ON THE EXPLORATION OF THE RAYGILL FISSURE IN LOTHERSDALE,
YORKSHIRE. BY JAMES W. DAVIS, F.G.S.

The Raygill Fissure, in the mountain limestone in Lothersdale, about five miles south-east of Skipton, was investigated to some extent by a Committee of the Society, and a report was presented by the Committee, and printed in the Annual Report for 1883. The fissure descended in a slightly diagonal direction in the form of a pothole from the surface to a depth of about 120 feet, and of this depth the lower 90 feet has been dug out and thoroughly examined, resulting in the discovery of numerous bones of animals, particulars of which are recorded in the report referred to above. The specimens are deposited in the Museum of the Philosophical and Literary Society at Leeds. Towards the close of 1883 it was found that the fissure assumed a more or less horizontal direction, and the work of excavation was rendered very difficult and laborious by the position of a large mass of limestone in front of the fissure, constituting at that time the face of the quarry. This obstruction the proprietor of the quarry very kindly engaged to remove, and operations were suspended to enable this to be done.

Since 1883 the face of the limestone has been quarried and the obstructing mass of limestone removed, and during the present summer operations have been renewed on the fissure. Its course has been traced to a distance of 114 feet, with a gradual declination in a south-easterly direction. The present entrance to the fissure is 4 feet wide: it diminishes to 2 feet 6 inches, but at a distance of 60 feet expands and forms a lofty cave, thence forwards the diameter again diminishes. The termination of the fissure, so far as it has been explored, appears to receive a tributary extending almost vertically in a north-westerly direction. The general direction of the fissure tends towards the hill-side, forming the channel of a water course at present running at no great distance; and it is probable that it formerly opened into it, although no direct evidence at present exists of the exit. Borings have shown the bottom of the fissure to be filled in with clay,

DAVIS: EXPLORATION OF THE RAYGILL FISSURE AT LOTHERSDALE. 281

varying from 6 inches to several feet in thickness, with slight alternating layers of sand and gravel, and occasionally fragments of grit and limestone at the bottom. A few remains of mammals have been found near the entrance to the horizontal portion of the fissure similar to those already recorded.

A very large sum would be required to investigate the remaining length of the fissure, because the work will be increasingly laborious and the consequent expense proportionately heavy; and as there is no probability indicated in the work so far that the already large series of animal remains will be greatly, if at all, increased, it is not thought advisable to proceed with the work at present. Sometime during next year the proprietors intend to drive a cross cut to the Barytes vein, behind the boiler house, and it is expected that this cutting will open up the fissure; should this be the case, it will be interesting to note the direction and contents of the fissure at that place.

In conclusion, it is desirable to render thanks to Mr. Spencer, and latterly to his son, the proprietors of the Raygill Quarries, for their permission to carry on the work, and for the uniformly kind and courteous manner in which they have always placed themselves at the disposal of the Committee; and to Mr. J. Todd, the manager of the works, for the trustworthy and careful manner, combined with much skill, in which he has superintended the operations of the workmen employed.

ON THE DISCOVERY OF A STONE IMPLEMENT IN ALLUVIAL GRAVELS AT
BARNSELY. BY SAMUEL A. ADAMSON, ESQ., F.G.S.

Some good sections were revealed by the excavation of a gas-holder tank, at Old Mill, Barnsley, and were visited by the Council of the Leeds Geological Association, by the invitation and under the guidance of Mr. John Hutchinson, the Engineer to the Barnsley Gasworks. The section on the east side shows the following strata in descending order:—A, silt; B, gravel; C, stony clay; D, sand; E, gravel; F, fine blue clay; G, slightly weathered shale (middle coal measures). The section on