

The scope and ease of reading of *Annual Reports on Fermentation Processes* makes this volume a must for all libraries and individuals involved in microbial technology from a practical aspect and for those involved in the teaching and learning of the subject. We wish the editor every good wish at the start of this new era of the series and compliment him on the publication of this most useful volume.

Economic Microbiology. Volume 5: Microbial Enzymes and Bioconversions. Edited by A. H. Rose. Academic Press, London. 1981. xviii + 693 pp. ISBN 0-12-596555-9. Price: £50.40 (US\$ 121.00).

Microbial Enzymes and Bioconversions is the fifth in the series edited by A. H. Rose which has become familiar to many microbiologists. The earlier volumes have dealt with manufacturing processes for exploiting micro-organisms for commercial use. This volume differs from its predecessors in that it is concerned only with the development of enzymes, either in isolation or as short sequences for industrial use. The subject has been divided into 11 chapters written by experts in their respective fields, four of which dealt with carbohydrate directed enzymes whilst a fifth is devoted to immobilised forms of such enzymes.

The opening chapter, by Rose, provides a history and the scientific basis for the commercial exploitation of microbial enzymes. The coverage of this chapter includes the earliest reports of biological catalysts dating from the 1830s whilst including the most recent exploitation of enzymes, etc., with coverage of the literature up to 1979. Subsequent chapters include descriptions of the various types of enzymes, divided into their constituent types including, in addition to those mentioned above, proteases and penicillinases. Each type is described systematically in terms of occurrence, structure, mechanism and specificity of action, inhibitors, stability, methods of production, purification and uses. Other chapters include discussions on steroid alkaloid and xenobiotic conversions and antibiotic transformations. All chapters are well written with clear, easy to understand diagrams, structures and tables.

The chapters of direct relevance to readers of *Carbohydrate Polymers* are those by Fogarty and Kelly (Amylases, Amyloglucosidases and Related Glucanases), Barker and Shirley (Glucose Oxidase, Glucose Dehydrogenase, Glucose Isomerase, β -Galactosidase and Invertase), Rombouts and Pilnik (Pectic Enzymes), Goksøyr and Eriksen (Cellulases)

and Barker (Immobilized Enzymes). These chapters are very comprehensive and give clear descriptions of the action, etc., of these enzymes on a variety of polymeric carbohydrate substrates.

This volume, dedicated to the memory of D. Perlman, one of the great contributors to fermentation science, should provide much interest and stimulation to the field with which D. Perlman was associated, namely the pharmaceutical industry which has benefited so much from the more recent developments in microbial technology. In addition this book provides a suitable text for those involved in the research, development, industrial processes and teaching of microbiology, chemistry, biochemistry and cell biology or, to use the more recent term 'biotechnology' irrespective of the establishment to which they belong.

Microbial Enzymes and Bioconversions provides material which is of direct relevance to, and should stimulate future interest and progress in, all institutions concerned with biotechnology including research establishments, commercial companies or academic institutions. We wholeheartedly recommend this volume to all carbohydrate chemists and technologists.

John F. Kennedy
Charles A. White