

Book Reviews

Natural Product Chemistry at a Glance. By Stephen P. Stanforth (Northumbria University). Blackwell Publishing, Malden, MA. 2006. vi + 141 pp. 11.6 × 8.5 cm. \$35.99. ISBN 1-4051-4562-5.

The choice of the title for this volume, *Natural Product Chemistry at a Glance*, may be somewhat misleading, since the book does not include any significant coverage of either the synthesis or chemical modification of natural products. Instead, it is an overview of natural product biosynthesis. Attention is given to the basic fundamentals of biosynthetic chemical transformations.

The book begins with a very brief introduction that discusses the differences between primary and secondary metabolites. This is followed by two short paragraphs on the properties and purpose of secondary metabolites. These two paragraphs simply mention insect pheromones, the concept of chemical ecology, and that secondary metabolites have been sometimes found to be responsible for the bioactivities attributed to herbal medicines. The text is then organized into basic biogenetic pathways in the following order: acetyl coenzyme A, fatty acids, polyketides, shikimic acid metabolites, terpenes, and amino acid metabolites. Problems are provided throughout the text, and answers are given at the end of the book. Since this text is intended as a basic overview, several areas of natural product biosynthesis are not included. Neither the genetic regulation nor the modern manipulation of biosynthetic pathways is discussed. Biosynthetic enzymatic mechanisms are not described. The biogenesis of compounds of mixed biosynthetic origin is not given any direct coverage.

The book is one of a series of "at a glance" approach texts. This series is designed to make chemistry and other related disciplines more accessible to undergraduate level students by providing a brief overview of a selected topic in a very concise manner.

This text is based upon coverage of natural product biosynthesis from an undergraduate level curriculum in the U.K. However, it is difficult to imagine the audience for such a text in the U.S., where natural product biosynthesis is unlikely to be part of the undergraduate curriculum in either a chemistry department or a pharmacy school. The simplified basic coverage is inadequate for an introductory graduate biosynthesis course. This text could also serve as a good basic review or refresher of the chemical transformations involved in natural product biosynthesis for graduate students or researchers who have completed a course in biosynthesis.

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Medicinal Plants in Tropical Countries. Traditional Use—Experience—Facts. By Markus S. Mueller, M.D. (German Institute for Medical Mission) and Ernst Mechler, Ph.D. (University of Tuebingen). Thieme, New York. 2005. viii + 168 pp. 16 × 24 cm. \$109.95. ISBN 1-58890-253-6.

Herbal therapies and conventional medicine have historically been at odds. This brief monograph seeks to form a stable bridge of scientific research between the practices of the traditional healer and the science-based therapies of the physician. Surprisingly, the authors succeed in distilling the vastly expansive discussion into three short chapters. The personal experience of the authors working in Africa to provide some form of treatment in hospitals robbed of conventional medicines lends a humanitarian import to this report. Because the authors describe planting a medicinal plant garden outside of a hospital in the Congo and then provide data supporting the method and use of these herbs, this concise book should appeal to a diverse audience.

The melding of two somewhat divergent approaches to medicine requires focus and organization. The choice to focus on the medicinal plants used on three continents, particularly as treatment for malaria, keeps the discussion manageable. The criteria used to rate the effectiveness of these traditional therapies are based solely on the amount of research supporting traditional claims.

The last chapter in the book is dedicated to describing the plants. Besides the usual and lovely botanical drawings along with the expected list of botanical and common names, there is an uncommonly concise and informative overview of research regarding the medicinal virtues of 26 plants. Particularly applicable is the cross-referencing of methods of preparation with results. For instance, research regarding the effectiveness of garlic (*Allium sativum*) to lower blood lipids is collected and organized according to preparation (powdered vs raw) and dose, along with duration of the trial. Included in the analysis of each plant is a summary of clinical studies. In either concise table or short paragraph form the authors summarize active constituents, traditional uses, clinical studies, contraindications, dosing, and methods of preparation. Each description ends with a clear analysis and rating regarding the effectiveness of that plant in treating a specific ailment as validated by current research. Garlic does have scientific evidence to support using it to lower blood cholesterol, but does not currently have that same measure of evidence to be used as an antifungal agent. All of the conclusions (descriptive and ratings) are based on research through the year 2000.

The desire to remove the natural distrust between traditional healers and conventional doctors is well served by this text. By providing the common ground of reproducible evidence, both paths to wellness are served, meaning greater accessibility for those in need. The analysis of very common remedies (garlic, turmeric, cayenne) broadens the appeal of this text from the exclusive appeal to the science-based physician to include some more traditional healers.

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