

No. XXXIII.—A REVERSE FAULT IN KILTONGUE COAL AT DRUMSHANGIE COLLIERY. By ROBERT M'LAREN, Inspector of Mines.

[Read 11th February, 1892.]

REVERSE faults are of rare occurrence, and consequently in coming across one at the above colliery, I took notes with a view of bringing it before the members of this Society. The Drumshangie Colliery is situated to the north-east of Airdrie, in the county of Lanark.

The owners are Messrs. Drumshangie Coal Co., and the certificated manager is Mr. William Stevenson.

The extent of the field is 200 acres, and the Kiltongue coal is found in 120 acres; fully three-fourths of which has been worked. The field is intersected by a large throw of 40 fathoms, running south-east and north-west.

The Kiltongue coal lies in the upper coal measures, about 30 fathoms below the famous Airdrie blackband ironstone.

No. 1 pit, in the workings of which the fault was got, is sunk to the Upper Drumgray coal, at a depth of 46 fathoms, and Kiltongue coal in south section is reached by a cross cut mine.

The seam is worked longwall, with walls 14 yards long, and average inclination is 1 in 15.

A section of the seam is as follows :—

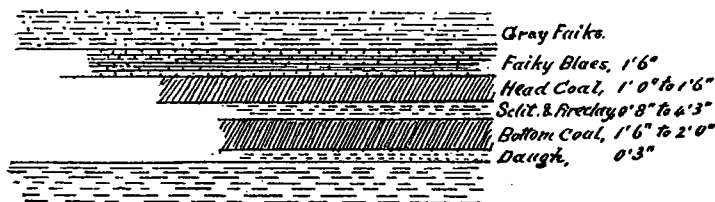


FIG. 1. Scale $\frac{1}{8}$ inch = 1 foot.

In working the coal 20 yards from the large throw a hitch was met running north-east 60° . The side of the greater angle was lying off on the top, apparently showing an upthrow, but on cutting the "vees" it was found to be a reverse fault with a throw downwards. The hitch began at almost nothing, and where the throw was greatest it measured 2 feet. As it went to the rise it thinned off. The angle of the "vees" was small, being 30° .

In coming towards the fault the rise was 5° , and inside it the rise was 14° .

The following section shows the position of the throw.

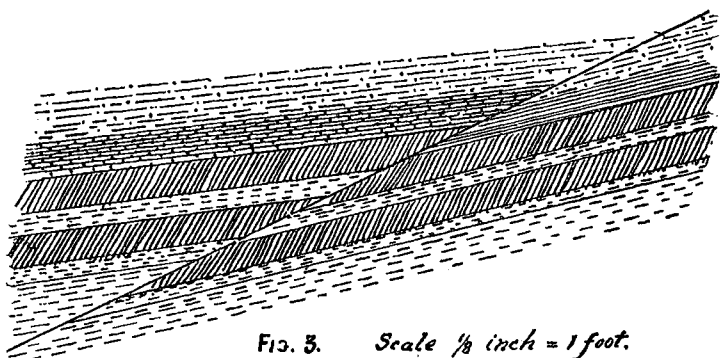


FIG. 3. Scale $\frac{1}{8}$ inch = 1 foot.

Throughout the seam various disturbances have been met with in proximity to the large throw, and it is evident this reverse fault is due to the same cause.

The origin of reverse faults has recently been clearly demonstrated by Mr. H. M. Cadell in a series of experiments made by him, the results of which have been given in a paper read before the Royal Society of Edinburgh.* This paper with its experiments was also delivered by Mr. Cadell before this Society [see *Transactions*, vol. ix., part 1, page 228]. These experiments show that reverse faults are produced by horizontal pressure.

* "Experimental Researches in Mountain Building," by H. M. Cadell, Esq., B.Sc. *Transactions of the Royal Society of Edinburgh*, vol. xxxv. part 7.