

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 .

Methods for the synthesis of the structurally non-characterized species, S_{9-11} , are included as are several examples of incorporation of O, Se, and Te into sulfur rings.

Chapters covering the reactivity of molecular species containing halogen are titled: "Preparation and reactions of perfluorohalogenoorganosulfenyl halides" by A. Hass and U. Niemann, and "Chlorine oxyfluorides" by K.O. Christe and C.J. Schack. These authors have published extensively in their respective fields and as one would expect, both chapters include a tremendous amount of chemistry. The chapter by Christe and Schack also includes a wealth of structural as well as IR and Raman data.

Dr. Joan Mason's contribution, "Correlations in nuclear magnetic shielding, Part I" summarizes, in table form, nuclei which have been examined by NMR techniques as well as pointing out nuclei of potential NMR interest in terms of likely success. Pairwise additivity shielding effects of substituents for various nuclei are discussed and nicely summarized in graphic form.

The chapter titled, "Some applications of mass spectroscopy in inorganic and organometallic chemistry" by Jack M. Miller and Gary L. Wilson includes a tremendous amount of invaluable information in terms of "how to do it" experience-gained experimental "tricks" associated with mass spectroscopy. Numerous examples are analyzed in detail and presented in a very readable form. I would expect an increase in the use of mass spectroscopy by readers of this excellent contribution to this latest volume of "Advances in inorganic chemistry and radio chemistry."

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Advances in Organometallic Chemistry, Vol. 14; edited by F.G.A. Stone and R. West, Academic Press, New York/San Francisco/London, 1976, xi + 414 pages, \$38.50, £ 22.35.

Since the appearance of the first volume of this well-known series in 1964, the Editors have maintained a standard of high quality and a selection of topics representing the diverse specializations within organometallic chemistry. This Volume commemorates the twelve year publication of this series by emphasizing this diversity as well as the international character of organometallic chemistry. Nineteen authors representing six countries contribute ten review articles in a nearly equal split between transition metal and Main Group metal chemistry. Only three of these authors have contributed articles in previous volumes of this series, and four authors were contributors to the Centenary Volume of the *Journal of Organometallic Chemistry*.

The Volume begins, very appropriately, with the translated version of E.O. Fischer's Nobel lecture, "On the Way to Carbene and Carbyne Complexes." This article is both a personal and professional account of the synthesis of the first carbene and carbyne complexes. The extensive reaction chemistry and structural characterization of these unique complexes is summarized with emphasis on the work from the Fischer laboratory.