

CAT

The Newsletter of the Cumbria Amenity Trust
Mining History Society



Coniston Coppermines valley and Warsops smelter, circa 1894.

No. 117

November 2014

Cumbria Amenity Trust Mining History Society

Newsletter No 117, November 2014.

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Society Officers and Committee Members

Back cover

Membership

We welcome three new members:

Mark Willey, who is manager of Coniston Holly How Youth Hostel, at Far End.

As well as kayaking and sailing he has a special interest in the Coniston Copper Mines. His days off tend to be midweek!

Mark Hatton, from Newcastle, who is based in Ambleside at weekends. He has some underground experience and has recently become interested in the history and archaeology of the mine workings in Cumbria.

Mike Gibson, from Seascale, in Cumbria

AGM & Dinner

With this Newsletter you should find enclosed a reminder about the CATMHS AGM and Dinner on Saturday 13th December at Rydal Hall. It is always a good event. Please make an effort to come and join in.

NAMHO 2014

This year the NAMHO conference was held at Bangor University. The choice of venue was no coincidence - Bangor University was founded in 1884 partly funded through public subscription by quarrymen from Penrhyn and other local quarries. The university is also the Alma Mater of your author.

The conference theme this year was "Mining Technology: technical innovation in the extractive industries". The usual themed lectures were on offer, as were a wide choice of surface and underground trips. The trips covered a wide geographical area, from Anglesey to Blaenau Ffestiniog and the Great Orme to Cwm Pennant.

The conference was organised by Adit Now - perhaps this is the first conference to be organised by a web based organisation rather than the more traditional society.

The conference opened on the Friday evening with the usual welcome speeches and a couple of short videos showing the Dinorwig quarries when working, and modern archaeological excavations on the Great Orme. Much networking followed the formal part of the evening.

Your author typically follows the underground programme, although this year was exceptional as he pursued a number of surface walks instead. On account of your author not attending any lectures, he cannot comment on the lecture programme.

Saturday comprised a short SRT trip through the Gilfach copper mine, followed by an afternoon on the beach at Red Wharf Bay. Saturday evening was the formal dinner, hosted at Neuadd Reichel, a hall of residence at the University. Coincidentally your author resided there during his first year of studies. It has improved in the last 22 years. The fine dinner was followed by some fine socialising.

Sunday comprised a fascinating surface walk around the vast Parys Mountain Great Opencast, led by one of the leaders from the Parys Underground Group. This was followed by a mad dash to Tanygrisiau for a walk up to Conglog Slate Quarry for a straightforward underground trip.

Monday was a surface walk at the head of Cwm Teigl, looking at Cwt-Y-Bugail, Blaen-Y-Cwm and the upper part of Rhiwbach. We had the privilege of having Iain Robinson as our guide, his encyclopaedic knowledge of the sites made for a fascinating day. The group were also able to confirm a statement by Alun Richards (in his Gazeteer) that there is a waste tramway underneath the Rhiwbach mill. Although substantially filled with fines that have washed in, part of the route is still accessible, and is the only example the author has ever seen.

Chris Cowdery <http://www.cowdery.org.uk>

Yorkshire Dales Mining Museum

The Yorkshire Dales Mining Museum is fast approaching a point where we can no longer stay open. We do not have sufficient income to cover insurance and the rent bonus that our landlords "The Windle Trust" demand. It is a sad outcome after the mining group oversaw the renovation and saving of the 16th century old grammar school and in effect brought about our own end. That said we are still looking for any source of funds which "may" keep the museum going or at worst fund the closing down costs and safe storage or transfer of all the artefacts.



The Mines Research Group was formed in 1945 within the Earby Pothole Club and set out to explore, record and preserve mining sites and equipment in the Yorkshire Dales. The museum was opened in 1971 to house the relics of mining collected over the previous twenty years. The water powered roll crusher from Providence mine at Kettlewell was recovered by members of Earby Mines Research Group in 1971 and reconstructed outside the museum

The museum is housed in the Old Grammar School, itself an interesting listed building dating from 1594. There is a large collection of Dales mining relics and photographs, interpreted by storeyboards. It is open on Saturdays and Sundays until the end of October and Sundays only from November to Easter, 11 – 4, and is well worth a visit if you are passing that way.

Postcode BB18 6QF, website www.yorkshiredalesminingmuseum.com
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National Trust purchase of mining documents from the Ian Tyler collection

The National Trust has recently purchased from Ian Tyler's collection some documents, plans and photographs which relate to mines on their land. They have all been properly catalogued, and are believed to be kept at The Hollens, Grasmere

Dave Blundel's log books

As part of the National Trust's policy of collecting historical documents relating to their properties, NT officer John Malley has recently obtained Dave Blundell's journals, a record of his activities with CATMHS and COMRU from 1st July 1981. Dave was founder member of CAT and former secretary. He made copies of numerous old mine plans many of which are in our archive collection. He was involved in the activities of the New Coledale Mining

Company at Force Crag mine and was a supporter of the CATMHS project to re-open and conserve Hudgillburn Mine. He died unexpectedly but peacefully whilst taking a rest in the sunshine at a CAT Hudgillburn meet in 1994. He was thorough and meticulous in his record keeping and his journals are a detailed record of our activities in the 1980's. The National Trust is to digitise them and will provide CATMHS with a copy

Archaeology in Crisis

The following is an extract from the Autumn 2014 News of the Council for British Archaeology, NW Group:

Archaeology in England is in the middle of its worst crisis ever according to Jane Greenville of the CBA. Speaking at the CBA winter meeting in London in February 2014 she highlighted the cuts in local authority budgets which make it possible that the provision of county archaeological services, established in the 1970s and 1980s, may turn out to be just a generational phenomenon. This warning comes at a time when local councils have been setting their budgets for the financial year 2014/15.

One of the trends is the cutting of planning services, including archaeological planning advice and conservation officer posts. The announcement on the 4th March of budget cuts by North Yorkshire County Council that will include a reduction in the budget of the Waste and Countryside Services unit of £470,000 which encompasses archaeology is just the latest example. Other councils that have announced cuts affecting archaeological services in the last 12 months include Cheshire West and Chester, the City of York, and Teesside. A disproportionate number of these are concentrated in councils in the midlands and north.

The Lake District National Park Authority has just completed a re-organisation that affects our two archaeologists, John Hodgson and Eleanor Kingston. After a period of uncertainty they have retained their jobs but with revised job titles. John becomes Lead Advisor of Historical Environment, with responsibility for the World Heritage bid, and Eleanor is now Strategy and Partnership Advisor, working three days per week

Subsidence at Cowshill, Weardale

On the 21st August 2014 a large mine collapse/ subsidence occurred at Cowshill, top end of Weardale. It appears to be somewhere near the intersection of the Burtree pasture and Sedling Veins. The landowner who lives nearby heard a loud rumbling just before the hole opened up. Its size is approximately 110ft long by 40 ft wide and 50ft deep. At the bottom you can just see some of the old mine workings and what appears to be an old shaft. The foot path that runs nearby has been closed by Durham County Council.

Malcolm Charlton.



Changes to the organisation of English Heritage

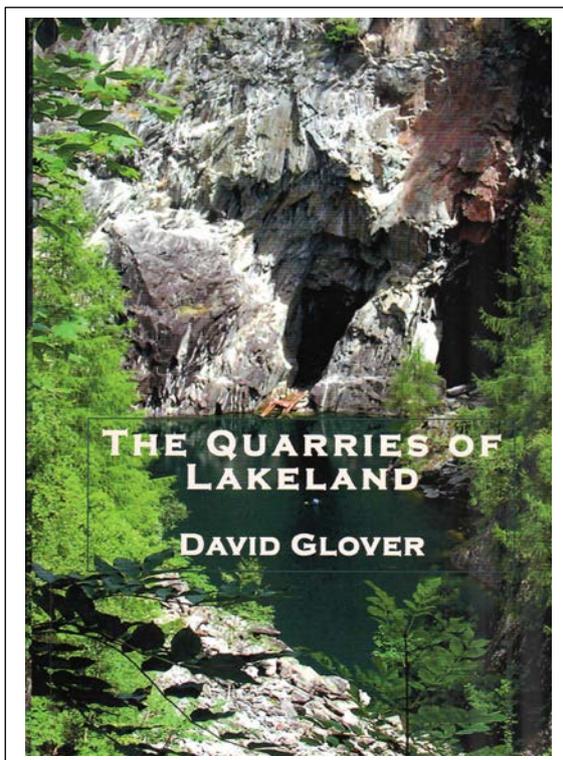
After a period of wide consultation, Ed Vaizey MP, Minister of State for Culture and the Digital Economy, has announced final Government approval for the separation of English Heritage into two organisations.

A new charity, retaining the name English Heritage, will run the National Heritage Collection of historic properties. A newly-named non-departmental public body, Historic England, will be dedicated to offering expert advice, championing the wider historic environment and providing support for stakeholders in the heritage sector. The changes will come into effect on 1 April 2015.

The English Heritage Charity will be responsible, under an operating licence from Historic England, for the care of the National Heritage Collection.

It was clear from the responses to the Government's consultation on the New Model that there is a great deal of support for Historic England and a clear desire that it should continue to champion England's heritage, providing expert advice, promoting constructive conservation and providing support with research, guidance and grants. No changes are proposed to our current duties and powers in planning and heritage protection.

Book Review:



“The Quarries of Lakeland”

David Glover

Bookcase

ISBN 978190414776 3

Price £15

CATMHS can lay claim to having a longstanding interest in quarrying, being especially fortunate in having as a member Alistair Cameron whose “Slate from Honister” and “Slate from Coniston” the Society has published. David Glover's book is a very valuable addition to the available literature; covering all the quarries (not just slate) of Lakeland in very considerable detail.

Full histories of the quarries are given along with detailed descriptions of the surface and underground layouts as they now exist. This is an essential handbook for anyone interested in the industry.

Report on the Lake District Mines Forum meeting, 9th October 4014

The Mines Forum is a group that meets about three times a year to share information about activities and concerns connected with mines and mining in the Lake District National Park and its periphery.

Participants may include representatives from NAMHO, LDNPA, National Trust, English Heritage, Environment Agency, CATMHS, COMRU, Coniston History Society, Honister Quarry and, until its demise, MoLES

National Trust.

John Malley reported on the water treatment plant at Force Crag mine, which has been operational since April this year. It has proved to be 95% efficient and is extracting 1.5 kg of metal per day. At present the system takes low summer rate of flow, but this will be increased experimentally after 18 months. It is envisaged to have a twenty year life before the carbon needs to be re-activated by adding brewers waste. The process releases hydrogen sulphide gas, so, to avoid possible health hazards, the actual ponds, which are leased to the coal board, are fenced off, although ducks seem to be living happily on them. Newcastle University is continuing its experiment with the hydro ferrous system of metal extraction.

At Level 0 the Coal Authority are monitoring water levels continuously and undertaking six monthly assessments. There is a rise and fall of several metres which roughly correlates with rainfall. If the levels were perceived to be dangerously high then pumping from the bore hole would be implemented. Plans to drive a new drain at 0 level have been set aside as such a procedure could have destabilise the system

DEFRA will fund the erection of some interpretive signs regarding the water treatment plant.

Level 3 portal is to be re-instated by CATMHS, funded by the Coal Authority, and water prevented from flowing down the internal shaft to lower levels.

Lake District National Park Authority

Eleanor Kingston reported that conservation work has been completed on the China Clay mine building at Caldbeck and that she was pleased with the standard of the work.

At Greenside a survey has been carried out using a quadricopter.

At Coniston the Heritage Lottery Fund Stage 1 bid has been successful. The proposal is for £500,000. An Activity and Interpretation plan is required for the Stage 2 application which is due in February, and a final decision is expected in June 2015.

Warren Alison, on behalf of CATMHS, conducted guided walk to Sandbeds and Driggith mines for ten individuals from the LDNPA. Six volunteers hope to carry out a level 1 survey there as a change from bracken cutting

The annual Archaeology Conference will take place at the Theatre by the Lake, Keswick, on Sunday 2nd November

CATMHS

Work to re-open the Penny Rigg Horse Level at Tilberthwaite is continuing most Sundays. Sixteen sets of steel frames have been installed so far.

Mark Simpson and Mike Mitchell, with Clive Barrow, have been carrying out a survey of the Paddy End lower dressing floors at Coniston, using a camera on a pole. They have also been using a video camera to record the interior of the underground water leats.

At Greenside mine the locks on Lucy Tongue entrance were changed two years ago, with keys that cannot be copied. CAT and LDNPA have keys and the LDNPA have taken control of access. At the Gencoyne adit, which is on National Trust property, there is a notice stating that there is no egress below

NAMHO

Peter Claughton reported that NAMHO hopes to publish the Research Framework for Extractive Industries Agenda by the end of the year. Suggestions for sites for examination or conservation may still be submitted. Information was requested on iron mines on the periphery of the National Park

Alastair Cameron

Alastair has been examining the water leats in Tilberthwaite Ghyll and found a rock cut channel that is not visible from below.

At Honister quarry they are getting good black slate from the Kimberly vein. Tourism has increased this year. The underground via ferrata route from Level 1 to Level 3 has been popular.

The management are re-negotiating leases and consents regarding Dubs and Hopper quarries. In 1998 Mark Wier obtained consent to work at Dubs, Hopper, High Hopper and Ash Gill in exchange for relinquishing other consents to mine slate. Now they are seeking permission to get building quality stone from the bottom tip at Dubs.

Dubs hut has been repaired and is now being used as an open bothy

Threlkeld, Yellow Dam

Eleanor Kingston reported that the Environment Agency was in the process of appointing a contractor to design a structure at Yellow Dam. A planning application was anticipated.

MoLES, English Heritage and the Environment Agency were not represented at the meeting. The next meeting will be held in February.

IM

Newland Furnace news

The sixth year of Heritage Open Days was unspectacular with £46 takings from 30 visitors over two days. This was in spite of the presence of a new star attraction, a Valley cold blast pig. (see below) The design of the proposed interpretation panels was on display.

We are now waiting to arrange site meetings with Ulverston council and English Heritage, neither of whom have given us a straight answer as to whether planning permission and listed building consent are required.

At the last work meet on 27 September we finished digging the wheelpit, at least for the present. It has taken since January 2010 to remove enough spoil to start building a brick arch to support the stonework above the axle hole. On 25 October we will be building scaffolding to support the stonework while the arch is under construction, then removing the botched wall which is filling the gap at present.

Backbarrow Iron Furnace

Built 1711

Rebuilt 1770

Bought by Harrison Ainslie 1824.

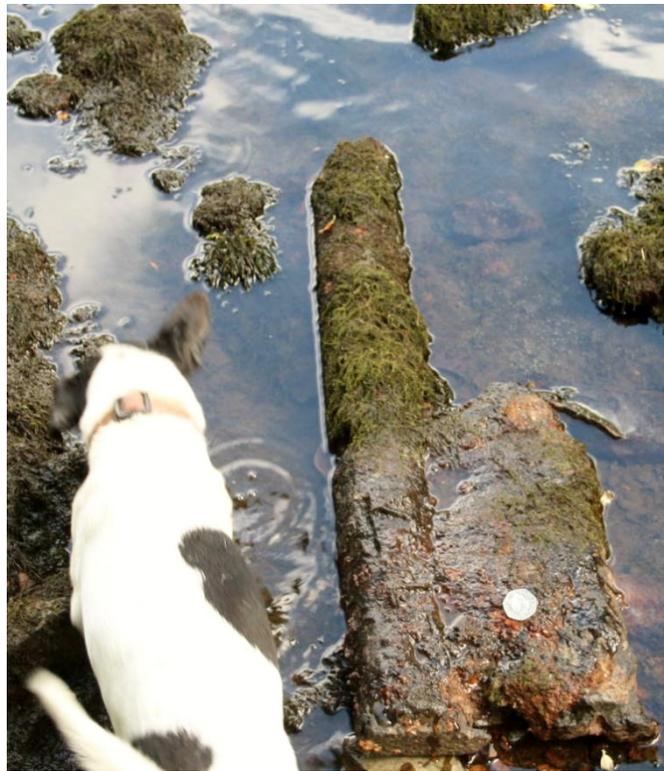
Harrison Ainslie bankrupt in 1903 and 1918

Reopened as the Charcoal Iron Co in 1918.

Among other things they made Valley brand cold blast pig iron.



Detail on the pig, 'Valley'



The pig as found.

Force Crag Mine water treatment plant

In previous newsletters it has been reported that the water issuing from Force Crag Mine, especially No 1 level, is heavily contaminated with heavy metals especially Zinc, which is polluting Coledale Beck and Bassenthwaite Lake. The contamination is exacerbated with the mine water from Threlkeld Mine also entering Bassenthwaite, which apparently is one of the worst polluting mines in the country and Zinc has been found as far as West Cumbria where the river from the lake enters the sea.

For the last few years two different water treatment plants, which require no electricity to run them, have been developed for Force Crag Mine. Newcastle University have been working on a Hydro Ferric system with limited success. The second plant uses the old settling ponds of which there are two and have Limestone in the bottom of the pond with carbon material on top. The bacteria present remove the heavy metals which settle out and the initial trials indicate that 95% is being removed at a feed rate of 6 litres a second of water and it will be 15 to 20 years before the metal in the ponds has to be dug out. The water from the two ponds is then sent to a finishing pond to aerate it before being discharged into the beck.

The whole length of Coledale Beck is being monitored, which is showing a substantial improvement in water quality. Such is the success of the new system that a technical paper is to be presented to an international conference.

After the Mines Forum meeting in March we went to the mine to view the building of the ponds.



Looking towards the mill



Looking over the top of the partially constructed ponds



Constructing the finishing pond



Notice explaining the work going on

As previously reported, CATMHS will be re-opening No 3 level as it was in the 1960's, which will prevent surface water from running back through the stopes where it will pick up Zinc which is highly soluble. This may also involve diverting the water coming down the La



No 3 level entrance today



No 3 level entrance in the 1960's as taken by John Hodgkins when working there

to No 2 leading down to No 1 level will also be secured, which will allow the back of the drainage pipes to be checked since No 1 level has now collapsed. This project will start in late Spring/Summer of next year when there is a period of decent weather, as Force Crag can be quite inhospitable.

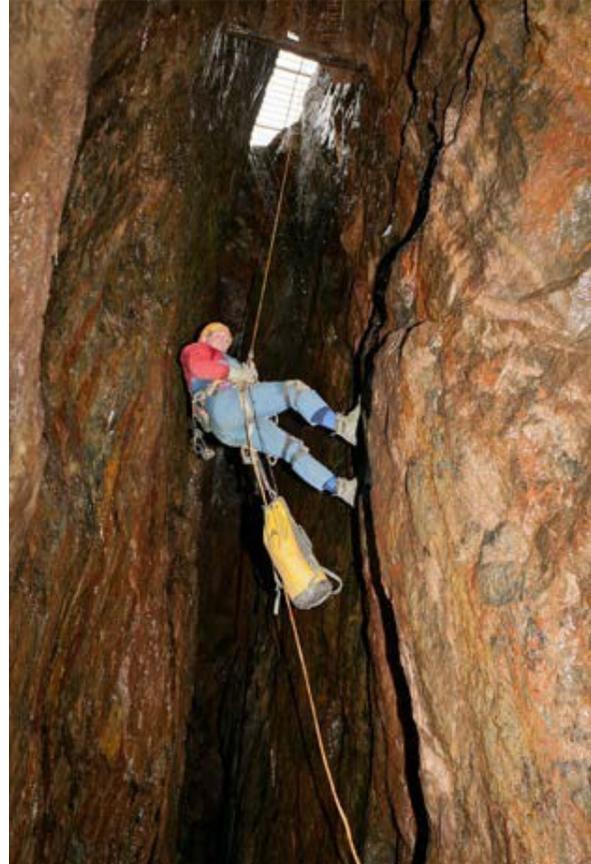
Warren Allison

NAMHO 2014 – A PERSONAL VIEW

Saturday 26th July

Undaunted by the failure to obtain the appropriate access agreements for NAMHO 2013, Jon Knowles offered the 2014 organisers a meet underground at the Britannia mine on Snowdon. Having roped in John Ashby and myself we agreed that we would go and do the rigging the weekend before to ensure that the actual meet went smoothly.

We had not been to the site since 2002 and one can say (in retrospect) that we took a fairly cavalier view of what was involved; we knew the walk up was arduous and quite long; we thought we knew what we would do underground; and Jon had researched the parking arrangements which had radically changed and involved bus transport up to Pen y Pass from Pen y Gwryd. Even so parking had to be paid for! The parking and bus journey went exactly as planned, the walk up was just as remembered but unfortunately the mine wasn't.



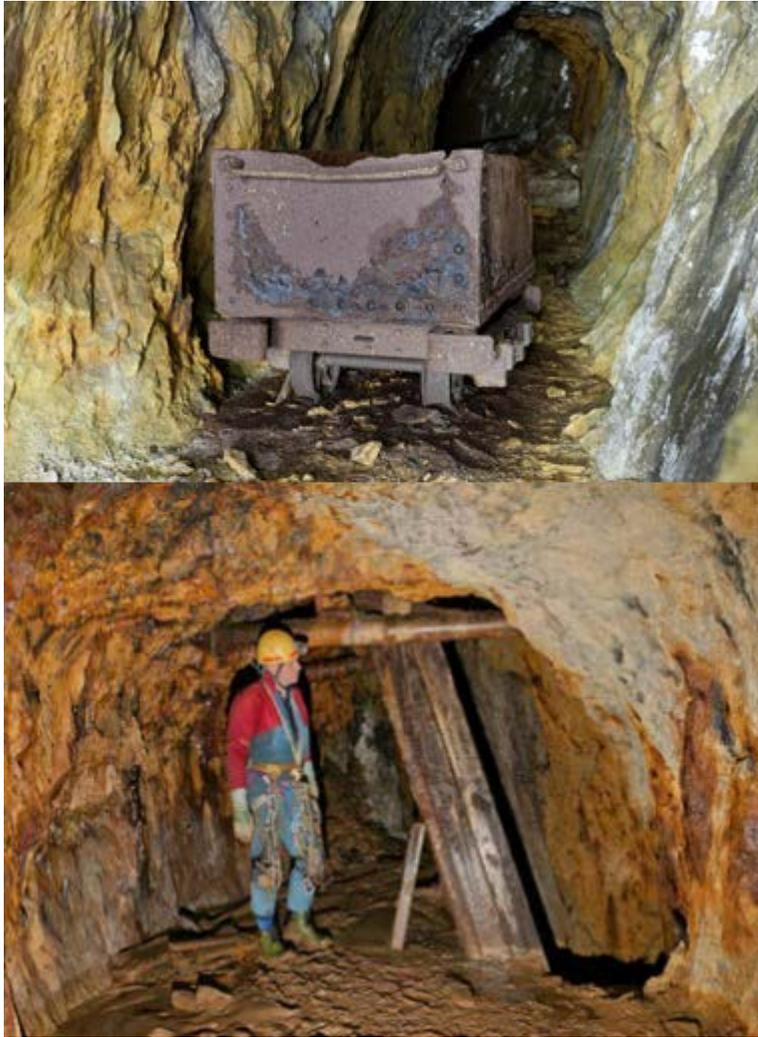
Entrance was affected via the open stopes and traverse safety lines were installed, artefacts located and a further internal descent rigged. We made no attempt to descend further; we knew that returning to the surface we would be able to walk downhill and access the lower levels. A belief completely unfounded as can be seen; Jon negotiated the bars but found that the level was solidly blocked. Further descent and searching located a



lower level, access was a little tight and muddy but having got inside it was decided to install the hangers for a descent to the lowest accessible level.



At this point we ran out of battery power and called it a day. Returning home I decided that time could be profitably spent looking back through the Newsletter archive to review our previous exploration. This produced the revealing quotation from Leader Knowles that “*Level 4 is probably the most interesting and extensive in the whole mine*” i.e. the level that we had failed to access.



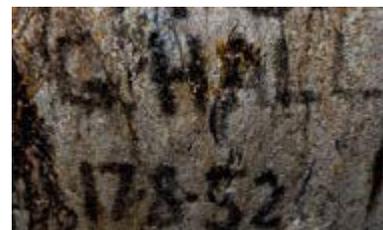
The actual NAMHO meet proved the value of our reconnaissance. Everyone was on time, the walk up was accomplished without problems and the mine entered. Among the artefacts seen were the mine tub (complete with buffers!) and the splendid wooden ore pass on Level 4 - reached by the simple expedient of de-rigging the underground descent and using the rope from Level 5, close by the tub, for the descent down to Level 4. Once back on the surface, the party descended the steep slopes through the spoil heaps, passing 1 (Old and New) down to Llyn Glaslyn and on down the Miners Track. Further down alongside Llyn Llydaw are the remains of the mill, the remains of mine buildings and Levels 2 and buildings, outside of which lie a section of cast iron trough from the stamp mill, presumably too heavy for the scrap man to remove.

By this stage the need to be back at Pen y Pass in time to catch the bus was clearly in the forefront of the Leader's mind and the pace was picked up to an extent that brought military training to mind! Similar military images were invoked when any suggestion of a hasty pint at the new Youth Hostel bar was dismissed out of hand. Still we did catch the bus, the Leader had organised amazing weather for both days and a good time was had by all.

Sunday 27th July

The day was spent in Cwm Pennant, where two NAMHO meets were taking place. Paul Smyth led a descent of the stopes/ladderway in Gilfach copper mine, while Dave Seabourne (both from the Welsh Mines Society) was running a surface trip to the Cwm Ciprwth water wheel. Both parties walked up to the top of the stopes at Gilfach which give a fine view across to the wheel. Splitting up, the descent team dropped down to the Gilfach Middle Level, kitted up and got on with the two pitch descent, with Paul guarding the head of the pitch. Clearly some ore had been removed given the amount of false flooring but can never have allowed a profit.

The descent ends at the forehead of the low level and there on the wall was evidence of a much earlier exploration by the late president of the WMS George Hall. Very satisfying since a year previously at Lliwedd we had found similar evidence of the presence of the other luminary of the WMS, David Bick.



Hard work had drained almost all the water from the level, making the walk out to daylight very easy. Paul resolutely declined all offers of help with derigging, so I drove to the top of Cwm Pennant to walk up to Prince of Wales quarry and Cwm Dwyfor copper mine. While the ability of mining and quarrying to lose money has never been in doubt, when you look down from the head of the beautiful Pennant valley you are looking at the site of the most colossal destruction of value it is possible to imagine outside a battlefield. Out of sight on the left hand side of the valley is the Gorseddau quarry (c1857) complete with the remains of its own village, 8 miles of three foot gauge railway to the coast, an amazing mill building of considerable architectural merit, a retaining wall to hold back waste that still cause wonderment due to its size and construction. But regrettably no slate rock!

At the head of the valley is Prince of Wales quarry, mainly open benches with six levels served by an incline, a further incline down to the mill, a large reservoir, and the 8 miles of three foot gauge railway re-laid in two foot gauge (1875) and extended a further 4 miles up the valley. Not content with this, developers extended the railway further to Cwm Dwyfor at the very head of the valley where they constructed a massive water wheel pit and buildings without producing any minerals of value at all. If one adds in the mines of Gilfach, Ciprwith and Moel Hebog, not to mention the numerous other quarries, then the whole expenditure must have come to hundreds of millions sterling in present day terms. Much is still to be seen and the old railway track bed makes for effortless walking; I would strongly urge anyone in the area to go and see; especially if the weather is as it was for my visit.

Monday 28th July



Braich Goch led by Mark Waite, just a perfect day for the underground aficionado; with all the pitches rigged we covered all the levels that are accessible in the east end of the mine even getting to see the remains of an underground bridge (the authorities are unanimous that there were no bridges underground in Braich Goch!). On the left is the party

at the end of the day and on the right some of the hard stuff from the artefact collection. If you get the chance then go.

You won't regret it.

www.corrismineexplorers.co.uk



Many thanks for Photographs 1, 4, 5 Jon Knowles and 2, 3 John Ashby

John R Aird

Sandbeds Mine near Caldbeck

The mine is located a mile west of the cattle grid at Calebrack, not far from Carrock Mine and first worked a Lead-Copper vein running NW-SW from Driggith Mine before working an East-West Barytes vein in the 20th Century, finally closing in 1966.

According to W T Shaw, the Lead-Copper vein was first worked at Driggith Mine in 1790 when it was re-opened by Mr. Rowe of Liverpool, who worked the vein from an opencast of considerable length along with a shallow adit crosscut. A stamping mill was built halfway down the valley by the side of Carrock Beck where the remains can still be seen today.

Shaw does not state how long the enterprise ran for, but it is believed that the 30 fathom level was sunk at this time and that Mr. Rowe erected an engine – presumably hydraulic for drainage. In 1810 the mine was in the hands of Messrs. Richardson and Lowrey & Co who erected a crushing and dressing plant just below the 30 Fathom level in 1812, which had four sets of crushing rollers and by 1813 was running night and day. The company carried on working until 1822 and is said to have obtained 200 tons of lead a year.

In 1822 R. G. Braddyll of Conishead Priory started the 60 Fathom level from the Sandbeds side of the vein but gave it up in 1834 after losing a great deal of money. John Barratt worked the mines for four years before passing them over to Messrs Dickinson & Co who worked the mines at a loss for several years.

In 1849 Messrs Brocklebank and Jeffery took over and Wm. Jeffery was appointed manager. He was apparently a man of great experience and re-organised the whole mine above and below ground, erecting at that time a modern dressing plant. In the eight years up to 1857, some 1,950 tons of galena and copper concentrates were raised. In 1858 the 90 Fathom level was started from beside the dressing floors which was the lowest point at which the water from it could be used in the plant.

The mine continued to work until around 1874 when it finally stopped working for Lead and Copper.

In 1927 the Barytes vein at Sandbeds was found by John Hemmingway and William Blockley of Mungrisedale, who were prospecting for Mr. J. Clay, but nothing was done. In 1946 a crosscut was driven by McKechnie Brothers Limited from the same horizon as the old 90 Fathom level and started to work the vein. The mine became known as Sandbeds East Mine and on the whole the yield was poor, mainly due to the great thickness of the loose glacial till which caused problems in the stopes.

In 1956 the continuation of the East Sandbeds Lode was discovered and a new 60 Fathom level was driven on the vein. Eventually levels were driven at 20, 40, 50 and 67 Fathoms. The old 90 Fathom level which originally worked the Lead & Copper vein was driven to undercut these levels and a tramway was taken to the Sandbeds 90 Fathom East Level where there was a large hopper where the Barytes was dumped before being taken by a wagon for processing at Potts Ghyll Mine.

Eleanor Kingston, one of the LDNPA archaeologists, commented that some of their volunteers had been to Sandbeds Mine and wanted to survey it, as they were fed up with bracken bashing, pulling out Himalayan Balsam, etc., and wanted to do something different. She asked if CATMHS could take the volunteers to the mine and show them around the site.

So on the 18th September Mark Simpson and I met ten volunteers (one travelling from Shropshire) at Calebrack. We slowly walked up the track to the mine pointing out various features on the way; all related to the 20th Century Barytes workings.

Arriving at the main site, we started from the bottom of the processing area and worked our way up towards the 90 Fathom Level using the 1st Edition OS map to try and identify features on the ground. However it is quite remarkable that more and more remnants of buildings, waterways, timber work etc are becoming exposed every time the site is visited.

Arriving at the 90 Fathom level where the water is issuing from a collapse at the point where the timbered entrance met the bedrock (worthy of a dig), we stopped for a break. Walking up the line of the old tramway we soon arrived at the 67 Fathom (Barytes) level which, although collapsed, the original doors to the level can still be seen. Just above we soon came to the 60 Fathom Barytes Level and then to the original 60 Fathom Level which worked the Lead-Copper vein re-opened many years ago by MOLES, although access is now by a short level just above by a 15 foot shaft which was probably used as a water blast.

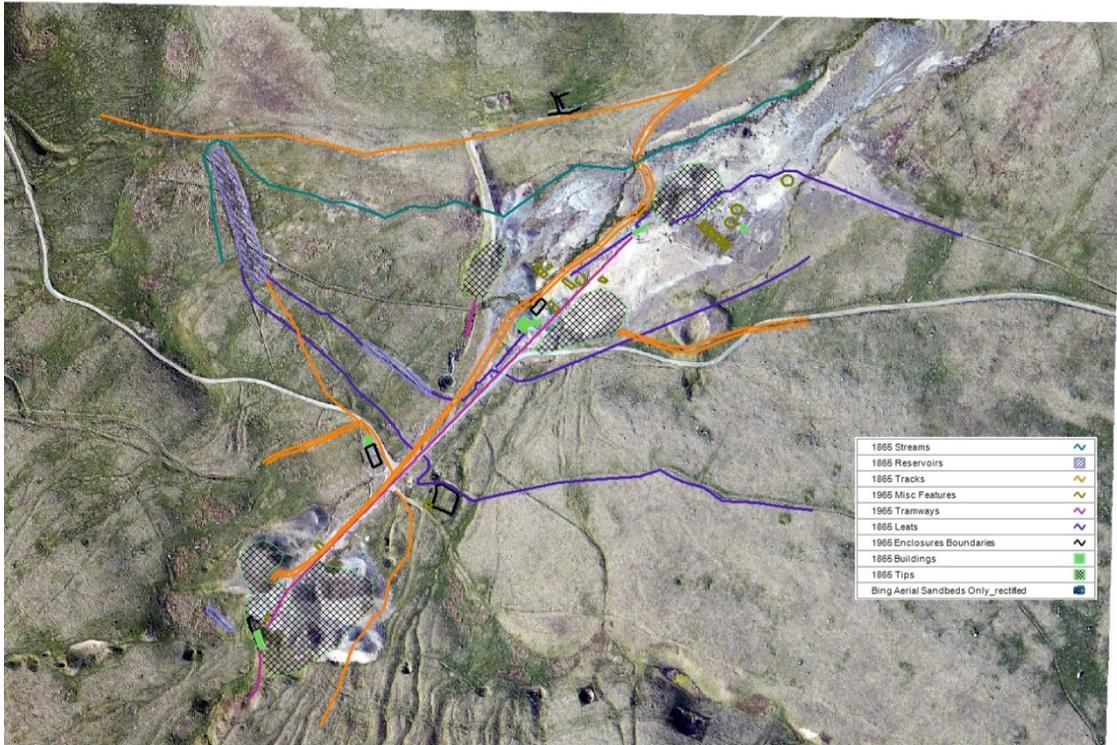
As there was still plenty of time left we continued up towards Driggith Mine (the next survey for the volunteers once they have finished Sandbeds Mine), passing No 1 Shaft where it came to the surface. Beyond, the workings on the surface stretch for hundreds of yards with evidence of trial workings to find the vein still visible. Lunch was had in the open workings before carrying on through the workings, passing the 30 Fathom Level (entrance now closed up) and the remains of the various dressing floors. We now cut off along what everyone thought was a footpath which was actually an old leat which eventually ended up at the 60 Fathom Sandbeds Level which worked the Lead-Copper vein, age unknown.

Arriving above Calebrack, we cut off down the fell, pausing to look at the Medieval Smelter near the Howthwaite Stone, where the charcoal has been carbon dated to 1020-1200 AD. Arriving back at the cars we discussed the next steps to getting the dressing floors at Sandbeds Mine surveyed.



The "team" at Driggith Mine

Since then Mark Simpson, Mike Mitchell and Clive Barrow have been back and taken some GPS readings which allowed the 1st Edition OS map from the 1860's to be overlaid on a surface photograph from the internet. The surface photograph also shows other features such as reservoirs and leats which are not on the OS map, and I suspect they are earlier than the 1860's.



The 1st edition OS map overlaid on the photograph.



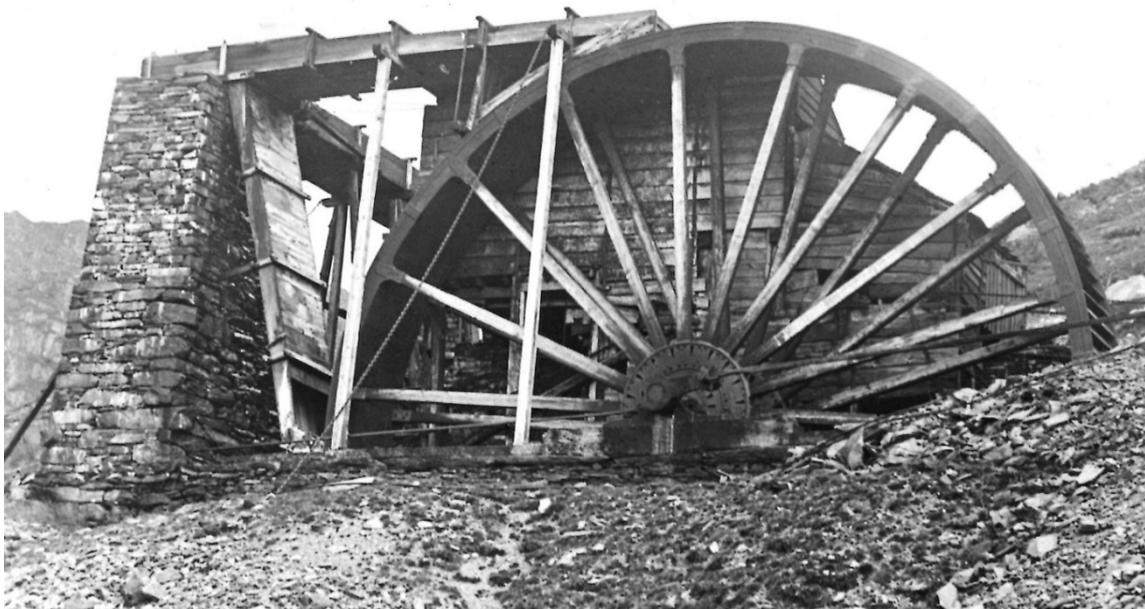
Photograph of the 60 and 90 Fathom levels during the 1960's taken from W T Shaw's book 'Mining in the English Lake Counties'



Last shift at Sandbeds Mine in the mid 1960's taken from W T Shaw's book 'Mining in the English Lake Counties'

The surveying will commence shortly which I am sure will provide a greater insight into this very interesting site and should throw up some surprises.

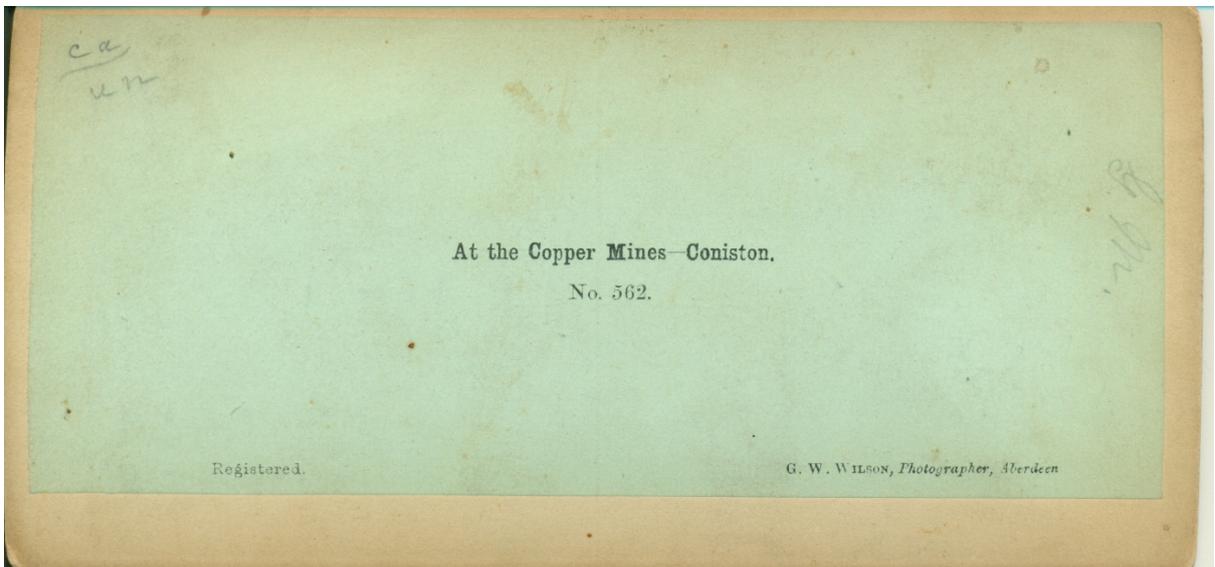
Warren Allison



This is the Coniston Old Engine Shaft wheel, top right in Warren's photo opposite, thought to have been taken circa 1908 just before it was dismantled for scrap. Ed.

Coniston Copper Mines photograph

It is surprising what can be found on E-Bay, I purchased the photograph below (date unknown) and wonder if anyone can provide any information on it.



The waterwheel at the Old Engine Shaft below Red Dell which was 45 foot by 6 foot can be seen in the top right hand corner.



Warren Allison

The Old Engine Shaft water wheel was used for pumping and winding in the Old Engine Shaft, which reached a depth of 170 fathoms below the Deep Level adit. John Barratt

installed a 30 foot wheel there in 1834, and enlarged it in 1850. According to Eric Holland pumping stopped in April 1892 and winding in 1897 when water filled the mine up to Deep Level.

The cover picture shows CopperminesValley and can be dated to 1893/4, as the large white building is

*Joseph Hellen and John Hellen
 Contracts for Breaking old Iron
 off Mr William Rose of Hawkhead*

*In 1892 at Coniston Mines Thomas Minigan
 old Waterwheel at thriddle 30 feet in Diameter
 Also 2 sets of stamps at low mill and
 one Waterwheel 18 feet in Diameter £5/10*

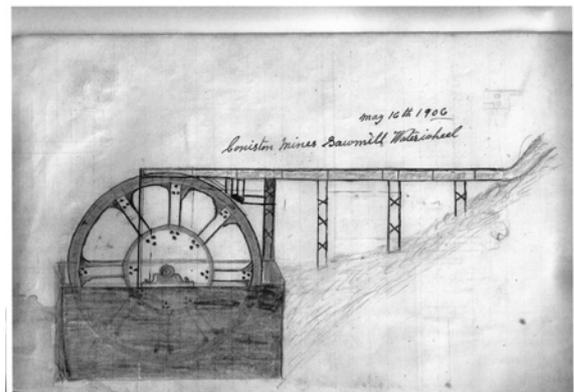
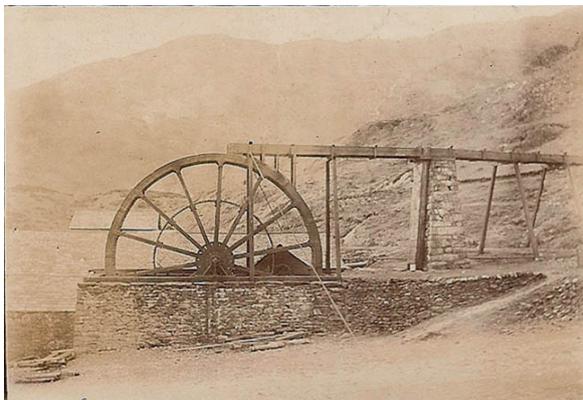
*In 1896 at Padyend
 one Waterwheel 18 feet in Diameter
 £1/15*

*In 1897 the far Thriddle Waterwheel 42 feet
 in Diameter and winding Engine and air
 compressor £9/15*

*in 1900 the big Waterwheel Thriddle and
 winding gear and Pumps £10/15*

*in 1897 at Tilberthwait Mines Crushing
 mill Wheel 30 feet in Diameter £3*

Warsop's smelter, which was built in 1893 and destroyed by a storm in December 1894. Whilst the launder tower is visible it is difficult to see whether or not the Old Engine Shaft wheel is still in place. As the mine reached the end of its life the water wheels were dismantled for scrap as this note shows.



These two pictures, from the John Belton collection, are of the sawmill wheel, bottom left of Warrens photo, which they post date. The small roof behind and above the main building didn't exist then. The wheel might have been scrapped and then reinstated in 1906.

Ed.
 I

GRAPHITE

From Seathwaite to Virginia?

Over the past few years the graphite mine at Seathwaite has been giving up its many secrets...thanks to work done by the B.G.S. and scientist from the University of Madrid. For centuries there had been speculation, rumour and technical papers written to try and unravel those really big questions:

- *Where did the source carbon come from?*
- *How was it mobilized?*
- *How was it deposited as graphite?*
- *Why only graphite at Seathwaite?*

The papers that were produced to answer those really “big” questions are to say the least very technical and expensive to purchase for the lay person. Because of this, over time I set out to produce a slightly less complicated paper about both the visit and results. This is in PDF form and on the web. It is this paper that a field archaeologist accessed which lead to a communication from her.

She is working in Virginia, USA at the historic site of Jamestown. This was the first permanent settlement in America by the English. In 1606 King James (Jamestown) granted a charter and 104 settlers set sail from London. Life was extremely difficult, disease, famine, and continuing attacks of neighbouring Algonquians Indians took a tremendous toll on the group.

What has all this got to do with graphite you may well ask? Well during excavations of a cellar building dated 1607-1610 approximately 100 grams (45 pieces) of graphite were discovered. These consisted of pieces sharpened to pencils as well as classic graphite nodules. It is not known if the nodules were used for any other purpose such as for lubricating machinery or even medicinal reasons such as treating colic but it is possible. She posed the intriguing question. “Is it possible that the graphite originated from Seathwaite and if it was is there a way that this could be proved by scientific analysis?” I could not answer that question with any certainty but I knew a man that could!

I contacted Javier Luque, senior lecturer at Madrid University and asked for his opinion. I was a bit deflated by his reply as there is not a test that would announce “Seathwaite” through the samples like a piece of rock! There are however various tests available and these are described below as follows.



Graphite found during excavation at Jamestown

Stable Carbon isotopic ratios:

This test was used to prove that the source carbon at Seathwaite originated from the Skiddaw Slate rocks that are the basement rocks which underlie the Borrowdale Volcanic Group. These marine mudstones contain a small percentage of biogenic material which took the form of algae, plankton and other carbon detritus. Unfortunately there are other graphite deposits worldwide that also have source carbon from carbonaceous sediments which have a similar signature so this would not solve the issue.

Raman Spectroscopy:

Seathwaite graphite consists of over 90% flaky, platy crystals but also contains crystals that have not been found in any other deposit, but these are rare and are unlikely to be found in the Virginia samples.

Environmental Scanning Electron Microscope:

Graphite from Seathwaite is commonly associated with the secondary mineral epidote...not present at any other deposits worldwide. This and other secondary minerals were formed when volcanic rocks next to the veins were altered by the upwards flow of intensely hot hydrothermal fluids. If epidote can be found on the surface of the samples this would be strong evidence.

The final way to determine source is if any graphite nodules can be found within the host rock matrix. This matrix of thermally altered andesite and to a lesser extent dioritic rock is totally unique to the Seathwaite deposit and would defiantly confirm origin. It may be unlikely though that any host matrix was transported with the nodules.

So this is where we are at the moment and now it's down to the powers that be in Virginia to find organizations that can perform tests on the samples. It would be better if they sent the samples to Madrid but they do not want to take that risk with their rare find. Common sense would suggest that the graphite did originate from Seathwaite mine but these things do need to be properly proved. If it does get proved beyond doubt it would be a very interesting piece of information for both sides of the pond...watch this space.

Any member who would like a copy of the PDF (1.5MB) about the visit and results can send an email to: membership@catmhs.org.uk and I will forward a copy.

Here is a link to the field archaeologist page of Historic Jamestown which shows their graphite finds:

http://www.historicjamestowne.org/newsletter/may14/jamestown_graphite.php

Jeff Wilkinson.

More from the archives

Paul Timewell and I have been volunteering to help with catalogueing in Barrow Records Office. After ploughing through two boxes of Wordsworth Harrison's endless disputes and insolvencies, BDHJ 231 bundle 2 turned up the sort of information we were hoping for. Dr Henry Ainslie died at Grizedale on 26 October 1834 resulting in a storm of paperwork:

First, a list of partners in the Company over the previous 35 years:

Newland 12 Oct 1835

Partners in the Newland concern 25 Mar 1799 which continued the same till 25 Mar 1804

Mr Knott	8 ½ sixteenth shares
Dr Ainslie	5 ½ sixteenth shares
Mr Chadwick	1 sixteenth share
Mr Harrison	1 sixteenth share

Ditto from 25 Mar 1804 till 25 Mar 1812 or I believe till Jun 1812

Mr Knott	9 ½ sixteenth shares
Dr Ainslie	5 ½ sixteenth shares
Mr Chadwick	1 sixteenth share

Ditto from 25 Mar or June 1812 till 25 Mar 1825

Mr Harrison	9 ½ sixteenth shares
Dr Ainslie	5 ½ sixteenth shares
Mr Chadwick	1 sixteenth share

Ditto from 25 Mar 1825 till the present time

Mr Harrison	9 ½ sixteenth shares
Dr Ainslie	5 ½ sixteenth shares
Mr Roper	1 sixteenth share

NB: It might appear by the above that Mr Roper bought Mr Chadwick's share 25 Mar 1825 but Mr Harrison bought Mr Chadwick's share without any reference to Mr Roper and he afterwards sold Mr Roper either the same share or another for a specific sum.

Then an inventory and valuation of the Newland Company:

Newland Furnace	£300	Brought forward	£18551 8s
Utensils at Newland	£100	Cardoness Woods?	£1096
Utensils and tools at Backbarrow	£200	In Wakefield & Son	£4215 19s
Utensils and tools at Duddon	£200	Rolled Iron	£65
Ditto at Backbarrow forge	£400	Sloop William	£14
Ditto at Spark Forge	£400	Westmorland Bank	£1189

Ditto at Nibthwaite Forge		£250	Smack Dora	£587
	doz sacks???		Debts	£9453
Charcoal at Newland	574	£1117 12s	4s	
			Cash and Bills	<u>£801</u>
Ditto at Backbarrow	225	£270	<u>19s</u>	
Ditto at Duddon	40	£53 10s		£35973
Ditto at Spark Bridge	76	£93.14	10s	
Ditto at Nibthwaite	24 ½	£42	Bar iron customers	<u>£500</u>
Pig iron at Newland	5 tons	£25	±	
Pig iron at Backbarrow	417	£2085		£36473
Pig iron at Duddon	302	£1510	10s	
Pig iron at Spark Bridge	15	£90	Debts owing	<u>£1385</u>
Pig iron at Nibthwaite	19	£114	±	
Pig iron canal	19	£95		£35088
Blooms Spark Bridge	35	£420	10s	
			Half years average profit	<u>£2511</u>
			<u>10s</u>	
				£37600
			0s	
			Dr Ainslie's share 5 ½ sixteenths is	£12925
			Deduct already recd by Dr Ainslie	<u>£1247</u>
				£11678
Blooms Nibthwaite	47	£564		
Blooms Backbarrow	62	£624		
Bar iron Nibthwaite	4	£40		
Bar iron Spark Bridge	67	£938		
Bar iron Backbarrow	58	£812		
Coal sacks		£74		
Ironstone	14	£12		
Iron ore at illegible (Lindal?)		£6037		
Culm at ditto		£10		
Old iron at ditto		£40		
Steel		£690		
Bar Iron Liverpool		£340		
do at Carlisle		£120		
Schooner Richard		£600		
Galliot Ann		£220		
Schooner Mary 1/8		£50		
Sloop Eclipse 1/16		£15		
Sloop Fame 1/8		£80		

Roper, Richard Roper's son. It seems that BH appointed trustees specifically to exclude his sons from the partnership. Montague Ainslie writes to Gilbert Ainslie:

Feby 23 1864

Grizedale

My dear Gilbert,

I have just finished a despatch to Margaret and told her that I was going to consult you on a certain point. It is this:

Who are to be the Partners? I had a friendly chat with Mr Roper yesterday and I put that question to him. I left him in a quandry. At first he said probably the 4 trustees and me, himself and Margaret. I said Mr Wordsworth is already one and added how are we to vote? If the trustees are partners then they will have 5 votes instead of Mr H and his son's, ie the 4 trustees as trustees (of whom WH is one) & WH besides as a partner. I then said that those who were beneficially concerned should alone be partners and that I had no objection to the 3 sons being admitted. Mr H has not left his shares apparently to them but to trustees for their benefit. Mr Roper observed "doubtless for some good reason". I smiled.

A singular thing it is too that Mr Yarker the solicitor in whom he trusted is such an invalid and his life so uncertain that his work is done by one who was his clerk but is now also a sol^r

Mr Roper thinks a power of appointment is vested in the trustees.

I want you to draw up a question for Mr Cookson's consideration and opinion. It appears to me that we cannot admit any one of the whole set, trustees or children & I shall not be surprised to find that resuming (as I have done) his share from Wordsworth Mr H has ousted him from the partnership. He had 9 ½ shares. Has he left 8 ½ or 9 ½ to be apportioned amongst his 3 sons?

Today the 4 trustees are to attend at the office preparatory to some probate arrangements, on Thursday I may hear more - as Mr R would speak to Mr Yarker about the partnership . It will be queer if in their wisdom Mr BH and Mr Y have cut out all the whole set!

A share is valued in our books at £9000 and has been taken at that valuation - as in the late Mr Roper's case - for Probate duty. As his personalty on all accounts has been sworn under £200,000 - the value of a share, Mr R observed to me, greatly depended on the length of our leases and the goodwill we could transfer to purchasers.

Ever your affectionate brother, M Ainslie.

Finally there is a letter from Gilbert to his son, Aymer on the death of Margaret Hogg:

Pembroke College
Cambridge

Feby 26 1868

My Dear Aymer,

Having attended the funeral of your kind Aunt at Thornham yesterday I am now at liberty to inform you of the contents of her will; and, so far as you are concerned therein, I send you extracts from it. At the same it is right that I should tell you that your Aunt, having the design to give one of her two shares in the Iron Works to your Uncle and the other to me, kindly allowed me to dispose of the latter according to my own pleasure. You must therefore look upon her bequest as a final arrangement (as it were of my own will) for your present and future provision and not look for any further allowances from me. Your mother, in her love and generosity, was unwilling that I should lay any heavier charge on the shares than is laid for her maintenance.

I have been informed that a considerable extra sum will soon be allotted to each partner.

Your Uncle and I go to London tomorrow to prove the will. That done, the share will be absolutely yours, only liable to an annual charge of £300 during the lives of your mother and myself. I learn from your Uncle that he has made William the absolute owner of two shares; but I suppose that William has covenanted to pay the whole profits of them to his father or to others: so that, though in fact no better off than if he were a mere trustee, he is really a bonafide partner.

This event will let you see why I have always advised you to stick to the works and be quiet.

And, now that I am casting you out of your old nest, let me give you a word or two of parting advice. I think you have met with a piece of good fortune: Do not let it exalt you, nor allow it to alter your behaviour to the ejected (?) Director.

Again, do not let the love of money take possession of you and, finally (?), do not league yourself with that man and become partners with him in getting all that can be got from the Company and in sharing the spoils with him. I fairly understand that he has covertly proposed this to you and represented that the Company cannot do without you two; and I am really uneasy about it, lest you should fall into the snare.

"Lead us not into temptation" is a very necessary prayer. In justice to him (and I am a lover of justice) you ought to have answered my enquiry whether you had any authority beside his word for your statement that the Partners were aware that he might keep his place under a fresh agreement on the expiration of two years, even though you were fit to be manager.

One word more, an important one. Bear in mind that mines are inconstant in their produce and annual profits, and do not live up to your income: be prepared for a slackness of trade and lay up something for your family.

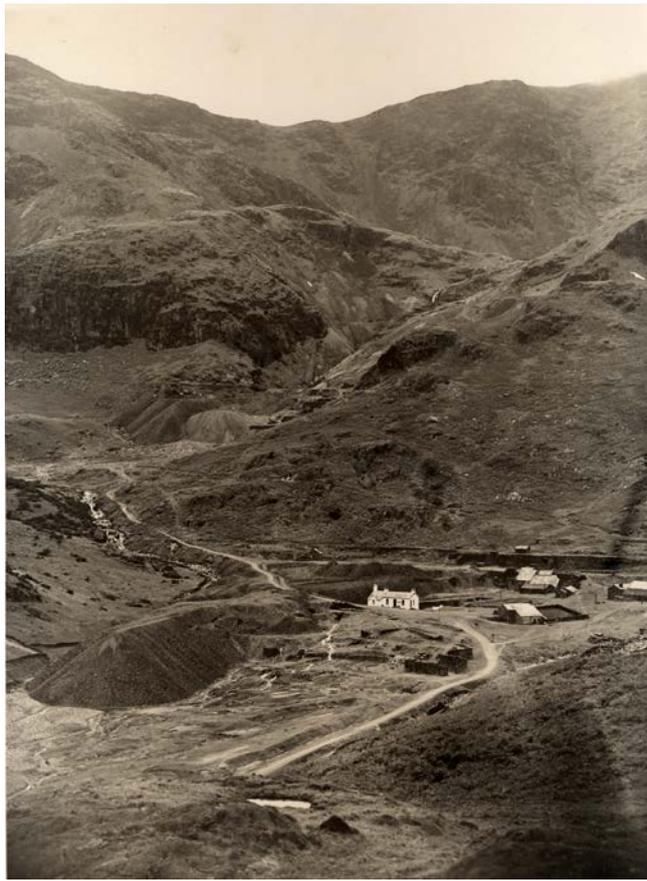
With our best love to you and your wife, I am your affectionate father,
G Ainslie.

P Sandbach with assistance from A Postlethwaite in the transcription

Coniston Copper Mines and Tilberthwaite Mine conservation project- update

Previous newsletters have reported on the submission to the Heritage Lottery Fund (HLF) for £400,000 for conservation work to be carried out at Coniston Copper Mines and Penny Rigg Mill at Tilberthwaite, following the loss of the grant funding through the Higher Level Stewardship scheme administered by Natural England due to the commoners in the area not unanimously agreeing to enter the scheme.

The HLF application is in two stages, the first being an outline of the proposed scheme which if successful would go through to stage two where the applicant has to demonstrate how it will be delivered. Apart from the conservation work, there will be a huge element of public participation which will involve the local community, schools; there will be the opportunity for volunteers to carry out archaeological investigations at the sites, training for volunteers in conservation work etc.



Minerva Heritage Ltd was engaged by the LDNPA to compile stage one of the grant application which has included support from members of the public and various organisations including other mining societies of national repute such as Northern Mines Research Society and NAMHO. The initial application was submitted in February 2014 and the decision to allow the application to progress to stage two was made in July. A site meeting with the HLF was held and they commented that only 35% of applications are now getting to stage two due to the sheer number they are receiving because at the moment they are seen as one of the only funding bodies and only the strongest applications are getting through.

Work has now started on stage two with Eleanor Kingston (LDNPA Archaeologist) being the lead person and the aim is to submit it in February 2015. Having got through stage one the HLF will not allow this two to five year project to fail. CATMHS will be heavily involved along with the LDNPA, Ruskin Museum, and landowners Rydal Estates and Mr P Johnston.

It is a great credit to the society and its members who over many years have pressed for conservation work to both sites to be carried out and should be indebted to John Hodgson (LDNPA) for all the work he has done to get the application through the difficult first stage. This is an opportunity to raise the societies profile and hopefully attract new members, especially as it has helped to secure £400,000 of grant funding.

Warren Allison

Surplus Publications for sale

The following publications (surplus to the Society's needs) are offered to the membership at the listed prices, which are the lowest at which second hand copies could be found on the web. If not hand delivered then P & P at £3 per copy will be charged.

NMRS British Mining Number 12 "The Mines of Cardiganshire"	£22
NMRS British Mining Number 23 "Memoirs 1983"	£11
NMRS British Mining Number 24 "The Ancient Metal Mines of the Isle of Islay, Argyll"	£25
NMRS British Mining Number 34 "Memoirs 1987"	£10

Photocopies of the following publications are offered to members who may wish to make a donation of £7 (including P & P) per copy to the Society.

NMRS British Mining Number 1 "Memoirs 1975"	
NMRS British Mining Number 2 "The Bay Mine"	
NMRS British Mining Number 3 "Memoirs 1976"	
NMRS British Mining Number 4 "The Mines of Anglesey and Caernarvonshire"	
NMRS British Mining Number 5 "Memoirs 1977"	
NMRS British Mining Number 8 "Memoirs 1978"	
NMRS British Mining Number 9 "The Llandudno Copper Mines"	
NMRS British Mining Number 10 "The Mines of Montgomery and Radnorshire"	
NMRS British Mining Number 11 "Memoirs 1979"	
NMRS British Mining Number 18 "The Non-Ferrous Mines of the South Wales Area"	
NMRS British Mining Number 21 "The Greenhow Lead Mining Field"	
NMRS British Mining Number 22 "The Richest in All Wales"	
NMRS British Mining Number 27 "The Rheidol United Mines"	
NMRS British Mining Number 29 "A History of the Manor and Lead Mines of Arkengarthdale Yorkshire"	
NMRS British Mining Number 31 "Talargoch Mine"	
NMRS British Mining Number 32 "The Basset Mines Their History and Industrial Archaeology"	
NMRS British Mining Number 33 "The Yorkshire and Lancashire Lead Mines"	

If anyone is interested then please contact the Treasurer, see the back cover for contact details.

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