

"The coordination chemistry of indium" (73 pages) by A.J. Carty and D.G. Tuck is a large, factual listing of complexes under the headings of neutral complexes of indium(III), cationic complexes of indium(III), and anionic complexes of indium(III). Other sections describe the chemistry of indium in its lower oxidation states and compounds containing metal-indium bonds.

This volume has a good, detailed subject index; also, it contains a less detailed cumulative index of the topics presented in Volumes 1-19 of the series.

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Inorganic Reaction Mechanisms. Vol. 4 (A Chemical Society Specialist Report); A. McAuley, Senior reporter, The Chemical Society, London, 1976, xviii + 398 pages, £ 23.00, \$63.25.

This, the fourth in the series of Specialist Periodical Reports on Inorganic Reaction Mechanisms issued by the Chemical Society, maintains the excellent standard set by the earlier volumes. The team of reporters has expanded since the first two volumes but the original quartet of Burgess, Hague, Kemmitt, and McAuley is still there, McAuley having taken over from Burgess as captain for this volume. (It is to be hoped that his translation to Victoria will not affect his continuance in this rôle.) M.A.R. Smith paired with Kemmitt in the Organometallic line-up in Volume 3 and Coe, Moore, Scott, and Stedman have been added to the team this time. This expansion must have eased the load considerably, especially since the number of citations has dropped from ca. 1750 to 1500, and the length of the book by ca. 20%. All these reporters have considerable experience in their fields, and their combined strength is considerable.

The format of this volume is identical with that of the previous one with major divisions into Electron Transfer Processes, Substitutions and Related Reactions, Reactions of Biochemical Interest, and Organometallic Compounds. The subdivision within these sections is clear-cut, and cross-referencing is excellent. The authors sometimes take the opportunity of describing highlights in their topics in a short introduction. This tendency, albeit subjective, should be encouraged. The coverage appears to be quite thorough although it would be almost presumptuous to comment other than favourably without having done an equivalent amount of literature work to the authors. Such is not the case with this reviewer! Anyone wishing to catch up with developments in a particular area will be enormously helped by these volumes which leave only recent papers to be searched, coverage extending to December 1974 in this volume.

The style of reporting is factual, concise, and possibly dry, but opportunity is taken occasionally for critical assessment. One frequently has the need to refer to the original papers for elucidation of conclusions described but this is inevitable and, in fact, desirable. The authors have explicitly restricted themselves almost entirely to the kinetic approach to mechanism which avoids the more egregious flights of fancy indulged in occasionally by preparative chemists.

Photochemical aspects of mechanism are not dealt with as a separate subject and perhaps get less attention than they deserve when spread among all the other topics.

In short, however, this volume and its predecessors address the problem of reviewing such a large and diverse field in a constructive, realistic, and helpful way and it is hard to see how any inorganic kineticist could be without them. The price of the latest volume, unfortunately, reflects inflationary trends but any research group would be entirely justified in buying it out of research funds as an essential piece of equipment. Such books must be around in the lab. for continual browsing.

Finally, it is interesting to compare these volumes with their cousins in the MTP International Review of Science series. The latter tend to be more discursive and less encyclopaedic. Forced to make a choice this reviewer would choose the Chemical Society's series for the sheer concentration of information, but both should be treasured occupants of one's bookshelves.

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Advances in Inorganic Chemistry and Radiochemistry, Vol. 18; edited by H.J. Emeléus and A.G. Sharpe, Academic Press, New York/San Francisco/London, 1976, vii + 414 pages, \$35.50.

Advances in inorganic chemistry and radiochemistry, Vol. 18 continues, in the fine tradition of the preceding volumes, to offer workers in various fields of chemistry a convenient way to catch-up with recent developments or become acquainted with new areas of chemistry. More often than not, the purchaser of these volumes does not immediately read all chapters in detail but draws on this conveniently located information as the need arises. Vol. 18 includes information in three areas: structural aspects of catenated inorganic species; reactivity of halogen moieties associated with molecular species; and investigative methods: NMR and mass spectroscopy.

Chapters related to structural aspects include: "Structural and bonding patterns in cluster chemistry" by K. Wade; "Coordination number patterns recognition theory of carborane structures" by Robert E. Williams; and "The structures of elemental sulfur" by Beat Meyer. Dr. Wade has succeeded in developing common bases for predicting and rationalizing cluster geometries associated with both transition and representation elements. Workers in these areas will greatly benefit from this contribution. The same may be said for Dr. Williams' contribution which is concerned with carborane structurally related species. Various rules are presented which allow prediction and elimination of various structural possibilities. Both of these fine chapters contain numerous examples of structure prediction to test the readers' understanding of the subject matter.

Dr. Meyer has nicely summarized methods for the preparation and listed structural parameters associated with the six molecular cyclosulfur species, S_{6-8} , S_{12} , S_{13} , and S_{20} . Also briefly discussed are the gaseous species, S_2 , S_3 , S_4 , and S_6 .