

Encyclopedia of the Terpenoids: by JOHN S. GLASBY. Two vols: A–H and I–Z, John Wiley, Chichester, 1983. 2646 pp. £250.

This enormous encyclopedia lists, in alphabetical order, some 10 000 terpenoids, most of which are naturally occurring, only a few being of synthetic origin. For each compound, physical data are given, natural sources and some details of structural determination; a few key references are also provided, together with the structural formula. At the end, there is a formula index and a useful if incomplete classification index listing those terpenoids known to be antibiotics, bitter principles, cytotoxins or antifedants. It should be noted that steroids, which are modified triterpenoids, are specifically excluded.

Unfortunately, the author does not discuss in his preface the basis for inclusion or exclusion of any given terpenoid, so it is not clear precisely how comprehensive this listing is. I did notice that while lactucin, one of the two major bitter principles of *Lactuca*, is included, the related ester lactupicrin is strangely omitted. There are also some obvious disadvantages in a straight forward alphabetical listing of all terpenoids, irrespective of their

functionality or biosynthetic complexity. It is difficult, for example, to pick out all the known carotenoids from this listing. Additionally, some compounds have not been given proper trivial names, so that there are some rather meaningless entries, such as 'carotenoid RG Keto-VI', 'diterpenoid AC-7', etc. Also, some names are rather inappropriate: complicitic acid from *Stereum complicatum* is actually a fairly simple sesquiterpene acid and much more complicated structures can be found, for example in the triterpenoid series. The absence of family names after plant sources is unfortunate. Errors seem to be few, although I noticed that the structural formulae of columbin and colubrinic acid on pp. 521 and 522 have been transposed.

This is clearly an outstanding reference to have, at a price. The production is excellent. Since no comparable up-to-date encyclopaedic treatment is currently available, these two books provide the phytochemical reader with a valuable directory of terpenoid structures, together with key references to the research literature.

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Advances in Botanical Research Vol. 9: edited by H. W. WOOLHOUSE. Academic Press, London, 1981. 279 pp. £24 hardback.

This ninth volume of 'Advances' contains three chapters on such apparently diverse topics as storage protein synthesis, metabolism of gibberellins and vascular tissue differentiation. However, these subjects should be of wide appeal to all phytochemists with an interest in various aspects of the chemical control of plant development. The strength of the volume as a whole is that each of the contributors has been encouraged to give a personalized account and synthesis of their specialist field rather than the usual bland catalogue of information so often found in textbooks and review articles.

Professor D. Boulter presents a clear but concise (30 pages) account of storage protein synthesis in developing legume seeds. After a brief introduction to the biology of the seed and the nature of the storage proteins there is a more detailed discussion of the intracellular sites of synthesis and deposition, post-translational modifications, the origin of protein bodies and the protein transport pathway. Finally, there is a description of the mechanism of protein synthesis in developing seed and approaches to its control using genetic mutants and recombinant DNA technology. Those of us struggling to come to terms with the jargon of the latter subject may find "the most feasible strategy . . . is to make ds-copy DNA against partial purified mRNA using AMV reverse transcriptase (Klenow's enzyme A) and to clone it using microbial vectors" a little difficult to digest without the aid of a diagram.

The chapter by Alan Crozier on aspects of metabolism and physiology of the gibberellins (110 pages) covers three main topics, namely analytical methods, GA bio-

synthesis and structure–activity relationships. He emphasizes the distinction between accuracy and precision in analysis and describes separation and identification procedures available for GAs together with a discussion of the relative selectivity and sensitivity of biological and physicochemical techniques. The application of information theory for the verification of accuracy is proving controversial but is an important contribution to the debate on compound identification which deserves wider attention amongst phytochemists. The fine details of the elegant GA metabolism studies, particularly with developing seeds, are critically discussed but as yet there appears to be little relevant information clarifying the function of GAs in plants.

In the final chapter, T. Sachs presents a well reasoned conceptual framework for the study of patterned differentiation of vascular tissues in higher plants (110 pages). Much of the experimental evidence supporting the hypothesis is based on deductions from surgical experiments where the effects of organ removal can be replaced by auxin application. Similarly, patterns of vascular regeneration following grafting or wounding are interpreted in terms of a polar flux of auxin orientating further differentiation. Perhaps the application of highly sensitive immunoassays for analysis of auxins and other growth substances may provide more direct support for the hypothesis advanced in this chapter.

In general, this is a well produced book with relatively few errors although the reproduction of some of the photographs in my copy was rather dark. It should definitely find a place on the library shelves of all departments concerned with the plant sciences.

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