

known than those of almost any other county, and to express our hope that the naturalists of Liverpool and Manchester will shortly enable us to speak with greater precision of their immediate environs.

Concerning the central regions of this chain, Mr. Bakewell presents us with the following notices. "Millstone-grit forms the summit of Blackstone Edge, Pule Moss,\* East and West Nab, and all the higher hills in that part of Yorkshire. A perforation of three miles was lately made through Pule Moss, 750 feet below the summit of the hill, to form a tunnel for a canal from Huddersfield to Manchester. The tunnel appears to have been principally carried through the shale which lies immediately upon the limestone; the strata are elevated, and inclined in an opposite direction, and are intersected by a large dyke, containing a vein described by Mr. Outram, the engineer, to be limestone, (Phil. Trans. for 1796). At a considerable distance from the entrance, a number of balls were found, composed of argillaceous ironstone." Mr. Bakewell also states that the millstone-grit extends from a little east of Halifax to Blackstone Edge, and near Todmorden, where its beds are bent in an opposite direction, and then generally follow the curvature of the hills.

We have thus traced this formation from Northumberland into Derbyshire, where our information again becomes precise in consequence of the researches of Mr. Whitehurst and Mr. Farey. The millstone-grit and shale together constitute in Derbyshire a series of strata very closely agreeing in their aggregate thickness, with that presented by the same rocks in Northumberland, amounting to 145 fathoms. In this series, as here exhibited, the millstone-grit (exhibiting the same characters which have already been sufficiently described) constitutes the upper portion, extending to the depth of 120 yards, the lower 170 yards being occupied principally by the shale, containing however, some alternating beds of fine-grained siliceous grit beds, and nodules of ironstone, and some subordinate, and apparently only local beds of limestone. In Derbyshire therefore, it appears that the separation between that part of this series in which the millstone-grit prevails, and that characterised by the shale, is so well marked, that they may be subdivided, as they have been by Mr. Farey, into distinct formations. This distinction does not appear to be equally applicable to other districts.

The millstone-grit in this part of the country, ranges at some

\* The whole of Romalds moor also consists of millstone-grit, which some of our topographical writers have mistaken for granite.