this book also will be well used by those engaged in research in which radionuclides are a very important factor.

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The Alkaloids. Vol. 6. Edited by M. F. GRUNDON *et al.* The Chemical Society, Burlington House, London W1V 0BN, England, 1976. x + 310 pp. 13.5 × 21.5 cm. Price £19.50.

M. F. Grundon has succeeded J. E. Saxton as senior reporter for the sixth volume of this excellent series on alkaloids. This comprehensive review of the literature published between July 1974 and June 1975 follows the format established by the previous volumes.

Chapter 1 deals with biosynthesis, which continues to be an area of considerable interest. In addition to the work on various alkaloids, many biosynthetic studies are reported on secondary microbial metabolites, including gliotoxin, mycelianamide, demethyltomaymycin, actinomycin, the cytochalasins, mitomycin, rifamycin, penicillins, and prodigiosins.

The ensuing 13 chapters cover the major types of alkaloids grouped by chemical structure: pyrrolidine, piperidine, and pyridine; tropane; pyrrolizidine; indolizidine; quinolizidine; quinoline, quinazoline, and acridone; β-phenethylamine and isoquinoline; aporphinoids; indole; *Lycopodium;* diterpenoid; steroidal alkaloids of the *Apocynaceae, Buxaceae, Asclepidaceae,* and *Salamandra-Phyllobates* groups; and *Solanum* and *Veratrum* steroidal alkaloids. Included in these chapters are discussions on the isolation of new alkaloids, structure determinations, chemical synthesis, miscellaneous general chemical studies, analytical methods, and pharmacological studies, depending on the literature available concerning a particular group of alkaloids during the period reviewed.

The centers of greatest activity remain the indole and isoquinoline alkaloids. Miscellaneous alkaloids, such as the imidazole, peptide, and purine alkaloids, have not been included, with the explanation that they will be covered in Volume 7.

Like its predecessors, Volume 6 is well organized. Each chapter is thorough, yet with the conciseness necessary for such a review. That such a review is available so promptly after the time period covered is a tribute to its contributors. While it is somewhat expensive, this volume is recommended very highly for those who wish to keep up-to-date in the field of alkaloid chemistry.

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Microbiology–1975. Edited by DAVID SCHLESSINGER. American Society for Microbiology, 1913 I St., N.W., Washington, DC 20006, 1975. vii + 521 pp. 17 × 25 cm. Price $16.00.

This book is a compilation of contributed articles of ASM-sponsored meetings in 1975. The title is misleading, since the book does not deal with topics that follow classical treatment of taxonomic, cultural, and biochemical aspects of microorganisms. The book addresses itself to subject matter areas of methodological and conceptual importance, intended to assist the investigator in the diagnosis and treatment of human diseases. These are provided in the form of "extensive exposures rather than an intensive high-level research." On this premise, a title such as "Recent Advances in Clinical Microbiology" or "Modern Approaches to Clinical Microbiology" or "Selected Topics of Current Interest in Clinical Microbiology" would have been more appropriate.

The book is divided into five sections, each of which is preceded by a short introductory note. Section I, Rapid Diagnostic Techniques in Clinical Microbiology, defines the extent to which new microbiological techniques that give rapid and/or automated results can be applied to clinical microbiology. It provides 14 contributed articles in 97 pages.

Section II, Pathogenic Mechanisms in Bacterial Diseases, discusses current concepts in pathogenesis of microorganisms that cause diseases in humans. It provides 43 contributed articles in 325 pages (about half of the book).

Section III, Mycotoxins, reveals basic interactions and biochemical aspects of mycotoxins in disease processes. It provides five contributed articles in 53 pages.

Section IV, New Vaccines, deals with most recent development and application of specific vaccines and immune serum globulins to the treatment of infections caused by "troublesome" organisms including *Haemophilus influenzae, Neisseria meningitidis,* and *Pseudomonas aeruginosa.* It provides four contributed articles in 17 pages.

Section V, Cell Differentiation and Communication, provides perspectives of morphogenesis in very simple organisms as they pertain to basic problems in developmental biology. It provides 11 contributed articles in 95 pages.

The contributed articles are well written and organized. Many of them show strong interactions between basic and applied concepts of microbiology. With few exceptions, *e.g.,* Considerations in Computer Data Entry by Paul D. Ellner (p. 73) and Polyvalent Vaccine and Human Globulin for Controlling *Pseudomonas aeruginosa* Infections by Mike W. Fisher (p. 416), leading references to original research articles are provided. Each article, however, includes a review, summary, and projections for future work in the specific area.

The book should find an interested audience among graduate students and microbiologists as well as health professionals in related disciplines at universities, hospital laboratories, and industry who may want to follow up on specific subjects.

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Marihuana. Chemistry, Biochemistry and Cellular Effects. Edited by GABRIEL G. NAHAS, WILLIAM D. M. PATON, and JUHANA E. IDÄNPÄÄN-HEIKKILÄ. Springer-Verlag, 175 Fifth Ave., New York, NY 10010, 1976. 556 pp. 16 × 24.5 cm. Price $19.80.

This volume contains the proceedings of a Satellite Symposium on Marihuana held at Matinkylä, Finland, before the Sixth International Congress of Pharmacology in Helsinki, Finland, in the summer of 1975. The conference was held primarily to pursue scientifically the areas of marihuana toxicology developed in 1974 spring hearings before the Senate Internal Security Subcommittee of the Committee on the Judiciary (Eastland Subcommittee). Many of the original government witnesses appeared again (Nahas, Morishima, Stenchever, Heath, and Leuchtenberger), but the meeting really was much broader, attracting 43 papers and more than 126 participants and contributors.

The areas covered include marihuana chemistry, the detection and identification of cannabinoids and their metabolites, kinetics and biotransformation, biochemical and cellular effects in isolated cell systems, neurotransmitter effects, and biochemical effects on organ development. The two largest groups of papers were devoted to the chemistry of detection and metabolism and inhibitory effects in isolated cell systems. Many new hydroxylated side-chain metabolites were reported for the first time (Agurell). Parts of the Greek chronic marihuana smoking study in humans were presented, but the majority of papers dealt with animals as subjects. Unfortunately, the discussion that is much needed to help evaluate these research publications is missing. A subject index is included to aid in rapid location of items of interest. Color plates are used in two hematology papers but not for all pathology.

Dr. W. D. M. Paton's concluding state-of-the-cannabis-art summary is recommended. He successfully perceives the limitations of the neurochemical basis for explaining marihuana action, the need for *in vivo* corroboration of isolated cell system work, and the elegant chemical and biochemical studies that undergird the field.

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