

## Book Reviews

**Biscuits, Cookies and Crackers. Vol. 1. The Principles of the Craft.** By Peter Wade. Elsevier Applied Science, London, 1988. ISBN 1-85166-187-5. xii + 176 pp. Price: £30.

Successful large scale automated biscuit manufacture is only possible if biscuits of uniform weight, shape and thickness are produced by the machinery. Errors made near the start of manufacture may cause irreversible problems later on and so it is important that everyone involved in biscuit production has at the least the depth of knowledge that this very readable book contains.

The author has explained the principles underlying the mechanised craft of biscuit manufacture. Each chapter is clearly sectioned and well referenced. The book has been written with either a newcomer to the biscuit industry, or with someone who supports the industry by supplying ingredients or equipment, in mind. The reader therefore needs only a basic knowledge of the properties of carbohydrates, proteins and lipids in order to follow the text.

The book starts with a definition of what a biscuit is and what the necessary ingredients are for the main types of biscuit doughs. The author then goes on to outline the basic biscuit-making processes and discusses the essential properties of the principal ingredients, i.e. wheat flour, fat, sugar and water. (Wheat, and its flour components, are considered in the greatest detail.) As the consumer tends to regard wafers as a biscuit, the penultimate chapter is devoted to wafer production.

Other important topics discussed in this book are the changes that occur

during biscuit dough processing, the types of equipment used for mixing, sheeting, laminating, moulding and cutting the dough, the effects of standing the dough between mixing and machining and the types of experimental techniques used by the industry to investigate the biscuit making process.

The greatest scientific input into biscuit making must be in the use of sulphur dioxide and the sulphites, proteases, etc., as dough conditioners, while the 'blackest art' must lie in understanding and controlling the changes that occur in the product during baking, cooling and storage. Clear diagrams, black and white photographs and photomicrographs aid the reader to comprehend both the science and the art.

This is an excellent very useful little book.

**Barbara Brockway**

**Review of Advances in Cereal Science and Technology.** Vol. IX. Edited by Y. Pomeranz. The American Association of Cereal Chemists, St. Paul, MN, USA, 1988. ISBN 0-913250-51-1. 345 pp. Price: US\$66.00.

Volume IX of the Advances in Cereal Science and Technology series is an excellent book containing a well balanced mixture of topics, ranging from a chapter reviewing the different methods used for determining the crispness of cereal products to chapters describing the application of quite advanced immunological and biochemical techniques to the complex questions asked about cereals.

Y. Pomeranz, as the editor, has gathered together contributions from American, Canadian, French and Australian authors, who between them have produced eight interesting and very useful chapters.

The first chapter in this volume discusses crispness. Crispness is a food characteristic that we use for judging quality, especially in foods like biscuits and certain vegetables. Often it is the consumer's only criteria for judging quality. Despite the relative ease with which we perceive crispness we find tremendous difficulties in designing suitable equipment for measuring this characteristic. The author of this chapter, Z. M. Vickers, concentrates on mechanical and acoustical techniques for measuring crispness and she explains how cereal products make noise.

The resurgence of interest in reducing water activity in foods to improve their storage characteristics has inspired the fourth chapter in this volume. The authors, P. S. Taqukis and W. M. Breene, review both the historical and the modern developments in the techniques used for producing intermediate-moisture foods. They also consider the savings that can be made in terms of energy costs and speculate about the future of intermediate-moisture foods.