Synthetic Methods of Organometallic and Inorganic Chemistry. Volume 4. Sulfur, Selenium, and Tellurium. By W. A. Herrmann, C. E. Zybill. Edited by W. A. Herrmann. Thieme: Stuttgart, 1997, 234 pp, hardback. DM 124. ISBN 3 13 103051 8.

Synthetic Methods of Organometallic and Inorganic Chemistry. Volume 5. Copper, Silver, Gold, Zinc, Cadmium, and Mercury. By D. K. Breitinger, W. A. Herrmann. Edited by W. A. Herrmann. Thieme: Stuttgart, 1999, 248 pp, hardback. DM124. ISBN 3 13 103061 5.

These two Volumes are part of a series that began in 1996 as a modernized, English language version of a classic German language compendium, Georg Brauer's "Handbuch der Präparativen Anorganischen Chemie". Volumes 1-3 and 6-8 were enthusiastically reviewed earlier [p. 1402, **1996**; p. 372, 736, 981, and 1352, **1997**]. These new installments cover inorganic and organometallic compounds with the title elements. Cross references are provided for most compounds that could logically be classified by more than one element. Two final volumes (Transition Metals, part 3; Halogens and Rare Gases) should appear in the near future.

Volume 4 (sulfur, selenium, tellurium), is well presented but not as topical as others in the series. The sulfur and selenium chapters are dominated by classical inorganic procedures that are of more use to specialists than the general readership of this journal. Fifteen pages are devoted to various solid, liquid, and colloidal forms of sulfur. Twenty-two pages are allotted to H_2S_n and S_n^{x-} species. Halides, oxides, and nitrides are extensively represented. Only two sequences are given under "organic sulfur derivatives" ($F_4S{=}CH_2$ and $F_4S{=}NH$), and one lacks any sulfur-carbon bonds.

This volume would have afforded an excellent opportunity to compile representative syntheses of "TAS" fluoride salts, ArSX or ArSeX reagents used in organic synthesis, or useful transition metal ligands. Happily, the tellurium chapter is nicely balanced. Classical inorganic chemistry is complemented by procedures for various RTe^-, R_2Te, and R_3Te^+ species, halogen adducts thereof, and biologically relevant compounds such as tellurium derivatives of amino acids.

Volume 5 (copper, silver, gold, zinc, cadmium, mercury) will have much broader appeal among readers of this journal. In the copper chapter, inorganic derivatives are augmented by RCu, ArCu, R_2Cu^-, and related species. The silver chapter features similar inorganic and organometallic compounds, as well as π complexes (η^4) of a cyclodiyne and a bis(alkynyl) titanium "tweezer". The gold chapter highlights related species, and twenty pages of ground-breaking di- or polygold compounds from the Schmidbaur school.

The zinc chapter will attract special interest, as it strongly represents the organozinc compounds that are regularly featured in this journal, and less well studied ate systems that seem poised for development. Many transition metal derivatives are also given. The cadmium and mercury chapters are well balanced between inorganic and organic systems. Mercury reagents that see regular use in organic syntheses are presented. However, the tragic single-Me_2Hg exposure fatality of a well known chemist (*Chemical and Engineering News*, p. 12, 12-May 1997, and followup articles) forever alters the way in which this synthetic procedure should be published. Otherwise, safety precautions appear up to date, and there are many illustrations of specialized glassware assemblies.

In summary, Volume 5 succinctly captures the essence of modern preparative Cu/Ag/Au and Zn/Cd/Hg group chemistry. Volume 4 offers the same for tellurium chemistry, but the sulfur and selenium selection is less forward looking. The series should be in all libraries, and constitutes a valuable desk reference. Volume 5 could also be justified for individual purchase by anyone engaged in developing copper or zinc group reagents.

J. A. Gladysz, Universität Erlangen-Nürnberg, Germany

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