1-370. Vol. 2, Biochemistry and Pharmacology of Uric Acid Metabolism. xxvi + pp. 371-846. Each volume, \$19.50. Advances in Experimental Medicine and Biology, vol. 41.

Solid State Chemistry. C. N. R. Rao, Ed. Dekker, New York, 1974. x, 918 pp., illus. \$59.50.

Spectroscopy and Structure of Molecular Complexes. J. Yarwood, Ed. Plenum, New York, 1973. xviii, 594 pp., illus. \$28.

Stable Mappings and Their Singularities. M. Golubitsky and V. Guillemin. Springer-Verlag, New York, 1973. xii, 212 pp. Paper, \$9.50. Graduate Texts in Mathematics, vol. 14.

Statistical and Mathematical Aspects of Pollution Problems. John W. Pratt, Ed. Dekker, New York, 1974. xxxii, 392 pp., illus. \$19.50. Statistics Textbooks and Monographs, vol. 6.

The Structure and Function of Skin. William Montagna and Paul F. Parakkal. Academic Press, New York, ed. 3, 1974. xiv, 434 pp., illus. \$27.

Superconducting Machines and Devices. Large Systems Applications. Simon Foner

and Brian B. Schwartz, Eds. Plenum, New York, 1974. xx, 692 pp., illus. \$39.50. NATO Advanced Study Institutes Series, Series B, Physics. Vol. 1.

Synaptic Transmission and Neuronal Interaction. M. V. L. Bennett, Ed. Raven Press, New York, 1974. xii, 388 pp., illus. \$19.75. Society of General Physiologists Series, vol. 28.

The Systematics of Rhadinaea (Colubridae), A Genus of New World Snakes. Charles W. Myers. American Museum of Natural History, New York, 1974. 262 pp., illus. Paper, \$10.75. Bulletin of the American Museum of Natural History, vol. 153, art. 1.

Technology Transfer. Successes and Failures. Proceedings of a conference, Seattle, Wash., 1972. G. K. Manning, Ed. San Francisco Press, San Francisco, Calif., 1974. xxii, 224 pp., illus. \$7.50.

Textbook of Environmental Physiology. G. Edgar Folk, Jr. Lea and Febiger, Philadelphia, ed. 2, 1974. xiv, 466 pp., illus. \$17.50.

Thermal Methods of Analysis. Wesley William Wendlandt. Wiley-Interscience, New York, ed. 2, 1974. xviii, 506 pp., illus. \$27.50. Chemical Analysis Series, vol. 19.

Theory and Applications of Numerical Analysis. G. M. Phillips and P. J. Taylor. Academic Press, New York, 1973. x, 380 pp., illus. \$14.95.

Timber Construction Manual. A Manual for Architects, Engineers, Contractors, Laminators and Fabricators Concerned with Engineered Timber Buildings and Other Structures. American Institute of Timber Construction. Wiley-Interscience, New York, ed. 2, 1974. Various pages. \$15.

Topics in Numerical Analysis. Proceedings of a conference, Dublin, Ireland, Aug. 1972. John J. H. Miller, Ed. Published for The Royal Irish Academy by Academic Press, New York, 1973. xviii, 348 pp., illus. \$19.50.

Treatment and Management of Obesity. George A. Bray and John E. Bethune, Eds. Harper and Row, New York, 1974. x, 150 pp., illus. Paper, \$5.95.

Urban and Regional Models in Geography and Planning. A. G. Wilson. Wiley-Interscience, New York, 1974. xiv, 418 pp., illus. \$24.50.

Vitamins and Hormones. Advances in Research and Applications. Vol. 31. Robert S. Harris, Paul L. Munson, Egon Diczfalusy, and John Glover, Eds. Academic Press, New York, 1973. x, 332 pp., illus. \$22.

Who Bears the Tax Burden? Joseph A. Pechman and Benjamin A. Okner. Brookings Institution, Washington, D.C., 1974. xiv, 120 pp., illus. Cloth, \$5.95; paper, \$2.50. Studies of Government Finance.

The World's Cats. Vol. 2, Biology, Behavior and Management of Reproduction. Proceedings of a symposium, Winston, Oregon, May 1973. Randall L. Eaton, Ed. Feline Research Group, Woodland Park Zoo, Seattle, Wash., 1974. xii, 260 pp., illus. Paper, \$12.50.

The Writings of Anna Freud. Vol. 1, Introduction to Psychoanalysis. Lectures for Child Analysts and Teachers 1922-1935. International Universities Press, New York, 1974. xx, 200 pp. \$7.50.