and between arabinose-binding protein and carbohydrates. Each chapter is well written with reference to the more recent literature, but the different nomenclature systems used for defining carbohydrate structures (few of which comply with the IUPAC/IUB recommendations published in the early 1980s) can be confusing to the less specialised reader.

In general, this book has a lot to contribute to the subject of carbohydrate–protein interactions and is therefore suitable for recommending as an introductory test for graduate students and scientists from other disciplines who want a brief resumé of the subject. The inclusion of a discussion on the other types of carbohydrate–protein interactions and an adherence to accepted IUPAC nomenclature would have made this an excellent introductory text.

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Food Biotechnology 2. Edited by R. D. Kind and P. S. J. Cheetham, Elsevier Applied Science Publishers, London and New York, 1988, v + 260 pp. ISBN 1 85166 218 9. Price: US$70.25, £39.00.

Carbohydrates have always been and always will be associated with food, not only as an essential nutrient but (more recently) also as a necessary ingredient/additive (e.g. as sweeteners, food stabilisers, emulsifiers, etc.) to maintain or enhance texture, palatability, etc., of processed food stuffs. It is, therefore, not very surprising that three reviews in *Food Biotechnology 2* deal with the general topics of bioaffinity methods of analysis (Chapter 1), economics of biotechnology (Chapter 2) and recent developments in enzyme technology (Chapter 5) and have for their examples glucose sensors, high-fructose syrup manufacture and the optimisation of the performance of carbohydrate degrading enzymes (e.g. amylases) respectively. Another review dealing with immobilized plant cells (Chapter 4) discusses the application of carbohydrates (e.g. agarose, alginates, carageenan, xanthan) for gel entrapment.

However, in the more specialized contributions, surprisingly not even one was dedicated to the application of biotechnology on any carbo-

hydrates. The topics deal with the generation of flavour and aroma using enzymes and microorganisms (Chapter 3), the application of biotechnology in the control of the physical properties, stability of fats and oil products, with the production of useful derivatives from their raw materials (Chapter 6) and with three methods (enzymatic, chemical and recombinant DNA method) for the synthesis of aspartame (Chapter 7).

Contributions, all of which are reviews, are well-written, well-illustrated and each has a comprehensive list of references. The book is easily read and is an important source of information for food scientists and food technologists. For other 'non-food' biotechnologists, the topics on fats and oils, flavour and aroma might be found interesting, if not useful. However, the information discussed in the more general topics could be found in other biotechnology books which also contain much more valuable information and which could be bought for the same price.

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Carbohydrate Chemistry. Edited by J. F. Kennedy, Oxford University Press, Oxford, 1988, 678 pp. ISBN 0 19 8551770. Price: £75.00.

The study of carbohydrate chemistry has traditionally fallen into two fields based upon the molecular size of the molecules concerned. Thus monosaccharide chemistry is concerned with the reactions and chemical synthesis of monosaccharides, with a strong emphasis on pure organic chemistry, whilst polysaccharide chemistry is concerned with the primary structure, physical properties and derivatives of polymeric carbohydrates.

Over the past few decades it has become apparent that carbohydrates are heavily involved in other biologically active molecules in that carbohydrates are frequently attached to proteins and lipids. Consequently, interest in carbohydrates has now turned to the possibility that carbohydrates may act as molecular recognition determinants in biological processes and as cell–cell adhesion factors which may be related to health and disease. To this end both fields of carbohydrate chemistry