

books differ in their choice of subject matter, and to my knowledge a revelation clearing the question has not been received. Dowben's book certainly is as good as any other as judged by content, but it does not reflect the choice I would have made.

The first two chapters introduce the macro- and ultra-structure of cells. The illustrations are good. But the next seven chapters are about aspects of biology covered in detail and well in textbooks of biochemistry, molecular biology, and genetics. Energetics, cellular biophysics, amino acids and proteins, enzyme systems and metabolic pathways, DNA and its replication, ribosomes and protein synthesis, and regulation of metabolic processes are the subjects of these chapters. It is not entirely clear why the author tried to cover such a wide range, especially with so many excellent books (such as Stent and Watson) available as supplements to students of cell biology. He states in his introduction that his book "follows closely the recommendations of the Panel on Undergraduate Major Curricula of the Commission on Undergraduate Education in the Biological Sciences"; having served on the commission I can say with some confidence that the intention was not to include the full scope of biology in one book.

Chapters 10 through 16 are more to the point of cell biology: they cover lysosomes and protein regulation in eukaryotic cells, organization of biological structures, mitochondria and chloroplasts, cell permeability, excitation and nerve impulse, contraction in skeletal muscle, and primitive motile systems. In my teaching of these aspects of cell biology I have found it both easy and informative to introduce the more biochemical processes (of the previous seven chapters) as they become intellectually relevant to the grosser cell processes. My reasoning is based on the empiric observation that beginners seem to grasp the grosser processes more readily—which, if true, makes it somewhat easier to rationalize at a later time the more chemical processes. This reasoning is invalid for classes from which have been excluded those students whose analytic abilities are underdeveloped.

Dowben's book is very well illustrated, and it is written in a style acceptable to most professionals. It is not a book for the beginner or for the student who is not strongly motivated. If it is used in classes with students who are not afraid of molecular processes and are not repelled by jargon and a condescending style, it is as good as any book on the market.

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## Ecology

UNDERSTANDING ENVIRONMENTAL POLLUTION, ed. by Maurice A. Strobbe. 1971. C. V. Mosby Co., St. Louis. 357 p. \$5.95.

The editor, in compiling the selected readings and adding the appendices, says he had two major objectives: to provide a "text reference" to support biology courses and "to provide a source of information on the current status of the science and technology of environmental quality for students of the sciences and humanities." To this end, Strobbe divides the book into two parts.

The first set of articles is most readable. The lay readers as well as the science students will have a greater appreciation of specific environmental problems and will see how important it is that problem-solving should be interdisciplinary. Strobbe provides a good balance of view points on pesticide and water-pollution problems; this helps students to understand that not all scientists agree.

The selection of articles in the second section is more variable in both readability and significance. In this sense it is a true reflection of the scientific journals. The assignment of specific articles from this set, however, can be very useful.

The appendices vary in value from a most useful set of "standard" environmental tests to a rather useless, because nonevaluative, list of environmental films.

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ENVIRON/MENTAL: ESSAYS ON THE PLANET AS A HOME, ed. by Paul Shepard and Daniel McKinley. 1971. Houghton Mifflin Co., Boston. 317 p. \$4.50 (softback).

*Environ/mental* is a collection of articles, many of which are drawn from sources the typical biologist would not normally read. There is a good deal of emphasis on the social and psychologic effects of overpopulation and of the destruction of the natural environment on humanity. By dealing with these matters—often overlooked or ignored by biologists—the book can certainly broaden the reader's perspective of the dilemma we are facing. There are also a number of excellent articles from *Science* and the book ends with a 22-page bibliography of additional reading. Each article is prefaced with comments by the editors; these are often more interesting than the articles.

In general, the articles are not well integrated sequentially: the book seems

somewhat disjointed. However, I found it interesting and thought-provoking. Some of it would be difficult for the typical student, but there is much good supplemental reading here for courses in biology, sociology, and psychology.

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THE CHEMICALS WE EAT, by Dr. Melvin A. Bernarde. 1971. American Heritage Press, New York. 208 p. \$6.95.

Much has been written about chemical additives to food; but *The Chemicals We Eat* is not just another book on the subject. It is a well-written, fresh, realistic view of the ever-expanding, often frightening chemicals-in-food industry.

The technical chapter on chemicals found in natural foods and food additives may be difficult for the layman; the other six chapters are not. Bernarde explains that many natural foods contain chemicals toxic to man but in amounts insufficient to damage one's health. Perhaps he is a bit optimistic when he views chemical additives in the same way. He points out that it is the consumer who has demanded convenience foods. Furthermore, the only hope of feeding an expanded population is by increased yields, which necessitate chemical aids and additives.

Even after the dramatic cranberry and cyclamate announcements, little has been done to educate the consumer. *The Chemicals We Eat* is an attempt in this direction. It explains why food additives are necessary, provides information about strengths and weaknesses of the U.S. Food and Drug Administration, and explains what FDA does in the interest of the consumer. Furthermore, the book deals with the food of the future, including preservation of natural foods and the manufacture of foods from nonfood materials.

This book does well what it intends to do: allay fears about many food additives. It is easily read, is factual, and should be of interest to every consumer.

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GLOBAL ECOLOGY: READINGS TOWARD A RATIONAL STRATEGY FOR MAN, ed. by John P. Holdren and Paul R. Ehrlich. 1971. Harcourt Brace Jovanovich, Inc., New York. 303 p. \$4.50 (softback).

This selection of papers does not deal with global ecology as these words are usually defined but, rather, is concerned with the future of mankind and the quality of the planetary ecosystem. For the editors, there "are no panaceas