

## Book Reviews

**Interactions of Food Components.** Edited by G. G. Birch and M. G. Lindley. Elsevier Applied Science Publishers, London. 1986. xi + 343 pp. Price: £42.00.

This book is the Proceedings of an industry–university cooperation symposium organised under the auspices of the National College of Food Technology (Department of Food Technology), University of Reading, and held in April, 1985. It is the sixteenth in a series of successful symposia since 1970—symposia which have attracted a wealth of internationally renowned speakers and provided a useful and reliable collection of literature reference sources. The theme on this occasion provides ample room for manoeuvre on content matter, and the symposium committee has taken maximum benefit of this freedom. The book is not sub-divided into sections of common ground, but is rather a collection of highly individual chapters which have a bearing on the overall book title. The total coverage is diverse and extensive. The first paper reviews interactions of sensory and nutritional components of the diet; sensory properties of food can interact with, for example, fat and sugar, inducing palatability and obesity. The next chapter deals with interactions of water with food components, in particular the extent of water binding and available water for soluble mobility and chemical reactions. Three separate chapters review the interaction of minerals, especially iron, with carbohydrates or proteins. Complex formation and metal binding is discussed in relation to possible mechanisms, sensory changes induced and the subsequent effect on bioavailability of the mineral. A chapter on sterols shows that representatives containing an ethylidene group in the side chain have significant antioxidant properties at deep fat frying temperatures; the different behaviour of such sterols in comparison with phenolic antioxidants is

discussed in terms of the mechanisms of antioxidant activity. Sulphur dioxide inhibits non-enzymic browning, but, in addition, sulphite-mediated oxidation of, for example, unsaturated fats, methionine and  $\beta$ -carotene is possible; conditions promoting such oxidation are reviewed to reconcile the apparent antioxidative effect of the additive in many foods. Primary interactions of nitrites in foods include the formation of volatile nitrosamines and of nitrosylmyoglobin, but nitrite may also interact with proteins, carbohydrates, lipids, ascorbic acid, smoke components and bacteria. Other chapters include phenol/protein interactions and their significance in astringency, physico-chemical interactions in aroma transport processes from solution, interactions of non-volatile and volatile substances, the functional properties of pectins, and interactions of confectionery components. Finally, two chapters deserve special mention and the authors should be especially congratulated. One deals with numerous interactions of milk components in food systems and the other presents a review of protein-lipid interactions in bread dough. They are extremely comprehensive and well documented. In particular, the discovery and characterisation of the highly interactive wheat protein 'ligolin' (and its possible key rôle in gluten structure and baking performance of wheat flour) is, to me, the 'story' of the decade: an elegant piece of work, well conquered. This resumé surely shows that the book has something for everyone and a great deal for some, depending on individual research interests. Students alike will find useful material in concise chapters. The book is remarkably free of errors, the editing has been consistent, and authors, Editors and publishers have done well to achieve a reasonably speedy publication.

**Glesni MacLeod**

**Analysis of Oils and Fats.** Edited by R. J. Hamilton and J. B. Rossell. Elsevier Applied Science Publishers, London, 1986. x + 441 pp. Price: £52.00.

A vast number of analytical procedures have been reported over the years for the determination of the composition and quality of edible oils and fats. This book attempts to provide a central source of information for scientists involved in the analysis of these commodities.

Chapter 1 provides a discussion of classical methods for the analysis of oils and fats. Many of the methods described are specified by national and international standards organisations, and Chapter 2 discusses the need for standard methods and gives information about these bodies. The