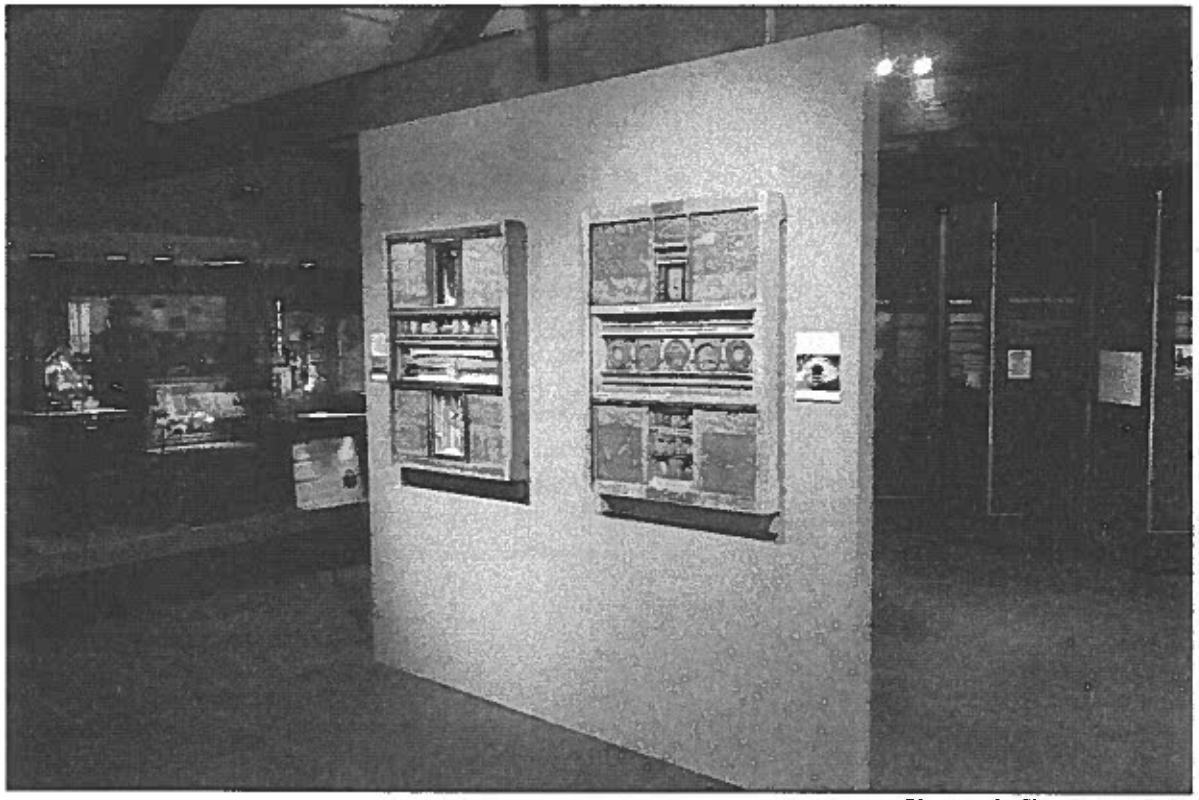
THE · FRIENDS · OF
KILLHOPE
Charity No 517647

Newsletter No 68 **September 2006**

in search of a **Hidden Landscape**



Photograph: Chris Rawson Tetley

The artist Dave Walker Barker has been working in collaboration with Killhope Museum to produce a range of art works that relate to the North Pennine landscape and its extensive mining history. The paintings and painted constructions have been produced for specific locations around the Killhope site and reflect David's long association with the museum, the Pennine landscape and its mining history.

The exhibition opened on Friday 26th May and will run until the end of October.

The project was co-funded by the Arts and Humanities Research Council and the Department of Contemporary Art Practice, School of Design, Leeds University.

Newsletter Editor

The newsletter is often the only contact that many of our members have with events at the museum and related information on the area and its history.

The vacancy for a newsletter editor still exists, however, if we continue to receive contributions we will endeavour to keep a newsletter going until an editor is appointed. We are very grateful to all those people who take time to prepare material for the newsletter and would urge members and their friends to send articles to Margaret Graham, Wingrove House, Wingrove, Rowlands Gill, NE39 1DT or preferably by email to dickgra@aol.com

A Message from your Membership Secretary

The renewal form for 2007 subscriptions is attached as the last page of this newsletter. A member who does not pay by standing order is required to send a cheque early in 2007.

Thanks to all who normally do so.

Day School

We are pleased to announce a joint day school arranged by the Friends and the North Pennines Heritage Trust on

Saturday, 30th September 2006 at
St John's Chapel Town Hall starting at 10.30 am

"Recent Industrial Archaeological Research in the North Pennines"

Cost £10 including lunch
Details can be found on the penultimate page of this newsletter

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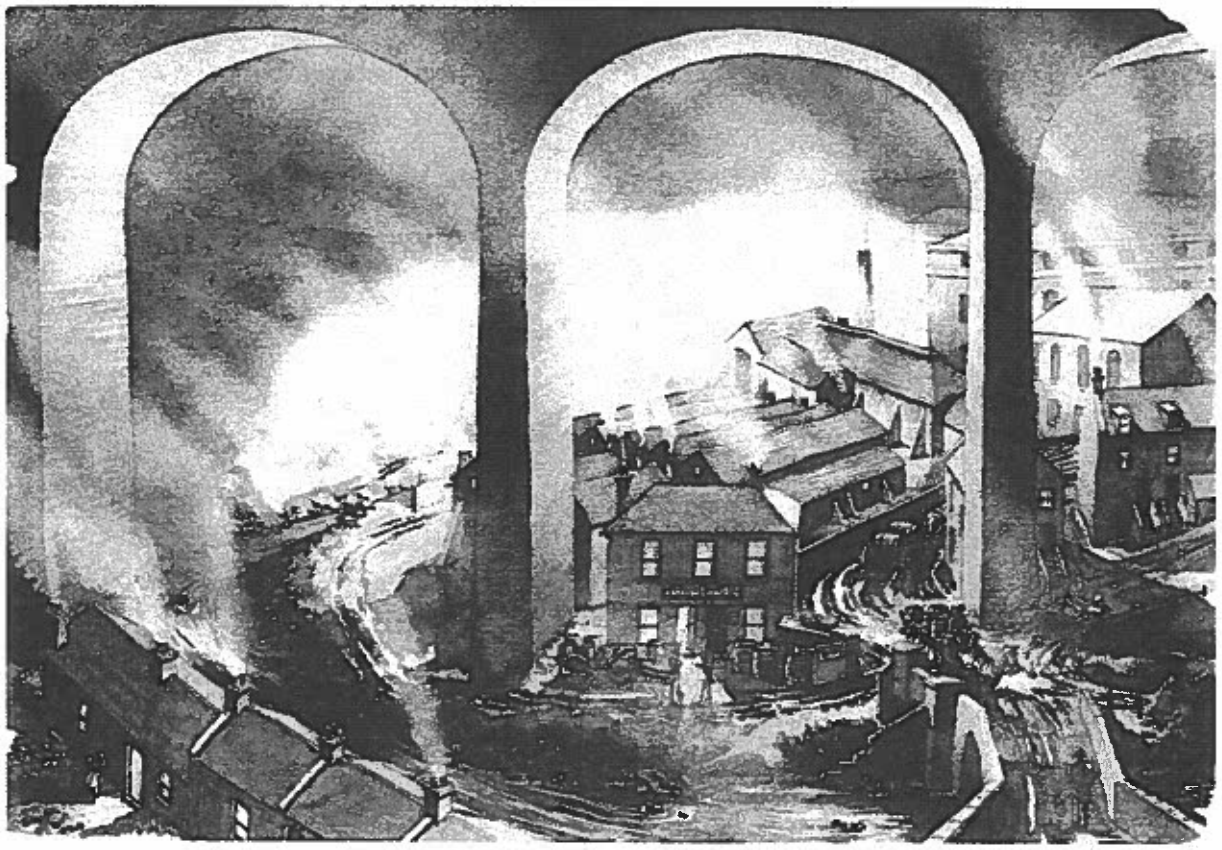
We are very grateful to Ouseburn Partnership for permission to reproduce this article from Ouseburn Heritage, Issue 2.

Ouseburn's White Cemeteries



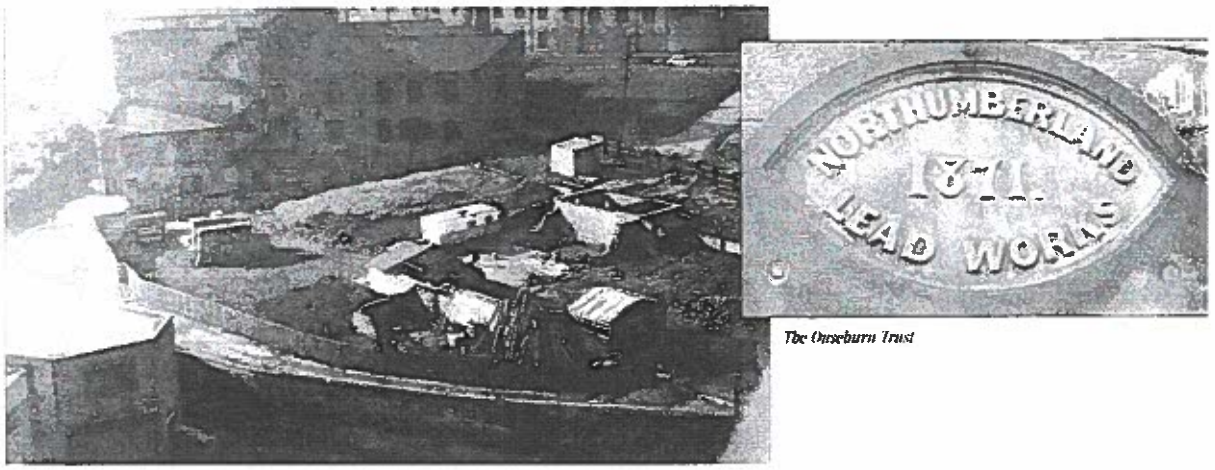
The Lower Ouseburn Valley has a historic association with the lead industry and in particular the manufacture of white lead for making paints and varnishes. The firm of James & Co were in operation as early as 1801, and in 1871 the Northumberland Lead Works was established by John Ismay on the site now occupied by Byker City Farm. These factories used primitive production methods and for the workers this meant long hours in an unhealthy environment, as Freda Booth makes plain in the following account.

"White Cemeteries - How Women are Poisoned"

This headline appeared above a detailed article published in the London based Daily Chronicle in December 1892 and was followed by another a week later. Both articles were highly critical of Tyneside's white lead trade and helped to highlight the plight of those that worked in this trade. The writer portrays a graphic picture of the health hazards involved in the 'stacking process', by which thin sheets of lead were placed upon small earthenware pots containing strong acetic acid, one stack of pots and lead upon another, up to twelve layers high.

In his article "The Human Dredger', the writer describes how "women stand on rough staging one above the other, and hand the dishes of wet lead up and up till the top shelves are full. Then the lower ones are packed, and when the stoves are 'set', gas or fire is applied, and the batch is left to dry for a fortnight. The sight of these pale women, with the red handkerchiefs bound tightly over their hair, enveloped in the sack-like overall, going on quietly and incessantly with this drill, passing up and passing up the wet poison like a live dredging machine into the dark recesses of the stove, is a sort of nightmare to carry away with you."

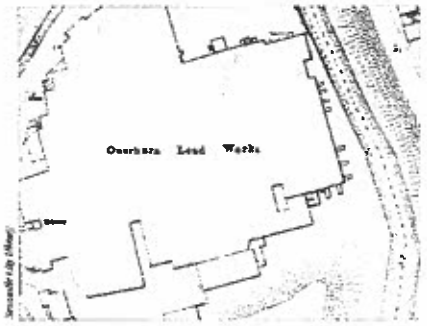
The acid fermented in the jars and turned the sheet lead into a carbonate lead paste. Although unpleasant, this 'blue bed' process was not as harmful as the next stage in the process, the 'white bed', whereby this paste was dried in large ovens to form powdered carbonate of lead. Once again it was the women labourers who had the job of emptying these oven stacks.



The Ouseburn Trust

"They go in with woollen mufflers over their mouths in addition to their coverings, and as they work the white lead flies and drifts and settles like fine snow, powdering everything. They must handle full 25 tons a day, when they are at this job. This furious exertion, which requires strong lungs and free fresh air, is carried on with the stifling and pitifully futile wad of knitted wool clapped over the mouth, which is open enough in texture to draw any kind of dust through, a thing that would serve as a kettle holder."

The fine white lead was then mixed with oil to form paint. Some of the powdered lead would have been sold to other oil and paint works, packed into wooden casks and hauled out of the Ouseburn by teams of horse and carts. Stephney Bank and Stephney Road were well served by stables and carters. The Ouseburn itself was tidal as far up as James & Co's works (just beyond the railway viaduct) and shallow draft vessels such as wherries would have carried casks of paint, varnish and powdered lead to the Tyne and waiting ships.



The Workers

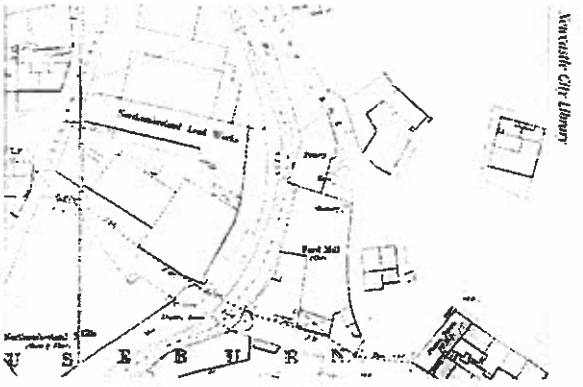
When the firm of James & Co became a joint stock company in 1884 it was recorded that the average work force was 25 men and 33 women. However, the unskilled nature of the work, the practice of piece work and availability of meals, attracted many casual labourers and led to a high turnover of workers. Women in particular were attracted to this work. They could do it equally as well as men, and while they were paid less these wages compared well with the few opportunities for female employment. Women appear to have begun work at 6.00 am and finished at 2.00 pm a shift system that appears to have suited their domestic commitments.

Growing concern at the incidence of lead poisoning revealed that women were twice or thrice as susceptible as men. The chief agency of poisoning was dust, and the lungs, rather than the stomach, became the principle means of ingesting the poison. Workers would develop a characteristic blue line along their gums, and later they would complain of 'wrist drop', caused by paralysis of their finger muscles. Severe cases might result in blindness and premature death.

The 1878 Factory Act recognised the problem but failed to resolve the issue. Teenage girls continued to work in the 'white cemeteries' alongside their parents and only in 1883 did legislation prescribe special measures (protective clothing, washing and bathing) designed to reduce the impact of the deadly white dust. The special rules adopted by Messrs Ismay & Co may be read in the extensive collection of papers held at Tyne & Wear Archives. These rules were to be observed by "each man or woman, before commencing to work at any stove, rollers, white bed, white or paint grinding" and "if not wearing stockings and boots, thoroughly wash the feet. Each man or woman must bathe at least once a week". The rollers used to grind the dry white lead were to be washed-down to keep dust to a minimum.

The writer in the London Daily Chronicle was very critical of these measures; they were ineffective and difficult to enforce. When female labour was eventually banned from the white lead trade in 1900, the Medical Officer of Factories, T M Legge MD, cited the casualised nature of the work force as a major obstacle to enforcing the special rules of the 1883 Act: "It is not difficult to understand why those firms which employ casual hands should suffer most. Work in lead has secured a bad name, and in Newcastle no-one who can get employment elsewhere will take it. Consequently the class of men applying for work is a low one - men discharged from other employment and those unfitted for skilled labour. Not a few are addicted to alcohol."

With few 'old-hands' to show new workers the ropes, and the poor quality of the work-force generally, it is hardly surprising that Ouseburn's white cemeteries survived until the 1900 Factory Act enforced the provision of dust extractors, abolished the old drying stoves and stopped the practice of workers entering the stoves to empty the stacks.



In 1900 the statistics of lead poisoning had showed that the three chief offenders were all Tyneside based firms; of 66 workers employed at James & Co in Ouseburn, there had been 32 cases of poisoning. After 1900 the incidence of poisoning reduced dramatically. The old works of James & Co had fallen into disuse by 1914 and the site is now covered by landfill. The Northumberland Lead Works of Ismay & Co continued as Elders Walker paint works until after the Second World War. Today this site is occupied by the City Farm but its history is never far away, as was revealed recently when fragments of earthenware pots used in the old 'stack process' were dug-up when excavating a trench for a new wall.

History of Lead Mining in the North Pennines Revised (continued from Newsletter No 66)

Alvin Hill

AD1600 to 1800AD

(James I 1603-1625) The union of the Crowns of England and Scotland in 1603 was welcomed by the inhabitants of the northern counties. The destruction of fortified places along the border by the King's order and suppression of moss-troopers was carried out. The Manor House began to rise beside the castle and peel towers. In the early years of the 17th century the people of Northumberland began to feel secure.

(Charles I 1625-1649) From this period there is little actual record of mining during the wars of Charles I in the north 1639-40, followed by Cromwell's reign up to 1658 and the restoration of the Monarch in 1660. It was, however, a great age for the rural middle classes and great activity in the discovery of ore deposits. Free miners were scattered all over the countryside hunting for veins.

In December 1624 a Grant was made by the Duke of Buckingham for 21 years of all mines royal and lead within 10 miles of Muggleswick to be opened and wrought at his own charge with provisos of giving one tenth of the silver to the king, bringing the residue to the Mint and obeying the proclamation of mines royal.

The Palatinate of Durham which was established in 1072 was dissolved by Cromwell in 1646, but restored in 1660, and so remained until finally vested in the Crown in 1836 (The Commonwealth 1649-1660).

Issac Basieu who was appointed to the rectory of Stanhope in 1646 by Charles I lost his preferments during the Rebellion, he was re-called by Charles II (1660-1685) and re-installed after some 16/17 years abroad.

In 1663 he complained to the Right Worshipful Sir Francis Goodrick, Knight, Chancellor of the County Palatine of Durham and Sadbarga that he had been deprived of his tythe or tenth part of all lead ore by, amongst others, of a mine or grove known by the name of Langhts Head or Lanktys Head in Burnhope.

This document lists between Wolsingham and Killhopehead 25 veins then wrought and 58 veins are listed as not wrought. The former include:

Westernhope - and mentions this lead being rich in silver
Greenlaws
Longtea Head in Burnhope
Cowhursh, Old Moss, Snodberry in Killhope
Sedling Grove (probably includes Burtree pasture which was worked in 1595)
Middlehope
Allercleugh
Lodgefield
Groverake, Wolfcleugh and Rispey in Rookhope

In 1664 Sir Francis Radcliffe, afterwards the Earl of Derwentwater leased to George Bacon of Broadwood Hall, Allendale, all the lead ore in the Manor of Alston Moor for 3 years.

The lease was renewed, Mr John Gallinson, steward to Mr Bacon at Allen Smelt Mill near Allendale Town. John Bacon, son of George, made considerable wealth from the mines, and in 1699 became High Sheriff of Northumberland. (James II 1685-1688, William III 1689-1702, Anne 1702-1714, George I 1714-1727, George II 1727-1760).

In the middle ages the Crown had claimed the ownership of all mines of gold and silver. The complication was that most of the silver was derived from the lead. How far the Crown tried to extend its claim to cover lead mines in general is not clear. Whatever rights the Crown had were abolished by the Royal Mines Acts of 1689 and 1693 at the time of William and Mary.

These Royal Mines Acts removed an important obstacle to the development of mining enterprises. Sir William Blackett commenced the Shield Ridge Level in West Allen in 1684, and at about the same time the Haugh Level at Allenheads was started.

About 1690 the Rampgill Vein at Nenthead was discovered and proved to be very productive. The Greengill mine between Nenthead and Garrigill was opened up then. Other work in the area was principally on and around the ancient mines of Blagill and Fletcherous, as well as a few other smaller mines.

From about 1690 there is an almost unbroken run of papers for such groups as the London Lead Company and the Beaumont Mines.

The Estate of Allendale was acquired by Sir William Blackett in 1694 and he began to develop the mines on very much modernised lines. In 1696 he also leased the Weardale Mines.

In 1692 William and Mary granted a charter incorporating 'The Governor & Co for smelting down lead with Pitcole and Seacole'. This became known as the London Lead Co, and after 1704 was frequently known as the Quaker Lead Co. They took over the Bristol Lead Works from Talbot Clarke in 1692, but they were not successful and in 1695 these works were closed down and sold.

In 1704 the London Lead Co took over the Ryton Smelt Mill which was established with reverberatory furnaces patented by Dr Edward Wright. Wright and most of his partners were Quakers, hence the name of the Quaker Co.

The Ryton Works were already smelting ore from mines at Alston Moor mainly situated in the head of the South Tyne Valley and at Blagill.

They also took over the Whitfield Mill in 1706 and it remained in operation for over 100 years, using coal from Coanwood about 6 miles away. When Whitfield Mill was in full production after re-building, the Ryton Mill was sold to the Blackett family.

In 1706 the London Lead Co were working in the Longhole and Blowngill veins near Garrigill, and they continued to take more small mines in groups.

The development of the Alston Moor mines were greatly affected by the political events connected with the rebellions of 1715 and 1745.

After the Jacobite rebellion of 1715 the Estates of the Earl of Derwentwater were forfeited to the Crown and in 1735 were assigned to the Greenwich Hospital. The London Lead Co took over more of the mines in Alston Moor.

At the Allendale Mines there is only a very scanty record of the working before records start in 1725, but there is sufficient to show that some mines were working in the 17th century.

Dressing of ores remained a woman's job throughout the 18th century.

The London Lead Co had before 1730 adapted the Water Wheel to working pumps, and in the late 17th and early 18th century many water wheels were used for pumping.

The introduction of the Horse Whim in the 18th century enabled shafts to be sunk deeper.

About 1760 the Barneycraig Horse Level was started. The first cast iron tram tracks were used in 1767 (George III 1760-1820, George IV 1820-1830).

The London Lead Co took a lease of some mines in Teesdale in 1753, but it was not until 1771 that they really settled down in the dale. In 1771 they leased Flakebrig mine in Egglestone along with the Smelt Mill and Refining House.

The Manor Gill mines were added by another lease in the same year.

The Mines in Lunedale were leased at the same time 1771. They were worked steadily by the London Lead Co for 110 years. The principal mines were Closehouse, Birkdale, Blacksykes, Arngill and Cocklake.

In Allendale James Dickinson was agent, and in 1774 he appointed Westgarth Forster as a second agent for the Coalcleugh area.

Forster was one of a family connected for some generations with mining. He introduced the first hydraulic engine underground.

Westgarth Forster's son, Westgarth was acting as agent from 1797 to 1808. In 1809 he published his first edition of the 'Strata'.

Nearly all the London Lead Company's carriage in the 18th century were done by trains of 12 to 30 pack horses, each carrying 2 to 3 cwts.

AD1800 to 1900AD (George IV 1820-1830, William IV 1830-1837, Victoria 1837-1901)

In 1807 the London Lead Co leased a number of mines in Bollihope and Stanhope together with the Smelt Mill at Stanhopeburn. It is recorded that in 1809 it paid the Bishopric of Durham over 5,000 in royalties. In the same year Col Beaumont held under lease from the Bishopric 17 mines. In that year there were three Smelt Mills in operation in Weardale and the mines were producing important quantities of lead.

Breckon Syke and Wolfcleugh are named as among the richest mines, the former having produced 4,000 tons of lead ore in one year. In 1821 there were 36 mines working in Weardale which produced about 6,800 tons of lead ore.

Crushing Rolls were invented by John Taylor and used in Cornwall in 1796. The London Lead Co built roller crushers in 1816.

The sharp fall in the price of lead after 1815 (Waterloo) and again in the 1829-33 depression when many smaller mine owners went out of business.

In the depression of 1815-17 the London Lead Co put unemployed miners making and repairing roads, etc.

A Report upon the state and condition of the Roads and Mines on the Estates of Greenwich Hospital in 1823 by Edward Hawke Locker, FRS, Secretary to Greenwich Hospital, John London McAdam of Bristol dealt with the state of the roads, and John Taylor upon the Mines and Smelter.

The roads of the district were described as in a deplorable state and the worst in the Kingdom. There were then no other roads than those formed on the old pack-horse tracks. There were two classes of roads, the Parish roads and the Turnpike (or Toll) roads. McAdam estimated that 60 miles of New Road construction would cost £203 per mile. In 1824 work was begun on an extensive roadway system in the area.

The estimated cost was £26,230. The London Lead Co contributed £5,000 and the Hudgill Burn Mining Co £3,000.

The London Lead Co were then applying for a General Grant of the Mines which they held under separate leases from Greenwich Hospital. This was recommended, as it was stated that there was still a reserve of mineral ground for the 'humbler adventurers' within the Moor.

In this respect Forster in his 'Strata' states that in 1829 the Alston Moor belonging to Greenwich Hospital is in occupation of at least 20 different mining companies, the largest being the London Lead Co which was about 2 miles square.

John Taylor then dealing with the Mines complemented the London Lead Co upon their efficiency and stated that they had complete Plans and Sections of all their mines, and such plans should be made by other operating companies.

He suggested that the then existing Royalty payment of one fifth should be reduced. This was altered to one seventh in 1830 and again to one ninth in 1863.

He also recommended that the cost of driving the Nentforce Level should still be continued by Greenwich Hospital.

It was then stated that the rich vein of Hudgill Burn was still yielding a large quantity of ore, and that the Rampgill Mine which is second only to Hudgill Burn has been worked for centuries and has produced more lead ore than any other mine in Alston Moor.

The Nentforce level was engineered by Smeaton, the builder of the famous Eddystone Lighthouse, and was driven at the expense of the Greenwich Hospital. It commenced in 1776 with the portal in the Scar Limestone. In 1821 upwards of 3 miles had been driven (352 feet per year). It is driven in this low horizon to a shaft at Nentsbury Haggs, sunk in 1818, and from here the level is carried forward at a high horizon to the Brewery Shaft at Nenthead. Its total length is 4.94 miles. It was not successful in penetrating any productive veins but proved of value in draining the mines.

The first railway to be built into the lead mining area was the Stanhope to Shields railway opened in 1834. In 1856 the railway from Darlington reached Barnard Castle, and in 1867-68 was extended to Middleton.

At the same time the Hexham to Allendale line was constructed.

Little use was made of gunpowder until the second half of the 18th century. The introduction in 1863 of dynamite and its use in cartridge form gave a much greater rock-breaking power than black powder.

In Weardale a rock drill was tried out in Hope Level, Stanhope in 1875, but was not a success.

When Sopwith took over the Beaumont Mines in 1845 he increased the bargain rates to give an average wage of 15 shillings per week and raised the month advance from 30 shillings to 40 shillings. To qualify for the monthly advance the miners had to keep regular hours, 8 hours, 5 days a week, and the enforcement of this caused a 4 month strike in 1849.

In 1836 the Ecclesiastical Commissioners was constituted, and from that time forth took the place of the Bishop of Durham as owners of Weardale both as regards the surface and the mining rights.

The Beaumonts continued to hold the mines until 1880, and then, the price of lead being low and general conditions of mining unsatisfactory, they relinquished their leases with the exception of a strip adjoining the Henry Vein in Allendale. Thus ended their long tenure (1696-1880) of the Weardale Lead Mines.

Three years later, in 1883 the Weardale Lead Company was formed and took over the Weardale Mines.

The London Lead Company relinquished the Alston Moor area in 1882 but continued working in Teesdale until finally winding up in 1905.

The Nenthead Mines were taken over by the Nenthead & Tynedale Lead & Zinc Co. At this time there were 21 veins in which ore was being raised, 6 veins on exploration and development, employing 163 men raising ore and 26 men on 'dead work', ie 14%.

This Company was followed by the Vieille Montagne Zinc Co, a Belgian firm who continued operations until the second world war.

Projects Officer's Report

Just a brief report this time, as this is a busy period for Killhope and your Projects Officer.

Once again we are extremely grateful to our Californian friends for their generosity in donating to us several loads of ore from their mine at Rogerley. As I have said in the past, the effective operation of the washing floor at Killhope (effective in the sense of children being able to discover and take away shiny pieces of galena or bonny bits of fluorspar) depends on the goodwill of the small number of businesses and individuals who keep us supplied with ore. Without them, Killhope would not be the exciting place it is for children to discover and to learn.

So we are also very pleased indeed that Paul Allison (Sherburn Stone Group) and Lafarge Cement were willing and able to supply and deliver to Killhope, entirely free of charge, a considerable quantity of vein material for the bouse teems and washing floor from the old cement works quarry at Eastgate. We are very grateful to both companies for their support of Killhope in this very practical way.

Thanks too to the group of Friends who organised and manned the "Killhope's Hidden Treasures" weekend early in August. It was great to see some of the items which are normally hidden away out on display and, just as importantly, to see members of the Friends in the mineral and spar box room talking to visitors. Our customers really respond to the infectious enthusiasm of the Friends which brought another part of Killhope to life for the weekend.

A new venture at Killhope this season has been the display of a number of works of art by David Walker Barker around the site, including in the mineshop and down the mine. David will be known to some of you as a collector of North Pennine minerals, but he is also a well-known artist and lecturer in fine art. David's work is both distinctive and powerful, and I was delighted that Killhope had the opportunity to host this important exhibition. David obtained funding from the Arts and Humanities Research Council to enable him to take sabbatical leave from teaching to work with Killhope and the Friends to produce the pieces on show. I urge you to come and see them; they are at Killhope until the end of the season, and, I think, add a great deal to the experience of visiting the museum.

Finally, don't forget the day school at the end of September that we are jointly hosting with the North Pennine Heritage Trust – the details of what promises to be a most enjoyable and informative day are elsewhere in this newsletter. Bookings are required by the 22nd September, please.

Ian Forbes

Committee Contacts

Members are advised that their main contacts with the Friends committee are:

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We are grateful to Shelagh Bridges who passed on this article from Simon Hughes of Talybont, Ceredigion, taken from the Mining Journal, September 22nd, 1877, p1051

Experiments with Dynamite at Aberystwith

A series of interesting experiments, showing the capabilities of dynamite as an explosive for blasting purposes, have been made by Messrs Griffith Williams and Son, Agents for Nobel's Explosives Company, under the conduct of Mr William Toye, the representative of the company. Among those present were Capts James Paull, W H Paull, and ... Rowse, Goginan Mine; Peter Garland, Lisbume Mines; John Michell, Cwmystwith; John Paul, Cefn Cwm Bryno; Thomas Glanville, Cambrian; Wm Trevethan, Melyndwr Valley; John Couch, West Goginan; John Owens, Grogwynion; Thomas Kemp, Bronfloyd; John Sprague, Cardiganshire; Frank Kitton, Red Rock Mine; John Ridge, Rheidol; John Williams, Florida; Sampson Trevethan, Tynllidiart; Mr David Owen, manager of the Ragoed and Cymerau Slate Quarry; Mr A Evans, Ashton Mines, Pwllheli; Mr Hugh Hughes, jun, Aberystwith; Mr C H Stokes, Aberystwith; Capt Edward Humphreys, Queen's-road; Mr Isac Morgan, Mr G Green, Mr James G Green, Mr William Green, &c.

The experiments were made on the beach under Constitution Hill, about half a mile towards the Vale of Clarach. Standing on a rock Mr Toye first showed the safety of the explosive by opening two or three cartridges and igniting them by means of a common Lucifer match. The dynamite flared harmlessly away, very much in the same manner as Wetted gunpowder would do, or the simple firework known to juveniles as "the devil". Mr Toye remarked, while burning the dynamite that he should not like to make the same experiments with gunpowder, nor, indeed, would anyone else in his right mind.

After the various experiments had been satisfactorily performed, the company assembled at the Belle Vue Hotel, where an excellent luncheon was laid out. Mr Issac Morgan, JP, occupied the chair, and Mr Peter Garland the vice-chair. The usual loyal and patriotic toasts having been given, Mr Pell proposed Noble's Explosive Company, to which Mr Toye responded, dwelling upon the safety of the material, its component parts, and its adaptability to wet and faulted ground where black powder could only be used with considerable trouble. By the use of dynamite, he thought, shafts could be sunk quicker than by any other means, and mines which were now paying no dividend could be made remunerative. The Chairman followed by proposing the Mining Interest of Cardiganshire and Adjoining Counties, and in doing so expressed the desirability of seeing the royalty of mines reduced. Capt Hemy Paull, Gogina, acknowledged the toast on behalf of Capt Thomas Paull, whose health was drank in a bumper. At Capt Sam Trevethan's request several persons rose to give their experience in the use of dynamite. Capt Granville, of the Cambrian Mines, said it was now used at the mine with which he was connected in sinking a shaft. The ground was faulty and wet, and could not be easily worked with black powder. The dynamite was simply thrown into a hole and it exploded at once. In fact the men at the mine had been able to sink at the rate of 6 feet a week in a shaft of 11 feet long. Not half the work could be done in the time with powder. Capts Couch and James Green also spoke to the effects of the explosive. The latter said it was better in wet ground than powder, it required no tamping, and no boring of holes. ... Mr Hughes, jun, gave the toast of the Mining Engineers of the County, to which Mr George Green responded. ... On the proposition of Mr Fell, the health of Messrs Griffiths Williams and Son, the agents of Noble's Explosives were drank with musical honours. Mr Evan Jones Williams having responded in appropriate terms, several other speeches followed, in the course of which Mr Stokes thought a decreased royalty should be paid as mines got deeper, and the difficulty of working greater, and Mr Griffith Williams expressed his opinion that mines in Cardiganshire were not worked deep enough to make them profitable.

A Rat and No Rat – the Author

William Morley Egglestone was born near St Johns Chapel in 1838, and spent his whole life in Weardale. He died at Stanhope in 1921. His was a life of public service, but he was also a prolific author. He wrote on many topics including local history, dialect, folklore and geology. Even in his own lifetime he was known affectionately as "the Weardale Historian". Many of his articles and shorter pieces were written first for newspapers, and then collected into volumes which he published himself. These books are very collectable today.

The piece below comes from his papers, a large collection of which is still held by his family. It is a hand-written manuscript, so I am not sure whether it was ever published. I have not seen it reproduced in print before.

It is a light-hearted piece, which perhaps captures something of the spirit of life in the mineshop.

Ian Forbes

A Rat and No Rat

In the higher parts of Harwood, or rather on Ireshopehead about the boundary between Weardale and Teesdale there is a lead ore mine called Grass Hill at which there is a grove shop which was well fitted up with beds to accommodate the walleters during the week who work at that mine. Once upon a time two Weardale miners took their wallets to Grass Hill mine. These two miners, by name Tommy and Sammy, slept in the low room or kitchen of the shop. The other rooms above were occupied by some other thirty walleters from various parts of the country. It so happened that this shop was pested with rats, as mine shops invariably are, so one night after the other miners had repaired to bed Tommy suggested that they would have a night with the rats, to which Sammy readily agreed. So, after they had blocked up all the rat holes in the walls, with the exception of one, Tommy proposed that his bedfellow should be covered up in the chimney corner with the workmen's grove clothes which were laying on the hearthstone and he himself would go to bed and watch. Sammy was willing to do anything as he crouched in the chimney corner and submitted himself to be covered up with the workmen's clothes, with the exception of a peephole, after which his partner took himself off to bed where he soon fell into the hands of Morpheus, leaving the vigilant rat catcher silently awaiting the four footed intruders. The hour of midnight had passed and the rats peeped out of the hole and came stealthily across the floor, standing occasionally on their hind legs in a listening attitude as if they had some suspicion, but fear soon fled and they ventured out on a foray around the kitchen. Now was the time thought Sammy for to make sure his game, so up he jumped and throwing the clothes from him, and stopping up the one hole, scampered after the half frightened rats which run into every corner of the shop for safety from their pursuer who bawled and shouted to "how-way" for he had them all. Tommy awoke out of his sleep thinking nothing less than that the shop was on fire, but to his surprise found Sammy, with an empty powder kit in his hands, chasing the frightened rats around the room. At last the kit was securely placed over one of the four footed animals , and the breathless pursuer sat down upon the kit to keep the prisoner safe, and informed his fellow lodger who was gazing out of bed that "he had 'em now". So far so good, thought the rat hunter, but the best way to be sure of the prisoner's death was to blow him up, so Sammy got a quantity of powder and by means of a case-knife he put it beneath the overturned kit, after which he put the poker in the fire. Tommy perceiving his intentions hastened upstairs into the bedrooms of the other inmates of the shop and roused them up telling them at the same time that Sammy had an empty powder kit upturned over a rat and a

quantity of powder, but how much he did not know, had been put in, and that it would be fired immediately with a hot poker.

The lodgers, recollecting that a good many barrels of powder were in the room above where this powder was going to be exploded, which might happen catch fire and blow the whole building up, jumped up out of bed neck over heels and run downstairs in confusion, some with trousers in their hands, others half naked, and some with nothing on save their shirts. Thus tumbled the bewildered inmates of Grass Hill shop down stairs, and bounced out of the door, leaving the rat and the mine shop to their fate. Tommy stood at the door ready for a run, until Sammy took the fateful instrument out of the fire, when Tommy away for his life, thinking nothing but what the rat and the rat catcher would share and share alike. The hot poker was cautiously brought in to contact with the powder which no sooner ignited than the kit which covered the rat was shivered into a thousand atoms which rattled around the room to the no small astonishment of the rat catcher, who was then in a far corner of the shop, more frightened than hurt. The half dressed inmates who had fled, were a considerable distance from the building when they heard the explosion, which proved to be not so bad as was expected, so they retraced their steps, thinking they would find Sammy's whiskers somewhat shorter than usual, but to their surprise as some of the more venturesome peeped in at the shop door they saw, in the midst of the thick smoke, which then filled the shop, Sammy the rat catcher, with candle in his hand, calmly searching every corner of the shop for the dead rat. But the deil a rat was there.

NAMHO News

Shelagh Bridges

The Friends of Killhope have been a member of NAMHO (National Association of Mining Historical Organisations) for many years. I'm the current representative for the Friends of Killhope on their Council and will gladly pass on any of your comments at their meetings. You may contact me on telephone 01661 833634.

Items of interest from the latest NAMHO Newsletter

The revised fourth edition of the NAMHO Mining Heritage Guide, celebrating 25 years of mining history and edited by R W Vernon, is now available. This lists every member of NAMHO among other information. At present our Secretary and myself have a copy, but if you would like a copy for yourself, they can be purchased at £3.00. Please contact me for further details.

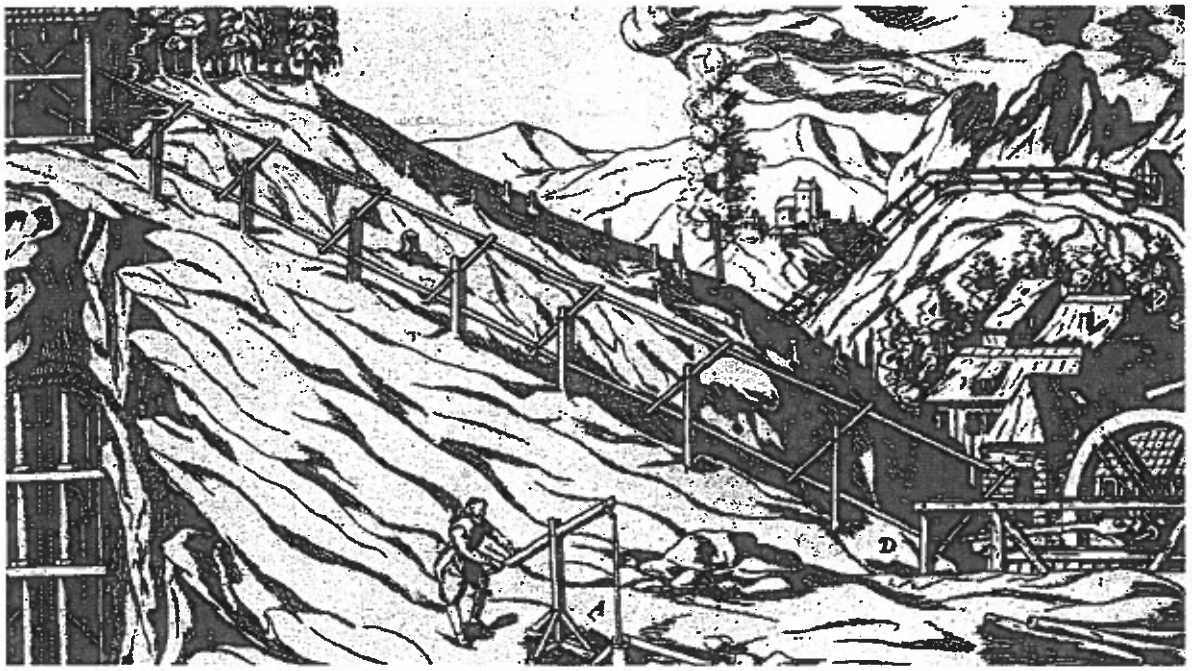
Cumbria Record Office has been funded to catalogue documents in the British Steel collection, covering the Workington Iron and Steel Co and including records related to the mines they controlled. The project is scheduled to completion within two years and will provide a useful resource for mining historians.

At present there are some underground access problems at Nenthead due to collapses - the horse gin in the Scaleburn branch of Rampgill mine is now ***not*** accessible.

A Note on the Dewatering of Mines

John Burgess

The use of flatrods or 'spears' to transmit power from water wheels was, according to Raistrick and Jennings, fairly common in the Pennines, especially in the nineteenth century. I know that this will not be news to many Friends of Killhope but I thought that readers might be interested to see the early seventeenth engraving by Thym which accompanies this article. This is the earliest reference which I can find to such 'cross-country mechanical power transmission arrangements', and although Agricola's classic 1556 De Re Metallica describes mine pumps and associated water wheels in great detail, there is no reference to any flatrod type arrangement.

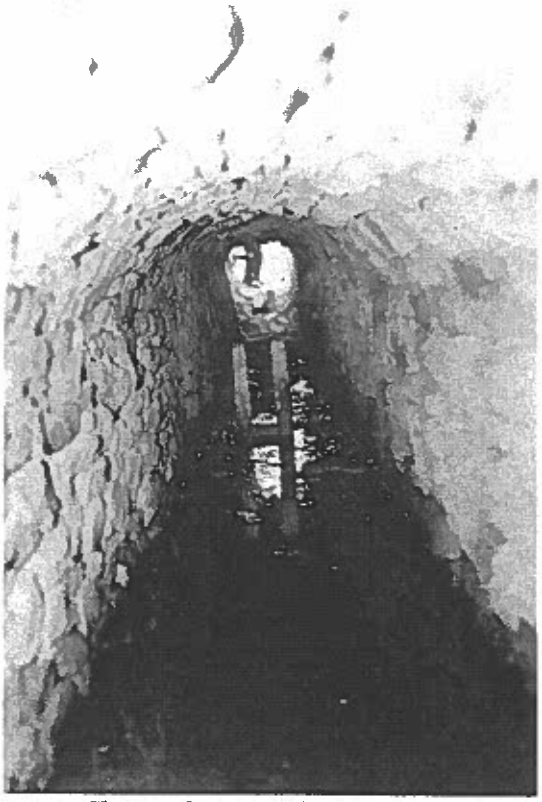


An engraving by Thym from Lohneyss: Bericht vom Bergkwerck, published in Hamburg in 1690.
It shows how power was transferred from a whater wheel to pumps in a shaft, in this instance, uphill.
Such systems were employed in the North Pennine orefield into the early twentieth century.

The North Pennines have quite a lot of surface evidence of the technology, so for example, the principle of transmission of power from water wheels to pumps in shafts was widely utilised in the Derwent Valley lead mines and there is evidence still on the ground if one knows where to look. Shafts such as Taylor's Shaft (NY965482) still has the remains of the angle bob pit outside the (more recent) protective wall. The rods which connected the pumps in the shaft to a water wheel further down the valley to the south west ran in sub-surface tunnels, now partly collapsed in places (NY964481). Near this point wooden sheaves may be seen inside the tunnel. These supported cast iron pulleys which supported wrought iron rods. The photograph on the outside of the tunnel is the view south west towards Jeffrey's Shaft and the engine house built by the Consett Water Company in the early twentieth century is visible in the distance, in a direct line with the direction of the tunnel (NY960478).

Interestingly, when the Derwent Lead Mining and Smelting Company's plant was auctioned in 1884, items included 740 yards of 1" wrought iron rods, 71 cast iron pulleys and stands from Taylor's Shaft, the asking price for which, along with balance bob, angle bob, bishop's heads metal gudgeon and saddle was £11.

Taylor's Shaft NY965462
(surrounded by protective wall)
Photo John Burgess



Sheaves for supporting spear rods
in tunnel NY964481
Photo John Burgess

Spear Rod Tunnel NY964481
(Presser House by Jeffrey's Shaft in distance)
Photo John Burgess

References

Georgius Agricola: De Re Metallica 1556 (available as a translation, Dover Pubs, New York, 1950, Trans Hoover & Hoover)

R A Fairbairn: Allendale, Tynedale and Derwent Lead Mines. Pub Northern Mines Research Society, May 2000.

W K Pirt and J M Dodds: Lead Mining in the Derwent Valley. Pub Northern Mines Research Society, December 2002.

A Raistrick and B Jennings: A History of Lead Mining in the Pennines. Pub Davis Books, 1989

Readers Letters

Not So Boring

I read with interest the article in the March 2006 issue entitled 'Not So Boring' and the reference to the Weardale granite and its effect on the so called saline ground-waters making them 'effective scavengers of chemical elements' which 'reacted with the limestone wall-rocks'; '... cooled they deposited their dissolved minerals forming the veins we see today'.

The chemistry of the formation of the fluorspar and galena has interested me particularly as the origins of the chemical 'brine' has not been fully explained.

The reaction with 'the limestone wall-rocks' is the first time I have seen what to me is a logical explanation.

It is my theory that the brine was a solution of nascent fluorine which produced hydrofluoric acid this then reacted with the limestone to produce calcium fluoride.

During the 1970 eruption of Mount Hekla in Iceland nascent fluorine was given off in large quantities. The records show that the lava contained 800-2000 ppm. Did a similar event occur in underground Weardale during the period of vulcanisation?

It has been suggested that the galena formed as a result of 'black smokies' from the granite rather being deposited from solution.

The bore hole at Eastgate found this 'brine' but I cannot find any reference to chemical analysis having been carried out. It may be that through the auspices of the Friends of Killhope analytical results on this 'brine' could be published. It would certainly help to trace further back into the history of mineralisation in Weardale.

I look forward to comment and further information.

John Land

Talking Shop

In the last newsletter Bryan Chambers asked the question about the name 'Mine Shops'. Why Shop?

My immediate reaction is why not? Having spent my working life in manufacturing I have been involved with many shops: Electricians Shop, Machine Shops (heavy and light), Blade Shop, Pipe Shop, Assembly Shop, Pattern Shop, Copper Shop (making conductor bars: not works security), Insulating Shop, Joiners Shop and Blacksmiths Shop to name but a few. A shop was a building where an activity took place. Using the same logic the building which housed the mine administration would be the Mine Shop and miners would lodge in a Lodging Shop.

Taking a stroll down a street in most villages, towns, or cities in early Victorian times you would see premises where bread was being baked and sold, premises where furniture was manufactured and sold, premises where shoes were repaired and many other making and selling activities going on. These premises were known as the Bakers Shop, the Furniture Shop, the Cobblers Shop etc reflecting the 'doing' activity. The building where groceries such as sugar, flour, tea, butter etc were bought in bulk and repackaged in smaller portions was referred to as the Store and it was looked after by a storekeeper.

As mechanised manufacturing developed and transport and communications improved, more goods were made in workshops remote from their point of sale, less goods being made on the premises where they were sold, but the name 'shop' stuck. The words shop and shopping became associated with the selling/buying activity rather than the doing and making. Stores became known as shops, although we can still shop in multiple stores.

In the good old days when men were men, and women had never heard of retail therapy, miners lodged in Lodging Shops and bought their candles and powder from the Company Store. As the great days of lead mining in the North Pennines declined and fewer mines, often remote from habitation remained, the miner was presented with stark choices, starvation, the workhouse, moving home or shop until he dropped.

Dick Graham

Windy Kings

I am gathering information on uses of water power in the Dales and came across a reference on page 51 of Les Tyson's "Lead Mines of Marrick" - British Mining No 38, 1989 to "two windy kings one worked by water and the other by a boy" for ventilation in Prys Mine in 1863.

A—Hollow drum. B—Its blow-hole. C—Axle with fans. D—Drum which is made of bundles. E—Lower axle. F—Its toothed wheel. G—Water wheel.

Photocopy of an illustration of a water powered mine ventilation fan - could this be a" Windy King"? Agricola G, "de Re Metallica" 1556. Trans Hover 1912, Reprint 1950 Dover Publications, New York

Can anyone tell me what a "Windy King" was, and are there any drawings or photographs of them. When worked by water, was a wheel or a turbine used?

In the same publication, on page 61, there is a reference to a "self acting jigger" in use in 1887 on the dressing floors. What is a "self acting" jigger - was it water powered and what did it look like?

Hydraulic rams are powered by water but are often called "self acting" while self acting inclines where full trucks going downhill pull empties up operated by gravity.

Tom Hay

Rookhope Runaway

In the last Newsletter (March 2006) you reproduced a photograph of a derailment and wondered whether it was the one referred to in the item from the Alston Herald, 1 May 1875. The photograph is, in fact, of wagons which ran away down the Bolts Law incline and jumped the track as they crossed the trestle bridge over the Rookhope Burn (seen in the photograph). There was no locomotive involved.

Michael Jones

The Hancock Museum, Newcastle upon Tyne

The Hancock Museum has now closed for a major refurbishment and re-organisation. It is due to re-open sometime in 2009. The refurbishment includes an extension and will incorporate two smaller art based museums (Hatton Gallery and Museum of Antiquities) currently within the University Campus. The new museum will be called 'The Great North Museum' which I think is a big mistake, since everyone knows it as the Hancock and that is what is written on the façade outside. Geology and mineralogy will get more space in the new museum. The collections will be housed in the Discovery Museum.

At present the Hancock is a hive of activity as they try to pack and move out all of the collections so that the builders can move in at the end of September. Since I retired, I have spent a lot of time working on the mineral collections. I offered to try to organise packing of the mineral collections, an offer which was gladly accepted. Starting in January a small group of mainly retired members of the Russell (mineralogical) Society, including Shelagh, have succeeded in packing well over 20,000 specimens by early August.

Trevor Bridges

Durham Mining Museum Acquisitions

The Durham Mining Museum has recently added J M Caw's February 1959 Mine and Quarry Engineering article which covers our area of interest. It contains a useful picture of the surface at Stanhopeburn Mine and a geological section of Red Vein in No 4 U/G shaft at Stotsfieldburn Mine.

They also have Arthur Raistrick's 1939 Mine and Quarry Engineering article on Ore Dressing in the 18th and Early 19th Centuries. The last picture is of a "Break sieve or Hotching tub" from an unknown location, presumably taken by him in the early 1930's.

Roger Bade (by email)

Modern Picking Belt

I am currently reading Balmaidens by Lynne Mayers ISBN 1 8722229 48 4. This is very readable and concentrates on the women employed on the Cornish dressing floors. There is much material covering the various dressing processes, so it is useful to compare and contrast what one can see at Killhope.

Therefore, having recently read a lot about picking belts, I was somewhat surprised this lunchtime to turn the corner in the Barbican Centre in the City of London and come across a modern version. I have been watching the local Archaeologists over the past couple of months excavating at a former school just to the north of the Barbican. For those that are not familiar with the Barbican it has elevated walkways, hence one can observe this excavation from above. They have just finished excavating some bodies and they were now checking a large pile of earth for small artefacts. Their digger was dumping soil into a hopper which fed a series of conveyor belts which finally deposited it into another pile twenty yards or so away from where it started. The soil was quite wet, so they may have soaked it before hand, although it is surprising how shallow the water table is in certain areas of the City.

Ten archaeologists in their blue safety helmets were standing either side of the belts and picking into black plastic bags whatever they noticed as the soil went past. I assume pottery and other small artefacts. Unless it appears in the newspapers or at the Museum of London I suspect I shall have to wait until later in the year, when MOLAS (Museum of London Archaeological Service) issues an update, to find what they have uncovered. I suspect that if it were to rain, all work would cease, unlike our ancestors who had no shelter. However archaeologists do tend to resemble the Balmaidens in that, in general, they are very poorly paid.

Roger Bade (by email)

Archaeological Survey of Earthworks at Killhope

Margaret Manchester - December 2000

There are some interesting archaeological earthworks adjacent to the 'woodland walk' in the ground of 'Killhope, The North of England Lead Mining Museum'. At grid reference NY824432 and an altitude of 480m, these earthworks consist of two enclosures, one with a rectangular hut attached, two bowl-shaped hollows, a track and a gully. The stony bank of the southern enclosure, which is typical of both enclosures and the hut, can be seen in the photograph. They are made up of large, limestone boulders and are approximately 2m wide.

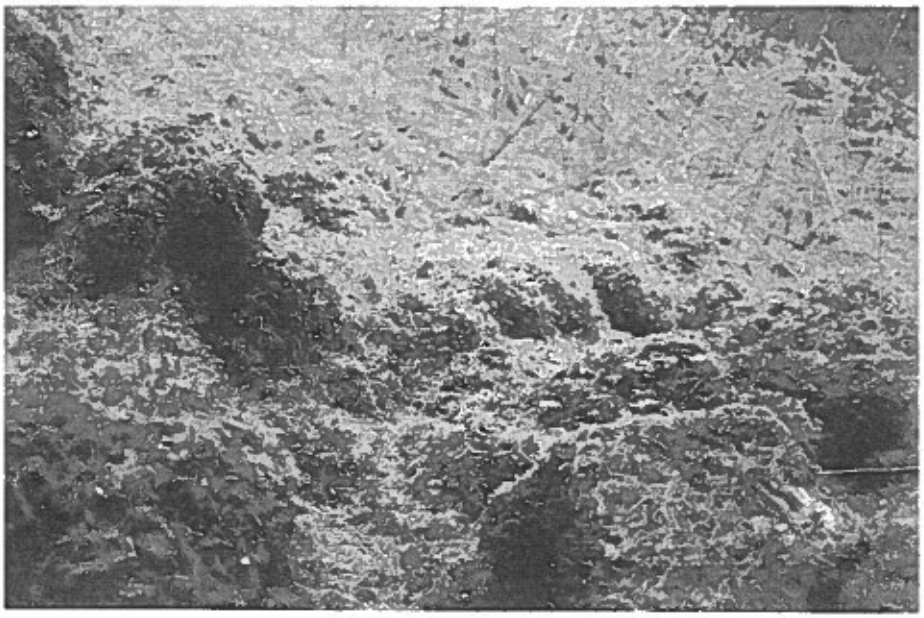


Figure 1 - The stony banks of the enclosures

Dennis Coggins interpreted the site as a medieval shieling (a summer farm) and the site is recorded in the Site and Monument Record for County Durham as a possible medieval shieling, dating from 1066AD to 1540AD. However, a recent archaeological survey report is sceptical of this interpretation and states that the earthworks may be more recent and possibly have an industrial origin (Nichol and Gledhill, 1998).

I carried out a topographical survey of the earthworks to record them as they are at the moment, using a total station (Leica Wild TC1010). Measurements were taken at carefully chosen points around the site, at close intervals where there were obvious features and at wider intervals where there were no features. It was not possible to survey the whole site from any one position, because of its size and tree coverage. Figure 2 shows the view from the southern edge of the survey area. The clearing in the foreground is the southern enclosure. The densely planted trees block the northern enclosure from view. The coniferous trees that immediately surround the two enclosures were recorded and appear on the plan in Figure 3. However, because of the density of the woodland, not all of the trees are shown. The modern footpath that runs along the eastern edge of the site was surveyed. The code for walls was chosen to represent the lines of the earthworks, in order to create an outline on the plan.

Figure 2 - View looking north across the survey site

Special care was taken when surveying two hollows on the site. Killhope was an important lead mining area and these depressions could possibly be the remains of shallow shafts. One of these, to the south west of the survey, was not included because it was considered too dangerous. The hollow had been in filled with large limestone rocks and looked as though it could be deep. A steep limestone outcrop behind it prevented any more readings being taken in that direction. The outcrop itself could not be recorded as part of this survey because the top of the cliff was inaccessible and was also obscured by tree cover.

The data was downloaded from the Total Station into LisCAD, a software package for surveyors. A plan view was produced and is shown in Figure 3. The crosses mark the survey points. The high density of points surveyed around the features can be clearly seen. The lines are the edges of the modern footpath. The round symbols denote the position of coniferous trees.

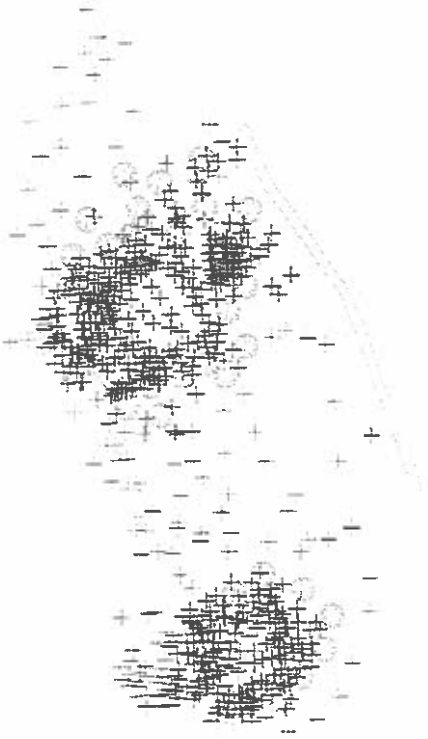


Figure 3 - Liscad plan view of the earthworks

Figure 4 - Contour plan of the earthworks

Using LisCAD, a digital model was created, consisting of triangles linking the survey points. A contour plan was produced from this model and is shown in Figure 4. The natural landscape, which is steeply sloping, is represented by the contour lines. The minor contour intervals were set at 0.25m and the major ones at 1m. The modern path follows a relatively gently gradient across the hillside. The walls show up as slight irregularities on the contour plan, but are not obvious features. However, the deep gully to the northwest can be clearly identified by the v-shaped, linear depression in the contours, and the circular hollow to the northeast by the concentric circles.

Using ArcView, a 3D digital terrain model was created. A layout comprising the model, a key, scale bar, North arrow and title is shown in Figure 5. The earthworks can be identified on this model. 'Terrain Elevation 3' was selected, from a wide variety of colour ranges, to represent the different elevation levels. The type of measurements used for the survey have to be entered, eg metres, otherwise a scale bar cannot be displayed.

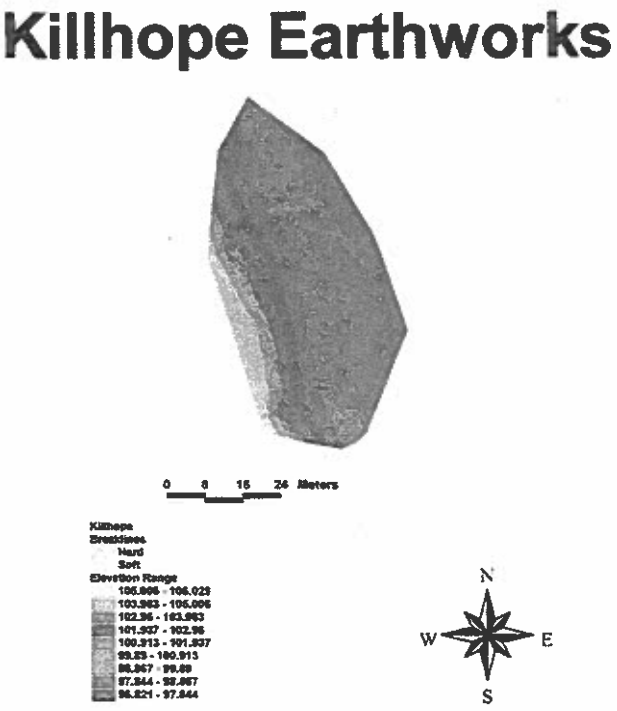


Figure 5 - Terrain model of the earthworks using ArcView

A track was discovered to the north west of the site. It is about 2.5m wide and forms a slight terrace in the hillside. The continues to he south, running along the base of the limestone cliff. Studying maps of this area, it appears that this track may also continue further north to meet the Carriers Way. The Carriers Way is a public footpath from Killhope to Allenheads, originally used by pack ponies to carry lead ore from Killhope to the smelt mill at Allenheads. This makes me wonder if the enclosures adjacent to this track may have been used as an overnight resting place for these ponies, and the hut may be a shelter for their owner. The Park Level mine, which is part of the museum, began working in 1853. The mineshop building, of the same date, has stables on the ground floor. Ponies were used for carrying lead ore before this mine was open, so where did they stay? The fact that these enclosures are covered in nettles, contrasting with the surrounding vegetation, strongly suggests previous habitation by humans or animals.

There is evidence of large-scale lead extraction in this valley. The site is surrounded by hushes, deep crevasses left after surface extraction. There is a well-defined gully on the site (Figure 6), running in a NE-SW direction, parallel to the large hushes on either side. It is up to 5m wide and 1.5m deep, and may have been an exploratory hush used to search for mineral veins. There are shallow pits nearby and also two possible pits on the site.

Figure 6 - Gully running NE-SW

Because of the different interpretations for this site, excavation would be useful to find out more about it. This would hopefully answer some question about the site, increase the number of visitors and increase public awareness of archaeology.

Bibliography

Clack, PAG (Ed), 1980, *The Archaeology of the Durham Dales,* Durham County Council
Nichol RJ & Gledhill TD, 1998, *Killhope Woodland Archaeological Survey*
Ordnance Survey Pathfinder 570

This poem, author and date unknown, is from the Archives.

THE WEARDALE ROUGES

1. Great JC, Great JC, wherever you be,
Take heed for the end is at hand,
Weardale's friend Walter, from his purpose won't falter
Until you're banished from the land.

2. Toory Rum, Toory Rum, your time has come
WB the lead mines has resigned
A fallen saint of immoral taint
Old Satan will a place for you find.

3. Butcher Tommy, Butcher Tommy, that always looks gloomy
Tell your brothers to prepare for the strife,
The big pays are ended, your Uncle can't mend it
After June you must fly for your life.

4. Joshua Quack, Joshua Quack, who has the knack
How to cure all the Cows in Creation,
If you stand up for the Masters, we'll apply mustard plaster
And send you to Cold Knuckles for castration.

5. Roguish Will, Roguish Will, be quick take your fill
Of pilfering, fingering and lying,
For six months at most will banish a host
Of the scoundrels for which we've been trying.

6. Slow Franky, Slow Franky, you're not quite so cranky
For to see the old game is up now,
Since you got the situation, hones perspiration
Has never been seen on your brow.

7. Simple Joss, Simple Joss, you will be at a loss
After June where to go with your clash,
You belong the petition school, a wee silly fool,
And rightly christened Pot Ash.

8. On Great Midden, On Great Midden, there is hidden
A lot of favourites too numerous to mention,
But the chief one is Joe, whom you all know
As being fond of a cattle convention.

9. Parson Bob, Parson Bob, with big belly and gob
Your spiritual duties you neglect,
With splutter and bluster, trying to muster
A character for the devils elect.

10. Digger Jack, Digger Jack, y take Shep on your back,
And off to the Churchyard be flying
Then with Pick-axe and Spade, see he is deep laid
And down in beside him be lying.

11. Roddy Will, Roddy Will, far famed is your skill
For watering wishy and cheating,
The Devil wont get his own until you are gone
With those that make your house their meeting.

12. Jack Maggy, Jack Maggy, with the big baggy,
Skulker o'er mortar and stanes
You have long drawn the brass of the poor working class
But you must work now or blow out your brains.

13. Cheeky Tick, Cheeky Tick, with tape line and stick
You have schemed a fine Mansion and garden,
Never more you'll be heard on the Guardians Board
Now sit again as waywarden.

14. Snuffy John, Snuffy John, well may you groan
Your patrons reign is near a close
So drop all your sins, and have no more twins
Any by no more trash for your nose.

15. Brave Jock, Brave Jock, you're the man for the folk
Though blunt be your manners, yet good is your heart
And Nathan Race, Oh hard is your case
But God will bless you for taking the poor mans part.

16. Burnhope Tom, Burnhope Tom, forward lead on
With honest Peadon and Jock by your side,
And soon you will shout the Agents are out,
Take good Walter and God for your guide.

17. Rigg House Squire, Rigg House Squire, you now stand much higher
In our hearts for the part you have taken,
Then with Milburn fight, for the God and the right,
And depend upon it you'll not be forsaken.

18. Walter B, Walter B, all praise be to thee
Stand by us as victory draws nigh
And posterity shall know, who banished the foe,
You will be blessed both here and on high.

Computer Processing

Sketches, maps, and other graphics are usually computer-processed to ensure that an author's work is shown to the best advantage when printed.

The Diaries of William Rigby Junior

Ian Forbes

In August 1832 William Rigby arrived in the North Pennines. He had travelled up from Flintshire in North Wales, where his father had interests in the lead mines there. William Rigby's journey round the North Pennines was a fact finding mission - he came to see if there were ideas, techniques, innovations that he could take back to Wales with him.

Whilst in the North Pennines, William kept a journal or account of his travels. This diary passed down through the family, and is now in the hands of Mrs Timms of Middlesex. The diaries of William Rigby are here reproduced with her kind permission.

It is fascinating to see North Pennine mining and ore separation through Welsh eyes, and to realise that a number of techniques which were by this time well-established in our area were unknown in Flintshire, and thus new to young Rigby.

We shall be serialising William Rigby's diaries over the next few newsletters.

Thursday 9th August 1832

Arrived at Alston at 11 am with Mr. Williamson and his son Mr. Thomas after having posted over 20 miles of a hilly country with a heavy carriage.

We can surmise that the party of Welsh sightseers arrived at Alston after labouring over Hartside pass from Penrith. There is nothing in the diaries to tell us who the Williamsons were, although when the party visits Nent Head smelt mill we learn that "my friend George" is more "au fait" with smelting than the author. Probably "my friend George" was Mr Williamson senior; it seems possible that the Williamsons were associated with a Welsh smelting works. There are records of the names Williamson and Rigby in the Flintshire archives, and a Williamson was a solicitor in Holywell at about this time. He had tentative connections with the Anglesey Mining Company and with the Ty Gwyn Mine (Llandudno Copper) in 1835. Rigby is a common name in Flintshire and it is not yet known which mine William Rigby had associations with. (I am grateful to Rob Vernon for the above information on Flintshire Williamsons and Rigbys.)

Immediately upon our arrival we called upon Mr. Jacob Wilson who gave us a most gracious reception and directly set about giving us all the information requisite.

Jacob Wilson was a highly important figure on Alston Moor's mining scene at this time. He lived at Alston House - the imposing building at the bottom of the town which is now a hotel. Jacob and his brother Joseph are remembered today for the fortune they made at Hudgill Burn Mine, a story immortalised by Sopwith's "Account of the Mining District of Alston Moor etc" published the year after this diary was written. In fact by the time of Rigby's tour Hudgill Burn's best days were in the past, but the Wilsons were developing other important mines, including Rodderup Fell.

When we agreed to have fresh horses and go on instantly to a mine belonging to Mr. Wilson called Rodderup Fell, about 3.5 miles distant from Alston. This mine was discovered about two years back, on the side of a hill, by means of a level which met the vein or as they say here 'the bearing post' at the depth of 25 yards. Since that (sic) a deeper level has been driven for the more effectual working of it, which intersected the vein at 80 yards after driving through 800 yards of a sort of chirt and spar.

Although today known as "Rotherhope Fell" the nineteenth century spelling is the one used by Rigby - Rodderup. Rodderup Fell mine was to become, by the 1860's, a highly productive and extremely profitable mine, although in 1832 development was at an early stage. There is a persistent story that the low level at Rodderup Fell was engineered by John Smeaton. This is

demonstrably not true. Rigby describes what were to become the mine's high and middle levels. The low level was not started until about five years after Rigby's visit - and 45 years after Smeaton's death.

The general system of management at this mine does great credit to Mr. Wilson who superintends it. The mode of working the ore seems well calculated for their bouse, but I am not of opinion that the whole process would answer equally well with us in Wales. My reason for doubting this is that the component parts of their bouse seem to vary less in their specific gravities than our ore and jack.

"Less" is a mistake here - Rigby should have written "more". The main gangue mineral at Rodderup Fell is fluorspar; back home in Wales Rigby's men had to contend with both lead ore and zinc ore ("jack" or "black jack") in the same orebody. As these minerals are quite close in specific gravity, their separation is not as straightforward as the washing of lead ore and fluorspar. We return to this topic later in the tour.

They crush all the ore (after having gone through various processes) at a water mill (*i.e. waterwheel driven mill*). I have observed that they have a continual fall of water upon the rollers, which I understand acts with a double effect, firstly it assists the rollers by making the ore softer and more easily crushed and next it prevents the rollers being choked up.

The only process which I think we can adopt to advantage is the last, which the very fine sediment or smythms undergoes after an operation similar to our buddlings.

This is effected by putting the smythms in a large round vessel, something like a churn, which has a fan inside to give a rotary motion to the water, and turned round by boys from a crank at the top. When this is done the boys beat the outside of the vessel with heavy sticks which cause the heavier sediment to sink.

This of course is the dolly tub which had been used in the North Pennines for at least ten years by this time. It is interesting that our author had never seen one, or even heard of one, back in Wales. Westgarth Forster had published a full description of the dolly tub, with illustrations, in his 1821 edition of the "Section of the Strata".

This mine is held under the Greenwich Hospital Company and pay one seventh Royalty in these bad times, though their lease demands one sixth.

The early 1830's were a bad time for lead mining in Britain. There was a deep depression in the industry caused by a collapse in the price of lead. In 1832 pig lead was selling at only £13.16.0 a fodder, down from a high of £27.4.0 seven years previously. There is evidence that the Greenwich Hospital, as mineral rights owners on Alston Moor, had responded to this crisis by lowering the percentage of ore they required as royalty payment from the mining companies, thus lowering the companies' costs and helping to keep the mines working. This typically pragmatic approach was in everyone's best interests.

Their present get is about 400 tons per annum. The ore will run on an average about 7/5 or about 70%.

On our return we sat down to a most sumptuous dinner at the Low Byer where Mr Wilson favoured us with his company for the evening and engaged himself as our chaperon for the ensuing day. We retired very early to our comfortable beds and slept soundly, without even dreaming of Welsh Wales or the Nanny Goats till 6 o'clock on the morn of

Friday the tenth

To be continued…

Forthcoming Events 2006

Friends of Killhope Events 2006

30th September	Day School at St John's Chapel Town Hall -" Recent Industrial Archaeology in the North Pennines" - a joint venture between FOK and the NPHT. 10.30 St John's Chapel Town Hall. Prebooking essential by 22nd September
25th November	Rachael Clarke will talk to the Friends at 7.00 pm in the Ireshopeburn Institute as part of the Social Evening

Killhope's Events Programme 2006

October	
8th	Fungus Foray and BBQ. £2.00 per adult Autumn Half-term holidays Hallow'een Craft Workshops 12.30pm – 4.30pm daily £1.50 per child.
29th/30th	Scary Walks Around the Woods

Weardale Field Study Society - Programme 2006

All meetings held in Durham Dales Centre, Stanhope at 7 pm

5th September	David Hughes	"Special Children (Life Begins at 75!)"
3rd October	Paul Leadbitter	"The Peatland Heritage of the North Pennines"
7th November	Peter Nattrass	"Weardale in Old Postcards"
5th December	Mark Richardson	"Low Barns - The Wild Wetlands Project"

North East Vernacular Architecture Group

26th September	Peter Ryder	"Taking a look at some of our Chapels" All welcome. 7.30 pm at Durham Dales Centre, Stanhope

North Pennine Heritage Trust - Members Events Programme 2006

Sat 30 Sep	Day School – 'Recent Industrial Archaeology in the North Pennines'. A joint venture between Friends of Killhope and NPHT. 10.30 St John's Chapel Town Hall. Prebooking essential by 22nd September
Sat 7th Oct	NPHT AGM 11am at Alston Town Hall.
Sat 14 Oct	'Explore parts of Rampgill and Scaleburn mines, underground walk and scramble (no climbing) -NPHT Member's only event. Meet at 11am in Nenthead Visitor Centre, second courtyard, bring lunch. Leaders Peter Jackson & Rick Smith. Helmets and caplamps provided. Please book a place.

Always wear warm, waterproof clothing & strong footwear (wellingtons best for underground). Underground trips must be booked in advance, helmets & caplamps provided, ask when booking.

For further details contact: Nenthead Mines Heritage Centre 01434 382037/382726 or email info@npht.com

NAMHO - Forthcoming Events

Advance Notice for the 2007 NAMHO Conference

This will be held in the Tamar Valley, near Tavistock, Devon over the weekend of the 15th-17th June 2007. It will be hosted by the Tamar Mining Group in association with other NAMHO member organisations in that area.

This should be a very interesting Conference from the point of view of industrial archaeology, geology and mineralogy with much to be seen both above and below ground. A grand place to have a holiday too at the same time!! If all goes well, Trevor and Shelagh Brdiges will be going and it would be so nice to be joined by other people from this area.

For further information, please contact: Robert Waterhouse, 13 Mill Meadow, Ashburton, Devon, TQ13 7RN or the conference website at www.tamarmining.co.uk or visit the Tamar Mining Group at www.tamarmininggroup.co.uk.

Keswick Mining Museum - Mine Heritage Walks 2006

All walks will be guided by local mine historian Ian Tyler, the author of ten books on Lake District Mining Heritage and curator and owner of Keswick Mining Museum. All the walks are on a Sunday.

10th September	Elterwater Slate (7 miles 'hard')	Meet Elterwater Village Car Park
1st October	Goldscope Mine (6 miles)	Meet Littletown Bridge, Littletown

All walks start at 10.30 am, boots or strong shoes must be worn! Waterproofs and spare clothing should be carried, also a packed lunch. Most walks will take a minimum of five hours. Not suitable for unfit persons and children under 16 years (charge £5.00 per person). Telephone 017687 80055 or 01228 561883 (evenings). Email: coppermaid@aol.com. Website: keswickminingmuseum.co.uk.

Alston Moor Historical Society

The Archives of the Alston Moor Historical Society will be open on Saturday, 30th September 10.00 pm - 12.30 am and 1.30 - 5.00 pm at Alston Town Hall. An essential visit for family history, house history, lead mining and local history in general.

Catalogues are available, price £1, from the Tourist Information Office, or from Alston Library, or by A5 SAE from Ashleigh House, Nenthead Road, Alston Cumbria, CA9 3SN, or on the Society's website www.alstonhistory.org.uk

Churchard Survey

Margaret Manchester is continuing her recording surveys of local churchyards and would welcome volunteers to assist - even an hour or two helps! If you know anyone who may be interested, please pass on these details.

Dates for Wolsingham Churchyard are:

Saturday 2nd September (Alec Manchester will be there at 10am, Margaret will be there from 2pm)

Wednesday 6th September (from 10am)

Sunday 10th September (from 10am)

Dates for Heathercleugh Churchyard at Cowshill are:

Tuesday 10th Spetember (from 10am)

Thursday 14th September (from 12.30pm)

Thursday 21st September (from 12.30pm)

Thursday 28th September (from 12.30pm)

Please email (mmanchester@btinternet.com) or phone (01388 731131) to let Margaret know if you can help.

The Friends of Killhope and North Pennines Heritage Trust present:

Recent Industrial Archaeological Research in the North Pennines

A day conference at St. John's Chapel, Town Hall: Saturday 30th September, 2006, 10.30am.

Programme and List of Speakers:

1030	Introductions
1045	Frank Giecco, North Pennines Archaeology Ltd: 'The Augill Smelt Mill'
1100	Dr Tom Gledhill, Independent professional archaeologist: 'Medieval Bloomery Smelting in the North Pennines'
1140	Break
1150	Chris Jones, North Pennines AONB: 'Heritage Policy in the AONB and proposed work at Warcop Range'
1210	Lunch break
1300	Matthew Town, North Pennines Archaeology Ltd: 'Recent work at Nenthead'
1340	Rob Young, Northumberland National Park: 'Roman Iron Working on Bollihope Common'
1420	Break
1430	Roger Morris, Independent Historian: ' Isaac Holden's Archaeological Legacy'
1520	Discussion led by Paul Mercer (NPHT) and Peter Jackson (NPHT): 'Underground archaeology'
1540	Review
1600	Close

Fee £10 (includes lunch and refreshments)

Book your place by the 22nd September (advise if vegetarian lunch option required), making cheques payable to "North Pennines Heritage Trust" and send to:
Paul Mercer, NPHT Education Service, Nenthead Mines Heritage Centre, Nenthead, CA9 3PD
For further information e-mail Paul at: education@npht.com or Telephone: 01434 382 037

FRIENDS OF KILLHOPE

Membership Renewal 2007 (due 1st January)

Name: .....

Post Code: .....

Enclosed cheque or standing order for £ ..... Family @ £15 Senior (over 60) @ £7.50

Individual @ £10 Student @ £7.50

Please delete inapplicable rates.

Cheques to be made payable to Friends of Killhope and sent with this form to the Membership Secretary, Russell Parkin, 50 Lydgate Lane, Wolsingham, BISHOP AUCKLAND, Co. Durham DL13 3LF

GIFT AID

The Gift Aid scheme is very flexible and covers any donation or subscription at any time. It will not cost you any extra and it does not commit you to making any future payments. All it takes for the Inland Revenue to return to us 28p for every pound you give us is your signature on a form such as that below. The 28p comes from tax which you have already paid and can continue to be claimed only as long as you continue to pay income tax. Accordingly you will see that the form also asks that you let us know if you stop paying tax.

GIFT AID DECLARATION

Please reclaim my tax. I want the Friends of Killhope to treat all donations I have made since 6 April 2000 and all donations I make from the date of this Declaration as Gift Aid Donations.
I will inform you if I cease to pay tax.

Signature: ..... Date: .....

Full Name: .....

Address: .....

..... Post Code: .....

STANDING ORDER MANDATE

To: ..... Bank plc

Address: .....

..... Post Code .....

Please pay HSBC Bank plc, Stanhope Branch DL13 2TY Code 40-43-06

For credit of Friends of Killhope Account No 11031015

The sum of £ ..... (amount in words) .....

Now and on 1st January thereafter and debit my account accordingly.

Signature: ..... Account No: .....

Date: .....