

## BOOK REVIEWS

*Die Natürlichen Pflanzenfamilien. Band 28b1. Angiospermae: Ordnung Gentianales, Fam. Loganiaceae.* Edited by A. J. M. LEEUWENBERG, Agricultural University of Wageningen. Duncker and Humblot, Dietrick-Schäfer Weg 9, 1000 Berlin 41. 1980. viii+255 pp. 17.5x24.5 cm. DM 188.

The Loganiaceae is an economic family of the greatest interest, but one which botanically has suffered long from confusion. This monograph goes far in settling a number, though certainly not all, of the taxonomic and other uncertainties.

The contents indicate its inclusive coverage. Divided into eleven sections, it provides a most unusually complete treatment of the family (*sensu lato*) as understood at the present time. To begin with, we must acknowledge that Dr. Leeuwenberg, one of the most perspicacious modern botanists, has masterfully offered a most thorough study of the Loganiaceae. Section I considers the botanical relationships of various groups of plants normally considered loganiaceous. Section II represents an extraordinarily thorough taxonomic review of the family. Section III discusses vegetative architecture. Section IV presents an analysis of the anatomy of secondary xylem. Section V treats palynology. Section VI considers embryology. Section VII offers a cytological study. Section VIII undertakes to put phytochemical knowledge into perspective. Section IX discusses useful plants, and Sections X and XI are indexes of plant names and plant constituents respectively.

The monograph is the skillfully edited product of eight specialists in the various aspects of loganiaceous studies covered.

Leeuwenberg has, throughout the monograph, presented both sides of problems when differences of opinion have led to uncertainty concerning the constitution of the family. He has adopted a conservative point of view, including in the Loganiaceae groups which historically or sometimes currently may be excluded. One of the most valuable contributions from the viewpoint of the readers of the *Journal of Natural Products* is the chapter contributed by Bisset of the University of London on phytochemistry: one of the outcomes of this survey is the suggestion that the family *sensu lato* is too broad and that there is much merit in separating off several groups as distinct families. Bisset follows his phytochemical consideration with a consideration of useful plants, the most thorough that I have ever encountered for this family.

Each section is supported by a full bibliography. The indexes are complete and most useful.

RICHARD EVANS SCHULTES, *Harvard Botanical Museum*

*Handbook of Toxic Fungal Metabolites*, RICHARD J. COLE, National Peanut Research Laboratory, Dawson, Georgia, and RICHARD H. COX, National Institute of Environmental Health Services, Research Triangle Park, North Carolina. Academic Press, Inc., 111 Fifth Avenue, New York, NY 10003. 1981. xvii+937 pp. 17x24 cm. \$79.00.

Scientific interest in toxic fungal metabolites has increased enormously since the discovery of the aflatoxins in 1960 as a result of the mysterious "Turkey X" disease in England, and there is an ever-increasing awareness of the potential danger of these secondary metabolites to human and animal health. The published data on fungal toxins has however been scattered throughout the scientific literature in journals dealing with chemistry, microbiology, food science, medicine, and so on, and this has made it difficult for investigators interested in identifying known or related mycotoxins to carry out their work efficiently. The authors of this handbook have thus done the scientific community a real service by bringing together in one convenient format data on mycotoxins from all these various sources.

The handbook includes data on almost 300 microbial metabolites either known to be toxic or structurally related to known toxins. The data for each compound include structure, name, molecular formula, molecular weight, general characteristics, fungal source, toxicity data if available, other significant references (e.g. to biosynthesis, X-ray structure, stereochemistry, etc.), and, most importantly, full spectroscopic data. The inclusion of spectroscopic data is a key feature of this work, and differentiates it from most other handbooks of this type. For over half the compounds the spectra were obtained by the authors from samples provided by some 60 other investigators, and these spectra (uv, ir, mass spectra,  $^1\text{H}$  nmr and  $^{13}\text{C}$  nmr) are reproduced in the book. Spectroscopic data for the remaining compounds, where samples were not available, are taken from the literature, and are reported as simple listings of peaks. In all cases the authors have included assignments of the  $^{13}\text{C}$  and  $^1\text{H}$  nmr data.

The handbook is divided into 21 chapters, each devoted to a group of related metabolites. The major groups are the trichothecenes and the tremorgens, each with 49 representatives, and the cytochalasins and epipolythiopiperazine-3,6-diones, with 24 and 23 representatives respectively. The work concludes with indexes for molecular formula, molecular weight, compound, and microorganism/plant source.

The authors have accomplished a herculean task in bringing this work to publication, and in so doing have made a significant contribution to the study of mycotoxins. Workers in the area of mycotoxins will not need any recommendation to buy this book, since they have probably already done so, but workers in other areas of natural products would also profit from the extensive spectroscopic data compilation which could aid in the identification of unknown compounds containing similar structural units.

DAVID G. I. KINGSTON, *Department of Chemistry, Virginia Polytechnic Institute & State University*

*Phytoalexins* edited by JOHN A. BAILEY, Faculty of Agriculture and Horticulture, University of Bristol, and JOHN W. MANSFIELD, Wye College, University of London. Halsted Press, John Wiley and Sons, Inc., 605 Third Avenue, New York, NY 10158. 1982. x+334 pp. 16 x 23.5 cm. \$75.95.

This book, mainly directed towards plant pathologists and phytochemists, is very timely. It is a successful effort at compiling and presenting information concerning one of the most rapidly expanding areas of research in plant disease physiology and related phytochemistry. It illustrates the contributions to phytoalexin research made by a number of disciplines.

The introductory chapter by B. J. Deverall provides a concise accounting of the history of the subject and some of the major questions to be addressed in the future. Chapters 2, 3 and 4 are indepth presentations concerning the occurrence of phytoalexins in the Leguminosae, Solanaceae and other plant families. The chapters on biosynthesis and metabolism draw together, for the first time, the vast amount of literature in these areas. They contain sufficient detail to be of value to organic chemists and biochemists. The chapter on toxicity includes discussions concerning fungitoxicity, phytotoxicity, antibacterial activity and animal toxicity of phytoalexins. Of particular interest to plant pathologists are excellent discussions of the role of resistance and the mechanisms of accumulation in the chapters by J. W. Mansfield and J. A. Bailey. The concluding chapter presents a good synopsis of current problems and suggestions for future research.

In summary this is a very competent presentation of the information concerning phytoalexins. It is relatively current since it cites many 1981 articles. The appropriate audience for this book would be organic and phytochemists as well as plant pathologists. The book serves as a very useful reference to courses in secondary plant metabolism and plant disease physiology.

LAURENCE D. MOORE, *Department of Plant Pathology and Physiology, Virginia Polytechnic Institute and State University*

*High Performance Liquid Chromatography (Chemical Laboratory Practice)*, H. ENGELHARDT, Institute of Applied Physical Chemistry, University of the Saarland, Saarbrücken, Germany; translated from the German by G. Gutnikov, California State Polytechnic University, Pomona, CA 91768; Springer-Verlag, New York, Inc., 175 Fifth Avenue, New York, N.Y. 10010. 1979. xii+248 p. 17x24.5 cm. \$29.80.

During the last several years high performance liquid chromatography (HPLC) has developed rapidly to become a standard method of separation. The primary objective of this book is to present HPLC in a simple, non-mathematical manner, both for the beginner and the seasoned practitioner. It represents an enlarged and revised translation of the well known second edition of *Hochdruck-Flüssigkeits-Chromatographie* by H. Engelhardt.

The author presents in comprehensible language the basic fundamentals of chromatography; equipments for HPLC, detectors and stationary phases. Detailed chapters are given about various chromatographic systems like adsorption-, partition-, ion-exchange- and gel permeation chromatography. In addition an attempt is made to illustrate the theoretical concepts with appropriate illustrative examples of real separations. Considerable detail is devoted to factors that govern or affect chromatographic separations, and to the available means of manipulating them to achieve optimum results.

Concluding chapters on selection of the separation system, special techniques (preparative chromatography, qualitative analysis, quantitative analysis, trace analysis), and purification of solvents complete the work.

In summary this is a very competent book about the fundamentals of HPLC which one can recommend to anyone dealing with liquid chromatography.

OTTO STICHER, *School of Pharmacy, Federal Institute of Technology (ETH) 8092 Zurich, Switzerland*

#### CORRECTION

There are two errors in the review of the "Lawrence Review of Natural Products" published in the July-August edition of this journal. The corrected review is given below; the Book Review Editor regrets these errors.

*The Lawrence Review of Natural Products*. Pharmaceutical Information Associates Ltd., P. O. Box 186, Collegeville, Pa 19426. \$18.00 per annum.

The *Lawrence Review of Natural Products* is a semi-monthly newsletter which describes the origins, chemistry, uses, abuses, and toxicities of natural products. Recent articles have included ones on caffeine in "look-alike" preparations, ipecac, catnip, ginseng, etc. The articles appear to be short (typically 1-2 typed pages), and are referenced.