

Rather than provide specific literature citations within the text, some general references categorized as "Further Reading" for each chapter are listed at the end of the book. This makes it difficult for someone unfamiliar with this subject to quickly find details about a specific biotransformation, or to identify the most appropriate references to further explore important concepts. It is also worth noting that the latest reference in the "Further Reading" was published in 1994, with most references prior to 1992; thus, the utility of the reference list for current research activities may be limited. Also, although the text is generally easy to read, some important points are lost within long narrative sections, and the author moves very quickly between topics. Better use of subheadings within the chapters would have significantly diminished this problem.

Overall, this book will provide chemists a greater understanding and appreciation of biological systems as alternatives and adjuncts to chemical methods, and good specific examples directly relevant to chemical syntheses are provided for illustration. In this context, the book is likely to be useful for teaching purposes, but less useful as a reference text. I recommend the purchase of this book by those who are unfamiliar with this subject and wish to learn about the scope of possibilities in using biological systems to effect chemical modifications. The price of the book (\$19.95) is reasonable.

Alice M. Clark

National Center for the Development of Natural Products
and Department of Pharmacognosy
School of Pharmacy
The University of Mississippi
University, Mississippi 38677

NP980244L

10.1021/980244I

Virtual Activity, Real Pharmacology. Different Approaches to the Search for Bioactive Natural Compounds. Edited by Luisella Verotta (Università Degli Studi Di Milano). Research Signpost, Tivandrum, India. 1997. xi + 237 pp. 18 × 23.5 cm. \$40.00. ISBN 81-86481-17-6.

This edited volume contains a total of 15 contributions, all of which are focused on natural products drug discovery to a greater or lesser extent. A broad range of different terrestrial and marine organisms is covered in the book, and a central theme is the wide structural variation of secondary metabolites which can be correlated with important biological activities. One has to hunt around a little for the meaning of the primary title of this book, since this is not explained in the Preface or other introductory material and is mentioned only on p 223 in a chapter on *Combretum* species by the volume's Editor (L. Verotta) and C. B. Rogers. Thus, it is pointed out therein that very rarely does the "virtual activity" represented by ethnobotanical observations on folk medicinal remedies lead to reproducible laboratory biological data ("real pharmacology").

The individual chapters of *Virtual Activity, Real Pharmacology* offer different perspectives on the search for novel bioactive natural products, and some are focused on constituents of a single species or genus, including contributions on *Aconitum napellus* (M. L. Colombo), *Ferula communis* (G. Appendino), *Thapsia* (P. Avato), as well as the above-mentioned chapter on *Combretum*. Other chapters deal with compounds from restricted groups of organ-

isms, inclusive of lichens (A. G. González *et al.*) and Ecuadorian plants (G. Vidari *et al.*), while others are concerned with specific compound groups, namely, cyclopeptide alkaloids (L. Barboni and E. Torregiani), taxane derivatives (E. Bombardelli and A. Riva), and protoilludane sesquiterpenoids (G. Nasini and A. Vajna de Pava). The contributions by G. M. König and A. D. Wright (antimalarials from the marine environment) and by E. Bombardelli *et al.* (medicinal plant constituents for treating alcoholism) feature specific biological activities, while those by B. Botta *et al.* (plant cell culture), O. R. Gottlieb and M. R. de M. B. Borin (morphology-metabolism-geography based evolutionary trends), J.-L. Wolfender *et al.* (LC/MS), and R. Aquino *et al.* (techniques of activity-guided isolation and structure elucidation) are mainly methodological in coverage. Most of the chapters are clearly written, adequately illustrated, and well referenced.

Despite the obviously good intentions of the Editor, the diligence on the part of the contributors, and the reasonable price of this volume, this book cannot be recommended for purchase by members of the scientific community or the institutions to which they belong. Unfortunately, the production of this volume by the publishers does not come anywhere close to internationally accepted standards. There are literally thousands of unacceptable typographical and other errors. This reviewer is left wondering whether the contributors were ever allowed to proofread the galleys of their chapters. There is no index whatsoever, no consistency of font style or size, and many other unnecessary problems with the typesetting such as paragraph indentations. In a volume such as this, when the native language of many of the contributors is not English, it is imperative that there be a copyediting stage to smooth out minor grammatical problems. Simply stated, the overall appearance of the book simply does not do justice to the generally very good scientific input. It is to be hoped that any future volumes by this same publisher on natural products topics will not suffer from the same production deficiencies as are evident in *Virtual Activity, Real Pharmacology*.

A. Douglas Kinghorn

College of Pharmacy (M/C 781), University of Illinois at
Chicago
833 South Wood Street
Chicago, Illinois 60612-7231

NP9802466

10.1021/9802466

The Pharmacology of Chinese Herbs, Second Edition.

By K. C. Huang (University of Louisville). CRC Press, Inc., Boca Raton, FL. 1998. xxi + 512 pp. 17.5 × 25 cm. \$129.00. ISBN 0-8493-1665-0

The second edition of this book testifies to the rapid global flourishing of herbal products, as both "natural food products" and alternative medical treatments. This burgeoning interest has sparked both concern and attention from medical and scientific researchers. The efficacy of traditional herbal has been proven by its use in China for both past centuries and at the current time. However, the recent focus of research has been aimed at applying modern technology to prove the validity and value found in this unique approach and to develop safe, effective herbal drugs.

The book is arranged as in the previous edition. Section I gives an introduction to Chinese medical terminology, as

well as scope and structure, which allow the non-Chinese reader to grasp the underlying and general principles of Chinese medicine philosophy. Section II then gives a brief history of Chinese medicine from pre-22th century B.C. to the present. This section highlights the extensive scientific Chinese literature related to important herbal medicines. Herbal medicines are then categorized into eight broad systems (cardiovascular, nervous, alimentary, respiratory, genitourinary, hematopoietic, and endocrine systems and chemotherapy) and subclassified by usage. The chemical constituents, pharmacological action, toxicity, and therapeutic uses of each herbal medicine are given.

As identified as a goal in this edition, new research data have been added from both Chinese and international sources through the year 1997. Several important herbs have been added, in particular, herbs from Tibet, Xinjiang, and Manchuria.

As pointed out in the review for the first edition, the structural drawings still lack both a professional, unified appearance and, often, accurate stereochemistry. The quality of the book would be enhanced by a concerted effort

to redraw all chemical structures in a unified manner. Also, in many instances, errors in Chinese characters or pronunciation are found; an example is the newly added, important herb Huang Se (Qi), p 386. Others include Jiao Chiu (Gu) Lan, p 49; Yang Guo (Jiao) Nau (Ao), p 56; San Long (Lang) Zhi (Dang), p 131; Rou Chon Wun (Rong), p 265; Zhi (Shi) Wei, p 308; Ziao (Xiao) Yeh (Bi) Gen, p 388; Qian Ji (Li) Guang, p 391; Yi Gi (Zhi) Jin (Jian), p 426; and Ban Sao (Mao), p 476.

This volume remains an excellent reference or guideline for understanding of how Chinese herbs work and also allows the reader to conceive and interpret ancient Chinese herbal medicine in comparison with Western medicines.

Kuo-Hsiung Lee

*School of Pharmacy
University of North Carolina
Chapel Hill, North Carolina 27599*

NP980247Y

10.1021/980247y