

Methods of Protein and Nucleic Acid Research

Vol. 1: Electrophoresis, Isoelectric Focusing, Ultracentrifugation

Edited by Lev A. Osterman

Springer-Verlag; Berlin, Heidelberg, New York, Tokyo, 1984

x + 342 pages. DM 156.00, \$58.20

This volume is worth having for the excellent section on ultracentrifugation procedures. The author appears to have personal experience of most of the methods described here and the application of principle to practice is always evident. Criteria governing the choice of rotor and of media for use in gradients are clearly explained. The author is at pains to show how optimum conditions to effect particular fractionations can be calculated and this approach is emphasised by critical analysis of published procedures. This section should prove invaluable to Ph.D. students and others unfamiliar with recent developments in this area since it provides detailed information for the care, correct handling and setting up of rotors as well as the preparation of tubes and gradients in a clear logical fashion.

By contrast, the treatment of electrophoresis

and isoelectric focusing is patchy but again the essential principles of the methods are well explained and there is a lot of useful information to aid selection of the appropriate technique. This sections appears a little unbalanced because there is a wealth of material on electrophoretic procedures for nucleic acids whereas starch gel electrophoresis and staining procedures for detecting enzyme activity are barely mentioned. The short section in isotachopheresis would have been best omitted entirely.

The book could have been improved by careful proof reading and is occasionally marred by infelicitous usage which may have arisen in translation. Despite these reservations it is a useful addition to the literature of biochemical methods.

N. Spencer

Biochemistry of Plant Cell Walls

Society for Experimental Biology. Seminar Series: 28

Edited by C.T. Brett and J.R. Hillman

Cambridge University Press; Cambridge, 1985

312 pages. £19.50, \$34.50

This book is based on a symposium held at the University of Glasgow in July 1984. It consists of 12 review chapters, each by experts in their particular fields, covering aspects of plant cell-wall composition, structure, biosynthesis and growth.

The individual contributions are generally authoritative, well written and clearly illustrated. The inclusion of stimulating chapters presenting new ideas and approaches in relation to helicoidal structures in plant cell walls and immunological

approaches to studies on wall development is most welcome, although it is perhaps a pity that it was not possible to include a chapter on the possible roles of plant cell-wall fragments as informational molecules.

The two chapters dealing with the isolation of cell-wall components should be of practical value to workers in this area, as they present critical assessments of the factors affecting wall-component composition as a function of extraction procedure. Wall biosynthesis is discussed in individual chapters on the role of lipid-linked glycosides as precursors for glycoproteins and polysaccharides, enzymic interactions during heteropolysaccharide formation, the enzymology of hydroxyproline-rich glycoprotein biosynthesis, the control of wall formation at the biochemical and cytological levels and the problems of studying the relationships between 1,3- and 1,4- β -D-glucan synthesis *in vivo* and *in vitro*. These chapters could perhaps have been arranged in a more logical order. The pen-

ultimate chapter provides a brief summary of the nature and turnover of cell-wall storage carbohydrates in legumes, and this leads into a discussion of wall-component degradation in relation to auxin-induced cell extension and mechanical changes in wall properties.

The concentration on topics related to the dynamic aspects of cell walls should help to increase the appeal of this book to students of plant biochemistry and the reputations of many of the authors should ensure its success. With the advent of improved analytical techniques for polysaccharide analysis and the application of immunological and recombinant DNA techniques to studies on the control of plant development, plant cell walls will become increasingly important subjects for research. In this context, this book can be firmly recommended, as it contains much to stimulate future efforts in these areas.

R.A. Dixon

Structure, Function and Metabolism of Plant Lipids (Developments in Plant Biology, Vol. 9)

Edited by P.-A. Siegenthaler and W. Eichenberger

Elsevier Science Publishers; Amsterdam, New York, Oxford, 1984

xvii + 634 pages. \$125.50, Dfl. 326.00

The size of this book is testimony to the increasing interest in plant lipids amongst biologists and biochemists. It records the proceedings of the 6th International Symposium on the Structure, Function and Metabolism of Lipids, held at Neuchâtel, Switzerland, in July 1984, and is appropriately dedicated to Morris Kates, who has been a leading figure in the development of plant lipid biochemistry for several decades.

The 126 contributions within the volume are divided into eight sections. Three of these deal with the biochemistry and biosynthesis of fatty acids, acyl lipids and isoprenoid compounds, whilst a fourth, short section, concerns the catabolism of lipids. A further three parts cover the various roles

of lipids in the biogenesis of plant cell organelles, non-photosynthetic and photosynthetic membranes. The final section, which encompasses 131 pages, discusses the role of plant lipids in relation to environmental and physiological factors.

As would be expected, the papers are mostly short (on average 4 pages) and obviously some of the material has been published elsewhere, including by now, I expect, the data quoted as 'in press' or 'submitted'. In this context, I wish that all the authors had stated which journals should be perused for these forthcoming publications.

The contributions were all prepared as camera-ready copy, and so there is considerable variation in the typescripts used. The editors did not proof