

Book review

Gmelin-Durrer Metallurgy of Iron. Volume 7: Practice of Steelmaking 1; edited by H. Trenkler (Institut für Eisenhüttenkunde, Montanuniversität Leoben, Austria) and W. Krieger (Voest-Alpine AG, Linz, Austria) Springer, Berlin, 1984. Vol. 7a, xx + 421 pp; Text; Vol. 7b: Illustrations, English and German Subject Index, 351 pp. DM1983 for both volumes, not available separately.

Earlier volumes in this series have dealt with ironmaking (Vols. 1–4) and the theory of steelmaking (Vols. 5 and 6). Volume 7 is the first of three concerned with practical steelmaking. It contains a wide-ranging review of raw materials and additives such as scrap, alloying elements, slag formers and fluxes. It also discusses the sampling of liquid iron and steel and the measurement of temperature. The bulk of the book is taken up with an extremely thorough and well presented account of modern steelmaking practice using converters. The longest section is inevitably on the design, technology and metallurgy of top-blown oxygen converters for processes derived from the LD method. This includes discussion of monitoring of melt and off-gases and the factors affecting steel yields. There are also sections on bottom-blown converters, on processes using a combination of top and bottom blowing and on refractories for oxygen converters. Older technology is discussed more briefly, and the manufacture of steel using electric arc furnaces is deferred to volume 8.

As usual with books produced by the Gmelin-Institut (this counts as a supplement to the Gmelin Handbook of Inorganic Chemistry System 59. Iron, Parts A3, A4 and A5), the coverage is very detailed. The authors and editors have, however, tried to produce something which can be used as a textbook and in this they have succeeded superbly. The overall picture is not obscured by detail. Working steelmakers will find a clear account of methods and techniques in practice related to their own and those concerned with research in steelmaking will find an up-to-date and readable survey of the ways in which scientific results are currently applied in industry. The whole book is magnificently produced and clearly presented. Literature is covered to the end of 1982 but there are a few later references.