Conference on the Biology of the Mycoplasmas held in 1966. Fifteen of the chapters are updated and expanded versions of papers published earlier in the 871-page proceedings of the 1966 conference (*Biology of the Mycoplasmas*, Annals of the New York Academy of Sciences, vol. 143, 1967).

By usual definition, mycoplasmas are found in nature and L-phase organisms, as the editor prefers to call them, are derived from bacteria. Various properties shared by mycoplasmas and L-forms have led to a hypothesis that is difficult to substantiate, that is, that mycoplasmas are descendants of bacteria. The requirement for sterol, a property of animal cells not yet reported for bacteria, and the failure of nucleic acid homology techniques to confirm genetic relatedness are cited in this volume as evidence to the contrary. One may wonder, nevertheless, why other opposing arguments are not included.

Investigators delving into the possible role of L-phase organisms as agents of clinical disease will do well to read the chapter by W. Hijmans and his colleagues from the Netherlands. The thinking in this chapter, supported by 18 pages of references, does not seek to debunk the hypothesis that L organisms have such roles. However, the pitfalls for the researcher investigating this hypothesis are clearly and forcefully presented. Another chapter, by Z. A. McGee and R. G. Wittler, establishes acceptable terminology for the wall-defective variant phases of bacteria and brings together the most recent information on their clinical significance A discussion of the taxonomic position of the mycoplasmas and the reasoning that led to their present classification was enlightening to this reviewer. *Mycoplasma*, the only genus so far assigned to the family Mycoplasmataceae, has 35 species which are listed by name in the book. Just what will be done with the T-strains of M. C. Shepard is not clear, but the possibility of another genus being assigned to this group appears to be under consideration. Since mycoplasmas are free of cell walls and differ in other important respects from bacteria, they should be aligned into a new class, and the suggested name is Mollicutes (soft skin).

The repetition appearing in the introductory sections of various chapters could have been avoided; however, the articles are well organized, clearly written, thoroughly referenced, and comprehensive. The book is not abundantly illustrated, but does contain sparkling photographs of mycoplasma organisms as viewed under the electron microscope. Photographs shown in the chapter by W. A. Clyde which reveal the diversified morphology resulting from progress of growth are especially striking. The book, covering topics which range from studies of ultrastructure to the epidemiology of *Mycoplasma pneumoniae*, should be a useful addition to the wealth of reference material now available to educators, research workers, and students of microbiology.

YORK E. CRAWFORD
Mycoplasma Research Division, Naval Medical Research Unit No. 4, Great Lakes, Illinois

Binary Semiconductors

Semiconducting II-VI, IV-VI, and V-VI Compounds. N. KH. ABRIKOSOV, L. V. PORETSKAYA, L. E. SHELIMOVA, and E. V. SKUDNOVA. Translated from the Russian edition (Moscow, 1967) by Albin Tybulewicz. Plenum, New York, 1969. viii + 25 pp., illus. $19.50. Monographs in Semiconductor Physics, vol. 3.

In recent years the rapid development of the use of compound semiconductors for many diverse applications ranging from optoelectronic to thermoelectric devices has precipitated a correspondingly rapid increase in interest in their crystallography, phase chemistry, thermodynamic properties, and stoichiometry and in a range of preparative techniques. Interest in a more chemical approach to the materials aspects of semiconductors has arisen somewhat late in comparison to the rapid development of semiconductor technology. This is primarily because, compared to the elemental semiconductors silicon and germanium, which were the first developed and are still the most used, compound semiconductors are more sensitive to variations in preparative techniques and thermal history.

In this book the authors present a compendium of information of interest to the semiconductor materials scientist for the semiconducting compounds formed from elements of group II, IV, or V, and sulfur, selenium, and tellurium. There are three chapters, dealing respectively with $A^{II}B^{VI}$, $A^{IV}B^{VI}$, and $A_2{}^{V}B_3{}^{VI}$ compounds. In each chapter there is a concise and informative description of the crystal structure of the binary compounds. Also presented are phase diagrams and, in many instances, a discussion of nonstoichiometry and thermodynamic properties of the binary systems. Tables of physical properties pertinent to semiconductor applications are also presented. Preparative techniques are discussed quite briefly. Each chapter finishes with a brief but useful description of the phase diagrams of some multicomponent systems based upon the binary systems discussed in that chapter. It does not appear that, for any of the reported data, a critical evaluation of the source material has been made.

This book will be of general interest to people who are concerned with materials problems encountered in the study and use of compound semiconductors. It is not, however, complete enough in detail to serve as a primary reference source for those who are doing research with a particular semiconductor, and to achieve such detail does not appear to have been the intention of the authors. An annoying drawback is that the bibliography has significant omissions, at least for the systems with which this reviewer is most familiar. Since one purpose a monograph such as this is expected to serve is to aid the researcher more quickly to find primary sources of data, this may be a serious limitation of the usefulness of this book for some readers.

MORTON B. PANISH
Bell Telephone Laboratories, Murray Hill, New Jersey

On the Uses of Applied Physics

Properties of Matter under Unusual Conditions. In Honor of Edward Teller's 60th Birthday. HANS MARK and SIDNEY FERNBACH, Eds. Interscience (Wiley), New York, 1969. x + 390 pp., illus. $19.50.

This book, honoring Edward Teller, consists of 16 articles by some of his colleagues and co-workers. The scope of the book, like the scope of Teller's scientific contributions, is rather broad, ranging from the study of elementary particles up to the study of cosmology. In between these extremes, there are articles on atomic, molecular, and solid state chemistry and physics, neutron and plasma physics, and geophysics. Personal appraisals of Teller's career and scientific style are included in brief articles by E. P. Wigner and W. Heisenberg. In some cases, the articles discuss work presently in progress under Teller's di-