To those familiar with this series, the latest addition comes up to the same standards as the earlier volumes. The book is highly recommended to all carbohydrate scientists, as an addition to their libraries and/or for reading.

Vivian M. Cabalda
John F. Kennedy

Chemical Changes During Food Processing. Edited by J. Davidek, J. Velisek and J. Pokorny, Elsevier Science Publishers, Amsterdam, 1990. xv + 448 pp. ISBN 0-444-98845-9. Price: US$174.25/Dfl. 340.00.

Food processing is as old as mankind. As knowledge has increased, so also has food processing evolved. However, deep sophisticated knowledge in this field has been acquired slowly, compared to that in other areas of science. This might be due to complex chemical heterogeneity of foods and the complexity of the processes and reactions which take place during preparation. The development of powerful new analytical methods, specially in separation techniques, has made possible the expansion of understanding of new aspects of food science.

The aim of 'Chemical Changes During Food Processing' is to describe in detail the processes and chemical reactions which take place during industrial processing and storage of food. The work deals with the changes occurring in foodstuffs from the aspect of the main food constituents, regardless of the particular food item per se.

'Chemical Changes During Food Processing' includes six chapters, each dealing with a different group of food components: proteins, saccharides, lipids, as well as vitamins, sensorically active compounds (including natural pigments and flavour-active substances) and natural anti-nutritive and toxic compounds. These components are important from the side of nutritional, sensory and hygienic properties of food commodities. Only natural food constituents are considered.

The most important reactions are described and in general detailed by means of figures. A theoretical explanation of each type of reaction is given, followed by examples taken from different branches of food technology.

However, some previous knowledge of food chemistry is assumed, so that contents of the book may become complex for inexperienced readers of food technology. This book is a good source of information for food technologists and researchers interested in a wide knowledge of chemical changes in food constituents.

Josu M. Anta
John F. Kennedy

Computer Modelling of Carbohydrate Molecules. Edited by A. D. French and J. W. Brady, American Chemical Society, Washington, DC, 1990. 406 pp. ISBN 0-8412-1805-6. Price: £84.95.

Nearly 95% of the yearly growing biomass consists of saccharides and thus, carbohydrates provide a cheap and practically unlimited source of raw material for useful products in every day life as well as in research and technology. Present and future applications are ranging from biological active substances in pharmaceutical industry through the use of carbohydrates as detergents and emulgating agents to the use of carbohydrates in biofilm or plastic material production. Most, if not all, of these widespread applications are due to the manyfold conformational and dynamic properties of the saccharides.

However, structural characteristics of many carbohydrates still remain unknown and predictions based on physical and chemical methods alone are often unsatisfactory. The combination of theoretical and physical chemistry with modern computer technology, starting in the 1960s and still developing with increasing velocity, led to the most promising approval of estimating and understanding molecular conformation and dynamics: the computer modelling of molecules. 'Carbohydrate Modelling of Carbohydrate Molecules' (23 chapters) opens with a comprehensive introduction which although it provides a basic knowledge for people who wish to start work in this area, does expect some theoretical chemistry background on the part of the reader.

Following chapters deal with special methods and problems in computer modelling of carbohydrates, in order of increasing complexity. The methods for calculating conformations and dynamics of carbohydrates are based on systems using classical mechanic relationships, on systems using molecule orbital calculations or on systems using NMR or