

Advances in Metal-Organic Chemistry, Vol. 2, Lanny S. Liebeskind (Ed.), Jai Press Ltd., x + 293 pages, 1991. £54. ISBN 0-89232-948-3

This is the second volume of this series, and maintains the high standards of the first. This volume perhaps places more emphasis on stoichiometric reactions involving metal complexes, but the focus continues to be largely on transition metal complexes. The editor promises that this balance will be redressed in future volumes.

The first review, from the group of Stephen Davies, concerns their work on applications of chromium tricarbonyl stabilised benzylic carbanions in synthesis. This is a thorough and comprehensive account, and will provide an excellent introduction to anyone entering this fast-expanding area. It is a little disappointing that there are no references to work published after 1988, since there is much new in this field. The second section, from G. Doyle Daves, describes the palladium mediated arylation of enol ethers. This is quite a general reaction, and many interesting results from carbohydrate chemistry are presented. The mechanistic aspects of the reaction are not neglected, and regiochemistry is shown to be influenced largely by electronic factors.

Transition metal catalysed silylmethylation of alkynes, and triethylboron induced radical hydrostannylation of alkynes in the synthesis of vinylsilanes and vinylstannanes is described by Koichiro Oshima. This is a very useful collection of reactions, somewhat varied in nature, all of which have the same synthetic outcome. Paul Helquist reviews the uses of iron carbene complexes in synthesis. These include alkylidenation, and both inter- and intramolecular cyclopropanations. The discussion of mechanistic aspects of the reaction is limited, but the reader is referred to the excellent work of Brookhart in a well-stocked bibliography.

Motokazu Uemura returns to the theme of arene chromium tricarbonyl complexes, but he is mainly concerned with reactions involving ring lithiation of the complexes, stereoselectivity in complex synthesis, and reactions of nucleophiles at the benzylic position. William E. Crowe and Stuart L. Schreiber review π -bond hybridisation in transition metal complexes, with particular reference to the conformations and reactivity of metal acyl complexes. In the final section, William Donaldson discusses palladium mediated methylenecyclopropane ring opening as applied to organic synthesis. The title misled me a little, since my first thoughts were of the elegant work of Binger's group in this area. However, the main theme here is ring homologation, achieved by the chloropalladation of Ω -methylene-bicyclo[*n*.1.0]alkanes. This has been developed from a mechanistic curiosity into a fully-fledged synthetic method, with applications in natural product synthesis.

Overall the volume is well-produced, and the experimental details given for typical preparations in most chapters are very valuable. There has been some cost in time, however; few of the reviews referenced much material after 1988. I found few typographic errors. As there is no index, interested readers must be willing to browse to find specific topics of interest. As with the first volume in this series the interpretation by the authors of the editor's brief to them to write detailed accounts of their research effort in a particular field has varied. Some accounts focus rather specifically on the author's own work, whilst others are much more general. However, this does not detract from the overall readability of the book, and there will be few organometallic chemists who do not find interesting and

useful material here. The publishers are to be commended for keeping the price to a modest level by current standards, and all libraries should be purchasing this series.

School of Chemistry and Molecular Sciences
University of Sussex, Falmer, Brighton (UK)

Penny A. Chaloner

Inorganic Biochemistry of Iron Metabolism, by R.R. Crichton, Ellis Horwood Limited, Chichester, 1991, pp. 263. \$85.95. ISBN 0-13-728742-9

This is a book written by an enthusiast who has not been afraid to let his personality express itself. This may not be acceptable to all in a scientific culture where one is encouraged to render everything impersonal, but I found it refreshing. I hope others might, too.

The book attempts to cover most aspects of iron in biology, and also to provide introductory background. This is ambitious, and the background is perhaps most use as revision for those already familiar with the field. Headings such as "Low Molecular Weight Iron" might cause problems whereas those skilled in the art can easily accept it. A long chapter summarises the functions of iron in biological systems, and then the meat of the book commences, as the author deals, in turn, with iron uptake and release in cells, plants and animals, iron transport, release into cell metabolism, and storage. The final part of the book deals with more macroscopic effects, regulation of iron levels, the effects of iron overload and deficiency on man, iron and oxidation, and finally, iron and infection. There is an extensive bibliography and a short index.

This is not a book for organometallic chemists as such, but a book for anyone interested in coordination chemistry and its particular expression in biological systems. It is well written, and the author has not been afraid to express his own ideas. It provides a valuable perspective for those of us who might be tempted to believe that iron in biology is iron-sulfur clusters plus a bit of other things. I strongly recommend it.

AFRC-IPSR Nitrogen Fixation Laboratory
University of Sussex, Brighton BN1 9RQ (UK)

G.J. Leigh

Dioxygen Activation and Homogeneous Catalytic Oxidation (Proc. 4th Int. Symp., Hungary, September 1990), *Studies in Surface Science and Catalysis*, 66 edited by L.I. Simándi, Elsevier, Amsterdam, 1991, pp. xiv + 700. US\$225.50. ISBN 0-444-88876-4

Normally I do not look favourably upon books arising from conferences or symposia. They are often generated by exposing the various authors to some sort of duress, the contributions are short and lack comprehensiveness, and are often not of value to someone who did not attend. The inclusion of posters helps very little, since one is not able to amplify the telegraphic presentation by talking directly to the authors. Admitting all this, and more, the present volume was a pleasant surprise.