Carbohydrate Polymers **16** (1991) 233–237

Book Reviews

Downstream Processing and Bioseparation Recovery and Purification of Biological Products. Edited by J.-F. P. Hamel, J. B. Hunter and S. K. Sikdar, American Chemical Society, Washington DC, 1990. viii + 312 pp. ISBN 0-8412-1738-6. Price: $69.95.

As the field of biotechnology grows, the need for separation techniques which result in pure products at high yields becomes increasingly important. 'Downstream Processing and Bioseparation' aims to relate several useful separation techniques to the field of biotechnology. The volume's main areas of focus are downstream processing techniques. In some 14 different papers the book aims to give an introduction to, and some detail of, a similar number of different processes. All of the processes outlined have had, or are expected to have, some success in the recovery or purification of biological products.

The three types of bioseparation contained within the pages of this volume are extraction and membrane processes, processes using bispecific interaction with proteins and novel isolation and purification processes (which basically covers anything which cannot be fitted into the first two sections). The chapters contained within these three sections are in general well written, with a good deal of detailed information from both a theoretical and a practical standpoint.

As can be the problem with symposium based volumes, 'Downstream Processing and Bioseparation' displays a distinct lack of continuity between its chapters. This problem is, however, somewhat sidestepped by including a first 'introductory' chapter which aims to bring all of the information in the volume together in one integrated section. This works well, and is an idea which other symposium editors should consider using.

'Downstream Processing and Bioseparation' will have a very wide readership, because it is aimed at all graduate level and beyond scientists in biotechnology, chemical and biochemical engineering and in the pharmaceutical field. Many scientists who require bioseparation techniques may feel compelled to purchase this book, and scientific libraries would be incomplete without a copy.

John F. Kennedy
David W. Taylor

Gums and Stabilisers for the Food Industry 5. Edited by G. O. Phillips, D. J. Wedlock and P. A. Williams, IRL Press, Oxford, 1990. xv + 609 pp. ISBN 019 9630615. Price: £55.00.

The food industry is most often the prime target for application of carbohydrates. However, there still remains a lot to be known regarding the relationship between carbohydrate functionality and their molecular structure and the physicochemical interaction of carbohydrates with biopolymers and other substances in a system. Understanding of the basic principles subsequently leads to the ability to design carbohydrates and systems to give desired functionality and properties, respectively.

Development and increase in carbohydrate applications needs the interaction between the user, the producer and the basic researcher. The Gums and Stabilisers in the Food Industry series aims to marry the technical and industrial considerations with more basic interpretation of functionality; the latest addition for the year 1990 (Volume 5) is no exception.

Again the editors are to be congratulated for putting together the most recent information on gum arabics and other exudates, starch, gelatin, pectin, microbial polysaccharides, celluloses and seed gums and marine polysaccharides. In the whole, not a lot has developed except, in particular, the microbial polysaccharide, acetan, and the novel idea of derivatizing polysaccharides in their natural state, e.g. cereal grains for starch, and subsequent extraction of the derivatives. The book also underlines and identifies the problems and questions still remaining in the carbohydrate field especially their applications in the food industry.