

Book Reviews

Developments in Dairy Chemistry — 3. Edited by P. F. Fox, Elsevier Applied Science, London, 1985. x+405 pp. ISBN 0-85334-370-5. Price: £48.00.

This is the third volume in the series on the chemistry and physical chemistry of milk constituents. Volumes 1 and 2 dealt with the commercially more important constituents, proteins and lipids, respectively. This volume deals with the less commercially important constituents, lactose, milk salts, enzymes, protective proteins and vitamins which are, however, of major significance in the chemical, physical, technological, nutritional and physiological properties of milk.

Five out of the 11 chapters in this volume deal with various aspects of lactose. Chapter 1 reviews the more modern aspects of the chemistry and physiochemical properties of lactose. Developments in the modification of lactose and applications of these derivatives in food and nonfood industries are discussed in Chapter 2. The enzymatic conversion of lactose to glucose and galactose and its technological and nutritional significance is described in Chapter 3. Chapters 4 and 5 discuss the nutritional aspects of lactose, with the current views on the problem of the non-digestibility of lactose by the majority of the world's population and the factors which lead to galactosaemia being reviewed.

Chapters 6 and 7 discuss the secretion, concentrations and physical chemistry of the milk salts, and the nutritional aspects of other minerals in bovine and human milk, respectively. A comprehensive summary of the salient features of the flavour/off flavour of milk and milk products such as butter, cream, fermented milks and cheeses is condensed into Chapter 8. The biological activity of milk is frequently ignored but the indigenous enzymes reviewed in Chapter 9 can cause undesirable changes in milk and dairy products during storage. Other biologically active compounds such as the antibacterial systems, lysozyme, lactoferrin and lactoperoxidase, and vitamins, reviewed in Chapters 10 and 11 respectively, have significant nutritional and biological significance.

Whilst the aim of this text is to present an up-to-date review of lactose and minor milk constituents, it covers areas which have hitherto been considered by many workers to be of minor importance but which have been shown in this text to be of much greater significance. This volume

should do much to stimulate further research into the subject and is wholeheartedly recommended as essential reading for all chemists, biochemists, food scientists and technologists who are engaged as teachers, students, research workers or managers in the food industry or academia.

Charles A. White
John F. Kennedy

Chemistry and Physics of Baking. Edited by J. M. V. Blanshard, P. J. Frazier and T. Galliard. Royal Society of Chemistry, London, 1986. viii + 276 pp. ISBN 0-85186-995-5. Price: £39.50.

This volume represents the proceedings of an International Symposium with the same title, jointly organised by the Food Chemistry Group of the Royal Society of Chemistry and the Nottingham University School of Agriculture and held during April 1985 at Sutton Bonington. Both the symposium and this volume are an attempt to rectify the virtual total absence of a comprehensive, up-to-date examination of a subject which has an estimated total annual retail value (in the form of cakes, bread and biscuits) in excess of £3000 million in the UK alone. The drive behind this aim is the increasing awareness that nutritional and legislative issues can have opposing effects on commercial viability. A detailed knowledge of the materials and processes involved is therefore essential for the future wellbeing of the industry.

The 20 contributions, written by 34 authors from the UK, Europe, Australia, Canada and the US, are presented in three sections. The first section, entitled Basic Constituents of Baked Products, contains nine contributions dealing with the major components of baked products including polysaccharides, proteins, fats, emulsifiers, enzymes, yeast and water. The importance of water is frequently overlooked by many food scientists but this review illustrates the important role it plays in the baking process.

The second section, entitled Fundamental Interactions: Consequences, Control, contains seven contributions which cover both physical and chemical interactions that are important in the baking process including mixing, interactions of carbohydrates and lipids with proteins, oxidation-reduction systems, rheology and component interaction at various stages of processing. The final section entitled Developments