

BOOK REVIEWS

Recent Advances in Phytochemistry, Vol. 1. Edited by T. J. MABRY, R. E. ALSTON and V. C. RUNECKLES. Appleton-Century-Crofts, New York, 1968. 437 pp. \$16.50.

THIS volume, derived from papers presented at the April 1966 symposium of the Plant Phenolics Group of North America, is the first of an annual series sponsored by the Phytochemical Society of North America. As befits the new name of the organization the topics covered are much broader than phenolic compounds. Appropriately, because of the thread of chemotaxonomy that runs through many of the chapters, the book has been dedicated to Ralph Alston who did much to advance the study of biochemical systematics, and who contributed an excellent chapter on C-glycosyl flavonoids to this symposium.

Not only the more general introductory chapters by Whaley and Erdtman but even many of the specialized papers are helpfully critical and practical in their considerations of what can and cannot be expected of chemotaxonomy. Enough statistical information is now at hand so that some premature generalizations can be shot down, and any that are advanced can be much better supported than was true only a few years ago.

The chapters on sulfur compounds (Ettlinger and Kjaer) and acetylenic compounds (Sørensen) overlap to a small extent since many sulfur compounds are derived metabolically from acetylenes. Although the chapter on biosynthesis of flavonoids (Grisebach) treats some of the same isoflavonoids and neoflavanoids discussed by Ollis, the two treatments are nicely complementary—the first dealing more with metabolic interrelationships and the second with chemistry and natural occurrence. Taken together they lead to one general conclusion that neither makes perfectly explicit, namely that on the basis of biosynthesis there are two kinds of naturally occurring coumarins. Those with a single aromatic ring are derived from shikimic acid via cinnamic acid. Those with substituent aromatic rings have the coumarin nucleus derived from oxidation of an isoflavonoid or neoflavanoid; therefore only the substituent rings come from shikimic acid, while the benzene ring of the coumarin nucleus itself comes from acetate. Incidentally, use of the terms isoflavonoid and neoflavanoid, by the same author, indicates the need for some uniformity in spelling. Both terms are of fairly recent coinage, and it seems not too late to change one or the other.

There are only two chapters dealing exclusively with nitrogen compounds. Recent studies on distribution, chemistry, and biosynthesis of the betalains are summarized by Mabry and Dreiding; a paper by Stermitz discusses the chemistry and systematics of alkaloids in the genera *Papaver* and *Argemone*. Terpenoids are the subject of two contributions, one on pseudoguaianolides of the Compositae (Herz) and one on the systematic distribution of di- and triterpenes (Ponsinet, Ourisson and Oehlschlager).

The book is attractively printed and lavishly illustrated with structural formulas. The only errors I detected were trivial, such as the interchange of skeletal structures for the lanostanes and cucurbitanes (p. 276) and the spelling of Scots pine consistently with an apostrophe. Those whose main interest is in plant metabolism may be disappointed by the scanty information present about pathways, but on the other hand they will also have their attention called to problems that can be answered only by investigations of metabolism.

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