

There are several maps showing the distribution of land and water in New South Wales at particular geological periods, and the frontispiece is a clearly-printed, general, geological map of the State. Finally, a glossary (a merciful provision when such words as 'regolith' and 'monadnock' are used) and an index complete this useful handbook.

#### V.—BRIEF NOTICES.

1. THE PRODUCTION OF GRAPHITE IN 1913. By E. S. BASTIN. Mineral Resources of the United States, year 1913. Part II. pp. 181–251. 1914.

THIS report contains all the information on graphite which has appeared in earlier reports of the United States Geological Survey, amplified and brought up to date wherever possible. It includes a valuable account of the physical and chemical properties of graphite, and of the origin and uses of the mineral. The deposits of the United States are described in detail, and descriptions are also given of graphite deposits in Ceylon, Korea, Madagascar, and Mexico. The report is completed by a full bibliography of literature bearing on the occurrence, production, properties, and uses of graphite.

2. USEFUL MINERALS OF THE UNITED STATES. Compiled by SAMUEL SANFORD and RALPH W. STONE. United States Geological Survey, Bulletin 585. pp. 250. Washington, 1914.

Lists of useful minerals appeared in the issues of the *Mineral Resources of the United States* for the years 1882 and 1887, but have not been published since. In the interval the mining industry of the United States has increased enormously, and a revised list has long been called for. In view of its length it is now issued as a separate publication. It gives the locality of the principal deposits of useful minerals in the various States, and a glossary showing the composition and character of each mineral and its principal occurrences is added.

3. SUMMARY REPORT OF THE GEOLOGICAL SURVEY, DEPARTMENT OF MINES, FOR THE CALENDAR YEAR 1913. pp. ix + 544. Ottawa, 1914. Price 20 cents.

This report, which is unusually belated even for an official return, testifies to the extent and varied nature of the work undertaken by the Survey. During the year it was exceptionally heavy owing to the additional field work called for in connexion with the handbooks compiled for the visit of the International Geological Congress the following year (1913). Field work in Canada appears to be not without danger; one of the staff, Dr. J. D. Trueman, unfortunately lost his life owing to a canoe accident, and a topographer was laid up in hospital for some months as the result of an encounter with a grizzly bear. Some progress is reported in fitting up the Natural History Museum, but is greatly handicapped by the lack of properly equipped workrooms and storerooms. Mr. D. D. Cairnes completed the geological section along the 141st parallel between the Yukon and Porcupine Rivers, which is part of the geological section across the

Northern Cordillera undertaken in co-operation with the United States, and found that the formations are dominantly of sedimentary origin, and range from Recent to probably pre-Cambrian age.

4. **THE ORE DEPOSITS OF NORTH - EASTERN WASHINGTON.** By HOWLAND BANCROFT, including a section on The Republic Mining District by WALDEMAR LINDGREN and HOWLAND BANCROFT. United States Geological Survey, Bulletin 550. pp. 215, with 26 figures and 19 plates. Washington, 1914.

The district described by the author comprises mainly the whole of Stevens and Ferry Counties. The geology could not be determined with certainty owing to the absence of fossils, but the rocks may be referred to the Proterozoic, Palæozoic, Mesozoic, and Cenozoic eras. One of the most conspicuous rocks is an intrusive granite. The mineral resources are very varied, and include gold, silver, lead-zinc, copper, iron, tungsten, nickel, antimony, and molybdenite deposits, and also minerals used as fluxes. The various mines are described in detail, and reference to the memoir is facilitated by an excellent index.

5. **ELECTRIC ACTIVITY IN ORE DEPOSITS.** By ROGER C. WELLS. United States Geological Survey, Bulletin 548. pp. 78. Washington, 1914.

As the result of considerable investigation in the laboratory the author concludes that electric action may have played no small part in the deposition of ores. Many metalliferous minerals can conduct electricity and act as electrodes and as conductors of electric currents in ore deposits. The chemical difference producing the greatest effect appears to be that existing between oxidizing and reducing solutions. Pyrites is so inert to many solutions as to function electrically like unattackable electrodes for long periods, thus making oxidizing or reducing solutions available for producing electric currents in ore deposits.

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## REPORTS AND PROCEEDINGS.

### I.—GEOLOGICAL SOCIETY OF LONDON.

*February* 3, 1915.—Dr. A. Smith Woodward, F.R.S., President, in the Chair.

The following communications were read:—

1. "On the Gravels of East Anglia." By Professor T. McKenny Hughes, M.A., F.R.S., F.G.S.

The author discusses the sources from which the subangular gravels that cover such large areas in East Anglia can have been derived.

He points out that their great variety of fracture, colour, etc., proves that they cannot have come directly from the Chalk, nor from Boulder-clay derived directly from the Chalk, nor from the Lower London Tertiaries, none of which contain subangular gravels, but only beds of pebbles, and those mostly of small size.