

history. It should be widely used by school children as well as by serious and senior scholars. It is also a very beautiful book that is a pleasure to use. My one criticism of *The Land*

Transformed is that it includes only fifty-eight plates. A hundred and fifty-eight would be even more satisfying.

Barrie Trinder (ed.), *The Blackwell Encyclopedia of Industrial Archaeology*

LARRY McNALLY

Trinder, Barrie (ed.). *The Blackwell Encyclopedia of Industrial Archaeology*. Cambridge, Mass.: Blackwell Publishers, 1992. xxii, & 964 pp., illustrations, bibliography, indexes. \$150.00, ISBN 0-631-14216-9.

The term industrial archaeology (IA) has been difficult to define and explain ever since it was coined in the mid-1950s. This has compounded the methodological problems facing this developing field of study. Luckily, this encyclopedia has adopted a pragmatic rather than a philosophical approach to describing industrial archaeology. This encyclopedia serves as "a guide to the monuments, settlements, landscapes and museums holding artifacts of the industrial societies which evolved in the West from the mid-eighteenth century" (p. xvii).

This is a very tall order and the encyclopedia succeeds quite well. The editor and chief writer is Barrie Trinder, Senior Research Fellow at the Ironbridge Gorge Institute in the UK. Trinder has been a proponent of the study of industrial archaeology on a broad scale for the past several decades. For this volume he has been aided by an international editorial board as well as numerous national correspondents and subject experts. The encyclopedia contains short biographies of prominent individuals, descriptions of geographical regions/countries, industrial materials and processes as well as a bibliography and indexes. Each of these categories succeeds to a different degree in this encyclopedia.

The 130 biographies of inventors, engineers and industrialists work fairly well. Naturally, only the most important people have a biography, though they seem to be fairly representative. Only one Canadian, J. Armand Bombardier, is described. The regional/country descriptions form much of the encyclopedia. For Europe there are entries by country from Albania to Yugoslavia. There are also descriptions of Canada, the United States,

Australia and New Zealand. However there are no entries for Central or South America, any of the Pacific Rim, Asia or Africa. Even where there has been long-standing industrialization, such as India or Japan, there are no entries because the IA of the non-Western world has yet to be described. Though it is understandable, this book perpetuates the Eurocentric view of industrialization. This process is much more pervasive than the encyclopedia lets on. One can only hope there will be a comparable volume for the IA of Africa, Asia and Latin America some day.

For the areas that the encyclopedia does cover, it is very good. Countries, their states/provinces and major geographical regions are described in terms of their natural resources, human history, resource exploitation, industrial development, industrial monuments and museums. For the UK, the birthplace of the industrial revolution, there are separate descriptions for England, Wales, Scotland, and Ireland, as well as for twenty-five regions and geographical areas plus the major manufacturing cities of Britain. Significant individual sites and industrial museums in Britain also merit entries. The rest of Europe gets the same type of treatment: France has 68 entries while Germany gets 108. At the end of each entry there are references to sources in the general bibliography, titles of more specialized printed sources plus a list of preserved sites and museums.

For Canada there are descriptions of eight provinces, three regions (Cape Breton, Niagara and Vancouver Island) plus twenty-four cities and towns. Naturally, Quebec City, Montreal, Toronto and Hamilton are described, but so are Boulamarque, Shawinigan, Sudbury and Waterloo. The Forges du St-Maurice and the Rideau Canal also get descriptions. Unfortunately, neither Canadian Pacific nor Canadian National Railways get descriptions, though they had a tremendous impact on Canada and

its development. Louise Trottier of the National Museum of Science and Technology and Deryck Holdsworth now with the Geography Department of Penn State, wrote the Canadian entries. Looking over the geographical representation, it could be argued that Quebec received too many entries and southern Ontario too few.

The articles for industrial materials and processes are perhaps the least satisfying because they are so general. Many of them contain only a brief amount of technical data with little historical or geographical context. For instance "Foundry," a key industry in the industrial revolution, is limited to a half-page description, and the same is true for "Iron."

The bibliography of "works...of major significance to the study of industrial archaeology" occupies fifty-eight two-column pages. It contains sources on railways, canals, companies and industries as well as national and local histories. A significant number of these texts are from languages other than English. This bibliography is a formidable resource on its own. There are three indexes; a subject classification, an alphabetical index plus an index supplement. The subject index is arranged into nineteen categories with numerous subdivisions covering everything from transportation and public utilities to IA theory. Each subdivision lists the relevant articles in the encyclopedia. The alphabetical index lists countries, geographical regions, cities, indus-

trial materials and processes, and biographies. The index supplement provides additional entries for canals, museums and railways only. Unfortunately there has been no indexing of individual or company names occurring within articles, making it difficult to find specific information. A search for details on historic European engineering firms was slow and probably incomplete. Only a few establishments had their own entries such as Le Creusot in France. Most of the data came from the descriptions of cities where the engineering works were located which requires a certain amount of existing knowledge.

The index confusion comes from putting together a number of quite different types of knowledge into one alphabetical sequence. The editors included information on IA and its methodology, geographic based descriptions and industrial techniques. If these types of information had been put into separate sections, then a proper name index might have been possible.

The Blackwell Encyclopedia of Industrial Archaeology is a monumental work. It contains vast amounts of information on the physical aspects of the industrial revolution and its aftermath. However it has limited geographical coverage and has a limited proper names index. In spite of these restrictions, it is a most useful reference work for all those interested in the field of industrial archaeology.

Robert Bud and Susan E. Cozzens (eds.), *Invisible Connections: Instruments, Institutions and Science*

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Bud, Robert and Cozzens, Susan E. (eds.). *Invisible Connections: Instruments, Institutions and Science*. SPIE Institutes for Advanced Optical Technologies, v. IS 9. Bellingham, Washington: SPIE Optical Engineering Press, 1992. xiv & 306 pp., 35 illustrations. Hard-cover U.S. \$62.00 ISBN 0-8194-0767-4, paper U.S. \$56.00 ISBN 0-8194-0768-2.

Books based on the proceedings of conferences are rarely really successful; *Invisible Connections* adds evidence to this assertion. The basis of this volume was a meeting held at the Science Museum (London) in 1991. It was attended by people from an unusually broad spectrum of backgrounds. The conference was organized around three broad topics and the present work

includes the papers discussed. Unfortunately, the material available to the editors was quite variable in quality, level and faithfulness to the theme and sub-themes of the book. I suspect the best papers in such books might have greater circulation and impact if they had been published in journals. Only thanks to modern technology, on-line searches and on-line abstracts, are the contents of such tomes likely to be rescued from oblivion.

A problem encountered with conference proceedings is that strict editorial control is often bypassed. Lack of peer-review means papers that would have been weeded out or highly modified as a result of referees' comments may slip in with little change. In this book we encounter the gamut of verbal diarrhea,