

Book Reviews

Microbial Enzymes and Biotechnology. Edited by W. M. Fogarty. Applied Science Publishers Ltd, London. 1983. xiii + 382 pp. Price: £34.00 (US\$63.00).

Industrial enzymology and the development of new enzymological processes are some of the most significant areas of new growth in biotechnology. The present volume is a review of many recent developments, with particular reference to microbial enzymes which catalyse the hydrolysis of several types of naturally occurring high molecular weight polymers.

Three of the chapters are concerned with the enzymolysis of polysaccharides. The first of these, by the editor, is an extremely comprehensive review of microbial amylases, and includes an account of various immobilised enzymes which have been developed for a variety of industrial processes. The editor is also the coauthor with C. T. Kelly of a chapter on pectic enzymes, where the properties of various substrates, and of separate pectinesterases, pectic hydrolases and pectic lyases are clearly described. T. M. Enari has then given an authoritative account of microbial cellulases, a group of enzymes which are notoriously difficult to examine, particularly in the first stages of the degradation of insoluble cellulose fibres. The author emphasises that current knowledge of the biodegradation of the associated lignin has lagged behind that of celluloses.

The final chapter on carbohydrates, by C. Buck, deals with glucose-transforming enzymes, such as glucose isomerase and the glucose oxidases. Current world production of high-fructose syrup amounts to some three million tonnes per annum, which gives an indication of the scale of glucose isomerase operations.

Extracellular microbial lipases and microbial proteinases are then reviewed by A. R. Macrae and O. P. Ward, respectively, with emphasis on their applications to industrial processes. In the case of lipases, this is a comparatively recent development, but with proteinases, there is a substantial literature going back to the work of Rohm and Haas in Germany before World War I.

The book is completed by a discussion of the regulation and process of secretion of enzymes by microorganisms written by F. G. Priest. The present knowledge of protein synthesis in extracellular enzyme-producing microorganisms has lagged behind that of other organisms, and the author has shown how recent molecular biological techniques have provided new information on the regulation and physiology of extracellular enzyme synthesis.

Overall, the book provides a timely survey of microbial enzymes of major industrial significance and can be strongly recommended.

D. J. Manners

Enzymes and Food Processing. Edited by G. G. Birch, N. Blakebrough and K. J. Parker. Applied Science Publishers Ltd, London. 1981. xii + 296 pp. Price: £26.00 (US\$48.25).

Enzymes and Food Processing represents the proceedings of the industry-university cooperation Symposium organised by the National College of Food Technology, University of Reading, UK. The 14 papers comprising this volume are contributed by different authors with specialised knowledge and expertise in the subject, and range in their coverage of the application of enzymes in processing from isolated substrate to complex products like meat, milk, fruit juices and bread. Health and safety aspects of detoxifying enzymes and analytical applications of enzymes are also discussed. The sources of enzymes, their