

## REVIEWS

**Foreign Compound Metabolism in Mammals, Vol. 4. A Specialist Periodical Report.** Edited by D. E. HATHWAY, *et al.* The Chemical Society, Burlington House, London, W1V 0BN, England, 1977. 411 pp. 14 × 22 cm. Price \$55.00. Available from Special Issues Sales, American Chemical Society, 1155 16th St., N.W., Washington, DC 20036.

This book, which continues the excellent literature reviews previously assembled by Dr. Hathway and associates in former volumes of this series, covers the period 1974–1975. The material is organized into four chapters: Drug Kinetics; Biotransformations; Mechanisms of Biotransformation; and Species, Strain, and Sex Differences in Metabolism. As may be deduced from these headings, the major portion of the book is devoted to the biotransformation of foreign compounds. In addition to drugs, the compounds covered include food additives and contaminants, carcinogens, toxins, and agricultural and industrial chemicals.

An interesting feature of the book's format is the manner in which the elements of a reference and textbook are combined. The first two chapters are organized by classes of compound so that one can readily learn what has been published on specific compounds of interest. The latter two chapters are built along conceptual lines in that the material is segregated into discussions of the reported mechanisms of various metabolic reactions and of the species differences found for selected biotransformations.

An outstanding accomplishment of the authors is the clarity of writing. One error noted, the more specific placement of a hydroxyl group on a fluorinated phenyl ring (p. 115) than was published in the original article, is an important reminder of the need to check back to the original sources.

This volume is considered an essential item in the library of every serious student of drug disposition. Furthermore, the purchase of this book is one direct way we may encourage Dr. Hathway and his colleagues to continue their very useful contributions to this somewhat nebulous discipline.

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**International Symposium on Marine Natural Products.** Edited by R. H. THOMPSON. Pergamon, Maxwell House, Fairview Park, Elmsford, NY 10523, 1976. 44 pp. 19 × 28 cm. Price \$8.00.

This publication contains five plenary lectures presented at the International Symposium on Marine Natural Products held in Aberdeen, Scotland, September 8–11, 1975, under the auspices of the International Union of Pure and Applied Chemistry (Organic Chemistry Division) in conjunction with the Chemical Society, Perkin Division. The book is a handy, compact reproduction of the lectures, which originally appeared as a series of articles in *Pure and Applied Chemistry*, vol. 48, pp. 1–44, in 1976.

B. Tursch reviews in the first lecture the recent developments in the chemistry of Alcyonaceans or soft corals which are abundant in the Indo-Pacific region. A series of sesquiterpenes, diterpenes, and sterols isolated from this group of organisms is reviewed. The origin of the compounds in these coelenterates is discussed, with particular reference to organisms living in symbiosis with them—*viz.*, intracellular dinoflagellate algae known as zooxanthellae. These latter organisms are suspected of being responsible for the synthesis of terpenoids encountered in the Alcyonaria. The biological significance of the symbiosis is discussed in particular reference to the obvious protection of Alcyonaceans by toxic terpenoids produced by the zooxanthellae.

In the second paper, L. Minale reviews the natural product chemistry of the marine sponges. He reports that over 100 new compounds have been derived from marine sponges, particularly bromo compounds, terpenes, diterpenes, and sterols. In some cases, the origin of the compounds is discussed as, for example, with the brominated compounds. Here the

author states that it appears possible that the brominated compounds isolated from sponges, like the bromoterpenes from molluscs, were originally fabricated by algae symbionts. The author also provides data showing that sponges often have terpenes in large amounts, most of which possess unique structural features without parallel in terrestrial sources.

The third paper deals with the biomimetic synthesis of marine natural products. Dr. D. J. Faulkner presents extensive chemical evidence that the biosynthetic pathways to many halogenated marine natural products are based on bromonium-ion-initiated cyclization reactions. The synthesis of 10-bromo-chamigrene is used to illustrate the efficacy of biomimetic synthesis.

Paper four by Dr. Y. Kato and Dr. P. J. Scheuer deals with the aplysiatoxins and their structure determination. These authors report that under the influence of ethanolic acetic acid the aplysiatoxins rearrange with retention of all carbon atoms. Furthermore, an osmate of the anhydrotoxins was able to be reduced to a glycol that resists oxidative cleavage but loses water and rearranges with acid. These reactions and others coupled with consideration of PMP data lead to partial assignment of the relative stereochemistry of the toxins.

The fifth and final paper by Dr. J. T. Baker provides an excellent review of the natural product research on Australian marine organisms for 1959–1975. The overview is thorough and complete, citing all authors, organisms studied, compounds isolated, and structures elucidated.

This book is highly recommended as a valuable reference source for all scientists interested in the progress of marine chemistry and pharmacology.

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**Alicyclic Chemistry. Vol. 5. A Specialist Periodical Report.** Edited by W. PARKER *et al.* The Chemical Society, Burlington House, London W1V 0BN, England, 1977. ix + 438 pp. 14 × 22 cm. Price \$56.00. Available from Special Issues Sales, American Chemical Society, 1155 Sixteenth St., N.W., Washington, DC 20036.

This volume is the fifth in a series of literature summaries dealing with alicyclic chemistry including such topics as synthesis, reactions, stereochemistry, physical properties, and spectroscopy of small, medium, and large carbocyclic systems. The literature published during 1975 is covered. The book is divided into five chapters, each of which is authored by scientists having authoritative expertise in a given area of alicyclic chemistry.

Chapter 1 (B. Halton, New Zealand, 100 pages) discusses the chemistry of three-membered ring systems. Previous volumes in this series discussed three- and four-membered rings in a single chapter. Chapter 2 (I. Watt, Scotland, 91 pages) describes four-membered rings. Chapter 3 (N. M. D. Brown and D. J. Cowley, Northern Ireland, 31 pages) discusses five- and six-membered rings and related fused systems. Medium- and large-ring compounds are described in Chapter 4 (E. J. Thomas, England, 70 pages), and the bridged and caged carbocyclics are discussed in Chapter 5 (G. B. Gill, England, 126 pages).

Discussion of the literature of 1975 dealing with three-membered rings and bridged carbocyclics is enhanced by bibliographies of books, reviews, and discussions relevant to the chemistry of these systems. Each chapter usually begins with a review of theory and structure of the individual alicyclic systems. Major emphasis on the preparation and reactions of each ring system is provided. In addition to discussion of the parent saturated ring system in each class, the authors provide literature surveys of the unsaturated members as well as functional analogs such as ketone, alcohol, and amine derivatives. The text is well illustrated with structures, mechanisms, and reactions. Arabic numerals are used to denote specific structures and, in certain chapters, these numbers total 500 or more. Fortunately, Roman numbers are not employed.

In the introduction, the editor attempts to answer previous critical reviews of this series regarding the lack of a subject index. Professor