

Book Reviews*

Herbal Medicines: A Clinician's Guide. Edited by Lucinda G. Miller (Texas Tech University Health Sciences Center) and Wallace J. Murray (University of Nebraska Medical Center). The Haworth Press, Binghamton, NY. 1999. xviii + 382 pp. 14.5 × 21 cm. \$59.95. ISBN 0-7890-0466-6.

This book is aimed at the practicing physician, with the goal "to support safe and effective concomitant use of alternative and conventional medicines to achieve optimal patient outcomes". Most of the individual chapters are written or coauthored by authors with a PharmD or an MD degree and all are fully referenced to the literature. The individual chapter titles are as follows: 1. Herbal Medications Interface with Conventional Medicine: An Overview; 2. Renal Implications of Herbal Remedies; 3. Hepatic Effects of Herbal Remedies; 4. Herbal Medicines for Colds and Flu; 5. Herbal Medications for Gastrointestinal Problems; 6. Herbal Medications and Nutraceuticals Used to Treat Rheumatoid or Osteoarthritis; 7. Herbal Medications, Nutraceuticals, and Diabetes; 8. Herbal Medications, Nutraceuticals, and Hypertension; 9. Nutraceuticals for Management of Dyslipidemia and Atherosclerosis; 10. Asthma: A Review of Diagnostic, Pharmacotherapeutic, and Herbal Issues; 11. Herbal Medications, Nutraceuticals, and Anxiety and Depression; 12. Herbal Medicine and Substance Abuse; 13. Common Herbal Products Used in Cancer Prevention and Treatment; 14. Herbal Medicinals for Dermatologic Uses; 15. Gynecological and Obstetric Concerns Regarding Herbal Medicinal Use; 16. Specific Toxicological Considerations of Selected Herbal Products; 17. The History of Herbs in the United States: Legal and Regulatory Perspectives.

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Second Supplements to the 2nd Edition of Rodd's Chemistry of Carbon Compounds. Volume IV. Heterocyclic Compounds. Part A. Three-, Four-, and Five-membered Monoheterocyclic Compounds. Edited by M. Sainsbury (University of Bath, England), Elsevier Science BV, Amsterdam. 1998. xxvi + 704 pp. 15 × 22.5 cm. \$457.00. ISBN 0-444-82736-6.

This volume is another update of the classical compendium *Rodd's Chemistry of Carbon Compounds*. As a supplement to the second edition, it does not provide a complete coverage of the topics listed in the title, but instead it provides an update on the literature published between 1984 and 1996. As with the companion volumes reviewed earlier this year (*J. Nat. Prod.* **1999**, *62*, 662–663), the chapters are written by different authors, and this results in differing levels of coverage and (irritatingly) in the use of different fonts and reference formats. With the power of modern word processing programs, it would have been relatively simple to reformat each chapter to a common style, and it is surprising that this was not done, especially considering the price of the book.

The major thrust of the book is on the chemistry of simple heterocyclic systems, and natural products (other than amino acids such as proline) are rarely mentioned. Thus although Taxol (paclitaxel) is arguably the best-known oxetane-containing compound in the world, and numerous reactions involving the oxetane ring have been reported, it does not rate a mention in the text.

Despite the lack of coverage of some natural products, there remain several sections of potential interest to natural products chemists. Thus Chapter 1, which covers three- and four-membered rings, has an extended section in azetidinones (β -lactams), which are important reagents in the semisynthesis of paclitaxel. Chapter 3, covering thiophenes and related compounds, discusses two different syntheses of the tetrahydrothiophene-containing glycoside (+)breyanolide, and Chapter 4 covers the synthesis of several proline derivatives. Chapter 5, covering indoles and related compounds, has a review of general synthetic methods for indoles, although there is little discussion of indole alkaloids.

In summary, this volume, like its companions, will be of interest primarily to libraries that already hold the main series. It will also be of interest as a convenient summary of the recent literature to heterocyclic and synthetic chemists, but it is likely to appeal only to those natural products researchers with a strong interest in the synthesis of small-ring heterocyclic systems.

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Poppy. The Genus *Papaver*. Edited by Jenő Bernáth (University of Horticulture and Food Industry, Budapest). Harwood Academic Publishers, Amsterdam, The Netherlands. 1998. xiv + 352 pp. 17 × 24.5 cm. \$127.00. ISBN 90-5702-272-0.

This book is the third volume in a series titled *Medicinal and Aromatic Plants – Industrial Profiles*. Previous works were on *Valerian* and *Perilla* with 30 additional volumes (*Artemisia* to *Urtica*) promised. The present volume fits the series title well. For the chemist, there are particularly well done sections summarizing data on each of the 44 known alkaloids from *Papaver somniferum* (54 pp) and on biosynthesis (30 pp). One section (93 pp) is devoted to biology (taxonomy, morphology and anatomy, physiological and ecological aspects, genetics and breeding). Another long section (72 pp) provides detailed data on raw material production (opium and poppy straw) and cultivation. Smaller sections deal with *in vitro* culture and biosynthesis (30 pp), pharmacology (28 pp), and an overview of world tendencies regarding total production, processing, and trade of opium alkaloids (18 pp). The last-named overview contains much statistical data, collected by the International Narcotics Control Board, on yearly production of various alkaloids. There are no chapters on synthesis or synthetic transformations.

*Unsigned book reviews are by the Book Review Editor.

Some of the chapters on cultivation are particularly detailed, as are methods of collecting opium, the use of poppy straw concentrate (from dried total plant material), and the individual alkaloid content of various preparations. Missing are any details on isolation and purification of individual alkaloids from either opium or straw concentrate. Thus, there is no information on what is done to convert the annual licit collection of 898 276 kg (1993) of opium into the 150 112 kg of pure morphine produced. Incidentally, it is stated that 95% of the opium produced in the world goes to illicit rather than legal use.

J. Milo, A. Levy, and D. Palevitch report that latex of some *Papaver bracteatum* varieties can contain very high concentrations of thebaine and no morphine. Some varieties of *P. somniferum* have been patented that may be similar. Since there are well-established procedures for converting thebaine to codeine and morphine and other useful morphinanediene alkaloids, some have commented that there seems to be little or no scientific or medicinal reason for the further cultivation of standard *P. somniferum*. Milo et al., have the opinion that "the cultivation of *P. bracteatum* for commercial purposes has been limited by socio-political considerations which reflect the fear of negative consequences for the economy of traditional growers of opium for the pharmaceutical industries".

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Pesticide Chemistry and BioScience: The Food-Environment Challenge. Edited by G. T. Brooks (University of Portsmouth, U.K.) and T. R. Roberts (JSC International Ltd, U.K.). The Royal Society of Chemistry, Cambridge, U.K. 1999. ix + 438 pp. 15.5 × 23 cm. \$100.00 ISBN 0-85404-709-3.

This book is the proceedings of the 9th International Congress on Pesticide Chemistry held in London on August 2–7, 1998. The theme of the congress, The Food–Environment Challenge, reflects concern for providing environmentally acceptable solutions for weed, pest, and disease control in the face of a rapidly expanding global population. Chapters are organized into sections on Synthesis and Structure–Activity Relationships, Delivery, Natural Products, Mode of Action and Resistance, Metabolism, Environmental Fate, Residues, and Regulation and Risk Assessment. The volume begins with a reprint of the plenary lecture by David Evans, which provides an excellent "high-altitude" look at the food–environment problem. This chapter is replete with charts, graphs, and vital statistics that highlight the enormous challenge of increasing food and fiber production in an environmentally sustainable manner. Interestingly, this chapter and others point to biotechnology as a key part of the solution, but do not address the growing debate and public outcry (particularly in Europe) against genetically modified organisms (GMOs).

Three papers are provided in the Synthesis and Structure–Activity section, but only one deals strictly with this topic in providing a good overview of chirality in agricultural chemistry. An outstanding chapter is provided in the Delivery section on the Impact of Biotechnology. A transgenic crop is considered a delivery agent, and this chapter comes the closest to identifying and discussing the critical

public and ethical issues associated with introduction of a new technology. This chapter should be of great interest to all working in agricultural biotechnology. A strong paper on modeling foliar penetration of pesticides is also included in this section.

The Natural Products section is represented by four papers. These papers address the spinosyns, a novel family of microbial insecticides, pyrrolnitrin, a natural product lead structure used in fungicide discovery, a number of syntheses using carbohydrate monomers, and phytoalexins. Subsequent sections include excellent papers on the mode of action, metabolism, and environmental fate of several recently introduced pesticides. A description of metabolic pathways for detoxification of pesticides in plants will be a particular useful reference for those working in pesticide discovery. The final papers in Environmental Fate, Residues, and Risk Assessment go beyond just descriptions of registration information to include detailed discussion of new methods, probability modeling, and the global regulatory outlook for the future.

The audience for this book is clearly those involved in the pesticide discovery, development, and registration process. Although natural products are discussed in a few chapters both from a discovery and regulatory perspective, natural product chemists may opt for the library volume. While many high-visibility research topics are addressed in this book, conspicuously absent is a comprehensive treatment of herbicide-resistant crops. Nevertheless, for those in agrochemical discovery and development, this is an excellent reference that needs to be kept close at hand.

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Tartaric and Malic Acids in Synthesis. By Jacek Gawróński and Krystyna Gawróńska (Adam Mickiewicz University, Poznan). Wiley-Interscience, John Wiley and Sons, Inc., New York, NY. 1999. xxii + 591 pp. 15.5 × 23.5 cm. \$149.00. ISBN 0-471-244511.

This book provides a comprehensive listing of syntheses using tartaric and malic acid. The use of these acids as starting materials for synthesis as well as their use in the generation of chiral auxiliaries is covered. The chapter titles provide a good indication of the book's coverage: Tartaric Acid and its Salts; Tartrates and Their Metal Complexes; Tartramides, Tartaric Hydrazides, and Their Derivatives; *O*-Acylated Tartaric Acids and Their Derivatives; *O*-Alkylated and *O*-Silylated Tartaric Acid Derivatives; Tartrimidates; Derivatives of Tartrates with Activated Hydroxy Groups; Tartrate Borates and Boronates; Tartrate Nitrates and Tartrate Modified Phosphorus Compounds; Acetals of Tartaric Acid Derivatives; Tartraldehydes; TADDOLs, Their Complexes and Related Compounds; Threitol and its Derivatives; Threonic Acid; Malic Acid, its Anhydride, and *O*-Protected Derivatives; Malates and Their *O*-Protected Derivatives; Malamides and Mal-

imides; 2,4- and 3,4-Dihydroxybutanoic Acids; 2,4- and 3,4-Dihydroxybutanals; 1,2,4-Butanetriol and its Derivatives.

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CRC Ethnobotany Desk Reference. By Timothy Johnson. CRC Press, Boca Raton, FL. 1999. ix + 121 lpp. 21.5 × 27.5 cm. \$149.95. ISBN 0-8493-1187-X.

The *CRC Ethnobotany Desk Reference* was a book title that generated a tremendous amount of expectation among ethnobotanists. The book title is however misleading, since the book is essentially an alphabetical listing of plants species of U.S. National Parks with information on some uses. Thus while it is likely to be of great interest to the libraries of National Parks in the United States, it is disappointing to those looking for a more comprehensive work.

The book is the printed document of a database of approximately 28659 species. The entries are arranged alphabetically by species; followed by data under categories. The species name is given without any botanical authorities, together with a few common names and the scientific name of the plant family. Under each species is an indication of the international distribution of the plant and a listing of the National Parks in which the plant may be found. To take a specific example, entry number 3584 is *Bidens pilosa*. The first locality listed for this species is "Africa". Later on, specific countries within Africa are listed, but this listing is not comprehensive. Finally, there are listings of specific National Parks or recreation areas in the United States where the species occurs.

The next section is an indication of the utilization of the plants. In general the disease conditions for which the plants are used are given, but no information is supplied about the plant part that is used or how the plant is applied, i.e., oral, topical, etc.

The next section provides information on the chemical constituents of the plants, but it is omitted for many of the plants listed and is therefore inconsistent. The next section relates to the body part for which the plant is utilized, and the following section, which is very rarely present, refers to habitat. The last category is used for comments, which are also not very often included.

The index of this book, which is 310 pages long, lists plant numbers by National Parks as well as a smattering of diseases and conditions for which plants are mentioned. The index also lists a cross-index of common names, but this is by no means comprehensive. In addition, plant families and occasionally genera are listed, but the book is not indexed completely by genera. The common names that are listed are generally English common names, but occasionally one encounters an indigenous common name. One would have to be extremely careful in utilizing this index for anything other than perhaps a comprehensive listing of plants found in those National Parks or recreational areas that are actually listed in the book. It is somewhat hard to fully understand the rationale by which the index was constructed.

There is a bibliography in the back of the book, which contains 18 citations, very few of which are particularly significant to the extensive listing of plants in this volume. It is not at all clear why the author chose to include these references as opposed to others. There is also no mention whatsoever of the Missouri Botanical Garden or the Nature

Conservancy, which have extensive data and information on the various specimens and data associated with these collections in the United States.

In short, this book contains a massive amount of information, which would be extremely useful to anyone interested in plants occurring within the U.S. National Parks. Because of the lack of references, it is extremely difficult for a reader to have any sense of the origin of the information, its cultural context, and perhaps most importantly the actual utilization of the plant, the plant part, how it is prepared, and any other data associated with it. In fact, this listing of plants gives the field of ethnobotany a very poor representation. It appears that the author and/or publisher chose the title, to draw the enthusiasm of a growing number of people involved and interested in ethnobotany, but it is difficult for this reviewer to recommend this book to anyone working in the field.

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How to Find Chemical Information: A Guide for Practicing Chemists, Educators, and Students, Third Edition. By Robert E. Maizell (Technology Information Consultants, New Haven). Wiley-Interscience, John Wiley and Sons, New York, NY. 1998. xxiii + 515 pp. 16 × 23.5 cm. \$64.95. ISBN 0-471-12579-2.

What can one write about a highly successful book that is now in its third edition? This book is a complete overview of chemical information from the philosophy to the practicality of searching for chemical information. To quote Maizell, "The author hopes this book will be helpful for desktop reference, for daily use, and as a text. . . . One of the strengths of this edition is that it describes and discusses the more enduring principles, strategies, and approaches that the chemist and engineer can utilize in the selection, evaluation, and use of chemical information tools."

Chapter 1. Basic Concepts. This is a brief overview with an emphasis on interactions with information professionals.

Chapter 2. Information Flow and Communication Patterns in Chemistry. The author briefly presents a 14-step sequence that describes the role of chemical information in origin of an idea, the publication in primary literature, and evaluation in secondary literature.

Chapter 3. Search Strategy. This brief chapter presents 24 questions one should ask oneself in delimiting and conducting a search.

Chapter 4: Keeping up to Date. Current Awareness Programs. This brief chapter presents many of the printed awareness services. Unfortunately, with monthly changes in this age of the Internet, this chapter now discusses "traditional" approaches. These days e-mail alerts are the latest vehicle for current awareness.

Chapter 5. How to Get Access to Articles, Patents, Translations, Specifications, and Other Documents Quickly and Efficiently. This brief chapter covers what it says. Again, the Internet will continue to have a large impact on this area; no printed document can be a current source of information.

Chapter 6. Chemical Abstracts Service: History and Development. This long chapter is filled with many charts and tables that chronicle the development of *Chemical Abstracts*. This chapter has some fascinating statistics and data.

Chapter 7. Essentials of *Chemical Abstracts* Use. This chapter describes the organization and layout of *Chemical Abstracts* as it has evolved over the years.

Chapter 8. Selected Other Abstracting and Indexing Services of Interest to Chemists. This is a fairly short chapter with introductions to major indexing services worldwide.

Chapter 9. Some United States Government Technical Information Centers and Sources. This is a short chapter that introduces these sources. Because of the Internet, the information here is not the most current.

Chapter 10. Online Systems and Databases, the Internet, CD-ROMs, and Related Topics. At the beginning of this litany of sources, the author provides some sage advice, "However, by no means is all significant chemical information online or in other electronic form. Furthermore, many online sources do not begin their coverage until the late 1960s (or subsequent to that), and a vast amount of useful data appear in earlier chemical literature." The author recommends "a combination of media and sources" to locate the desired information.

Chapter 11. Reviews. This four-page chapter lists sources for reviews.

Chapter 12. Encyclopedias and Other Major Reference Books; Journals. This long chapter is an annotated listing of these sources. The author provides instruction on how some of the encyclopedic sources present the data.

Chapter 13. Patent Documents (with a Brief Section on Trademarks). This is a very useful chapter that describes the patenting process (philosophical and structural aspects), the storage of patents, and their retrieval.

Chapter 14. Environment, Safety, and Related Topics. This is another very useful chapter that describes issues and sources for understanding this complex topic.

Chapter 15. Locating and Using Physical Property and Related Data. The contents of this valuable chapter will endure the advances on the Internet until a rapid, inexpensive method for digitizing printed material appears.

Chapter 16. Chemical Marketing and Business Information Sources. This chapter provides an introduction to sources that deal with chemical industry.

Chapter 17. Process Information. This four-page chapter discusses sources for process optimization from a business viewpoint.

Chapter 18. Analytical Chemistry: A Brief Review of Some of the Literature Sources. This chapter contains an outline of the sources for various analytical data.

Appendices A–D. Herman Skolnik Award winners; The Austin M. Patterson–E. J. Crane Award winners; Tabulation of Selected Representative Online Databases That are of Interest to Chemists and Chemical Engineers; CAS Online Databases Available from Major Hosts (Vendors) Used in the United States.

In summary, this book is a useful reference source. This well-organized guide is filled with many lists and tables. Chemical information specialists and consultants should have a copy in their personal library. Chemical information is a growing business, e.g., ChemWeb.com and ACD Labs. Anyone considering a career move to this field will find this guide valuable. As an educator who teaches a chemical literature and information course, I find this book valuable to supplement my lectures and postings on the web.

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