

Book review

Cellulose and Other Natural Polymer Systems: Biogenesis, Structure and Degradation: edited by R. M. BROWN, JR., Plenum Press, New York, 1982, xvii + 519 pages, \$49.50.

Cellulose and Other Natural Polymer Systems, dedicated to the late Dr. Hans-Henning Heunert, focusses on the composition, biosynthesis, and degradation of selected, natural-polymer systems of bacteria, algae, insects, and plants, with a concentration on cellulose, its macromolecular structure, and its role in plant growth and development. The book, first conceived at a cell biology meeting in 1978, has been produced in order to bring together the current basic research, so as to provide the reader with the more recent, innovative approaches to the biosynthesis of cellulose, and the assembly of the microfibril.

The book is divided into three sections, dealing with the three aspects of the subtitle, each consisting of a number of chapters written by international authors of high repute. The first section, on biogenesis, which occupies almost 75% of the book, consists of 18 chapters that cover various aspects of the synthesis of cellulose and chitin, fibril formation, cell-wall formation, and protein glycosylation, and includes discussions on molecular-weight distribution and polymerization kinetics. The second section, on structure, contains three chapters dealing with cellulose microfibrils, cellulose, and chitin fibre organization, and a comparison between synthetic and natural fibre systems. The third section, on degradation, contains two chapters dealing with the localization, visualization, and action of β -D-glucanases and cellulases.

The coverage of the subject is deep, but the editor admits that the constraints of space meant that discussion of many important natural polymers had to be omitted. Nevertheless, the approach taken by the editor and authors should instil a new stimulus in those involved with cellulose in research and industry. The book should be essential reading for biologists and biochemists involved in teaching and research on, or utilization of, cellulose, and would be beneficial to the advanced student wanting more specialized information not found in the more standard texts. Where criticism can be made of the book, it is in the area of nomenclature, with no common system being adopted by the editor, and frequent disregard displayed for IUPAC/IUB Recommendations on enzyme and carbohydrate nomenclature. In a book of this status, it is inadmissible to find anomeric configurations being quoted without mention of absolute configuration, whilst some mention of the systematic nomenclature of enzymes would have been preferred by the reviewers.

JOHN F. KENNEDY
*Department of Chemistry,
University of Birmingham,
England*

CHARLES A. WHITE
*Vincent Kennedy Ltd.,
Sutton Coldfield,
England*