"Metallography and Other Industrial Applications."

The book is well organized, in view of the numerous fields of interest, and the reproduction of the photographs is excellent. The reader will get more out of this book if he has command of German, since about one-third of the articles are in that language.

The papers dealing with reflection and scanning electron microscopes indicate the interest and efforts being expended on development of instruments wherein thin specimens are not necessary. The techniques of sample preparation as described in some of the papers should aid workers who are trying to develop similar techniques for their own work.

The efforts to obtain high resolution have been successful to the point where 10 angstroms has been gained; however, it is apparent that such high resolution is obtained only with ideal samples and with ideal instrument performance; the normal resolution remains in the range of 25 to 50 angstroms.

The number of papers in the interesting and important field of metallurgy is quite small. Two very interesting and important papers on the study of dislocations in thin foils were presented. The techniques presented in such papers should promote greater interest in the study of the dislocation theory by means of the electron microscope.

This publication illustrates the extremely wide scope of electron microscopy. While the book itself cannot be recommended as a reference book, it embraces work from leading scientists in a very large number of fields, both here and abroad.

JOHN F. RADAVICH
Purdue University

An Encyclopedia of Annual and Biennial Garden Plants. Charles O. Booth. Faber & Faber, London, 1957 (order from Macmillan, New York). 488 pp. Illus. $12.50.

The zest with which American publishers view erudite British garden books appears to be irrepressible. Obviously expert in treatment, and somewhat overpowering in content, this British import deals, with painstaking care, with hundreds of annuals and biennials that most American gardeners will never see. To give an example—the author treats of 39 annual or biennial species of *Campanula,* and of these only about half a dozen are likely to be in cultivation here.

The book, then, is patently for the experts, and it would be difficult to find a better one. All experiment-station workers in horticulture, writers, and editors will find in it—what is nowhere else so well done—careful, precise definitions of over 1400 species and varieties, facts about their culture and care and about their pests, and even their chromosome numbers.

About two-thirds of the book is in the nature of an encyclopedia; the rest consists of introductory matter and appendixes, such as a glossary of terms, a table of specific equivalents, an index of common names, a table of chromosome numbers, an index of pests, and a list of seedsmen in overseas (non-British) countries. (Many of those mentioned as being seedsmen in the United States are actually nurserymen and sell no seeds, and one of the seedsmen has been out of business for four years.) There is also a list of pest-control-product manufacturers—all British, hence the list is useless here. In spite of these handicaps, this is a highly recommended book, well worth its rather steep price but obviously not for browsing by amateurs.

NORMAN TAYLOR
Elmwood, Princess Anne, Maryland

The Chemistry of Organometallic Compounds. Eugene G. Rochow, Dallas T. Hurd, and Richard N. Lewis. Wiley, New York; Chapman & Hall, London, 1957. vi + 344 pp. $8.50.

Teachers of graduate courses in organometallic chemistry will be indebted to the authors for a book which presents a systematic approach to the subject and should serve admirably as a textbook. The book is obviously not intended to be a comprehensive or detailed treatment of organometallic phenomena, but rather a systematic survey of the field, with generous lists of literature references for the reader whose interest has been stimulated. Those engaged in organometallic research will find the many tables useful, although the descriptive portions are too limited in detail to be of much reference value in any specialized area.

The systematic approach is developed from a general consideration of the carbon-metal bond and the types of bonds which characterize the groupings of organometallic compounds. The authors judiciously have not attempted a rigid classification into types and subtypes, preferring rather to discuss groupings defined by the periodic table of the elements. A separate chapter, which should appeal to students, is devoted to a general survey of preparative methods.

Readers who are expert in specific areas covered by the book may take issue with certain explanations or observations in their field of specialization. This does not detract unduly from the value of the book as a systematic approach to organometallic chemistry.

The authors are to be complimented on a very timely introduction to a subject which has aroused considerable interest in both industrial and academic circles.

THOMAS P. WHALEY
Ethyl Corporation,
Baton Rouge, Louisiana

Radiation Shielding. B. T. Price, C. C. Horton, and K. T. Spinney. Pergamon Press, London and New York, 1957. ix + 350 pp. Illus. $10.

This book, volume 2 of Division X (*Reactor Design Physics*) of the *International Series of Monographs on Nuclear Energy,* deals with the problems of shielding modern nuclear equipment such as reactors, betatrons, synchrotrons, and linear accelerators. During nearly ten years of reactor construction, shielding was handled primarily on an empirical basis, resulting in unnecessarily heavy and expensive designs. With modern developments, such as mobile reactors operating at sea and commercial exploitation of nuclear power on land, the emphasis in radiation shielding has shifted from the purely empirical phase into the area of theoretical understanding. The book puts the emphasis on the physical principles of shielding after presenting, in the first chapter, an excellent survey of the background cause of all our shielding problems and needs: the biological hazards of nuclear radiations. The discussion is confined to the requirements of the aforementioned equipment, leaving very high-energy accelerating machines for a later study. The individual chapters deal with the attenuation of gamma rays and high-energy electrons, with neutron physics, and with neutron attenuation in thick shields. A special chapter gives often-used mathematical formulae for different source-sizes and shapes.

The last chapter presents applications of the physical principles to practical problems, emphasizing the often complicated task of designing the proper shield for very powerful equipment. A great number of valuable material-constants and figures make this chapter of special value to the engineer and physicist working in this challenging field. At a time when nuclear power, from its role at sea, on land, and in the air, has stepped over the threshold into outer space, this book will be very welcome.

A. T. KREBS
U.S. Army Medical Research Laboratory