Gmelin Handbook of Inorganic Chemistry, 8th Edition. *B. Boron Compounds.* 1st Supplement Volume 1, *Boron and Rare Gases, Hydrogen and Oxygen*, K. Beeker, G. Heller, A. Meller and T. Onak, volume authors, K. Niedenzu and K.-C. Buschbeck, volume editors, 1980, vii + 319 pages, DM 780, $ 460.20; 1st Supplement Volume 2, *Boron and Nitrogen, Halogens*, B.R. Gragg and A. Meller, volume authors, K. Niedenzu and K.-C. Buschbeck, volume editors, 1980, vi + 349 pages, DM 798, $ 470.90, Gmelin Institut für Anorganische Chemie der Max-Planck-Gesellschaft zur Förderung der Wissenschaften and Springer-Verlag, Berlin/Heidelberg/New York.

The twentieth and final volume of the Gmelin Handbook boron series was published only in 1979 (for a review see J. Organometal. Chem., 194 (1980) C63) and here we have already Volumes 1 and 2 of the three-volume First Supplement to this series. The aim of this supplement is to bring all the topics covered in the boron series to a uniform literature cut-off date of January 1, 1978. In these first two installments of the First Supplement are covered the boron hydrides in 111 pages and boron—oxygen compounds in 205 pages (Volume 1) and boron—nitrogen compounds in 255 pages and boron—halogen compounds in 93 pages (Volume 2).

In the B/H system chapter species from the fugitive BH molecule through the very stable B_{12} hydrides are discussed. From the amount of space devoted to metal borohydrides (58 pages), it would seem that this class of boron compounds has received major attention in the last few yars. Of special interest are the many new transition metal borohydrides which have been prepared and investigated.

The readers of this journal will find the account of boron hydride compounds most interesting and useful, and those who are interested in spectroscopy will find an abundance of data, mostly IR and Raman and ^{1}H and ^{11}B NMR spectra. For those more interested in chemistry, there is abundant fare here also: for instance a table listing 73 reactions of $NaBH_4$ with inorganic and organometallic substrates, as well as discussions of its reactions with organic compounds. However, boron hydrides are chemical curiosities even within the field of boron chemistry. More common and more studied and utilized are the compounds of the boron—oxygen system: boric oxide, boric oxide-containing glasses, boric acid and borates, borate minerals, and these take up almost one-half of Volume 1. The organometallic chemist will be more at home in the last part of the book which deals with "organic" boron—oxygen compounds: organoboroxines, borate esters, boronic and borinic acids, anhydrides and esters, BOC heterocycles, peroxy- and acyloxyboranes.

In Volume 2 there is found a great diversity of boron—nitrogen compounds from boron nitride through aminoboranes of all sorts, borazines, other BN heterocycles, amine-boranes, to other BN compounds containing four-coordinate boron. Boron—nitrogen chemistry continues to be a popular area of research, and it is surprising how much new material has accumulated since the respective B/N volumes of the Gmelin boron series were completed. The last third of Volume 2 covers the boron halides, including compounds which contain hydrogen or organic substituents in addition to halogen.

As intended, the literature coverage is complete through the end of 1977.

In boron hydride, borate anion and some aspects of boron—nitrogen chemistry structures can be complex, and the many figures and formulas in these volumes will make the compounds in question readily understandable to the reader. In Volume 1 the one-page chapter on the system boron/rare gases and the long chapter on the B/O systems are written in German, but T. Onak has provided his fine up-dating on boron hydrides in English. Most of Volume 2 is in German; however, the chapters on boron—halogen compounds written by B.H. Gragg are in English.

We must applaud the editors and the authors for their valiant efforts to bring their coverage of the voluminous boron literature up-to-date. No doubt they are already planning the Second Supplement!

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Gmelin Handbook of Inorganic Chemistry, 8th Edition, *Sulfur*, Supplement Volume 3, *Sulfur Oxides*, H. Bitterer, volume editor-in-chief, Gmelin Institut für Anorganische Chemie der Max-Planck-Gesellschaft zur Förderung der Wissenschaften and Springer-Verlag, Berlin/Heidelberg/New York, xvi + 344 pages, DM 797, $470.30 (in German).

This volume is part of the Gmelin Handbook series of supplements on sulfur and its compounds. The series already includes volumes on sulfur—nitrogen compounds (part 1), thionyl halides, and sulfur halides. It will be completed with the appearance of volumes on elemental sulfur, sulfuryl halides, hydrogen sulfide and sulfanes, the acids of sulfur, and sulfur—nitrogen compounds (parts 2 and 3), all in preparation, and on sulfur compounds in aqueous solution.

The present volume deals with the oxides of sulfur and the corresponding radical cations and anions. Aqueous chemistry is not included, as it will be part of the final supplement. The coverage starts with cyclopolysulfur monoxides and dioxides (S_nO and S_nO_2) and polysulfur oxides ($(S_nO)_x$), and continues to disulfur oxides, sulfur dioxide, sulfur trioxide, and sulfur peroxides, in that order. As one would expect, treatment of SO_2 and SO_3 comprises most of the volume (269 pages). Typically included in the coverage of each major oxide are preparation, electronic structure and properties, rotational and vibrational spectra, crystallographic data, mechanical and thermal properties, and chemical and photochemical behavior. The literature has been covered through 1977, and some more recent references are given. However, certain aspects of technology are treated selectively and from secondary sources. Thus the extensive literature on the detection, determination, and separation of atmospheric SO_2 is not complete. Coverage of organometallic chemistry is limited to about 6 pages dealing with reactions of SO_2 and SO_3.

The volume is written in German, but English translation of the preface, table of contents, chapter titles and section headings, and a brief review starting each section are provided. The subject matter is extremely well organized, and desired information is easy to find.