facturing industry. It is essentially divided into sections covering the production and properties of raw materials, manufacturing processes, and other technological aspects of the subject, with many of the original chapters having been totally rewritten and re-organised, compared with the first edition, to reflect today's markets.

The opening introductory chapter deals with sugar (sucrose) itself, outlining the production of cane and beet sugars and discussing the different marketed grades of sugar. Some of the properties of sugar and sugar solutions are also discussed. The next four chapters deal with the production of a variety of major confectionery ingredients/additives such as glucose syrups, starch hydrolysates, gums, gelling agents, oils, fats, colours and flavours.

The technical aspects of industrial confectionery manufacture are dealt with in the next five chapters, which are geared towards specific products, such as boiled sweets, caramel, toffee, fudge, jellies, liquorice, marshmallow, nougat and chewing gum. The equipment required for the production of such confections is presented in diagrammatic detail.

Other topics discussed include the very different methods employed for the preparation of tablets and lozenges (forms that are frequently confused), quality control and chemical analysis, packaging and shelf-life evaluation, and countlines and cereal bars. The term 'countlines' describes a category of confectionery products which are sold as individually wrapped units intended primarily for single-person consumption. In traditional confectioners, tobacconists and newsagents they are displayed and sold from the counter unit adjacent to the till.

Very little information has been published on the structure of confectionery. Two chapters, therefore, attempt to relate available experimental data to the known behaviour of various confectionery products during preparation and storage. Confectionery products must be both structurally and microbiologically stable at ambient temperature.

This volume has been primarily written for food scientists and technologists in the sugar confectionery manufacturing industry, but also aims to serve as a useful reference source for ingredient suppliers and equipment manufacturers and those working in academic and research institutions. It is well presented, with a good index, and is highly recommended.

**John F. Kennedy**
**Charles J. Knill**

**Bioseparation Processes in Foods**. Edited by R.K. Singh & S.S.H. Rizvi. Marcel Dekker, New York, USA, 1995. viii + 469 pp. Price $175. ISBN 0-8247-9608-X.

In biotechnological developments in food manufacture, the separation or purification of biomaterials from their original sources or mixtures during processes has become very significant. Since biological processing always involves large numbers of low-volume products, bioseparation steps are occasionally difficult to scale-up and apply in commercial aspects. However, when they are developed, they can be fully practical in industrial manufacture. Bioprocessing can also be used in a variety of ways to produce value-added products. The various applications of biomaterials separation embrace protein, enzyme, polysaccharide and flavour materials.

Each year the Institute of Food Technologists (IFT) and the International Union of Food Science and Technology (IUFoST) have hosted a two-day Basic Symposium on Food Science. This book, *Bioseparation Processes in Foods*, results from the eighteenth symposium in that series, which was held in Atlanta. It also presents the basics of bioseparations, extraction with or without supercritical fluids, scale-up techniques, precipitation, foam fractionation, large-scale electrophoresis, affinity chromatography, membrane separations, microfiltration, ion exchange for whey protein isolation, and separation processes used in flavour manufacturing and enzyme recovery. In addition, it shows novel techniques and systems, some of which are already in operation in the food industry or are being tested in pilot plants.

With easily comprehended examples, schemes, tables and photographs, this book is an invaluable reference source and is recommended for food scientists and technologists, and chemical engineers.

**Pawadee Methacanon**
**John F. Kennedy**