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Book reviews

Handbook of Plant and Crop Physiology (2nd ed.)

M. Pessaraki (Ed.) Marcel Dekker, Inc. New York, Basel, ISBN 0-8247-0546-7, hardback £152.71

This editor intends this book to be a complete and comprehensive collection of topics in plant and crop physiology and with 48 chapters in 12 sections it makes a gallant attempt at reaching this ambitious goal. The sections group the chapters in a logical fashion. However the section Physiological relationships between lower and higher plants seems wrongly titled since it has only one chapter and that is on parasitic Angiosperms. The other section on lower plants discusses Volvox, mosses and ferns and although it might seem a bit out of place in a book with crop in its title it does remind the reader of the value of model organisms. The two chapters at the end round the volume off nicely. The first on lighting in controlled environments reminds us that artificial days are much more complex than turning the lights on and off while the last reminds us that one day we will be growing plants in outer space.

The book is nearly 1000 pages in length and clearly cannot delve into too much detail on every subject. The selection of topics seems appropriate and the individual chapters are a reasonable length, introducing each subject in an easily readable format. Most students should be able to follow the subject matter but the book is still informa-

tive to the experienced researcher. Each chapter cites a wide range of literature with some having as many as 200 references. In many of the chapters the cited literature goes back to papers in the 1930s and 1940s, which is heartening in this day and age when many students usually do not look further than the web. On the other hand, many chapters contain very recent references so the book certainly provides a ready access to the relevant literature.

The publisher has not helped the editor in presenting these diverse topics. Quite a few of the pictures look as if they were in colour and have been photocopied. Clearly production costs have to be kept down especially on a book of this size but at over £150 I feel that I should be able to find the minor veins in *Syringa vulgaris* or discern the parts of the photosystem complex without bright lights.

In conclusion the authors and editor have done a good job and the book should be prescribed reading for all those molecular biologists who do not realise that a knowledge of genes is of no use without an understanding of function.

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The Simple Plant Isoquinolines

Alexander T. Shulgin and Wendy E. Perry, Transform Press, 2002, xxxv + 624 pp., Hardback, ISBN: 0-9630096-2-1, \$40.00

The title *The Simple Plant Isoquinolines* will certainly draw immediate attention of anybody working in the area of natural products, especially plant alkaloids. Considering the recent resurgence of interest in phytochemical research, both in academia and industries, the timing for publication of this book is absolutely perfect. The authors' excellent effort in compiling all the names, structures and sources of simple plant

isoquinolines in a single easy-to-use volume must be appreciated greatly.

This book consists of mainly introduction, trivial name index, structural index and taxon index. The introduction focuses generally on the nomenclature and numbering of plant alkaloids, and chemical relationships among various isoquinoline alkaloids. However, in my opinion, the introduction lacks in some fundamental details regarding biosynthetic origin of these plant secondary alkaloids and can hardly be described as 'adequate'. It would have been useful if the authors had discussed the chemistry of these isoquinolines in the light of possible biosynthetic pathways. A brief discus-

sion on chemotaxonomic implication and biological properties of these plant isoquinolines would also add enormous value to and wider acceptance of this book.

While the trivial name index provides a comprehensive alphabetical listing of plant isoquinoline alkaloids with immediate access to their structures, botanical sources and appropriate references, the structural index includes the structures of all these compounds. Structures of these compounds are intelligently presented under various structural classes, e.g. unsubstituted, monosubstituted, 6,7-HO, HO-substituted, 6,7-HO, MeO-substituted, 6,7-MeO, HO-substituted, 6,7-MeO, MeO-substituted, 6,7-MDO-substituted, 7,8-HO, HO-substituted, 7,8-MeO, HO-substituted, 7,8-MeO, MeO-substituted, 5,6,7-HO, MeO, HO-substituted, 5,6,7-MeO, MeO, HO-substituted, 5,6,7-HO, MeO, MeO-substituted, 5,6,7-MeO, MeO, MeO-substituted, 5,6,7-MeO, MDO-substituted, etc. This kind of classification is rather artificial, but it seems to have worked out quite well. The authors have used 'R' or 'S' within some of the structures to describe the stereochemistry of the chiral centre (s), but it has not been followed consistently for all structures.

The taxon index presents a complete and valuable listing of botanical sources of the isoquinoline alkaloids. However, the information presented in this index could easily be transformed into a more visual distribution table. In addition to these major sections, there are also a plant families appendix which categorises all genera

according to their families, an appendix on isobenzofuranone nomenclature and a journal names appendix which provides the full name of journals used in the cited references in abbreviated forms.

Looking at the title, one might expect this book to provide an insight into the biosynthesis, occurrence, chemistry, structures and biological activities of various isoquinoline alkaloids, but obviously that is not the case. The information compiled in this book is not that different from the information one can easily obtain from the readily available *Dictionary of Natural Products* (DNP) CD-ROM or *Combined Dictionary of Organic Compounds*. Despite these limitations, this book is presented superbly with all necessary and correct names and structures of isoquinolines; it is reasonably priced and user-friendly. This book undoubtedly stands out in its own merit as an affordable and cheaper alternative to DNP for accessing information on isoquinoline alkaloids, and can be recommended as a reliable reference source for any scientist dealing with phytochemicals, and particularly, isoquinoline alkaloids.

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Major Herbs of Ayurveda

Compiled by Dabur Research Foundation and Dabur Ayurved Limited, Edited by E. Williamson. Churchill Livingstone, Elsevier Science Limited, Edinburgh, UK, 2002. xiv + 361 pp. + 70 plates. ISBN 0443 07203 5. Hard back £39.99.

There are very few compilations of information and data on Ayurvedic plants that are readily accessible, and so this treatise is particularly timely and welcome. The volume is comprised of 70 monographs of the principal herbs of the healing tradition of Ayurveda, a system of philosophy and medicine of India. There is no single system of medicinal plants of Ayurveda, since the diversity of the ecological regions of India connotes that very different plant ecosystems will be available in the various locales. The chosen plants are the most widely used. While there is much known about many of these materials, the volume quickly indicates that there is also much remaining to be disclosed. In the past few years, increasing numbers of these materials are finding their

way to the health food stores and dietary supplement shelves of pharmacies in Europe and North America; products such as ashwaghandha (*Withania somnifera*), gotu kola (*Centella asiatica*), and the guggulsterols (from *Commiphora mukul*). Yet, the information in most Western volumes of dietary supplements is scant or non-existent, so it is timely indeed to have a volume available which presents substantial important information.

Each plant in the monograph is represented by a color picture of the fresh and dried plant material located in a single section at the beginning of the volume. This is followed by a brief introduction to the principles of Ayurveda. The monographs are comprised of the Latin name of the plant, its English, Hindi and Sanskrit names, a brief overview of the plant, a description of habitat, a botanical description, and the parts used. The traditional and modern uses are followed by any veterinary uses. Major chemical constituents are summarized by chemical type, and this is followed by the medicinal and pharmacological activities. There is a safety profile