

## Book Reviews

**Developments in Food Proteins—5.** Edited by B. J. F. Hudson. Elsevier Applied Science, London and New York, 1987. x + 341 pp. ISBN 1-85166-082-8. Price: £48·00.

The increasing use of plant proteins in the food industry is due to a number of factors, most notably economic pressure (high meat prices and the availability of cheap sources of plant proteins such as soybean) and concern about health problems associated with consumption of meat and dairy products. In addition, our advancing knowledge of protein functionality in food systems has allowed the substitution of plant for animal proteins with little or no change in the characteristics of the product. This revolution in the food industry is reflected in the new volume of this well-established series, with three of the seven chapters devoted to seed proteins, and a strong emphasis on functionality throughout.

Although legume proteins are dealt with in two chapters, there is little or no overlap in content. Wright's general account of 'The Seed Globulins' concentrates on proteins from a limited number of legume (chiefly peas and soybeans) and non-legume (oats, rice, *Brassica napus*) species for which complete or partial amino acid sequences have been determined by molecular cloning. The contrast between the detailed sequence data and our limited knowledge of other aspects of protein structure and how this relates to functionality is striking. In contrast the proteins of peanuts have not yet been the subject of molecular analysis, probably because of the restricted use of the crop in developed countries (mainly in peanut butter and as whole roasted nuts). The excellent chapter by Conkerton and Ory gives a broad account of their extraction and functional properties, and describes a range

of traditional and novel food uses from around the world. Finally, the chapter by Frank on cottonseed proteins focuses on processing methods and the properties of crude protein isolates, with about half of the text devoted to the removal of gossypol and other toxic compounds.

If there is any single lesson to be learnt from these three chapters, it is that there is still a wide gulf between the molecular studies of seed protein genes and our knowledge of protein functionality.

The two traditional sources of food proteins, meat and milk, are highlighted in chapters on 'The Coagulation of Casein Micelles' (Bringe and Kinsella) and 'Functional Properties of Muscle Proteins' (Morrissey *et al.*), while contributions from the Leatherhead Food Research Association describe protein foaming and gelling systems (Poole and Fry) and methods for assessing functionality (Patel and Fry).

Although the present volume in particular, and the series in general, are well balanced in most respects, the proteins of wheat and other cereals have been comparatively neglected. Not only has there been a great increase in our knowledge of wheat protein structure since it was reviewed in volume 2 (1983), but the current production surplus of wheat in the EEC makes gluten an attractive raw material for new lines in the food industry. I hope that this imbalance can be corrected in future volumes of what has proved to be a very useful series.

Peter Shewry

**Recent Advances in Chemistry and Technology of Fats and Oils.** Edited by R. J. Hamilton and A. Bhati, Elsevier Applied Science, London, 1987. xii + 188 pp. ISBN 1-85166-070-4. Price: £30.00.

The editors describe this text as 'an attempt to provide some insight into the current state of the art' (relating to the chemistry and technology of fats and oils). Eight subjects of interest to scientists and technologists have been selected for discussion.

Chapter 1 by Birker and Padley describes the physical properties of fats and oils including, melting behaviour, polymorphism, phase diagrams and compatibility of fats in blends. Thermodynamic properties of fats are well summarised in this chapter. In the following chapter, the late Dr Bhati provides a useful account of alternative procedures for determining the fatty acid sequence in triacylglycerols and related compounds. The following two chapters are more relevant to the fat technologist. Industrial aspects of lipid oxidation and hydrogenation of fats are discussed by J. C. Allen and H. B. W. Patterson, respectively. The latter chapter includes a discussion of plant