

Book Reviews

The Encyclopaedia of Food Science, Food Technology and Nutrition. Edited by R. Macrae, R. K. Robinson & M. J. Sadler. Academic Press Limited, London, 1993. ISBN 0-12-226850-4. Price £1100.

This encyclopaedia covers the very broad range of disciplines and topics required in the study of food, from its production to the role and metabolism of nutrients. The range of topics is thorough and comprehensive, including individual foodstuffs, handling, composition, processing, chemistry, analytical techniques, microbiology and nutrition.

The book comprises eight volumes, seven containing subject matter and the eighth comprising the complete contents list and index. The compilation must have been a mammoth task and the editors, advisers and contributors are to be congratulated and complimented on the excellent result. Although the editors acknowledge that it was not possible to cover every aspect of the subject in minute detail, the range of topics is very extensive, and a valuable source of information for students and practitioners in the field. The entries are well presented and where appropriate including tables (providing much data), useful diagrams and formulae. Each entry has a valuable bibliography for those seeking further in-depth information.

The use and structure of the encyclopaedia is clearly explained. I found it very easy to use, with a good index and extremely well cross-referenced, as is vital in a work of this complexity. It includes useful dummy references, which direct the reader to the appropriate entry (e.g. Vitamin C to Ascorbic acid, Oranges to Citrus Fruits) and this greatly facilitates its use.

In my opinion this is an excellent reference work, comprehensive and comprehensible, and although rather expensive, it provides good value for money. It will become a popular and well-used reference work in libraries, and be of great use to lecturers and students of food in general. However, it also provides readers who have a much wider range of interests with a valuable source of information. A work to be recommended.

K. D. A. Taylor

Ullman's Encyclopaedia of Industrial Chemistry. Vol. A22–A24. Edited by B. Elvers, S. Hawkins, W. Russey & G. Schulz. VCH, Weinheim, Germany, 1993.

One of life's pleasures is thumbing through the pages of an encyclopaedia, whether it be the *Encyclopaedia*

Britannica, and ABC of gardening, or this all-encompassing encyclopedia of industrial chemistry. As with all previous volumes these are packed with facts, structures and pictures of industrial processes. For both the industrialist and the non-industrialist there is hardly a page that will fail to fascinate, and for those who seek physical constants of key elements or the intricacies of design of particular processes, these volumes will be essential browsing.

Volume A22 commences with polyvinyl compounds and ends with reduction. Early highlights include excellent chapters on potassium and its compounds, with numerous flow charts of industrial processes; around 100 pages on propane and its derivatives, with the usual mixture of physical and chemical properties, production, usage and even toxicology; and a very useful summary on the prostanoids. This chapter includes a good list of the prostanoid-like drugs and a brief summary of the main synthetic approaches. The longish gestation period of these volumes is evident from the rather poor coverage of other eicosanoids, and it is not obvious if they are covered elsewhere. This volume also includes other pharmacologically important compounds including drugs used in psychiatry (psychopharmacological agents) and the beta-blockers. Both of these chapters contain what appears to be an exhaustive list of drugs, including trade names and some physical data. There is a super chapter by the Reverend Lancaster on pyrotechnics—an inspired choice of author; and this follows a series of chapters on various heterocyclic compounds: pyridines, pyrazolones, pyrimidines, pyrroles, pyrrolidines and quinolines. In a volume that spans POLY to RED there are of course lengthy chapters on industrially important protein products, radiation chemistry, a superbly informative chapter on radionucleotides (90 pages), and a very useful survey on radio-opaque materials. The final chapter on reduction provides an excellent introduction to the various methods of reducing organic functional groups. The coverage is more than adequate though there is no mention of stereoselective reduction.

Volume A23 proceeds from refractory ceramics to silicon carbide, and most of the volume is taken up with coverage of various natural resource materials. These include a fascinating chapter on natural resins (all you ever wanted to know about amber, elemi, frankincense and myrrh); 250 pages on rubber (both natural and synthetic); 180 pages on silica, silicates, silicon and silicon carbide; and a less weighty chapter on resources of oil and natural gas. This chapter describes all aspects from methods of exploration through to the applied

mathematics of resource engineering—very much a chapter for chemical engineers. The pharmaceutical and agrochemical industries are represented by chapters on rodenticides and salicylates. The former informs us that an adult rat produces 30 000 droppings per annum and 8 litres of urine, hence the need for rodenticides; and the latter begins with Hippocrates' use of willow bark for the treatment of pain and fever and proceeds through a discussion of the production, use and toxicology of modern salicylates. There is also a chapter on saponins which is the best introduction to this biologically interesting group of compounds. Finally there are short chapters on seasonings (most of the information is carried in an earlier chapter on flavours and fragrances), sedatives, selenium and its compounds, shoe polishes, and a somewhat longer chapter on semiconductors. This chapter is disappointing because there is very little chemistry and no mention of recent advances (high temperature conductors etc.).

Volume A24 begins with (inorganic) silicon compounds and ends with (microscopic) stains. The first chapter (93 pages) completes the coverage of silicon compounds commenced in volume 23, and other mammoth chapters are also concerned with inorganic chemistry: silver and its compounds (55 pages) and sodium and its compounds (100 pages). In between these chapters, the cosmetic industry receives wide coverage with chapters on skin cosmetics and soaps. The latter includes a lot of engineering information. Pharmacologically interesting compounds are discussed in chapters on skeletal muscle relaxants and spasmolytics, and as usual a comprehensive list of drugs complete with key physical data is provided. A timely survey of single cell protein types and their manufacture is welcome, especially since (as stated) 10% of the world's population of five billion persons are undernourished. Finally there are excellent chapters on solar technology (full of practical information), solvents (with comprehensive lists and tables of physical properties), and microscopic stains (again with excellent tables of names and physical properties).

It hardly need stating that every major organisation where industrial chemistry is taught or practised should have these (and previous) volumes in their libraries. At £220 each they are well beyond the reach of individuals, but no (industrial) chemist should be denied the joy of browsing through and learning from this encyclopedia.

John Mann

Catalytic Selective Oxidation. Edited by S. T. Oyama and J. W. Hightower. Proceedings of the CS Symposium Series No. 523. 1993. 464 pp. ISBN 0-8412-2637-7.

The invitation to review the published proceedings of a symposium can elicit very different reactions. Anyone active in research knows well that many such publications are now full of drivel, being seen by some authors as an opportunity too good to miss, an occasion to chalk up yet another publication of essentially the same

work, written in a different format. Whether this situation arises through pressure to publish from the author's viewpoint, or from the desire of the publishers to maximise profits, is immaterial. The final result diminishes and devalues published research, and lowers the expectation of readers of such proceedings. If there is a solution to this growing problem, it is not obvious to this reviewer, especially since it is also becoming common practice for funding bodies to only support attendance at a conference if a paper is presented. If it so happens that the proceedings of the conference are to be published, the present sorry state of affairs becomes almost unavoidable. There is far too much rubbish being published in the so-called academic literature and it really is time that something was done about this.

The ACS Symposium Series is an honourable exception to this trend and it is a pleasure to find that the present issue contains a significant number of high quality papers covering a wide range of related topics in catalytic selective oxidation. It is highly significant that the policy of the ACS with regard to the publication of a symposium is very clearly defined and based on high academic standards. Papers can be excluded because they are not appropriate to the topic of the symposium, and others are added to broaden the scope. All papers are reviewed anonymously, and only original research papers and occasional review papers are accepted. This should be compared with the growing practice at conferences of participants being handed one or more papers to 'referee', with the clear indication that a response before the end of the meeting would be appreciated.

No system is perfect, but the ACS deserve credit for at least trying to maintain high standards, even if they have occasionally been somewhat let down by referees in this particular case. Thus, although it would be hard to find a paper which is a 'verbatim reproduction of a previously published paper', there are a number which have the familiar feel of an old pair of slippers—they are comfortable, easy to get on with, and have been around for a while. None of the papers are bad, but some are gentle extensions of previously published works by the same authors. Such papers do wonders for the researchers' publication record, are incredibly easy to read and assimilate, but in the end contribute little to the real advancement of knowledge.

By and large the production of the book is good, but in my copy there is an unfortunate transposition of pages nine and eleven, and there are a number of interesting forms of spelling, some of which may be American, but 'derth' as in 'derth of knowledge' sounds like 'Star Wars-speak', and the terminology data *is* brings this reviewer out in spots.

Turning to the contents of the book, one finds that the contributions are nicely balanced, covering theoretical aspects of selective oxidation, studies of single crystals and well-defined crystal faces, characterisation of oxidation catalysts, the synthesis and reactivity of new materials, the activation and selective oxidation of lower alkanes, and, finally, state-of-the-art engineering