

Book Review

Food—The Chemistry of Its Components. By T. P. Coultate. Royal Society of Chemistry Paperbacks, London. 1984. 187 pp. Price: £5.95 (soft covers).

For some time there has been a need for a reasonably priced student text dealing with the chemistry of food components. I was therefore pleased to see Dr Coultate's book, designed to fill this void. The author's emphasis on the relationship between the chemical structure of a food component and its contribution to the properties and behaviour of a foodstuff provides an essential, well balanced theme to this applied field of study.

The book is divided into eight chapters dealing with the principal macro- and micro-constituents of foods. Following on from a short introduction on food chemistry, Chapter 2, Carbohydrates, deals with basic structures; Fischer, Haworth and puckered ring conventions, conformation and configuration. The practical importance of sugars in food, water activity and microbial spoilage, is also mentioned. The theory on why sugars taste sweet is discussed, followed by browning reactions and finishing off with polysaccharides. Chapter 3, Lipids, deals with structure, nomenclature, antioxidants and autoxidation, triglyceride composition in animal and vegetable matter, their various polymeric forms and complex lipids. Chapter 4, Proteins, follows the pattern of the previous two chapters, outlining structures, discussing their nutritional importance and functions in foods such as milk, meat and bread. Chapter 5, Colours, is the first minor group of compounds considered. The

chlorophylls, carotenoids, anthocyanins, betalaines, melanins and food synthetic colorants are discussed. Chapter 6, Flavours, emphasises the importance of flavour in foods. 'Man so often chooses on flavour rather than nutritional quality', Dr. Coultate reminds us. This is followed by sections on sulphur compounds, flavour enhancers and modifiers, and synthetic flavours. Chapter 7, Vitamins, discusses their occurrence and nutritional importance. The book concludes with Chapter 8, Preservatives, including nitrates, the use of sulphur dioxide and smoking as a means of preservation.

One of the strengths of the book lies in the liberal use of structure drawings showing the various groups of compounds as they are discussed. The book covers a lot of material, and, in so doing, in only 187 pages, can just glance over the many topics. As such, it is a good student text. To supplement this, each chapter lists a useful bibliography of primary references. The book has one obvious omission. In common with many other food chemistry books, water, the main component of food, is not discussed. Many of the chemical and biochemical reactions in food systems are dependent on the presence of water; also, gustation and, to some extent, olfaction require water, and protein behaviour is governed by the hydrophobic-hydrophilic balance, etc. Such importance must merit an individual chapter on the subject.

S. Z. Dziejic