

Book review

Mechanistic Aspects of Inorganic Reactions. ACS Symposium Series 198 (Ed. D.B. Rorabacher and J.F. Endicott), American Chemical Society, Washington DC, 1982, x + 486 pages, \$ 58.95 (\$ 48.95, U.S.A. and Canada). ISBN 0-5412-0734-8.

This volume is based upon a conference on inorganic reaction mechanisms which was held at Wayne State University, Detroit, Michigan, June 10—12, 1981. The major stated goals of the conference were to provide a forum for the assessment of the current state of the various areas of mechanistic investigations and to generate extensive dialogue among the participants. Nineteen papers are presented in this volume, collected under the headings of nucleophilic substitution reaction mechanisms, electron-transfer reaction mechanisms, and non-traditional areas, with a final short overview of inorganic reaction mechanisms (past, present and future) by Ralph Wilkins. The titles and authors of the papers presented are too lengthy and numerous to detail in a short review, but the topics covered include substitution reactions of chelates, pressure effects and substitution mechanisms, electron transfer mechanisms, optical charge-transfer transitions, atom-transfer reactions, mixed-valence compounds, and the effect of organised assemblies on chemical reactions. Of particular interest to organometallic chemists will be the generation of reactive intermediates via photolysis of transition metal polyhydride complexes (Geoffroy), the one-electron reduction product of tris-(2,2'-bipyridine)rhodium(III) (Creutz and Sutin), proton-transfer reactions, particularly of chromium, molybdenum, tungsten and osmium carbonyl hydrides, in organometallic chemistry (Jordan and Norton), and the reactivity of coordinated dioxygen (Endicott and Kumar). That active discussion was generated is evident from the often lengthy but always fascinating reports which are included at the end of each paper.

This volume is of the high standard which is now de rigueur for this excellent series of books. The papers and, perhaps of more significance, the discussion sessions become a matter of public record, and the scientific community as a whole (and not just the conference delegates) benefit from this: international meetings are expensive to organise, but their scientific value is not in doubt. The American Chemical Society leads the world in the publication of rapid but well-produced volumes based upon topics of a wide general interest (and frequently these form the only collations of material upon their well-conceived fields to be available in book format). Why does the Royal Society of Chemistry not emulate their fine example? Last year we saw, for example, a remarkably successful meeting upon the chemistry of chromium, molybdenum and tungsten, and this year the second international meeting on the chemistry of the platinum group metals is to be held

in Edinburgh; the best that we have seen or can hope for is a book of one-page abstracts! This clearly undervalues both the material presented and the learned discussion of the delegates.

This present volume of mechanistic aspects of inorganic reactions well illustrates what can be achieved with camera-ready-copy and cooperative authors, and at approximately £0.10 per page, with a detailed and useful index, no library should be without a copy. Moreover, at the current price of books, I expect it will find a significant number of private sales.

*School of Chemistry and Molecular Sciences,
University of Sussex, Brighton BN1 9QJ (Great Britain)*

KENNETH R. SEDDON

Book review

Gmelin handbook of inorganic chemistry, 8th Edition. *W — Tungsten, Supplement Volume B5: Tungstates of Group IIIA and IIIB Metals*, Springer-Verlag, Berlin, Heidelberg, New York, 1984, xvi + 306 pages, DM 987; ISBN 3-540-93492-8.

This is the sixth volume of the Gmelin Handbook to deal with the chemistry of tungsten (System Number 54) since the main volume was published in 1933, and the fourth to deal exclusively with oxides. What distinguishes this volume from its predecessors, however, is its remarkably inaccurate title, which would suggest that the volume only describes the tungstates of aluminium, gallium, indium, thallium, scandium, yttrium and lanthanum: in fact, well over half of the volume describes the tungstates of the lanthanide (rare earth) elements. The title apart, the authors (D. Gras, F. Schroder and S. Waschk) have produced a thorough and detailed survey of their subject, and the excellent quality of the illustrations adds significantly to the value of this learned volume. However, it is difficult, even with an active imagination, to envisage that this volume will be of even passing interest to the most broad-minded organometallic chemist (except, possibly, one looking for new heteropoly anion complexes). How long will it be before we see the crucially important volumes upon the coordination and organometallic complexes of tungsten? These are long overdue and eagerly anticipated; fifty-one years is a very long wait!

*School of Chemistry and Molecular Sciences,
University of Sussex, Brighton BN1 9QJ (Great Britain)*

KENNETH R. SEDDON