Gmelin—Durrer; Metallurgy of Iron. Volume 8, Practice of Steelmaking 2; edited by H. Trenkler (Institut für Eisenhüttenkunde Montanuniversität Loeben Austria) and W. Krieger (Voest-Alpine A.G. Linz, Austria), Springer, Berlin, 1985, Vol. 8a: xv + 236 pages. Text. Vol. 8b; Illustrations, English and German Subject Index (244 pages). DM 1612. Not available separately.

Volume 8 of the Gmelin—Durrer Metallurgy of Iron continues the mammoth task begun with the publication of Volume 1 in 1964. It covers the practice of steelmaking by routes other than those involving oxygen-blown convertors. The first part (72 pages) deals with the open hearth process which, though declining in importance, still accounted for 20% of world raw steel production in 1982. There is detailed discussion of heating, construction, and lining and of melting practice for various hot metal-scrap feeds and various alloying elements. The second and biggest part (100 pages) covers electric arc furnace processes, with sections on design and construction, environmental protection and shop layout. Technology and metallurgy (charging, meltdown, refining and alloying) and melting practice are discussed in two chapters, one devoted to basic and the other to acid practice. Shorter sections then cover induction melting (24 pages), plasma melting (15 pages), direct current electric arc furnaces (4 pages) and continuous steelmaking (5 pages). As in previous volumes the text and diagrams are bound separately.

These volumes provide much more than an entree to the literature. By setting steelmaking practice in a historical perspective (bravely projecting into the future as well as reviewing the past) and by linking basic metallurgical theory with production, they show steelmaking as a flexible, adaptive on-going activity. Details do not obscure principles and the painstaking thoroughness of the contributors does not detract from the clarity of their writing. The literature has been covered to 1983, though there are also a number of 1984 references. As always with volumes of Gmelin, the technical printing and illustration are of the highest quality.

Unfortunately the price of these books will mean that they are held only by the wealthiest libraries. But there they will be invaluable to industrial and university metallurgists, to managers with many years' experience and to students discovering for the first time the intellectual content of steelmaking practice.

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Phosphorus. An Outline of its Chemistry, Biochemistry and Technology, 3rd edit. *(Studies in Inorganic Chemistry 6)*; by D.E.C. Corbridge, Elsevier Science Publishers BV, Amsterdam, The Netherlands, (in the USA/Canada P.O. Box 1663, Grand Central Station, New York, NY 10163), 1985, x + 762 pages Price US$ 157.50/Dfl. 425.00, ISBN 0-444-42468-7.

A glance at the contents of the twelve chapters that comprise the 3rd edition of this book namely: 1. Introduction and Background, 2. Phosphides