

REVIEWS.

Igneous Rocks. Vol. II, Description and Occurrence. By JOSEPH P. IDDINGS. Pp. xi + 685, with 20 text-figures and 8 maps (5 coloured). (New York: John Wiley & Sons; London: Chapman & Hall. 1913. Price 25s. 6d. net.)

The first volume of this important treatise appeared in 1909, and was reviewed in this Magazine, vol. xv, p. 331. The second and concluding volume is divided into two parts of equal length, the first dealing with the systematic description of igneous rocks, and the second with their occurrence, or rather geographical distribution. The set of three handsome volumes (including the companion volume on rock-forming minerals by the same author) extends to 1800 pages and forms an indispensable compendium of petrography, although including only the rocks of igneous origin.

We are glad to find that the six main divisions of igneous rocks devised for the purposes of description are based fundamentally on mineralogical composition, namely 'Rocks characterized by':

1. Preponderance of quartz.
2. Quartz and felspar.
3. Felspars with little or no quartz or felspathoid minerals.
4. Felspars and felspathoid minerals.
5. Felspathoid minerals.
6. Chiefly 'mafic'¹ minerals [i.e. pyroxene, amphibole, olivine, &c.].

Each of these divisions is first sub-divided into 'phanerites' and 'aphanites,' i.e. coarse-grained (or holocrystalline) and fine-grained or dense rocks. These words being frequently repeated in the text as main-headings are somewhat misleading, since they suggest rock-names rather than adjectival qualifications defining texture. The author complains bitterly of the confusion in rock-names, but instead of attempting to

¹ This appears to be a newly-coined term, and, like 'femie' and 'femag,' it is no doubt a contraction from the words magnesium and ferrum. Like many of the uncouth words of the 'quantitative system of classification,' it bears a strange resemblance to English slang—in this case forcibly reminding us of the verb 'to maffick.' Descriptions burdened with terms of this type surely invite ridicule.

simplify he only adds to the existing confusion by introducing other less acceptable names. Fortunately, he has found it impossible to dispense altogether with the current nomenclature, which, indeed, figures largely throughout, thus rendering the volume more generally useful than it might otherwise have been.

About two thousand chemical analyses of rocks are quoted, and several diagrams representing chemical composition are given. Coloured maps of each of the continents, except Australia, show in broad outline the distribution of igneous and metamorphic rocks. The second part of the volume contains a useful, though much condensed, summary of the literature relating to the distribution of igneous rocks in each country. Even here we find evidence of the author's passion for new classifications: e.g. under the heading 'Great Britain' are included Ireland and Spitzbergen. A new, but not quite perfect, system of classification has also been devised for the numerous bibliographical references that are cited.

A Manual of Petrology. By F. P. MENNELL. Pp. [v] + 256, with 123 text-figs. (London: Chapman & Hall. 1913. Price 7s. 6d. net.)

This book was originally intended as a third edition of the author's 'Introduction to Petrology' (1909, second edition 1910), but so many changes have been made that it now appears under a new title. It is elementary in character, and is well printed and illustrated. The first 80 pages treat of polarized light and the rock-forming minerals. Then follow 93 pages on the igneous rocks, their classification, structure, origin, and description of the more important types; 12 pages on the sedimentary rocks; and 59 pages on the metamorphism and weathering of rocks. Finally there are short chapters on the chemistry and radio-activity of rocks, and on the collection of material and the preparation of thin-sections. A large number of the examples and figures relate to material collected by the author in Rhodesia, so that the book contains many new facts of interest to petrographers. Further, owing to the originality of his ideas, more especially with regard to the origin of igneous rocks, the author raises many points for discussion.
