

BOOK REVIEWS

Chemotaxonomie der Pflanzen, Volume 7: by ROBERT HEGNAUER. Birkhauser, Basle, 1986. 804 pp. Swiss Fr. 460.

Robert Hegnauer's magnificent six volume set, entitled "The Chemotaxonomy of Plants" and produced during the years 1962–1973, remains today the most important single key to the phytochemical literature. It provides a detailed listing of plant constituents set out on a comparative basis, family by family, throughout the plant kingdom. It also provides a chemical profile of each plant family and indicates existing correlations between chemistry and plant taxonomy. It has been a formidable, nay Herculean, task to accomplish and the whole occupies some 3700 closed packed pages.

The only difficulty with this series is that some of the earlier volumes, particularly those written during the 1960s, are becoming out-of-date. However, Professor Hegnauer has already recognized this problem and is in the process of preparing a complete updating. What we have in volume 7, which has now appeared, is an updating of the first two volumes with literature coverage up to mid-1985. However, it is much more than this in that the first 200 pages provide a bibliography of the phytochemical and systematic literature of the last two decades, especially drawing attention to books, review articles and key research papers. The literature on medicinal plants is fully documented and the recent growth of chemical ecology is also recognized. Additionally, there are several general reviews, written by the author, covering the role of tannins, alkaloids, iridoids and cyanogens as chemical

markers in green plants. The remainder of the book then progressively reviews the more recent literature on the chemistry of the algae, fungi, mosses, ferns, gymnosperms and monocotyledons. Recent advances in our chemical knowledge of this last group of plants takes up some 250 pages.

Volume 7 is much more than a simple listing of chemical constituents on a taxonomic basis. The whole is enlivened by insights into the systematics and general biology of these plant groups. The chemical data are encapsulated in places in useful summary tables and there are a profusion of chemical structures; wherever appropriate, biosynthetic pathways or relationships are indicated. The whole is highly accurate and an extremely exhaustive coverage of the burgeoning literature of phytochemistry. I doubt that the most sophisticated computer search of 'Chemical Abstracts' would provide such a thorough recall of the relevant information. It is also bang up-to-date with many additional references being added at the various proof stages.

Once more, therefore, we owe an enormous debt to author and publisher for this magnificent thesaurus. It should be widely available wherever phytochemistry and plant science are practiced. If you cannot afford your personal copy, make sure that your library invests in one; it is an ideal starting off point for all new phytochemical research.

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Molecular Luminescence Spectroscopy. Methods and Applications: Part 1: edited by S. G. SCHULMAN. John Wiley and Sons, 1985. £98.25.

This is volume 77 in "Chemical Analysis—A Series of Monographs on Analytical Chemistry and its Applications". Ten authors have contributed to the book which comprises eight chapters dealing with an overview, pharmaceuticals, natural products, inorganics, bioinorganics, excited state optical activity, fluorescence detection in chromatography and luminescence immunoassay.

The opening chapter gives a good overview of the subject and is briefly referenced. However for many busy analysts, I suspect that the main value of the book lies in the applications and these are well covered in subsequent

chapters. In a comprehensive chapter on pharmaceuticals, 748 references are quoted and the applications of fluorometry and phosphorimetry to the analysis of a wide range of pharmaceuticals is reviewed. Of particular interest to phytochemists is the chapter on the fluorescence of organic products covering 1417 references. Amino acids, proteins, coenzymes and vitamins, nucleic acids, alkaloids, oxygen heterocyclics, dyes and pigments together with a group of miscellaneous natural products are dealt with in the space of some 212 pages of text. Two chapters cover inorganic and biorganic substances and their determination by luminescence methods; again the texts are well referenced. The techniques of optical rotatory dispersion (ORD) and circular dichroism (CD) are valuable chiroptical methods but newer developments including fluores-