the east. Of much interest, too, was the discovery at Bock Bay of a volcano, which had been active during the great Ice Age, and the occurrence of numerous hot springs, which had built up beautiful basins of carbonate of lime.

2. "Exhibition of Specimens and Fossils from Lowe Sound and Axel Island." By H. M. Cadell, B.Sc., F.R.S.E., J.P., D.L., of Grange, Linlithgow.

LIVERPOOL GEOLOGICAL SOCIETY.

March 8, 1921.—W. T. Walker, Esq., B.Sc., F.G.S., President, in the chair.

The following paper was read: "Notes on the Geology of Lingdale." By F. T. Maidwell, F.G.S.

Lingdale was defined as the western slope of a wide, shallow valley-head, ranging from the high ground between the Uplands and the southern end of Bidston Hill in a north-easterly direction to the western side of Birkenhead Park. Many small exposures of what is presumably Lower Keuper Sandstone occur in the road-sides and lanes, as well as in the old quarries at Flaybrick Hill. The dip of the rocks is generally to the north-east, but the district is much cut up by faults ranging chiefly north and south, although there are some east and west faults which change the direction and amount of the dip, and bring in the Waterstones to the south of Howbeck Road. Detailed descriptions and measurements were given of the succession of strata in two instructive sections, where the junction of Yellow Upper Bunter Sandstone and the Keuper Basement beds is displayed.

CORNISH INSTITUTE OF ENGINEERS.

April 2, 1921.

"Ore Deposits of Igneous Origin." By R. H. Rastall, Sc.D., M.Inst.M.M., F.G.S.

Ore deposits of igneous origin can be divided into two main groups: those associated with acid intrusions usually take the form of veins or lodes. They belong to the latest phases of cooling and tend to concentrate in the upper parts of the intrusive masses; furthermore, they commonly accompany pneumatolytic phenomena. The ore-bodies associated with the basic rocks, on the other hand, usually separate at an early stage, the intrusion often splitting into two immiscible liquid phases, as shown by Vogt in the case of the sulphides. The metalliferous phase, being the heavier, sinks to the bottom, although, owing to imperfect equilibrium and viscosity, this sinking is often incomplete and segregations of ore may be found at any level. An unusual type is afforded by the magmatic iron ores of Swedish Lapland, where concentration has been effected by sinking in an acid intrusion. The association of chromite and