

Book reviews

“Pharmacognosy, Phytochemistry, Medicinal Plants”, 2nd edition

By Jean Bruneton (translated by Caroline K. Hatton), Intercept Ltd., London, 1999, xiii + 1119 pages, ISBN 1-898298-63-7.

This book is divided into 4 parts; “Part 1” deals with compounds of primary metabolism, while “Parts 2, 3 and 4” deal with secondary metabolites, arranged according to biosynthetic origin. The four parts are preceded by an “Introduction to the 2nd edition” and a list of “Abbreviations” and followed by an “Appendix”, a “List of Illustrations” and an “Index”.

Part 1, “Compounds of Primary Metabolism” (224 pages), deals with 3 main topics, “Carbohydrates”, “Lipids” and “Amino Acids and Peptides, Proteins and Enzymes”; each of these topics is divided into more specialized minitopics, each being dealt with separately in a chapter-like format. Each minitopic is dealt with regarding chemistry, origin, properties, tests, uses and, when applicable, method of production and pharmacological or biological activities as well as related herbal drugs and products. Logically, although the general title of this part deals with primary compounds, certain secondary components are included under their respective topics. Thus gums and mucilages and herbs containing them are dealt with under “Heterogenous Polysaccharides”, saw palmetto is dealt with under “Unsaponifiable Matter”, *Echinacea* and related herbs under “Lipid-Related Compounds”, and cyanogenetic glycosides, glucosinolates, *Allium* sulfur compounds and betalins under “Amino Acid Derivatives”. The consideration of proteins is limited to two minitopics on “Protein Sweeteners” and “Lectins”, in addition to a minitopic on “Enzymes”.

Part 2, “Phenolics. Shikimates, Acetates” (235 pages), is also divided into minitopics in chapter-like formats, including “Generalities” dealing with biogenetic considerations, “Shikimates. Phenylpropane Derivatives-Containing Drugs”, “Phenols and Phenolic Compounds”, “Coumarins”, “Lignans, Neolignans, and Related Compounds”, “Shikimates. Drugs Containing Phenylpropane Chain Elongation Derivatives”, “Flavonoids”, “Isoflavonoids”, “Neoflavonoids”, “Anthocyanins”, “Tannins”, “Polyketides”,

“Quinones”, and “Orcinols and Phloroglucinols”. Each of these minichapters deals with the related herbs, thus balsams are dealt with under “Phenols and Phenolic Acids”, furocoumarins under “Coumarins”, *Sylibum* flavanolignans under “Lignans, Neolignans and Related Compounds”, ginger, curcum, kava, stilbinoids and xanthenes under “Shikimates. Drugs Containing Phenylpropane Chain Elongation Derivatives”, St. John’s Wort (hypericin), naphthoquinones and anthraquinones (though these may have different biosynthetic origin) under “Quinones”, and cannabis and hops under “Orcinols and Phloroglucinols”.

Part 3, “Terpenoids and Steroids” (321 pages), is divided into 14 minichapters: “Introduction: Biogenetic Generalities”, “Monoterpenes”, “Sesquiterpenes”, “Essential Oils” and “Oleoresins and Related Products” as further mono- and sesquiterpenes, “Pyrethrins”, “Sesquiterpenoid Lactones”, “Diterpenes”, “Triterpenes and Steroids”, with the latter itself divided into 5 minichapters: “Generalities”, “Saponins”, “Cardiac Glycosides: Generalities”, “Cardiac Glycosides”, and “Other Steroids. Other Triterpenes”, and finally “Carotenoids”.

Part 4, “Alkaloids” (304 pages), is divided into 32 minichapters, starting with “Generalities”, which deals with definition, properties, isolation, biosynthetic origin and pharmacological activity. The alkaloids are then dealt with according to biosynthetic origin; thus “Alkaloids Derived from Ornithine and Lysine” are dealt with in 6 minichapters: “Introduction”, “Tropane Alkaloids”, “Quinolizidine Alkaloids”, “Indolizidine Alkaloids”, “Piperidine Alkaloids”, and “Piperidine Amides: Piperaceae”. The author then deals with “Piperidine Alkaloids not from the Metabolism of Lysine”, and “Alkaloids Derived from Nicotinic Acid”. The author then discusses “Alkaloids Derived from Phenylalanine and Tyrosine” in 12 minichapters: “Generalities”, “Phenylethylamines”, “Isoquinoline Alkaloids. Simple Tetrahydroisoquinolines”, “Isoquinoline Alkaloids. Benzyltetrahydroisoquinolines”, the latter being classified into 6 minichapters: “Introduction” dealing with oxidative coupling, “Simple Benzylisoquinolines”, “Bisbenzyltetrahydroisoquinolines”, “Aporphinoids”, “Protoberberine Alkaloids” and “Morphinans”; the author then considers “Isoquinoline Alkaloids. Phenylethyl-

isoquinolines" dealing with colchicum, then "Isoquinoline Alkaloids. Alkaloids of the Amaryllidaceae", and "Isoquinoline Alkaloids. Monoterpenoid Isoquinolines" dealing with Ipecacuanha alkaloids. The author then deals with "Alkaloids Derived from Tryptophan" in 4 minichapters and a 5th regular size chapter; the first gives an introduction and classification, then "Tryptamines. β -carboline Alkaloids", "Calabar Bean Alkaloids", "Ergoline Alkaloids" and finally "Monoterpene Indole Alkaloids"; the latter (40 pages) deals with nux vomica, yohimbe, vinca and rauwolfia alkaloids as well as the quinoline alkaloids of *Cinchona* and *Camptotheca*. The author then discusses "Alkaloids Derived from Anthranilic Acid", "Alkaloids Derived from Terpene Metabolism. Terpenoid Alkaloids", the latter including terpenoidal and steroidal alkaloids, then "Alkaloids with Miscellaneous Structures", dealing with spermidine and peptide alkaloids, and finally "Purine Bases".

Within each class or minichapter of Parts 2, 3 and 4, the author discusses respective herbs and their constituents, biosynthetic origin, production or extraction, characteristics, tests, biological or pharmacological activity, toxicity, uses and semisynthetic analogs. Each minichapter is supported with a list of pertinent references, classified according to herb or subject.

The "Appendix. Glossary of Botanical Terms", is followed by a "List of Illustrations" and an "Index". The "List of Illustrations" is an alphabetical listing of excellent illustrations of 90 medicinal plants cited in the book. The "Index" is arranged alphabetically according to common and scientific plant names, families, active principles, classes of secondary compounds .. etc, all arranged in a single index for easy retrieval of the needed information. However, the "Index" lacks any biological, pharmacological or toxicological terms and disease states, which would certainly simplify the retrieval of information related to these subjects; such information is of utmost importance to the reader and specialists in medicinal plants, the main scope of the book.

This book is, beyond doubt, an extensive and updated treatise of natural products and their biological and therapeutic activities. Although it is an excellent book by all measures, it suffers from "over-classification". The topics are subdivided, often non-rationally into minitopics; such

overclassification does not necessarily serve the purpose of the book, since it distracts the reader from the unity and the relatedness of the subject matter. The classification of "Cardiac Glycosides" into 2 minichapters and "Benzyltetrahydroisoquinolines" into 6 minichapters is certainly not to be commended. On the other hand, *Erythrina* alkaloids were considered under "Bisbenzyltetrahydroisoquinolines", based on their curare-like action, though they are quite different both chemically and biosynthetically and peyote alkaloids were considered under "Simple Tetrahydroisoquinolines", although the primary active principle belongs to "Phenylethylamines". Likewise, quinoline alkaloids of *Cinchona* and *Camptotheca* are included under "Monoterpene Indole Alkaloids"; truly they are derived from tryptophan, but as such are not indole alkaloids. Such overclassification and misclassification, however, does not belittle the high level of the updated extensive information on various types of natural products; it is mentioned here merely to be taken into consideration by the author in subsequent editions of this excellent textbook.

"Pharmacognosy, Phytochemistry, Medicinal Plants, 2nd edition" does not only deal with the main secondary constituents of each class of natural products, which are the subject for an undergraduate course in natural products, but also deals with other constituents involved in toxicity as well as those in various stages of drug development. The book is thus the most extensive and updated book in "Pharmacognosy and Natural Products". It should be useful to undergraduate and graduate students and researchers in the field of natural products. It should be also of use to those involved in natural products' drug discovery and development and to those interested in herbal drug and poison information. It belongs on the shelves of public, university, industrial and private libraries, as a valuable reference on natural products.

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“A-Z Guide to Drug-Herb-Vitamin Interactions”

By Lininger, S.W., editor in chief, Gaby, A.R., Austin, S., Batz, F., Yarnell, E., Brown, D.I. and Constantine, G., Healthnotes, Inc., Prima Health, A Division of Prima Publishing, 1999, xix + 436, ISBN 0-7615-1599-2.

“A-Z Guide to Drug-Herb-Vitamin Interactions” is composed of one main chapter, followed by three appendixes, references and the index. It is written in an easy to follow language to be suitable to the interested consumer.

The main body of the book (228 pages) lists more than 200 commonly used drugs, arranged alphabetically by generic names, and gives the interactions of each with herbs, foods or dietary supplements. Each interaction is clearly explained and properly referenced with a number referring to the specific reference listed under the drug name in the “References” section at the end of the book. A brief summary table of interactions is given at the end of each generic name entry, summarizing interactions in 5 main categories: depletion or interference, adverse interaction, side effect reduction/prevention, supportive interaction and reduction of drug absorption/bioavailability.

The remainder of the book encompasses 3 appendixes. Appendix 1 (11 pages), “Combination drugs”, lists some 72 trade names of combination drugs, arranged alphabetically, and gives the composition of each, referring to the pages under the generic name listing, dealing with each component. Appendix 2 (91 pages), “Drug Interactions by Herb or Supplement”, encompasses two tables and lists alphabetically some 115 herbs in the table on “Drug-Herb Interactions”, and some 110 nutraceuticals in the table on “Drug-Supplement Interactions”; each table lists the drugs, by generic and trade names, that might interact, positively or negatively, with the herb or dietary supplement. Appendix 3, “Drugs by Pharmacist Classification”, lists classes of drugs, alphabetically arranged, and presents under each class the generic names of the drugs within the class dealt with in the book, referring to the page number for its main listing.

The “References” (82 pages) are given at the end of the book, appropriately listed under each generic drug name; the references for each drug are numbered according to the numbers given in the

text. The “Index” is arranged alphabetically, according to generic and trade names of drugs, common and binomial names of herbs, dietary supplements, drug classes ...etc., all in one index for easy retrieval of the needed information.

All in all, the book presents some 4500 documented interactions of drugs with foods, herbs or dietary supplements, pointing out to useful interactions that may be put to good use and harmful interactions, that should be avoided. The authors made it clear, however, that the book is not expected to include all drug-herb or drug-nutrient interactions and advise the consumer to consult further with his pharmacist or physician. The only improvements I may recommend, is to include the references for interactions of each generic drug, right following the drug listing and not in a separate section on “References” at the end of the book, and to substitute in place of the “Summary Table” at the end of each drug, with “Significant Interactions of the drug”.

A-Z Guide to Drug-Herb-Vitamin Interactions” gives an extensive, easy to follow, documented information on interactions of drugs with herbs, foods or dietary supplements. It is recommended for physicians, pharmacists, other medical and paramedical personnel and first of all for the informed general public.

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“Interactions Between Drugs & Natural Medicines”

By Chris D. Meletis and Thad Jacobs, Eclectic Medical Publications, Sandy, Oregon, 1999, vi + 363, ISBN 1-888483-10-5.

This book is divided into three parts, preceded by a short “Introduction” and “General Considerations”, and followed by an “Appendix” and the “Index”. The book is written in an easy to follow scientific language so as to be useful for health professionals and interested consumers.

The “Introduction” briefly introduces to the book and type of information included therein. The treatise of “General Considerations” discusses

dosage forms and effects on gastrointestinal absorption, briefly introducing to hydrocolloids, fibers, tannin-containing herbs and laxative herbs and the interaction they may have with certain drugs particularly regarding their intestinal absorption.

Part one, "Alphabetical Listing of Drugs, Herbs, Nutrients and Their Interactions" (170 pages), as its title indicates, provides a list of various drugs, herbs and nutrients, arranged alphabetically (some 195 agents). Nutrients include both vitamins, minerals and other nutraceuticals. Under each agent, the authors present a brief account of any interaction(s) between that agent with other drugs, herbs or nutrients and occasionally present a proper course of action to minimize or prevent this interaction. This section points out antagonistic as well as synergistic interactions, often with a reference citation cited, following the discussion of a given interaction. However, this section shows several repetitions of synonyms, such as "tocopherol and vitamin E", "ascorbic acid and vitamin C", "cholecalciferol & vitamin D", "pyridoxine & vitamin B₆", "coenzyme Q10 and ubiquinone", "phytonadione & vitamin K", "pantothenic acid and vitamin B₅", "riboflavin & vitamin B₂" and "thiamine and vitamin B₁". Such repetitions should have been avoided by giving the information under the most common name, with a proper referral under the other.

Part two, "Guide to Interactions Between Drugs and Natural Medicines by Categories", (108 pages) arranges drugs alphabetically according to therapeutic categories, and presents under each category any interacting drugs, herbs or nutrients.

Part three, "Interactions Between Foods, Drugs and Nutrients, by Food Item and Food Categories"

(125 pages), as the title indicates, deals with foods and food categories, arranged alphabetically, and presents potential interactions of each food item with drugs and nutraceuticals. There are also some repetitions in this section under certain food items regarding interacting drugs. An example is given by grapefruit juice interaction with "antihypertensives & calcium channel blockers", "antihistamines & H₁-blockers" and "benzodiazepines & midazolam", with the same referenced information about the interactions under each pair, probably as an oversimplification for use by the general public; this is not justified.

The "Appendix" (11 pages) presents the "Common and Latin Binomial Names of Herbal Medicines" (some 362 herbs), while the "Index" (23 pages) is arranged alphabetically according to names of drugs, herbs and nutrients, Latin binomial names, therapeutic class, food or food category, trade names...etc, for easy retrieval of the needed information.

"Interactions Between Drugs & Natural Medicines" provides concise easy-retrievable information on interactions between drugs, herbs, nutrients and foods. The data are presented in a tri-fold manner: first alphabetical, second by therapeutic category and third by food item. It is recommended for physicians, pharmacists and other paramedical personnel as well as for the informed interested consumer.

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