the Penine range, but nothing could remove his conviction that as physical phenomena they were connected. The causes producing so symmetrical a fracture might not all have operated at the same time, but they must have been in operation within the same geological period, and must have been dependent on internal conditions. He wished for a special examination of the mineral constitution of the rocks which Mr. Bainbridge regarded as volcanic rocks, for he had difficulty in comprehending their volcanic character from anything he had seen of them, and only the shape seemed to indicate even abnormal volcanic mountains. He was inclined to think they were not such as would fairly come within the title of volcanic mountains, and that there was no proof of the rock having ever been submitted to the action of any water except rain water. He could easily conceive that, in the course of an immensity of time, decomposition on the surface of the mountains would produce the effects that were now seen, and that it was possible to have a conical figure produced upon rocks of a sedimentary origin.

ON THE OCCURRENCE OF ROCK SALT AT MIDDLESBRO'.

About four years ago, Messrs. Bolckow, requiring a good deal of fresh water in connection with their iron-works, commenced to sink a well or shaft, in order to obtain a supply of it. This shaft was carried to a depth of one hundred and eighty feet, but the supply not being sufficient, they commenced about a year ago to put down a borehole. The rock salt was first pierced at a depth of twelve hundred and six feet, and the bottom is not yet proved, but is already one hundred feet into it. The quantity and quality of the brine had not yet been fully tested, but the subjoined has been given as an analysis:—Chloride of sodium, 9·163 per cent.; sulphate of lime, 3·09 per cent.; sulphate of magnesia, 0·08 per cent.; sulphate of soda, 0·10 per cent.; silicia, 0·06 per cent.: oxide of iron, trace; moisture 0·04 per cent. On the north, at Castle Eden Colliery, the Coal-measures are overlaid by the Permian; and at Oughton boring, near to the Tees, the Trias has been bored in to some five hundred feet—the Hutton coal-seam at Castle Eden Colliery being some seven hundred feet below the sea level, and the salt at Middlesbro' about twelve hundred and fifty feet. On the south side of the Tees, the Lower Lias is soon put on and capped by the Upper Lias and Oolite measures, the measures dipping both to the south and north from the Tees.

ON THE WEARDALE IRON ORES.

In this paper Mr. Attwood observed, that in Weardale, iron ores, occurring as they do under the two different forms of spathon or sparry carbonate, and of hydrated peroxides, have certainly been all at first deposited as carbonates, and have passed into the state of oxides and of hydrates by the joint effects of atmospheric and of aqueous action. Examples of every stage of the transition present themselves in all directions, and there are also met with, from time to time, abundant proofs that, whilst the carbonates deposited are more or less rapidly passing into the hydrated condition, a fresh deposit of carbonates is continually going on in the mines in cavernous interstices, and on the roofs and sides of ancient workings, very much in the same way as stalactites and stalagmites are deposited. Upon one occasion there was found protruding, for five or six inches, from a block of pure and large-grained sparry carbonate of iron, a rod of malleable iron, of about a quarter of an inch in diameter, of which the other end was firmly embedded to about the same depth in the block, which had just before been broken from the mass of it, which was incrusting the walls and roof of an ancient drift, but which block must have been formed within one or two centuries.