

BIOLOGICAL PHYSICS, by D. C. S. White. 1974. Halsted Press (605 Third Ave., New York 10016). 293 p. \$11.75 softback.

Biological Physics is an attempt to bridge the gap between introductory physics and biology. The author indicates that the book is "... basically a biological book dealing with the necessary physics." Unfortunately, biologists will probably find the book difficult in spite of many informative examples.

The chapters comprise a collection of topics on various physical phenomena of direct importance to biologists. Three introductory chapters deal with mathematics, including calculus and vectors. However, some prior knowledge of differential and integral calculus would be helpful for tackling the rest of the book. In addition to subjects covered in elementary physics courses other topics of special interest to biologists are covered, such as radioactivity and its effects on living organisms, and energetics with examples and applications to biological systems. The chapter on deformation of solids is particularly informative and presents material on bone and connective tissue seldom found even in biophysics books.

Details, such as units and dimensions that can be confusing to biologists are carefully explained, and the illustrations, with the exception of x-ray diffraction patterns, are all simplified line drawings. In general, the illustrations are used to describe the physical phenomena rather than biological applications.

Throughout the book the treatment of physical principles and mathematical formulas is concise and straightforward, but the format is more reminiscent of a physics textbook than a presentation oriented specifically to biologists. The approach seems to be one of using biological examples to illustrate the physical principles rather than using physical analyses to clarify and explain biological phenomena. This may be a problem of integration of material. Transitions between the biological and physical aspects of a system are often abrupt. In most chapters in-depth discussion of biological application is presented after a thorough discussion of the physics and mathematics. An approach more easily understood by the biologist would have been a concurrent development of physical and biological applications.

The book should prove useful as a supplementary textbook for physics or as a quick reference book. If *Biological Physics* had been published a few years earlier it would probably have been the best integrative biology and physics textbook available. However, a number of good introductory physics textbooks for biology and medical students have been published recently. A biologist interested in the application of physics to biology should examine a number of

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INTRODUCTORY STATISTICS FOR BIOLOGY, by R. E. Parker. 1973. Institute of Biology's *Studies in Biology* no. 43. Crane, Russak & Co. (347 Madison Ave., New York 10017). 122 p. \$4.75 softback.

Sometimes good things come in small packages, and this book is an example. In 87 pages of clearly written text, Parker manages to convey the essentials of a large part of modern statistical techniques. Naturally, within this narrow compass, some topics must be omitted or treated very lightly. This is true here of experimental design, grouping, exact Poisson distribution, and—with the exception of rank correlation—the entire field of nonparametric analysis. Within the "classical" area of statistics, however, treatment is fairly complete and quite comprehensible. Some numerical examples are given in the text, but much of this material is handled through the extensive discussions toward the solution of end-of-chapter problems. Five useful tables are included.

This book would provide a sound beginning for anyone from upper high

school through college senior level who wishes to develop a working knowledge of statistics for the biological sciences and who does not have or want a thorough mathematical and theoretical background. It is also recommended to prospective authors as a paragon of brevity. Finally, it is for these days a rarity, in that it is nearly free of typographical errors; I only found two.

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LEARN TO SEE, ed. by Susan Meiselas. 1974. Polaroid Foundation (Cambridge, Mass. 02139). 142 p. \$3.00 softback.

This sourcebook is composed of selected examples of student efforts at the art of photography. It may be used in preparing individualized or group teaching materials using photography both as a tool and a motivating force for teaching language skills, social studies, art, reading, science—a scope of subjects limited only by the imagination of the teacher.

The book presents 101 teaching and study projects drawn from the work of teachers around the U.S. and includes information ranging from the most elementary to that which appears almost professional. The projects are designed

to help students and others "Learn to See" the world about them. Students need the direction provided in this publication if they are to carefully examine the world about them. Photography is only one of the available aids to seeing.

An excellent appendix provides limited technical information, reproduction techniques, mounting techniques, book binding, and framing information. For the student or teacher who desires to extend himself beyond the scope of the book, there is a good bibliography.

The information included in the book is valuable, although the materials obviously have been designed to promote Polaroid products as well as provide teaching ideas.

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Books Received

- A BIOGRAPHICAL DICTIONARY OF SCIENTISTS, ed. by Trevor I. Williams. 2nd ed., 1974. Halsted Press, New York. 656 p. \$17.95.
- BEHAVIORAL PHARMACOLOGY, by Susan D. Iversen and Leslie L. Iversen. 1975. Oxford University Press, New York. 324 p. \$10.95 hardback, \$5.95 softback.
- POPULATION AND COMMUNITY ECOLOGY: PRINCIPLES AND METHODS, by E. C. Pielou. 1974. Gordon & Breach, New York. 432 p. \$39.00.
- AN INTRODUCTION TO ORNITHOLOGY, by George J. Wallace and Harold D. Mahan. 3rd ed., 1975. Macmillan, New York. 560 p. \$14.95.
- BILLIONS OF BUGS, by Haris Petie. 1975. Prentice-Hall, Inc., Englewood Cliffs, N.J. 32 p. \$5.95.
- SQUIRRELS, by Brian Wildsmith. 1975. Franklin Watts, New York. 32 p. \$5.95.
- WRITING SCIENTIFIC PAPERS IN ENGLISH, by Maeve O'Connor and F. Peter Woodford. 1975. Elsevier, Amsterdam. 115 p. \$8.75.
- FEATHER FASHIONS AND BIRD PRESERVATION: A STUDY IN NATURE PROTECTION, by Robin W. Doughty. 1975. University of California Press, Berkeley. 200 p. \$10.95.
- CONCEPTS AND CHALLENGES IN SCIENCE, Book One and Book Two, by Alan Winkler, Leonard Bernstein, Martin Schachter, and Stanley Wolfe. 1974 and 1975, respectively. College Entrance Book Co., New York. 281 and 262 p., respectively. \$5.85 hardback, \$3.95 softback.
- ANATOMY: A REGIONAL ATLAS OF THE HUMAN BODY, by Carmine D. Clemente. 1975. Lea & Febiger, Philadelphia. 327 p. \$24.50.
- METRICS MADE SIMPLE. 1975. Run-

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- ning Press, Philadelphia. 24 p. \$95.
- PROSIMIAN BIOLOGY, ed. by R. D. Martin, G. A. Doyle, and A. C. Walker. 1974. University of Pittsburgh Press. 1,004 p. \$48.00.
- LIGHT'S MANUAL: INTERTIDAL INVERTEBRATES OF THE CENTRAL CALIFORNIA COAST, ed. by Ralph I. Smith and James T. Carlton. 3rd ed., 1975. University of California Press, Berkeley. 736 p. \$20.00.
- PROJECTS WITH AIR, by Seymour Simon. 1975. Franklin Watts, New York. 96 p. \$4.90.
- OWLS, by Helen Hoke and Valerie Pitt. 1975. Franklin Watts, New York. 72 p. \$3.90.
- THE METRIC SYSTEM, by James and Lynn Hahn. 1975. Franklin Watts, New York. 96 p. \$3.90.
- BEAVERS, by James Poling. 1975. Franklin Watts, New York. 85 p. Price not given.
- SPRING PEEPERS, by Judy Hawes. 1975. Thomas Y. Crowell Co., New York. 34 p. \$4.50.
- THE STUDENT EARTH SCIENTIST EXPLORES WEATHER, by Constantine Constant. 1975. Richards Rosen Press, New York. 132 p. \$4.80.
- METERS, LITERS, AND GRAMS: UNDERSTANDING THE METRIC SYSTEM, by Kay and Bob Nation. 1975. Hawthorn Books, New York. 64 p. \$4.95.
- SMOKING AND YOU, by Arnold Madison. 1975. Julian Messner, New York. 64 p. \$5.29.
- EPILEPSY, by Alvin Silverstein and Virginia B. Silverstein. 1975. J. B.

- Lippincott, Philadelphia. 64 p. \$5.50 hardback, \$1.95 softback.
- THE WORLD OF THE WOODLOT, by Thomas D. Fegely. 1975. Dodd, Mead & Co., New York. 126 p. \$5.50.
- FROGS, TOADS, SALAMANDERS, AND HOW THEY REPRODUCE, by Dorothy Hinshaw Patent. 1975. Holiday House, New York. 142 p. \$6.95.
- GETTING INTO MEDICAL SCHOOL: THE PREMEDICAL STUDENT'S GUIDEBOOK, by Sanford J. Brown. 1974. Barron's Educational Series, Woodbury, N.Y. 228 p. \$1.95 (softback).
- HANDBOOK OF COMMON METHODS IN LIMNOLOGY, by Owen T. Lind. 1974. C. V. Mosby, St. Louis. 161 p. \$5.95.
- WEATHER AND THE ANIMAL WORLD, by J. H. Prince. 1974. Thomas Nelson Inc., New York. 126 p. \$5.95.
- DEVELOPMENT OF THE AVIAN EMBRYO, by B. M. Freeman and Margaret A. Vince. 1974. Halsted Press, New York. 379 p. \$21.50.
- THE LIFE AND CONTRIBUTIONS OF WALTER BRADFORD CANNON, ed. by Chandler McC. Brooks, Kiyomi Koizumi, and James O. Pinkston. 1975. State University of New York Press, Albany. 386 p. \$20.00.
- REVIEW OF THE CURRENT STATE OF RADIATION PROTECTION PHILOSOPHY. NCRP Report No. 43. National Council on Radiation Protection and Measurements, Washington, D.C. 50 p. Price not given.
- PRINCIPLES OF PATHOBIOLOGY, by Mariano F. LaVia and Rolla B. Hill, Jr. 2nd ed., 1975. Oxford University Press, New York. 312 p. \$11.95 hardback, \$7.95 softback.
- AGAINST POLLUTION AND HUNGER, ed. by Mary Alice Hilton. 1974. Halsted Press, New York. 325 p. \$12.95.
- PERSPECTIVES IN ECOLOGICAL THEORY, by Ramon Margalef. 1968. University of Chicago Press. 119 p. \$2.45.
- HELPLESSNESS: ON DEPRESSION, DEVELOPMENT, and DEATH, by Martin E. P. Seligman. 1975. W. H. Freeman and Co., San Francisco. 250 p. \$8.95 hardback, \$4.95 softback.
- FRONTIERS OF PINEAL PHYSIOLOGY, ed. by Mark D. Altschule. 1975. MIT Press, Cambridge. 281 p. \$17.50.
- TEACHING-LEARNING GUIDE FOR ODUM'S FUNDAMENTALS OF ECOLOGY, by Roger L. Kroodisma. 1975. W. B. Saunders Co., Philadelphia. 167 p. \$4.50.
- THE PRECIOUS METALS OF MEDICINE, by Geoffrey Marks and William K. Beatty. 1975. Charles Scribner's Sons, New York. 304 p. \$7.95.
- PICTORIAL KEY TO GENERA OF PLANT-PARASITIC NEMATODES, by W. F. Mai. 4th ed., rev., 1975. Cornell University Press, Ithaca. 219 p. \$9.75.