

REVIEWS.

Manual of the Chemical Analysis of Rocks. By HENRY S. WASHINGTON, Ph.D. Pp, ix + 188. (New York : John Wiley & Sons ; London : Chapman & Hall, Ltd., 1904. Price 8s. 6d. net.)

Of late years it is to the United States that we have learned to look for improved methods of manipulation and separation in the chemical analysis of inorganic bodies. In the case of rocks, the most recent and approved methods of analysis employed by the chemists of the United States Geological Survey have been made generally accessible by the recent publication of Hillebrand's admirable treatise. At first sight, therefore, there would appear to be little justification for this work of Dr. Washington's on precisely the same subject. The author, however, claims for his book that it has been written for that increasing class of petrologists and others who would like to make analyses of rocks, but who have had little or no experience in the subject, whereas Hillebrand's treatise is intended for the practised analyst. As one of the joint authors of that remarkable system of rock-classification, depending mainly on chemical composition, which has recently astonished the petrographical world, he is naturally anxious to render 'data in the way of rock analyses of superior quality more numerous.' In good hands the book, with its clear exposition of modern chemical methods, should certainly conduce to this desirable end, but, as it is avowedly intended to supply the student with such minutiae of detail that he may dispense with personal instruction, there is some cause to fear lest unskilled and careless workers be encouraged by its aid to perpetrate analyses of rocks and to publish their results. We are inclined to think that the chemist who is sufficiently advanced to produce trustworthy results will not require any more details than are given in Hillebrand's treatise. The book is nevertheless very welcome as a further means of making recent methods of rock analysis more widely known, for it is admirably written from the point of view of clearness and minuteness of detail. The student could have no better training in analytical methods than would be afforded by the guidance of this book in the analysis of an igneous rock, and it can be recommended to college professors who can spare little time for personal instruction to their students, since the directions given are very explicit and descend to such details as the sizes of beaker, filter-paper, and evaporating dish to be used in the various operations.

A Handbook to a Collection of the Minerals of the British Islands, mostly selected from the Ludlam Collection, in the Museum of Practical Geology, Jermyn Street, London, S.W. By F. W. RUDLER, I.S.O. Pp. x + 241. (London: H.M. Stationery Office, 1905. Price 1s.)

An interval of almost half a century having elapsed since the publication, in 1858, of Greg and Lettson's 'Manual of the Mineralogy of Great Britain and Ireland,' a new work on British minerals is specially welcome. The work is primarily intended as a handbook to a collection of minerals arranged by Mr. Rudler, since his retirement from his long held post of curator, in the Museum of Practical Geology. The book will have a permanent value as a treatise, for it is by no means a mere catalogue or descriptive list of all the specimens in the collection, nor is it, like Greg and Lettson's manual, a descriptive mineralogy with complete lists of the localities of British minerals. Rather is it an extremely readable and interesting account of the mode of occurrence and history of British minerals, with special reference to their paragenetic relations, and their probable modes of origin, and with only brief reference to specific characters.

The mode of treatment is distinctly novel, the minerals being classified according to geographical distribution. Half the total number of minerals in the collection come from Cornwall and Devon, and about half the book is devoted to the consideration of these specimens. The remainder deals with minerals from the other mining districts of England, and includes a chapter on the minerals of the Neozoic strata, and short accounts of various mineral localities in Scotland, Ireland, and the Isle of Man. Under Cornwall and Devon the main headings are as follows:—cassiterite; minerals associated with cassiterite; copper sulphides and sulpho-ferrites; copper-bearing minerals of the gozzans; arsenates and phosphates from the copper-gozzans; ores of lead, zinc, antimony, &c.; sulphides and sulpho-salts; ores of iron, &c.; minerals of the rarer metals; the spars of the mineral veins; miscellaneous minerals.

The breadth and comprehensiveness of this work render it valuable not only to mineralogists, but also to geologists and to those interested in mining, while the numerous references to original papers furnish abundant evidence of the care and patience which have been bestowed upon its preparation.

Minerals of Japan. By TSUNASHIRŌ WADA. Translated by TAKUDZI OGAWA. Pp. vii + 144, with 30 + 4 plates. (Tōkyō, 1904.)

This attractive-looking volume contains descriptions of 131 mineral species found in Japan, giving details of their mode of occurrence at the various localities, together with particulars relating to crystalline form and chemical composition. Much of the matter has been previously published in Japanese journals, but has not hitherto been accessible to European mineralogists; there are, for example, numerous chemical analyses of minerals which have not appeared before in a European language. The book, which is written in English, may be considered to be an extension of K. Jimbō's paper 'Notes on the minerals of Japan' (Journ. Sci. Coll. Univ. Tōkyō, 1899, vol. xi, pp. 213-281).

The excellent colotype plates, prepared from photographs of specimens in the author's collection, show very clearly the characteristic features of the minerals they represent. Special mention may be made of those representing the well-known Japanese minerals stibnite, rock-crystal in simple and twinned groups, topaz, and orthoclase. In addition to the plates, the text is well illustrated by outline figures of crystals.

Under the name naegite a new species is described from the alluvial tin washings at Naegi, near Takayama, in the province Mino. It is a silicate of uranium and thorium with some tantalum and niobium; the crystals appear to be tetragonal and isomorphous with zircon and thorite.

An examination of the mineral reinite, which has been described only from Japan, shows that it is not tungstate of iron crystallizing in the tetragonal system, but a pseudomorph of wolframite after scheelite, like the well-known pseudomorphs from Trumbull in Connecticut.

Since mineralogy was first taught in Japan by Karl Schenk, John Milne, and others, thirty years ago, considerable advances have been made in the science, and there are now several expert Japanese mineralogists, facts which the book before us amply testifies.

For information respecting Japanese localities of minerals the book will be found especially useful.