

of the biosynthesis of these polymers and their normal degradation receive only cursory attention.

The remainder of the book is devoted to five chapters on complex carbohydrates from bacteria. The lipopolysaccharide, teichoic acid, and mucopeptide constituents of the Gram-positive and Gram-negative bacterial cell-wall structures are described in some detail, and the methods used to study these complex materials, *e.g.*, the use of mutants, are given. In the sections on the biosynthesis of bacterial cell-wall components, the mode of action of certain antibiotics and the obligatory participation of lipid carriers in the biosynthetic processes are clearly demonstrated. The book ends with a speculative section on architectural relationships in peptidoglycan synthesis.

The author is a distinguished research worker in carbohydrate biochemistry and has succeeded in presenting much complicated information in a clear, comprehensible fashion. In addition, he has managed to convey the feeling of excitement and fascination which exists among workers in these lively and exciting areas of biochemical research. The author has provided a very readable book, which is recommended highly both to undergraduate and graduate students, as well as to teachers in these areas of chemistry and biochemistry that have moved on apace over the last few years.

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Carbohydrate Chemistry, Volume 8, J. S. BRIMACOMBE (Senior Reporter), A Specialist Periodical Report of the Chemical Society, London, 1976, xii+485 pages, £18.00 (Chemical Society Members).

The compilers have again made a magnificent effort in this comprehensive review of carbohydrate chemistry and biochemistry, covering the literature between January 1974 and January 1975, though some earlier references have been included. The book is well produced and has again been divided into two sections. Part I deals with mono-, di-, and tri-saccharide chemistry; a larger Part II deals with macromolecules, and this section should be of particular interest to biochemists. Each reference is dealt with in a concise manner and the reader is left in no doubt as to the salient points. The structural formulae are clear, and Tables are used sparingly and only where appropriate. An author index is included, but there is no subject index; however, with 970 references in Part I and 2090 in Part II, such an index would require a book of its own. Instead, a detailed contents list is included at the beginning of the book, and particular subject matter is quite easy to find.

This book must be an essential reference work to all who deal with carbohydrates, whether from the point of view of synthetic organic chemistry or that of the more biologically orientated disciplines. The reporters deserve our thanks for the great deal of time and effort that they must have put into this work. J. F. Kennedy, for example, reports on two sections covering over 600 references.

Unfortunately, while this book is over 100 pages shorter than the two previous volumes of the series, it is more expensive; in view of the cost, it is unlikely that it will grace many private book collections, though it would make a worthy addition to any college or university library.

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Methods in Carbohydrate Chemistry, Volume VII, General Methods, Glycosaminoglycans, and Glycoproteins, edited by R. L. WHISTLER AND J. N. BEMILLER, Academic Press, New York and London, 1976, xxi + 293 pages, \$29.50, £16.25.

This volume, the seventh in the series, has been divided into four sections, comprising (a) General Methods, which deals largely with synthetic aspects of mono- and di-saccharide chemistry; (b) Oligo- and Poly-saccharides, which is concerned, in the main, with procedures for the isolation and analysis of glycosaminoglycans; (c) Glycoproteins, again dealing, in the main, with the isolation, analysis, and methods for the structural determination of these substances; and (d) a short section called "Selected Methods Found in Other Collections", which is a list of references to relevant articles found in other series.

As in the previous volumes of this series, the section on general methods is well written and should be a most valuable aid to the synthetic organic chemist. However, the section dealing with glycoproteins and, to a lesser extent, the section on oligo- and poly-saccharides are only superficially treated. How, for example, can justice be done to a section entitled "The enzymic structural analysis of glycoproteins" in only five pages of text, including the references? For that matter, how can a section entitled "The isolation of glycopeptides from cell membrane glycoproteins" be adequately treated in only four pages; it surely deserves more than that? Yet an article on the isolation and properties of Stem Bromelain commands ten pages. Some sections, of course, are adequately covered and serve as a good guide to the general principles involved in the study of complex carbohydrates. The articles on methods for the determination of protein-carbohydrate linkages, for example, are well done, as are the chapters on physical methods for the analysis of polysaccharides. Though it is not obvious why a photograph of what appears to be a fairly standard distillation set-up is included in the section on "Glycosaminoglycans from human tissue". The fourth section of the book deserves a special mention. This is a potentially very useful addition, as it cross-references relevant articles from five other "Methods Series", and could speed up literature searches considerably.

This volume will no doubt find itself on many library shelves, for it is a useful book and it is always desirable to have a complete set of a series. However, certain sections, particularly those concerned with glycoproteins, are disappointing.

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