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BURHILL MINES

J.M. Dickinson

The mines are situated near Appletreewick, Skipton, Yorkshire and comprise the Western end of the Craven Moor Mines of the Greenhow Mining Field. The veins, are in the most, concentrated in a narrow belt some five thousand feet wide running NW-SE. over Burhill and Greengrooves. All are in a massive limestone and most of them crop out to the surface, in general the foot wall of the veins is well defined but this is not always the case with the hanging wall where the tendency is for wing deposits and flattings to form.

The Mines were probably at work in the 16th century and continued up to the 1880's. A half penny found on Newcastle Vein in an old working was dated 1675. About 1857 the Burhill Mining Co. was formed and worked the Old Vein via two Gin Shafts and other veins by opencut and Jackroll. In Feb. 1859 "At a depth of only 15ft from the surface, two men got upwards of 120 Binge of ore last month, and last week (5th Feb) 7 Bings in three and a half hours". The output of the Burhill Mines was averaging 120 tons per year in 1858-1861 and had risen to 144 tons in 1868. Whim Shafts on Greengrooves were sunk to a depth of 40 fms by a partnership of Messrs Harker, Harland and Ashworth under the name of the Greengrooves Lead Mining Co. At a later date these mines were worked by Elisha Newbould. Harland was in a partnership which sunk shafts on the North Rake Vein, to the North of Stump Cross and one shaft was named after him, this was later reworked by the East Grassington Mining Co in the 1890's and renamed Hammond Shaft. It is said that Harland was killed in an accident in one of his shafts but which one is not known. During the 1920's the dumps on Wright Vein and Blackhill Vein were worked for fluorspar by the Greenhaugh Mining Co. and from 1930 onwards by a series of two or three man partnerships. F.C. Walker worked the veins from the early 1940's up to 1963 and sunk several small shafts on Halton, Innman and Wright Veins in search of fluorspar. In 1963 the Clay Cross Co. Ltd. of Clay Cross, near Chesterfield, Derbyshire erected a gravity mill at Dry Gill on the old dressing floors of Blackhill Level. They worked the dumps on Blackhill, Wright Vein and Low Burhill. A working on Walton Vein originally started by F.C. Walker was developed via a 50ft shaft and a small fluorspar deposit stoped out to a depth of 80 ft. Several trials and open cuts were made on Walton and Innman Veins.

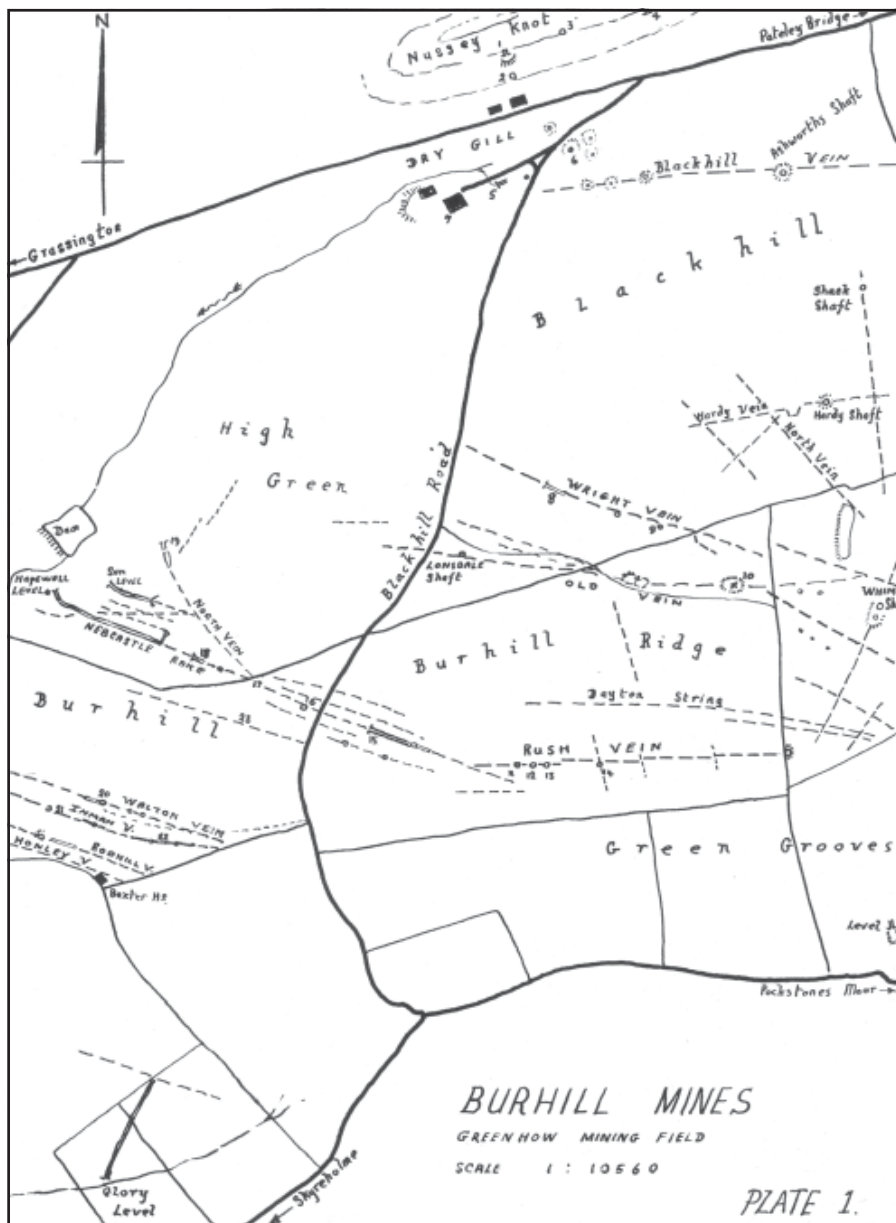
Two Inclines Nos. 1 and 2 were sunk on the Newcastle Vein during 1965-66 and large deposits of fluorspar worked. A third Incline was being sunk on Wright Vein after extensive open cast workings in 1967 when the mines were closed.

[1]

NEBCASTLE RAKE VEIN

This well defined vein runs S 70° E from a point 400ft saw of the New Dam at the head of Trollers Gill. A flank level called Hopewell or Hodwell level driven in the 18th Century meets the vein 90 ft from the portal. It was driven for 700ft on the vein

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with an inclined sump 9 fms deep some 250 ft from the portal. This section of the vein has been stoped out to grass, at the forehead the vein became poor, probably due to the effect of the North Vein approaching its junction point. A rise was put up and a top drift carried forward 200ft with a connection to 'Whites Shaft sunk onto a

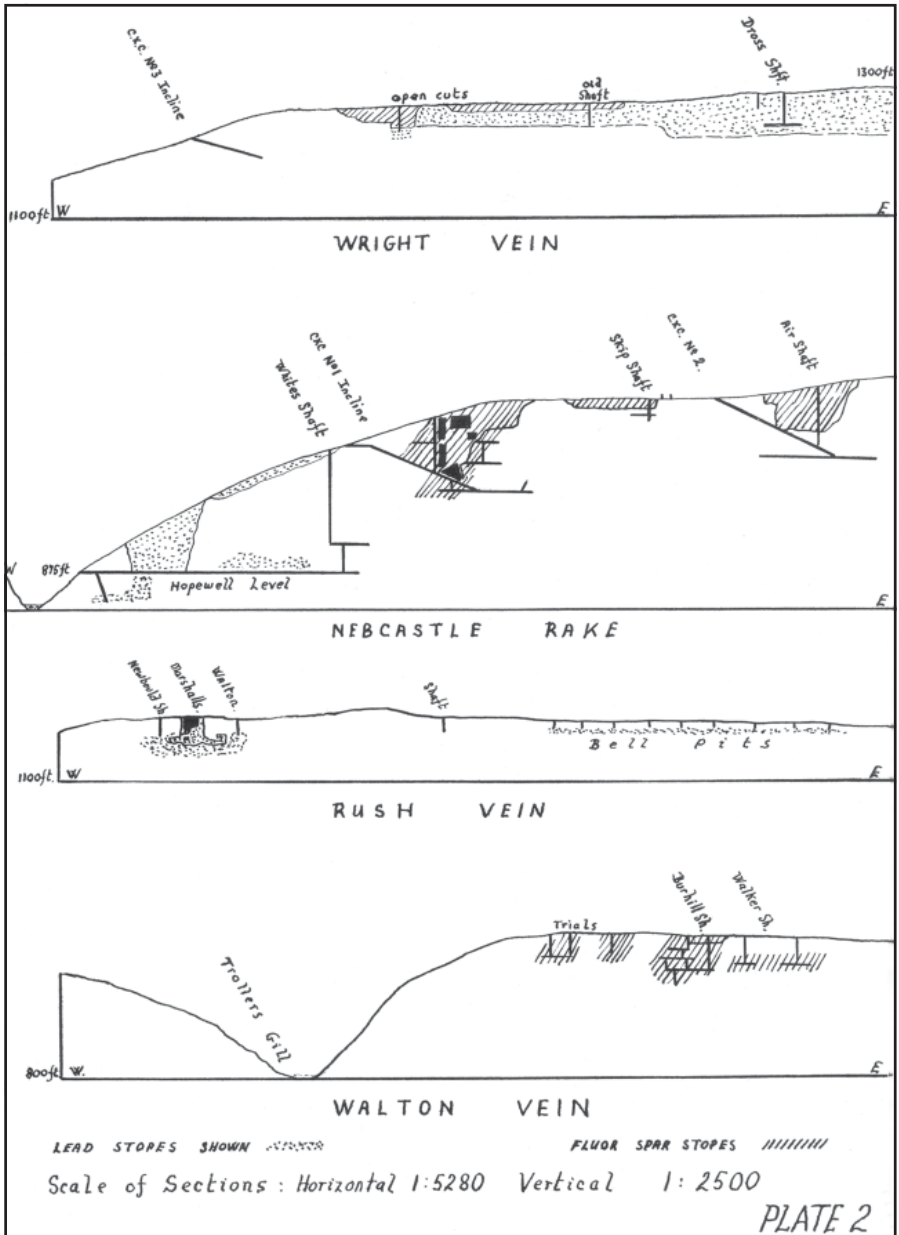
string running parallel to the Newcastle Vein on the North side. The vein material in the tips of the dressing floor at the level entrance is mainly calcite with some flurite as fines, and small quantities of a curious cinder like material grey in colour which appears to have been burnt. A material very similar if not identical to the latter has been seen on the 22 fm level west from No.1 Incline in a drift off the North Crosscut.

At a point very nearly above the end of the Top Drift from Hopewell Level the Clay Cross Co. Ltd. sunk the No.1 Incline in June 1965. This Incline was sunk to explore in depth a large deposit of fluorspar which had been worked opencast to a depth of 60 ft from moor level¹⁷ further east at the junction of North Vein with Newcastle Rake. The Spar deposit dips at 40 degrees to the West and was cut after a drive of 150 ft in the vein, at a depth of 95 ft, stoping was carried out up to grass over a length of 180 ft. At the Incline foot (22 fm Level) the vein was very mixed being mostly a dirty calcite with small strings of spar, the 22 fm East Level was driven a further 120 ft where a pure white Calcite was encountered, an inclined rise was made and calcite mined up to the closure of the mine (1967). On the 22 fm Level West the vein was almost barren of fluorspar for the first 60ft of the drive, here the footwall of the intersecting North Vein, Bade 9 degrees S, came into the incline foot. The fluorspar when met with was soft and friable in a matrix of dry clay with strings of calcite and galena with some cerrusite, up to a maximum width of 10 ft, after 70 ft however the vein became confused and unproductive. It was in this level that a compressed air driven loading shovel (Eimco 12B) was used for the first time. in the history of the Greenhow Mines. From the end of the 22 fm Level West a North Crosscut was driven to cut North Vein which was met with after a drive of 40 ft, the vein hading 39 degrees South carrying a 6 inch brangled string of Galena in a soft spar and mud fill. In fact the whole of the North Crosscut was driven in mineralised ground of alternating bands of white calcite, fluorspar and vein stone, no doubt due to the junction of North Vein and two small stringers to the North of Newcastle Vein.

The North Vein was not explored any further due to the closure of the Mine. One hundred and fifty feet East of the Open Cut the vein splits into four branches, the two outside branches containing calcite [2] and the inner two calcite with some fluorspar and galena, all the branches have been well tried by Bell Pit workings. At a point 160 ft West of the crossing of Newcastle Rake Vein by the Blackhill Road, a fluorspar deposit on the middle branch, was worked opencast to a depth of 20 ft up to the Blackhill Road by the Clay Cross Co. Ltd. in 1966. The deposit had an average width of 12 ft and a shaft (Skip Shaft) was sunk: in the East end near the road, at a depth of 28 ft the footwall suddenly changed from near vertical to a hade of 70 degrees South and the vein nipped to a width of 4 ft. An inclined drift was put down the vein from the shaft foot for a distance of 40 ft, where although the vein had nipped to 9 inches wide the third.. branch was met with, but due to haulage difficulties no further work was done. Some stoping was carried out at either side of the drift the vein proved to be very irregular in width and the hanging wall almost impossible to support without a great expense in timber.

Where the vein crosses the road a SW-NE gulf has been traced skirting the Eastern continuation of the vein a few feet to the South.

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The third branch has been worked for fluorspar from an Old Man shaft reopened by F.C. Walker, to the East the vein pinched out and to the West the Gulf was encountered whilst at a depth of 60-70 ft a flat bed cut off the vein.

The second or middle branch was explored East of the Blackhill Road by an Old Shaft and an open cut (Clay Cross Co. Ltd. 1965) and a deposit of fluorspar round and the No.2 Incline driven to it. The Incline bottomed the deposit at a depth of 90 ft and stoping was carried out up to grass over a length of 250 ft averaging 4 ft in width. Drifts East and West from the Incline root did not reveal any productive ground Westwards the vein pinched out and Eastwards the matrix was mainly Calcite with the odd string or galena and fluorspar. The vein branches finally stop at a N-S fault some 400 ft West of No.2 Incline fluorspar is present in the tips or some old shafts just short of this point.

NORTH VEIN

North Vein 300 ft SE of the New Dam at the head of Trollers Gill can be seen running in a SE direction as an old grassed over open cut working on High Green. After 200 ft the vein changes course to N-S and intersects Newcastle Rake Vein after 650 ft. The Old Man has sunk 16 shafts on the latter length, fluorspar, calcite and galena appear in all the tips. In May 1966 the Clay Cross Co. Ltd. started to drive Sun Level onto the North Vein. After driving 100ft the vein had not been round, a rise of 27 ft and a short crosscut a few feet to the West located the vein heading at 39 degrees S. The Old Man had stopped out [3] the vein up to grass, the vein stuff was massive calcite with a 9 inch rib of fluorspar in a total width of 2 feet. The level was driven a further 85 ft without the vein being found, a crosscut east was driven 20ft to cut a North string carrying fluorspar being worked open cast, without success and an inclined rise to the West to locate North Vein, the level was closed in September 1966. If the hade of the vein is uniform throughout its length it would appear that the forehead of the level is about 50 ft North of the Vein.

To the East of the point where North Vein changes direction an opencast working on the site of two old man shafts revealed a small deposit of fluorspar. A short Incline was sunk for about 60 ft and a drift to the South made but due to old workings underneath an almost total collapse occurred and the site was abandoned (1966).

RUSH VEIN

At the Eastern end of Newcastle Rake Vein on Greengrooves and on Burhill Ridge, 1000 ft East of the Blackhill Road, a line of Old Shafts marks Rush Vein. The largest workings are at the three shafts^{11,12,13} almost at the start of the vein, of these only Marshalls Shaft¹² is now open. Here a fair sized ore shoot has been worked over a length of 150 ft, the vein heds 5 degrees South and is 12 ft wide near the shaft but rapidly closes to a uniform 2 ft at either end. The Eastern end nips to 9 inches wide and carries fluorspar and calcite. A short rise to a small top level shows the vein to be calcite on the walls with one foot of fluorspar in the middle an assay of this spar made in 1967 showed it to be 89% Calcium Fluoride, 4.20% Carbonates, 3.20% Silica. The deepest point of the working is 50ft from surface and appears to have been much deeper, the old stopes are however backfilled with debris. A small shaft some 500 ft East of Marshalls Shaft has been explored¹⁴ here the vein is intersected by a N-S fault and a few feet of work have been done on this fault which is barren, the vein, about 9 inches wide carries a little calcite. The vein continued Eastwards a further 1,100 ft to the lease boundary wall where it is running among a series of

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shake holes one of which takes the water from Greengrooves well. Some fluorspar of a glassy nature can be seen in tips at this point.

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WALTON VEIN INNMAN VEIN RODHILL VEIN HONLEY VEIN

These four veins running NW-SE occur on Burhill to the North of an old ruin called Baxter House, and can be traced into Trollers Gill. Honley and Rodhill veins carry calcite with a little clear fluorspar and have been worked by Bell Pits, in Trollers Gill a short Level has been [4] driven on Rodhill Vein from Jackdaw Nick but does not appear to have been productive. Innman Vein has been rich in fluorspar and is said to have carried fair amounts of galena in the past. In the 1950's F.C. Walker sunk a series of shafts²² at the Eastern end of the vein and some rich pockets of fluorspar were found, most of it being fit to sell as metallurgical grade spar straight from the vein, the spar was got to a depth of 30-40 ft where the vein pinched, trials in the level sole up to 30 ft in depth did not show any opening out of the vein. Overlying the vein throughout its length is a 10-15 ft thick cap of limestone. Moorlands Shaft²¹ is said to be the last working Lead Mine on Burhill, this shaft was reopened by the Clay Cross Co. in 1966, the vein was found to average 8 ft in width over the explored distance of 80 ft. Considerable stoping had been done for lead but it would still appear to be worth working for spar. A level has been driven on the Vein from the beck side just above Jackdaw Nick in Trollers Gill, the vein fill being calcite. In 1963/4 the Clay Cross Co. Ltd. developed a semi opencut working on Walton Vein previously worked by F.C. Walker. A shaft was sunk to a depth of 50 ft and a level driven on the line of the vein westwards, after a short drive fluorspar was found at the foot of a winze from Walker Shaft. The deposit averaged 8 ft in width and was stoped out to 20 ft above the level, at the west end a N-S fault cut off the vein, in roof works near this point a blob of galena occurred yielding about 5 tons of ore.

In the main spar deposit a 30 ft winze was put down and the vein which had 10 degrees to the South became unproductive. To the East of this mine two other shafts have been sunk for fluorspar and yielded a little. To the west a series of open cuts have proved the vein to a depth of 25-30 ft and in all cases the vein pinches out around the latter depth.

OLD VEIN

The Vein 3000 ft S of Dry Gill House runs N-E over the Burhill Ridge for approximately 3500 ft and has been mined extensively by the Old Man. Two deep shafts equipped with Horse Whims were sunk by the Burhill Mining Co. at the eastern end of the vein sometime in the 1850's. The extensive dressing floors suggest that the vein was well exploited, the depth of the workings is not known. At the western end of the vein near the Blackhill Road, Lonsdale Shaft reached a depth of 40 fms, two levels running west under the road on branches of the vein and one east towards Mecca Shafts are shown on a plan dated 1858. The matrix of the vein is calcite, with some fluorspar, at the eastern end Nail-Head spar can be found in large quantities.

WRIGHT VEIN

Some 2300 ft S of Dry Gill House the vein can be seen running NW-SE over Blackhill towards Greengrooves. It does not appear to have been worked to any great extent by the Old Man except at the eastern end. The vein carries fluorspar with some barytes, galena and limonite. In many places a purple fluorspar is seen in conjunction with a metamorphosed vein wall. The Clay Cross Co. Ltd. opencasted the entire length of the vein to a depth of 15-20 ft in 1964-66 and much good fluorspar was found, in one place the deposit was large enough to be worked like a quarry with a power shovel. An Incline was being sunk at the west end in 1967 when the mines were closed.

Mid way along the vein towards the eastern end the vein has been thrown South for about 20 ft at a depth of 50 ft. This was seen in an old Shaft,⁹ Dross Shaft, cleaned out by the Clay Cross Co. in 1964 and by a line of old shafts running down the South side of the Vein. At Dross Shaft the old workings were met with at a depth of 50 ft, a small level 3 ft x 4 ft had been driven West in a flatting at the top of the shifted part of the vein, the bed contained barytes mixed with fluorspar in a soft clay fill. At the shaft foot the vein walls appeared regular at a width of 7 ft, the stope underfoot had been back filled with waste and was not followed further.

The flatting or wing deposit previously mentioned is a common occurrence in the hanging wall of this vein and to a lesser extent in the footwall which is usually well defined. Large amounts of fluorspar were taken from the dumps along the vein in the 1920s. The old man works appear to be quite old, dates on two boulders on the side of the vein are 1833 or 38 and 1857.

GREENGROOVES VEINS

Whim Shafts 4000 ft SE of Dry Gill House are sunk onto a network of small veins and strings trending NW-SE with cross veins running N-S and SW-NE. Dumps show the vein fill to be calcite, Nail Head spar, clear fluorspar. Workings were carried out up to a maximum depth of 40 fms via the Whim Shafts and a long crosscut (2100 ft) driven to North and Hardy Vein, finishing under Shack Shaft. It was during mining operations on Burhill that a natural cavern was discovered when driving North, a Joss Pounder being paid £5 to explore it, he reported that the cave was large and had a great amount of water in it. A Geophysical Survey carried out by the Lea Cross Geophysical Co. reported a possible site of a cave 200 ft NW of Shack Shaft at an undetermined depth.

A level near the Pockstones Moor Road was driven for a short distance only, the headstone reads W.C.B. June 26th 1860. [6]

BLACKHILL LEVEL

The level entrance is in Dry Gill 500 ft SW of Dry Gill House, the mill of the Clay Cross Co. was built on the top of the tips from the mine and dressing floors. The Level runs East for 2800 ft to the lease boundary and on again to Foxholes Shaft on Craven Moor. At Ashworths shaft 1800 ft from the portal an ore shoot was stoped out in the 1850's on either side of the shaft, the dumps from the latter were rich in fluorspar

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with some Barite. Near the boundary wall the matrix of the vein has changed to calcite with barite with only a trace of fluorspar.

At the level entrance a series of shafts have been sunk onto a flatting bed associated with the Black Hill Vein containing clay and barytes, one of these shafts serving as a water drop for the level. The flatting is probably the same at the bottom bed under Nussey Knott.

The level was started some time in the 1840's and then given up during the lead slump. In 1856 a report dated March 8th states "The level has been driven about 60 ft in a vein 26 inches wide of rich ore. At the Engine Shaft the vein is 10 inches wide containing good ore and opening out downwards". About 1863 the level was being driven on towards Foxholes Shaft by the Craven Moor Mining Co. Present day exploration terminates at a fall 500 ft from the portal.

NUSSEY KNOTT

A series of flatting beds with a dip of 12 degrees North are intersected by a number of N-S faults or veins. Three flattings are now called top, middle and bottom beds, all carry barytes and galena in a clay fill, the beds vary in height from 3 ft to 8 ft. The lead ore occurs in clean nodules of varying size from a few pounds to several hundred weight, the barytes is in places similar but in others, stands solid from sole to roof. The infilling of the N-S veins is of a like nature with the one exception. In the flatting beds the barytes is of an amorphous nature, whereas the N-S vein³ mineral is crystalline. Assays of the barytes runs at 98% BaSO₄ and 1% SiO₂. J.H. Clay who reopened an old incline on the Top Bed and started another on the middle bed in the 1930's calculated the reserves of barytes in the beds at 7200 tons, and hopes were high of good lead ore when the beds met the veins running from the North Rake to the North of Stump Cross Caverns. The old man sunk a shaft 30fms deep²⁰ to the Middle Bed, at this depth they had 2ft of solid ore and about 6 ft of barytes. They were taking out the bed over a distance of 30 ft and had worked down the bed 20 ft to the North, when a period of wet weather watered them out and the shaft collapsed.

A small incline 1000 ft East of the latter⁴ has been reopened [7] twice, the last time being in 1965 but difficulties in supporting the roof proved to be too great. In Dry Gill almost opposite the Blackhill Level there is what appears to be the start of a level headed towards Nussey Knott, if this is so it was never driven any distance.

From the side of Grimwith Reservoir the California or Aket Coal Level was driven towards Nussey Knott cutting a series of pipes and flattings as well as a coal seam. It is said that the level was originally driven by the London Lead Co. and was abandoned due to the hardness of the rock. The lease to Nussey Knott was held by the Yorkshire Lead Mining Co. from 1852-1874.

GLORY LEVEL NGR SD 628074

The level is situated in a gill at the rear of Parcival Hall, Skyreholme at an altitude of 780 ft. It is driven for 700 ft NE towards the Mines on High Burhill.

Originally driven to dewater some mines (unknown) which had long been under water in 1867, the present forehead was reached by late 1869, where an E-W vein was cut and followed. The West branch of the vein has been stoped out the vein fill being calcite with some ankerite. To the East the vein takes the form of a flatting which has not been fully explored (1961) because of bad air. Several Sumps on the south side of the vein were seen.

Key to numbers on map and in text

1. Incline for Barytes. J.H. Clay c1932.
2. Presumed site of 30 fm Shaft to Middle Bed.
3. Shaft on N-S Vein.
4. Incline for Barytes reopened 1965.
5. Blackhill Level.
6. Old shafts onto flatting at Blackhill.
7. Blackhill Dressing Floors and site of Clay Cross Mill.
8. Clay Cross Co. No.3 Incline.
9. Dross Shaft reopened 1964.
10. Press Shaft. Burhill Mining Co. 1857.
11. Newbould Shaft, Rush Vein.
12. Marshalls Shaft, Rush Vein.
13. Walton Shaft, Rush Vein.
14. Shaft on N-S fault, Rush Vein.
15. Clay Cross Co. No.2 Incline.
16. Clay Cross Co. Skip shaft.
17. Open Cut on Newcastle Vein, Clay Cross Co. [8]
18. Clay Cross Co. No.1 Incline.
19. Clay Cross Co. No.4 Incline North Vein.
20. Burhill Mine, Walton Vein, F.C. Walker and Clay Cross Co.
21. Moorlands Shaft.
22. Walker Shafts.