

had a lower refractive index than any of the above; the double refraction was hardly noticeable and it consisted of very fine flakes and minute vermicular aggregates. The Glagerite had a higher refractive index than any of the other specimens.

The examination of these specimens was undertaken in the hope of arriving at some definite conclusion about the origin of the kaolin veins in this country, but it cannot be said that one has been attained.

NOTICES OF MEMOIRS.

I.—MARTIN SIMPSON, A YORKSHIRE GEOLOGIST (1800–92).

AT the annual meeting of the Yorkshire Geological Society, held at Leeds on December 12, Mr. T. Sheppard, M.Sc., F.G.S., read a paper on “Martin Simpson and his Work”.

Martin Simpson was born at Whitby in 1800, and died in 1892. He spent most of his life in the Whitby district, and for over half a century had charge of the valuable Geological Collection in the Museum there, though for a short period he was Curator of the Yorkshire Geological Society's Collection, now in the Museum at Leeds. He was one of the pioneer workers among the Yorkshire Liassic rocks, and considering the early date of his researches the enormous amount of information he accumulated was remarkable, and his methods of research had a surprisingly modern air. He was the author of a number of geological memoirs, most of which are now exceedingly scarce.

Mr. Sheppard showed a complete series of these works, which he had collected, the most important being a memoir on the *Ammonites of the Yorkshire Lias*, which was long since said to be so rare that only one copy was known. Another work, published when the author was 84 years of age, was *The Fossils of the Yorkshire Lias*, in which no fewer than 743 species were enumerated and more or less described. Simpson measured with a foot-rule the thickness of the Lias beds north and south of Whitby, taking special note of the fossils in each bed, a very early example of zonal collecting.

II.—THE MINERAL RESOURCES OF THE BRITISH EMPIRE.

FOR the second year in succession the Swiney lectures were given by Dr. J. S. Flett, F.R.S. As already announced in the *GEOLOGICAL MAGAZINE*, the subject chosen was “The Mineral Resources of the British Empire”. By means of a judicious mixture of statistics, engineering, and geology Dr. Flett succeeded in giving a remarkably interesting, though necessarily condensed, account of a very large subject. It was shown that in the case of some minerals, such as tin, nickel, and diamonds, the British Empire is still the greatest producer, while in other instances its former pre-eminence has passed into foreign hands, especially into those of the United States and Germany. It is evident that in the immediate future Canada will be an important producer of many minerals, besides oil and gas on a large scale. The mines of Sudbury, Cobalt, and Porcupine were dealt with by the lecturer in some

detail, and a great future was predicted for the metal cobalt, which in some ways is superior to nickel. The production of tungsten ores has been greatly stimulated by the War, and many new sources have been discovered. Molybdenum is also rapidly increasing in importance for the same reason. The gold production of South Africa has now reached the enormous value of nearly forty million pounds sterling per annum.

The lectures, which were illustrated by a large number of excellent lantern slides, were listened to by large and appreciative audiences, and must be regarded as highly successful.

III.—THE AGE OF THE BOLIVIAN ANDES.

IN 1915 Professors Singewald and Benjamin L. Miller collected from rocks of hitherto undetermined age in the copper district of Corocoro fossil plants of the same flora as that previously known from the silver district of Potosi, whence also they made collections. These have been described by Professor E. W. Berry (Proc. U.S. Nat. Mus., vol. liv, pp. 103-64, pls. xv-xviii, October, 1917) and the types and figured specimens presented to the United States National Museum. The age of the flora is determined as Pliocene, whence it follows that the major elevation of the Eastern Andes of Bolivia and the high plateau took place in the late Pliocene and throughout the Pleistocene, and that the extensive mineralization of the region is of equally late geological age. A Brachiopod, *Disciniscia singewaldi*, found at 13,500 feet above sea-level, and described by Professor Schuchert in the same paper, similarly proves an elevation of at least that amount since Miocene times.

IV.—WEST AUSTRALIAN CHALK FORAMINIFERA.

THE fauna of the Gingin Chalk (= Albian to Cenomanian) was made known by the researches of Robert Etheridge, jun. (Bull. Geol. Surv. W. Australia, No. 55, 1913), and its Foraminiferal contents listed by Howchin (Rep. Adelaide Meeting Austr. Assoc., September, 1893). Since then Frederick Chapman has been working on the deposit, and has now produced a monograph on the Foraminifera and Ostracoda (Bull., No. 72, 1917). A mere glance at Chapman's careful drawings shows the completely Upper Cretaceous nature of the deposit and the remarkable agreement of the fauna with the English equivalents. Eighty-one pages, of which 14 are devoted to illustrations (plates); 134 species of Foraminifera, 16 of Ostracoda.

REVIEWS.

I.—JAMES GEIKIE, THE MAN AND THE GEOLOGIST. By MARION I. NEWBIGIN and J. S. FLETT. pp. xi + 227, with four portraits. Edinburgh: Oliver & Boyd, 1917. Price 7s. 6d.

THIS charmingly written book is divided into two distinct parts. The first, by Miss Newbigin, deals with James Geikie's life from the biographical standpoint, while in the second part Dr. Flett