

Book reviews

Joan Day and Ronald F Tylecote (editors), **The Industrial Revolution in Metals**, Institute of Metals, London, 1991. vi + 318 pages. ISBN 0-901462-82-9. £37.50 (HMS members: £30.00 + £2.50 postage from the Institute of Materials)

One of the problems for any professional or academic is keeping abreast with the constant outpouring of monographs and journal publications, not only in terms of time but also cost. Single-volume surveys of the literature are therefore especially welcome. This collection looks at the great surge of technical innovation which gave Britain the commanding lead in metals production from the second half of the eighteenth century into the early nineteenth. Five chapters cover the development of techniques and production in the following subject areas: 'Tin Preparation and Smelting' (Bryan Earl), 'Lead Ore Preparation and Smelting' (Lynn Willies), 'Copper, Zinc and Brass Production' (Joan Day), 'Iron in the Industrial Revolution' (R F Tylecote), and 'Steel in the Industrial Revolution' (K C Barraclough). Joan Day also provides a lengthy introduction and Barraclough adds a brief appendix on the chemistry of metal manufacture. Each of the contributors, an expert in their respective fields, attempts a broad survey from the latest research, which is documented in the numerous footnotes at the end of each chapter.

HMS Members will already be familiar with the content of some of the various sections. However, it is a tremendous convenience having the material in one volume. Barraclough's contribution, for example, is nothing less than a condensation of much of his two-volume **Steelmaking Before Bessemer** (1984); Day usefully summarises her work on the Bristol brass industry; and the others present findings from a wide range of journal articles and primary sources that are not easily available.

Both a sampler and a reference work, this volume is fascinating to dip into, less easy to review. The articles stand alone: but together they describe the initial transfer of skills from Europe to Britain; attempts to utilise coal in place of scarce wood supplies; and the development in little over thirty years, from 1678 onwards, of most of the basic techniques for producing the most important metals by using coal fuels. The introduction makes a brave attempt to sketch most of the other factors involved as events gathered pace: the steam engine, rolling mill technology, and the growing level of industrial activity which reversed an old trend by increasingly attracting Continental 'spies' to Britain after the 1750s.

Not much time is spent in actually defining the term Industrial Revolution, though in the introduction it is said that for the metallurgist the revolution stemmed from 'new techniques arising from the exploitation of coal'. Ironically, the main impression of the book is the gradual **evolution** of metallurgical skills in Britain both before and during the so-called Industrial Revolution. One wonders, in strictly metallurgical matters, whether the term is really such a good one, especially since, as the editors admit, one of the major revolutions (in steel) did not happen until the second half of the nineteenth century, when the Industrial Revolution in the accepted sense was over. If there was a revolution, it certainly does not appear to have been a scientific one: several chapters show that chemical principles were unknown, that the main protagonists were skilled artisans, and that scientists had little part to play in metallurgical development.

Until now many of the standard monographs on metals in the Industrial Revolution had been written by economic historians, in which technical matters were not always accurately presented. This volume redresses those failings and is a monument to many years of work by British historical metallurgists (many of them, of course, HMS members). The sense that the book is partly a monument to a generation of scholarship is increased by the fact that two of the contributors, K C Barraclough and R F Tylecote (the latter the prime mover of the enterprise), did not live to see its publication.

In contrast to the miserable offerings of most university and academic presses, it is good to see the Institute of Metals still producing books on high-quality paper, liberally laced with drawings, engravings and photographs. Two small 'extras' would have improved the book further: information on the background and affiliations of the authors; and a bibliography drawing together some of the basic works listed in the footnotes. Even without those, it is an indispensable reference work.

Geoffrey Tweedale

Letters to the Editors

From L M Hogan

May I add some comments to the most informative article by J P Schotsmans on Monsieur de Réaumur (*Historical Metallurgy* 24(2)). The selection of comments by contemporary scientists is revealing but may give some misleading impressions, or at least impressions different from those that I have obtained in recent reading.