7th Edition, which may at least occasionally occur as fibres; and a further appendix lists over 200 types of synthetic inorganic fibres and whiskers.

The third and final chapter on health effects arising from fibre inhalation covers the characterization and etiology of asbestosis, pleural diseases and mesothelioma, and lung cancers. The human respiratory and lymphatic systems are described in detail and are shown in a number of clear diagrams. Much of the experimental approach since 1965 to our understanding of the biological effects of asbestos is covered, although the references appear to cut short at 1980, leaving out some important work since that date. The epidemiology of asbestosis and other fibre-related diseases is well summarized up to 1985, particularly with regard to exposure levels and the debate on a safe threshold level.

Bearing in mind its theme, this is a useful, well written and well presented book which should be of wide interest to the producers and users of industrial minerals, to those involved in environmental mineralogy, and the medical researchers who wish to know more about potentially hazardous mineral particles. For those non-medical readers who may be drawn into dialogues (sometimes litigative) on the biological effects of respirable fibres this compact publication is worthy of a place on the bookshelf for its final chapter alone.

The book has a few typographical errors, but an unfortunate one in Table 1–2, page 14, shows fibre tensile strengths in terms of $kg/cm^2 \times 10^{-3}$ instead of $kg/cm^2 \times 10^3$.

A. A. HODGSON

Halbach, P., Friedrich G. and von Stackelberg, U. *The Manganese Nodule Belt of the Pacific Ocean.* Stuttgart (Ferdinant Enke Verlag), 1988. x + 254 pp., 190 figs. Price DM186.00.

This book is largely, but not entirely, an overview of German efforts in manganese nodule studies in the NE Pacific ore-grade nodule belt (Clarion–Clipperton zone) in the 1970s and very early 80s. As such, much of the material in it has already been presented in more detail in the scientific literature, but this book brings it together in an easily accessible and readable format.

The book starts with a vigorous promotion of the nodules as a future mineral resource. Doubters of the viability of future nodule mining should read this. Chapters 3 and 4, with one exception, largely deal with nodule nature and distribution, and present a useful overview of these subjects. The exception is a detailed paper on the structural chemistry of manganese and iron minerals and synthetic model compounds, which represents a significant advance on previous papers on this topic. Had this paper been published when written, it would have significantly influenced several subsequent studies and its delay in publication is to be regretted.

Chapter 5 concerns the environment of formation of manganese nodules and goes well beyond the confines of the C.C. zone in its scope. It represents an excellent synthesis of mostly sediment studies related to nodule development and as such is essential reading for all serious students of 'noduleology'.

Chapter 6 concerns the growth processes involved in the formation of nodules, and presents a useful overview. There is a certain amount of repetition of material presented in previous chapters, but this is perhaps inevitable in a volume with so many authors.

The remaining chapters present a concise summary of some of the exploration, mining, processing, assessment, legal and environmental considerations relating to future nodule exploitation. Much of this is fairly straightforward, but the legal chapter is somewhat dated, as events have moved on since it was written.

Dealing as it mainly does with the C.C. zone, this book largely ignores work on nodules done elsewhere in the Oceans. Even its title is something of a misnomer, as there is not one but several manganese nodule belts in the Pacific ocean. There is little mention of the Japanese work on nodules in the Central Pacific Basin, nor of nodule studies in the EEZs of the South Pacific island countries which has been the subject of much attention in the past few years. Likewise, there is no mention of the nodules of the Central Indian Ocean, similar in many respects to the C.C. zone nodules, on which work was commenced independent by British and German workers in the 1970s and has since been ably taken up by Indian workers. Nevertheless, in spite of these limitations, this book represents an excellent synthesis of a very important body of knowledge on nodules.

D. S. CRONAN

Jones, M. J. (ed.) *Silver—Exploration, Mining and Treatment.* London (Institution of Mining and Metallurgy), 1988. 344 pp. Price £40.00.

The recent spate of intense exploration for, and development of, gold deposits has resulted in a large number of publications related to gold. By contrast, silver deposits have remained relatively neglected. It is thus of interest to see a publication