Nissen), opioid peptides from milk proteins (Chiba and Yoshikawa), mechanism-based enzyme inactivators for medical uses (Silverman), probing the active site of a steroid isomerase with a solid phase reagent (Benisek and Hearne), entry of protein toxins into cells (Sandvig and Olsnes), immunotoxins (Marsh and Neville), tailoring enzymes for use as therapeutic agents (Poznansky), attaching metal ions to antibodies (Meares) and the tailoring of an antitumour protein drug (Maeda *et al.*).

A. P. Williams

Food Analysis: Principles and Techniques, Volume 4: Separation Techniques. Edited by D. W. Gruenwedel and J. R. Whitaker. Marcel Dekker, New York. 1987. 480 pp. $119·50. ISBN 0-8247-7573-2.

Food analysis is a subject that has grown considerably over recent years and is likely to continue to do so as instrumentation develops further and the pressures on the analyst from consumers and governments increase. It can be a particularly frustrating subject and isolating the component of interest from the complex matrix that generally makes up food is one of the major problems. This book, the fourth of an eight volume treatise on food analysis, covers separation techniques. The editors state that their objective was not to produce an undergraduate text nor to produce a cook-book but to produce a reference book for the professional food scientist and analyst. Whilst, generally, the book achieves these aims there are a few frustrating moments along the way, in particular due to the uneven approach adopted by the individual authors. As this book is part of a large treatise, a more structured book would have been welcome.

The seven chapters are well written, giving good coverage with plenty of references to each of the techniques discussed. In two of the chapters, 'Distillation' and 'Membrane Separation Processes' the preponderance of the material seems to be more concerned with the processing aspects of the subjects rather than analysis. The remaining chapters are concerned with the various chromatographic techniques. The techniques covered are: 'Ion-Exchange and Affinity Chromatography', 'Exclusion Processes', 'Thin-Layer Chromatography', 'High-Pressure Liquid Chromatography' and 'Gas Chromatography'. Each technique could easily be the subject for a book which means that each contributor has had to make some selective judgements regarding material. Generally the editors' objectives are adhered to, resulting in a useful guide to separation techniques.

Richard King