

Book Reviews

Emmett Wright
Department Editor

BOTANY

PERSPECTIVES ON PLANT POPULATION ECOLOGY

by Rodolfo Dirzo and Jose Sarukhan, Eds. 1984. Sinauer Associates (Sunderland, MA 01375-0407). 478 p. \$45.00 hardback, \$27.50 softback.

Plant ecology, having been a long time in the developmental stage, has recently emerged as an important branch on the tree of biology. This book contains an in-depth look at the major areas of the field in its four sections. Each of the 19 chapters is a current and comprehensive contribution to the study of plant ecology.

This book provides the variety indicated by its title both in terms of authorship and subjects. The authors range from botanists to population biologists, and the subjects range from plant morphology to range management and weed science. The very thorough bibliography will prove most helpful to those whose research lies within the scope of this book.

Value to plant ecologists, researchers, and graduate students is clearly evident in this book. I do not recommend this book for less than upper-level college students, nor for those who are not genuinely interested in an in-depth study of plant population ecology.

Alton L. Biggs,
*Allen High School
Allen, TX 75002*

CAREERS

INTRODUCTION TO THE PROFESSION OF MEDICAL TECHNOLOGY

by David S. Lindberg, Mary Stevenson Britt and Frances W. Fisher., 4th ed. 1984. Lea & Febiger (600 Washington Square Philadelphia, PA 19106-4198). 114 p. Price not given.

This book's spectrum of topics includes discipline definition, brief history, discussion of the accrediting process and agencies involved, and the variation in undergraduate educational programs, the clinical experience, and graduate studies. Considerable attention is given to employ-

ment opportunities, the future of the profession, professional ethics (to a minor degree), the various professional organizations, supportive personnel, and other programs certified by the American Society of Clinical Pathologists (ASCP).

The book is well written except the forward is somewhat awkward. The content is accurate and current and the subject matter logically sequenced. The credentials held by the authors lend considerable credibility to the book.

The format and printing are excellent. The bold, darkly printed lettering identifying chapter and sub-topics is particularly appealing. Each chapter is printed in a dark, straightforward type which is easy to see and read.

This document is needed by the profession and is of considerable value to educators, working professionals and students.

In summary, the book is needed, relevant, current, and accurate. The authors are to be commended for effectively weaving new and current threads into the basic fabric of Ruth Williams' original publication.

H.A. Cook, Ph.D.
*West Liberty State College
West Liberty, WV 26074*

WORKING FOR LIFE: CAREERS IN BIOLOGY

by Thomas A. Easton. 1984. Plexus Publishing, Inc. (143 Old Marlton Pike, Medford, NJ 08055). 128 p. \$12.95 hardback.

Easton has given us a valuable and refreshing book—valuable because the discussions of a career in biology are comprehensive, though the book is relatively brief, and refreshing because Easton, a male author, shows a unique understanding of the problems encountered by women and minorities in science careers.

Students who are pondering career choices will find the book interesting and very informative. The author has presented a wide range of useful data about most phases of a biologist's career. As well, he has discussed the pertinent aspects of a career in biology, including: fields of biology; biology organizations; a personal suitability for the career (for example, a willingness to work long hours in the laboratory); educational requirements and costs; descriptions of biological careers in the academic world, in industry, in government, and as a self-employed biologist.

Possibly worth the price of the book, alone, are the reading references distributed throughout the text, and the

sections at the end of the book which give a list of career pamphlets and the sources for obtaining them, a bibliography of further readings, and a second bibliography on biographies.

This book may well be the best on the market for a description of careers in biology. I heartily recommend it to teachers and librarians, and to students.

Marjorie Perrin Behringer
Austin, TX 78758

ENDOCRINOLOGY

ENDOCRINOLOGY

by Mac E. Hadley. 1984. Prentice-Hall, Inc. (Englewood Cliffs, NJ 07632). 532 p. \$32.95 hardback.

This textbook melds classic endocrinology and neurophysiology to examine neuroendocrine function and a broad "theory of hormones". Derived from a college lecture series, it would serve well in a general endocrinology course and as a reference in human or comparative physiology.

The first four chapters overview historical background, the vertebrate endocrine system, methodologies and mechanisms of hormonal action. Classic concepts are presented and then broadened to encompass more than 100 established or putative hormones and related cellular factors. New concepts of delivery are discussed, and the old "one cell, one hormone" tenet is broken. Major human systems follow in 17 thorough chapters, each divided into: Introduction; Sources; Synthesis and Chemistry; Secretion and Control; Metabolism; Physiological Roles; Mechanisms of Action; and Pathophysiology. Some comparative physiology is presented, setting the background for a final section on the evolution of neuropeptides as the author reprises questions on the

Emmett Wright is a professor of biology education and science education coordinator at Kansas State University. Until the fall of 1984, he was an associate professor of science education and director of the Science Teaching Center at the University of Maryland.

Readers interested in becoming book reviewers should contact Dr. Wright directly. Inquiries on this feature should be directed to him at:

**Kansas State University
Department of Curriculum and
Instruction
Bluemont Hall
Manhattan, KS 66506**

continuity of chemical messengers from single-cells to vertebrates.

Hadley clarifies data and concepts through well-conceived tables, flow-charts and appendices. Illustrations lack color and the text is sometimes dry; however, the author's enthusiasm is apparent in discussions of research. He ably communicates that endocrinology is a dynamic field in which new information and insights will arise daily.

Ronald D. Reed
*Andrews Air Force Base
Washington DC 20334*

EVOLUTION

THE ORIGIN OF LIFE

by Carl R. Woese. 1984. Carolina Biological Supply Company, Burlington, NC 30 p. \$2.00 softback.

This brief monograph is far more than a rehash of the traditional versions of how life first originated on earth. The author begins the discussion with a thorough review of the physio-chemical nature of extant life forms and the basic concepts of the Oparin model of chemical evolution. He then describes the problems of "traditional" chemical evolution models in light of current understandings of the prebiotic environment and the metabolic processes of contemporary organisms. Finally the author proposes an alternate scenario in which life began some four billion years ago in mineral-rich water droplets suspended above the surface of a planet too hot to permit the accumulation of significant quantities of liquid water. He further suggests that the earliest life forms were photoautotrophs and that heterotrophs evolved later on in time.

The monograph is well thought out and extremely well written. It is an excellent supplementary text for any advanced high school or elementary college course where the origin of life is considered.

Nathan Dubowsky
*Westchester Community College
Valhalla, NY 10595*

GENESIS ON PLANET EARTH: THE SEARCH FOR LIFE'S BEGINNING

by William Day. 2nd ed., 1984. Yale University Press (92A Yale Station, New Haven, CT 06520). 200 p. \$35.00 hardback, \$12.95 softback.

The author provides a detailed, vivid account of modern views on the evolution of the first life on the earth. The contents include discussions of the building blocks of life, physical

features of the early earth, the evolution of prokaryotes and eukaryotes, the molecular architecture of life, and energetics. There is a cohesive flow to the story and the writing style is excellent. The author has succeeded in telling the story in a clear, lucid, interesting manner. There are many technical details, and readers will need some background in biology and chemistry in order to derive maximum benefit from the book. The author includes many highlights in the history of biology, and explains a number of basic biological principles.

Although the softback version of this book has an interesting cover, the internal design is not very appealing. Small print, off-white page color, small, crowded figures and the condensed format are disconcerting.

This is a fascinating, well-written, thought-provoking book that is well worth reading. Except for the design features and the scarcity of good illustrations, I would recommend this book for the serious science student who wants to capture the thinkings and findings concerning this intriguing subject.

Marvin Druger
*Syracuse University
Syracuse, NY*

GENETICS

UNDERSTANDING DNA AND GENE CLONING: A GUIDE FOR THE CURIOUS

by Karl Drlica. 1984. John Wiley and Sons (605 Third Avenue, New York, NY 10158). 205 pp. \$11.95 softback.

Drlica's objective is to provide a nontechnical exposition of gene cloning technique and point to ways such techniques can further our understanding of life and be applied to society's benefit.

His presentation goes beyond superficial discussions of molecular genetics and does so in a style easily accessible to those with only limited background in biology and chemistry. Clear writing and illustration, coupled with a glossary, brings the concepts within an average college student's grasp. A useful (though limited) collection of references, ranging from *Scientific American* reviews to technical research reports, will benefit more advanced students.

The theoretical foundations of gene cloning are nicely balanced with practical applications. DNA recombination and cloning techniques are introduced via discussions of DNA replication, transcription and translation. Examples from recent literature are well

chosen and discussed in ample detail to give a basic understanding of the processes involved.

Drlica has succeeded in his efforts to bring molecular genetics to a general audience. The book is adaptable for use with nonscience majors and can serve biology majors as an introduction to more technical presentations.

Finn Pond
*University of South Dakota
Vermillion, SD 57069*

MICROBIOLOGY

MICROBIOLOGY: INTRODUCTION FOR HEALTH PROFESSIONALS

by Paul A. Ketchum. 1984. John Wiley & Sons (605 Third Avenue, New York 10158). 544 p. \$27.95 hardback.

This textbook is specifically intended for introductory courses for students who are preparing for careers in any of the many and varied health fields. The material presented deals with the basic science of microbiology with an emphasis on the health of man.

Ketchum consistently organizes materials that aid the student in assimilating the facts. He relates microbiology to the tenets of physics and chemistry with meaningful illustrations.

There are questions and topics for discussion at the end of each chapter to supplement these discussions, a literature search of articles and reviews found elsewhere. The usefulness of the book is further enhanced by several appendices, each unique for a specific topic such as Krebs Cycle, Glycolysis and the like; an excellent glossary and complete index enrich this book. Any professor who uses this excellent textbook will be overjoyed at the comprehension of accurate, up-to-date and well illustrated materials that are contained therein.

Sister Ignatia Marie.o.p.
*Catholic Central High School
Steubenville, OH 43952*

PHYSIOLOGY

EXERCISE PHYSIOLOGY

by G.A. Brooks, and T.D. Fahey. 1984. John Wiley & Sons (604 Third Avenue, NY 10158). 810 p. \$27.95 hardback.

In these days when exercise programs have entered the mainstream of daily activity, textbooks updated in mechanisms underlying the biologic effects and in applications to human