Gmelin Handbook of Inorganic Chemistry. 8th Edition. *S — Sulfur. Supplement Vol. 4a/b: Sulfanes,* Springer-Verlag, Berlin, 1983, xxi + 500 pages, DM 1598.

This book is a double volume of Gmelin, with more pages than usual. Part 1, taking up 388 of the 500 pages, deals with hydrogen sulphide, and part b is concerned with the higher sulphanes H_2S_n (data are presented for compounds with n = 2—8), thiothianyl hydride, H_2SS, hydrogen sulphide radicals [i.e. HS_n radicals (n = 1—4), H_3S_2 radical, and H_nS (n = 1—6) radicals], and hydrogen sulphide ions [HS^+, H_2S^+, $H_2S^+ \cdot nH_2S$, H_2Sn^{n+}, H_3S^+, $H_3S^+ \cdot nH_2S \cdot mH_2O$, H_3S^{2+}, HS_2^+, $H_2S_2^+$, H_nS_2 (n = 2—5), HS^-, H_2S^-, H_3S^-, HS_n^-, $H_2S_2^-$, $H_3S_3^-$, and $H_2S_4^-$]. The preparation, physical properties, and chemical reactions of the various species are summarized. The outline of the reactions of hydrogen sulfide with inorganic and some organometallic compounds (e.g. with organosilicon and organophosphorus halides) will be of special interest to some readers of this Journal.

The authors (W. Behrendt, U.W. Gerwarth, B. Heibel, A. Kubny, P. Kuhn, and H. Vanecek) have done the thorough job we expect of Gmelin contributors, and as usual the volume is very well produced. Also as usual the price is very high (in fact, at ca. £405 or $600, this is the most expensive book I have ever reviewed), but unavoidably so, one feels, given the nature of the task involved, and it would be a great loss to inorganic and organometallic chemistry if economic considerations ever led to discontinuance of this fine series.

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Gmelin Handbook of Inorganic Chemistry. 8th edition. *Sn — Organotin Compounds. Part 10: Mono- and Diorganotin—Sulfur Compounds, Organotin—Selenium and Organotin—Tellurium Compounds.* Springer-Verlag, Berlin, etc., 1983, xi + 352 pages, DM 993.

The rapid growth in organotin chemistry (there are about 1000 publications in the field each year at present) has meant that the Gmelin treatment of organotin compounds has had to take up several volumes. The first such volumes in this eighth edition, began to appear in 1975; Volumes 1—3 dealt with mononuclear tetraorganotin compounds, Volume 4 with mononuclear organotin hydrides, and Volumes 5—8 with mononuclear organotin halides and pseudohalides. Volume 9 began the treatment of mononuclear organotin sulfides, selenides, and tellurides, which is completed in Volume 10, which deals with sulfides of the types $R_2Sn(SR')_2$, $R_2Sn(SR')(SR'')$, $RR'Sn(SR'')_2$, $R_2Sn(SR')_2$, $RSn(SR')_3$, $RSn(SR')_2(SR'')$, $R_2SnX(SR')$, $RR'SnX(SR'')$, $RSnX(SR')_2$, $RSnX_2(SR')$, and $RSnXY(SR')$, along with the few known mononuclear organotin—selenium and organotin—tellurium compounds. The compilation was by H. Schumann and I. Schumann, who have surveyed the literature to the end of 1980. There is a clear formula index. A list of books, monographs,

reviews and special general articles on organotin—selenium and —tellurium compounds is included, a similar (very useful) list for organotin compounds in general having appeared in Volume 9.

These volumes will be of great value to all those engaged in research involving studies or use of organotin compounds.

Readers of these and other Gmelin volumes who object to the use of barbaric form "sulfur" for element 16 should remember that this is supported by IUPAC. (Fortunately the Union prefers the civilized spelling for element 13.)

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Nuclear Magnetic Resonance Spectroscopy; by Robin K. Harris. Pitman Books, London, 1983 xx + 250 pages, £ 17.50.

For the organometallic chemist who wishes to deepen his knowledge of NMR principles and modern multinuclear applications, it would be difficult to make better recommendations than this and the book reviewed below. Professor Harris has built on the foundations of "Nuclear Magnetic Resonance Spectroscopy" (co-authored with R.M. Lynden-Bell) which was published in 1969, updating the treatment of NMR parameters and adding substantial sections on Fourier transform and special pulse techniques, and on the NMR of the solid state.

The subtitle "A Physicochemical View" gives a succinct description of the approach taken, and although the reader would benefit from a knowledge of quantum methods, it is at the level of commutation relations rather than, for example, density matrices. The text is well provided with excellent diagrams and illustrative spectra, and each chapter ends with a set of problems (with some answers), a list of up to date further reading, as well as specific references from the text.

The text is very clearly written and I would imagine that the only regret to be experienced by users of this book will be that it is not longer and more comprehensive. Thus, the chapter on special pulse sequences and two-dimensional NMR explains basic principles such as refocussing, cross polarization, and *J*-spectroscopy, and it treats INEPT in some detail. There is a brief mention of DEPT and the basic two-dimensional methods are treated in outline. Professor Harris' guidance through the profusion of other NMR acronyms would have been very welcome.

Some typographical errors are listed on a small sheet of errata, and I detected very few additional errors. One curious survivor from the 1969 precursor is the sentence (on p. 8, referring to B_0) "A torque is exerted on the magnetic moment which tends to align it perpendicular to the field". Explorers following this advice would be led seriously astray, so perhaps another erratum notice should be issued.

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