

easy-to-understand introduction to NMR both for the beginning student and for new users of NMR in the biological, engineering, earth, and materials sciences. Hennel and Klinowski's *Fundamentals of Nuclear Magnetic Resonance* meets that need admirably.

Anyone who aspires to genuinely understand NMR today must have a good grasp of quantum mechanics. For readers who lack this background, the authors have provided a compact and accessible introductory chapter on the subject. The ensuing discussions of the magnetic properties of nuclei and nuclear paramagnetism lay the groundwork for the more interesting and practically oriented chapters on observation of NMR in liquids, dipolar interactions, and nuclear spin relaxation mechanisms. The reader is also introduced to correlation spectroscopy, pulse techniques, and Fourier transform spectroscopy. Important mathematical tools are summarized in the appendixes.

The advanced student of physics will require a fuller treatment of the microscopic interactions that determine the NMR spectra and relaxation processes than this book provides. Similarly, hands-on practitioners who need to understand the techniques of NMR probe design, low noise amplification, and automated data acquisition will find that experimental techniques are only mentioned here. Nevertheless, beginning physics students as well as aspiring applied chemists and medical imagers will find this to be an excellent introduction to NMR that can serve as a stepping-stone to more thorough treatments such as Anatole Abragam's classic *Principles of Nuclear Magnetism* or Maurice Goldman's *Quantum Description of High-Resolution NMR in Liquids*. The carefully compiled list of suggested reading is a good guide to the advanced literature.

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## Books Received

**Analog and Computer Electronics for Scientists.** Basil H. Vassos and Galen W. Ewing. 4th ed. Wiley, New York, 1993. xvi, 473 pp., illus. \$59.95.

**Analysis and Simulation of Chaotic Systems.** Frank C. Hoppensteadt. Springer-Verlag, New York, 1993. xviii, 305 pp., illus. \$49. Applied Mathematical Sciences, vol. 94.

**Ancient Light.** Our Changing View of the Universe. Alan Lightman. Harvard University Press, Cambridge, MA, 1993. xiv, 170 pp., illus. Paper, \$10.95. Reprint, 1991 ed. Adapted from *Origins: The Lives and Worlds of Modern Cosmologists*.

**Before Lascaux.** The Complete Record of the Early Upper Paleolithic. Heidi Knecht, Anne Pike-Tay, and Randall White, Eds. CRC, Boca Raton, FL, 1993. x, 304 pp., illus. \$75.

**Biocatalytic Production of Amino Acids and Derivatives.** J. David Rozzell and Fritz Wagner, Eds.

Hanser, Munich, 1992 (U.S. distributor, Oxford University Press, New York). xii, 411 pp., illus. \$98.

**Biology of Whiptail Lizards (*Genus Cnemidophorus*).** John W. Wright and Laurie J. Vitt, Eds. University of Oklahoma, Norman, and Oklahoma Museum of Natural History, Norman, 1993. xiv, 417 pp., illus., \$29. Herpetologists' League Special Publication no. 3. From a symposium, Norman, OK, Aug. 1984.

**Catalytic Oxidations with Hydrogen Peroxide as Oxidant.** Giorgio Strukul, Ed. Kluwer, Norwell, MA, 1992. x, 283 pp., illus. \$130. Catalysis by Metal Complexes, vol. 9.

**Children in Time and Place.** Developmental and Historical Insights. Glen H. Elder, Jr., John Modell, and Ross D. Parke, Eds. Cambridge University Press, New York, 1993. xiv, 289 pp. \$49.95. Cambridge Studies in Social and Emotional Development.

**Cladistics.** A Practical Course in Systematics. Peter L. Forey et al. Clarendon (Oxford University Press), New York, 1992. xii, 191 pp., illus. \$52.50. Systematics Association Publications, 10. From a workshop, 1992.

**A Diderot Pictorial Encyclopedia of Trades and Industry.** Manufacturing and the Technical Arts in Plates Selected from *L'Encyclopedie, ou Dictionnaire Raisonné des Sciences, des Arts et des Métiers* of Denis Diderot. Charles C. Gillispie, Ed. Dover, New York, 1993. 2 vols. Unpagged. Paper. Each vol., \$17.95. Dover Pictorial Archive Series. Reprint, 1959 ed.

**Dinosaurs Rediscovered.** New Findings which are Revolutionizing Dinosaur Science. Don Lessem. John Sibbick, illustrator. Simon and Schuster, New York, 1993. 368 pp., illus. Paper, \$12. Reprint of *Kings of Creation*, 1992.

**Ecology and Management of Breeding Waterfowl.** Bruce D. J. Batt et al., Eds. University of Minnesota Press, Minneapolis, 1992. xxii, 635 pp., illus. \$49.95. From a symposium, Winnipeg, Canada, Aug. 1987.

**The Ecology of Butterflies in Britain.** Roger L. H. Dennis, Ed. Derek A. A. Whiteley, illustrator. Oxford University Press, New York, 1992. xiv, 354 pp., illus. \$86.

**Fractals and Chaos in Geology and Geophysics.** Donald L. Turcotte. Cambridge University Press, New York, 1993. x, 221 pp., illus., + plates. Paper, \$27.95. Reprint, 1992 ed.

**From Sorceress to Scientist.** Biographies of Women Physical Scientists. Kevin Allison Nies. California Video Institute, Tarzana, CA, 1990. iv, 94 pp., illus. \$30; spiral bound, \$14.99. Lives of Women Scientists, vol. 1.

**Fundamentals of Complex Analysis for Mathematics, Science, and Engineering.** E. B. Saff and A. D. Snider. 2nd ed. Prentice Hall, Englewood Cliffs, NJ, 1993. xii, 468 pp., illus. \$65.

**Guide to the Bats of Argentina.** Guia de los Murciélagos de Argentina. Rubén M. Barquez, Norberto P. Giannini, and Michael A. Mares. Norberto P. Giannini, illustrator. Oklahoma Museum of Natural History, Norman, 1993. viii, 119 pp., illus. Paper, \$15.

**Hearing Loss.** Robert Thayer Sataloff and Joseph Sataloff. 3rd ed. Dekker, New York, 1993. x, 522 pp., illus. Paper, \$69.75.

**Inside NASA.** High Technology and Organizational Change in the U.S. Space Program. Howard E. McCurdy. Johns Hopkins University Press, Baltimore, MD, 1993. xvi, 215 pp., illus. \$32.95. New Series in NASA History.

**The Last Panda.** George B. Schaller. University of Chicago Press, Chicago, 1993. xx, 291 pp., illus., + plates. \$24.95.

**Legal Issues in Mental Health Care.** Barbara A. Weiner and Robert M. Wettstein. Plenum, New York, 1993. xviii, 403 pp., illus. \$50.

**The Mammals of the Indomalayan Region.** A Systematic Review. G. B. Corbet and J. E. Hill. Oxford University Press, New York, 1992. viii, 488 pp., illus. \$110. Natural History Museum Publications.

**Managing Sustainable Development.** Michael Carley and Ian Christie. University of Minnesota Press, Minneapolis, 1993. 303 pp., illus. Paper, \$19.95.

**Melt Processed High-Temperature Superconductors.** Masato Murakami, Ed. World Scientific, River Edge, NJ, 1992. xvi, 361 pp., illus. \$86. xii, 197 pp., illus. \$59.95.

**Methods in Nonradioactive Detection.** Gary C.

Howard, Ed. Appleton and Lange, Norwalk, CT, 1993. xvi, 342 pp., illus., + plates. Spiral bound, \$47.95.

**The Nature of the Stratigraphical Record.** Derek V. Ager. 3rd ed. Wiley, New York, 1993. xiv, 151 pp., illus. Paper, \$21.95.

**The Nervous System.** Its Function and Its Interaction with the World. Lloyd D. Partridge and L. Donald Partridge. MIT Press, Cambridge, MA, 1993. xiv, 579 pp., illus. Paper, \$39. A Bradford Book.

**Oxygen Transport in Biological Systems.** Modelling of Pathways from Environment to Cell. S. Egginton and H. F. Ross, Eds. Cambridge University Press, New York, 1992. xii, 298 pp., illus. \$110. Society for Experimental Biology Seminar Series, 51. From a symposium, Birmingham, U.K., April 1991.

**People of the Tonto Rim.** Archaeological Discovery in Prehistoric Arizona. Charles L. Redman. Smithsonian Institution Press, Washington, DC, 1993. x, 214 pp., illus. \$39.95; paper, \$14.95.

**Perspectives on Animal Behavior.** Judith Goodenough, Betty McGuire, and Robert A. Wallace. Wiley, New York, 1993. xviii, 798 pp., illus., + plates. \$59.95.

**Perspectives on Higgs Physics.** Gordon L. Kane, Ed. World Scientific, River Edge, NJ, 1993. xviii, 467 pp., illus. \$98; paper, \$48. Advanced Series on Directions in High Energy Physics, vol. 13.

**Philosophy and Conceptual History of Science in Taiwan.** Cheng-Hung Lin and Daiwie Fu, Eds. Kluwer, Norwell, MA, 1993. xiv, 276 pp., illus. \$122. Boston Studies in the Philosophy of Science, vol. 141.

**The Quark Structure of Matter.** Maurice Jacob. World Scientific, River Edge, NJ, 1992. vi, 393 pp., illus. \$58. World Scientific Lecture Notes in Physics, vol. 50.

**The Rainbow Makers.** The Origins of the Synthetic Dyestuffs Industry in Western Europe. Anthony S. Travis. Lehigh University Press, Bethlehem, PA, 1993 (distributor, Associated University Presses, Cranbury, NJ). 335 pp., illus. \$49.50.

**Renewable Energy.** A Concise Guide to Green Alternatives. Jennifer Carless. Walker, New York, 1993. viii, 168 pp., illus. \$19.95.

**The Role of Trees in Sustainable Agriculture.** Roslyn Tamara Prinsley, Ed. Jamie Allnutt, compiler. Kluwer, Norwell, MA, 1993. viii, 186 pp., illus. \$84. Forestry Sciences, vol. 43. From a conference, Albury, Victoria, Australia, Oct. 1991. Reprinted from *Agroforestry Systems*, vol. 20, nos. 1-2 (1992).

**Schizophrenia.** Empirical Research and Findings. Eckart R. Straube and Robert D. Oades. Academic Press, San Diego, CA, 1992. xiv, 637 pp., illus. \$99. Personality, Psychopathology, and Psychotherapy.

**Schools for Thought.** A Science of Learning in the Classroom. John T. Bruer. MIT Press, Cambridge, MA, 1993. xii, 324 pp., illus. \$29.95.

**Sharks.** Silent Hunters of the Deep. Reader's Digest, Pleasantville, NY, 1993. 208 pp., illus. Paper, \$19.95. Reprint, 1986 ed.

**Tools, Language and Cognition in Human Evolution.** Kathleen R. Gibson and Tim Ingold, Eds. Cambridge University Press, New York, 1993. xii, 483 pp., illus. \$69.95. From a symposium, Cascais, Portugal, March 1990.

**Transport and Diffusion in Turbulent Fields.** Modeling and Measurement Techniques. Hadassah Kaplan et al., Eds. Kluwer, Norwell, MA, 1993. xiv, 449 pp., illus. \$216. From a conference, Eilat, Israel, Oct. 1991. Reprinted from *Boundary-Layer Meteorology*, vol. 62.

**Uranium-Series Disequilibrium.** Applications to Earth, Marine, and Environmental Sciences. M. Ivanovich and R. S. Harmon, Eds. 2nd ed. Clarendon (Oxford University Press), New York, 1992. xxxiv, 910 pp., illus. \$185.

**Veterinary Virology.** Frank J. Fenner et al. 2nd ed. Academic Press, San Diego, CA, 1993. xii, 666 pp., illus. \$75.

**Vital Circuits.** On Pumps, Pipes, and the Workings of Circulatory Systems. Steven Vogel. Rosemary Anne Calvert, illustrator. Oxford University Press, New York, 1993. xii, 315 pp., illus. Paper, \$12.95. Reprint, 1992 ed.

**Vortex Dynamics.** P. G. Saffman. Cambridge University Press, New York, 1992. xii, 311 pp., illus. \$69.95. Cambridge Monographs on Mechanics and Applied Mathematics.