

Book Reviews

Phytomedicines of Europe. Chemistry and Biological Activity. ACS Symposium Series 691. Edited by Larry D. Lawson and Rudolf Bauer. American Chemical Society, Washington, DC. 1998. x + 324 pp. 15.5 × 23.5 cm. ISBN 0-8412-3559-7. \$115.00.

This volume in the ACS Symposium Series will be of widespread interest to anyone with an interest in current research in herbals and natural products. While this text does not offer the "cookbook" sense of the *Facts and Comparisons Lawrence Review* or the *German Commission E Monograph*, this volume contains detailed discussions of analytical methods, mechanisms of action, and structure–activity relationships. In other words, *Phytomedicines of Europe* is a true medicinal chemistry text that is essential for understanding and accessing the literature of much of what is published elsewhere.

Phytomedicines of Europe is written in three sections, Perspectives, Specific Effects, and Specific Plants, each with several chapters covering a variety of topics. Chapter 1 is, appropriately, written by Dr. Varro Tyler and provides an overview of the influences that European phytomedical practices have had on those on the American continent. A comparison of the regulatory differences in Europe versus in the United States shows why herbal research is less practical in the United States and leads to a discussion of the 10 most popular phytomedicinals on the American continent. In Chapter 2, Anton and Kuballa have provided a concise discussion of the legal regulations in Europe, especially in Germany and France. The chapter follows with a discussion of how the current and evolving laws in Europe, WHO policies, and research funding will affect the future of the phytomedicinal market on the European continent. An exceptional section on other European countries gives a view of the status of phytomedicinals in Finland, Italy, and other countries that are not often addressed. Chapter 3 is a clear discussion of the new *German Commission E Monograph* system by Mark Blumenthal of the American Botanical Council. This section alone will be a great help to anyone who has used the monograph. Chapter 4 ends the Perspectives section with a current regulatory perspective on botanicals in the United States. Specific discussions of the regulation of herbs as foodstuffs in the United States describe how our current situation came about.

The second section, Specific Effects, consists of five chapters that relate to effects of phytomedicinals on biological systems. Chapter 5 contains a discussion of the search for plants with antiasthmatic and antihypertensive activity. Careful screenings have revealed compounds generated from enzymatic actions in onion extracts that possess anti-IgE activity and act as inhibitors of cyclooxygenase and 5-lipoxygenase. These agents were shown to reduce allergen-induced bronchoconstriction by 30–60%. Extracts of *Picrorhiza* and *Galphimia* possessed similar effects. Prostanoid synthetase inhibitors, and peptides have been shown to act as ACE inhibitors. Calcium channel blockers were also discovered from plants and are reported in this chapter. Chapter 6

provides an overview of plant constituents that are useful in the treatment of benign prostatic hypertrophy (BPH). The etiology of the disease is discussed, and specific aspects of pharmacological treatment of BPH with phytomedicinals are given. Δ^7 -Sterols and their glycosides, selenium, linoleic acids, tocopherols, and carotenoids are all discussed as constituents of plants that act on BPH. Chapter 7 gives an enlightening view of the emerging area of the application of plant polysaccharides in cancer. Branched $\beta(1\rightarrow3)$ glucans are found to be excellent immunostimulants, inducing TNF α , interleukins, macrophage influx, and complement. The SAR and molecular modeling of a number of congeners is discussed, and the limited clinical experience is emphasized. Chapter 8 shows us the recent findings in plant products as anti-HIV and retroviral integrase experiments. The scientific methodology behind the screening is clear, and a series of lignans, flavonoids, and cucurminoids with two aryl rings and 1,2-dihydroxy substitution patterns is promising. The final chapter in the Specific Effects section discusses anthrones and anthraquinones, their effects as ATPase inhibitors, cation channels, and their laxative actions. Twenty-five different plant drugs were tested to determine the primary targets for ion transport activity.

The third section, Specific Plants, contains 11 chapters dealing with the biological activities and active principles of specific herbs, all used in the United States: arnica, turmeric, echinacea, feverfew, garlic, ginkgo biloba, ginseng, hawthorn, milk thistle, mistletoe, Saint John's wort, and vitex, and covered in great detail. The scientific content of these chapters is exquisite and provides much more insight than other texts. For example, the sections on St. John's wort, feverfew, and echinacea are the best that this reviewer has encountered. Virtually all of these chapters contain clinical data, analytical studies, structural correlations, and clear discussions of each. To my knowledge no other text has this detail.

The usage and interest of phytomedicinals in the United States has taken on a more important perspective in the past few years. Yet, a concise, well-referenced publication on the medicinal chemistry of the discipline has been lacking. This text is concisely written, is clear, is full of data that would normally be hard to find, and takes a broad view of a major topic. After reading this book one has a fairly complete understanding of the state of the art of phytomedicines in Europe and, by extension, its future in the United States.

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