

tive to the various institutions and the individual investigators are summarized in a table near the end of chapter 6. The difficulties in going from a concept for applications to a useful working system are detailed, and the contributions of physicists, chemists, engineers, materials scientists, and optical scientists, especially the cooperative aspects, are emphasized.

The book is clearly written. Bromberg gives explanations (without equations) of relevant physical principles, and some scientific literacy is required for full appreciation of the story she tells. Anyone, however, can appreciate the drama of the major discoveries, the successful and unsuccessful attempts to find applications, and the circumstances that made it all possible. There are numerous illustrations, mostly photographs of the principals in their laboratories, but also sketches of lasers, a few energy-level diagrams, and copies of key notebook pages. There is a comprehensive index and 50 pages of notes, most referencing the sources, but many providing glosses on the text, even to pointing out instances in which the advisory committee of the Laser History Project did not agree with the author's interpretations.

Perhaps the main limitation of the book is that made clear in the title—the concentration on the two decades between 1950 and 1970 and on work in the United States. There are occasional comments that extend beyond those limits, but they lack the detail given the primary material. Those familiar with Mario Bertolotti's historical account (*Masers and Lasers*, Hilger, 1983) will recall that he does take an international approach, and also devotes two chapters to the explorations of stimulated emission before the maser. His book, however, requires a scientific background, as he develops the laser principles quantitatively, together with the history. Although he went well beyond the published literature, Bertolotti did not have the considerable resources of the Laser History Project behind him, so could not be as detailed in the central portion. Thus the two books are complementary, each important in its own way. Bromberg's book is essential reading for anyone interested in the history of the laser itself or in the societal factors that shaped its development.

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## Books Received

**Animal Models of Neurological Disease, II.** Metabolic Encephalopathies and the Epilepsies. Alan A. Boulton, Glen B. Baker, and Roger F. Butterworth, Eds. Humana, Totowa, NJ, 1992. xviii, 372 pp., illus. \$79.50. Neuromethods, 22.

**Assessing Child Survival Programs in Developing Countries.** Testing Lot Quality Assurance Sampling. Joseph J. Valadez. Department of Population and International Health, Harvard School of Public Health, Boston, 1991 (distributor, Harvard University Press, Cambridge, MA). vi, 247 pp., illus. Paper, \$10.95. Harvard Series on Population and International Health.

**A Century of Calculus.** Tom M. Apostol *et al.*, Eds. Mathematical Association of America, Washington, DC, 1992. 2 vols. Vol. 1, 1894–1968. xvi, 462 pp., illus. Paper, \$36. Vol. 2, 1969–1991. xvi, 481 pp., illus. Paper, \$36. Raymond W. Brink Selected Mathematical Papers. Papers reprinted from *American Mathematical Monthly*, *Mathematics Magazine*, and *College Mathematics Journal*.

**Chemistry of the Solid-Water Interface.** Processes at the Mineral-Water and Particle-Water Interface in Natural Systems. Werner Stumm with contributions by Laura Sigg and Barbara Sulzberger. Wiley, New York, 1992. xii, 428 pp., illus. \$39.95.

**The Chronological Annotated Bibliography of Order Statistics.** Vol. 7, 1968–1969. H. Leon Harter. American Sciences Press, Columbus, OH, 1992. vi, 292 pp., Paper, \$95. Series in Mathematical and Management Sciences, vol. 23.

**Classification, Evolution, and the Nature of Biology.** Alec L. Panchen. Cambridge University Press, New York, 1992. xii, 403 pp., illus. \$80; paper, \$4.95.

**Climate Since A.D. 1500.** Raymond S. Bradley and Philip D. Jones, Eds. Routledge, Chapman and Hall, New York, 1992. xvi, 679 pp., illus. \$100. Based on a meeting, Bologna, Italy, March 1988.

**Exposure Criteria for Medical Diagnostic Ultrasound.** I, Criteria Based on Thermal Mechanisms. Recommendations of the National Council on Radiation Protection and Measurements. National Council on Radiation Protection and Measurements, Bethesda, MD, 1992. xvi, 278 pp., illus. Paper, \$25. NCRP Report, no. 113.

**Extragalactic Radio Sources.** From Beams to Jets. J. Roland, H. Sol, and G. Pelletier, Eds. Cambridge University Press, New York, 1992. xvi, 372 pp., illus. \$69.95. From a meeting, Paris, July 1991.

**Glial-Neuronal Interaction.** N. J. Abbott, Ed. New York Academy of Sciences, New York, 1991. xxii, 639 pp., illus. \$154. Annals of the New York Academy of Sciences, vol. 633. From a conference, Cambridge, U.K., Sept. 1990.

**Guidance and Control 1992.** Robert D. Culp and Richard P. Zietz, Eds. Published for the American Astronautical Society by Univelt, San Diego, CA, 1992. xvi, 736 pp., illus. \$120; paper, \$90. Microfiche supplement, \$20. Advances in the Astronautical Sciences, vol. 78. From a conference, Keystone, CO, Feb. 1992.

**Guidelines for Clinical Practice.** From Development to Use. Marilyn J. Field and Kathleen N. Lohr, Eds. National Academy Press, Washington, DC, 1992. xiv, 426 pp. Paper, \$34.95.

**The Gulf of Mexico Basin.** Amos Salvador, Ed. Geological Society of America, Boulder, CO, 1991. x, 568 pp. + maps, boxed. \$77.50. The Geology of North America, vol. J.

**Hypoxia and Mountain Medicine.** J. R. Sutton, G. Coates, and C. S. Houston, Eds. Pergamon, Oxford, U.K., 1992. xii, 330 pp., illus. 90. Advances in the Biosciences, vol. 84. From a symposium, Lake Louise, Canada, Feb. 1991.

**In Vitro Culture of Trees.** J. M. Bonga and P. von Aderkas. Kluwer, Norwell, MA, 1992. xiv, 238 pp., illus. \$69.50. Forestry Sciences, vol. 38.

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**Indian Gondwana.** Sahni Volume. B. S. Venkatachala and H. K. Maheshwari, Eds. Geological Society of India, Bangalore, 1991. xxx, 529 pp., illus. \$60. Memoir 21.

**The Integral and Fractional Quantum Hall Effects.** C. T. Van Degrift, M. E. Cage, and S. M. Girvin, Eds. American Association of Physics Teachers, College Park, MD, 1992. iv, 116 pp., illus. Paper, \$20. Selected reprints.

**The Mammalian Auditory Pathway.** Neurophysiology. Arthur N. Popper and Richard R. Fay, Eds. Springer-Verlag, New York, 1992. xii, 431 pp., illus. \$89. Springer Handbook of Auditory Research, vol. 2.

**Material Safety Data Sheets.** The Writer's Desk Reference. Richard P. Molinelli, Michael J. Reale, and Ralph I. Freudenthal, Eds. Hill and Garnett, Boca Raton, FL, 1992. xxvi, 394 pp., illus. \$99.95.

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**Mathematical Methods in Computer Aided Geometric Design II.** Tom Lyche and Larry L. Schumaker, Eds. Academic Press, San Diego, CA, 1992. xviii, 626 pp., illus., + plates. \$59.95.

**Plasticity in the Nervous System.** Boris I. Kotlyar. 2nd ed. Gordon and Breach, Philadelphia, 1992. xxviii, 305 pp., illus. \$56. Monographs in Neuroscience, vol. 5. Translated from the Russian edition (Moscow, 1986) by John K. Young.

**Plastics Recycling.** Products and Processes. R. J. Ehrig, Ed. Hanser, Munich, 1992 (U.S. distributor, Oxford University Press, New York). xiv, 289 pp., illus. \$64. Society of Plastics Engineers Books.

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**The Role of Horticulture in Human Well-Being and Social Development.** A National Symposium. (Arlington, VA, April 1990.) Diane Relf *et al.*, Eds. Timber Press, Portland, OR, 1992. 254 pp., illus., + plates. \$49.95.

**Russian-English Translator's Dictionary.** A Guide to Scientific and Technical Usage. Mikhail Zimmerman and Claudia Vedeneva. 3rd ed. Nauka, Moscow, and Wiley, New York, 1991. xiv, 735 pp. \$145.

**R<sub>x</sub> 2000.** Breakthroughs in Health, Medicine, and Longevity by the Year 2000 and Beyond. Jeffrey A. Fisher. Simon and Schuster, New York, 1992. 271 pp. \$22.

**Singular Integral Equations.** Boundary Problems of Function Theory and Their Application to Mathematical Physics. N. I. Muskhelishvili. Dover, New York, 1992. vi, 447 pp., Paper, \$12.95. Dover Books on Advanced Mathematics. Translated from the Russian edition (Moscow, 1946) by J. R. Radok. Reprint, 1953 ed.

**Snakes of the United States and Canada.** Keeping Them Healthy in Captivity. Vol. 1, Eastern Area. John Rossi. Krieger, Malabar, FL, 1992. xiv, 209 pp., illus. \$42.50.

**Tandem Organic Reactions.** Tse-Lok Ho. Wiley, New York, 1992. x, 502 pp., illus. \$79.95.

**Textbook of Endocrine Physiology.** James E. Griffin and Sergio R. Ojeda, Eds. 2nd ed. Oxford University Press, New York, 1992. viii, 351 pp., illus. \$45.

**Theoretical Geochemistry.** Applications of Quantum Mechanics in the Earth and Mineral Sciences. John A. Tossell and David J. Vaughan. Oxford University Press, New York, 1992. xiv, 514 pp., illus. \$85.

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**Topics in Bifurcation Theory and Applications.** Gérard Iooss and Moritz Adelmeier. World Scientific, River Edge, NJ, 1992. viii, 160 pp., illus. \$28. Advanced Series in Nonlinear Dynamics, vol. 3.

**Topology via Logic.** Steven Vickers. Cambridge University Press, New York, 1992. xvi, 200 pp., illus. \$42.95. Cambridge Tracts in Theoretical Computer Science.