Book Reviews

COMPREHENSIVE BIOCHEMISTRY, VOL. 17: CARBOHYDRATE METABOLISM, Edited by Marcel Florkin and Elmer H. Stotz. American Elsevier Publishing Co., Inc. New York, N.Y. 1969. 308 pages, indexed. Price $17.00.

Vol. 17 of this series, "Carbohydrate Metabolism," is divided into seven chapters. The first four of these concern themselves with reviewing the major aspects of carbohydrate metabolism commencing with a brief discussion of the mechanisms of intestinal transport of simple sugars. The second chapter on glycogen, starch, and cellulose synthesis and breakdown is an extensive and well-referenced (351) discussion of the individual enzymes concerned with particular emphasis being placed on phosphorylase and glycogen synthetase. Chapters III and IV deal with Glycolysis and Hexose-Monophosphate Oxidation, respectively, with primary emphasis again being placed on the regulation and mechanism of the enzymes involved in each biochemical process.

The remaining chapters deal with more specialized areas of carbohydrate metabolism which are more often found as the subjects of separate reviews or monographs. The first of these deals with the metabolism of carbohydrate in brain tissue, followed by an interesting review of aldonic and uronic acids. The last chapter, "The Metabolism of Glycosaminoglygans," concerns itself with amino sugars and mucopolysaccharides.

In general, the material in this volume is largely restricted to mammalian metabolism of carbohydrate with only limited excursions into bacterial, yeast, or higher plant biochemistry. As such, the first four chapters provide interesting reading into the fate of carbohydrates from salivary α-amylase to the generation of high-energy phosphate compounds. Each author tends to present his material in a well-organized concise manner, touching on the highlights of each topic without exhausting detail. However, the chapters are well-referenced and provide ample opportunity for the reader to obtain considerable supplemental reading material should he so desire.

In general, all of the contributors to this volume bring together valuable information in specialized areas

of mammalian carbohydrate metabolism. Within the framework of the subjects covered, this reviewer found Vol. 17 to be a useful addition to the current series of "Comprehensive Biochemistry."—CARL B. FELGER—Gillette Company Research Institute

IDENTIFICATION TECHNIQUES IN GAS CHROMATOGRAPHY, by D. A. Leathard and B. C. Shurlock. Wiley-Interscience, New York. 1970. 282 pages. Price $13.95.

Although a very large number of books on gas chromatography (GC) have been published, this is the first in which identification techniques have been covered so extensively. This is not another general text on GC theory, apparatus, and techniques. Apart from a necessary introductory chapter on the fundamentals of retention, it is solely a well-documented, up-to-date review of techniques for identifying compounds responsible for GC peaks.

Topics discussed begin with the principles of retention and column selectivity and the use of retention as a tool in identification. They continue with applications of chemical techniques such as selective abstraction, chemical modification, pyrolysis, and other degradative methods, and conclude with physical and instrumental methods of identification. The physical and instrumental methods include molecular weight determination, detector response, infrared and other spectroscopic techniques, and mass spectrometry. Techniques for the effective trapping of peaks are also discussed. For each technique mentioned, examples of its use are given and attention is drawn to its advantages and disadvantages and to special considerations regarding its use.

The techniques covered range from those requiring simple equipment available to almost every chromatographer to real-time computer processing of data from an on-line mass spectrometer. Thus, the book can be recommended to all who are interested in the qualitative aspects of GC but who have not already reached a high level of sophistication in this area.—G. J. C. FROHNSDORFF—Gillette Company Research Institute