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melin Handbuch der Anorganischen Chemie, Erganzungsband zur 8. Auflage, Vol. 13, Borverbindungen, Teil 1, Binare B—N Verbindungen, B—N—C Heterocyclen, Polymere B—N Verbindungen, K. Sommer and K.-C. Buschbeck editors). Gmelin-Institut fur Anorganische Chemie der Max-Planck-Gesellschaft zur Forderung der Wissenschaften e.V., Springer-Verlag, Berlin/Heidelberg/New York, 1974, x + 331 pages, DM 444, $171.

Reviewed here is the first of a multivolume Gmelin series which will cover boron compounds containing B—N, B—C and B—H linkages. The first 86 pages of the present volume deal with hexagonal and cubic boron nitride. The long (157 pages) chapter on heterocyclic compounds containing boron, nitrogen and carbon atoms as ring members which follows will be the most useful to organoboron chemists. Here are treated the 1,2-azaboracycloalkanes, 1,3,2-diazaboracycloalkanes, other azaboracycloalkanes, benzoazaboracycloalkanes and compounds with unsaturated B—N—C ring systems, of which the notable examples are Dewar's B—N aromatics. Separate sections deal with the spectroscopy (vibrational, NMR, mass) of the saturated and the unsaturated B—N—C ring systems, which has given answers concerning the nature of the B—N bond, especially concerning the amount of N-to-B π bonding.

One problem with these diverse B—N—C heterocycles is that of their nomenclature; the rules used in this volume are well explained in the first 5 pages of this chapter. For each compound class are given all preparative methods (with detailed examples), physical properties (often in tabular form) and chemical conversions.

The final chapter (86 pages) deals with polymeric B—N compounds an area which has received much attention in the hope (still unfulfilled) that polymers of high thermal stability and useful applicability might be found. Most of these polymers are derived from borazine-type monomers, a class of B—N compounds which will be covered in a later volume.

The literature is covered through the end of 1972. Although this book, like most Gmelin volumes, is written in German, English translations of the table of contents and the preface are provided. English translations of chapter and section headings appear in the margins, so those whose knowledge of German is not good can quickly find their way around in this volume. An English translation of the section of B—N—C heterocycle nomenclature would have been useful as well. Unfortunately, this book has no indexes, which will make its effective use less easy than it might otherwise have been. Presumably the reader will have to wait until the end of Part 1 of the boron compound volume for an index which will cover the present book. But this is a relatively minor matter. Nowhere else can such a thorough and up-to-date discussion of the areas covered be found, and it will be indispensible for all boron chemists to have access to this book and to all succeeding parts of the Gmelin boron volume.

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