

BOOK REVIEWS

Flavonoids and Bioflavonoids, 1981, Edited by L. FARKAS, M. GABOR, F. KALLAY and H. WAGNER. Elsevier Science Publishing Company Inc., 52 Vanderbilt Avenue, New York, N.Y. 10017. 1982. xix+534 pp. 17 x 25 cm. \$104.75.

This volume presents the proceedings of the International Bioflavonoid Symposium (6th Hungarian Bioflavonoid Symposium) which was held in Munich in September 1981, the first occasion on which this symposium has been held outside Hungary. Fifty invited lectures were delivered at this conference and all are presented in this volume, which in effect comprises a series of specialized, largely unrelated papers on the general theme of flavonoids. The timing of the publication of this volume is unfortunate in that it coincides with the appearance of the update of "The Flavonoids", a volume which has become widely recognized as "the bible" for flavonoid information. This update, namely "The Flavonoids - Advances in Research" presents a comprehensive series of review articles in all major sections of flavonoid chemistry by leading world-wide experts. As such, and at a comparable price, it represents very much better value for money and is potentially a much more valuable reference book. However, the present volume does offer additional and at times more specialized information in many flavonoid fields. For example approximately one-third of the papers describe in detail, subjects such as chemical manipulations and specific syntheses of flavonoids, flavonoid glycosides and a variety of related non-flavonoids. Of particular interest to natural products chemists are the reports of syntheses of acylated flavonoid glycosides and flavonol triosides by H. Wagner and his coworkers. New flavonoids from new plant sources and chemotaxonomic studies are detailed, as also are thought provoking articles on the significance of flavonoid data in evolutionary studies in the Embryobionta (O.R. Gottlieb *et al.*) and in higher plants (J.B. Harborne). The paper on ¹³C-nmr spectroscopy of glycosides by V.N. Chari covers much the same material as is presented in "The Flavonoids" update as also do some of the papers on the general subject of mammalian metabolism of flavonoids. In the proceedings of previous Hungarian Bioflavonoid Symposia I have always found the articles on pharmacological applications to be of interest, as it seems that the Hungarian Symposium is the main forum for presentation of this work. I was not disappointed with these proceedings in this respect either. Numerous papers are presented in this field, the most comprehensive being a review article on the pharmacology of benzopyrone derivatives by M. Gabor.

Space limitations prevent a more detailed discussion of the contents of this volume. Suffice it to say that in general the volume is well written and most importantly, well indexed, a feature which enhances its value as a reference work. It is printed in camera-copy form and as such is relatively free of errors. As a source of general information of flavonoids it is limited by its very nature and thus does not compare favorably with "The Flavonoids" update. However it does offer more detailed information in certain fields e.g. synthesis and pharmacological activity. In my opinion the book is over-priced for what it offers, and while not wishing to discourage potential buyers who seek information about specialist topics covered at this conference, I feel I can only recommend it as interesting, but not necessary, reading for the majority of researchers in the flavonoid field.

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New Plant Sources for Drugs and Foods from the New York Botanical Garden Herbarium, S. VON REIS and F. J. LIPP, JR., Harvard University Press, Cambridge, MA 02138. 1982. 363 pp. 16 x 24 cm. \$25.00.

This reference work is intended to provide a listing of potential plant sources for new drugs and foods. It is a companion volume to the 1973 publication entitled *Drugs and Foods from Little-Known Plants: Notes in Harvard University Herbaria* by Siri von Reis Altschul; it follows the criteria and format of the earlier publication with few minor exceptions. Entries are arranged taxonomically by plant family, but cross indexing by genera and recorded use permits ready access to the information by persons without taxonomic training.

The book is a compilation of field notes from herbarium sheets in the extensive collection of the New York Botanical Garden. The publication is especially valuable because it makes information available to many scientists who would not have the opportunity, motivation or stamina to examine the herbarium material. The successful user of the compilation must recognize, however, the limitations inherent in its strength. The collecting notes record uses or alleged properties; they do not represent scientific verification of utility.

Flora of the United States and tropical America are well represented in the New York Botanical Garden Herbarium, and the correlation of notes on usage with herbarium material permits eventual adjustment for the inevitable errors in the provisional taxonomic designations of some accessions. The book enhances the availability and utility of knowledge of plants represented in the Herbarium. However, the

omission of notes on plant uses or properties for many herbarium accessions introduces an indeterminate factor in the quest for comprehensive knowledge.

The book satisfies the intent of the authors. It should be included in the libraries of most academic institutions and many research organizations. The specialized nature of the work makes it suitable for the private libraries of only a few individual investigators.

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Amino-acids, Peptides and Proteins. Volume 12. Specialist Periodical Reports, R. C. SHEPPARD, Senior Reporter. Royal Society of Chemistry, Burlington House, London. 1982. xx+634 pp. 13.5 x 22.5 cm. \$153.00.

Amino-acids, Peptides and Proteins. Volume 13. Specialist Periodical Reports, R. C. SHEPPARD, Senior Reporter. Royal Society of Chemistry, Burlington House, London. 1982. xxiv+485 pp. 13.5 x 22.5 cm. \$132.00.

The scope of these volumes is immense covering isolation, characterization, and synthesis of amino acids and peptides, as well as many aspects of protein chemistry, especially those dealing with structure. Special areas of research discussed include spectroscopy, affinity labelling, metal complexes, etc. As sources for the recent literature, both volumes are outstanding. Volume 12 covers papers in the literature during the year 1979 while Volume 13 covers papers published in major journals during 1980. In areas familiar to this reviewer, the comments of the reporters are clear and represent a high level of understanding of published research. These books, of course, are not designed to give a beginner routes into the specific areas of research covered. Rather, they represent methods for advanced researchers to keep abreast of information in their fields.

The overall organization of both of these volumes is essentially the same. Isolation, chemical characterization and syntheses of amino acids are described. This is followed by sections dealing with the identification of proteins and modern sequencing studies for determination of primary structure. A very substantial chapter is devoted to X-ray crystallographic characterization of proteins. Some attention is paid to the problems of protein folding and related phenomena. The books then continue in the area of conformations of peptides and proteins in solution, theoretical approaches to structure, high resolution nuclear magnetic resonance, Fourier transform infrared, Raman spectroscopy, circular dichroism and other spectroscopic techniques.

Peptide hormones, ionophores and regulatory compounds are discussed in detail. In Volume 13, a biannual chapter dealing with metal complexes of amino acids, peptides and proteins is also included.

Each section is repertorial if not critical. The reporters simply note what is stated as the findings of these papers, although the methodology and structural elucidations are put into the framework of each general field. Extensive tables supplement the text. The large number of references incorporated merits special recognition. Because of the above features, we refer to these volumes constantly.

The sections on peptide synthesis, spectroscopic characterization, naturally occurring peptide hormones and related structures were particularly useful to this reviewer. We often prepare linear oligopeptides as model structures for proteins or peptide hormones; these volumes informed us of the latest methods of protection, deprotection, coupling, and purification employed by peptide chemists.

In both volumes, the researcher can easily ascertain the centrality of protein X-ray diffraction studies and sequencing methodology since so much of modern structural research depends on our knowledge of protein structure. Volume 12 includes sections dealing with peptide alkaloids, peptides linked to carbohydrates and compounds related to penicillins, cephalosporins and other antibiotics. These sections represent important extensions of the field of peptides.

Some areas now emerging receive only the barest of attention. The theoretical aspects of peptide and protein conformational analyses and the use of the computer to calculate minimum potential energies, simulate structures and even represent dynamic structural properties are examples of fields which should be surveyed more completely in future volumes.

If there is any criticism at all, it is the somewhat tardy appearance of these volumes. The usefulness of the books would be enormously enhanced if the time between the period covered and appearance were shortened. Hopefully, we can look forward to most rapid publication of future volumes.

The work which Dr. R. C. Sheppard has done in coordinating these volumes is first-class. It is with regret that in his comments in Volume 13 he indicates that he will no longer be the senior reporter for future volumes. We, amino acid, peptide and protein researchers, owe him a great debt of gratitude and thanks for the Herculean effort which he expended in pulling together the information and the reporters for these volumes.

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