

BOOK REVIEWS

Indole and Biogenetically Related Alkaloids, Edited by J. D. PHILLIPSON, School of Pharmacy, University of London, and M. H. ZENK, University of Ruhr, Academic Press, London. 1980. xi+379 pp. 16x23.5cm. \$75.00.

The chapters in this book are based on lectures presented at a symposium held by the Phytochemical Society of Europe in April 1979 with emphasis on two groups, the alkaloids derived from tryptamine and secologanin and the ergot alkaloids. With regard to the former group the plant families in which these alkaloids occur, namely, the Loganiaceae, the Apocynaceae, and the Rubiaceae, are discussed from a chemotaxonomic standpoint. One of the chapters on this subject which is particularly well done is by M. V. Kisakürek and M. Hesse. They give consideration not only to the biogenetic relationships of the various structural types of alkaloids found in these plant families but also show by example a relationship of the chemical complexity of compounds to their distribution in various taxa. Chapters are also included which update information on the occurrence of alkaloids in the Loganiaceae and the Rubiaceae, discuss isolation and separation methodology, and review the biosynthesis of heteroyohimbine-type alkaloids and the antitumor indole alkaloids, camptothecin, perlorline, and vincalkeboblantine. Several chapters discuss the chemical synthesis of the alkaloids both from a classical and from a biomimetic approach.

The chapters dealing with the biosynthesis, fermentation, and pharmacology of the ergot alkaloids provide little new information from that already existing in review articles. The chapter on biosynthesis provides a fresh approach on this subject in that it illustrates how the proposed hypothetical mechanisms for the biosynthetic reactions turned out to be incorrect after subsequent experimentation. In the chapter on the production of ergot alkaloids by fermentation, the section on genetics contains textual material that the author used verbatim in an earlier review published in 1978 under the auspices of the Federation of European Microbiological Societies, and in my opinion this type of duplication is not proper.

Concluding chapters summarize the biological activities and recent highlights in the chemistry of indole alkaloids.

The appropriate audience for this book would be biochemists, chemists, and pharmacognosists; however, the high price of the book precludes my recommending its purchase for personal libraries. It should be purchased by libraries that serve researchers in natural products.

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Lipid Biochemistry of Fungi and Other Organisms. J. D. WEETE, Auburn University, Plenum Press, 227 West 17th Street, New York, NY 10011. 1980. xii+388 pp. 16 x 23.5 cm. \$45.

This is the second edition of a successful text originally called *Fungal Lipid Biochemistry* and this remains the more appropriate title. Although "other organisms" are covered the main area dealt with is the fungi and it is as a book on fungal lipids that it can be thoroughly recommended. All main lipid groups are discussed—fatty acids, acylglycerols, glycerophospholipids, sphingolipids, aliphatic hydrocarbons, sterols, carotenoids and polyprenols—and the solidly descriptive chapters on their nature and distribution provide excellent reference material.

The chapters on biosynthesis are good and should provide attractive reading for senior undergraduates. For a discussion of the more detailed mechanistic aspects of biosynthesis resort to other advanced texts is necessary. Metabolism and degradation are well covered and there is a final short chapter on lipid metabolism during fungal development contributed by D. J. Weber.

The book is produced in the modern mode by photoffset process on a text presumably assembled by a word processor. A few minor misprints of trivial importance were noted but one has changed the sex of a scientist. I am sure that Dr. Kates might raise his eyebrows when he sees his system of lipid classification described as Kate's. The frequent abuse of the apostrophe probably also resigned the late Sir Hans Krebs to see his tricarboxylic acid cycle attributed by a generation of undergraduates to an unknown scientist Kreb.

That diversion aside, one misinterpretation which might cause some confusion is that the ϵ -end groups of carotenoids are designated α (α -carotene contains a β - and an ϵ -end group; α -is no longer used in formal carotenoid nomenclature).

In summary this is a very competent survey of fungal lipids which is as up to date as one can expect these days and which one can recommend to mycologists with a biochemical bent and to non-specialists who want a succinct entry into the literature of fungal lipids.

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