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OLD PROVIDENCE LEAD MINE

J.M. Dickinson

The mine is situated in the steep easterly running valley known as Dowber Gill, near the village of Kettlewell, Grassington, Yorkshire.

In the past some ten to fourteen east to west trending veins running on the south side of the gill under Slate Pit Rigg on the slopes of Great Whernside, have yielded a fair amount of galena in the limestones and grits of the Yoredale series.

After the dissolution of the monasteries and the forfeiture of the Neville estates to the Crown, the manor of Kettlewell was sold to a group of London merchants in 1628, who leased the mineral rights to Sir Humphrey Wharton, and mines were opened-up in the area. In 1656 the manor was sold to the freeholders of Kettlewell who appointed their own trust Lords and Barmaster for the mines. A partnership of Smithson, Swale and Barker was formed to work the veins in Dowber Gill in 1663, this lease passing to a John Chaytor of Swaledale sometime prior to 1700.

The principal workings in Dowber Gill have been on the Hooksbank and Old Providence Veins. Hooksbank, on the north side of the Gill has been worked northwards by a level over a length in excess of 40 fathoms, but no details of these works are now known.

The Old Providence vein has been worked via two levels. The Low Level, driven at 1150ft AOD on the bottom of the 'Thick Limestone' followed a north to south cross vein and cut Old Providence Vein at 1056ft from the portal. At this point the vein is 3ft in width carrying some fluorspar. Roof falls prevent further exploration of the short workings shown on the plan (Figure 2). A raise was made from the end of a short crosscut and the north-south vein followed at this high level for a further 1518ft, cutting several thin east to west running veins, and terminating at the Running Slack Vein, which had been worked in earlier times by small shafts and proved to be rich in lead ore. The north-south vein has been traced for a further mile southwards up to the Conistone manor boundary. In this length three east to west running veins have been worked by small hand shafts. Two, near the boundary, Summer Haw North and South Veins were reported as rich in ore in early times.

The Middle Level 19 situated some 2122ft to the east of Low Level and 250ft higher. It is driven at the base of the 'Top 6fm.

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Limestone' as a crosscut and encountered the Old Providence Vein at 704ft from its portal and workings were made eastwards on this vein for some 1584ft. At this point, a north to south crosscut was made, the North branch after a long drive cutting the North Vein which was followed eastwards for over 500ft, its forehead standing dated at 26th August 1868. The main workings on this vein were made from raises and on the surface considerable mining has taken place in the Bearing Grit. At its western end the North Vein splits into two branches, the northernmost one being called Smiths Veins which has a hade of between 15 and 20 degrees to the south and a "throw of 5 fathoms south. It has been tried by small shafts and a level driven from the north side of Dowber Gill Wham.

The south branch of the crosscut encountered three veins running with the line of Old Providence Vein after only a short drive. The Exhibition Vein, hading 5 degrees south with a throw of 2 fathoms south, Middle Vein hading 3 degrees north with no apparent throw, and Australia Vein hading 20 degrees north with a throw of 6 fathoms to the north, were cut. It is probable that the western extension of the latter is the Running Slack Vein. The three veins are reported as being rich in the 'Top 6 Fm Limestone' at their eastern ends, but in a south crosscut from the Old Providence Vein which cut them further westwards the veins do not appear to have been worth working. It is of note that a large block of ore was sent from the Exhibition Vein to the Crystal Palace Exhibition of 1851.

At the eastern end of the mine a high level called the Plate Level was driven to the Old Providence Vein from the south side of Dowber Gill Wham; its purpose unless for ventilation is somewhat obscure.

It becomes apparent that the main ore zone was limited to the 'Top 6 Fm Limestone' although some ore was got in the '10 Fm Limestone' and the 'Bearing Grit'. Sumps from the adit level in the 'Top 6 Fm Limestone' were put down through the '10 Fm Limestone' into the top beds of the '8 Fm Limestone' but the results of these trials did not lead to any deeper workings.

Coal has been worked, probably for the smelt mill, from a shaft sunk into the shales beyond the eastern limits of Australia Vein. The shaft sunk to a depth of approximately 20 fathom had a driven northwards along the '2nd Coal' which occurs in a 2ft seam four fathoms above the 'Bearing Grit'. A road was made from the shaft to join with the one from the Old Providence mine.

The main dressing floor of the mine is situated at the portal of the Middle Level and is of note as a set of Crushing rollers were

were installed. (Parts of this machine are preserved in the Craven Museum, Skipton, & the Earby Mines Museum). The crusher was driven by a waterwheel, a large dam being made at the head of Dowber Gill to provide water for the dressing floors.

A smelt mill was built by the Trust Lords of Kettlewell at the foot of Dowber Gill near to Cam Beck and was at work shortly after 1699. This mill also smelted ore from the Conistone and Starbotton mines. By the 1850's the mill was reported as being very inefficient and caused much complaint from the mining companies due to its smelting procedures: claims were also made by farmers for the loss of stock due to poisoning from the lead fumes. However, it was not until 1868 that the mill was enlarged, with new roasting and ore hearths and a flue up the hillside to a chimney on the Cam side. The mill met a sad end in 1942 when it was blown up by the army testing a new explosive. The flues and remains of the chimney can still be traced at the present time (1972).

Production figures for the Old Providence Mine are not known for the early years of working, the first note to hand being for the year 1838 when 192 tons of lead ore were mined. Unfortunately, the returns for the period 1849-60 are given as the total from Kettlewell with Conistone. Allowing for this, it would seem that 100 tons per year would be a fair estimate, the total ore raised during the latter period being 1659 tons. The returns for Old Providence Mine from 1862 to its closure about 1874, are given below.

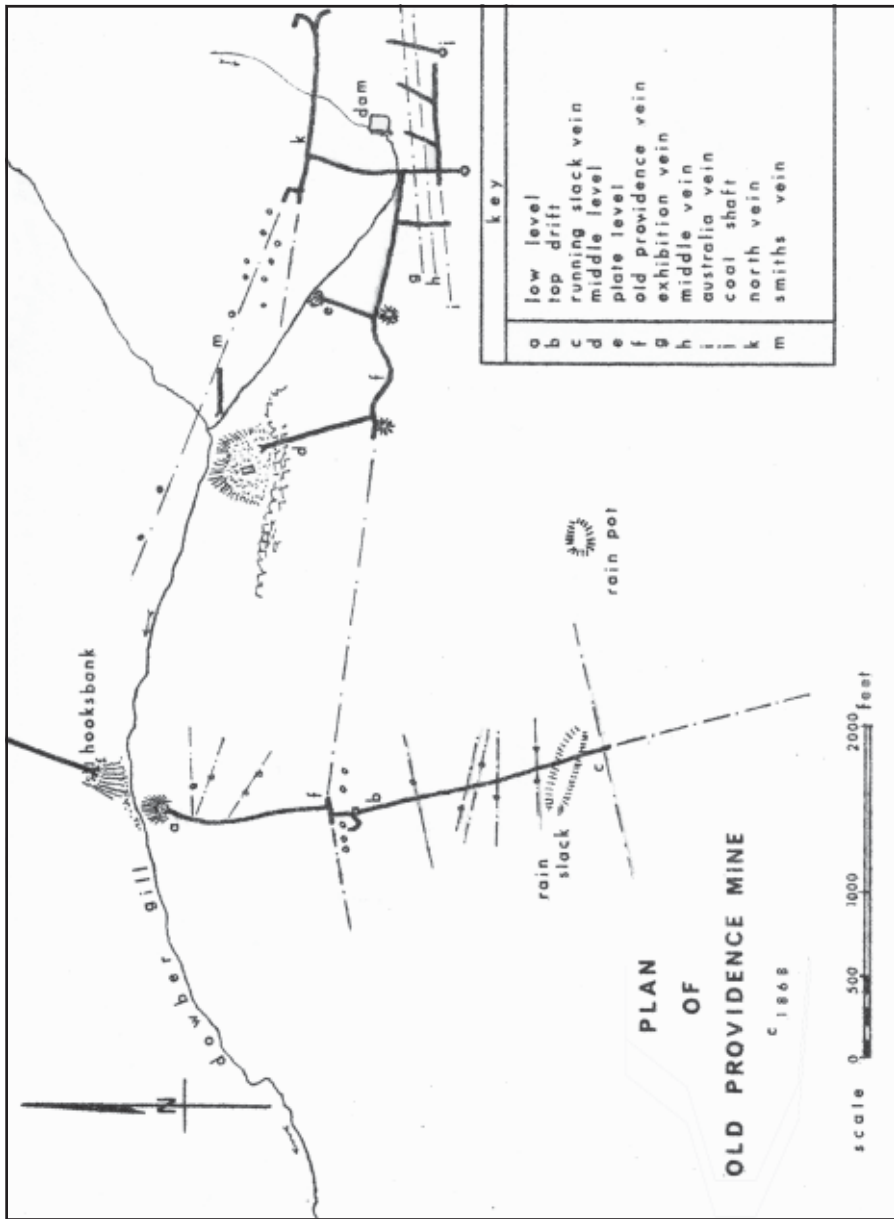
Old Providence Mine, Annual Production of Lead Ore

1862	11.7 tons	1869	117.8 tons
1863	47.5	1870	72.5
1864	88.9	1871	68.6
1865	171.8	1872	16.0
1866	205.3	1873	15.0
1867	325.2	1874	4.7
1868	192.3		

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OLD PROVIDENCE LEAD MINE



GEOLOGICAL SECTION AT OLD PROVIDENCE MINE

