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AYGILL LEAD MINE, STAINMORE, NORTH YORKSHIRE.

by Leslie O. Tyson

SYNOPSIS

This paper describes the history of a hitherto undocumented mine on one of the most northerly veins which can be geographically associated with the Yorkshire Dales lead mining field.

INTRODUCTION

Aygill vein and its associated strings are on Bowes Moor which lies between the village of Bowes to the east, and the town of Brough to the west. Whilst there are other veins still geographically in Yorkshire to the north of it, the Stainmore – Cotherstone Syncline forms the geological boundary between the Askrigg and Alston Blocks. This remote mine was never as productive as those in neighbouring Swaledale and Arkengarthdale, nevertheless, as the principal trial of the Stainmore Syncline, its history should be recorded.

Bowes Moor is part of Stainmore, which is a large expanse of unenclosed moorland stretching from Baldersdale, in the north, to Swaledale, in the south. It is crossed by the A66 Trans – Pennine Trunk Road and the course of the now abandoned Barnard Castle to Tebay railway. The moor is drained by several steeply incised gills, which flow northwards to form the headwaters of the River Greta, around which some of the moorland has been enclosed and reclaimed as agricultural land. Stainmore is covered by glacial drift and blanket peat which, except for a few outcrops of Millstone Grit, hide the bedrock. Approaching the River Greta, however, the gills draining the moor cut through this river terrace exposing the underlying strata. The east/west trending Aygill Vein was discovered in one of these gills.

Complex folding in the Stainmore – Cotherstone Syncline, which underlies Stainmore, has caused several east/west trending faults. These have broken away from the north/south trending Augill and Argill faults which lie to the west of Bowes Moor. The minor Aygill fault runs roughly parallel with the major Stainmore Summit – North Spanham Fault.¹ The underlying bedrock of Bowes Moor belongs to the Little Limestone to Crow Limestone cyclothem of the Namurian period.² The major ore workings in the area are the Augill/Cabbish mines near Brough and Eller Beck and Scargill/Spanham mines near Bowes.

The Aygill Vein and other veins on Bowes Moor were overlooked by Dunham & Wilson in Northern Pennine Orefield Vol.2 who state that no mineralisation occurs in this area.³

Vast areas of Crown lands were sold off in 1628 by Charles I in order to repay the massive debts incurred by his father King James.⁵ The Manor of Bowes, which includes Aygill Mine, was purchased by the Citizens of London, who held it till 1656. During this period, many of the customary tenants purchased their lands, becoming Freeholders.

The tenants, represented by Christopher Hanby of Gilmonby, purchased the remainder of the manor which consisted of the wastes, royalties, tollage and mineral rights for £440 in 1657.⁶ These were conveyed to the Freeholders in the following year, to be held by the Trust Lords. In return, Hanby was given a consideration of £160 and allowed to retain the mineral rights in the unenclosed lands.⁷ This gave him control of Kings Pit Colliery, in the manor of Bowes, at a time when he was working the adjoining Tanhill Colliery. Nevertheless, to further his coal mining interests, Hanby, whilst still working Kings Pit, used the Bowes mineral rights as collateral in return for a lease of Cotterdale Colliery from Sir John Lowther, in 1670.⁸

By the 1690s, however, the unenclosed lands, including the minerals, in the manor of Bowes had been acquired by Thomas Pulleine, of Carleton Hall. The latter, who was appointed Master of the Stud for William III in 1689, and High Sheriff of Yorkshire in 1697 and 1703, also had a lease of Tanhill Colliery, from Lord Wharton. The Pulleine family dominated coal mining in this area for the next 250 years.⁹

The history of the collieries at Tanhill and Bowes, are the subject of a future monograph now in preparation. The documentary source for the mining leases and reports, which form the main body of the following text, is the Clifton Castle Archive (reference ZAW, on microfilm 1315) deposited at the North Yorkshire County Records Office, Northallerton.

The Eighteenth Century. A Prospecting Period.

With the Pulleine family fully in control of the coal mines they turned their attention to the other minerals in the manor of Bowes. As the mineral lords of the manor they only had control over the unenclosed lands. The West String from Aygill Vein crosses over into enclosed land known as the Intacks near Sleightholme. To gain effective control over the full length of the string, Wingate, the son of Thomas Pulleine took a 999 year lease from Christopher Alderson of Bowes for the Intacks in September 1732. By the terms of this unusually lengthy lease he, his heirs or lessees were to pay £50 within 20 days to Alderson or his heirs when 20 fother of lead was raised within the leased area. The sum of one penny was to be paid to Alderson or his heirs on the first day of May during the term of the lease and permission was also given for a level to be driven.

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The first documented leasing of the main Aygill Vein occurred in August 1755 when Wingate Pulleine granted a one year Take Note to search for lead on the west side of Aygill. The lessees were Mathias Hanby of East wood, Gent; John Petty of Bowes, carpenter; and William Galilee of Bowes Fields, yeoman. They were allowed to "Pitch" on any two places they thought fit, but not on the same vein, and to have 800 yards in length or 300 yards in breadth on each vein and no more. A 21 year lease on either "Pitch" would be granted if requested, delivering a duty of 1/7th from each pitch, washed and dressed ready for smelting.

The trials were successful and in August the following year Pulleine granted a 21 year lease to Rev Thomas Bowman of Startforth; Rev William Docketay of Barningham, Clerks; William Stephenson, Gent; Thomas Parsons, butcher both of Barnard Castle; William Galilee of Bowes Field, yeoman; Jane Hanby of East wood; and Richard Sockburne of Westwick, yeoman. The original partners lacking sufficient capital to develop the new mine themselves brought outside investors into the venture.

The lease allowed 250 yards north, 150 yards south from the Forefield Shaft, and 800 yards on the vein northwest to Thomas Bowmans Shaft. The use of the name Forefield Shaft is a clear indication that this was the first working at Aygill as the first shaft sunk on a new vein was always termed the Forefield Shaft and all measurements along the vein taken from it. It was agreed by the other partners that Thomas Bowman should have a full 1/4th share while the rest had 1/8th share paying 1/7th Tun or Dish to Pulleine as duty. Also included in the lease were two parcels of ground on the North Ings 50 yards from the Old Shaft south, 250 yards north and 800 yards west of the vein. The fact that old shafts are mentioned in this lease indicates that lead mining had been practised in the area for some time but unfortunately no documentation has been found for these early ventures.

Wingate Pulleine died in 1763 and his brother Thomas Babbington Pelleine inherited the Bowes Estate. He died the following year and his widow Winifred took over the administration of the estate. She granted a Take Note in June 1766 to Richard Hammond and partners to make trials between Sleightholme Beck and Spittal Beck. If any vein or string were found they were to have 1000 yards in length on the Range or Random of the vein and 50 yards on either side paying 1/5th Tun or Dish on all ore raised to Mrs Pulleine.

The ground on the east side of Aygill was leased for 14 years by Winifred Pulleine in November 1766 to Thomas Butson of Middleton Tyas, miner and Thomas Walker of Leyburn, musician.¹⁰ This was for a 400 yards square section of ground opposite the workings granted in 1756 (see plan). The measurements for the area being computed to run

from the level mouth driven on Aygill Vein. The existence of a level mentioned in this lease suggests that the area had already been worked probably by the partners on the west bank of Aygill. The duty was 1/5th after smelting before any part was removed, the lessees being responsible for drawing, dressing and smelting the ore and then giving six days notice before any ore was weighed or removed. A penalty clause was inserted in the lease whereby the lessees would pay treble the value of any lead removed before the lessor had received their 1/5th. No smelt mill was ever built in Bowes and it is most likely that ore was sent for smelting to the nearby Augill Smelt Mill.

John Chrisoph of Bowes who owned the land between Sleightholme Beck and the road to Gilmonby had sunk a trial shaft to determine whether the West String crossed over the Beck. Traces of a vein were found and he took a 14 year lease of a one square mile area to the north west of the road from Winifred Pulleine in June 1767.

When 20 tons of ore at 21 cwt per ton had been raised he was to stake out 600 yards along the random of the vein and 200 yards on either side by way of quarter cord and give 14 days notice that a vein had been discovered. A barrier of 50 yards was to be left at the boundary of the leased ground. Permission was given to "drive one drift or outstroke 2 yards high and 2 yards in breadth for conveying water and venting of air and Styth from the mine" and was to be made in such a manner that the drift could be stopped with a "Frame Dam" at the end of the lease. Duty was to be 1/5th after smelting and he was to pay treble the value of any ore removed without prior notice. The use of so many coal mining terms in this lease such as Stythe, leaving a barrier and frame dam suggest her agents were more used to coal than lead mining.

Henry Pulleine, Winifred's son took over management of the family's mining interests in 1771. He granted a 3 year lease in January the following year to three miners from Brough. William Clement son and Edward and Christopher Halliday. This was for trials to be made on Bowes Moor south of the River Greta as far west as Aygill. The Hallidays became tenants of Kings Pit Colliery two years later. The remainder of this area was leased for 21 years to Richard Metcalfe of Calverley House, Gent; Rev Langhorn and John Scott of Reeth in March the same year. A duty of 1/8th was paid by both companies.

Attention turned again to the vein at Sleightholme in 1780 when Edward Halliday of New Hall and Christopher Halliday of Barras; Edmund Dixon of Kirkby Stephen and James Herd of Sleightholme took a 21 year lease of the land next to the Intacks at Sleightholme owned by Mr Poole at 1/8th duty.

The final lease for this period was granted by Henry Pulleine on May 1st 1789 to Christopher Wright, taylor and John Taylor, cordwainer both of

Richmond. This lease granted one mile of ground at the Ings on Bowes Moor to extend along the vein now being worked for 880 yards east and west along the vein now being worked for 880 yards east and west along the length of the vein for 21 years paying 1/6th duty.

The Nineteenth Century

The Final Trials

The first half of the 19th Century remains a blank regarding lead mining at Bowes for no more is heard till a letter was sent to James Pulleine in December 1855 by his agent Christopher Lonsdale Bradley regarding a revival of the lead mines at Aygill. He had been approached by Messrs Harker and Co., lessees of Kings Pit, regarding a lease of Aygill Mine. Negotiations and a viewing of the ground in question was delayed however owing to the extremely bad weather to which Stainmore is subjected each winter.

The ground was inspected in March 1856 but Bradley has reservations about leasing them such a large area. He expressed doubts that they had sufficient capital to carry out proper investigations of the Main Limestone which would require either an hydraulic engine or entail the driving of a level for drainage. The Harker's application was not taken up and by June Bradley had prepared an advertisement to be placed in the local papers and the Mining Journal.

In July 1856 Bradley carried out a full survey for likely mining sites in the manor of Bowes. He decided that the most promising site for a determined effort lay in the area around Aygill. Here there were two or three veins running parallel with each other. Several surface trials had been made in the past and rich samples of ore with a good rider could be found on the tips of the old workings. A level had been driven to drain the Grit and Crow Limestone indicating that the previous lessees had not been able to reach the Main Limestone which is the main bearing bed.

A working capital of £500 to £1000 would be required to make initial trials as to production potential. A trial shaft would have to be sunk in order to test the Main Limestone and a water wheel would be needed to pump water from the shaft while sinking. This would not present any problem as there was a 40ft fall in the gill which would be sufficient to power such a wheel. Once the Main Lime was reached it was most likely that the water in the strata would drain away naturally. These trials at Aygill and in other areas of the manor would require in all an estimated capital of £5,000.

A reply to Bradley's advertisement for leasing the mines came from a Mr Hinde of Birmingham in August which also contained a reference to including in a possible lease the Ironstone deposits in the manor. These belonged to

the Trust Lords for the Freeholders, one of whom was James Pulleine. Bradley noted that the ironstone could not possibly be worked at a profit until the Darlington to Tebay Railway line was constructed over Stainmore.

Hinde visited the area in October 1856 but could not find any Ironstone worth working near to the River Greta and he thought the deposits at Tan Hill and Kings Pit too inaccessible and, therefore, declined taking the lease.

No further offers were forthcoming till February 1857 when Bradley was contacted by George Robinson of Richmond who proposed taking a lease for the lead mines along with Messrs Harris and Harker of Darlington. The terms offered by Robinson were for a 21 year lease paying duty at 1/15th for the first seven years, 1/12th for the second seven years and 1/10th for the final term. As there was no existing habitable buildings within practical reach of the mine the lessor was to build three cottages for the miners. It was also proposed that he build a smelt mill with 3 ore hearths and a slag hearth if the mines could produce 200 bings (80 tons) every month; the lessees paying seven and a half per cent on the outlay.

Bradley calculated what might be derived from the proposed royalties in the eventuality of 200 bings per month being raised. Taking the price per bing at £5, the present price being £5-10s would give £800 p.a. at 1/15th, £1,000 p.a. at 1/12th and £1,200 p.a. at 1/10th. James Pulleine objected to paying for the smelt mill which would cost about £1,000 to build, but Bradley pointed out that the first years profits would cover the outlay. He noted that the partners possessed sufficient venture capital and that Robinson and Harker had very extensive lead mining experience. A refusal of a 1/4th share for Pulleine had been requested to which Robinson readily agreed. A point in Robinson's favour which carried a lot of weight with Bradley was the fact that Robinson preferred not to make his pays at a Public House and had asked that a cottage be made available for his use at Bowes.

A draft lease was drawn up in August 1857 and submitted to James Pulleine for his comments. The company known as the Aygill Lead Mining Co was to consist of six partners; John Harris, merchant and George Harker, Gent, both of Darlington; Joshua Byers, merchant, of Stockton; Thomas Smurthwaite, Gent, George Alderson Robinson, Gent, and Roper Stote Donnison Rowe Roper, banker, all of Richmond. The last three people were principal investors in most of the Swaledale mines and had a great deal of experience of handling lead mining ventures.

The lease was to run for 21 years commencing on 1st January 1858 and to be terminable upon 12 months notice being given after the first 3 years. Eight pickmen were to be constantly employed on trials. Should one or more of the Aygill Veins become productive the company pledged itself to make

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efficient trials in other parts of the manor unconnected with the Aygill Vein or relinquish such parts if requested by the lessor.

The duty remained as first proposed i.e. 1/15th in good lead and 1/15th in slag lead for the first seven years; 1/12th in good lead and 1/12th in slag lead for the second seven years and 1/10th in good lead and 1/10th in slag lead for the final seven years. It was to be rendered in ore until such time as the produce warranted the building of a smelt mill, i.e. when 200 bings per month for 12 months were raised. The sum of £300 was to be advanced for building cottages for the workmen by the lessor.

The bulk of these fresh proposals were acceptable to Pulleine apart from the advance of £300. He noted that under the original proposals he was to build the three cottages and the smelt mill at his own expense, with the lessees paying seven and a half per cent of the costs. Whereas in the new proposals the lessees offered to build the smelt mill and he was to build one cottage now and three additional ones later without any contribution by the lessees. Whilst prepared to pay preliminary expenses which consisted of Bradley's survey, one cottage and half the cost of the lease, roughly £250 to £300, objections were raised to building the additional cottages at a probable cost of £500. He rightly pointed out that the cottages would never be required for any other purpose, and after mining had ceased would never be used again. As the mines would be producing large profits to the lessees from the low and favourable Royalty he would be receiving very little if any remuneration for his outlay. Indeed Pulleine was being very generous in his terms for it was the usual practice in most Swaledale leases that the lessees paid the costs of the survey, lease and buildings associated with the mines.

The partners accepted Pulleine's objection to paying the £300 and on the 17th August 1857 work was allowed to begin in order to take advantage of the weather, despite the official lease still being in its draft stage. The site for the trial shaft was chosen on the east side of Aygill and initially 8 men were employed this being raised soon after to 12. A site had also been chosen for the cottages near the proposed railway line which were completed by January 1858 at a cost of £189. Leeman & Clark of York, acting for James Pulleine sent the draft lease to the partners in September, and it was finally signed on October 1st 1858.

A general report on the Aygill Mine was prepared for James Pulleine by Thomas Raw, manager of the Arkengarthdale Mines. Dated the 27th September 1859 it gives an effective view of the trials made at Aygill.

The trial shaft which was positioned midway between the Agyill Vein and West String eventually reached a depth of 16 fathoms and was 8 foot 6 inches by 4 foot 6 inches wide. The first 30 feet of sinking was through the Crow

Lime and 5 Ft Grit which had to be stone lined. It then passed through the 8 Ft Grit, 9 Ft Plate, 10 Fms Grit and was 3 feet into the Main Lime when sinking stopped.

In order to reach the West String a 21 Fms crosscut had been driven west from the shaft on top of the Main Lime in Plate at the base of the 10 Fms Grit. A 6ft sump had then been put down in the Main Lime where the vein was 6 to 8 inches wide but it was found to be very hard and unkind in appearance. A 6ft rise had also been put up into the bottom part of the 10 Fms Grit which found the string very "slender and hard, being broken up but quick" (sic).

To reach the main Aygill Vein a 21 Fms crosscut had been driven east from the shaft in the Plate on top of the Main Lime which found the vein to have a slip of 4 Fms east side down. A sump had then been put down 39 ft to test the Main Lime which found the vein here to be 12 to 18 inches wide. It was described by Raw as being "very Loffy, frozen, soldered, and of a bad appearance, not quick and very hard".

Further trials on the West String were made from the Top Crosscut which was driven for 16 Fms in plate on top of the 10 Fms Grit. An 11 ft sump was then put down on the string which was 8 inches wide but found to have a bad mineral appearance, being very hard and not quick. A drift with both sides in the 10 Fms Grit had then been made 2 Fms 3ft south along the string which was here about 9 inches wide but again was found to be very hard and barren. The shaft was then abandoned with all timber and boards left in situ.

The trials at Aygill which had cost £1002-13-11d are best summed up in the words of Thomas Raw. "According to my best judgement on mining I am perfectly satisfied that an efficient trial has been made into the Vein and String before named. In my opinion what makes against the ground at Aygill not being productive is the absence of some of the most mineral beds, namely Main Chert, Black Beds and Red Beds Limestone".

So the hoped for revival of lead mining in Bowes came to nought, the two cottages being rendered up to James Pulleine by the company in December 1859. The site has now returned to the peace and quiet of the moor but combined with a walk along the disused railway line is well worth a visit and a most pleasant place to spend a hot summers day.

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