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The Newsletter of the Cumbria Amenity Trust Mining History Society

CAT meet, 'Inside The Old Man Slate' 3rd April 2016. Photo Mark Hatton

No. 123 **May 2016**

Cumbria Amenity Trust Mining History Society
Newsletter No 123, May 2016

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Editorial

For those of you who receive paper copy of the CATMHS newsletter, I want to apologise for some quality issues in the print of the last one. I have recently acquired a new printer that prints double sided, about five times faster than the old one, takes a full ream of paper and will print 9,000 pages on a set of ink cartridges. Usually I start by printing off a single copy which I then check carefully for layout, typos and picture quality. Then I print the rest of the copies in two batches, so that I can be sure of putting at least half together should I run out of ink or have a printer problem. On the last occasion I was so excited by the speed and ease of the new printer that I didn't do any of that, but just printed the whole lot off in one go, so I missed some glitches. I will be more careful in future.

Note: The cover pic was taken in December 2015, not 2016. The CAT website password was also incorrect, but we have decided not to publicise it in the Newsletter as quite a few copies go to libraries, other societies, etc. All members who have supplied an email address to the Membership Secretary should now have received the user name and password by email. If anyone who needs it has not received it, let me know and I will send it by whatever means is appropriate.

I have been asked to clarify my 'deadline' for copy, which is the cut-off date for all items/reports for inclusion in the next newsletter. I like to have the paper copies ready for posting by the first day of the month it is due. To achieve this I need to have finished printing about a week before, in order to put it together, stuff the envelopes, etc. It takes me about a week to print it, so the copy deadline is two weeks before the end of the month. In order to start printing, the page numbering and the contents page have to be done, so I need to have received and edited ALL the copy before I start to print any pages.

New Members:

Geoff Crackett from Bardon Mill, near Hexham. Geoff is a GP and is a member of Nenthead Mines CS

David Clayton, is an engineering geologist who lives in Hong Kong, but hopes to get involved when he visits Cumbria for a couple of weeks each year.

Stephen Sim from Cleator, who is a construction plant mechanic

Peter Jackson from Bishop Aukland. Peter is leader of Nenthead Mines Conservation Society and NAMHO secretary.

Charlie Fowler and Sue Lund from Ennerdale. Charlie is a Project Manager and was an explosives engineer.

Graham Derbyshire, from Penrith. Individual member of BCA

Michael Oddie, from Morecambe

Darrel Ainscough, from Poulton-le-Fylde

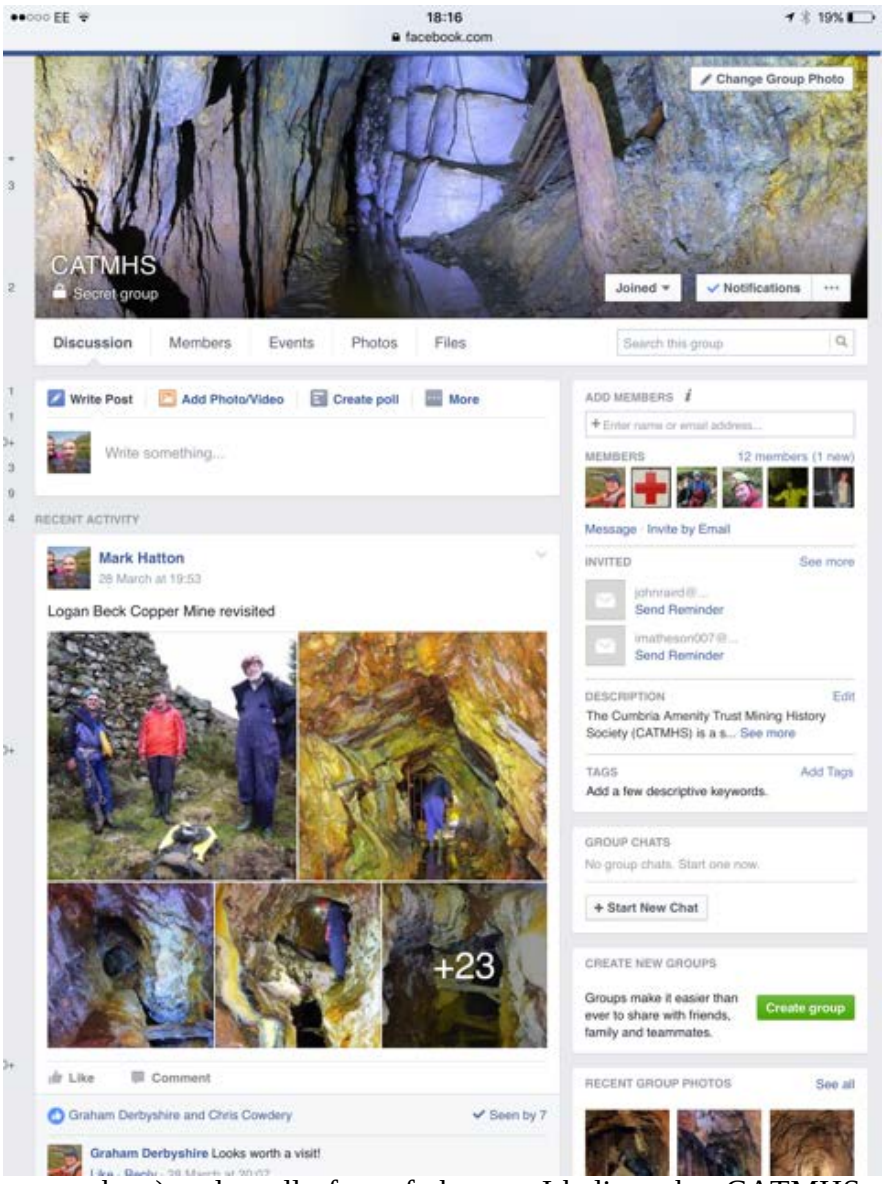
Julian Cruikshank, from Cockermouth

Change of date for Birkshead Mine Meet

There has been a change to the date for the Birkshead Mine meet. Because of operational commitments the mine Manager has given me two options and these are 3rd June and 10th of June, both being a Friday. I consulted with Tony Holland because he and Heb have booked places and the 10th would be the preferred option for them. I will confirm this date with the mine this morning. Places are limited to ten and it would be good if they could be filled by CATMHS members, though we have one non member so far. This is a lady who has lived in a house above the mine for 12 years now and has been in touch through the website and has always wanted to know what goes on beneath her.

John Brown

CATMHS on Facebook



A few years ago I thought Facebook was just something for teenagers to share pictures of which parties they went to. And for adults, it was a means of showing off where you went on holiday and sharing pictures of the kids with friends. But then various cycling clubs I am a member of started using Facebook Groups to communicate with members. They used it to arrange rides, discuss routes, seek and share advice and see pictures of where people had ridden their bikes. Quickly using Facebook became a means of making the bike club far more valuable to members and the club activities far more plentiful, accessible and enjoyable. And this was all possible in a Group which was only open to members (not visible to non members) and totally free of charge. I believe that CATMHS members could also use a Facebook Group to strengthen the organisation, increase the communication between members and help us all better achieve the aims of the organisation.

We have been experimenting with a Facebook Group for a few months now, with members being John Brown, Ian Matheson and Chris Cowdery. All were initially quite sceptical about the benefits (and feared hidden financial and social costs). But now I believe they all see that a Facebook Group which is only visible to CATMHS members is a fantastic tool for sharing information, arranging events and learning about Cumbria Mines and being inspired by the pictures members post there. If any other CATMHS members would like to access this experimental Facebook Group, please email mhatton304@aol.com and he will arrange access for you. If you don't like what you see there, you can very easily leave the group and, if the consensus is that CAT doesn't need such a group, we can very easily close it down. And remember, it costs nothing, it takes minimal amount of effort to administer and it is only visible to paid up CATMHS members.

Joseph Neale

This is some correspondence that has arisen through our web site:

To webmaster: Dear Sir,
I hope you don't mind me getting in touch with you.I am trying to find information regarding a distant relative who was in charge of mines in the 1880s. His name was Joseph Neale. .I have some of his work diaries and would be interested to know if there was someone I could get in touch with to help me with my search.
Yours faithfully, Hilary Cottle.

From Webmaster to Secretary: Could you possibly pass this on to Warren Allison who may be able to help?

From Warren
Hillary, Following your request for any information on your relative, do you know which mine(s) he worked at in the Lake District?

From HC
Thank you for replying. Joseph Neale was in charge of Rawhead and I think some other ones. I have several old diaries of his but they are difficult to decipher. I hope this is some help.
Yours Hilary Cottle

To Ian Matheson
Ian, Were the mines at Rawhead in Furness?

From IM
More likely to be Roan Head. If so Pete Sandbach is the best person to consult I will copy this correspondence to him. The contents of the diaries would be of interest to CAT and the Furness Adventurers

From Peter Sandbach: Hi Warren,
Found a Joseph Neale, mining engineer at Urswick:
http://www.archiveweb.cumbria.gov.uk/CalmView/Record.aspx?src=CalmView.Catalog&id=BDHJ%2f438%2f3%2f2
I have not heard the name in connection with Kennedys. There was a Rowhead near Pennington, not much mining there but some speculation and prospecting. The diaries themselves might help.

From Warren to HC: Hillary, Please see the response from Peter, would it be possible for him to look at the diaries as he knows quite a bit about mining in that area. Do you live near Cumbria? To be continued.

Family History and Elizabethan Mining
Received the following, forwarded from the CIHS. *If anyone has any information then please copy it to me. Ed.*

Dear Sir or Madam,
I am researching the Williamson family from Millbeck, Cumberland and came across a James Williamson in London who was "Factor of the Copper Mines in the North" in 1595. I believe that James was connected to the Williamsons of Keswick. I was wondering if there is any record of James in the history of the Mines Royal, and where I could find more information about him?

Krista Williamson
Phoenix, Arizona, USA. krista_w@mac.com

New website
Darkness Below UK. This appears to be a new venture and is very interesting, and is under the auspices of Peter Claughton. www.darknessbelow.co.uk

CATMHS ARCHIVE AGAIN – GOING, GOING, NEARLY GONE!
Following the relocation of the archive to the Armitt Museum and Library in Ambleside foreshadowed in the last edition of the NL, a number surplus of books and maps have been sold to members.

The full list of remaining available material (books and maps) is to be found on the CATMHS website in the "Members" area, members who have no online access may obtain details by contacting the Treasurer.

The intention is only to price items in which interest is expressed; pricing will aim to charge 2/3rds of the lowest available market offering plus P & P. (Please note that maps that are rolled rather than folded are expensive to post)

Approximately three weeks after this NL is published the material remaining will be offered on the open market to all comers.

NT open days at Force Crag Mine
Force Crag Mine has it all, history, engineering, geology, geography, archaeology you name it. The last mineral mine worked in the Lake District it was once a hive of industry, mining lead, zinc and barites for over 200 years. Production ceased in 1990 yet you could almost believe the miners had just left for the day as the complete processing plant still exists.

We offer a guided tour to explore the processing mill and surrounding remains, to get a feel for the harsh lives of the miners working away on the side of the fell. The tour takes about 1 hour, all tickets are £6 and we do provide transport up to the site. So, here are this year's dates to get into your diary:
Wednesday 6 April, Sunday 8 May, Sunday 12 June,
Sunday 7 August, Thursday 1 September

To find out more visit http://bit.ly/ForceCragMine call 017687 74649 or
email northlakes@nationaltrust.org.uk

Archaeology Volunteers Programme 2016
The programme for 2016 has recently been published It includes the following mining related projects:
Coniston Copper – Survey of Penny Rigg Mill – 3 weeks over late May/early June. Opportunity to survey a 19th century ore dressing and processing plant. Dates to be confirmed.
Rusland Horizons – Cunsey Forge project – 4 weeks over July/August. Opportunities to take part in Level 2 field survey, geophysical survey and small-scale excavation of a bloomery forge. Dates to be confirmed.
Booking contact: LDNPA Archaeology Volunteers Bookings, archvol@lakedistrict.gov.uk

Book Review
Slate Mining in the Lake District - An illustrated history, by Alastair Cameron.
96 pages and 100's of photos.

Alastair's new book takes a short but highly informative and colourful look at dozens of slate mines (or quarries if you prefer) across the whole of the National Park. To my mind the balance is just right between providing enough detail to help people understand the genius and effort of the men involved, and photos to appreciate the beauty of these places, whilst leaving readers keen to find out more from other sources and personal exploration. There are no maps and very few details of the accessible underground features. But this appears to be completely deliberate, focusing the readers' attention on just how beautiful and rich the surface features and history of these old working are.

Alastair provides glorious historical insights, with personal touches on the individual miners involved and he briefly explains the geology of the different coloured slate bands that flow across the Park. His admiration of the people who worked these mines and the part they played in the economy, community and history of the area shines through.

This book thoroughly deserves a place on the shelves of everyone who loves the Lakes and can see beyond the mountain tops to the history and labours of men who for centuries have made their living in this harsh but stunningly beautiful landscape. The only slightly odd thing I found was the order in which the quarries (mines) appear in the book. There doesn't appear to be a logic in the sequence. But that certainly doesn't detract from the pleasure of reading it. There are many other mines that could be added too, so if this book sells well I hope a volume 2 will be on the cards. Maybe a mineral mines version as well? A clue to this might lie in one of the final pages where Alastair pays homage to the CATMHS team who have toiled long and hard to successfully reopen the Horse Crag Level.

Great book Alastair, well done. Mark Hatton

Karabiner recall:
Black Diamond Equipment is recalling carabiners (solid, wire and screw-gate), quickdraws and nylon runners because of the possibility of product irregularities.
In a press release BD announced:

"In some carabiners, the gate rivets (in solid-gate carabiners) and wire ends (in wire-gate carabiners) attaching the gate to the carabiner body may not be properly manufactured, potentially resulting in the gate becoming detached.

"Additionally, in some screw-gate carabiners, the locking sleeve may not have been correctly assembled, resulting in a locking carabiner that does not lock properly.

"The recall related to the nylon runners is due to a small number found to contain a tape splice, resulting in a product that is not load bearing and will fail under standard use.

"No accidents have been reported; however, in the interest of customer safety, Black Diamond has decided to voluntarily issue a recall to ask users to inspect their equipment and return products that are in question to Black Diamond for a replacement.

"Please help us share this information and urge people to inspect their gear."

Products include carabiners in all colors, including those sold as individual carabiners, carabiners in quickdraws and quickdraw packs, and as part of harness, belay and rock protection packages.

And 18mm Nylon Runners in 60cm and 120cm lengths, produced with the manufacturing code tags 2014 and 2015. All colors are subject to this recall.

Mines Forum, 1st March, held at Coniston MRT base.
Present were Warren Allison, Ian Matheson, Mark Simpson, CATMHS, Peter Claughton, NAMHO, Eleanor Kingston, LDNPA, John Malley, National Trust, Mike Mitchell, COMRU, Elley Whitfield, Liz Withey, Peter Bardsey, Environment Agency, Alastair Cameron, Coniston History Group.

Updates:
Force Crag. John Malley reported that the official opening of the filtration plant by Rory Stuart, MP for Penrith & Borders, took place in October. The recent floods had not damaged the site but had scoured out the beck leaving it clear of sediment. This is an opportunity for a study to monitor future deposition, which is to be carried out by Alan Jarvis of Newcastle University.

Greenside Health and safety concerns regarding the tips are to be addressed before conservation plans are developed regarding the portal, the adjacent incline and recently exposed engine beds.

Tilberthwaite Work by CATMHS to finish clearing the in-by end of the level will resume after the A590 over Dunmail Raise has re-opened. Alastair Cameron's forthcoming book on Lakeland Quarries, which includes Penny Rigg, will be ready soon.

Threlkeld Work to consolidate and drain the Yellow Dam area has been finished. A report is awaited. It will still be necessary to deal with the mine water discharge, which contains an estimated 14 tons of zinc per annum!

Sandbeds The Volunteers survey of Sandbeds mine has nearly finished. The recent floods resulted in some loose gravel being deposited on the site. At the outset of the survey a UAV camera survey was carried out. It would be beneficial to repeat this for comparison purposes.

Flooding There has been some damage at Hartsop Hall Mine where the beck has diverted and undercut. Damage at Wythburn was reported in the February newsletter. Elley Whitfield expressed concern about Potts Gill. Scouring has occurred at Yewthwaite mine and at Bonsor spoil heap, at Coniston.

Heritage Lottery Grant at Coniston Coppermines
Eleanor Kingston reported that all landowner permissions have now been signed and she will now contact Heritage Lottery for permission to start work straight away. The grant is for £571,925, of which about £200,000 will be spent on conservation.

The site covers 57 hectares, and there will be three survey sites, Bonsor Low mill, Tilberthwaite mine and Penny Rigg mill. Based upon the Conservation Management Plans commissioned in 2010, all the works have been identified and costed. Ten sites/structures have been prioritised. In the main the task will be to clear overburden of spoil or scree, stabilise walls and divert water to prevent erosion. Some structures will have to be dismantled and rebuilt.

Work is expected to take place from April to October 2016 and 2017. There is a generous 25% contingency fund to deal with unexpected finds or contingencies.

Activities and Interpretation. There will be additions to the Ruskin Museum and information in the Coniston Youth Hostels. Three trails will be established, the first starting from the Coniston Institute, and some on-site interpretation will be provided. There will be collaboration with local outdoor centres and schools, and some mines events will take place in Coniston. There will be a Coniston Copper website. Courses will be arranged in stonewalling and lime mortar techniques. Guides will be trained to lead walks around the sites.

A Social history project will be based at the Institute, and it is hoped that information will be forthcoming from the local community. There will be links with local businesses, guest houses and B&B's. It is hoped that interest will carry on beyond the 2 year life of the project and that trained people will be available in future to carry out maintenance after the project has finished.

Environment Agency
Liz Withey reported on work carried out by the EA. A 12 month project to sample heavy metal pollution at Coniston is nearing completion. Monthly sampling has taken place at 10 sites between Levers Water and Coniston Water. Initial findings are that the highest pollution is emanating from the spoil heaps and mill sites and less from the water issuing from the mine itself. There was discussion as to how to treat water coming from the spoil heaps. It was thought that it would be best to prevent surface water from getting into the tips, perhaps by re-instating some of the original water leats.

AOB
Peter Claughton introduced a new NAMHO publication, 'The Archaeology of Mining and Quarrying in England', which has gone to print. Only 200 copies will be printed, but it will

be available for download from the NAMHO website. CATMHS will receive a hard copy.

Alastair Cameron suggested that a list of sites worthy of scheduling should be updated. Eleanor Kingston said it should be considered alongside the existing Mines Protection Programme. It was agreed to discuss the matter at the next meeting of the Mines Forum, scheduled for 12th July.

IM

Heritage Lottery Grant Application at Coniston Copper Mines

At the mines forum held on the 1st March, Eleanor Kingston announced that the final landowner had agreed to the terms of the grant for just under £500,000 and gave a presentation on the project. The Heritage Lottery Fund has confirmed that the project can start, which is on the 23rd May providing the A591 is open to allow the contractors to get to Coniston.

Eleanor said that this would be a two-year project which she would be managing, although a project co-ordinator would also be employed. Ten main structures had been identified such as the Penny Rigg Mill, Paddy End Dressing Floors, Thriddle Incline, Bonsor Dressing Floors etc. and there were some 150 discrete forms of repair. A detailed plan had been produced and there would be an archaeological watching brief while work was ongoing along with an ecological and geological survey. The work would be carried out between April and October and Eleanor had managed to get the contingency increased to 25%.

In addition to the conservation work there would be a lot of interpretation on the sites as well as adding to what is already in the Ruskin Museum and the Youth Hostels. At the moment there is very little in Coniston to indicate that copper mining was a major industry and the main reason for the development of the village and this would be addressed in conjunction with groups, people and the businesses in the area. There would be three trail leaflets produced which would suit all abilities, there would be family guides, events, mining weekends, working with the schools and a new Coniston copper web site which would be part of the LDNPA web site so it was kept updated.

The project would develop skills in dry stone walling and lime mortar so that maintenance could be carried on once the project had finished and there would be surveys carried out by volunteers at Tilberthwaite mine, Penny Rigg Mill and Bonsor Lower Mill, Training guides would be developed to improve the knowledge of the people who guide the public to the sites.

A social history project would be developed about the mining which would be based at the Institute in Coniston which would make use of old archives and hopefully new sources of material could be added.

UNSECO are visiting the Lake District in September and hopefully there will be a visit to the mines as mining was included in the World Heritage bid.

The Society should be extremely grateful to John Hodgson and Eleanor Kingston for all the hard work they have put into the HLF bid, not forgetting that the project originally started as

a bid under the Higher Level Stewardship scheme, which unfortunately failed as not all of the commoners would sign up to it.
Warren Allison.

Visit to Greenburn Mine, 8th March 2016, to assess storm-damage

On Tuesday 8th of March a small group met up at the Little Langdale Ford, parked up their cars and prepared to set off up to the Greenburn Mine. The group consisted of two members of CATMHS and two pollution specialists from the Environment Agency, all of whom had some concern over the possible effect Storm Desmond had had on the site and on pollution into the River Brathay. Previously I had been approached by Dorothy Wilkinson (Tilberthwaite Farm) who passed on a message from her husband Glenn who was concerned that there had been *'very heavy weather yon side of Long Crag'*. Elderly Joe Birkett, formerly of Little Langdale, had also passed on similar comments. It was good that they had taken the trouble to inform us.

Greenburn Mine is an extremely special site. It was included by CATMHS in their report **'Mining Sites within the Lake District National Park recommended for Protection'**. Those who drafted the report also noted that "*...this site is almost certainly the most complete mining and mineral processing site in the Lake District...*". And I'm now convinced they were right.

After a pleasant walk up from the Ford, most of the day was spent inspecting and photographing the buildings, wheelpits and the primary processing sites at Greenburn and up at the Pave York workings. In general there had been hardly any damage from the storm and little evidence of spoil or tailings being washed into the river. Jamie Lund, National Trust archaeologist, had provided us with photographs taken of the site in 2002 and also 2009. In 2002 the 'revetment' wall behind No 2 wheelpit had been rebuilt and the site below tidied up. This had allowed remains of the jigs, cranks and machinery which were used for separation and had lain underneath the collapses, to be displayed. Jamie's photographs show this clearly. Sadly by 2009 the wall had collapsed again and has remained so ever since.

Two types of ore were handled by the site. Chalcopyrite (a complex of copper and iron sulphides) was obtained from the underground workings at the Greenburn Mine which had been taken down to the 120 fathom level. The head of the engine shaft serving these workings is on the site. A pump rod, complete with eye, sticks out of the top. After primary processing the ore was sent away for smelting. The site also handled copper oxide ore, a form of cuprite, which was mined high above Greenburn at Pave York, on the shoulder of Wetherlam at about 1400ft altitude. Pave York was linked to Greenburn by a long inclined railway and ore was brought down this way. The route of the railway can still be followed. Cuprite can be processed by treatment with sulphuric acid and this is how the ore was handled at Greenburn. Remains of the tanks in which this took place are still at the site. Many years ago CATMHS carried out a survey of the Pave York surface and underground workings and the results are in the Trust's archives.

All who took part in the visit were relieved at the lack of damage and lack of evidence of contamination. It was also very clear to them that the comments made in the CATMHS report from many years ago about the site were still correct. There is huge potential for the site to be a landmark interpretation facility. Acid treatment of copper ores is now used on an enormous scale throughout the world and at Greenburn there are still good remains of one of the very first primitive facilities set up in the 19th century for this purpose – and it actually worked!

We are very grateful to Jamie Lund for information and copies of images of the site taken in 2002 and 2009 and to colleagues from the EA who readily helped in the investigation of the site.

A D Cameron.

Greenside mine meet 7th February 2016
Meet leader Warren Allison, and 20 members/guests.

Thanks to Mark Hatton's efforts through social media, this meet probably attracted the most number of people in a very long time. One of the other initiatives being taken to encourage people especially new members to attend meets is to provide a helmet and lamp. This is probably the biggest cost to someone who just wants to do a walk in and out and is probably a barrier to attending a meet, however one of the members has made available to the society a number of helmets/lamps for use at meets.

Gathering everyone at the Glenridding Information Centre before travelling up to the mine, it was quite sobering to see the devastation in the village from the recent storms and we were not seeing it when it was at its worst. We made our way to the mine, got everyone one kitted out and gave a brief overview of the history of the mine before descending on to the Lucy Tongue Level.

For most people this was either their first trip underground or into Greenside mine which is one of the world's most famous lead mines. I have a confession in that as my mother's family worked there for many years including my mum who worked in the office (she said it's the best job she ever had), I never get tired of visiting the mine or taking people in. As we walked along the level the method of driving it using hand drilled holes and gunpowder was explained. The timber in the roof which carried the bare electric cables for the first underground electric locomotive in a UK metal mine are still visible. Bad Uns drift where the surveyor got his directions wrong and cost the company around six months' work driving the level in the wrong direction was passed, photographs of the Stalactites approximately 600 yards in, which can actually be dated as being around 150 years old, were the subject of many photographs as were the stemple holes in a part of the Lucy Tongue vein where the roof had been supported and each stemple hole was made to fit the timber being put in.

We passed through the five digs that CATMHS undertook between 1992 and 1996 where the techniques used were explained, and also that without Pete Blezard, it would have never happened. Passing through High Arches where the level is stone arched, very reminiscent of the style used at Alston/Nenthead, we arrived at the vein some three-quarters of a mile from the entrance where the water from the mine rises from the flooded stope. Using copies of original plans the extent of the workings was explained which amazed those on the trip.

It was not long before we reached Smiths Shaft having gone through fall number six, which the Society had dug, where we stopped for lunch. Walking on further into the mine, we soon stopped at a side drive which had been hired out to companies to try their new rock drills as this was the closest point to the air compressors and was another revenue stream for the company. The number of holes drilled is quite some sight and many photographs were taken. We carried on and soon reached Hick's Sump before reaching the side drive which takes you to the 'blue lagoon' which is the flooded stope under the Lucy level. It was here many years ago that we put a dingy into the stope and tried to get along under the Lucy, but to no avail as the roof came down after about 20 yards. Reaching the bottom of the Alma Stope, the method of filling the mine tubs from the hoppers was explained, before retracing our steps, but first visiting the huge stope above Lucy near Hick's Sump, which as it had been raining for a few days was pouring with water.

One point to make was that as we walked up the level, you could tell that there had been a lot of water through the mine from the recent storms as the floor had been well and truly cleaned of any debris and some of the drain rods just inside the entrance used to keep the drainage pipes clear had been moved from a ledge four feet off the floor and dumped vertically in the level.

Eventually we arrived back at the cars having had a very enjoyable trip.

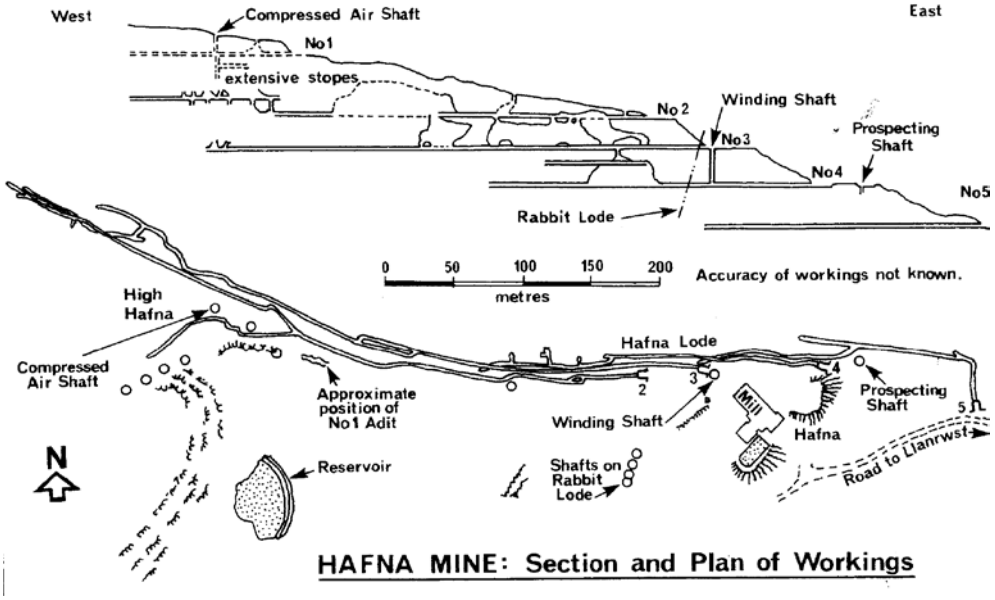
Warren Allison

Welsh Weekend 12/13th March.

Hafna and Parc 12th March

ML Jon Knowles John Aird Steve Brown Chris Cowdery Mark Hatton Ian Hebson Tony Holland Dave Tyson.

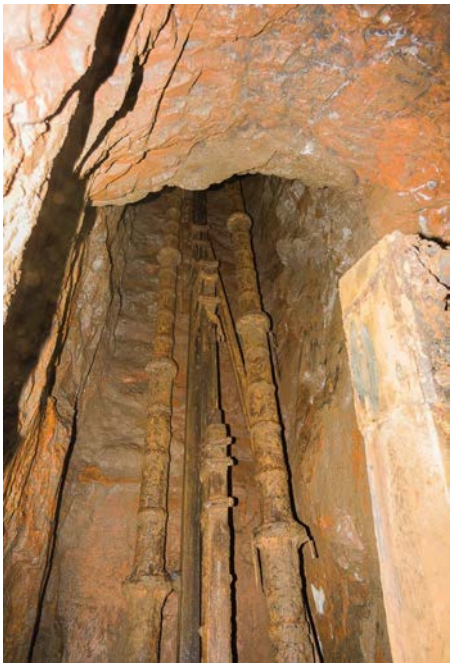
Having reconnoitred the Hafna site previously; the party divided into two once entry had been made into Level 3, after the short climb from the carpark. Messrs Knowles and Aird proceeded along the level to attempt bolting up in a location where there had been a ladderway up the stope. Chris Cowdery led the rest of the party down the shaft to the sub-level and then on down to Level 4.



HAFNA MINE: Section and Plan of Workings

The first task of the bolting team was to replace the traverse line in situ where the level floor was collapsing; this completed they moved on over the collapse, reluctantly descending onto the adit floor to commence work. It would have been good to have used the extra height gained by starting from the top of the collapse but the rock conditions, combined with the suspended "ratty" ladders meant this was unavailable. ML Knowles had "Hobsons Choice" in choosing a line of ascent; the rock being sound once the covering of fine white (and very wet) calcite was scraped off but was beneath a continuous dripping water source. This would have hardly been noticeable to someone walking along the level, but when suspended directly below it had a marked damping and cooling affect. Some nine bolts later (five had been placed for the traverse) combined with discovery that we had handed all the rest of the rope to the descent party; play was suspended and all but the top two hangers removed. This coincided with the return of the triumphant descent party who had observed the wheelbarrow, the tub and much underground timbering. Lunch was taken at the entrance to the level mouth, where some consideration was given to descending the winding shaft. After lunch it was decided to walk across the valley and enter Parc Mine No 2 level since three of the party had never been there. Parc is by far the largest of the Gwydyr Forest mines having been worked into the 1950's for lead and zinc with a modern froth floatation mill installed by Johannesburg Consolidated Investment Company. The walk along the considerable length of No 2 level allows a proper appreciation of the mining methods used to extract the ore and tram it to surface.

The real interest comes when the site of Llanrwst mine is reached and the lower workings are entered. A crawl leads to the ladders up to what can only be described as an amazing example of Victorian optimism (engineering it is definitely not). Endeans Shaft had been sunk from surface for 45 fathoms and equipped with a steam engine and pumps to raise water from shaft bottom up the 24 fathoms to adit level for discharge to surface. When the decision was made to deepen the mine by a further 12 fathoms instead of simply extending Endeans Shaft insanity dictated that an entirely separate underground shaft should be excavated from an adit 10 fathoms above Endeans Shaft bottom. Flat rods driven by an angle bob from the main pump rods transmitted motion along the adit to the underground shaft; regrettably the adit was not in line with the main shaft pump rods meaning that two angle bobs were needed to cope with the angular change, the tips of which were connected by chains. Even more unfortunately the underground shaft did not align with the other end of the adit and rods leading to the angle bob had to be fitted with a mechanism to adjust the angle. All of this machinery is pretty well intact in situ left just as it was when the mining company went into well-deserved liquidation.



Top Left: - Endeans Shaft Rising Mains and Pump Rods
Top Right: - One of the two Angle Bobs at Endeans Shaft remains of chain at tip
Bottom Left: - Angle Bob at top of Underground Shaft
Bottom Right: - Mechanism to adjust rod angle to Underground Shaft Angle Bob

A satisfied group then retired to surface and went off to adjust their stockings and makeup for a night out on the town in Porthmadog, where they were joined for an enjoyable evening by Mark Waite.

XxxxYyyz 13th March
ML Jon Knowles John Aird Steve Brown Chris Cowdery Mark Hatton Ian Hebson

Apart from disclosing that this was a most interesting and enjoyable day, no more may be said except that Mr Hebson gave a magnificent demonstration of free shaft descent using 3 iron pegs and two waist belts and then climbed back out, recovering the belts which were hung on the lowest peg!

References: -
"Mines of the Gwydyr Forest" Parts1, 2 and 3 John Bennet and Robert W Vernon

NB if you intend to visit any of the Gwydyr mines please go to *permits@caveaccess.co.uk* and follow the simple instructions, this will ensure that access for all is maintained.

John Aird

Inside Old Man Slate, 3rd April 2016
Sunday 3rd April saw 21 adventurous souls gather at the Walna Scar car parking area, ready for a day out on (and in) The Old Man of Coniston. The group included some long standing CAT members (Warren A, Alastair C and Peter S) plus a few newer members and a dozen or more potential new members. Today's tour had been advertised to people expressing an interest in old mine workings who we felt might become CAT members if this interest was encouraged. And the prospect of Alastair guiding and sharing his unparalleled knowledge of the history of and methods used in these workings, clearly made for a very attractive event.

After the normal paperwork and safety briefing, the group headed off along the Walna Scar Road then up the steep track towards Brossen Quarry. We then contoured around the hillside to reach Low Moss Head. Here the extent of the remaining surface features was revealed with many parts of the ariel flight scattered around the spoil heaps and fellside. We then plunged into the first huge closehead of the day and marvelled at the height and depth of this working.

The short climb up to Middle Moss Head brought us to even more surface features with extensive rail lines, buildings, compressed air pipes and slate carrying equipment, again scattered liberally across the fellside and down the enormous spoil heaps. The walk into the closehead here is even more interesting due to the scale of the various workings and the large winching machine lying by the rail line. And then the view up through the mountain to Spion Kop gave everyone a taste of what was to come.

The climb up to Upper Moss Head brought everyone to the deepest working, extending so far into the mountain that it surely must almost run all the way through to Cove. Everyone on the tour marvelled at the sheer scale of the work undertaken in here.

After lunch outside in bright sunshine, we made for Spion Kop. This working is always a favourite with the inclined rail line looking like something out of Raiders of the Lost Ark. And looking back down the massive void, all the way through to Middle Moss Head, left everyone in awe of this magnificent place.

We then set off on a leisurely descent down to Saddlestone, passing many further workings and ruins along the way. From the Saddlestone bank the view across to the Coppermines Valley and the Paddy End Mill gave us an opportunity to point out just how much this landscape has been worked by man.

We were all back at the cars by 4pm, weary and content and further enthused by the beauty of these workings and the brilliance of the men who toiled here.

Many thanks to Alastair for his excellent guiding and to Warren for keeping a careful eye on the group.

Mark Hatton.

Carrock mine meet 17th April 2016

Meet leader Warren Allison and 12 members (including one guest).

Meeting at the bridge over Brandy Gill, John Aird beckoned me over to point out that the hinges on the gate at the bottom of the mine road had been cut through, although this senseless act of vandalism hadn't allowed vehicle access as you could still not fully open the gate. The incident has been reported to Dalmain Estate.

Having gathered everyone up, including a number of new members, we walked up the road to the mine and soon reached the Canadian level first driven in the Second World War by Canadian sappers. Although it was the middle of April, it was a bitterly cold day, so we opted for going straight underground, although having first explained with photographs how CATMHS re-opened and rebuilt the entrance in 2011.

We soon reached the junction with the Harding vein running north-south where it was explained about the underground dam on the southern branch which was built during the last phase of mining in the 1980's to dispose of the slimes from the milling operation into the first world war workings, which were now slowly making their way through the drainage pipes and was the reason why there is now an eighteen-inch step at the entrance, as the slimes were settling out after it was pulled in.

It was decided to visit Smith's vein first, where John Aird disappeared to find where the lead vein crossed the Tungsten bearing vein at right angles. The rest of the group visited the southern drive before returning to the junction and slowly walked up the northern drive looking in every nook and cranny with plenty of photography taking place.

We eventually arrived at the end of Smith's vein where there are several veins visible in the forehead. I explained that on a previous trip when Richard Smith from the BGS was carrying out a geological survey of Smiths vein as part of the project to re-open the entrance, that he explained how the various veins were deposited at different times and how with a trained eye you could make out which ones came first and were later cut by other veins.

Reserve explosive store on the Harding

We retraced our steps back to the junction with the Harding vein and slowly walked up the level, again people visiting each part and photographing along the way. Eventually we reached the forehead where the ladderway from the upper workings comes down, along with most of the mine water. No-one went up the ladders as we did not have rope with us as the meet had been advertised as easy. People made their way to the junction which takes you to the Waterfall vein and this eventually enters the crosscut to the Emerson vein, although some four feet higher than the level floor, the surveyor has obviously got his calculations wrong. After visiting the Emerson crosscut, we made our way back to surface for lunch.

Hoppers on the Harding

Looking up the ladderway at the end of the Harding

In the afternoon we looked over the surface remains using maps and photographs, especially of the First World War mill, which was recently conserved using Higher Level Stewardship funding; the result has taken the site off Historic England's 'at risk register'.

Reaching the top level on Smiths vein, all visited the level and were in awe of the stoping which goes down the 150 feet to where they had been a few hours before.

Traversing across the fell, the surface workings on Emerson were visited before making our way back to the cars to finish off what had been a memorable day.

A thank you needs to go to John Aird and Mark Hatton for assisting with the meet as it made it much easier to manage, especially with all the questions being asked and photographs being taken.

Warren Allison.

Longarth Copper Mine near Ulpha

The narrow steep lane from Ulpha up to Old Hall Farm passes an area of copper mining which dates back to the 19th Century. The mine was known as Longarth Copper Mine and seems to have been worked from around 1868 to 1888. The remains of the mine now comprises an open shaft with associated surface infrastructure just off the South side of the lane, directly opposite a solid looking mine building, which is still standing to roof height. In the wooded area to the north of the lane are various other mine remains including several short wet levels, bridge abutments and much disturbed ground. Our aim on today's visit was to descend the shaft and explore the workings beneath.

Rigging the descent is very straight forward as a large tree stands close to the shaft above the relatively clean and solid south wall of the shaft.

Looking down the 45 feet to the sole of the shaft it appears to be somewhat cluttered with refuse. We had heard that this shaft was used for many years as the local waste disposal chute and reputedly this waste included animal carcasses and various other thoroughly unsavoury items. It was with some relief therefore to arrive at the bottom to find a very thick layer of dried leaves covering anything unpleasant, with no bad odours at all.

What we hadn't expected though was the steep climb down through very broken ground to reach the floor of the level itself. The hanging wall has clearly detached itself at this point leaving a nasty jagged edged rock infested slope to negotiate. But once down that climb you arrive in a beautiful dry level heading off to the South West. The level runs for upwards of 60 yards before forking.

The right fork runs another 60 yards before reaching a forehead which shows a 6 inch wide vein.

The left fork runs for 40 yards, before forking again. The forehead here is reached after another 60 yards. There is a fairly short stoped area with a 3 foot wide vein that seems to show the riches that the miners were after. We all puzzled why the vein had not been further exploited after all the miners work and expense to prove the vein.

We then returned to the base of the shaft and SRT'd back up to day, feeling very pleased with ourselves, as this mine had delivered everything we hoped it would, with well over 300 yards of explorable level.

A little research on the mine suggests that the reason the mine was not fully worked was that once the rich vein was discovered a dispute about royalties ensued. This dispute put a stop to further mining work and seems to have never been resolved. As a result a rich copper vein still awaits some adventurers here.

Mark Hatton

Carrock Mine- Some snippets of information

The history of the mine has been well documented, however there are still odd pieces of information which come to light from time to time. This happened during research for a presentation on the mine for the 2015 NAMHO conference held at Nenthead.

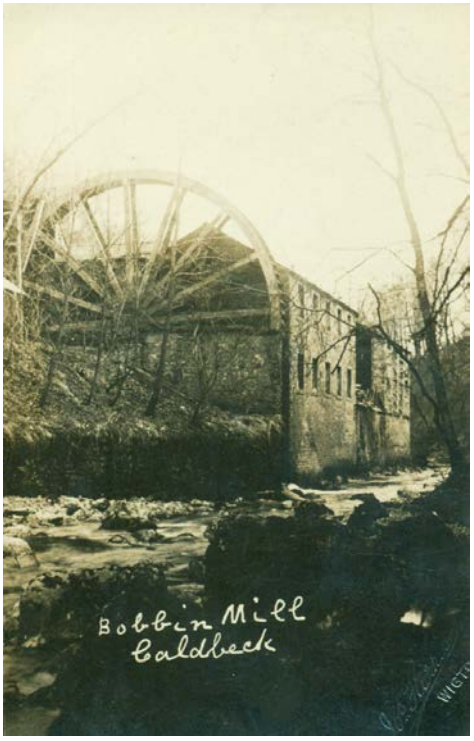
The mine is on land belonging to Dalemain Estate near Penrith and still owned by the Hasell-McCosh family. Sir Edward Hasell bought Dalemain in 1679 thanks to a legacy from his employer Lady Anne Clifford, who he had acted as her 'Chiefe Officer' until her death in 1676.

Lead mining

Carrock was originally a lead mine, when in 1853 Mr Frederick William Emerson started to work the east-west Lead vein which cut the north-south Tungsten bearing veins. He built a crushing mill which was driven by a large waterwheel adjacent to the office at the bottom of Brandy Gill, but by 1856 the mine was run down and the lease was offered for sale (Carrock and the Mines of Skiddaw and Blencathra, Tyler 2003, pages 22 – 23). W T Shaw in his book (Mining in the Lake Counties, 1970, page 49) said that the water wheel reputed to have worked the mill was dismantled and re-built at the Caldbeck Bobbin Mill.

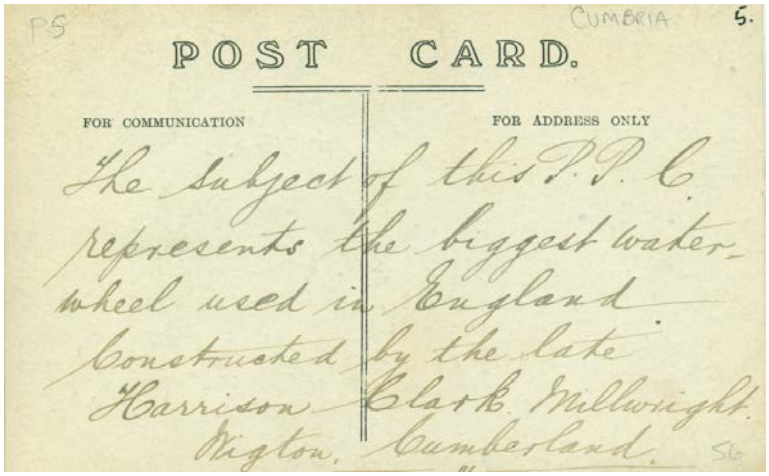
However, the following newspaper article from the Carlisle Journal, dated 25th July 1856, was passed to me by Graham Brookes which carried the following advert seeming to contradict Shaw.

"*For sale, waterwheel constructed by Scott, the eminent wheelwright of Keswick for Carrock Mine. Its Graceful movement alone was tested; it was never used. 40ft diameter ft. breast has brass movements, cast iron axle shrouding, etc. arms and buckets Memel timber other appendages wrought iron*". This also suggested that the mine had not produced any ore.



However, on the 27th July 1857, Mr Joseph Matthews, an accountant from Tavistock, Devon, and James Barrett, a mine agent of Holborn Hill, Broughton-in-Furness decided to take a one year take-note, but the venture did not last long. Surprisingly Mr Emmerson returned and in May 1859 took a new take-note with the estate and started to work the mine, but the date the mine actually closed is not clear, with production figures unknown (Carrock and the Mines of Skiddaw and Blencathra, Tyler 2003, pages 23 – 24).

I purchased this postcard of the large waterwheel at the Bobbin Mill at Caldbeck where it was known as Red Rover and on the back someone has written the millwrights name, Harrison Clarke, Millwright from Wigton. Perhaps WT Shaw was correct and the water wheel came from this second period of working by Mr Emmerson.

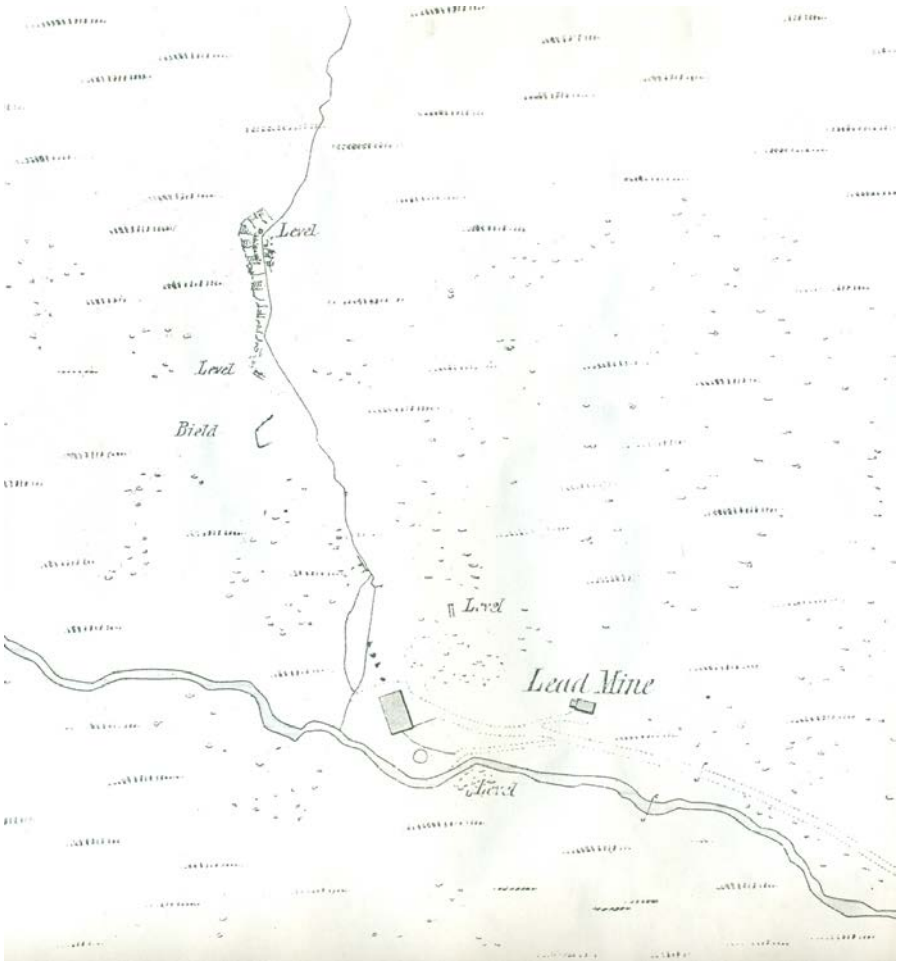

POST CARD.

FOR COMMUNICATION

FOR ADDRESS ONLY

The subject of this P. P. C. represents the biggest water-wheel used in England. Constructed by the late Harrison Clark Millwright. Wigton, Cumberland.

It would appear that the mine may have produced some ore as the first edition OS map (circa 1863) shows the site as a lead mine, and as well as a number of levels having been driven, there is a large building, a circular buddle and the bases for the launder carrying water to the waterwheel; some of the remains are still visible today.



William Graham
During recent research into the men from Patterdale Parish, approximately ten miles from Carrock Mine, who fought and died in the First World War, a William Graham who had worked at Greenside Lead Mine moved to work at Carrock Mine before the war, although he emigrated in 1910 to Canada, where he joined the 192nd (Crow's Nest Pass) Battalion Canadian Expeditionary Force in February 1916.

First World War and an article in the Autocar magazine
In 1913, the mine was re-opened by Anthony Wilson a well-respected mining engineer who had been involved in numerous mining ventures including Threlkeld and Thornthwaite Mines near Keswick, under a new company called the Carrock Syndicate. At this time a fabulous account of the mine in operation at this time is found in the Autocar magazine published on January 27th 1917, George D Abraham Author of the "Complete Mountaineer" "Motor Ways in Lakeland", etc. who wrote an article called "The workings in the Cumberland Mountains which form the only Pure Wolfram Mine in the United Kingdom"

The following are extracts from that article and apologies for the reproduction of the photographs:

"Your wolfram is wunderschon- more than wonderful- far better than all your Lakeland scenery!" Thus spake a stout matter-of-fact German speculator who, a few years before the outbreak of the war, came North to prospect the possibilities of the plumbago and wolfram mines in Cumberland.

The bulk of our wolfram comes from Burmah, but our English variety is the purest of all. It is unique in the fact that it is found in solid masses and is free from tin.

It is well known that a special combine of steel manufacturers has been formed to produce tungsten from the Wolfram ore. The need of high speed steel for our vast munition industries led to this important national step. The engrossing description in a recent article of The Autocar of this development roused the writer's interest and led to a visit to the most remarkable mine of the moment.

Through the courtesy of Mr Anthony Wilson, the managing director, the writer was invited to join in a run up to the mine, and in his 11.9 hp Humber drove to the mine for what proved to be an interesting and almost adventurous expedition.

The main site. Could the car belong George Abraham?

The sight of some grey dwellings on the verge of the wilds recalled an amusing story of the early days of the war. The heads of the nation had realised the vital importance of the wolfram supply and a young expert from the Geological Survey had come North to attempt the discovery of further supplies of the precious mineral.

It was the time when German spies were the popular craze and in an interview with the writer the expert told of his many strange adventures; for naturally his work was of a suspiciously secret nature. For some days he had been staying in the village and working and digging on a vein, as he thought, safely hidden from observation behind a high stone wall.

But the suspicious villagers saw all. The German spy, for such the foreigner had already been dubbed, had some murderous surprise in store! The visitor was certainly more than surprised when suddenly several sturdy Cumbrians jumped headlong upon him as he worked at the excavation in the shelter of the wall.

Explanations were useless. His plans and tools were taken and after being roughly handled the stranger was bundled into a local schoolroom for the night. Next morning the arrival of the police, who had been hastily summoned, eventually put matters to right.

Arriving at the mine the writer was welcomed by the manager who described the remarkable importance of wolfram at the present time. There is a tremendous and insatiable demand for tungsten steel in the numerous munition factories, but when peace returns the British product will give the home engineering industries a great advantage over all the world.

Mr Tuner, the mine manager, examining a piece of ore.

As an example of Germany's pressing need for tungsten and how she is striving to obtain it, the history of a very crude cargo of common olive oil is worth recording. The vessel was arrested by one of our warships and taken to a port for inspection. All seemed in order, but the peculiar thickness of the oil attracted attention and in the end was found to contain a consignment of tungsten held in suspension. Despite neutral remonstrances of innocence none of that olive oil reached Germany.

An inspection of the actual mine revealed much of practical interest. It stood alongside a small torrent which hurried down from the mountain, whilst huge rocky slopes strangely quartz-besprinkled rose a thousand feet high on each side of the valley. The peaks on each side of the valley were pieced by at least ten main quartz veins approximately each a yard wide which rose from base to summit and in some cases ran through the mountain into the next valley. In these stupendous veins the wolfram was found. Numerous levels have been driven into the solid quartz and each has its tiny railway running into the inner darkness. Aided by excellent acetylene lights which were in use, we walked comfortably in comparatively dry surroundings in to the heart of the mountain for two or three hundred feet.

It was a fascinating experience. Wonderful crystals and rare minerals glistened in the low narrow rocky walls, and now and again when the opening to the upper galleries were passed, the songs of the miners echoed strangely in the silent gloom. Superfluous clothing was

quickly discarded, for compared with the chilly outer air the warmth was remarkable. At the end of the level two miners were keeping the home fires burning tunefully, but the unexpected appearance of strangers put them out very suddenly.

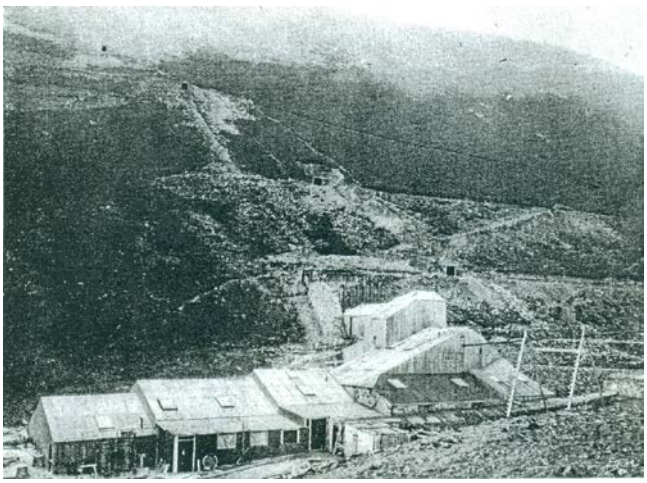
The mine from higher up Grainsgill Beck

It was entertaining to chat with two aged miners of life-long experience who had worked underground under a former regime. Their downright way of remarking "Thank goodness, there'll be nae mair Germans" was appreciated and echoed by everybody. They were evidently very well satisfied by the present conditions of work, although to an outsider of the party toil in the darksome depths of a mountain did not appeal.

The wonders of the beautiful quartz wall on which these men were at work were keenly inspected. The glistening black masses of wolfram were unmistakable, whilst the curious yellow silky gleam of scheelite which is also found in the quartz was noticeable.

Having departed to the outer air the tipping of the wolfram laden ore from the wagons into the jaws of the big crushing machinery was noticed, and in due course the buildings were inspected which contained the washing tables where the heavy wolfram is separated from the lighter matter. After noticing so much ore in the workings it is surprising to learn that the quartz yields scarcely more than 1.5% of the purest wolfram. Nevertheless, the authorities consider this a very remarkable and satisfactory result.

Then came the strange change from the throbbing uproar of machinery and stir of busy endeavour to the peace of the open mountain road. There is satisfaction in the knowledge of knowing that the nations cry for wolfram and more wolfram can be satisfied.



Mill showing the four entrances on Coombe Height

Development in the 1970's

In 1971, World-Wide Energy (U.K.), a wholly owned subsidiary of WECO Development Corporation of Denver, Colorado, U.S.A, purchased the mine and took a lease on 3,500 acres surrounding the mine. A mill was built and some limited underground development took place in 1972 before the company decided to withdraw and put the mill on stand-by in July 1972 having spent £166,000. The price of Wolfram had fallen from £38 per ton in 1970 to only £16 in 1972.

There was a further period of working from 1976 to October 1981, when it shut down again before being taken over by Minworth from Derbyshire, who purchased the mine in November 1982, but did not re-open it. Minworth were advised by the Planning Authority to 'either start mining or clear and landscape the site', and during 1988 the mill was removed, the entrances were sealed and the site was landscaped.

I took these photographs of the 1971 mill before the site was landscaped, but wished I had taken more, especially of the inside of the buildings.

Warren Allison

Primary crusher on the left, with the main processing plant behind

Looking down on the primary crusher

Landscaping in 1988 nearly complete

Greenside Mine- Discovery of possibly the earliest known reference
The date when mining first commenced at Greenside is unknown, but recent information may suggest a date earlier than previously suggested.

When trying to find information on the death of Joseph Wilson who died at the mine in 1848 a reference came up on the internet to a Robert Barker who worked as a mining engineer at Greenside in the mid 1750's. W T Shaw in his book 'Mining in the Lake Counties' suggested a working date of 1690, when he said the mine was in the hands of Dutch adventures, but the source of his information is unknown.

Samuel Murphy, who wrote 'Grey Gold', the definitive history of Greenside, records the first documentary evidence of work at the mine being in 1799, when it was being worked by Mr Thompson under a lease from the Duke of Norfolk. He goes on to write that a few years later at the beginning of the 19th century the mines were large enough to be recorded by William Green in his Guide to the Lakes, published in 1819, where he mentions the mines beside the road from Keswick to Patterdale, and that they had "*till lately worked by William Sheffield Esquire*".

Sam also records that the first documentary evidence for mining in Patterdale is in a lease dated 1696 for Hartsop Hall Mine, that in the Parish Records the death of a Margaret Vaizee a washer of lead ore on the 25th November 1713 is recorded. George Smedley a miner from Derbyshire is also recorded in the Parish Records of 1754 indicating the mines were attracting people from a great distance away. James Clarke's account in 'A survey of the Lakes of Cumberland, Westmorland and Lancashire', published in 1789, included a piece on the impact the miners had on the Parish, part of which is as follows: *"vice and poverty sit pictured in almost every countenance, and the rustic fireside is no longer the abode of peace and contentment. This lamentable change took place about thirty years ago: at that time some lead mines were wrought in the dale, and of course a number of miners were brought from different parts for that purpose. These fellows who are in general the most abandoned, wicked and profligate part of mankind, no sooner settled here, then they immediately began to propagate their vices amongst the innocent, unsuspecting inhabitants"*.

Sam subsequently mentions that these miners were being employed at Hartsop Hall mine and Eagle Crag mine, but could also have been working at Greenside mine.

The reference I came across was from a book titled 'Memorials of Sanquhar Kirkland', by Tom Wilson, and published in 1912 by Robert G. Mann, Dumfries and J. M. Laing, Sanquhar. The complete book is 297 pages, consisting of 264 pages of history and ending with the *Index to Graves* and *Appendix*, which are completely transcribed.

Many of the people listed worked in the lead mines at Wanlockhead and Leadhills, in Southern Scotland which the book refers to. The following reference to Robert Barker is *In Memory of Robert Barker, who died 16th June, 1793. Also Ann Barker, his wife, who died 23rd May, 1802*.

The four tombstones with the above inscriptions commemorate a family which did much to promote local industries, and the members of which were ever forward in all schemes for the welfare of the community, a trait that, happily, has descended to their offspring of the present day. The graves are at the foot of the slope on the south-west of the Kirk, and are neatly surrounded by a low stone wall with iron railings.

The only record of the advent of the Barkers to Sanquhar district is at the present time somewhat obscure, **but it is understood that Robert Barker, who was a native of Derbyshire, came in the**

exercise of his calling as a mining engineer to the Greenside Mine in Paterdale, in Westmoreland, sometime in the middle of the eighteenth century. There is a record extant that he was married in 1757 to Ann Dobson, a daughter of the proprietor of Grassethowe, in the parish of Barton, Westmoreland. At a subsequent period, he came to Leadhills to superintend the mines there. Ultimately Robert Barker tenanted some farms near Sanquhar, and also became lessee of the collieries, a position which he must have occupied at the time when Sir Walter Scott's Dandy Dinmont refers to "a' the colliers in Sanquhar" in *"Guy Mannering."* He was a member of Sanquhar Town Council from October 5th, 1774, till September 30th, 1776, and also from October 2nd, 1780, till September 29th, 1783; and he held the office of burgh treasurer from 5th October, 1789, up till the time of his death in 1793. Robert Barker possessed great energy and considerable culture and knowledge and literary taste, and left an extensive library of scientific and other works.

I looked up their marriage in the church records at Patterdale and it records that he married Ann Dobson on the 2nd December 1757.

From carrying out research into the Murray family, who moved down from Wanlockhead in the 1850's firstly to Keswick to work in the lead mines there before moving to Glenridding to work at Greenside Mine, and in the 1930's when the mines at Wanlockhead were closing down, families moved down to work at Greenside; there appears to be a great deal in common between the Wanlockhead/Leadhills area and Patterdale.

If Robert Barker was a mining engineer at Greenside, then this suggests that the mine was well established to have had the need of such a person, and is certainly now the earliest known documented reference, which appears not to have been reported before.

Warren Allison

Greenside Mine accident

A friend passed the following newspaper article from the Carlisle Pacquet dated 9th May 1848 relating to an accident at Greenside Mine, which I don't think has been mentioned before. It appears that even Sam Murphy missed it when he wrote the definitive history of the mine in 'Grey Gold'.

'An accident occurred at Greenside Mines on Wednesday last, which proved fatal to a steady industrious workman named Joseph Wilson. It appears that the deceased and three other men were at work sinking - two at the bottom and two at the top. Those at the bottom had occasion for a blast, and Wilson and his companion at the top had timely notice to get out of harm's way, which they accordingly did. It unfortunately happened that whilst they were thus waiting, another explosion at no great distance took place, which they mistook for their own blast and they forthwith repaired to the place in order to ascertain what extent of rock had been dislodged. Whilst looking down Wilson remarked that he thought very little execution had been done, but scarcely had he uttered the words when the charge exploded and a fragment of rock, which struck Wilson on the forehead, was thrown with such violence as to fracture it in a truly awful manner and occasioned his death within two hours afterwards. The unfortunate sufferer is about 30 years of age, and has left a wife and four small children to deplore his untimely end.'

I have looked at census, marriage, birth, death records and have been unable to find out any additional information on Joseph or his family, other than the 1851 census records that Elizabeth Wilson, aged 28 and a widow, was living at Close House, Glenridding with her daughter Mary aged 5 and six lodgers.

Warren Allison

Wythburn Mine

Following the visit with the Environment Agency on the 12th February 2016 to view the potential damage to the mine from the recent bad weather, I looked through photographs taken of the mine over a 30-year period which may be of use to the Agency to show how much the area around the mine, especially the beck, had changed during the flooding and had forgotten what we did there some 20 years or more ago, especially when access was gained into Arnisons level on the 2nd May 1992.

The mine is situated in Mines Gill on the Western side of Helvellyn overlooking Thirlmere and is well known for its spectacular 600-yard incline which took the ore from No 2 level to the crushing mill just above the main road. The levels at the mine consisted of Arnisons Top level, Arnisons, No1 level, No 2 level, No 3 level and No 4 level. It was Arnisons, No1 and No 2 levels which produced the lead ore and were all connected by shafts.

Arnisons level worked the Old vein and an east-west vein and is one of the most remarkable and spectacular levels I have been in for the number of artefacts left in place and what there is in a relatively short length of working.

The following photographs hopefully show what a special place this is:

Flooded sump with remains of a jackroll on the Old vein

Remains of a jackroll on the Old vein

Various drill steels near the flooded stope on the Old vein

Ladder rising to the stope on the Old vein

Remains of ladder in the stope on the Old vein

Crosscut from the Old vein to the East-West vein- Note the outline of the rails in the water

The next four photographs show the end tipping mine tub still on the rails on the east-west vein, which must have been taking ore from the stope to be tipped down the ore chute to No 1 level and onto No 2 level and be trammed outside to the incline.

The following photographs are taken in the main stope on the east-west vein

White mineral deposits

Remains of the iron work of a kibble, shovel, Hand-drill and lumps of galena

Remains of a gunpowder barrel buried in debris

Hammer head, device for hauling a kibble and other artefacts

Remains of shovels and a scraper

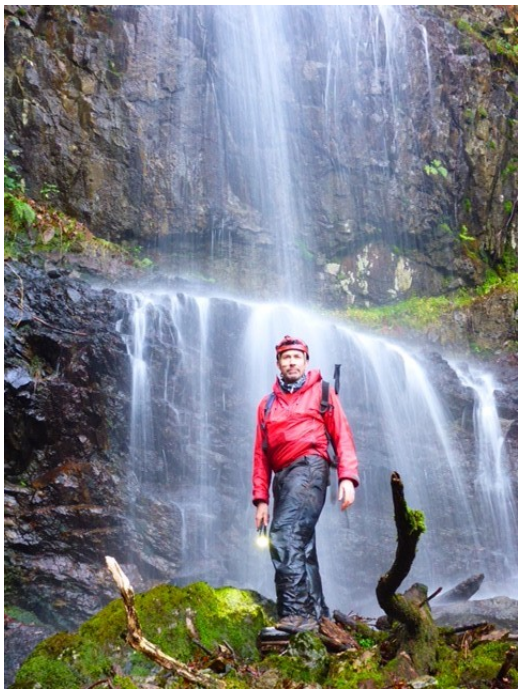
Remains of a can oil

This level would be worth re-visiting as we only spent a few hours exploring the workings and from a geological point of view it would be worth a proper survey being carried out, as the mine closed due to the Thirlmere Dam being built and so what is visible would give a unique insight into the mineralogy of the veins, as they were never completely worked out.

Warren Allison.

Coniston United Mine

Pull Beck is a small watercourse that runs from near the summit of Black Crag due east to reach Windermere at Pull Wyke. Along that watercourse a copper vein has been tried with at least 3 levels and a shaft working. The highest and most westerly trial is delightfully situated at the foot of a waterfall and up a steep sided Ghyll.



Just to the left of the base of the waterfall (as you look upstream) is the entrance to a short wet trial that runs for about 15 yards into the cliff face. No sign that this trial was productive though.

At the foot of the Ghyll and a bit further North is the site of a shaft working. Now completely filled in (following an incident in which the farmers horse plunged to an untimely death) the spoil flumes and trackway can still be seen just off the road to Skelwith Fold.

The second level is just off the byway that runs from Holmeshead Farm down to the road beside Brathay Quarry. Where this byway crosses Pull Beck is the mine managers cottage. The entrance to the level is well hidden, about 50 yards north of the cottage, just off the west of the byway.

The portal is now very tight and wet as an adjacent watercourse has tipped a lot of fine stoney material here. It would take a few hours work with a mattock and spade to lower dig a more comfortable entrance and lower the depth of water inside the level. From the entrance an attractive view of the level can be seen.

About 400 yards further downstream (and only 100 yards before the houses beside the B5286 road from Clappersgate to Hawkshead) lies the entrance to the third level. A heavily vegetated cutting gives the game away, although this could very easily be overlooked if you weren't expecting to find a level hereabouts. And it is a quite unlikely setting for a level, given the shallow slope of the hillside above. The cutting has collected a great deal of leaf litter over the years so it is very damp and spongy. But the entrance to the level is open and quite irresistible, despite a couple of feet of water for the first 30 yards or so.

The level runs into the shallow hillside for upwards of 100 yards, with no signs of mineralisation or stoping. An interesting feature of the level is a collection of glass bottles (identified mainly as porters from the second half of the 19th century) and metal containers. It would be nice to think these are the remains of a party held by the miners to mark the abandonment of the trial. However, it seems more likely that these bottles floated up into the level after they had been tipped into the cutting well over 100 years ago.

It would appear that the Coniston United shareholders certainly were the poorer for their investment in this set of workings. But their disappointment is now largely forgotten as are these rather obscure trials.

Mark Hatton.

From the CATMHS Archive

As I have gone through documents in the John Ruskin Museum Filing cabinet I have come across the one below. I have both scanned and also retyped to aid readability and clarity. Talking to Warren, he had not seen the A34 document so perhaps they would make an article for the newsletter. Others may not be aware of their content.

Colin Woolard

CATMHS A34, Letter copy, retyped by C Woollard, August 2015.

24 Gt. George Street,
Westminster S.W.
26th May 1865

To the Directors of the
Caldbeck Fell Consolidated Lead and Copper Mining Co. Ltd.

Gentlemen:

In obedience to the instructions contained in a letter from your Secretary dated April 27th 1865 that I should Report on the Company's property situated at Caldbeck Fells, Parish of Caldbeck in the County of Cumberland, and give my views as to the Mines, I have now to inform you that I have visited the property and inspected such parts of the workings as would enable me to form an opinion as to the most advisable mode of procedure. I have also gone over the surface so as to obtain an idea of the extent and boundaries of the Sets granted in the Leases which the Company have purchased.

Having perused the leases and description of the limits, I found that it was difficult to form a conception of the extent and the position of the present workings and such of the veins or lodes whose lines of direction could be generally traced out, and finding that there was no surface plan showing the boundaries, I deemed it advisable to obtain a copy of the ordinance Cadastral Plan of part of the Parish of Caldbeck, which is in a scale of 1/2500 or 25.344 inches to a Mile. On the streets of that plan I have drawn the boundaries of the ten sets as nearly as I could do from the description in the Leases and the general description given by the Mining Agent who has been manager of the Mine for the last 16 years, and also from the Mining Agent of the Lessor. But I may here remark that the points named in the Leases are in many cases of such a vague nature that it would be advisable, should a New Lease or Leases be granted, to have them, where doubtful, more definitely fixed by stones being erected or otherwise, unless there may be any difficulty in the case of Leases of other mines granted to other parties.

Having made these preliminary observations I shall now proceed to the consideration of the points brought before me in the interview that I have had with your Solicitors and Mr Foakes, under the following heads.

1st Upon the most advisable means to be adopted to develop the Mines under the ten Leases.

2nd Whether it would be advisable to accept a new Lease for 50 years, of the two sets already granted, and a more extended district on the payment of £4000 bonus and a reduction of the dues to 12th.

3rd What amount would fairly be due to the former workers of the mines for ores broken and lying on the ground outside of the mine on the 29th April 1865, and which could not be dressed in consequence of the severity of the frost in the winter stopping the machinery.

With regard to the first head, it may simplify the matter if I divide it under the separate grants or Leases of "Roughtengill Mine Sett" and "Drygill" and "Carrock End Mine Sett".

ROUGHTENGILL SET is limited by the Blue colour on the plan and extends in a nearly magnetic North East and South West direction on the course of the vein, a length, in round numbers of 1½ miles and an average width of ¾ of a mile. These are three principal veins namely, the "Silvergill", "Dobsons", and the "Roughtengill", having, underlying or dipping towards the north at the rate of 2 to 3 feet to the fathom. The two former have been cut through in the 90 fathom Adit level crosscut, which crosscut is 109 fathoms from the level mouth to where the main, or Roughtengill, vein was cut. The level has been extended westwards a distance of about 236 fathoms, at which point it has remained stationary for several years, the ground westward being of a more disturbed nature. The Roughtengill vein is generally considered to be composed of two parts, namely the North and South veins, but from my examination of the workings in the 30 fathom level (60fm above the 90) it appears to me to be a monster vein sometimes attaining a width of 36 feet, composed of Porphyrv, hard quartz, carbonate of lime, gossan and other substances, with irregular deposits of Carbonate of Phosphate of lead and sometimes a little Galena, or sulphuret of Lead and occasionally bunches of Copper ore of various kinds. The 60 fathom level crosscut (30 fathoms above the 90) is driven about 50 fathoms west of the 90 fathom level crosscut, it is in the East side of the Gill called Roughtengill. From the end of the crosscut the level has been driven (in the Roughtengill vein) westwards a distance of about 242 fathoms, about 40 fathoms of which is through disturbed ground that does not give great encouragement for

minerals, still as orey ground has been passed through and worked on a length of 100 fathoms and upwards towards the crosscut there are chances that the ground further west may turn out profitable, these being 450 fathoms more in length westwards to the West Boundary of the set.

The 30 fathom level crosscut is driven on the East side of the Roughtengill. The level has been driven in the vein westward up to and into the discovered ground about the same distance as the 60. The whole of the ground has been worked away in some parts of the vein nearly to the surface, but as the vein is wide, crosscuts made across the vein in places have been the means of recovering other deposits of ore, so that the vein is being worked in places, in two or three parallel runs of ore. The same may be said of the ground between the 30 and 60 and it is probable that crosscuts in the 90 may lay open other courses of the ore of a like kind between the 60 and 90. There appears to have been no waterings of the 30 and 60 towards the East and, as the points where the vein was cut in each were not accessible, I can form no opinion of them. The 90 fathom level has been driven eastward in very poor ground, a distance of probably 175 fathoms on the line of the vein to the East of the crosscut. The vein was cut into by the crosscut, but owing to the great quantity of water that then came out from the vein, the level was not driven in the vein for some distance westwards; the same on the east of the crosscut, so that the vein has not been seen for a distance of about 34 fathoms to the west of the 90 fathom level crosscut, and 60 fathoms in length to the east of the line of the same crosscut.

Towards the west a shallow day level has been driven to the Roughtengill vein, on the west side of one of the branches, of Grains or Thief Gill (the 60 fathom level is driven to a point nearly opposite this level) but no ore has been worked, the vein was driven into 9 or 10 feet and it is stated to have consisted of hard quartz and spar with spots of lead ore. A short distance to the east of where the end of the 90 fathom level East is supposed to be (there being no plan) a shallow level has been driven on the east side of "Blea Gill", from which a few tons of ore have been raised and dressed. On the Bunnon or heap there are several specimens of Phosphate of Lead, also some Galena or Sulphuret of Lead. The Mexico Level about 90 fms to the East of the last named level is driven on the East side of one of the branches of the Todd Gill; about 80 fathoms farther east in high ground a level has been driven and a little farther east (about 150 fathoms from the East Boundary) a shaft was sunk some years ago 5½ fathoms. All these last mentioned levels and feet produced Phosphate of Lead and it is expected at greater depth there will be ore worth working. For several years there have been no extension of levels, consequently the Reserves have been greatly diminished; in fact the mine has been worked on the principle of what is termed "picking the eyes out".

The **DRYGILL AND CARROCK END SET** is limited by the Yellow colour on the Plans and extends, in round numbers, in nearly a due East direction a distance of a little more than 2½ miles, the greatest width being 770 fathom (a little more than ¾ of a mile) and the narrowest width 275 fathoms (or a little more than ¼ of a mile). There is one main vein, called Drygill vein which is expected to extend the whole length of the set; there does not appear to have been any ores of consequence worked from this vein. There is a counter vein which runs towards the South west, out of the Drygill vein at a point about 500 fathoms (on the Drygill vein) east of the Western boundary. The Drygill vein will probably run through the North West corner of the Roughtengill set for a length of 400 fathoms and the Counter Lode or vein will probably pop into the Roughtengill set and intersect the Roughtengill vein somewhere near the Mexico level on the East side of one of the Branches of Grains or Todd

Gill. It was upon this counter vein (which I call Pattinson vein) that the late Hugh Lee Pattinson and others, a number of years ago, worked about 300 tons of ores of Arseniate and Phosphate of Lead, the workings from 3 to 4 shallow levels were of a very trifling nature and the burrows or waste heaps show that the ore has been much mixed with Mangenese. Should this lode prove of value it would be advisable to secure an additional area at the South East of the Roughtengill set by following the water shed over Great Lingy Hill to the Hare Stones or at least an area parallel with the vein westwards, from the Hare Stones. Under the present Lease there has been a shallow level crosscut driven on a North and South vein, from the North side of Drygill a distance of 49 fathoms to the Drygill vein, and continued on for some distance North of the Drygill vein. A level has been driven on the Drygill vein a distance of about 8 fathoms eastward, and westward about 55 fathoms, but no ore of consequence has been met with. There are some stones at the mouth of the level with sulphuret of Lead disseminated through the same. Another shallow level crosscut has lately been driven from the South side of Drygill a distance of about 4 fathoms to the Drygill vein, and the vein driven on for a short distance eastward, but no ore obtained. Another level was driven some time ago on the Drygill vein westward from a point where the vein crossed Drygill.

About 250 fathoms west of the Eastern Boundary of the Drygill and Carrock End Sett on the course of the vein and immediately beneath the great promontory of Carrock End, at a place called Black Dub, several shallow levels have been driven and a pit sunk to a depth of about 20 fathoms, the indications here bid fair for a course of Copper ore. Under the present Lease there appears to have been nothing done in this set beyond employing a few men to fulfil the simple conditions of the Lease.

FUTURE DEVELOPMENT

As regards Roughtengill set, seeing that no attempt has been made for some years to lay open new ground and the reserves having been greatly diminished, it will be advisable to crosscut northwards from the present western end of the 90 fathom level and likewise to crosscut in such other places as may be found advisable, the vein being of such magnitude and the ores so irregularly deposited, it will only be by cross cutting that discoveries will be made. The 60 and 30 should be immediately driven in westward and crosscuts put out at various points as indications occur. An intermediate level should be driven between the 90 and 60 in the unexplored ground, westward and eastward of the Rise which is about 105 fathoms west of the 90 fathom level crosscut. The vein should be tried in the 90 fathom level westward and eastward of the crosscut. The 90 fathom level East should be continued eastward from its present end, to get under the promising ground Eastward of Blea Gill and a shaft should be put down to the 90 East in Blea Gill for ventilation. A deeper level should be driven from Blea Gill, to command a fair depth at an economical crosscut, this point to be subject to the surface of the ground being levelled from the 90 fathom level. The Mexico level to be continued eastward below a point where a pit was sunk some years ago and contained ore at that time, if the indications are such as to give fair encouragement.

To fairly develop the property it will ultimately be found necessary to open out deeper levels. Ore is said to have gone done below the 90, the orey ground, so far as has been proved above the 60 and 30 fathom levels, appears to have commenced at about 105 fathoms west of the 90 fathom level crosscut and continued westward about 130 fms. To open out deeper will have to be by a shaft, which will be a very expensive process in consequence of the great quantity of water there is to contend with, the vein being soporous all the water coming out of the present 90 fathom level (about 300 to 400 gallons per minute) will most likely follow the vein down. The ground is so very uneven and rugged in surface that a shaft cannot be sunk in the

most convenient spot to get speedily at the orey ground on the west, there is a point on the surface, a little to the east of the line of the 90 fathom level crosscut which appears to be suitable one for sinking a shaft, so as to reach or cut the Roughtengill vein at about 70 or 80 fathoms deep below the 90 fathom level, but before the site is fixed upon it will be necessary to have a careful survey made and levels taken and also the average angle of the underlie of the vein taken. It would be advisable to sink the shaft at first to a point 20 fathoms below the 90 fathom adit level, then crosscut to the Roughtengill vein. The shaft on the site proposed will be nearly in the centre between the hitherto orey ground on the west and the expected orey ground on the East but to arrive at both grounds will require long and expensive levels to be driven, unless the vein below the 90 proves orey throughout. To sink a shaft and drive levels will necessarily be a work of time and it is a matter for consideration whether it would not be advisable to make use of the Hydraulic Engine now in the 60 fathom level at the engine shaft, by removing it to the 90 fathom level, and sink down by its aid on the underlie of the vein a distance equal to 20 fathoms perpendicular, in the orey ground said to have gone down before the 90.

In mining districts water power is the most economical, where it can be employed for pumping and winding, but water power would require ponds to be made to hoard up a supply to meet all contingencies. From the information I have been able to obtain, it is very doubtful whether a sufficient supply of water could be obtained for the purpose. In the summer the supply is scant and in the winter the frosts are so severe they frequently stop all operations. It will therefore, in the case of a shaft, be necessary to employ Steam power for pumping and drawing, the expense of which and sinking a shaft to 20 fathoms below the 90 fathom adit level be probably be between £7000 and £8000, but before going to such a great expense I think it would be advisable to further prove the ground east and west by the several levels and also prove the ground between the 90 and 60 East of the Rise 105 fathoms West of the crosscut. The washing floors and apparatus are of a very imperfect construction and will require great alterations to enable the ores to be dressed in a much more economical and effective and rapid manner than has hitherto been the case and the ponds will have to be enlarged, but these will be matters to be arranged as convenient opportunities occur and as the produce increases. It would be inadvisable to go immediately into such expenditure until it is seen that ores can be raised in greater quantities. In 13 years from 1852 to 1864 inclusive there has been sold from the mine 4604 tons of dressed lead ores and 263½ tons of Copper giving an annual average of 354 tons of Lead ore and about 20 tons of Copper Ore. In the two years 1863-4 the annual average has been in round numbers 450 tons of Lead and 30 tons of Copper Ore, but it has been done by robbing the mine and not opening any new work. I think the produce of this mine should, if possible, be raised to at least three times the amount average of 13 years to enable a small interest to be paid and allow for redemption of Capital.

DEVELOPMENT OF DRYGILL AND CARROCK END SET

Unless it should be determined to call up the whole of the capital of £60,000 I do not think it would be advisable at present to go to any great expense in developing this set, the most important and promising part of the lode is that where the shaft has been sunk near Black Dub at the Eastern part of the set. At first I should recommend that a few pairs of men should be kept exploring, some at the Westward levels now being operated on and some in driving the level near the pit at Black Dub, on the lode Westward, or say £1000 might be expended in erecting a water wheel and the necessary apparatus and making water courses to open out the pit at Black Dub and make some further exploration there.

I now come to the Second head of my instructions, viz as to "whether it would be advisable to accept a new lease for 50 years etc."

I am decidedly of opinion that it would be inadvisable to entertain the proposition, there being plenty of territory for the Company to work upon in the ten sets without being hampered with other grounds and the uncertainty of subleasing them to advantage. Besides I have not been able to ascertain any further district that can be available. To the north of the two sets Redgill, Haygill and Driggith sets are already under Lease and on the south the Drygill set is bounded by property which appears not to belong to the Lessors and I have no doubt if the Company work fairly vigorously, there will be no fear of a new Lease being withheld.

Third: "As to the value of the ores on the ground outside of the mine, belonging to Mr Lustin, on the 29th of April 1865".
In consequence of some of the ores having been dressed since the 29th I had not an opportunity of seeing the whole on the ground, but from the best information I could obtain, it appears that a large amount of ores had accumulated owing to the severity of the frost, during the winter, preventing the same being washed and dressed up in the usual way. The value of these ores I estimated at £610 without reckoning any profit which Mr Lustin is fairly entitled to, and the amount I consider should be paid by the vendors, Messrs Rivotta & Green. The Company's purchase includes all the "Plant, fixtures, machinery, horses, carts and materials and all the broken ores on or about the said mine and smelting mill". The amount to be paid to the vendors is greatly above any fair or reasonable amount for the privileges to be derived and I strongly protest against the Company paying for the said ores unless the vendors agree to allow the same out of the amount of purchase money to be paid to them. Mr Lustin Junr laid before me a claim for what he calls Stores at Roughtengill amounting to £153 : 18 : 2 and at Drygill amounting to £ 18 : 0 : 6.
Total £ 171 : 18 : 8

The items were composed of candles, powder, timber, steel etc. etc., and some articles that had been ordered but never delivered. The whole of the items came under the head of materials which were necessary to be on the spot for the working of the mine, that is the fair usual stock of the said materials, and they belong to the Company under their purchase. The quantity of candles, owing to a certain circumstance was in excess of the usual stock, such excess amounting to about £10 : 10 : -. And another item or two to be ascertained by Capn Vereve, I consider should be paid by the Company, and the vendors should, in my opinion, under the circumstances of the sale from Lustin to Rivotta and Green (who virtually never worked the mine), be paid by them as vendors to the Company.

In conclusion I would beg to remark there is no plan and section, but one which appears to represent but imperfectly, the extent and nature of the workings and that, in consequence of the many counter lodes and the workings in the Roughtengill vein being in several parallel courses and bunches, in order to form an opinion of the best mode of directing the works, it is highly advisable that plans and section of all workings, should be made as correctly as possible and that as far as possible all wheels and water courses connected with the works and washing floors should be covered in and sheds be erected over the several buddles and washing apparatus to shelter the workers from the frosts, snow, rain and heat.

One important point relative to Roughtengill lease I think should be modified either by endorsement on the lease or in a new lease should it be obtained. In the lease as it is, 16 men

are to be employed in exploring and to be specially employed at arbitrary points. I see no objection to the 16 men being employed, but I think it should be left to the Manager to exercise his judgement in employing them at the most judicious points he thinks proper.

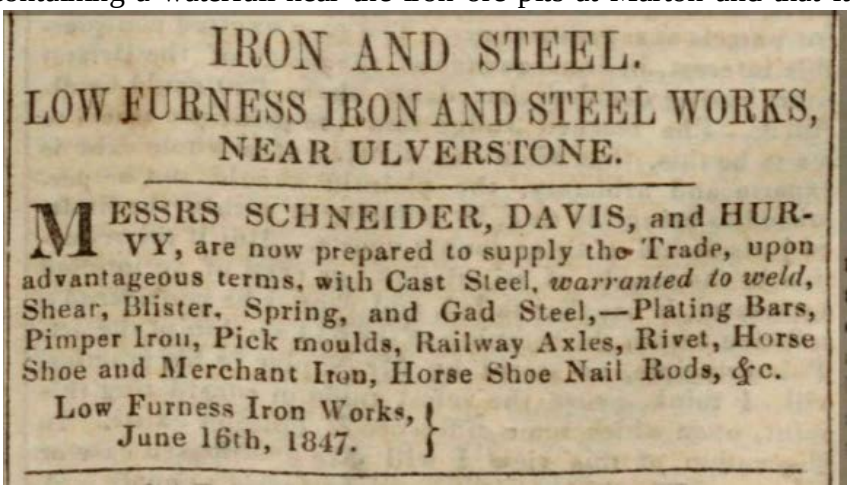
I am, Gentlemen

Your Obedient Servant,

(Sgd) MARCUS W. F. SCOTT.

The Low Furness Iron & Steel Co

Poaka ironworks was just below the present Poaka reservoir. Oregrave mill was just below Holms Green Farm. It was announced in February 1844 that the Low Furness iron Company had bought a 7 acre field containing a waterfall near the iron ore pits at Marton and that it would be used for smelting iron by means of Mr Clay's patent. Oregrave mill was much older. The land to build a corn mill was given by Roger Oregrave to the Abbot of Furness Abbey about 1234 and it remained a working corn mill until 11 October 1845, when it was leased to H W Schneider, James Davis and Edward Hurry and rebuilt as a rolling mill.



IRON AND STEEL.

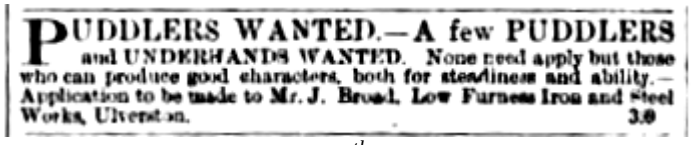
LOW FURNESS IRON AND STEEL WORKS, NEAR ULVERSTONE.

MESSRS SCHNEIDER, DAVIS, and HURVY, are now prepared to supply the Trade, upon advantageous terms, with Cast Steel, *warranted to weld*, Shear, Blister, Spring, and Gad Steel,—Plating Bars, Pimper Iron, Pick moulds, Railway Axles, Rivet, Horse Shoe and Merchant Iron, Horse Shoe Nail Rods, &c.

Low Furness Iron Works,
June 16th, 1847.

Kendal Mercury

The site was bought by the company from the executors of John Slater in April 1851 for £1200. Hurry and Schneider had left the partnership by then.



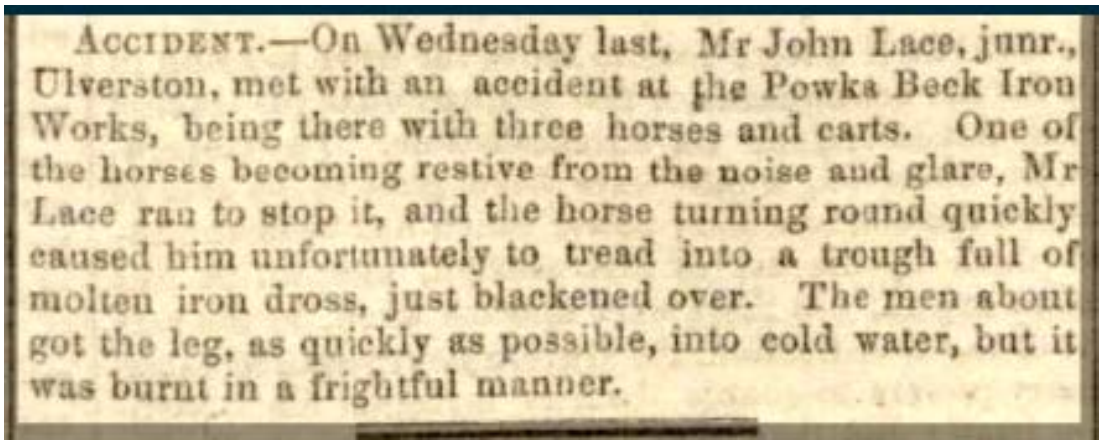
PUDDLERS WANTED.—A few PUDDLERS and UNDERHANDS WANTED. None need apply but those who can produce good characters, both for steadiness and ability.—Application to be made to Mr. J. Broad, Low Furness Iron and Steel Works, Ulverston. 3.0

Birmingham Daily Post, 15th August 1859

The company advertised for skilled puddlers in the Birmingham Daily Post but the ironworkers seem to have been an undisciplined lot. In April 1845 Thomas Brockelbank and Robert Tomlinson were summonsed for leaving their work without giving a month's notice and two months later in what was described as a dreadful outrage, a waller passing the works at midnight received a savage beating. On 14 June the Kendal Mercury reported "should the parties be apprehended, such a wanton and murderous assault will be visited with the utmost rigour of the law, and not with the usual fine, which, with the class of men brought into the neighbourhood by the railway and ironworks, has no effect at all." The same article goes on to say that Hart, Worthington and Colton had since been apprehended and fined £5 each.

Clay's patent may have been a variation of the puddling process whereby pig iron was melted in a reverberatory furnace (ie not in direct contact with the fuel) and stirred to reduce the carbon content. The usual product was wrought iron, but a skilled worker could produce steel by stopping the process while some carbon was still present. The work of the puddler was described in Griffith's Guide to the Iron Trade: "Some think the collier and the miner have a trying and a severe physical task in the bowels of the earth. This may be so; we are of the opinion, however, that the physical power and endurance exercised by the puddler to make a "heat" of good iron is greater, and taxes the muscle and strength of the operator to a much greater extent than the shingler, the roller, collier or any other workman engaged in the

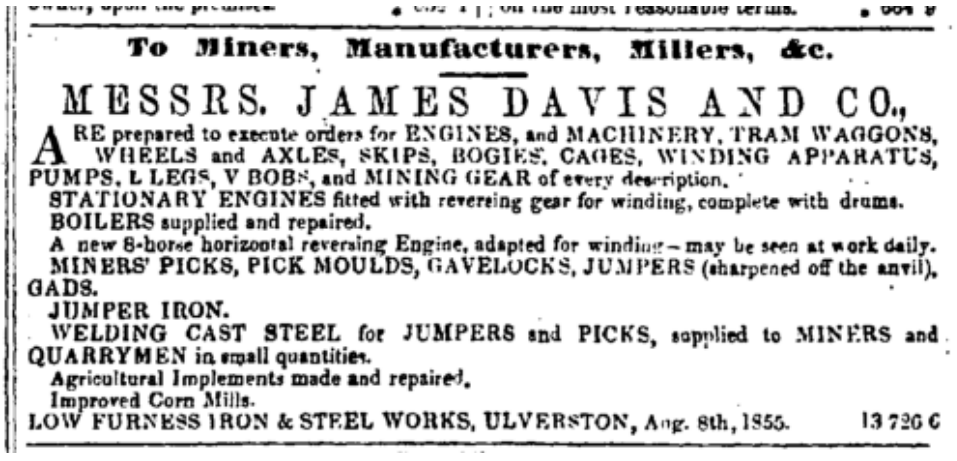
coal and iron trades.....for three quarters of an hour the puddler has to face the molten metal, continually agitating the same in consecutive order over this boiling sea of metal and silica, which is so bright with the high state of calorific fluidity necessary for the successful process, and the workman being within a yard of the stopper-hole of the furnace, that and the meridian sun-like glare of the metal upon the eyes are almost overpowering..... His final operation is to take the "heat" in four, five or six pieces, called "balls", previously formed in the furnace, to the hammer, where the iron is compressed and consolidated by heavy blows, which at the same time drive the dross or cinder out of it, and in this way it is prepared for the rolls."



ACCIDENT.—On Wednesday last, Mr John Lace, junr., Ulverston, met with an accident at the Powka Beck Iron Works, being there with three horses and carts. One of the horses becoming restive from the noise and glare, Mr Lace ran to stop it, and the horse turning round quickly caused him unfortunately to tread into a trough full of molten iron dross, just blackened over. The men about got the leg, as quickly as possible, into cold water, but it was burnt in a frightful manner.

Kendal Mercury, 10th Feb 1849

A voucher book of 1857 indicates that the most frequent expenses were coal, freight on coal and Scotch pig iron. It was dangerous work. A boy was killed in the spindles of the rolling mill in 1848. Then in 1849 a carter trying to calm one of his horses stepped onto slag which was not yet solidified. He died from his burns five weeks later. Another accident occurred in 1858 when William Newby, a 21 year old turner at the rolling mill missed the red hot bar with his grippers and it caught him about the leg causing serious burns.



To Miners, Manufacturers, Millers, &c.

MESSRS. JAMES DAVIS AND CO.,

ARE prepared to execute orders for ENGINES, and MACHINERY, TRAM WAGGONS, WHEELS and AXLES, SKIPS, BOGIES, CAGES, WINDING APPARATUS, PUMPS, L LEGS, V BOBS, and MINING GEAR of every description.

STATIONARY ENGINES fitted with revereing gear for winding, complete with drums.

BOILERS supplied and repaired.

A new 8-horse horizontal reversing Engine, adapted for winding – may be seen at work daily.

MINERS' PICKS, PICK MOULDS, GAVELOCKS, JUMPERS (sharpened off the anvil), GADS.

JUMPER IRON.

WELDING CAST STEEL for JUMPERS and PICKS, supplied to MINERS and QUARRYMEN in small quantities.

Agricultural Implements made and repaired,

Improved Corn Mills.

LOW FURNESS IRON & STEEL WORKS, ULVERSTON, Aug. 8th, 1855. 13 726 C

In September 1850 James Davis sought to consolidate his works on a single site and applied to lease 12 acres beside the Ulverston canal. Advertisements for mining gear made at the new site begin in 1855 *Soulbys Ulverston Advertiser* but the firm was still in difficulties and converted to a limited company in 1857. James Davis was still managing director and the chairman was the shipbuilder and ship owner, E J Schollick. The new company advertised rivets and iron and brass castings. Six thousand £10 shares were offered which promised a dividend of 12 ½ %. The company was barely 10 months old when an exciting extraordinary general meeting, was recorded in the Lancaster Gazette.

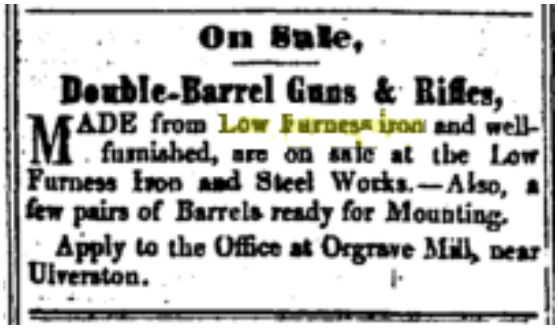
EXTRAORDINARY MEETING AT ULVERSTON. — On Tuesday week a meeting of the shareholders of the Low Furness Iron and Steel Company, was held in the Victoria Concert Hall, Ulverston, and in consequence of some rumours having been circulated prejudicial to the company, the attendance was very numerous. Mr. Schollick, of Aldingham, presided. The secretary read the report of the directors, and a statement of the accounts. The chairman refused to move the adoption of the report because some statement which he understood to have been made at some meeting was not in the report. Mr. Hewett, of Sheffield, rebutted the assertion made by the chairman and defended the directors. He denied that Mr. Schollick's view could be supported in any way whatever. He called upon Mr. Schollick to defend his assertion, and moved the adoption of the report. The chairman refused to give any explanation, and expressed his regret that many of the shareholders had not paid up their calls. He said he only felt it right to make the remarks. After some discussion the report was passed with the dissentients. The chairman moved that the London branch of the office be abolished, as he considered it entailed an unnecessary expence on the company. Mr. J. H. Burrow, of Ulverston, seconded the proposition, which was at once agreed to. Mr. Johnson, of the Ulverston and Lancaster Railway Company, and Mr. Sandbach, were appointed auditors, the solicitor to the company stating that the act made it imperative. The chairman then tendered his resignation as chairman of the board of directors and stated that he had never a good night sleep since he became connected with the company. Mr. Hewett expressed the confidence he had in the directory, and some smart sparring took place between this gentleman and Mr. Schollick, each gentleman twitting the other with the amount reserved for expences, a long discussion then took place as to who should be directors, several parties being named, and Dr. Beardsley, Messrs. J. Jackson, T. Jackson, J. W. Barrow, and E. Davis, all of Ulverston, and Allot, of Sheffield, were elected, with power to add to their number. During the selection a deal of "cross firing" took place between Mr. Hewett and the chairman, both gentlemen being named as directors, and each saying that if the other stood, a poll would be demanded; but on Mr. Hewett's partner, Mr. Allot, being chosen he withdrew his opposition to Mr. Schollick. This gentleman, however, said he would not stand at any price, for besides some of the gentlemen appointed he would not waste his own name. The secretary and the chairman had also a small "fight," but the words could not be exactly caught. The last words were "and you have plenty of brass in your face, &c." Mr. Davis was elected managing director, and was highly complimented by some of the shareholders. A vote of thanks to the chairman was passed, and the chairman having replied, shook hands with Mr. Hewett, and the meeting separated, the proceedings having occupied three hours and a quarter. Abridged from the *Preston Guardian*.

Lancaster Gazette - Saturday 16 January 1858

Petty & Postlethwaite were bankers, shipbuilders, shipowners and wine merchants. In 1846, according to the Kendal Mercury, they built the Augusta, a schooner of 101 tons "for Messrs Schneider & Co of the Low Furness Iron Works". She was named for Mrs W Schneider, but H W Schneider held no shares. James Davis had 27/64ths, the remainder were held by the builders and a London sharebroker. In 1860 they were pursuing the Low Furness Company over an unpaid debt of £1200, possibly the mortgage on Oregrave Mill. The company was voluntarily wound up in 1861.

About 1862 somebody drew up a list of mills on Poaka Beck in preparation for the Dalton Gas and Water Bill and the construction of Poaka Beck reservoir. These were:

1. Powka ironworks at Bridge End, Marton
2. Thrashing machine driven by a waterwheel at Scalebank
3. Oregrave ironworks Nr Dalton
4. Iron ore washing machine and other machinery, property of Joseph Rawlinson
5. Tan yard at Yarlwell, Dalton
6. Corn mill called Little mill Nr Dalton
7. Thrashing machine and other machinery at Parkhouse Nr Dalton
8. Corn mill called Roose Mill Nr Barrow in Furness.


On Sale,

Double-Barrel Guns & Rifles,

MADE from Low Furness iron and well-furnished, are on sale at the Low Furness Iron and Steel Works.—Also, a few pairs of Barrels ready for Mounting.

Apply to the Office at Orgrave Mill, near Ulverston.

Soulbys Ulverston Advertiser, 8th August 1850

The ironworks at Poaka and Oregrave were both owned by Petty and Postlethwaite at this time and Poaka was "nothing but a waterwheel, the buildings having been removed or fallen down". The contents of the canal side works were bought in 1866 by Mr Woodall of Dudley and then auctioned.

Although pig iron from Furness was sent to the Midlands for puddling and Whittriggs ore was valued for fettling the furnaces, James Davis's works is the only instance of puddling furnaces in Furness and it existed in the interval between the closure of Spark Bridge finery forge in 1848 and the start of Bessemer steel making at Barrow in 1865.

Acknowledgement
With thanks to Jonathan Wignall for information.

References

Purchase of Oregrave Mill, BDKF 117/2/2
Voucher book, 1857 to 8, BDX 209/7/2/1/1
Lease of Canal side site, 1850 BDKF 124/17/1
Lancaster shiping registers on microfilm
List of mills c.1862 BDKF 379/18/6

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