Leguminosae, Liliaceae, Rubiaceae, and Solanaceae) and localities (China, Southwest China, Moldavia, and Turkey) are also presented. Some noteworthy chapters include "Commercial utilization of plant-derived saponins: an overview of medicinal, pharmaceutical, and industrial applications" (M. F. Balandrin), "Anti-tumor-promoting activities of triterpenoid glycosides; cancer chemoprevention by saponins" (T. Konoshima), "Search for molluscicidal and antifungal saponins from tropical plants" (K. Hostettmann *et al.*), "Saponins with antifilarial activity from *Acacia auriculiformis* (S. B. Mahato), "Search for an endogenous mammalian cardiotonic factor" (K. Nakanishi *et al.*), "Bioactive triterpenoid and steroid saponins from medicinal plants in Southwest China" (C.-R. Yang and X.-C. Li), "Bioactive saponins from Solanaceous and Leguminous plants" (T. Nohara, S. Yahara, and J. Kinjo), "Steroidal glycoalkaloids: nature and consequences of bioactivity" (J. G. Roddick), "Chemistry and biological activity of steroid saponins from Moldavian plants" (P. K. Kintia), "Steroid and triterpenoid oligoglycosides of marine origin" (L. Minale *et al.*), "New cardioactive steroid saponins and other glycosides from Mexican *Tribulus cistoides*" (H. Achenbach, H. Hubner, and M. Reiter), "Triterpene saponins from plants of the flora of Turkey" (L. Calis and O. Sticher), and "19 New Steroidal saponins from *Allium* plants: isolation, structural elucidation and effect on blood coagulability" (J.-P. Peng and X.-S. Yao).

The second volume entitled "Saponins used in food and agriculture" has four major sections: (1) cosmetics, sweeteners, herbs, and nonalcoholic beverages (five chapters); (2) regulatory effects on crops, viruses, microorganisms, weeds, and insects (19 chapters); (3) chemical identification using NMR and MS (six chapters); and (4) nutritional aspects (5 chapters). Section 1 deals with saponins from Mohave Yucca, *Sapindus mukurossi*, fenugreek and *Ilex paraguariensis*, and sweet-tasting saponins. Section 2 covers saponins with phytotoxic, insecticidal, and oxygen-radical-scavenging activities as well as those with regulatory effects in the pathogenesis of root rots in cereal crops, growth and activity in rhizosphere bacteria, and growth enhancer effects on certain crops. It also discusses saponins of alfalfa (*Medicago sativa*), *Thalictrum* species, *Meliotus* species, *Majorana hortensis*, *Hernaria fantanesii*, and *Nicotiana tabacum* and contains chapters on new preparation of triterpenoid 3-sulfates by the use of SO_3−DMSO complex, novel microbial transformations of steroids, and thermal behavior of steroidal glycosides. The section on chemical identification using NMR and MS deals with application of novel spectroscopic techniques (selective INEPT, tandem MS, liquid secondary ion MS, electrospray ionization MS) utilized in elucidation of structures of saponins as well as steroids and triterpenes. The section of nutritional aspects discusses analysis, heat stability, and physiological effects of saponins from oats, biological effects of feed and forage saponins and their impacts on animal production, effects of guillaja saponins on *in vitro* rumen fermentation, steroidal glycoalkaloids in Andean potatoes, and role of steroidal saponins in hepatogenous photosensitization diseases of sheep. Noteworthy chapters in this volume include "Novel sweet-tasting saponins of the cycloartane, oleanane, secodammarane, and steroidal types" (E. J. Kennelly, R. Suttisri, and A. D. Kinghorn), "Intensely sweet saponin asladin: synthetic and structural study" (M. Nishizawa and H. Yamada), "Steroidal saponins from Fenugreek and some of their biological properties" (Y. Saivaire *et al.*), "Studies of the phytotoxicity of saponins on weed and crop plants" (R. E. Hoagland, R. M. Zablotowicz, and K. N. Reddy), "The role of cardenolides in a crucifer-insect relationship" (J. A. A. Renwick), "Oxygen radical scavenging activity of DDMP-conjugated saponins and the physiological role in leguminous plants" (K. Okubo and Y. Toshiki), "Novel microbial transformations of steroids" (K. M. Madyastha), "Proton and carbon-13 NMR studies of steroids and triterpenes" (G. A. Cordell, L.-Z. Lin, and R. R. Gil), "A systematic NMR approach for the determination of molecular structure of steroidal saponins" (P. K. Agrawal), "Application of tandem mass spectral approaches to structural determination of saponins" (C. E. Costello), and "Steroidal glycoalkaloids in Andean potatoes" (I. Kubo and K. Fukuhara).

The first volume carries at the end an appendix with information on a saponin network for mass spectrometry and nuclear magnetic resonance, whereas the second value has, in addition, a second appendix giving information on a plant saponin disease network. Also included in both volumes are lists of participants (with their addresses), a latin name index, and a subject index. Although these two volumes are expensive for the individual purchaser, they are invaluable additions to a library of anyone interested in saponins and, considering the diverse nature of the topics included, may well serve as primers for those beginning research in this area. These two volumes are certainly valuable acquisitions for departmental and university libraries.

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Phytochemical Diversity: A Source of New Industrial Products. By Stephen Wrigley (Xenova Limited), Martin Hayes (Glaxo Wellcome Research and Development), Robert Thomas (University of Sussex), and Ewan Chrystal (Zeneca Agrochemicals). The Royal Society of Chemistry, Cambridge, England. 1997. xi + 254 pp. 15.5 x 23 cm. $135.00. ISBN 0-854040-717-4.

This book is a symposium proceedings sponsored by The Royal Society of Chemistry and held in Brighton, U.K., on April 15−17, 1996. The title "Phytochemical Diversity: a Source of New Industrial Products" foreshadows the diversity of contents in these proceedings, which varies from strategies and examples of bioassay-directed natural product discovery in higher plants to computer searching tools, plant biosynthetic pathways, biotransformations, and the outlook for intellectual property rights. While the breadth of subjects covered is laudable, no single topic is addressed comprehensively. The diversity of subject matter makes reading

the book cover-to-cover rather disjointed, but most of the individual chapters are well-written, interesting, and worthy of careful review.

Eight chapters present examples of bioassay-directed isolation of novel natural products from plants. The range of bioassays employed include specific target site assays, microbial growth assays, and whole insect tests. These chapters vary considerably in depth of information provided on isolation methods and in level of documentation on structure assignments. While a number of chapters touch on elements of discovery strategy, papers by researchers at Xenova, Shaman Pharmaceuticals, and Phytera document their experiences with plant secondary metabolite expression and testing from a high-altitude, strategic perspective. These chapters, along with the overview of the NCI experience in screening natural products provided by Cragg et al., help define the relative merits of contrasting approaches to drug discovery from plants.

Transformations involving semisynthetic modifications and biotransformations of plant- and microbial-derived natural products are described in three chapters. The examples presented illustrate the relative applicability of each method to selected specific chemical modifications. Single chapters are presented on the biosynthesis of tetrapyrroles and on computer database design for dereplication. The remaining chapters address various commercial considerations for plant-derived natural products and their genes for production. Collectively, these proceedings cover a range of topics that will make this a useful reference to principal researchers in the field. The lack of comprehensive treatment of any single topic limits its cover-to-cover readability.

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International Collation of Traditional and Folk Medicine: Northeast Asia. Part 1. By Takeatsu Kimura. World Scientific Publishing Co., Inc., River Edge, NJ. 1996. 221 pp. 16.5 × 24.5 cm. $48.00. ISBN 981022589X.

This book is a comprehensive and timely contribution to the scientific understanding of traditional medicine and plant use in China, Hong Kong, Japan, and Korea. The book was specifically designed to assist phytochemists in identifying plant species that may be worth investigating. The information on each plant includes botanical information, local names of the "drug" or formulation, how it is administered or used, the medical application in each country, as well as some information on contraindications and side effects. There are also some literature citations on the chemistry and pharmacology of the species. The book includes 200 plants and is very well organized and presented. The index includes an alphabetical list of the plant genera discussed. There is also a medical indication index that is very useful. Lastly, there is a Chinese character index, which makes the book useful to non-English speaking scientists. In general, this is a compilation that is extremely useful for the growing international interest in traditional, herbal, and phytomedicine. The authors are highly qualified with diverse backgrounds including pharmacologists, physicians, and specialists in medicinal plants of China. This book will be extremely useful to scientists and individuals who are not familiar or facile with the literature on medicinal plants of northeast Asia.

There are a few inconsistencies in the way information is presented. Most plants list the specific plant part and then give all the information associated with that plant part. The compounds listed under the area of chemistry do not indicate the plant part from which the compounds were isolated. It would have been useful to have included a distinction of what compounds had come from which plant parts. In the pharmacology section the plant part is mentioned. There are also some unusual aspects of the dates and breadth of literature citations. As an example, *Ginkgo biloba* is a well-studied plant. There are, however, only 25 literature citations associated with this plant and the most recent one of those citations is 1993. The majority of them are late 1980s and early 1990s. This may have to do with the editorial production process, but there has been a tremendous amount of literature generated on this species in the last several decades. A reader would not necessarily encounter or be aware of the extensive amount of research that has been associated with this species.

The most frequently listed contraindication is pregnancy. There is, however, no information, citation, or way to ascertain for what reason this particular plant would have contraindication for pregnancy. One can conjecture on some of the pharmacology sections or even some of the potential compounds present, but it is conjecture. Considering the focus of the book on traditional and folk medicine, it would have been useful to add some qualification of these contraindications.

The most fascinating and complex section focuses on each plant and its medicinal uses. The uses listed are given in western medical terminology and western medical therapeutic applications. In this area, we find the most challenging aspect of cross-cultural medicinal plant studies. There is a tremendous diversity of cultural interpretations of disease and illness. Many researchers are aware of the complexity and sophistication of the Chinese medical system. The reader wonders how much of the true complex medical application of a plant has been truncated or forced into a Western medical concept to enable the book to be of use. This of course goes to the heart of the matter of indigenous or traditional medical systems. I would urge readers involved in this type of research to look at the primary literature wherever possible and involve a Western-trained physician to look at the descriptions of uses.

The other key issue that this publication raises is the use of the term "folk medicine". This reviewer would strongly urge subsequent publications to use the term traditional medicine and to reduce the application of the term "folk". One of the reasons is that this term may