

particularly "to bring to a focus the many problems amenable to theoretical and experimental investigation." The book covers the following major topics: the nature of the parental material and source environment, the thermal and mechanical requirements for melting, the physical chemistry of melting and crystallization, and the mechanisms of magma accumulation and extrusion.

The introduction is only marginally related to the rest of the book and conveys little of the history or of the interdisciplinary nature of the study of basalt genesis. Subsequent chapters, however, adequately represent the diversity of current research on the subject.

The section on the nature of the source material and environment gives a comprehensive summary of the major arguments on which current models of the outer few hundred kilometers of the earth's mantle are based and gives estimates of the depth ranges over which partial melting occurs. In a comparable manner, the discussion of the thermal and mechanical requirements for melting draws together the varied hypotheses put forward concerning the parameters that control melting. Although somewhat eclectic, the recital of hypotheses that need adequate testing is illuminating.

Experimental studies of the phase equilibria that govern the fusion and crystallization of basaltic magma dominate the central portion of the book. The clarity with which the fundamental parameters that control the major variability of basalt magmas are explained testifies to the success of this approach. The section is excellently balanced between review and synthesis. It reflects the author's research experience, and it represents the culmination of one aspect of traditional studies of magma genesis.

The discussion of the mechanisms of magma accumulation and intrusion and the mechanical and tectonic effects controlling the energetics and periodicity of magmatism catalogs a broad spectrum of ideas and experimental studies. Although the discussion is nondogmatic in describing a variety of possible mechanisms, it lacks critical assessment of the alternatives.

There is no discussion of research on the trace element and isotopic chemistry of basalts or of the thermodynamic analysis of magmatic processes, although major contributions to the understanding of basalt genesis have resulted from such work.

A final chapter accurately summarizes the ideas and conclusions discussed in the book.

Yoder has largely succeeded in his goals. His lack of dogma and his willingness to accept alternative working hypotheses stimulate the reader to appreciate the frailty of many of our basic tenets. The book thus primarily looks forward to new research rather than presents accepted assumptions as fact. Although there is an understandable lack of critical assessment of alternative hypotheses, the wide-ranging discussion makes the book valuable to both geochemists and geophysicists interested in the evolution of the crust-mantle system.

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## Books Received

**Amerinds and Their Paleoenvironments in Northeastern North America.** Papers from a conference, New York, Feb. 1976. Walter S. Newman and Bert Salwen, Eds. New York Academy of Sciences, New York, 1977. vi, 570 pp., illus. Paper, \$35. *Annals of the New York Academy of Sciences*, vol. 288.

**Annual Review of Medicine.** Selected Topics in the Clinical Sciences. Vol. 28. William P. Creger, C. H. Coggins, and E. W. Hancock, Eds. Annual Reviews, Palo Alto, Calif., 1977. x, 538 pp., illus. \$17.

**Apostles and Prophets.** Medicine for Society's Ills. Frederick Eberson. Exposition, Hicksville, N.Y., 1977. xii, 106 pp., illus. \$6.

**Around Mount Isa.** A Guide to the Flora and Fauna. Helen Horton with a section by David Stammer. Line drawings by Elizabeth McKenzie. University of Queensland Press, New York, 1977. xiv, 182 pp. \$7.25.

**Cell Wall Biochemistry Related to Specificity in Host-Plant Pathogen Interactions.** Proceedings of a symposium, Tromsø, Norway, Aug. 1976. S. Solheim and J. Raa, Eds. Universitetsforlaget, Oslo, 1977 (U.S. distributor, Columbia University Press, New York). 488 pp., illus. Paper, \$34. Scandinavian University Books.

**Chemical Evolution.** An Examination of Current Ideas. S. E. Aw. University Education Press, Singapore, 1976. 156 pp., illus. Cloth, \$12; paper, \$5.

**Chemical Principles.** William L. Masterton and Emil J. Slowinski. Illustrated by George Kelvin. Saunders, Philadelphia, ed. 4, 1977. xvi, 636 pp. + appendices + plates. \$15.95. Saunders Golden Sunburst Series. Also available in advanced placement edition.

**Climatic Atlas of the Tropical Atlantic and Eastern Pacific Oceans.** Stefan Hastenrath and Peter J. Lamb. University of Wisconsin Press, Madison, 1977. xvi, 98 pp. Spiral bound, \$15.

**The Coleoptera of Egypt.** Anastase Alfieri. Entomological Society of Egypt, Cairo, 1976. xvi, 362 pp., illus. Paper, LE 30. *Memoires de la Société Entomologique d'Egypte*, vol. 5.

**Computer-Aided Design of Digital Systems.** Douglas Lewin. Crane, Russak, New York, and Arnold, London, 1977. x, 314 pp., illus. \$22.50. Computer Systems Engineering Series.

**Geographical Applications of Aerial Photography.** C. P. Lo. Crane, Russak, New York, and David and Charles, Newton Abbot, England, 1977. 330 pp., illus. + plates. \$10.95.

**Geological Oceanography.** Evolution of Coasts, Continental Margins, and the Deep-Sea Floor. Francis P. Shepard. Crane, Russak, New York, 1977. xii, 214 pp., illus. \$10.50.

**Handbook of Oscilloscope Waveform Analysis and Applications.** Miles Ritter-Sanders, Jr. Reston (Prentice-Hall), Reston, Va., 1977. viii, 200 pp., illus. \$15.95.

**Hanging On.** Hila Colman. Atheneum, New York, 1977. vi, 216 pp. \$8.95.

**Higher Education in the World Community.** Papers from a meeting, Washington, D.C., Oct. 1975. Stephen K. Bailey, Ed. American Council on Education, Washington, D.C., 1977. xiv, 220 pp. \$15.

**The Life Science.** Current Ideas of Biology. P. B. Medawar and J. S. Medawar. Harper and Row, New York, 1977. 196 pp. \$8.95.

**Location in Space.** A Theoretical Approach to Economic Geography. Peter E. Lloyd and Peter Dicken. Harper and Row, New York, ed. 2, 1977. xii, 474 pp., illus. \$14.95.

**Maps in Minds.** Reflections on Cognitive Mapping. Roger M. Downs and David Stea. Harper and Row, New York, 1977. xx, 284 pp., illus. Paper, \$7.95. Harper and Row Series in Geography.

**1977 Oil Spill Conference.** (Prevention, Behavior, Control, Cleanup.) New Orleans, Mar. 1977. American Petroleum Institute, Washington, D.C., 1977. xxiv, 640 pp., illus. Paper, \$25.

**Reptile Ecology.** Harold Heatwole. University of Queensland Press, New York, 1976. xviii, 178 pp., illus. + plates. Cloth, \$20; paper, \$9.95. Australian Ecology Series.

**The Road to Total Freedom.** A Sociological Analysis of Scientology. Roy Wallis. Columbia University Press, New York, 1977. xiv, 282 pp. \$12.

**Rodd's Chemistry of Carbon Compounds.** A Modern Comprehensive Treatise. Vol. 4, Part B, Heterocyclic Compounds. S. Coffey, Ed. Elsevier, New York, ed. 2, 1977. xx, 462 pp., illus. \$75.50.

**Scientific Quotations.** The Harvest of a Quiet Eye. Selected by Alan L. Mackay. Maurice Ebison, Ed. Crane, Russak, New York, 1977. xii, 192 pp., illus. \$14.

**Space-Time Transients and Unusual Events.** Michael A. Persinger and Gyslaine F. Lafranière. Nelson-Hall, Chicago, 1977. xiv, 268 pp., illus. Cloth, \$9.95; paper, \$5.95.

**Stalking the Wild Pendulum.** On the Mechanics of Consciousness. Itzhak Bentov. Dutton, New York, 1977. xvi, 158 pp., illus. Paper, \$4.95.

**Techniques of Algebra.** Herbert A. Hollister. Harper and Row, New York, 1977. x, 310 pp., illus. \$10.95.

**Using Social Research in Public Policy Making.** Carol H. Weiss, Ed. Lexington (Heath), Lexington, Mass., 1977. x, 262 pp. \$19.

**Using the Computer in the Social Sciences.** A Nontechnical Approach. Ronn J. Hy. Elsevier, New York, 1977. xiv, 156 pp., illus. Cloth, \$10.95; paper, \$5.95.

**Virology in Agriculture.** Papers from a symposium, Beltsville, Md., May 1976. Allanheld, Osmun, Montclair, N.J., and Universe Books, New York, 1977. xiv, 294 pp., illus. \$23.50. Beltsville Symposia in Agricultural Research, 1. Landmark Studies.