

Superintendent of Documents, Washington, D.C. 20402, 1968.

This is a collage of articles directed toward agriculture. Unfortunately, most of the information presented is far from the frontiers of science, having been presented in popular magazines and the Sunday supplements. Some articles are descriptive technology, which make for interesting reading but are not what are expected from the volume's title; some are bits of memorabilia. As a reference, this book may have limited student use in the classroom.

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ELEMENTARY SCIENCE

GOALS FOR THE CORRELATION OF ELEMENTARY SCIENCE AND MATHEMATICS, Cambridge Conference on the Correlation of Science and Mathematics in the Schools, 208 pp., \$2.20, Houghton-Mifflin Company, Boston, 1969.

This is a summary report, written anonymously, of a conference which surely had an important and valid objective, viz., to come up with concrete methods of correlating the disciplines of science and mathematics in the elementary curriculum. While the conference participants' titles indicate good representation, it is evident that the base of discussion was mathematics. Thus, mathematical concepts are discussed with reference to what kind of science units or exercises they might best be correlated. One is struck, therefore, that mathematics is conceived as the framework for the correlated curriculum and not vice versa. The writers admit a minority view that nothing must interrupt the regular progression of the mathematics curriculum, and let science instruction go where it will. But in rejecting this point of view, the minority seems to have won for the progression proposed is still that of the mathematician. There are some biological "correlates" but not many.

This is not to say that this is not a valuable publication; it is. But a real correlation remains to be proposed.

GENERAL BIOLOGY

AN INTRODUCTION TO MODERN BIOLOGY, Paul C. Bailey, 414 pp., \$8.95, International Textbook Company, Scranton, Pennsylvania, 1969.

A new elementary undergraduate text by a biologist at Birmingham-Southern College, Birmingham, Alabama. It may be presumed that the text is written for the junior or four-year college course as the text, while at the collegiate level, is nevertheless quite simpler than some of the more ponderous tomes or the shorter but amazingly advanced texts. The organization is traditional. While the writing is smooth enough, it is didactic and without much embellishment. The illustrations are

mostly line drawings, but there are quite a few full color pictures, particularly for taxonomic purposes. Chapter-end materials include review questions and bibliographies.

The final chapter, "The Challenge," takes up important biological problems: genetics, ecology, and immunology. To this reviewer, such a chapter, sans detail, might be chapter one, and then the text might put the points in context.

A new text, traditional as it is, which deserves examination.

UNEXPLORED MODEL SYSTEM IN MODERN BIOLOGY, Robert M. Friedenber, 98 pp. \$7.50, Hafner Publishing Company, New York, 1968.

An attempt to explain a portion of biophysics dealing primarily with exobiology. It is a curious book, short yet chock-full of details and broad-ranging concepts in biological systems. The first section takes up the idea of models and some chemical and physics background. The second section is on exobiology from thermodynamics to quantum mechanics. The final section is on "Long Range Forces in Biology," and an intricate summary of biophysical concepts. There is an index.

The book is one of a series, *Pioneering Concepts in Modern Science*, and offers rough reading for all except those with a good background in the physical sciences.

PLANT BIOLOGY

PLANT DIVERSITY, Robert M. Harris, 96 pp., \$1.95, Wm. C. Brown Company, Dubuque, Iowa, 1969.

A concise introduction to the plant kingdom, this paperback is one of the *Concepts in Biology Series* designed for an introductory college biology course. The scope of the book is limited primarily to one aspect of plant diversity, that of life cycles typical of the major plant groups. Following brief discussions of the origin of life and the general scheme of plant classification, major plant groups are presented in sequence from primitive to advanced with emphasis on ontogeny and evolutionary relationships of select examples. Scientific vocabulary is kept to a minimum; however a basic knowledge of such processes as mitosis and meiosis is prerequisite. Numerous photographs and illustrations, primarily of reproductive structures or cycles, supplement to the text. I consider the use of "highly magnified," "greatly enlarged," etc., rather than the actual magnifications of the photomicrographs, to be a serious omission in a college text.

The most serious shortcoming of the book is the failure of the author to raise questions. For example, it is stated that a reduction in flower parts is considered to be a feature of more advanced angiosperms, but no considera-

tion is made of why this is so. The adaptive significance of diversity is only briefly mentioned in the summary, and the question "why are there so many species?" is never asked. I would not recommend this book as supplemental reading for the high school course because the scope of diversity is more restricted than that in most high school texts, and I would suggest that the beginning college student who has experienced an investigative approach to biology in the high school would find this book dull and unchallenging.

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INTRODUCTION TO PLANT PHYSIOLOGY, Jacob Levitt, 304 pp., \$9.85, The C.V. Mosby Company, St. Louis, Missouri 63103, 1969.

A new text incorporating much of the newer research yet keeping it within the confines of a single semester course. Of course, there is much that is not here, e.g., anatomy, much of the work on pigments, relevance of genetics, etc. Yet the book is remarkably complete and comprehensive. The writing is to the point with little effort to go beyond the bare facts. The organization is logical and includes chapter-long treatments of subjects important in the general biology course, e.g., absorption, osmosis, colloidal structure, etc. A good book.

COMMON AQUATIC WEEDS, Agriculture Handbook No. 352, L. W. Weldon, R. D. Blackburn, and D. S. Harrison, 43 pp. \$.50, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 1969.

A good example of a U.S. Government publication which is of great usefulness to the biology teacher. Although the emphasis is on water weeds which infest and clog waterways of the South, there are many familiar plants for those in more Northern areas. A fine reference for any biology classroom.

ANIMAL BIOLOGY

ANIMAL DIVERSITY, Milton Fingerman, 184 pp., \$2.95, Holt, Rinehart and Winston, New York 10017, 1969.

Another splendid paperback addition to the publisher's *Modern Biology Series*. It describes the Animal Kingdom from Protozoa to Primates with a final chapter on miscellaneous and minor invertebrate phyla. The author has presented a succinct and up-to-date review of the diversity of the animal world. The first chapter presents a good and lively discussion of the systematics involved and its evolutionary significance. This reviewer was struck by the simplicity of approach and the new facts incorporated into each phylum treatment.

Highly recommended as a resource or as part of a multiple reading course.