

BOOK REVIEW

Topics in Enzyme and Fermentation Biotechnology. Volume 5. Edited by A. Wiseman. Ellis Horwood, Chichester. 1981, Pp. 359. ISBN 0-85312-275-X. Price: US\$70.00 (£38).

This book is the fifth volume of a successful, ongoing series which was given its initial impetus by the *Handbook of Enzyme Biotechnology* (1975) also edited by A. Wiseman, and published by Ellis Horwood. Volumes 1–4 of this series (produced annually since 1977) contain reviews of an interdisciplinary nature on a wide range of topics ranging from production of immobilised enzymes to uses of enzymes in industry, medicine and research. At first glance, this series appears to have little to interest the carbohydrate chemist but a survey of the contents pages shows that for those involved in the increasingly more relevant biotechnological aspects of carbohydrate chemistry, be it from the viewpoint of production of industrially important carbohydrate polymers, utilisation of carbohydrate foodstocks or use of enzymes for structural studies, etc., this series provides well written, up to date, state-of-the-art reviews of great importance and interest.

The recent publication of the Spink's Report (*Biotechnology – A Report of a Joint Working Party* (1980), published by HMSO has given new impetus to large-scale use of enzymes and examples of the relevance of this series to carbohydrate chemists can be found in two contributions to Volume 5. The first is an excellent review, by Dr C. R. Lowe, on the subject of immobilised enzymes and the potential these materials hold for the purification, preparation, etc., of enzymes and isoenzymes, including those active on polysaccharides, by affinity chromatography techniques. The second is a review, by Dr J. Darbyshire, on the subject of large-scale extraction of enzymes and the related field of large-scale disruption of micro-organisms, an area

which is very much polysaccharide orientated. These two reviews are most timely in view of the current emphasis on fermentative production of a whole variety of 'chemicals', particularly polysaccharides, using alternatives to expensive oil-based materials, or which require the specificity of enzymic production to provide the required (biological) activity of the product.

The antibiotic Gramicidin S is the subject of an extensive review which brings together fermentation considerations and many related biochemical aspects. The mixture of enzymes referred to as papain (EC 3.4.22.2), used considerably by industry, is the subject of an excellent review which deals with the pure and applied enzymology of *Carica papaya* L. latex and industrial uses of this mixture of enzymes. The final chapter, on analytical and synthetic applications of a number of free and immobilised alcohol dehydrogenases (EC 1.1.1.1, etc.), rounds off this excellent volume by providing a particularly detailed description of the subject.

Wiseman, in his introduction, describes the multi-disciplinary nature of biotechnology, the need for full co-operation and exchange between different groups of workers in similar and differing fields of study and the profit each and everyone can both yield and obtain by increasing the financial support to biotechnology. This volume (maintaining the tradition of the series) will do much to influence the future by fulfilling those needs. We can do nothing but recommend this series most strongly to those actively engaged in any aspect of biotechnology (be they pure scientists, engineers or industrialists, or to use a derivation from the 'in' word 'biotechnology' — biotechnologists), a subject which is so dependent upon carbohydrates and polysaccharides. We suggest to those still discovering the subject that the insight to be gained from this series is invaluable.

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