Phytochemistry, 1967, Vol. 6, pp. 767 to 768. Pergamon Press Ltd. Printed in England

BOOK REVIEW

Actualités de Phytochimie Fondamentale: Edited by C. MENTZER. Second Series. Masson et Cie, Paris, 1966. 320 pp. 119f.

A VOLUME under this title appeared two years ago (for review, see *Phytochem.* **4**, 357, (1965)) which presented therein a novel method of classifying the organic molecules occurring in plants according to their biosynthetic origin. One of its principal features was a catalogue of the natural products discovered from January, 1961 to July, 1962, divided into four biogenetic classes. The main purpose of the present volume under review, which is the second of what will presumably be a regular series of publications, is to cover the phytochemical literature from July, 1962 to July, 1964.

Previously, Professor Charles Mentzer had a single collaborator, Olga Fatianoff, but this time he is joined by four more contributors, three of whom provide separate chapters reporting in some detail recent advances in the phytochemistry of xanthones (D. Billet), glycoflavonoids (J. Chopin) and flavanonols (H. Pacheco). Professor Mentzer himself provides a general review chapter at the beginning. These are all admirable accounts, well documented, with addenda written at the proof stage bringing in some 1965 references.

The main feature of the book, again, is the comprehensive catalogue of new natural constituents compiled by O. Fatianoff and C. Deschamps-Vallet. The growth of natural product chemistry is well illustrated by the fact that from 1962 to 1964, 911 new compounds were reported as compared with the 425 substances of the previous two years. These figures exclude alkaloids and macromolecules, which are not dealt with in either volume, but the popularity of terpenoid research is patent since about half the new structures are isoprene-derived. Other active research fields appear to be in flavonoids (100 new structures), quinones (60) and acetylenics (54). There are relatively few new carotenoids (12), amino acids (25) or monosaccharides (10) but this is probably due more to the fact that structural variation is limited among these classes rather than to any neglect of these substances by organic chemists.

One striking aspect of organic structures found in plants in recent years is the remarkable number which are polyfunctional. This makes classification difficult in any system and it is not surprising that some fifty structures fall outside Mentzer's main biogenetic groupings. Among the most interesting of these are probably the twenty-three *bis*- or *tris*-phloroglucinol derivatives found in two *Dryopteris* species; ferns are clearly a rich source of chemical variability that have not been much studied until now. Of the other novel polyfunctional structures, one might mention the acetylenic thiophenes isolated from various Compositae, and the phenolic or quinonoid terpenoids such as podototarin from *Podocarpus totara* or the yellow pigment, royleanone, from *Inula royleana*.

Producing a catalogue of natural plant constituents presents many problems but the compilers in this case seem to have surmounted most of these successfully. Few inaccuracies or omissions could be detected by the reviewer. The biogenetic arrangement, of course, limits the use of this book by plant taxonomists, who require the compounds to be set out family by family. Such readers, however, will find that species names are always accompanied by family names in the table and new constituents of any particular family can be traced through the excellent index. A practical point: the catalogue is not easy to consult since

it is set at right angles to the rest of the text, the references and the index. Some rearrangement of the format by the publishers (e.g. the use of a wider page) would enhance the utility of future volumes.

In the absence of any comparable compilation, this volume will be essential for all those interested in or engaged in natural products chemistry. Professor Mentzer and his team are to be congratulated on producing such a valuable compendium. We can only hope they will continue their immense and painstaking task; presumably in the next issue in the series the compilers will have to cope with no less than two thousand new substances.

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