

## BOOK REVIEW

*Botanical Dermatology*, JOHN MITCHELL, Division of Dermatology, The University of British Columbia, Vancouver, Canada; and ARTHUR ROOK, Department of Dermatology, Addenbrooke's Hospital, Cambridge, England. Grienglass Ltd., 691 W. 28th Ave., Vancouver, British Columbia, Canada V5H 2H4. 1979. xiii+787 pp. 15 x 22.5 cm. \$39.50.

According to the authors, this book is expected to be of value to those "... concerned with the clinical care of patients with dermatitis caused by plants or plant products ... [and] to introduce such physicians to the phytochemical literature ... ." In the book, about 675 pages are devoted to a listing of irritant and allergic plants according to taxonomic identity. In that listing under each plant can be found information on such things as plant distribution and use, chemistry of the toxic compounds, dermatites produced, and a reference list. But physicians concerned with patient care may find use of the book a formidable task unless they know scientific names of suspect plants. There is no appendix grouping plants by clinical signs produced to aid the diagnostician. Further, if one used the very limited index, one would find under phytophotodermatitis 96 separate page entries without further identification, under systemic effects 99 page entries, under urticaria 71, under eye effects 186, or under respiratory effects 239. Specific clinical signs are not indexed. The other 80 or so pages contain much interesting material, including a general section of some diagnostic help titled "Diagnosis of Contact Dermatitis from Plants," but illustrate an additional shortcoming of this book. Organization is difficult to follow because entries in the Table of Contents of equal weight are not treated uniformly in the text. Some are in caps and indented, some are without caps but indented, and some without caps are not indented. In the text, headings are not adequately set off, nor are they identified in the Table of Contents as to importance. The 675-page listing of irritant and allergic plants has but one entry in the Table of Contents, whereas the other 80 pages have 44. A second shortcoming of the book lies in references used. A great many are secondary. Almost all predate 1974. A few recent references can be found under a limited number of plants and in 20 pages at the end labeled Supplement I.

But even with organizational, editorial, and reference currency faults, the book is fascinating. It could serve as a first-source encyclopedic reference on phytodermatology to lead one to other source material once a plant name is known or suspected. Particularly good sections include those on the Anacardiaceae, the Compositae, and the Primulaceae. Careful editorial work and a more complete set of recent references would have helped this book, but the result still has much to recommend it, mainly because of the size of the undertaking and extent of material covered.

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*Health Plants of the World*, FRANCESCO BIANCHINI AND FRANCESCO CORBETTA, Museo Civico de Storia Naturale, Verona, and Department of Botany, University of Bologna. Newsweek Books, Inc., 444 Madison Ave., New York, N.Y. 10022. 1977. 242 pp. 11 x 30 cm. \$19.95.

Of a flurry of books on medicinal and health plants that have been introduced during the past few years, *Health Plants of the World* surely must be considered one of the worst. In the introduction, one finds the statement "Most of the scientific information is found in the Appendix. The text has been written not for the scholar, nor even for those who wish to be instructed, but for people who love plants: who find delight in looking at beautiful illustrations of fruits and flowers, and reading the old names ... ." Should this have been the intent of the authors, the antiquated, misleading and erroneous "scientific" information provided in the main body of the book, as well as the Appendix, should have been omitted.

About 225 of the most common medicinal herbs, including ergot and a few lichens, are presented to the reader based on a pharmacological classification, e.g. Digestive System, Cardiovascular System, Respiratory System, etc. Normally, three plants are briefly discussed on each page, with strikingly beautiful and realistic colored illustrations of each appearing on the opposite page. The information provided for each plant consists primarily of ancient folkloric claims, "active principles" derived from older literature that has no meaning, and at times a brief description of the plant and its habitat. An Appendix contains little more information than was presented in the text, and in most cases is completely repetitious. A Botanical Glossary, Pharmacological Glossary, Bibliography and Index complete the book.

Statements to the effect that the "rhizome (of Male Fern) should be taken as an ether extract ... ." gives some indication of the problems found in this compilation. A claim that malic and tannic acids are the chief active constituents of *Aristolochia* calls attention also to the lack of understanding by the writers of current events in the field of natural products. An attempt is made to caution the reader that *Catharanthus roseus* proliferates in the United States as a weed, and that in the U.S.A. the dried leaves are smoked like "pot". Further they state "The debilitating effects of getting 'high' on *Catharanthus* are very terrible: severe muscle

deterioration which results in ataxia; loss of hair and a sensation of burning all over the body. There is also a reduction in the white blood cell count which leaves the individual vulnerable to a variety of germs." All of this stems from a corruption of a fact printed in a national weekly news magazine published several years ago in the U.S.A. The article claimed that children in Florida were smoking blue flowered "periwinkle" (undoubtedly *Vinca minor*, rather than *Catharanthus roseus*), claiming that hallucinations resulted. A scientist at Eli Lilly Company was quoted as stating that the effects described might be similar to the side effects noted in humans receiving vincalcaleukoblastine and/or leurocristine for cancer therapy, believing that the plant being smoked was *C. roseus*.

Attempting to add credence to the use of rue (*Ruta graveolens*), it is stated that "The United States Department of Agriculture found that rutin was very effective in treating high blood pressure, and it also helps to harden the bones and the teeth!" Information taken out of context, and placed before the public in this way, should not be condoned.

Perhaps an even greater problem is in failing to alert the reader to potentially adverse effects of some of the herbs, based on a wealth of current scientific information that is readily available. Thus, one is led to believe that Pokeweed is innocuous; the fact that *Tussilago farfara* and *Symphytum officinale* have been shown to induce cancer in laboratory animals in feeding studies has not been mentioned.

One could go on and on to point out similar errors and misleading statements. Had the authors restricted this book to a collection of the beautiful illustrations of health plants that it contains, it could be recommended for the individual interested in this type of material. Unfortunately, many segments of the public are hungry for any type of information on health plants; reading this book can only lead to potential problems, since they have no way to verify the information presented as fact.

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*Laboratory Handbook of Chromatographic and Allied Methods.* Edited by O. MIKES, Czechoslovak Academy of Sciences, Prague. Halsted Press, John Wiley and Sons, Inc., 605 Third Avenue, New York, N.Y. 10016. 1979. 764 pp. 16.5 x 24 cm. \$89.50.

This volume is a joint effort of fourteen Czechoslovak scientists, most of whom are associated with the Institute of Organic Chemistry and Biochemistry in Prague of the Academy of Sciences. It is an expanded and thoroughly revised edition of Mikeš' "Laboratory Handbook of Chromatographic Methods" published in 1966. The text, a translation, reads smoothly, the printing is clear on nonglossy paper, and the illustrations were chosen judiciously. Although not designed as a manual, the emphasis is directed towards the practical and is filled liberally with useful hints and insights. Since there is no preface, the reader can only surmise as to the exact goals the authors had set and whether they were attained. The reviewer assumed it was to provide an introduction and a survey at an intermediate level of chromatography and related separation methods, directed toward students and researchers alike.

This book is divided into thirteen chapters, the last, a review of the literature, is more correctly a bibliography. Chapter 1 gives a historical survey of separation methods followed by a brief discussion about the nature of individual techniques, the types of development procedures, and the common terminology. Chapter 2 covers briefly, yet adequately, the theory of elution chromatography. Additional theory is discussed in the chapters devoted to individual separation methods. Paper chromatography is discussed in chapter 3 with careful treatment of different papers (including brands), chambers, development techniques, solvents (along with a systematic way to select them),  $R_f$  and  $R_m$  values, application of samples, detection, elution of spots, etc. Individual classes of compounds, as such, or as more useful derivatives, are treated separately. The treatment includes discussions of specific solvent systems (including the so-called Zaffaroni type), characteristic development features, even hydrolysis procedures as for peptides in the amino acid section, to make this chapter a wealth of useful information to the experimentalist. A section is devoted to separation of inorganic compounds as well.

Chapter 4 on adsorption chromatography covers the properties of different adsorbents, such as silica gel, alumina, magnesium silicate, florasil, charcoal, polyamide, and polystyrene, including those for HPLC. Recipes are given for preparation of quality grade adsorbents and for regeneration of spent adsorbents. With the recent escalating cost of adsorbents placing a strain on the research budget, such procedures are a welcome inclusion. The tables of solvents, specific examples of separations, and a description of apparatus for performing column chromatography under an inert atmosphere all add to the value of this chapter. Ion exchange is covered in the longest chapter of all, chapter 5. All varieties of ion exchange materials, from resins to celluloses, agaroses, and polydextrans are given plus information on their preparation, sources, properties, handling, and usages. Specific separations are illustrated for a variety of organic and inorganic substances.

Chapters 6 and 7 provide an adequate survey of gel permeation chromatography and affinity chromatography, respectively. A study of these sections would give the investigator enough background to apply the separations to his needs with lead references to specific applications. Grouped under one chapter, Chapter 8, are the mechanical aids and equipment that make chromatography convenient and reliable. Mentioned are pumps, gradient elution adapters, valves, and apparatuses for detecting, recording, and collecting of column fractions. A list of suppliers in various parts of the world is found at the end, with USA sources dominant. Chapter 9 on thin layer chromatography gives the equipment, solid support material, solvents, and their selection by a systematic procedure for successful operation. Also, a discussion follows on dry column chromatography, the transferring of separation conditions from thin layer to column, and illustrates by example separations of classes of compounds, such as olefins, penicillins, tocopherols, steroids, alkaloids, etc. Thirty-one reagents most commonly employed for zone detection are described. Chapter 10 on gas chromatography includes the expected information on theory, apparatus, detectors, stationary phases, preparation of columns, and different modes of operation, as well as the use of the technique for the measurement of sorption isotherms, heat of sorption, and adsorbent surface area. Thirty-seven specific separations for which column materials and operational conditions are given can be found at the end.

The countercurrent distribution chapter, chapter 11, is one of the shortest (in keeping, no doubt, with its decline in use), yet does a commendable job in reviewing the most common features. Drop countercurrent chromatography, unfortunately, is not included. This technique, although reported nearly nine years ago [T. Tanimura *et al.*, *Science* **169**, 54 (1971)] for the separation of dinitrophenyl amino acids, has more recently been found to have wider applicability, especially for the resolution of saponins, monosaccharides, alkaloids, and other polar organic substances. The electromigration section, chapter 12, contains a careful survey of the standard variety of techniques based on movement of ions towards an electrode. These include zone electrophoresis, isoelectric focusing, isotachopheresis, and methods derived from them, such as disc electrophoresis, density-gradient polyacrylamide gel electrophoresis, and others. Practical examples are presented, along with schematics for stabilized current power sources and safety procedures for handling of electrophoretic equipment. At the end of the book, a list of suppliers of materials and equipment for chromatography, etc., in the United Kingdom is provided. It would have been helpful to add to the American edition suppliers in North America.

In conclusion, Mikeš' *Chromatographic and Allied Methods* is a good book. It will find a place in research libraries and will be a ready source of valuable information for the initiated, as well as a practical text for the serious student. Surely, one can find more extensive coverage of topics in compendia devoted solely to a single separation method or maybe better single chapters in other collections. For example, the reader desiring coverage of liquid-liquid column partition chromatography would have to look elsewhere. Finally, the book to which this one must be compared is E. Heftmann's 3rd edition of *Chromatography*. Although not identical, both would provide comparable information, with Heftmann's somewhat more heavy on theory. The choice would come down to a personal preference or maybe economical reality. (Heftmann is available at little more than one-half the price.) A paperback student edition made available to legitimate students would make it possible for class adoption and greater distribution to those most likely to benefit.

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