

Book reviews

Organometallic Compounds and Living Organisms; by J.S. Thayer, Academic Press, Orlando etc., 1984, xii + 273 pages, US\$49.50, ISBN 0-12-686080-7.

This book has two major functions, as defined by the author in his preface: "(1) to provide a centripetal force attempting to bring together divergent research efforts, pointing out inter-relationships, and suggesting promising further work, and (2) to provide a convenient reference source to serve as a starting point for persons interested in some subject within the book's range of topics and a springboard for anyone wishing to make a more detailed study". It should serve these purposes satisfactorily.

The organization is not based upon types of compounds but on types of biological effects, and the scope and format are indicated by the chapter headings: Historical aspects (10 pages); Medicinal and pharmaceutical applications (27 pages); Toxicology of organometallic compounds (36 pages); Applications to biochemical investigations (34 pages); Organometallic compounds and microorganisms (15 pages); Organometallic compounds and fungi and algae (20 pages); Organometallic compounds and plants (24 pages); Organometallic compounds and animals (19 pages); Biological alterations of metal-carbon bonds (27 pages); Organometallic compounds and the environment (30 pages). Mostly the accounts provide very brief indications of the contents of the many references cited, with little discussion or assessment; in some chapters there are almost as many pages of references as of text. An extreme example of the brevity of some of the accounts is provided by the entries for silatranes; although there have been very many investigations of the biological effects of these compounds, with many reports of important beneficial effects, only five lines of text (if the index is reliable), spread over three chapters, are devoted to their effects (although seven lines and a formula are given to the description of their structure).

There are three indexes: (i) index to chemical substances; (ii) index to organisms; and (iii) subject index. (Anomalously the last contains the names of a few authors who happen to be named, mainly randomly as far as I can judge, in the text, with no index to the hundreds of authors whose names appear only in the references.) The indexes did not come too well out of the one test I made; knowing that triethyltin iodide was the species mainly responsible for many deaths in France in 1954 I looked for an entry under this compound in the 'substances' index, but found none. A reference to the incident is made only under the trade name 'Stalinon' and diethyltin diiodide, which was the less toxic component of the mixture (as is, indeed, stated under the account of the event, which is adequately described in the section dealing with 'historical aspects'). Triethyltin iodide is probably missing from the index because in the relevant section of the text it appears as its formula, and this suggests that a professional indexer rather than the author compiled the index.

In spite of minor secondary defects this book is a most valuable source of

information, and should be available to all chemists who work with organometallic compounds. The author expresses the hope that readers will get as much benefit and enjoyment out of it as he did in its composition; readers could undoubtedly derive much benefit from it, but I find it difficult to believe that many will find enjoyment in it; indeed, it is hard to see how the author could have found enjoyment in compiling it, consisting as it does mainly of brief abstract after brief abstract, rather in the style of an annual survey, but he can certainly take satisfaction in having discharged a very worthwhile task, and he deserves our gratitude.

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Spectroscopic Properties of Inorganic and Organometallic Compounds. Vol. 16, Royal Society of Chemistry, London, 1984, 363 pages, £78.00. ISBN 0-85186-143-1.

This latest volume in an excellent series maintains the high standard of its predecessors. It provides as thorough a guide to relevant literature as can reasonably be expected, and the contents of a very large number of relevant papers are indicated (see below). This particular series of Specialist Periodical Reports to my mind provides a model for reports of its type, in that it is reasonably up-to-date, is well-organized, and aims to include every relevant reference. Wisely in my view (but contrary to an opinion expressed in this journal in a review of Volume 15) it gives little space to comment; what most readers want from such a publication are references, not opinions.

The chapters are as follows: nuclear magnetic resonance spectroscopy (of nuclei other than ^1H) (B.E. Mann, 130 pages, 2539 refs.); nuclear quadrupole resonance spectroscopy (K.B. Dillon; 18 pages, 120 refs.); rotational spectroscopy (S. Cradock; 14 pages, 190 refs.); characteristic vibrations of compounds of Main Group elements (S. Cradock; 21 pages, 308 refs.); vibrational spectra of transition-element compounds (G. Davidson; 25 pages, 350 refs.); vibrational spectra of some coordinated ligands (G. Davidson; 53 pages, 412 refs.); Mössbauer spectroscopy (S.J. Clark, J.D. Donaldson, and S.M. Grimes; 87 pages; 676 refs.); gas-phase molecular structures determined by electron diffraction (D.W.H. Rankin and H.E. Robertson; 14 pages, 55 refs.). The survey is described as providing a 'review of the recent literature published up to late 1982', and the great majority of the references are from 1982.

Organometallic (and inorganic) chemists owe a considerable debt to the contributors and the Senior Reporters (G. Davidson and E.A.V. Ebsworth). This volume and the series as a whole are virtually essential for the efficiency of organometallic laboratories. Furthermore it represents excellent value for money. Professor Ebsworth in a Foreword rightly points out that higher sales would lead to even lower prices; conversely, falling sales would lead to higher prices in future, and so ultimately to disappearance of a very valuable aid to research. It is to be hoped that readers of this journal will ensure satisfactory