

COMMUNITIES AND ECOSYSTEMS, by Robert H. Whittaker. 1970. Macmillan Co., New York. 173 pp. \$2.95.

This volume and a related work, *Ecology of Populations*, are the latest of Macmillan's "Current Concepts in Biology" series of books that, according to the editor, are intended to provide "in-depth views of the principal aspects of biology."

Following an introduction, the chapter headings indicate the subjects: community structure and composition; communities and environments; production; cycling and pollution; and human ecology—the last consisting of five pages, seemingly as an afterthought. There are many charts, line drawings, and photographs; the photos are used extensively to illustrate the biomes.

The high school student would find useful the sections describing communities, environmental gradients, and biome types, and parts of the sections on cycling, pollution, and human ecology. The presentation of community structure and composition is, however, loaded with mathematics at a level well beyond the average high school student and possibly beyond the average high school teacher. Differential equations and terms such as "random niche boundary," "hyperspace," "niche hypervolume," "lognormal distributions," and "Poisson distributions" are used as explanations of ecologic relationships in a manner that assumes the reader's familiarity with the terms. They are not likely to be handled with comfort by the mathematically naïve. However, for the high school student who can take the math, the book should be a valuable addition to his ecology reading.

Communities and Ecosystems is an incomplete approach to the subject of ecology, for populations are nowhere discussed. However, this matter, along with environmental requirements of populations, is included in the companion book, *Ecology of Populations*. The two books should be packaged as a set, rather than be sold as individual volumes.

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GENERAL BIOLOGY

MAN AND THE NATURAL WORLD: AN INTRODUCTION TO LIFE SCIENCE, by Coleman J. and Olive B. Goin. 1st ed., 1970. Macmillan Co., New York. 653 pp. Price not given.

As intended by the authors, this book is designed for the student who is not planning to continue in the biologic sciences. For this purpose, the text is an excellent source of general and up-to-date biologic information for those who are interested in becoming well informed about the world around us.

The book starts with man, then takes

up other forms of life and the history of life, and concludes with the world today. The student is introduced to important biologic concepts exemplified in the human body. There is just enough information to help one appreciate the relationship between structure and function, along with other major biologic concepts. For clarity, there are many excellent illustrations, including diagrams, in this section as well as throughout the text.

The following chapters, on reproduction, growth and development, and heredity, are very well written. The chapters are brief but adequate. The subject of diversity is approached with emphasis, again, on the relationship between structure and function. The viruses, Monera, other plants, and other animals are schematically discussed in their relationship to man himself.

The final sections tell how the world began and discuss the role of man in the world around him. The topic of behavior is presented informatively and interestingly. (Many biology books treat this topic inadequately.) Since this book is man-oriented, it does not neglect social implications of today's changes in the physical and biotic environment. The appendix, giving basic information on chemistry and taxonomy, is most helpful for an understanding of today's biology.

This textbook will certainly suit the beginning and general student, as well as teachers of high school biology who want an excellent summary of important concepts and up-to-date advances in biology. These are superbly applied to man himself.

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TOOLS OF MODERN BIOLOGY, by Melvin Berger; illustrated by Robert Smith. 1970. Thomas Y. Crowell Co., New York. 201 pp. \$4.50.

This fine little book is divided into two parts: "Methods of Modern Biology" and "Instruments of Modern Biology." Both parts contain a wealth of information, and most of it is pertinent to a good up-to-date high school biology program or to many university courses.

The methods section covers "the" scientific method (perhaps too limited a view), observation, classification, the literature of biology, and biometrics. Each topic is presented in a way that will be of interest to most biology students. A great deal of the history of biology is covered as the author presents the subject matter: the reader comes to understand not only the methods of biology but also their important contribution to society.

Most of the instruments being used in a modern biology laboratory are introduced to the reader in very inter-

esting ways in the second part of the book. Microscopes, the centrifuge, x-rays, radioactive tracers, computers, and many more instruments are covered; and, again, an historical approach is used.

Teachers and students should find this a valuable reference book. I recommend that it be placed in the school library or, better still, in the science resource center.

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THE ENCYCLOPEDIA OF THE BIOLOGICAL SCIENCES, ed. by Peter Gray. 2nd ed., 1970. Van Nostrand Reinhold Co., New York. 1,056 pp. \$24.95.

The new edition of this valuable reference provides a current and extensive survey of the biologic sciences. More than 800 articles span development, ecology, genetics, taxonomy, structure, and function, in addition to biophysics and biochemistry. Among the 35 new articles are those on exobiology and space biology. As in the first edition, this one includes (unsigned) biographical sketches.

The expertise represented in this one volume was provided by 600 of the world's most eminent biologists. A specialist might consider his topic to be treated superficially, but he will recognize the usefulness of the reference in matters about which he is less knowledgeable.

The illustrations are chosen strictly to add clarity to the articles. Most of the articles include references, and there is a general index.

Persons who have had occasion to use the first edition will undoubtedly herald the arrival of the second. Those who are not familiar with this encyclopedia would be well advised to examine it carefully. It deserves a place in classrooms and in one's personal collection.

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STRUCTURAL UNITS OF MEDICAL AND BIOLOGICAL TERMS, by J. E. Schmidt. 1969. Charles C. Thomas, Springfield, Ill. 172 pp. \$7.50.

The title is misleading. This book does not provide the user with the structural units of medical and biologic terms in a straightforward manner. It is true that the structural units of these terms can be found by use of this book, but only by a circuitous route. If I were to prepare a book designed to dissect the medical vocabulary—the author has listed this as one of his objectives—I would begin with that vocabulary and translate it into the English of everyday use. Instead, each entry in this book is arranged by the English meaning; thus it is difficult to determine the exact meaning of a