

and constraining neutrino opacity. There is also a summary of recent analyses of the effect of possible neutrino oscillations on the supernova mechanism as well as on R-process nucleosynthesis.

Theoreticians like to invent theories with new types of particles. One class involves almost massless spin-zero particles, called Nambu-Goldstone bosons, which arise from the spontaneous breaking of a global symmetry. There is no compelling reason to believe in any such particles, but much analysis has centered on the particle called the axion, which could be a candidate for dark matter. Raffelt discusses various possible processes involving axions that make it possible to constrain the axion couplings from astrophysical observations. A more popular candidate for dark matter is one of the class known as supersymmetric particles, but these are only briefly mentioned.

It should be emphasized that the "fundamental physics" of the title has a very limited meaning. Stars can tell us about general relativity, nucleosynthesis, atomic physics, and much else, but these are not the subjects of this book. Also the book does not discuss the goals of proposed future neutrino astronomy projects like an expanded AMANDA at the South Pole, where the best hope is to find neutrinos from active galactic nuclei. Within the restricted range of topics covered the book is authoritative and thorough.

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Also Noteworthy

The Life of Stefan Banach. Through a Reporter's Eyes. ROMAN KAŁUŻA. Birkhäuser, Cambridge, MA, 1996. x, 137 pp. \$24.50. Translated from the Polish edition (1992) by Ann Konstant and Wojbor Woyczyński.

Stefan Banach (1892–1945), a founder of functional analysis, was a member of the illustrious group of mathematicians who met at the so-called Scottish Cafe in Lvov, Poland, in the 1930s. A good deal has been written about the group (see for example *Science* 218, 880 [1982]) but relatively little about Banach himself, and this book attempts to remedy the deficiency by reconstructing the basic facts of his life, which is especially poorly documented for the years of the two world wars. The journalist author frankly disavows any claim to mathematical authoritativeness but does quote some of

Banach's peers and contemporaries in the field concerning his work.

On Social Structure and Science. ROBERT K. MERTON. Piotr Sztompka, Ed. University of Chicago Press, Chicago, 1996. viii, 386 pp. \$55 or £43.95; paper, \$19.95 or £15.95. The Heritage of Sociology.

As a sociologist Robert Merton, in the words of Sztompka's introduction to this volume reprinting 24 of his essays, "opened up fruitful areas of inquiry along lines that he and generations of others would pursue for decades." One of these areas has been the sociology of science, and eight of the essays included here are on this theme. Among their topics are the rise of modern science (1938), the reward system of science (1957), multiple discoveries in science (1961), and the "Matthew effect" (1988; see also *Science* 159, 56 [1968]).

Sixty Years of Biology. Essays on Evolution and Development. JOHN TYLER BONNER. Princeton University Press, Princeton, NJ, 1996. x, 145 pp., illus. \$24.95 or £18.95.

In the five essays (all but one new) gathered here the Princeton biologist considers a set of evolutionary themes that have particularly engaged his interest. Among these are the relation of the physical properties of living matter to natural selection, the significance of the competition and the division of labor found at all levels of biological organization, and determinism and flexibility in development. In the title essay Bonner reflects on the changes in biology and in the way science in general is done that have occurred over his professional lifetime.

In Search of Nature. EDWARD O. WILSON. Island/Shearwater, Washington, DC, 1996. x, 214 pp., illus. \$19.95.

This is a collection of a dozen reprinted essays (1975–1993), the central theme of which is, as in many of the author's other writings, that "wild nature and human nature are closely interwoven." Among the subjects of his reflections here are the roots and ramifications of our awe of snakes and sharks, how ants have "managed to stay on top of things" for eons, the evolution of human behavior (altruism, aggression, and "culture as a biological product"), and the merits of the "environmentalist vision" as opposed to human "exemptionalism."

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Books Received

Ants and Plants. An Example of Coevolution. Pierre Jolivet. Backhuys, Leiden, The Netherlands, 1996. 303 pp., illus. NLG 132.00. Translated and enlarged from the French edition (Paris, 1986).

Atomic, Molecular, and Optical Physics Handbook. Gordon W. F. Drake, Ed. AIP Press, Woodbury, NY, 1996. xviii, 1095 pp., illus. \$130.

Circular Dichroism and the Conformational Analysis of Biomolecules. Gerald D. Fasman, Ed. Plenum, New York, 1996. x, 738 pp., illus. \$125.

Classics in Total Synthesis. Targets, Strategies, Methods. K. C. Nicolaou and E. J. Sorensen. VCH, New York, 1995. xxiv, 798 pp., illus. \$80; paper, \$49.95.

The Enigmatic Photon. Vol. 3, Theory and Practice of the $B^{(3)}$ Field. Myron W. Evans *et al.* Kluwer, Norwell, MA, 1996. x, 228 pp. \$114 or £77 or Dfl. 170. Fundamental Theories of Physics, vol. 77.

Extremal Properties of Polynomials and Splines. N. P. Korneichuk, A. A. Ligon, and V. F. Babenko. Nova, Commack, NY, 1996. vi, 433 pp., illus. \$92. Computational Mathematics and Analysis.

Guide for the Care and Use of Laboratory Animals. Institute of Laboratory Animal Resources, Commission on Life Sciences, National Research Council. National Academy Press, Washington, DC, 1996. xii, 125 pp. Paper, \$9.95.

Intuitive Biostatistics. Harvey Motulsky. Oxford University Press, New York, 1995. xx, 386 pp., illus. \$39.95; paper, \$24.95.

Marine Biology. Function, Biodiversity, Ecology. Jeffrey S. Levinton. Oxford University Press, New York, 1995. xii, 420 pp., illus. \$47.95.

Neuropeptides. Basic and Clinical Advances. Jacqueline N. Crawley and Stafford McLean, Eds. New York Academy of Sciences, New York, 1996. xii, 255 pp., illus. \$100. Annals, vol. 780. From a conference, Martha's Vineyard, MA, June 1995.

Nuclear Energy. Principles, Practices, and Prospects. David Bodansky. AIP Press, Woodbury, NY, 1996. xvi, 396 pp., illus. \$65.

100 and More Basic NMR Experiments. A Practical Course. S. Braun, H.-O. Kalinowski, and S. Berger. VCH, New York, 1994. xii, 418 pp., illus. Paper, \$49.95.

Papers on General Topology and Applications. Eva Coplakova and Klaas Pieter Hart, Eds. New York Academy of Sciences, New York, 1996. xii, 227 pp., illus. \$110. Annals, vol. 788. From a conference, Amsterdam, Aug. 1994.

Quantification of Brain Function Using PET. Ralph Myers *et al.*, Eds. Academic Press, San Diego, 1996. xxx, 443 pp., illus. \$99.

Retroviral Reverse Transcriptases. Simon Litvak. Chapman and Hall, New York, and Landes, Austin, TX, 1996. xii, 206 pp., illus. \$69.95. Molecular Biology Intelligence Unit.

Russian Contributions to Invertebrate Behavior. Charles I. Abramson, Zhanna P. Shuranova, and Yuri M. Burmistrov, Eds. Praeger, Westport, CT, 1996. xvi, 231 pp., illus. \$75.

Solar and Astrophysical Magnetohydrodynamic Flows. Kanaris C. Tsinganos, Ed. Published in cooperation with NATO Scientific Affairs Division by Kluwer, Norwell, MA, 1996. xlii, 742 pp., illus. \$330 or £220 or Dfl. 495. NATO ASI Series C, vol. 481. From an institute, Heraklion, Crete, Greece, June 1995.

Techniques in Apoptosis. A User's Guide. T. G. Cotter and S. J. Martin, Eds. Portland, London, 1996 (U.S. distributor, Ashgate, Brookfield, VT). xii, 333 pp., illus. \$120 or £75.

To Boldly Go. A Practical Career Guide for Scientists. Peter S. Fiske. American Geophysical Union, Washington, DC, 1996. iv, 188 pp., illus. Paper, \$19; to AGU members, \$13.30.

Variation in the Human Genome. Derek Chadwick and Gail Cardew, Eds. Wiley, New York, 1996. x, 329 pp., illus. \$84.95. Ciba Foundation Symposium 197. From a symposium, London, June 1995.

What Is Mathematics? An Elementary Approach to Ideas and Methods. Richard Courant and Herbert Robbins. Revised by Ian Stewart. 2nd ed. Oxford University Press, New York, 1996. xxiv, 566 pp., illus. Paper, \$18.95