



DURHAM
In Time

Weardale Lead Mining (Part 1) - introduction

by Shirley Waldock

One of the richest lead ore mining areas in England lies at the point where the counties of Durham, Cumberland and Northumberland meet, that is Weardale, Alston Moor and Allendale. Some Roman and pre-Roman extraction of the lead ore took place, although no evidence remains. In fact, when subsequent miners came upon earlier workings they attributed them to “t’owd man”.

Documents show Royal Charter privileges of the 13th and 14th century Alston mines as well as the 17th century land ownership of the area. From existing documents, and indeed from the evidence on the ground, it is possible to follow the greatly increased activity during the 18th and 19th centuries changing the area from isolated small-scale surface mining to an industrial landscape in the dales and the dominance of the two main mining companies, the Beaumont Blackett family and the London Lead Company.

These companies helped develop small settlements with their schools and chapels and to make improvements in the mining methods and also in the lives of the miners and their families. The names of people involved in all these activities are noted throughout the records, particularly in the Bargain Books which detail the bargains struck between land owner and the men (and sometimes women and children too) who would work the ore.

Weardale Lead Mining (Part 2) - land ownership and mineral rights

The ownership of the area under consideration does not fall easily into our present day county boundaries.

Royal Charters were granted in the first half of the 13th century and in 1282 the King granted to Nicholas de Veteripont (the original family name of VIPOND) the manor Alderston





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(Alston) to hold on fee of the King of Scotland. (The name VIPOND is noted in some of the 18th and 19th century records, including that of “ANN VIPOND and Son” for washing ore in 1753).

Broadly speaking, the mineral rights in Weardale were, (and still are) owned by the Bishop of Durham, and the land encompassing Allendale and Alston Moor eventually came to James, Earl of Derwentwater. Following the Jacobite Rebellion of 1715 and the Earl’s execution for treason, these estates were sequestered by the Crown and given to the Commissioners of the Royal Hospital for Seamen at Greenwich, who thus became, in 1734, Lords of the manor of Alston. This became the most valuable landed property of Greenwich Hospital and in 1821 yielded an annual £100,000 plus additional £1,200 in land rental from the small farms and allotments let to miners.

East Allendale came into possession of the Beaumont family, although the mineral rights remained with the Greenwich Hospital, along with Weardale where the mineral rights are those of the Ecclesiastical Commission; West Allendale, Alston Moor and Teesdale came to the London Lead Company. This was a Quaker company, incorporated in 1692, who sold their interests in lead mines in other parts of England and eventually had their headquarters in Middleton-in-Teesdale.

Weardale Lead Mining (Part 3) - getting the lead

Lead is a mineral, being forced up from the molten core of the earth through cracks and fissures in surrounding rocks. It cannot be identified as coming from a particular vein, but its area of origin can be determined by other minerals or rocks that are incorporated in the ore. It is interesting to note that the present day prized fluorspar was a waste by-product of the washing process of the lead ore, and waste heaps or “deads” have been worked over for the extraction of the fluorspar.





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The veins of lead ore are therefore predominantly vertical, with side veins branching out from a shaft in all directions. All the lead veins were measured in fathoms and along its length the name changed in order to distinguish a working length, being approximately 1,200 yards in length. East, West, North were identifying names, as was “cross veins” but for the South side of a vein the word “sun” was used.

Some examples of the names of lead ore veins:

Hanging Shaw East End, Windy Brow West End

Galligill North Vein, Bentyfields Sun Veins

Leehouse Well Cross Vein

At first, when a lead vein was found outcropping from surrounding rocks, the method known as ‘hushing’ was used to wash the surface earth from the hillside to expose the vein. Earth dams were built across streams high up on the hillside and in due time the dam was breached and the water rushed down the hillside and swept away earth leaving the lead ore vein exposed. Sometimes a lead vein would be exposed naturally in a stream. These ‘hushes’ changed the landscape and many can be seen today in the dales.

When all the lead had been taken in this way the lead vein could be followed into the hillside by the means of an adit, or a shaft could be dug down to contact the vein deeper in the hillside. The miners’ experience would assist them in determining where to dig their shaft. Knowledge of geology was not very high in the 17th century, but Thomas Sopwith (Agent for the London Lead Company) described the miners as ‘practical geologists’.

The adits were horizontal tunnels, called ‘levels’ or ‘drifts’ dug into the hillside, either following a vein or making its way towards a vertical shaft. There was no profit from the rocks that contained no lead ore, the ‘deads’, and so this work was kept to a minimum by





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making tunnels as small as was practicable. All the lead-bearing ore as well as the 'deads' had to be brought out of the mine through the tunnel in 'kibbles' (a type of metal tub), which in the early days were often drawn by children along wooden rails.

Again, when it became necessary to dig a shaft down to connect with an ore-bearing vein, this was kept as narrow as possible in order to avoid unnecessary, unprofitable work removing more 'deads' than was necessary. If the shaft was deep with a lot of deads to be removed, small shelves were constructed in the shaft on which the deads would be left and some still left today.

The miners descended these narrow shafts by means of wooden pegs positioned in the sides of the shaft in such a way as to enable them to use hands and feet alternately from side to side in the form of a ladder. Children, with their shorter arms and legs, were carried down on the shoulders of their fathers and were then left to load up the ore or the deads into kibbles which were hauled up through the shaft to the surface by a 'whimsey' (a small roller) placed across the top of the shaft on which to wind up the kibble by hand or by horse-power.

In the early days the children often as young as six years old undertook these tasks although the companies later would not permit children under the age of 14 years to work underground. Galloway ponies were later used to bring the lead ore and the deads out of the mines along levels that were sometimes as much as a mile long.

These early mining activities would have been in reasonably close proximity to the miners' homes and so they could travel to and from the mine on a daily basis, leaving time for them to tend to their few cattle and other small-scale farming activities. However, once these veins had been worked out, the productive veins would have been further away from home and even in more isolated areas.





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There was a tradition of miners lodging with other miners or with farmers and as the industry grew the landowners built special 'mining-shops' to house the miners during the week. To these mining-shops the miner would travel early on a Monday morning (or Sunday evening) taking with him his 'wallet' (a cloth bag that he would sling over his shoulders) containing all he needed in the way of clothing and food for the week as well as the candles, which he had also to provide. This meant, of course, that his wife would be left to look after any farm animals that they had until the miner/farmer returned from the mining-shop.

Weardale Lead Mining (Part 4)- washing the ore

Once the ore was taken out of the mine it had to be crushed and all the waste washed away leaving the pure lead. This work was done mainly by boys, who were paid by the mine-owner on a daily basis.

The Washer Boy would start work at nine years old for 4d. (four old pence) a day. By this time he would already have been at school since he was six years old. He finished school by the age of twelve, when he would be earning 7d. a day. At fourteen years old a washer boy could work underground during the non-washing winter months when inclement weather prevented work on the washing floors. He would now be paid 9d. a day, when he was actually working, of course. At fourteen he could work underground perhaps helping with the Galloways or working the ventilation fans or just helping around the partnership, which probably consisted of his father or brothers or relatives, but he could not work as a miner until he was eighteen years old by which time he would be earning 1s.1d (one shilling and a penny).

Work as a washer boy was hard and long, in fact he worked longer hours than his father the miner! He worked twelve hours a day against the miner's eight hours a day. He worked under a disciplined regime and there were harsh penalties (mostly of wage reduction) for neglect of working hours.





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The mines were open even when the washing floors were frozen up, unless the weather was so bad as to preclude any travel across the fells to the mining shop, then the fourteen year old boys could earn a small wage either from the mine owner, the Galloway owner or even perhaps within his father's partnership.

Some of the 'bargains' struck for washing ore:

Brekensike - 3rd July 1752

ANN MUNCASTER, MARY STEPHENSON, SARAH BARKER, to wash cuttings and deads at LITTLE SHAFT at 16s. (Sixteen shillings) per bing till 31st December 1752.

Brekensike – 23rd July 1753

Lett to MARGARET MILBURN to wash up the cuttings at the LEVEL HEAD SHAFT, from the KNOCKSTONE downwards at 12s. per bing.

Lett to THOMAS RIDLEY and THOMAS BROWN to wash up the wastes in the burn at LEVEL MOUTH at 14s. per bing, and to go no further than 20 fathoms below the DYKE NOOK.

Lett to ANN MUNCASTER and SARAH BAKER to wash up the wastes at the RANDOM SHAFT and LITTLE SHAFT at 15s. per bing, till 30th June 1754.

**Lett to ANN VIPOND and son to wash the cuttings above MARGARET MILBURN at LEVEL HEAD SHAFT at 15s. per bing.

Lett to HANNAH MURRAH and HODGSONS's Lass to wash the cuttings at RA.FEATHERSTON'S shaft from STEPHEN DAWSON'S buddle downward at 12.s per bing.

Lett to JANE SMITH, JANE STEPHENSON, JANE HOBSON, and 3 lads to wash cuttings above STEPHEN DAWSON'S buddle at RA. FEATHERSTONE'S shaft at 12s. per bing.





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Brekensike 16th September 1754

Lett to JOHN RUMNEY and JOS. JAMES a bargain to get ore out of the old wastes, where
ATHUR WATSON had his late bargain, at 18s. per bing to 30th June 1755.

NB: A bing was the equivalent of eight hundred weight. (8cwt).

About 1775 it is recorded that a workman named RUMNEY lost his life by a rockfall at the
Ale Burn Cavern owned by the London Lead Company.

Weardale Lead Mining (Part 5) - schools

The earliest schools in the dales were probably the so-called dame-schools, funded by a
charity and only for those who had money to spare for a teacher. However, these were
somewhat erratic and of a low standard.

In 1807 the Bishop of Durham, Shute Barrington, received a total of £70,000 from the
Beaumonts in respect of unpaid royalties on the mineral rights in Weardale. He paid part of
this back into Weardale in the form of schools, thereby benefiting the children of the miners
who had made the wealth possible in the first place.

The London Lead Company, a Quaker company, founded a number of schools from about
1818 under the guidance of their Chief Agent, Robert Stagg. Although he was a Quaker,
school attendance was not restricted to Quakers or the children of Quakers and, indeed, one
of the few requirements for attending these schools was attendance also at a place of
worship on Sundays.

These schools provided a good standard of education and a disciplined regime which led to
educated, literate and disciplined workers of the future. Literacy was a prized possession





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and it is interesting to learn that most of the bargains struck in the 18th century were signed by name and not with just an 'X'.

Weardale Lead Mining (Part 6) - conclusion

From small-scale isolated surface mining, the Weardale, Alston Moor and Allendale areas became a flourishing industry, developing and using new methods. This brought enormous wealth to the land owners and those who held the mineral rights.

The bargains struck with the owners made certain restrictions on the miners and their ability to work independently, but it also improved the conditions in the mines and in their daily lives. The London Lead Company built houses for the miners closer to the mine itself and thereby benefiting themselves also, but the inclusion of a garden or a small holding with each house benefited the health of the miner and his family.

However, when the lead ran out, so did the industry. To see the quiet, peaceful and uniquely beautiful Weardale today is to scarce believe that once this was a thriving industrial area giving a living to thousands of miners, but it was that very industry that gave rise to much of the landscape as we see it today.

Weardale Lead Mining (Part 7) - the bargain system

The "bargain" system of lead mining in Weardale gave the miners a degree of independence as separate bargains were struck between the landowners and a "partnership". A partnership consisted of a group of men from 2 up to 12 or more, but more usually 6 or 8, and often members of the same family.

The bargains were struck for many of the mining activities but mostly for the getting of ore at an agreed price per "bing" (eight hundredweight). The bargains were sometimes for a quantity of ore, but more commonly for a period of time. Some of the bargains related to





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constructing shafts to get at the ore-bearing veins, or digging sumps within the mines in order to drain the water, which was always a great hazard to the miner. These bargains were sometimes paid by the "lump", that is a lump sum for the work involved, sometimes at an agreed rate per day for a specified period.

In the 19th century the crushing and washing of ore was mostly done by boys no younger than nine years old who were paid at the rate of 4d (four pence) a day, although in the 18th century some of the children started work at six or seven years of age and the education facilities were either non-existent or, at best, the so-called dame schools.

With the setting up of permanent schools in the early 19th century, by the two principal landowners in the district, the Ecclesiastical Commissioners through the Bishop of Durham and the London Lead (Quaker) Company, most children were able to go to school at the age of six.

After the age of nine boys had to start work on the washing floors and had to finish their schooling during the winter months when the inclement weather froze the water and made it impossible to continue working on the washing floors. Girls continued at school until they were 12.

After the turn of the 19th century women did not work at the washing floor but in the mid – 18th century women, boys and girls also washed ore and struck bargains for specific lengths (measured in fathoms) of a specific lead vein at an agreed rate per bing of washed ore.

With the technological advances in the mines, such as the construction of metal rail ways for getting the kibbles of ore out of the mine; better ventilation; improved methods of crushing ore; as well as improved housing with small-holdings or gardens; schools, chapels and reading rooms, the landowners were able to strike bargains weighted in their own favour and the independence of the miners became more restricted.





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NB: A bing was the equivalent of eight hundredweight. (8cwt).

Weardale Lead Mining (Part 8) - references

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