

to the mineralogist. The book will, however, save much time spent in the library for anyone making a start in this field. G. RYBACK

THOMAS (TREVOR M.). *The mineral wealth of Wales and its exploitation*. London (Oliver & Boyd), 1961, 247 pp. Price 30s.

This book, which gives a useful account of the mineral resources of Wales, falls unhappily between being a straightforward non-technical description of the deposits and a geological appraisal. One suspects that it was not written by a geologist; if this does Mr. Thomas an injustice, then he did not check his references thoroughly. His first reference to the classification of the South Wales Coal Measures (p. 15) quotes the obsolete division into Upper Coal Series, Pennant Sandstone Series, and Lower Coal Series without comment, rather than the now accepted classification which he gives on the next page. Any doubt that this may cause in the reader's mind is increased by the fact that on subsequent pages he uses a mixture of old and new classifications. There are many factual errors: the Middle Coal Measures are not 'the principal repository of the important coal seams' (p. 17); on the same page he seems to confuse the old Upper Coal Series with the present Upper Coal Measures when he says that 'within the . . . Upper Coal Measures the seams are generally thin in the eastern half of the coal-field'; in fact, the seams in the lower part of the Upper Coal Measures (particularly in the Rhondda and Brithdir Beds) are far more important in the eastern half of the field.

This reader was irritated by the use of a strange jargon, for example, 'the extractive potential of . . .' (p. 6); '200 operative small mines' (p. 13); 'The end-uses of sandstone . . .' (p. 114); 'output . . . of the extractive raw materials . . .' (p. 165); '. . . locally quartzitized . . .' (p. 148). The author could have assumed that his reader would understand if he used the term 'dip-slope' instead of 'low southwards dips being paralleled by a similarly-directed surface gradient' (p. 74).

In a list of new manganese minerals found in Benallt mine, the author misspells banalsite (as benalsite) and includes the barium mineral cymrite.

Mr. Thomas does not appear to be familiar with some aspects of mining and geological exploration techniques: although Dennison and Varvill's description of successful diamond-drill exploration is listed in the bibliography at the end of the chapter (and misquoted), he believes that 'core-drilling from the surface can be largely excluded

as an exploratory tool' in the search for lead-zinc orebodies, and he suggests that 'the only really satisfactory method . . . is the driving of long cross-cuts' (p. 206). I wonder how many economic geologists and mining engineers would agree?

The author would have difficulty in obtaining support for the idea that thrust faulting of the Basal Grit of the Millstone Grit near the west end of the South Wales coalfield 'has been sufficiently severe to alter the sandstones to quartzites locally' (p. 146). What is the evidence?

The style of the book may be summarized by quoting Mr. Thomas's heading for chapter VII—'Sandstones, gritstones or greywackes'. Although these terms may be synonymous for the quarryman, some explanation should be made for the use of the general reader. And please, could the places where these rocks were won be described as quarries, and not 'extraction points'!

The general layout of the book is good and it is well illustrated, there being 47 text figures and 13 photographic plates (most of which are very good aerial photographs). Unfortunately some of the figures are inaccurate or incomplete; for example an unexplained symbol is used on fig. 3, and Pentremawr Colliery, which he mentions on p. 26 as one of the more successful collieries, is omitted from fig. 5. A. A. ARCHER

STEWART (G. H.), Editor; *Science of ceramics*. Vol. I. London and New York (Academic Press for the British Ceramic Society), 1962, 334 pp., price £3. 5s.

The study of ceramics is no longer confined to fired clay-based products. For many years the requirements of the metallurgical and gas-producing industries have demanded specialized refractory materials and, more recently, nuclear energy, rocketry, jet propulsion, and radio-communications have, in their turn, extended and are still extending the range of materials necessary for their further development. Indeed, virtually the whole field of non-metallic inorganic chemistry is now within the purview of the ceramist.

These broader horizons of ceramics are well illustrated in this volume, which contains twenty-three papers presented at a joint meeting of the British and Dutch ceramic societies. They range from studies on the structure and mineralogy of clays and other raw materials, the properties and development of glazes, and the study of a wide range of physical properties of ceramics—examples of traditional ceramic