

characteristics and classification. Two chapters discuss the intricate requirements of microscale HPLC in terms of instrument components and detection with particular emphasis on factors that might contribute to band broadening such as the Poiseuille flow dispersion and the diffusion and mixing chamber effects. Another chapter focusses on peak broadening caused by the reactors in post-column derivatization used in microscale HPLC. A separate chapter presents the types of micro-columns, i.e. open-tubular and packed microcapillary columns including the different supports used such as chemically bonded columns, cross-linked and dynamically modified columns. In addition, a brief discussion on the semi-micro columns is given. However, whilst a substantial portion has already been allotted on instrumentation requirements, an unnecessary inclusion of it was still made in this chapter on columns. Another chapter presents an interesting discussion on systems that may be coupled with microscale HPLC such as infrared and mass spectrometers. The final chapter presents an extensive list of applications of microscale HPLC which include, among others, the separation of saccharides using direct UV detection. In addition, applications of semi-micro and high-speed HPLC are also given.

To provide the reader with a clearer picture of the text, the text is aptly supplemented with figures and tables. A directory of appendices follows the last chapter and it provides very useful information on the available packing materials for semi-micro and micro-columns for the different modes of chromatography. Likewise, the index is comprehensive and proves to be a very useful quick reference guide.

The book proves to be a useful guide and source of information on the basics of microscale HPLC. Although it is primarily intended as an introductory guide on this HPLC technique, it can be used by both beginners in the field and the professional chromatographers who would like to extend their knowledge into micro HPLC techniques and to utilize its capabilities.

John F. Kennedy
Zenaida S. Rivera

Modern Carbohydrate Chemistry. R. W. Brinkley, Marcel Dekker, New York, 1988, 343 pp. ISBN 0-8247-7789-1. Price: £64/\$108.

Carbohydrate chemistry has grown rapidly in recent years in line with most other scientific fields and significant advances have been made.

Indeed, much of what is in use today in carbohydrate chemistry was unknown 20 years ago. 'Modern Carbohydrate Chemistry' is intended to provide an updated treatise on the subject and to highlight new developments.

The title of this book is somewhat misleading since only synthetic and mechanistic aspects of monosaccharides and disaccharides are discussed, with no reference to other carbohydrate materials. The author, however, makes it clear in the preface of his dilemma in what to cover in such a broad subject and states his intention. It is, therefore, unfortunate that such a broad title has been chosen to cover only one particular aspect in such a broad field.

The first five chapters (consisting of 46 pages in total) outline basic terminology and fundamental concepts of carbohydrate chemistry, much of which is present in general organic textbooks, and is intended for readers with little knowledge in carbohydrate chemistry. The remaining nine chapters which are more relevant are intended for chemists with a background in carbohydrate chemistry, and each chapter ends with a useful list of relevant further reading on the subject. Topics discussed in detail in Chapters 6–8 include conformational analysis, unprotected sugars and the utility of a variety of protecting groups. Chapters 9–13 discuss in detail specific organic reactions and their relevance to carbohydrate chemistry, and include nucleophilic substitutions, eliminations, oxidations, reductions and addition reactions. The book concludes with a chapter devoted to new methods in oligosaccharide synthesis. Surprisingly, no mention is made of the use of carbohydrate precursors for the synthesis of optically pure non-carbohydrate materials which is of such importance today in modern synthetic chemistry, which encompasses carbohydrate chemistry.

Despite its limitations we have no doubt that this book will be useful to chemists who require an understanding of synthetic carbohydrate chemistry who normally work in other fields, and to chemists beginning a career in carbohydrate chemistry. The high cost, however, will deter many students from purchasing a personal copy, but this book would be a useful addition to university libraries.

D. L. Stevenson
J. F. Kennedy