

Book Reviews

• Readers' comments on reviews should be addressed to the Editor.

Biochemistry

CATALYSIS AND ENZYME ACTION, by Myron L. Bender and Lewis J. Brubacher. 1973. McGraw-Hill Book Co., New York. 215 p. \$3.95 softback, \$6.95 hardback.

This volume, in the "Chemistry-Biology Interface Series," is designed to introduce undergraduates in chemistry and biology to concepts of catalysis. The authors briefly introduce reaction kinetics and then discuss mechanisms by which various catalytic moieties increase reaction rates. Finally, stereospecificity of enzymes is considered.

The content follows a clear, logical sequence, is spiced with analogies and examples, and includes to some extent an historical development of the science. These factors allow for easy reading, in spite of the authors' apparent assumption that the reader has a sophisticated knowledge of chemistry. An annotated bibliography and a consideration of current techniques used in the study of catalysis should provide the reader with a key to pursue the field. Although catalysis is thoroughly described, aspects of enzyme modulation and physiologic significance are not dealt with extensively. This book should be of great value in providing the biology teacher with analogies and examples of catalytic mechanisms.

With few exceptions, textbooks have not kept pace with the volumes of biochemical literature in recent years; and it appears from this book that the "Chemistry-Biology Interface Series" is a step toward bridging the interdisciplinary gap. Surely the need for a concise summary of biologically important catalytic mechanisms has been filled.

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THE BIOCHEMISTRY OF GREEN PLANTS, by David W. Krogmann. 1973. Prentice-Hall, Inc., Englewood Cliffs, N.J. 239 p. \$11.95 hardback, \$6.95 softback.

This well-written textbook, in the "Foundations in Modern Biochemistry Series," is designed for a limited audi-

ence of advanced students of biochemistry and related fields. The author assumes that the student will have completed a general biochemistry course and be prepared to pursue topics through the literature. An introductory chapter details some of the special problems and techniques to be considered in working with green plants.

The topics covered are hexose breakdown; reduction of oxygen, sulfate, and nitrate; photosynthetic carbon metabolism; hexose assimilation and the cell wall; lipids and lipid pigments; photosynthesis; and photochemical and hormonal controls. Photosynthesis is covered most thoroughly, with good reviews of physics, photosystems I and II, phosphorylation, structural units, and chloroplast development. The treatment of plant hormones is limited. The topics not covered are numerous; they include amino acid metabolism, ribosomes and protein synthesis, alkaloids, tannins, membranes, secondary metabolism, and biochemical taxonomy. Botanists will want further discussion of the biochemistry of developmental processes, and Krogmann refers the reader to some of the basic books and reference articles in plant physiology.

The only negative note is the evident bewilderment the author feels when faced with a whole plant instead of an isolated plant process. Certainly botanists will not be enchanted by his view that "botanical terms, plant structures, and even the generic names for plant species are often of use but rarely remembered." For the reader who has no difficulty identifying coproporphyrinogen III but apparently cannot identify a bean, he has appended a peculiar glossary. It is difficult to determine who will be helped by such definitions as "Senescence: growing old" or the information that *Chlorella* (as well as *Chlamydomonas* and *Euglena*) is "a genus of green algae." The author disclaims any serious intent in the glossary by labeling it "informal." It would have been advisable to either omit it entirely or prepare a section comparable in quality to the rest of the book.

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Botany

HUMAN POISONING FROM NATIVE AND CULTIVATED PLANTS, by James W. Hardin and Jay M. Arena. 2nd ed., 1974. Duke University Press, Durham, N.C. 194 p. \$6.75.

In the introductory paragraphs, the authors state that about 4.5% of reported poisonings are due to plants other than fleshy fungi. Most of the remaining pages are taken up with lists of plants and plant descriptions,

symptoms, and treatment of the human responses. Brief descriptions introduce each of the types of toxic responses: allergy, dermatitis, internal poisoning. There is a glossary and an index. The illustrations are copious and include both line drawings and photographs (15 in color).

It is easy to read the narrative portions of the book. However, no key for plant identification is included, so identification of a plant that is believed to be toxic should be made by using a standard flora. The numerous plant descriptions in the same format are repetitive. Toxicologists are likely to turn to Arena's *Poisoning: Toxicology, Symptoms, Treatments* or John Kingsbury's *Poisonous Plants of the United States and Canada*. Teachers may wish to use this book to arouse interest in the subject, even though there is not as much integrated narrative as in the older *Deadly Harvest*, by Kingsbury. Even better: use both books.

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WILD FLOWERS OF ALABAMA AND ADJOINING STATES, by Blanche E. Dean, Amy Mason, and Joab Thomas. 1973. University of Alabama Press, University, Ala. 230 p. \$10.00.

This book was a labor of love, compiled and sponsored by a number of dedicated amateur botanists, camera buffs, garden-club people, and wildflower-lovers, and it has been carefully edited by professional botanists. It assembles an attractive collection of 3-by-2-inch Kodachrome plates of 400 southern wildflowers, many of which seem not to have been illustrated before. An account of each species, consisting of a brief nontechnical description, the family, vernacular names, interesting facts of folklore, utility, and rarity, and statements of habitat and distribution, is given on the facing page. The illustrations are all adequate; some are superb, but others suffer from the inevitable limitation of printing techniques when pictures of dissimilar tone are grouped and, as a result, are overly dark or pale.

Aside from a bare-bones introduction to floral morphology there are no keys or other devices for identifying species. The arrangement is phylogenetic according to Engler-Prantl; this is of little use to nonbotanists. Here the advice of the professional botanists unfortunately seems to have dominated the authors. Grouping the plants by flower color would have been useful. As it is, the book must be browsed by any reader who does not know the family to which a plant belongs and its place in the system.

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