

beads are widely used for trapping volatiles. Gas chromatography (GC) using fused silica bonded phase capillary columns coupled with much improved injection techniques gives far superior separating power and is now popular. The application of hplc is given for chlorophenols and for analysis of oleoresins of black pepper and capsicums. Hplc–ms using microbore columns is mentioned briefly (Whitfield and Shaw) and promises great future potential to flavour chemists and for separating highly polar and thermally labile compounds. Fourier Transform (FT) nmr at ng levels and FT ir have been used to supplement data obtained by mass spectrometry. Two notable new techniques are introduced in sensory research, free choice profiling (Williams and Arnold) and the use of relative to ideal scales (Shepherd *et al.* and Griffiths *et al.*). A heavy emphasis is placed on data handling and analysis. Several papers discuss the basic principles of the application of multivariate statistical techniques. Because of the large and multidisciplinary nature of flavour science many areas receive less attention. The biotechnological formation of flavour materials is an important area which was not covered, probably because of the potential commercial value.

The typesetting and presentation is poor on many papers; however, the book will attract a wide readership and is recommended.

**Rosemary O'Reilly**

**Peptide and Protein Reviews. Vol. 4.** Edited by Milton T. W. Hearn. Marcel Dekker Inc., New York 1984. 272 pp. Price: US\$63.00.

*Peptide and Protein Reviews. Vol. 4* consists of five chapters dealing with: NAD dependent dehydrogenases; crystalline cytosolic aspartate aminotransferase; heme structure and function; seleno-glutathione peroxidase and neuraminidase. Large sections of this volume discuss the crystallography of the various proteins and the authors are to be congratulated on making these results so accessible to the non-specialist reader. I particularly enjoyed the chapter on heme structure and function. This was an up-to-date review on the crystal structures of heme proteins in general and cytochrome C peroxide in particular. A full review of current ideas of oxygenase/oxidase mechanisms of action was also included. To the authors' credit, they gave a fair hearing to homolytic cleavage of the cytochrome P450 peroxy O—O bond although they clearly are not happy with the idea.

This book is of a much higher standard all round than previous volumes in the series. However, I still feel it is very over-priced and that will be a major factor preventing it from reaching as wide an audience as it possibly deserves.

**F. F. Morpeth**

**Biotechnologies: Challenges and Promises. Sextant 2.** By Albert Sasson. UNESCO. 1985.

*Biotechnologies: Challenges and Promises* is the second volume in a new series published by UNESCO. The aim of the series, explained in the cover, is to guide the unknowing through 'an ocean of sometimes complicated and often confusing information'. To emphasise this noble objective the series has been given the pretentious title of Sextant (after the navigation aid). Happily, the book rises above this and I found it interesting and informative.

This book covers an enormous range from genetic recombination to energy from biomass. Each chapter briefly outlines the development and techniques associated with a particular area of biotechnology before going on to consider specific commercial applications. There are also general chapters discussing specific problems and identifying new directions for the subject.

I found the chapter entitled 'Development of Bio-industry' particularly interesting, especially the subsection dealing with 'patents and the exploitation of inventions'. The author discusses the problems associated with patenting living organisms with considerable common sense.

This book is not a standard textbook but rather an introduction to, and an analysis of, biotechnology. As such it should be of especial interest to those who continually ask that most difficult question, 'What is biotechnology?'

The book is a paperback with a garish cover. However, the typography is good and the only real criticism I feel I can level against it is that it lacks an index. *Biotechnologies* should find a place in the collection of any institute which is concerned with the commercial utilization of living organisms. I can recommend it as an interesting and stimulating volume.

**F. F. Morpeth**