

thetic purposes). What effect does allowing people to enter the back country by new roads have on our environment? The claim is commonly made that "people pressure" tends to destroy the "natural" balance; although this could have been speculated upon by Robinson, my recent field research (for the Arizona Highway Department) along these lines shows this is extremely difficult to document and quantify.

I would like to have seen more discussion of certain practices, such as the questionable mowing of sparse vegetation beside roads in arid regions, the effect of road-building on river systems, and the interaction between increased drainage, from surfaced roads, and roadside plants (natives and exotics).

Nevertheless, I have never enjoyed and appreciated a book more. The book is too important to allow cost to prevent wider dissemination. I hope that Robinson and McGraw-Hill will consider publishing this important work in a less expensive form.

R. Roy Johnson
Prescott (Ariz.) College

Genetics

GENETICS LECTURES, VOL. 2, ed. by Ralph Bogart. 1971. Oregon State University Press, Corvallis. 126 p. \$4.00 (softback).

This volume contains the nine lectures presented at the 1968 genetics seminar at Oregon State University. Many aspects of genetics research are represented; these include tetrad analysis, regulation of crossing-over in *Neurospora*, and genetic analysis of constancy. The material would be beyond the grasp of any but the most gifted undergraduate student but would be useful as readings for graduate students in genetics.

Patricia Kemner
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Kansas City, Mo.

Histology

OUTLINE OF HISTOLOGY, by Gerrit Bevelander. 7th ed., 1971. C. V. Mosby Co., Saint Louis. 303 p. \$8.25 (softback).

This short version of histology has considerable merit and should prove to be popular. Two words aptly characterize this edition: "compendium" and "synopsis." The book does cover the whole field of tissue structure in a brief and well-conceived organization, and it succeeds in being a condensed overview of an extensive subject. Those readers who know the standard, classical textbooks of histology will appreciate this abridgment of the subject while at the same time appreciating the fact that the larger, encyclopedic his-

tologies must still be the ultimate references for the specialist.

There are recent editions of condensed books of histology with which Bevelander's book will be compared. One popular "competitor" is actually an outline, in the strict sense. The book under review is not in outline format; rather, it is like a digest. Moreover, this book is a small atlas of microscopic structure: there are illustrations on almost every page. Judiciously combining and juxtaposing optical photomicrographs, electron micrographs, and drawings, the author elucidates and delineates tissue structure in a comprehensible and palatable manner.

A special feature of this book is that there are two discrete sections, each complete with its own table of contents, style, and separate index. Part 1 (209 pages) is "General Histology"; Part 2 (88 pages) is "Dental Histology and Embryology." The inclusion of the latter section is a reflection of the author's affiliation with the Dental Branch, University of Texas, Houston.

An "outline" such as this would be highly useful in college histology courses, either as a short textbook or as a practical supplementary reference. This inexpensive volume could also serve as a reference in general biology or zoology when the topic of histology is

presented. High-school biology teachers would be likely to find this a handy source of information on microscopic anatomy of cells and tissues, and the secondary-school library should have it in its collection of biology reference works.

Raymond E. Henzlik
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Muncie, Ind.

History

THE HIDDEN CONTRIBUTORS: BLACK SCIENTISTS AND INVENTORS IN AMERICA, by Aaron E. Klein. 1971. Doubleday & Co., New York. 216 p. \$4.95 (hardback).

This book, like many others on the market at present, points up the incompleteness of works on American history that are being used throughout the world. The contributions of a considerable segment of our population—the blacks—are either treated very incompletely or omitted altogether in such books. The author chronicles the contributions of some 12 black scientists and inventors in America from early colonial times to the present. Among them are some who are generally known, but others are most conspicuous by their absence from the history books: B. Bannerker, N. Rillieur, E. McCoy, G. T. Woods, E. E. Just, and P. L. Julian.

The book describes the almost insurmountable obstacles that black scientists have had to overcome. It will come as a surprise to many readers to learn that the expression "the real McCoy" refers to the inventive ingenuity of a black man, Elijah McCoy.

This book could be used in secondary schools for various purposes: among others, to show the relative incompleteness and omissions in standard American history books; to show the difficulties faced by scientists and inventors—particularly the blacks; and to motivate young people—black children in particular.

Paul L. Brown
Norfolk (Va.)
State College

Human Biology

THE BIOLOGICAL AND SOCIAL MEANING OF RACE, by Richard H. Osborne. 1971. W. H. Freeman & Co., San Francisco. 191 p. \$2.95 softback, \$6.00 hardback.

Osborne presents 11 essays, nine of which were previously published elsewhere. There is a glossary, and the words defined therein are italicized the first time they are used in each paper.

Osborne has selected material that covers the questions of race from various perspectives. The presentation has good balance. This book will be of value to high-school and college students as

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David H. Ost
California State College
Bakersfield

Laboratory Manual

A PRACTICAL COURSE IN BIOLOGY, by W. Belfield and M. Dearden. 1971. Pergamon Press, Oxford. 187 p. \$4.75 (softback).

The manual contains a collection of mostly pedestrian laboratory activities for a general-biology class. There is a certain lack of continuity in the presentation of material. Perhaps the book represents a compilation or recording of exercises carried out in the authors' classes, and, if so, such a customized rendition would lack a degree of general usefulness. The proportionality of topic coverage is skewed: about 40 pages each on the mammal and the flowering plant but no more than 10 pages each on ecology, genetics, and evolution. Some of the species, reagents, etc., referred to seem atypical, perhaps by reason of the British authorship; there would be a need to interpret such words as treacle, sellotape, and watchpocket valve to students in the United States.

Belfield and Dearden's book could have reference value for the biology instructor. The sections on culture of organisms and on techniques and methods contain a number of useful and simply stated descriptions, including a summary of statistical methods. There are more than 100 exercises: an instructor could conveniently use the book as a source of ideas for his own laboratory sessions. However, the use of this book as the course manual does not seem advisable.

Martin D. Brown
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Junior College

Textbooks

BIOLOGY: AN INQUIRY INTO THE NATURE OF LIFE, by Stanley L. Weinberg. 1971. Allyn & Bacon, Inc., Boston. 645 p. \$7.95.

This book looks bigger and more impressive than other high school biology textbooks currently on the market. The fact that a 108-page Teachers' Handbook was bound into the annotated (teachers') edition I received for review may have given the impression of an overly thick volume. The text is profusely illustrated. Each of the 30 chapters has, following its general coverage of each topic, sections dealing with questions, vocabulary, thought and discussion, things to do (lab exercises are suggested here), and further readings.

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Eldon J. Gardner, Utah State University

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Allen H. Benton, SUNY-Fredonia, and William E. Werner, Blackburn College

This long-time favorite of field biologists is an excellent companion for any student studying his environment first-hand. It begins with a thorough discussion of field tools and techniques and provides taxonomic keys for identifying unknown organisms. It continues with investigations of biological succession on land and in water, animal populations and behavior, and, new in this edition, ecosystems. The manual offers a variety of suggestions for projects, outside references, and visual aids.

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organisms, maintenance, regulation, continuity, evolution, and ecology. The first unit opens with questions on the nature of life—contrasting vitalism as a point of view with today's mechanistic and modified-mechanistic, or organismal, view. Chapter 1 concludes with a consideration of general characteristics of all living organisms. Cell theory, methods of cell study, cell structure, cell groups, and plant and animal tissues are covered in chapter 2. In 18 pages chapter 3 covers more chemistry and biochemistry than I have ever seen in a high-school biology textbook. The unit concludes with a chapter titled "Energy," which crams too much about

fermentation, respiration, ATP, glycolysis, the Krebs cycle, and enzyme theory into one chapter. To this point in the text more than 100 technical words have been introduced in fewer than 80 pages.

Unit 2 has chapters dealing with life and change, protists, plants, and animals. The evolution of life-forms is extensively covered by diagrams that relate living to fossil forms. Comparative anatomy, embryology, physiology, and biochemistry are used to illustrate relationships. Treatments of speciation, binomial classification, and modern theories of classification lead into eight pages of color-plate presentation of