

of erosion is paramount; with problems of reversing flow, for example in the maritime environment; with land reclamation, including embankment underdrains; with permanent and temporary road construction. In all cases, useful working drawings are given and the potential superiority of some of the membrane-based solutions over the traditional rip-raps etc. is clear.

A brief concluding chapter gives an idea of laboratory equipment involved in the evaluation and quality control aspects of membrane design.

The use of membranes in ground engineering is relatively new—the author rightly refers to the complete absence of its mention in many standard texts on soil mechanics. Others have criticized the failure of traditional research groups—for example the universities—to give a lead in assessing the potential for exploiting ground membranes. However, this reviewer believes the author's Chapters 5 to 9, on field application, show that the only viable experiments are those conducted in the field.

This book can be recommended to practising engineers concerned with problems of ground filtration and separation. Although the author's experience may be biased towards certain manufacturers, there is much of practical value, particularly in Section 2.

IAN M. SMITH

A GUIDE TO CLASSIFICATION IN GEOLOGY by J. W. Murray. Ellis Horwood Ltd., Chichester, U.K., 1981. No. of pages: 112. Price: £10.00 (Board); £5.00 (Paper).

This is an unusual, interesting and useful book. It is neither about the theory of classification in Geology nor a glossary of terms, but a synopsis of the classification(s) of rocks currently in use or suggested by international committees. Thus it brings together, in a handy, updated, reference form, material otherwise to be found in numerous texts or scattered through geological dictionaries. The book is clearly aimed at professional geologists who frequently or occasionally need to use terms outside their immediate field.

The scope of the work is primarily restricted to petrology. An extremely brief introduction is followed by chapters on: Sediments and Sedimentary Rocks, Igneous Rocks, Metamorphic Rocks, Mixed Rocks and Rock Associations, Stratigraphic Classification, Engineering Geology, and an Index. A hierarchical system of subheadings is used, so that for example, limestones are found under Chapter 2 (sediments), 2.5 (organic deposits), 2.5.2 (carbonates). Here, after an introduction, schemes for carbonate sediments are given, then classification of limestones by Folk, Dunham, and Embry and Klován, both in text and tables. This is followed by other limestone names commonly encountered but not included in the above classification.

The coverage is extensive, but not exhaustive, and often too concise, so that a non-specialist using the book may still require a glossary on hand to fully comprehend the classification. However, many references are provided which makes the book an excellent guide to the more specialist literature.

The petrological chapters are straightforward, and that on Engineering Geology is interesting. The chapter on Stratigraphy is adequate too, for a book this size, but can do no more than merely outline the geological column and briefly explain litho-, bio- and chronostratigraphy. Obviously, had chapters on Palaeontology, Mineralogy, Structural Geology, Economic Geology etc. been included, the work may have been more complete, but yet more inadequate in the eyes of specialists in these fields (not to mention having then to embrace the classifications of Biology, Chemistry, Physics etc.). There does seem, however, to be a vacuum at the beginning. We are told for example, that keratophyre is leucocratic, schist is foliated, hornfels has porphyroblasts and chert is cryptocrystalline. We are thus led into a micro-cosmic world of terms which may again have diffuse definitions. For completeness therefore, and to help those who are unfamiliar with—or have forgotten—descriptive petrography, an introductory section, or additions to existing chapters, covering this would have been welcome. Similarly at the other extreme, field terminology could have received more emphasis.

Of course, specialists would dispute some of the classifications, but there appeared to be neither factual errors nor misprints. The print is large and clear, and the paragraphs well laid out. However, the pages are very small so there are relatively few words to the page (c. 250), a feature which is more striking because the tables are reduced to fit the page and their lettering is about half the size of the text. Consequently, the price at £10.00 for boards (c. 1p per page), and even at half that for the paperback, is rather high.

Defining boundaries in Nature is always difficult, and interpreting classifications and the guidelines of committees tends to lead to exasperation. This book certainly ameliorates the effect, and Professor Murray is to be congratulated on discovering this empty niche and filling it with a useful little book.

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