

BOOK REVIEWS

Actualités de Phytochimie Fondamentale; by C. MENTZER and O. FATIANOFF. 266 pp.
Masson & Cie, Paris, 1964. £6 7s. 6d.

THE classification of the many and varied chemical constituents found in plants presents nearly as many problems as the classification of the plants themselves but, curiously, is a subject which has not received any serious attention. This neglect has now been rectified by Charles Mentzer and Olga Fatianoff, who, in this slim paper-back, make out a good case for using biogenetic theory as a basis for classification instead of the more conventional approach of chemical complexity. These authors provide, in 97 pages of text, their reasons for making this revision, together with a concise summary of current knowledge of biogenetic pathways in plants. The rest of the book consists of a catalogue of the new plant substances discovered during 1961 and part of 1962, laid out according to their new scheme.

They divide plant substances into four main classes [fundamental constituents (sugars, amino acids, etc.), C_2 -derived molecules, C_5 -derived molecules, and shikimic acid derivatives] and only 21 of the 425 compounds fail to fit into the scheme. The method can therefore be counted a success and has much to recommend it to the phytochemist. Its main drawback is that knowledge of the biogenesis of most of the more complex constituents is very sketchy at the present time and the scheme will inevitably have to be revised as new information comes in from ^{14}C tracer experiments. There are also some inconsistencies in the arrangement of compounds within the four main classes. It is, for example, difficult to see why the authors place chalcones and dihydrochalcones at the end of the $C_6-C_3-C_6$ group, since biogenetically they fit in naturally at the beginning of the section.

As a catalogue of plant constituents, this work is frankly disappointing. Although some physical constants of new substances such as m.p. and optical rotation are included, the opportunity to add equally useful measurements such as R_f value or spectral maxima has not been taken. Also, the catalogue, which is not free from errors, does not include new occurrences of known compounds, information which the chemical plant taxonomist prizes as much as knowledge of new substances.

Mentzer and Fatianoff arbitrarily cover only just over a year of the literature in their book, so that the gap left between the present day and Walter Karrer's monumental dictionary (complete up to the end of 1956) still remains to be filled. It is to be hoped that these authors, if their new scheme receives popular support, will undertake the preparation of a comprehensive supplement to Karrer and thus bring us completely up to date. In the meantime this book, although expensive, is a valuable addition to the literature on natural products.

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