

material, while more organic photochemists who find little to attract their primary attention will find it sufficient to consult a borrowed copy occasionally. The book is indispensable for up-to-date institutional collections in physics and chemistry. Considering the rapid rate of expansion and progress in photophysics and photochemistry, and the excellence of this volume, I look forward to the next volume.

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## Superconductivity

**Superconducting Magnet Systems.** H. BRECHNA. Springer-Verlag, New York, 1973. xii, 590 pp., illus. \$65.60. *Technische Physik in Einzeldarstellungen*, vol. 18.

Brechna has put together a massive text on the various technologies that underlie the design of superconducting electromagnets. The book is built around three major topics: magnetic field calculations, superconductivity (treated in collaboration with G. D. Cody), and cryogenics (treated in collaboration with H. M. Long). Each of these topics is treated from first principles, and each treatment constitutes in itself a more or less complete reference work. Unfortunately the book as a whole suffers from the defect of many jointly authored compendiums, namely a failure to integrate the component parts into a balanced treatment of the main subject.

Despite its lack of balance, the book offers a good collection of basic theory and reference material. There are a fine introductory section on the methods of generating high magnetic fields and an interesting chapter on magnet economics. Techniques of field calculation are treated in the largest chapter in the book; this material is useful but the chapter is perhaps overlong in view of other omissions.

A separate chapter on the fundamentals of superconductivity covers the basic Bardeen-Cooper-Schrieffer (BCS) and Ginzburg-Landau-Abrikosov-Gor'kov (GLAG) theories, plus detailed mechanisms of flux pinning. Though this is an excellent treatment, it seems obvious that more emphasis should have been placed upon real magnet materials and the advanced filamentary structures that have become the central

basis for modern superconducting magnet technology. It is also curious that there is virtually no discussion of the basic materials work from which this relatively new technology originated.

A similar criticism applies to the lengthy chapter on cryogenics, which qualifies as a good introduction to the subject but deals poorly with the cryogenics-magnet interface. One would like to have seen more consideration of the practical aspects of magnet cooling in relation to the physical structure of the coils, the superconductor-to-normal-conductor ratio, and other vital design factors.

A major problem in large superconducting magnets is the loss of field energy due to normalization. Brechna deals with this in a chapter entitled "Superconducting alternating current magnets." Here the emphasis on a-c losses seems to be excessive, and the dynamics of the superconducting-to-normal transition would seem to warrant much more attention. The protection of magnets after normalization is essentially ignored, as are practical questions of achieving field uniformity in space and time, persistent mode operation, and so forth.

*Superconducting Magnet Systems* contains a lot of good material. Regrettably, much of it is irrelevant to magnet technology, and much that would be relevant is omitted.

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## Geosynclines

**Modern and Ancient Geosynclinal Sedimentation.** Proceedings of a symposium, Madison, Wis., Nov. 1972. R. H. DOTT, JR., and ROBERT H. SHAVER, Eds. Society of Economic Paleontologists and Mineralogists, Tulsa, Okla., 1974. viii, 380 pp., illus. \$11.50; by subscription, \$9.50. SEPM Special Publication No. 19.

This publication is the outcome of a symposium dedicated to Marshall Kay, whose famous Geological Society of America Memoir 48, *North American Geosynclines*, published in 1951, laid the foundation of American geosynclinal thinking for two decades.

The timing of the publication could not be better. Five years have passed since the concept of plate tectonics provided a theory of world structure that satisfied most earth scientists. Geol-

ogists working on ancient geosynclines and mountain belts have been able, for the first time, to develop conceptual models based on properly understood modern analogs. It is now becoming possible to place the sediments of geosynclines into a global framework.

It was long customary to divide geosynclinal sediments into preorogenic preflysch (pelagic sediments, fine-grained turbidites, carbonates, and ophiolites), synorogenic flysch (turbidites and mass-flow sediments), and postorogenic molasse (continental fanglomerates and fluvial-deltaic sediments). As Marshall Kay emphasizes, geosynclines are of many sorts, however, and this volume shows that the pattern in which preflysch, flysch, and molasse occur varies, reflecting distinctive environmental and tectonic settings that depend on the type of plate or continental boundary.

Discussing the old controversy about the depth of water and the depositional environment of the preflysch, Bernoulli and Jenkyns explain convincingly how a widening "Atlantic" ocean explains the carbonate platforms and pelagic facies of the Tethys. Other types of preflysch, such as those formed around island arcs and in marginal basins, are touched upon by Kanmera and by Churkin.

All the papers concerned with flysch illustrate the current tendency to emphasize the importance of submarine fans as the loci for turbidite deposition. The sedimentary environments are well described, but, perhaps owing to the difficulties of establishing the tectonics from a study of flysch alone, there is little mention of the structural setting.

Molasse is rather neglected, but Van Houten and Eisbacher each cover a different type. The former describes the classical nonvolcanic molasse of the Alps and Pyrenees and the latter the Canadian Cordillera "successor basins," where postorogenic sedimentation is associated with magmatic activity.

There are several papers that deal with sedimentation in particular tectonic situations: Scholl and Marlow in Pacific trenches; Dickinson, Okada, and Kanmera (in separate papers) around island arcs; and Moore and Curray on "Atlantic" midplate margins.

Two papers are of particular importance. Crowell synthesizes the tectonics and sedimentation along the San Andreas fault, showing how huge thicknesses of varied sedimentary facies accumulate in basins associated with continental transform faults. Hoffman,

Dewey, and Burke describe some long-lived, deeply subsiding troughs or aulacogens that form at aborted ridge-ridge triple junctions and show how huge geosynclinal thicknesses can accumulate, contrary to modern dogma, without any lateral plate movement. Both these models have been neglected in recent reconstructions of ancient geosynclines, the first because it lacks igneous and metamorphic activity and the second because consideration of vertical movements has been subordinated to the recently discovered, more spectacular lateral movements.

The Society of Economic Paleontologists and Mineralogists has a deserved reputation for the production of excellent special publications at a price that individuals can afford. Special Publication No. 19 outranks all previous issues in scope and interest to geologists.

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## Books Received

**Ab Initio Valence Calculations in Chemistry.** D. B. Cook. Halsted (Wiley), New York, 1974. x, 272 pp., illus. \$27.50.

**Advances in Carbohydrate Chemistry and Biochemistry.** Vol. 29. R. Stuart Tipson and Derek Horton, Eds. Academic Press, New York, 1974. xii, 476 pp., illus. \$36.50.

**Advances in Chemical Physics.** Vol. 25. I. Prigogine and Stuart Rice, Eds. Interscience (Wiley), New York, 1974. xii, 308 pp., illus. \$22.50.

**Advances in Environmental Science and Technology.** Vol. 4. James N. Pitts, Jr., Robert L. Metcalf, and Alan C. Lloyd, Eds. Wiley-Interscience, New York, 1974. x, 382 pp., illus. \$19.95.

**The Agent of Trachoma.** Recent Studies on the Biology, Biochemistry and Immunology of a Prokaryotic Obligate Parasite of Eukaryocytes. Yechiel Becker. Karger, Basel, 1974. xiv, 100 pp., illus. \$23.50. Monographs in Virology, vol. 7.

**Analytical Chemistry.** An Introduction. Donald J. Pietrzyk and Clyde W. Frank. Academic Press, New York, 1974. xx, 668 pp., illus. \$13.95.

**Animals and Their Colors.** Camouflage, Warning Coloration, Courtship and Territorial Display, Mimicry. Michael and Patricia Fogden. Crown, New York, 1974. 172 pp., illus. \$9.95.

**Annual Review of Earth and Planetary Sciences.** Vol. 2. Fred A. Donath, Francis G. Stehli, and George W. Wetherill, Eds. Annual Reviews, Palo Alto, Calif., 1974. x, 478 pp., illus. \$12.

**Anticancer Agents Recently Developed in the People's Republic of China.** C. P. Li. Fogarty International Center, Bethesda, Md., 1974 (available from the Superin-

tendent of Documents, Washington, D.C.). x, 256 pp., illus. Paper, \$2.

**Applied Finite Mathematics.** Howard Anton and Bernard Kolman. Academic Press, New York, 1974. xvi, 476 pp., illus. \$10.95.

**The Art and Craft of Ceramic Sculpture.** Thelma Frazier Winter. Halsted (Wiley), New York, 1974. xxiv, 270 pp., illus. \$18.75.

**Asymptotic Analysis.** J. D. Murray. Clarendon (Oxford University Press), New York, 1974. viii, 140 pp., illus. \$11.25.

**Astronomy and Astrophysics Abstracts.** Vol. 9, Literature 1973, Part 1. S. Böhme and six others, Eds. Published for Astronomisches Rechen-Institut by Springer-Verlag, New York, 1973. x, 610 pp. \$32.60; by subscription, \$25.60.

**Astronomy of Star Positions.** A Critical Investigation of Star Catalogues, the Methods of their Construction, and their Purpose. Heinrich Eichhorn. Ungar, New York, 1974. xviii, 358 pp. \$25.

**Basic Electricity for Electronics.** Richard Blitzer. Wiley, New York, 1974. xvi, 728 pp., illus. \$14.95.

**Basic Supplement to Accompany Principles of Data Processing.** Robert Stern and Nancy Stern. Wiley, New York, 1974. vi, 132 pp., illus. Paper, \$4.50.

**Batteries.** Vol. 1, Manganese Dioxide. Karl V. Kordesch, Ed. Dekker, New York, 1974. xvi, 566 pp., illus. \$47.50.

**Battle for the Wilderness.** Michael Frome. Praeger, New York, 1974. x, 246 pp. \$8.95.

**Behavior Therapy.** Techniques and Empirical Findings. David C. Rimm and John C. Masters. Academic Press, New York, 1974. xviii, 514 pp., illus. \$11.95.

**Behavior Therapy in Psychiatry.** A Report of the American Psychiatric Association Task Force on Behavior Therapy. Aronson, New York, 1974. xx, 156 pp. \$10. Reprint of the 1973 edition.

**Behavioral Neurology.** Jonathan H. Pinus and Gary J. Tucker. Oxford University Press, New York, 1974. xviii, 206 pp., illus. Cloth, \$7.95; paper, \$4.95.

**Beyond Black and White.** James P. Comer. Quadrangle, New York, 1974. xvi, 272 pp. Paper, \$2.95. Reprint of the 1972 edition.

**Bibliography on the Genetics of Drosophila.** Part 6. Irwin H. Herskowitz. Macmillan, New York, 1974. xii, 526 pp. \$17.95.

**Biochemie.** François Chapeville and Hubert Clauser, Eds. Hermann, Paris, 1974. viii, 860 pp., illus. 178 F. Collection Enseignement des Sciences.

**Biological Control.** Proceedings of a symposium, Boston, Dec. 1969. C. B. Huffaker, Ed. Plenum, New York, 1974. xx, 512 pp., illus. Paper, \$8.95. Reprint of the 1971 edition.

**Biological Systems.** Shelby D. Gerking. Saunders, Philadelphia, ed. 2, 1974. xiv, 506 pp., illus. \$11.50. Teachers manual available.

**Biology.** An Uncommon Introduction. Robert McNally. Canfield Press (Harper and Row), San Francisco, 1974. xii, 516 pp., illus. Paper, \$8.95.

**The Biology and Adaptability of Natural Populations.** James T. Giesel. Mosby, St. Louis, 1974. viii, 178 pp., illus. Paper, \$6.25.

**Biology and Social Behavior.** Allan

Mazur and Leon S. Robertson. Free Press, New York, 1974. viii, 200 pp., illus. Paper, \$2.45. Reprint of the 1972 edition.

**Biology Anthology.** Readings in the Life Sciences. Samuel Wilson and Richard L. Roe. West, St. Paul, 1974. xii, 340 pp., illus. Paper, \$4.95.

**Biology for Survival.** Text and Readings. Rosalyn Kane and George A. Wistreich. Glencoe, Beverly Hills, Calif., 1974. x, 422 pp., illus. Paper, \$6.95. Teacher's manual available.

**Biomedical Science and Cardiovascular Dynamics.** Part 2, Free Communications. Proceedings of a congress, Ljubljana, Yugoslavia, Apr. 1971. Gojmir Južnič, Ed. Karger, Basel, 1973. xiv, 318 pp., illus. Paper, \$42. *Bibliotheca Cardiologica*, No. 31.

**Biosynthèse des Acides Nucléiques.** Réplication et Transcription. Francois Gros and Marianne Grunberg-Manago. Herman, Paris, 1974. xvi, 330 pp., illus. Paper, 58 F. Collection Methodes.

**Body Surface Mapping of Cardiac Fields.** Proceedings of a symposium, Burlington, Vt., Aug. 1972. Stanley Rush and Eugene Lepeschkin, Eds. Karger, Basel, 1974. xvi, 344 pp., illus. \$52. *Advances in Cardiology*, vol. 10.

**Breathing.** Physiology, Environment and Lung Disease. Arend Bouhuys. Grune and Stratton, New York, 1974. xii, 512 pp., illus. \$26.

**Cable Television.** Franchising Considerations. Walter S. Baer, Michael Botein, Leland L. Johnson, Carl Pilnick, Monroe E. Price, and Robert K. Yin. Crane, Rusak, New York, 1974. xi, 294 pp., \$13.50. Rand Cable Television Series.

**Central Nervous System.** Studies on Metabolic Regulation and Function. Proceedings of a symposium, St. Vincent, Italy, Sept. 1972. E. Genazzani and H. Herken, Eds. Springer-Verlag, New York, 1974. viii, 250 pp., illus. \$30.50.

**Central Nervous System Pharmacology.** A Self-instruction Text. Donald E. McMillan. Little, Brown, Boston, 1974. xii, 122 pp., illus. Paper, \$8.85.

**Cerebellar Cortex.** Cytology and Organization. Sanford L. Palay and Victoria Chan-Palay. Springer-Verlag, New York, 1974. xii, 348 pp., illus. \$60.10.

**Cervical and Nasopharyngeal Carcinoma.** MSS Information Corp., New York, 1974. 228 pp., illus. \$17.50.

**Chemical Carcinogenesis.** Part A. Papers from a symposium, Baltimore, Md., Oct. 1972. Paul O. P. Ts'o and Joseph A. DiPaolo, Eds. Dekker, New York, 1974. xxiv, 440 pp., illus. \$29.75. *The Biochemistry of Disease Series*, vol. 4.

**Chemical Oceanography.** Wallace S. Broecker. Harcourt Brace Jovanovich, New York, 1974. x, 214 pp., illus. Paper, \$7.95.

**Chemical Principles and Their Biological Implications.** Raymond F. O'Connor. Hamilton (Wiley), Santa Barbara, Calif., 1974. xvi, 414 pp., illus. \$9.95.

**Chemical Reactivity and Reaction Paths.** Gilles Klopman, Ed. Wiley-Interscience, New York, 1974. xii, 370 pp., illus. \$19.95.

**Chemistry.** A Modern Introduction. Frank Brescia, Stanley Mehlman, Frank C. Pellegrini, and Seymour Stambler. Saunders, Philadelphia, 1974. xviii, 644 pp., illus. + plates + index. \$14.50.