

Book Review

Selective Detectors. Environmental, Industrial And Bio-medical Applications. Edited by R. E. Sievers. Wiley-Interscience, J. Wiley and Sons Inc. ISBN 0 471 01343 9.

This book is Volume 131 of a distinguished series of monographs on analytical chemistry and its applications (*Chemical Analysis*, series editor J. D. Winefordner). In reviewing the book for this journal, I was conscious of needing to view it from two directions. The first was to review the book as an analytical chemist with a need to understand the design and principles of detectors in order to make the correct choice of approach and to gain optimum performance in analysis. Second, to view the book strictly with regard to its direct relevance and coverage of detectors for the analysis of food constituents and contaminants. The book is strong on the first point and weak on the second. To be fair, from its title and declared scope I should not complain about a poor coverage of food analysis.

It is important to note early on that the book does not cover that most pre-eminent of all selective detectors—the mass spectrometer coupled to a gas chromatograph or liquid chromatography for the analysis of organic substances. Organic mass spectrometry is covered in earlier volumes of the series.

The book chapters are as follows: 1. Sulfur-selective chemiluminescence; 2. Flameless sulfur chemiluminescence; 3. Nitric oxide/ozone chemiluminescence; 4. Oxygen-sensitive flame ionization detection (FID); 5. Metals by ion mobility FID; 6. Gas chromatography–atomic emission detection (GC–AED); 7. Element analysis by chromatography–plasma mass spectrometry; 8. Peroxyoxalate chemiluminescence; 9. Reminiscences by James E. Lovelock.

The book is rich in technical specifications and design details, with many schematics and cutaway diagrams of detectors. These are reproduced to a high quality. The index is comprehensive. Each chapter is well referenced to the original literature. Chapters 6 and 7 will be of particular interest to food chemists.

So who should buy this book?

- Reference libraries that have Volumes 1 through to 130!
- Analytical chemistry libraries.
- Readers of *Food Chemistry* who already use the techniques covered, but perhaps not to best effect.

For the general reader of this journal, access to a text via interlibrary loan will be adequate.

Laurence Castle

Fish and Fishery Products: Composition, Nutritive Properties and Stability. Edited by A. Ruiter. CAB, 1995. ISBN 0 85198 927 6. xi + 187 pp. £55.00

This book of 12 chapters written by authors from Europe, USA and Canada provides an overview of the chemistry, nutritive value, hygiene and preservation of fish and fish products. Reference is made in the Preface to the authoritative reference publications on fish (*Der Fisch*, Rudolf and Clara Baader, 1922 onwards) and the four volumes of *Fish as Food* (Georg Borgstrom, 1961–1965) which in some areas have become out of date with the advance of scientific knowledge. The book is intended to remedy the situation by providing up-to-date information on fish and fish products which will be of value to the research worker and food inspector alike.

To achieve such an overview in only 387 pages inevitably requires difficult decisions in the selection of material. The editor and authors have gone a long way to meeting this objective while at the same time producing a general book on fish which is interesting to read. Chapter 1 covers 'World catches and catching methods'. Aquaculture is included but I feel, too briefly. As perhaps the major growth area throughout the world, it deserves more than 31/2 pages. Chapter 2 is about 'Edible fish' and here I would have preferred to have foregone some at least of the line drawings, attractive though they are (56 drawings in a 45-page chapter), to have more text here and elsewhere in the book. A minor point, but why entitle the chapter 'Edible fish' and not simply 'Fish landed for human consumption'?

Chapters 3, 4, 5 and 6 are concerned with the main components of fish flesh—proteins, lipids vitamins and inorganic matter. All are well referenced and provide a rich source of information for further reading. Chapter 7 is concerned with the determination of quality of fish during post mortem storage. It describes sensory and non sensory methods of quality assessment of fish while Chapter 8 deals with the microbiological safety of fish, shellfish and their products. The latter chapter discusses potential hazards, including those from *Clostridium botulinum*, *Listeria monocytogenes* and *Staphylococcus aureus* and those arising from algal toxins, paralytic shellfish poisoning (PSP) and diarrhetic shellfish poisoning (DSP). On the whole a reassuring chapter but with the message for greater vigilance especially with regard to extended shelf-life products. Contaminants in fish, including heavy metals, organo-halogen compounds (it is of interest to see toxaphene highlighted), polycyclic aromatic hydrocarbons (PAHs) and drug residues in

farmed fish are covered in Chapter 9. On the whole this chapter is reassuring but it also emphasizes the need for vigilance in ensuring that fish is safe to eat. Chapter 10, 'Freezing and chilling of fish' overlaps to some extent with Chapter 7 in the section on chilled fish. It is, however, mainly concerned with the theory of the freezing process and possible mechanisms of frozen storage deterioration of fish. The final section deals with the technical aspects of freezing equipment. Fish products are brought together in Chapter 11 which covers 'traditional' and more recent fish products. These include dried fish, salted fish, smoked fish, marinated fish, canned fish and fish minces. The section dealing with the last named product I found rather confusing as all minced products are dealt with together including surimi. I would have expected that, because of its worldwide importance, 'surimi' would have been treated separately and more thoroughly. Surprisingly fish fingers, another very important commercial product, are not mentioned.

The final chapter on fish meal and oil provides information on the species used, the manufacturing process and the role of fish meal in animal nutrition. The proportion of the world's catch being converted to fish meal is high (between 25 and 30%), but for economic and practical reasons it seems that there is no alternative at present to making more of these fish available for direct human consumption.

Overall this book provides a useful update across the whole spectrum of interests concerned with fish and shellfish as food, and it is a useful addition to the scientific literature. It is a pity, however, that it does not include a chapter on specifications and regulations drawn up by the European Commission, Food and Drug Administration of the USA, and other bodies, to

ensure the safety and quality of fish and shellfish for human consumption.

Ian Mackie

Handbook of Food Additives. Compiled by Michael and Irene Ash. Gower, London, 1995. ISBN 0 566 07592 X. xiv + 1040 pp. £175.00

Far more comprehensive though less easily readable than *Lewis' Food Additive Handbook* (about 1300 entries), this book is more of an encyclopedia of food additives (over 7000 entries). It allows an immediate focus onto one particular substance, description and brief usage properties and supplier's name (where known). This is supplemented by an index of supplier's addresses, telephone numbers and fax numbers. It is therefore a very useful text indeed.

Additional useful features include a list of abbreviations, chemical abstract service (*CAS*) numbers, European inventory of existing commercial chemical substances (*EINECS*) numbers, code of Federal Regulations (US) (*CFR*) numbers, Flavour and Extract Manufacturers' Association (*FEMA*) numbers as well as EC(*E*) numbers and cross-reference tables against suppliers where possible.

There is also a list of Japanese food additive regulations.

Bearing in mind the extremely high costs of completely comprehensive tables of food additives, this volume is clearly a very expedient tool for every-day fast use. The authors are to be congratulated on their mammoth compilation and the book is highly recommended.

Gordon Birch