BOOK REVIEWS

THE CHEMISTRY OF THE POLYSACCHARIDES by R. J. McIlroy. Pp. 116 and Index. E. Arnold & Co., London, 1948, 10s. 6d.

Though the nature of the simple sugar units present in polysaccharides had previously been recognised from examination of hydrolytic products, it is only in the last sixteen years that techniques have been developed which have led to our present conceptions of the chemistry and structure of a wide range of polysaccharides and their derivatives, of both animal and vegetable origin. It was in 1932 that Haworth and Machemer showed that with methyl alcoholic hydrogen chloride, the terminal unit of fully methylated polysaccharides was obtained as a methylated methyl glycoside and that by refined distillation methods it was then possible to separate and determine the proportion of the terminal unit. Haworth's " end group assay method " has since been widely applied. It has led to our present knowledge of the chemistry of starch, including both the water-soluble component, amylose, and the water-insoluble component, amylopectin, as well as to confirmation of the amylose-nature of the 'synthetic' starch obtained by Hanes in 1940 by submission of glucose-*l*-phosphate to the action of a purified phosphorylase obtained from potato tuber juice. It has led also to modern conceptions of the chemical nature of cellulose, of the pentosans, of glycogen, of mucilages and gums, of carbohydrate products of bacterial metabolism, and of the immuno-polysaccharides. The importance on the one hand of the carbohydrate sulphuric ester, heparin, the natural blood anti-coagulant stored in the liver and heart, and on the other hand of the antigenic polysaccharides derived *inter alia* from pneumococci, tubercle bacilli, and the relation of carbohydrate haptens to the polyuronides (gums), are such as to emphasise medical aspects of the need for development of knowledge of polysaccharide chemistry. The advancing front of chemical study of polysaccharides of diverse origin is now such that there has been real need for a concise readable resumé of modern developments in the field. This need is admirably met by the book under review. The structure of relevant monosaccharides is discussed briefly as an introduction to an account of modern methods of determination of polysaccharide structure. Chapters follow on starch and cellulose, glycogen, levans, galactose-, mannose-, amylase- and immuno-polysaccharides, and the polyuronides including hemicellulose, pectin, gums, mucilages and alginic acid. Part II of the book describes the derivatives of monosaccharides of importance in polysaccharide investigations, methods for estimation of carbohydrates, the utilisation of carbohydrates in animal and plant metabolism, the role of carbohydrates in immunology, and the identification of sugars and sugar acids. An appendix completes the survey of available literature to September, 1947. A comprehensive list of references at the end of each chapter permits extensive condensation of the text without in any way detracting from the clarity of the discussions. The book can be commended to all those who, unable to keep in touch with an ever expanding literature of a developing subject, yet desire, or have need, of an up-to-date knowledge of the methods of investigation, the problems arising and the results achieved in this important branch of chemistry. F. HARTLEY.

THE BASIS OF CHEMOTHERAPY by T. S. Work and E. Work. Pp. 435 + XX. Figs. 42. Oliver and Boyd, Ltd., Edinburgh, 1948, 26s.

It is refreshing to receive for review a new work founded upon an original idea. The book was designed to give young research workers a broader and sounder basis for the study of chemotherapy. It is my belief