derstanding the precursors, intermediates, and stereochemistry involved have been made in the past decade or so. The contributions from several groups are summarized.

Iwasa's chapter on the biotransformation of protoberberines in plant tissue culture reviews research on three pathways. It is somewhat difficult to follow. A great number of compounds and transformations are presented in tables and schemes, but numerous compound numbers (e.g., reticuline) and references are absent. Examples: The introduction should direct the reader to any reviews of the occurrence and identification of these alkaloids. The section (pp 314−6) on formation of benzophenanthridines from protoberberines in plant tissue cultures of three genera has no references to published or unpublished work. On p 320, the statement "These results differ from those utilizing the purified enzyme..." is not followed by citation of the work involved (O'Keefe, B. R.; Beecher, C. W. W. *Plant Physiol*. **1994**, *105*, 395−403).

Mueller, Roeloffs, and Jackson provide a concise, but richly detailed, review of the pharmacology of polyamine toxins from spiders and wasps. After a brief introduction to the ecology and chemistry of these organisms and their venoms, the authors offer a detailed summary of mechanism and site of action studies in both invertebrates and vertebrates and an overview of structure−activity studies.

Szántay, Kardos-Balogh, and Szántay have written a chapter focused on the various syntheses of epibatidine, a frog skin alkaloid with powerful and potentially important analgesic activity. The unique structure of epibatidine, its scarcity in nature, and its biological activity have prompted a good deal of synthetic work. This short chapter is nicely illustrated and brings together all work in this arena well into 1994.

Bringmann and Pokorny provide a richly detailed, thorough update of previous reviews (1977, 1986) on the naphthylisoquinoline alkaloids, thus far found only in two small, related plant families (Ancistrocladaceae and Dioncophyllaceae). In the past decade, over 40 new members of this class of alkaloid have been identified. This review not only summarizes the new structures and their sources, but also brings together work on their biological activity, stereochemistry, synthesis, biosynthesis, and ecology. This chapter suffers only from 18 citations of meeting abstracts and 33 citations of unpublished work among the 250 references. While the latter would seem to reflect the authors' desire to be as up to date as possible, the lack of access to experimental data in 20% of the chapter's references would be a hindrance to interested readers and scientists wishing to work in this area.

Like its predecessors in this venerable series, this book should be in library collections of the series. Those researchers with a direct involvement or interest in any of these five topic areas may want to obtain a personal copy.

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Preservative-Free and Self-Preserving Cosmetics and Drugs: Principles and Practice. Edited by J. J. Kabara (Technology Exchange, Inc., and Michigan State University) and D. S. Orth (Neutragena Corporation). Marcel Dekker, Inc., New York, NY. 1997. x + 274 pp. 15 × 22.5 cm. $150.00. ISBN 0-8247-9366-8.

This volume, which is volume 16 in the Cosmetic Science and Technology Series, is a multiauthor compilation with the following chapters and authors: Principles for Product Preservation (J. J. Kabara and D. S. Orth); The Effect of Acid pH on Microorganisms and Survival Strategies that Permit Growth in Products (D. S. Orth); Water Activity and Self-Preserving Formulas (D. C. Enigl and K. M. Sorrells); The Roles of Surfactants in Self-Preserving Cosmetic Formulas (O. Cozzoli); Fatty Acids and Esters as Multifunctional Components (J. J. Kabara); Biomimetic Phospholipids: Components for Self-Preservation (D. L. Fost and J. I. Yablonski); Use of Antioxidants in Self-Preserving Cosmetic and Drug Formulations (A. L. Branen and P. M. Davidson); Aroma Chemicals as Preservatives (J. J. Kabara); Chelating Agents as Preservative Potentiators (J. J. Kabara); The Role of Packaging in Product Preservation (D. K. Brannan); Preservative-Free and Self-Preserving Cosmetic and Drug Products: The Future (J. J. Kabara and D. S. Orth).

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