

sophisticated apparatus and materials as well as a considerable amount of preparation by technicians and laboratory assistants.

The following incomplete list of experiments gives an inkling of the nature of the laboratory studies: conjugation in *E. coli*; genetic complementation; immunological methods in proteins; poky *Neurospora*; mapping genes in phage by deletion methods; transduction in *Salmonella*; use of radioactive isotopes. A four-page appendix deals with the use and detection of radioactive isotopes.

Separates and a 139-page "Instructions to the Instructor for the Experimental Geneticist" are available from the publisher.

Alton H. Gustafson
Bowdoin College
Brunswick, Maine

THE ETHICS OF GENETIC CONTROL, by Joseph Fletcher. 1974. Anchor Press/Doubleday, New York. 214 p. \$1.95 (softback).

The author has attempted to provide some answers regarding the new technology in genetic engineering and reproduction of humans by means other than the old, reliable (or perhaps unreliable) method. He suggests that this book goes beyond the usual book on these topics because, while other authors seem to be asking the same questions, they are not suggesting any answers. If you agree with Fletcher in this respect, you probably should read this book. You will then find that many answers have been proposed by Fletcher and others from the fields of biology, medicine, philosophy, and religion. The topics range from abortion to artificial insemination and from altering DNA molecules so that individuals can be improved to permitting death of other individuals who have heredity defects. But having read the book, you may still be confused as to which course is best for mankind to follow in these areas.

In reference to modern advances in medicine and biology, Fletcher states, "Just because something is a fact or could become a fact does not mean necessarily that it is good or right." For example, until recently, children born afflicted with Down's syndrome (mongolism) often died young due to anatomical defects such as perforated anuses or stomach blockages. Today, however, surgical techniques can often prevent such deaths, and thus the number of adults afflicted with this genetic disease is increasing. When such adults reproduce, the disease is very prevalent among their children. Down's syndrome is only one example of many genetic defects which can not at present be "cured," but which can be treated to permit survival of the individual through the reproductive stage

of adulthood. As our gene pool becomes more and more polluted by deleterious genes and chromosomal abnormalities, it will become more and more difficult for our species to survive. The statement by other authors that man is on the list of endangered species may be more factual than most of us would care to admit. Fletcher puts it quite aptly when he says, "Heredity plays a part in more than fifteen hundred diseases, and many of us are carrying time bombs—just waiting to explode with the right sexual combination, and as time goes along the chances are greater and greater." (Some sources put the number of known genetic diseases in humans at more than two thousand.)

There are some instances of over-simplification and a few errors which most readers who have studied introductory genetics should be able to recognize. For example, on page 50, in a discussion of transmission of a fatal condition which is caused by a dominant allele, Fletcher quotes a physician who said, "You could wipe out this disease within a generation, even without a cure, if the affected persons simply stop having babies." Of course, even if all of the affected persons abstained from having children, one would expect the allele to arise spontaneously in other individuals through mutation. The above quotation should not have gone unchallenged by the author for the sake of those readers who do not understand elementary genetics. Also, on page 71, we find "A fertilized ovum or zygote is extracted from the oviduct and the fertilizing done in vitro."

In general, I would recommend this book because it contains many thought-provoking ideas. It should provide stimuli to motivate even the most reluctant high school or college student, and it could be considered for use in health, social studies, and family life courses as well as for courses in biology. But you should read the book and consider possible negative reactions in your community before assigning it to your students.

Walter Cory
Indiana University
Bloomington

FOUNDATIONS OF GENETICS, by Anna C. Pai. 1974. McGraw-Hill Book Company, New York. 386 p. \$10.50.

During the last 5-10 years scientists have become increasingly aware of a need to interpret to the layman the results and implications of their research. This is particularly true for the biological sciences, of which perhaps the present and contemplated research in genetics bears the greatest social responsibilities. In answer to the problem of better communication between the geneticist and the general citizen, Anna C. Pai has produced a timely and use-

ful book. Although intended primarily for nonscience students and adults in continuing education, the book should be equally useful in any course concerned with social implications of genetics and the responsibilities of scientists and other citizens.

The author has intentionally used an informal and nontechnical style which, nevertheless, adequately encompasses the basic principles of genetics. As a result, many teachers may wish to use the book as a basic text or as a supplementary reader in an introductory genetics course for science majors. Problems relevant to man receive a primary emphasis in the textual discussions and in the illustrations.

The first 8 chapters contain discussions of the basic principles of genetics. Chapters 9-15 are concerned with matters relevant to both the scientist and the nonscientist, including such topics as the genetics of immune reactions, viruses and cancer, chromosomal mutations, genetic basis of evolution, and radiation and chemical mutagenesis. In a last chapter, "Now and to Come," the author asks questions which at present have no answers, but which must be asked now. Here the discussion is forthright and technically correct; and it is without the emotional, exaggerated pessimism which often accompanies such discussions.

Best of all, the book is good reading! Students and teachers will enjoy it.

Marjorie Behringer
University of North Dakota
Grand Forks

Microbiology

BIOLOGY OF MICROORGANISMS, by Thomas D. Brock. 2nd ed., 1974. Prentice-Hall, Inc., Englewood Cliffs, N.J. 852 p. \$15.95 hardback.

For years biology teachers have referred euphemistically to the purchase of expensive textbooks by students as "the beginning of your library." In this case, the euphemism is justified. This improved and expanded edition would serve as an excellent reference book for persons loosely associated with microbiology as well as a good foundation for persons having this major interest. The promises of the author in the preface are kept: pages have been updated and improved and many new illustrations and diagrams have been included. The expanded areas reflect the results of microbial research in the last several years as well as the new taxonomic treatment from the eighth edition of Burgey's *Manual*. The reading lists have also been updated and a glossary has been included to refresh the reader's definition of terms.

As might be expected, the book is extremely well written and complete. It is this completeness which may not be advantageous in all situations. The

The National
Association of **Biology Teachers** ^{INC.}

1420 N STREET, N.W.
WASHINGTON, D. C. 20005

PLEASE CHECK ONE:

- Dues of \$12 are enclosed for one calendar year (January through December 19___) NABT membership. *Please indicate calendar year.*
- Dues of \$18 are enclosed for a year and a half NABT membership (July 19___ through December of the following year).

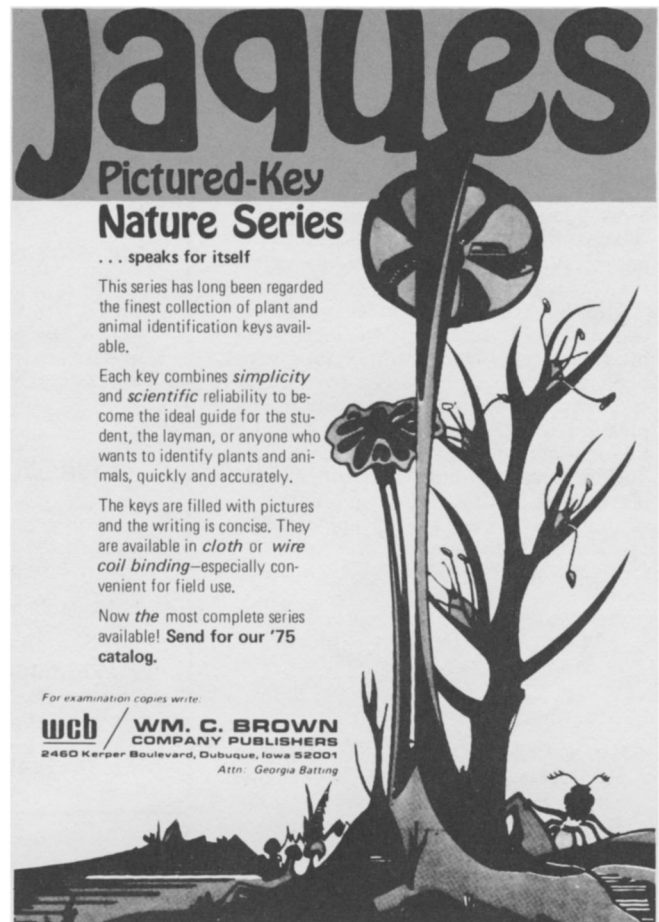
NAME _____
(PLEASE PRINT)

MAILING ADDRESS _____

CITY _____

STATE _____

ZIP _____



Jaques
Pictured-Key
Nature Series
... speaks for itself

This series has long been regarded the finest collection of plant and animal identification keys available.

Each key combines *simplicity* and *scientific* reliability to become the ideal guide for the student, the layman, or anyone who wants to identify plants and animals, quickly and accurately.

The keys are filled with pictures and the writing is concise. They are available in *cloth* or *wire coil binding*—especially convenient for field use.

Now *the* most complete series available! Send for our '75 catalog.

For examination copies write:

wcb / **WM. C. BROWN**
COMPANY PUBLISHERS
2460 Kerper Boulevard, Dubuque, Iowa 52001
Attn: Georgia Batting

book is too "big" for many quarter-long courses in microbiology and perhaps for some semester-long courses as well. Depending upon the background of the student, the enthusiasm with which they embrace the subject, and the adroitness of the teacher, the book may or may not have great value. While it would be possible to omit sections, for example, the one on algal symbionts, there may be more information on enzyme synthesis or other topics than it is necessary for the student to know. However, in a course focused specifically on microbes, their physiology, morphology and relation to environmental constraints, I know of no better textbook.

James C. Horton
Cal State College
Bakersfield, Calif.

MICROSCOPIC ANIMALS AND PLANTS, by Dorothy Hinshaw Patent. 1974. Holiday House, N.Y. 160 p. \$5.95 (hardback).

Intended as a basic guide to microscopy, this book should be used by everyone interested in exploring this area. Students in junior and senior high schools will be motivated by this book, which presents and surveys the microscopic animals and plants and intro-

duces the microscope giving worthwhile tips on its use. The author has thought out all steps necessary to begin a successful exploration of this world.

The survey describes microscopic organisms and also gives life histories and culturing techniques. These concise, accurate accounts give enough information to satisfy the avid student and whet the appetite of the more casual one. Photographs and drawings guide the reader. Possible experiments and projects, a list of supply houses, and suggested readings round out the offerings of this well-organized guide to a fascinating world.

M. J. Crumlish
Neshaminy Senior High School
Langhorne, Pa.

MICROBIOLOGY AND INFECTIOUS DISEASES, ed. by Bernard A. Briody. 1974. McGraw-Hill Book Co., New York. 707 p. Price not given.

This very specialized textbook provides a voluminous amount of information on microbiology as related to infectious diseases. Briody is the major author and editor with several experts serving as contributing authors. The content, although well defined and organized, is not directed to use by the or-

dinary underclassman microbiology student.

The book has two major emphases although many aspects are included. The first eleven chapters are comprised of general approaches to the topic and include such things as a comparison of the structure and function of prokaryotic and eukaryotic parasites. Other aspects include general characteristics of pathogenic organisms as related to man and, appropriately, host abilities to resist infection. Factors affecting resistance are emphasized through analysis of the immunological interactions. The significance in clinical medicine is then related to the basic pathogenic relationships. The remainder of the book is very specific in its content, demanding much background for effective utilization. Most chapters have special emphasis on certain types of infections.

Each of the chapters on specific types of infections includes an overview and historical review if appropriate. Additionally, such concerns as causative agents, pathogenesis, laboratory diagnosis, epidemiology, and prevention and control are dealt with for each major grouping. This brings about continuity in relating the various factors and problems associated with infectious diseases.

Clinical aspects and diagnosis have been interwoven to a high degree.