

## Book Reviews

**Annual Reports on Fermentation Processes. Volume 4.** Edited by G. T. Tsao. Academic Press, New York. 1981. xiv + 320 pp. ISBN 0-12-040304-8. Price: £16.00 (US\$38.40).

Volume 4 of *Annual Reports on Fermentation Processes* represents the beginning of a new phase for the series for, with G. T. Tsao taking over the editorship from the late D. Perlman, this volume also contains the first David Perlman Memorial Lecture of the annual lectureship awarded by the American Chemical Society. The lecture, entitled 'The new biology: opportunities for the fermentation industry' by A. L. Demain, provides an up to date review of the interaction between genetics and fermentation, with emphasis on what the fermentation can achieve at present, and the opportunities for the future development of the industry in terms of new products and processes.

The remaining nine contributions cover a wide range of topics including: conversion of food processing wastes into food or feed through microbial fermentation, which provides a valuable discussion on the utilisation of such waste products as starch, cellulose, pectins, whey and a variety of other carbohydrates; immobilised microbes, which includes a discussion of the use of such carbohydrate polymers as carrageenans for supports for immobilised cells; and the effect of recombinant DNA on improved alcohol production by direct conversion of cellulosic foodstocks from agricultural, forestry and municipal residues. Other topics of interest include production of antibiotics, interferon and biologically active peptides. All contributions are well written and concise with clear illustrations and up to date references, including the patent literature, which serve to provide a compact but comprehensive, publication at an economic price.

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,  $\beta$ -Galactosidase and Invertase), Rombouts and Pilnik (Pectic Enzymes), Goksøyr and Eriksen (Cellulases)