

ture especially thought-provoking. The book concludes with several questions left unanswered, particularly with regard to the puzzling role of secondary Haversian systems and bone remodeling processes in general. As is evident from the author's discussion of this topic, the current theories do not adequately explain the curvature of long bones or many of the responses of bone to mechanical stimuli; it appears that, whatever the mechanism by which such responses are mediated, it involves an integration far more complex than has been imagined.

This is an important book that will serve a broad readership, both student and professional, whose work entails an interpretation of bone structure and function. It is a delight to read and is filled with many good biological examples, new ideas, and questions that will certainly have an important impact on research in the field.

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## Some Other Books of Interest

**Ecological Entomology.** CARL B. HUFFAKER and ROBERT L. RABB, Eds. Wiley-Interscience, New York, 1984. xvi, 844 pp., illus. \$75.

In this book the editors "have sought to bring together the known facts and reasonable concepts and theories relating insects to the factors of their environment, both biotic and abiotic, over both the short term . . . and longer . . . spans of time" and have attempted to present the subject in a degree of generality, breadth, and detail not equaled by any other book in the field. The book has 44 contributors, all but six from North America. The editors report that extensive editing, including cross-referencing among chapters, has been done to reduce problems of integration and unevenness. The introductory section of the book consists of two chapters, "Meaning of ecological entomology—the ecosystem" by Huffaker, H. T. Gordon, and Rabb and "The concept of the ecosystem" by Peter W. Price. Section 2, Basic Biological and Ecological Adaptations, Properties, Behaviors, and Processes, contains eight chapters on subjects ranging from growth and development (Gordon) to biogeography and evolutionary history (Eugene Munroe). There follow sections headed Natural Control of Insect Populations (eight

chapters), Roles or Effects of Insects in Ecosystems (four chapters), and Application of Ecology to Insect Population Management (three chapters). Each section has an introduction by the editors. The book concludes with a 48-page subject and taxonomic index. There is no general bibliography or author index.

—KL

**Spatial Orientation.** The Spatial Control of Behavior in Animals and Man. HERMANN SCHÖNE. Princeton University Press, Princeton, N.J., 1984. xviii, 348 pp., illus. \$55; paper, \$14.95. Princeton Series in Neurobiology and Behavior. Translated from the German edition (Stuttgart, 1980) by Camilla Strausfeld.

This volume inaugurates a Princeton University Press series to be edited by Robert R. Capranica, Peter Marler, and Norman T. Adler. In the preface the author sketches the history of approaches to the study of his subject from the time of Jacques Loeb and Alfred Kühn through the advent of systems analysis. In the present treatment, he writes, "The focus . . . is on the analysis of the system as a whole: the physiology of the orientation behavior. We shall look at mechanisms from the stimulus-response relationships and the determination of the central reference value to the structure of interactions within the whole system, e.g. to human spatial perception and to space constancy. Sensory physiology is covered where it is necessary for the understanding of the orientation itself." A brief opening section, Orientation: Its Meaning and Scope, is followed by a section concerned with external aspects of orientation—directing stimuli, components of orientation, spatial referents, and so on. The third and final section of the book deals with orientation according to sensory modality. In addition to visual, auditory, tactile, and chemosensory orientation, orientation to heat, magnetic fields, vibration, currents, and gravity and angular acceleration are considered. The book has a reference list of 1028 entries, including some as recent as 1981 as well as many from the early German literature.—KL

## Books Received

**The Acid Rain Sourcebook.** Thomas C. Elliott and Robert G. Schwieger, Eds. McGraw-Hill, New York, 1984. vi, 290 pp., illus. \$37.50. Based on a conference, Washington, D.C., March 1984.

**Acquired Immune Deficiency Syndrome.** Michael S. Gottlieb and Jerome E. Groopman, Eds. Liss, New York, 1984. xxii, 438 pp., illus. \$60. UCLA Symposia on Molecular and Cellular Biology, New

Series, vol. 16. From a symposium, Park City, Utah, Feb. 1984.

**Advances in Applied Mechanics.** Vol. 24. John W. Hutchinson and Theodore Y. Wu, Eds. Academic Press, Orlando, Fla., 1984. xii, 376 pp., illus. \$89.

**Advances in Drying.** Vol. 3. Arun S. Mujumdar, Ed. Hemisphere, Washington, D.C., 1984. xiv, 361 pp., illus. \$62.50.

**Advances in Immunology.** Vol. 35. Henry G. Kunkel and Frank J. Dixon, Eds. Academic Press, Orlando, Fla., 1984. xx, 281 pp., illus. \$36.50.

**Bacterial and Viral Inhibition and Modulation of Host Defences.** G. Falcone *et al.*, Eds. Academic Press, Orlando, Fla., 1984. xii, 249 pp., illus. \$24. From a symposium, Pisa, Sept. 1982.

**Basic Human Neurophysiology.** David F. Lindsley and J. Eric Holmes. Elsevier, New York, 1984. xvi, 368 pp., illus. \$32.50.

**Beat the Racetrack.** William T. Ziemba and Donald B. Hausch. Harcourt Brace Jovanovich, San Diego, Calif., 1984. xxii, 392 pp., illus., + plates. \$22.95.

**The Bioorganic Chemistry of Enzymatic Catalysis.** Myron L. Bender, Raymond J. Bergeron, and Makoto Komiyama. Wiley-Interscience, New York, 1984. xvi, 312 pp., illus. \$39.50.

**Bone Marrow Biopsies Revisited.** A New Dimension for Haematologic Malignancies. R. Bartl, B. Frisch, and R. Burkhardt. Karger, Basel, 1985. xiv, 138 pp., illus. \$34.75.

**Cell Culture and Somatic Cell Genetics of Plants.** Vol. 1, Laboratory Procedures and Their Applications. Indra K. Vasil, Ed. Academic Press, Orlando, Fla., 1984. xxxii, 825 pp., illus. \$85.

**Cephalopod Life Cycles.** Vol. 1, Species Accounts. P. R. Boyle, Ed. Academic Press, Orlando, Fla., 1983. xviii, 475 pp., illus. \$120.

**The Classics of Science.** A Study of Twelve Enduring Scientific Works. Derek Gijtsen. Barber, New York, 1984. x, 374 pp., illus. \$24.95.

**Climate Processes and Climate Sensitivity.** James E. Hansen and Taro Takahashi, Eds. American Geophysical Union, Washington, D.C., 1984. viii, 368 pp., illus. \$28. Geophysical Monograph 29. Maurice Ewing Volume 5. From a symposium, Palisades, N.Y., Oct. 1982.

**Coherence and Energy Transfer in Glasses.** Paul A. Fleury and Brage Golding, Eds. Plenum, New York, 1984. xiv, 419 pp., illus. \$62.50. NATO Conference Series VI, vol. 9. From a workshop, Cambridge, England, Sept. 1982.

**Cybernetics.** Theory and Applications. Robert Trappl, Ed. Hemisphere, Washington, D.C., 1983. xii, 455 pp., illus. \$80.

**Cytochrome P-450.** Structural and Functional Relationships, Biochemical and Physicochemical Aspects of Mixed Function Oxidases. Klaus Ruckpaul and Horts Rein, Eds. Akademie-Verlag, Berlin, 1984. 405 pp., illus. 80 M.

**Data Bases for Mortality Measurement.** United Nations, New York, 1984. x, 164 pp., illus. Paper. Department of International Economic and Social Affairs Population Studies, no. 84. From a meeting, Bangkok, Oct. 1981.

**The Day the Sun Rose Twice.** The Story of the Trinity Site Nuclear Explosion, July 16, 1945. Ferenc Morton Szasz. University of New Mexico Press, Albuquerque, 1984. xii, 233 pp., illus. \$15.95.

**Diagnostics for Fusion Reactor Conditions.** P. E. Stott *et al.*, Eds. Published for the Commission of the European Communities by Pergamon, New York, 1984. Three volumes. xlvii, 1192 pp., illus. Paper, \$75. From a school, Varenna, Italy, Sept. 1982.

**Evolution and Tumor Pathology of the Neuroendocrine System.** Sture Falkmer, Rolf Håkanson, and Frank Sundler, Eds. Elsevier, New York, 1984. xviii, 599 pp., illus. \$146. Fernström Foundation Series, vol. 4. From a symposium, Lund, Sweden, July 1983.

**Evolutionary Theory.** Paths into the Future. Jeffrey W. Pollard, Ed. Wiley-Interscience, New York, 1984. xxii, 271 pp., illus. \$37.95.

**Exercises in Biological Science.** Merle K. Heidemann. Willard Grant (PWS), Boston, 1985. vi, 293 pp., illus. Paper, \$16.25.

**Experimental and Clinical Toxicokinetics.** Abraham Yacobi and Hebert Barry, III, Eds. American Pharmaceutical Association, Washington, D.C., 1984. xvi, 188 pp., illus. \$39. From a symposium, San Diego, Calif., Nov. 1982.

**The Eye.** Vol. 1b, Vegetative Physiology and Biochemistry. Hugh Davson, Ed. 3rd ed. Academic Press, Orlando, Fla., 1984. xiv, 509 pp., illus. \$70.

**Federal Biotechnology Funding Sources.** Oskar R. Zaborsky and Brenda K. Young. OMEC Publishing Company, Washington, D.C., 1984. x, 262 pp. Paper, \$69.95.

**Finite Element Solution of Boundary Value Problems.** Theory and Computation. O. Axelsson and V. A. Barker. Academic Press, Orlando, Fla., 1984. xviii, 434 pp., illus. \$59. Computer Science and Applied Mathematics.