Methods in Plant Biochemistry. Vol. 2: Carbohydrates. Edited by P. M. Dey, Academic Press, New York, 1990, xii + 657 pages, £79.00.

The current volume is one in a comprehensive series on methods of plant biochemical analysis, the aim of which is "to introduce to the scientist current knowledge of techniques ... to give experimental details of methods and analyses and appraisal of them ...". The book deals with three general subject areas, namely, simple sugars and their derivatives; polysaccharides; and higher-order polysaccharide structure and interactions.

The simple sugars and their derivatives are dealt with in the first section of the book. The first chapter, *Monosaccharides*, details chemical methods for the analysis of different classes of sugars (hexoses, pentoses, amino sugars, etc.), enzymic methods for the analysis of specific sugars, and various methods for sugar separation and detection. The original analytical procedures, their modifications, sensitivities, and known interferences are generally provided. Except for the use of enzymes, there is no discussion of methods for the determination of the absolute configuration of the sugars. The second chapter deals with "nucleotide sugars", outlining methods for their extraction from cells, their separation, and their identification and quantification. Similar chapters on lipid-linked plant saccharides, oligosaccharides, cyclitols, branched-chain sugars and sugar alcohols (alditols), and a very extensive and thorough chapter on disaccharides follow. The chapter on disaccharides includes an interesting section on the use of electrochemical biosensors.

The second portion of the book deals with plant polysaccharides, with specific chapters on cellulose, starch, fructans, mannose-based polysaccharides, pectic polysaccharides, chitin, exudate gums, and algal polysaccharides. A number of analytical issues, in addition to those of composition and primary structure, arise with polysaccharides; these include degree of polymerization, polydispersity, crystallinity, and microheterogeneity. Although it is difficult to provide general recipes and methods for addressing these particular structural issues, it would have been useful to have had separate chapters on those analytical methods that are general, such as X-ray diffraction or n.m.r. spectroscopy.

The final section, consisting of only three chapters, deals with higher-order polysaccharide structures and interactions, and consists of chapters on plant cell-walls, the use of HF hydrolysis in studying cell-wall structures, and polysaccharide interactions with macromolecular systems, including polysaccharides.

In general, this is an excellent book, fulfilling the goals of the series editors. My major criticism is the book's lack of introductory chapters on the basic theories, uses, and limitations of the spectroscopic techniques that have already proved so useful in the structural analysis of polysaccharides and polysaccharide systems, especially n.m.r. and mass spectroscopies

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