

BOOK REVIEWS

Hormone Binding Sites in Plants: by MICHAEL VENIS. Research Notes in the Biosciences: Plant Science. Longman, 1985. 191 pp. £15.

The pace of change in the biosciences is such that even the professional finds it difficult to follow the progress in specialities peripheral to his own. This is the market that this series is probably aimed at, and if the others are as current, well-written and enjoyable as 'Hormone Binding Sites in Plants', then the publishers will have a deserved success.

The recent intense scrutiny applied to the plant hormone field has certainly brought about some rethinking; not least in that the established practices of 'spray and pray' and large scale extraction and assay have not thrown much light on the situation. As an alternative approach focussing on the binding sites and, hopefully, the prime receptors should give new information with which a better understanding of old data may come about.

Naturally a large proportion of this monograph concerns auxin and its binding characteristics; this reflects the proportion of published work and will still be of value to addicts of the other growth substances. The opening chapter clearly discusses the conceptual background; if these substances are involved in the regulation of growth or differentiation the cell must be able to detect them in order to respond. After a discussion of auxin structure and its relationship to activity the author gives a succinct coverage of the theoretical and practical approaches used in the study of binding. Various model systems are then

examined in a constructive manner, even treating some of the more questionable work with careful generosity.

The detailed chapter on binding sites for auxins covers all of the literature in an encyclopedic but clearly laid out fashion. This chapter is the solid backbone of the book and certainly clarified the issue to this confused reader. Chapter 6 then gives a similar coverage to the other growth regulators with the author not being afraid of putting his own opinion forward.

The final section attempts to summarize the present state of play and gives a hopeful view of the future. This particular chapter should be required reading for anyone entering the profession. If he can't find any ideas to excite him here then he will never make a scientist, since there is enough to keep a generation of postgraduates busy.

Obviously I greatly enjoyed reading this book and being updated on what has been a slightly neglected area in even advanced texts. There are of course some minor details of production that should be picked up, such as 'ase' following ATP a couple of times on p. 49; and the problems with the bibliography which the publishers did overcome while I was reading the book. But this sort of thing is unfortunately to be expected in such a rapid piece of publication where the bulk of the references are from the last five years. I even accept that the price is reasonable for such a useful book.

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The Biochemistry of Plant Phenolics: edited by C. F. VAN SUMERE and P. J. LEA. Annual Proceedings of the Phytochemical Society of Europe, Volume 25. Clarendon Press, Oxford, 1985. 483 pp. £20 (U.K.), £24 (overseas).

This volume comprises lectures presented at the Phytochemical Society of Europe meeting 'The Biochemistry of Plant Phenolics' held in Gent, Belgium on 28–31 August 1984. Published conference proceedings can be of rather variable quality, often containing research papers of limited general interest, appearing some time after the work has been fully written up in primary journals, and the books are often cheaply produced using camera-ready copy. The latter comment does not deter publishers from charging totally unrealistic prices for the finished product. These remarks happily do not apply to this volume. The book contains twenty-three contri-

butions from the conference's invited speakers, written as reviews covering recent advances in the area together with individual research results, and each contains a good range of literature references. From the titles alone, I would have wanted to read at least sixteen of the twenty-three chapters. The fact that they were written by a gathering of the world's leading authorities on phenolics led me to expect high quality, and I was not disappointed. The list of contributors includes Barz, Brown, Butt, Donnelly, Grisebach, Harborne, Haslam, Hostettmann, Roux, Strack, Swain, Thomson, Towers, Van Sumere and Wagner—and I apologise to the other seventeen authors and coauthors for not including them under 'leading' authorities. Together, they produce a nicely-balanced selection of topics in this broad field.

The subjects covered begin with aspects of phenol isolation and purification, including HPLC and other chromatographic methods, and their identification via

colour reactions and spectroscopic measurements, especially modern NMR and MS developments. The production of phenols in nature forms a second broad group, covering regulation of phenol biosynthesis and aspects of lignin, flavonoid, tannin and coumarin biosynthesis. Phytochemical studies of neoflavonoids, quinones and cinnamic acid derivatives are included. The metabolism of phenolic compounds, and mechanistic aspects of metabolism follow in two further chapters. The remaining topics cover the more philosophical areas, such as the role of phenolics in plant disease and defence of plants against animal predators, their physiological significance to plants, consequences of their presence in foodstuffs, and their possible role as new medicinal agents. I particularly enjoyed the final chapter though, in which Tony Swain presented an entertaining and anecdotal account of the history and future of research into plant phenolics. Surely this would have been acceptable for the after-dinner speech at the Conference Dinner?

The publishers have produced a nicely-printed volume—no camera-ready copy here except for diagrams and structures. These, as always, are a bit variable in quality and not entirely free from errors—why do dimethylchromene rings seem strangely susceptible to re-

duction and demethylation? Typographical errors are remarkably few, except in one badly-checked chapter. This particular chapter was not free from factual errors either—I would be unhappy if my undergraduate students made the same mistakes. And surely we can't credit Geissman and Crout (1969) with the first isolation of shikimic acid?

The publishers are to be congratulated on producing this volume at the bargain price of £20. This is real value-for-money to libraries and the personal shelves of workers in the area. However, they must be severely criticised for not putting the title of the book on either the cover or the spine. With only the uninformative description 'Annual Proceedings of the Phytochemical Society of Europe', not many people will pick it up and browse through its pages. That would be a pity.

Just one more comment. With the world's leading authorities on phenolics contributing to this book, couldn't they have agreed on whether to use the term 'flavonoid' or 'flavanoid'?

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