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The Newsletter of the Cumbria Amenity Trust Mining History Society

Old Engine Shaft wheelpit and Triddle incline, Coniston Coppermine

No. 124 August 2016

Cumbria Amenity Trust Mining History Society
Newsletter No 124, August 2016

Contents:

Editorial
The Committee has decided that the default delivery of our Newsletter will in future be digital, as has been the case for new members for some time. This should both reduce the very substantial cost of producing and posting the newsletter, and also the workload of the Editor in printing and posting it. The basic membership fee for those receiving emailed newsletters will be reduced accordingly. The newsletter will continue to be published on the member's page of our website, www.catmhs.org.uk

Members who *really* want to receive paper copies will still be able to do so, and we will also continue to send paper copies to libraries and archives. The basic subscription fee, before adding third party insurance charges, will be £18 for those receiving their newsletter by post and £10 for those receiving their newsletter by email.

The November newsletter will be sent out as usual, together with a two part renewal reminder so that members can make the choice to receive their newsletters by paper or by email.

It is important that members inform me of any changes to their email address.
Note that membership subscriptions are due on 1st November, which enables BCA insurance to be put in place for January 1st.

Membership
Welcome to Guy Hope from Low Tatham, Lancaster. Guy is a member of Yoredale Mine and Cave Group, based in Wensleydale and Swaledale.

CATMHS Website and CATMHS Archive
The transfer of our archive from the Ruskin Museum at Coniston to the Armitt Museum & Library in Ambleside has now been completed. All the items have been accessioned onto the Armitt catalogue. Please try to visit the Armitt to give them, and us, some support. Their website is www.armitt.com

The CATMHS website, www.catmhs.org.uk , has been substantially upgraded.

From the home page, if you hover on Resources and then click on Archive you will be able to access the catalogue of CATMHS material at the Armitt Museum by clicking on MODES-LIST.pdf

You can also find the full index of our mining plans as an Excel spreadsheet by clicking on CATMHS_Index_v1 .The index will come up as a box with the Excel symbol at the bottom left corner of the page. Click on this. If you then note a PLAN_ID number from column A, and enter it in the 'Search this website' box on the Home page, you will be able to view a pdf of the actual plan. Be patient, it takes a few seconds to download. If, for example, you entered 32360, which is for Threlkeld Lead – plans in 7 folders; once you have the plan onscreen you can scroll down to view the other Threlkeld Lead Mine plans in the collection. You will be able to zoom in to examine detail.

There is also a Meets page, where you can find a diary of CAT meets, together with details of how to contact the Meet Leader.

Many thanks to our webmaster, Chris Cowdery, for making this possible.

Coniston Copper Mines HLF grant update

There are many aspects to the grant, apart from the conservation work and interpretation, which also includes various ecological surveys, as previous ones have shown there are many rare plants, lichens etc. and the new surveys will show if there have been any changes.

On the 6th June conservation work by the contractor started at the Old Engine Shaft wheelpit which has been completed and they are now concentrating on the Thriddle incline. The bat and reptile survey has been completed and no adders or bat roosts were found. The Bryophyte survey has started and there are over 150 species, with three being rare.

Press releases have gone out and Eleanor Kingston and Warren Allison were interviewed for Border News which went out on the 27th May. Minerva Heritage have been appointed project co-ordinator and are looking at the various interpretation aspects of the project which will include involving the public and they have started working with the local schools.

Northern Archaeological Associates (NAA) have been appointed to carry out the watching briefs and recording process as well as looking after the volunteers who are taking part in the various archaeological surveys. The first one started at Penny Rigg Mill on the 11th July with an introductory day taking part on the 10th July where Mike Mitchell, Mark Simpson and Warren Allison took the volunteers through the site, describing the history as well as a short trip into the slate closehead just inside the Horse Crag Level.

Volunteers learning how to use the equipment

Eleanor was especially pleased that out of the 24 volunteers who turned up for the introductory day, at least half were new people and the invitation had only just gone out.

During July the lichen survey will commence with work continuing at the Thriddle Incline and associated wheel pit. *(See cover pic. Ed)* The survey at Penny Rigg Mill is anticipated to last three weeks with volunteers also carrying out documentary work and an introductory leaflet will be ready for the end of the month

I would encourage people to have a look at the project on the LDNPA web site under Coniston Copper for more news on the project.

Warren Allison

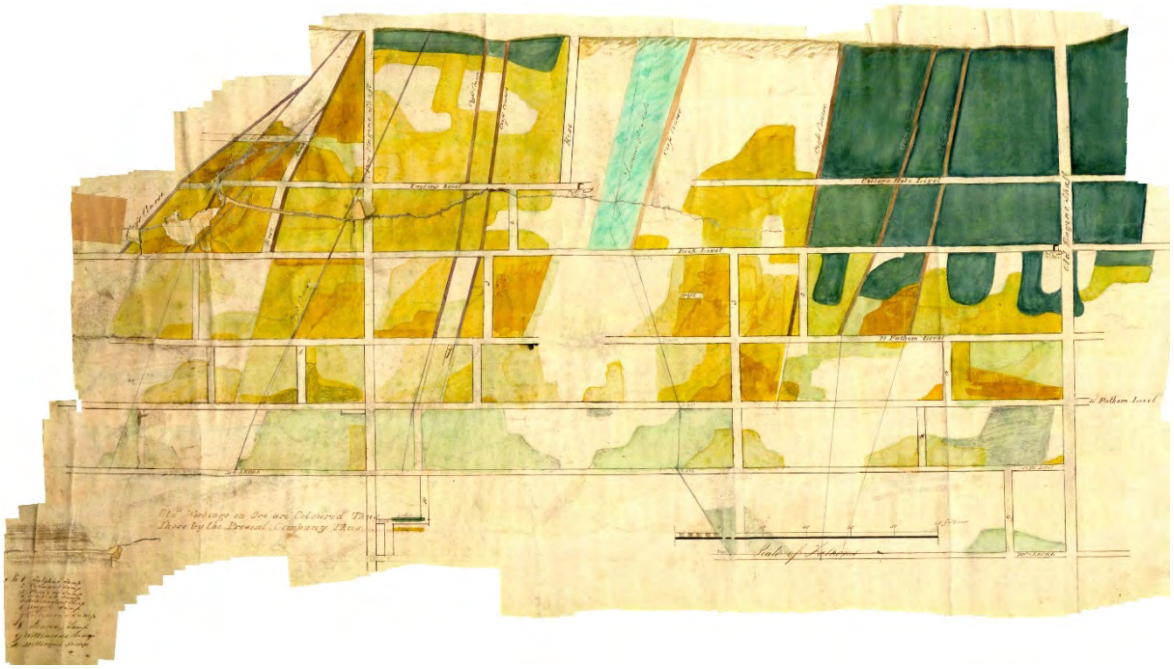
Eric Holland archive

Eric Holland was a founder member of CAT and was our first Secretary and Newsletter Editor. His interest in mining matters long pre-dated the formation of CAT, and he was amongst the first mine explorers in Cumbria, or Lancashire, Westmorland and Cumberland, as it then was. He was a visionary, wanting to develop our industrial heritage for all to share, and he amassed an impressive collection of mining artefacts and documents, many of which he rescued from destruction. He published a book, Underground in Furness, and two books on the Coniston copper mines, 'Coniston Coppermines – A Field Guide' in 1981 and 'Coniston Copper – A History' in 1986. Sadly Eric passed away in 2004.

Now, due in part to the good offices of Eleanor Kingston, LDNPA Archaeologist, his wife Maureen (Mo), herself a past Treasurer and Membership Secretary of CAT, has decided to make his documents publically available through CATMHS.

A collection of about 200 mine plans have been listed. Most are of the Cumbria west coast iron ore mines, but there are some of Coniston. They have all been delivered to the British Geological Survey to be scanned and digitised. Hopefully this will be done by the end of September, and then all the digital images will be available on the BGS website and on the CATMHS website. The original plans will returned; those pertaining to the Lake District mines will be deposited in the CATMHS archive at the Armitt Museum and Library, and it is hoped that the Cumbria iron mine material will go the CRO's at Barrow-in-Furness and Whitehaven, and be known as 'The Eric Holland Collection'.

We also have Eric's collection of mine ledgers and record books. Again, most relate to the Cumbria west coast iron ore mines, but there are some from Coniston copper mines, which have been deposited at the Armitt Library and Museum. If you would like a list email membership@catmhs.org.uk. Please telephone or email the Armitt in advance if you want to view documents so they can get them out of the secure store. 015394 31212; info@armitt.com



A *scanned image of one of the Coniston mine plans, 'Section of Bonsor Vein'. Workings have reached the 70 fathom level. Possibly drawn in the mid 1840's.*

Discovering Cumbria's Past Online

As part of its 150th anniversary celebrations the Cumberland & Westmorland Antiquarian & Archaeological Society is making all the volumes of its *Transactions* since 1874 available online. CWAAS members can see every volume by logging in, although non-members cannot see any published in the last 10 years. Go to the Society's website www.cumbriapast.com and click Transactions to go to the search page.

CUMBERLAND AND WESTMORLAND
ANTIQUARIAN AND ARCHAEOLOGICAL SOCIETY

Discovering Cumbria's Past Online

CWAAS *Transactions* since 1874 online

A brief guide

As part of its 150th anniversary celebrations, CWAAS is making all the volumes of its *Transactions* available online. CWAAS members can see every volume by logging in although non-members cannot see any published in the last 10 years.

These simple guidelines provide an introduction to help you explore this valuable resource.

Where to start

There are two main places to search *Transactions* online and find articles and references you are interested in:

Cumbria Past – the Society's own website which has full search facilities

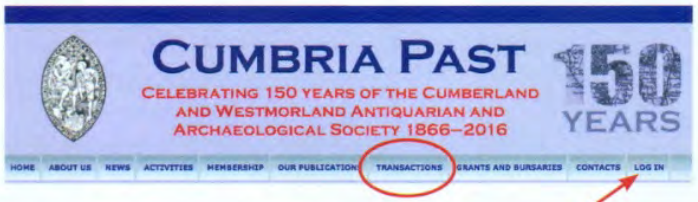
ADS (Archaeology Data Service) – where searches are limited to author, title or year

Using Cumbria Past

(www.cumbriapast.com or use your browser's search engine)

On Cumbria Past home page

Click on Transactions to go to Search Page



Log in if you are a member and wish to view the contents of the last ten years

Celebrating Nenthead's Mining Heritage

On Saturday 6th August, Nenthead Village Hall will host an international conference (how many village halls can claim that?). This occasion marks the 120th anniversary of the arrival in Nenthead of the Belgian Vieille Montagne Mining Company, whose mining operations once produced 60% of the UK's zinc. The conference will be followed on Sunday 7th by a gala in Nenthead and guided tours of the mines.

This special weekend is being organised by the Alston Moor Historical Society who have been awarded a 'Sharing Heritage' lottery grant for the purpose. For more information and to book tickets, visit http://vieillemontagnehistory.com/

Lake District Archaeology Volunteeers at Sandbeds Mine

After many months of walking over the site of the old Sandbeds lead and copper mine on Caldbeck common, we have finally completed our Level I survey of the area. We have produced far in excess of 120 Heritage Environment Records from what at first glance, seemed to be nothing more than a pile of rubble.

Most of us learned a lot of new things about mining as we came across the site of old buddles, stamp mills and settling ponds. The waterway system which consisted of leats linking one intothe other and channelling down to where the waterwheel had been, can only be compared with the complexities of Venice and its canal system.

From what seemed to be a somewhat uninteresting task when asked to take on the survey, it turned into a fascinating insight into a unique part of history as we explored and discovered how local men managed to extract the last ounces of ore from the landscape.

Our final survey took place just before Christmas when to our dismay, we saw the devastation that storm Desmond has wreaked on the site. Gone were the remains of the three buddles, the site of the stamp mill had disappeared and several of the leats had been washed away. We were left thinking that it was just in the nick of time we had recorded the remains of what had once been a thriving industry out on the rather bleak common land which lies beneath Carrock Fell.

Since completion of the volunteers' survey, aerial photographs of the site have been taken by Mike Mitchell and Mark Simpson. IM.

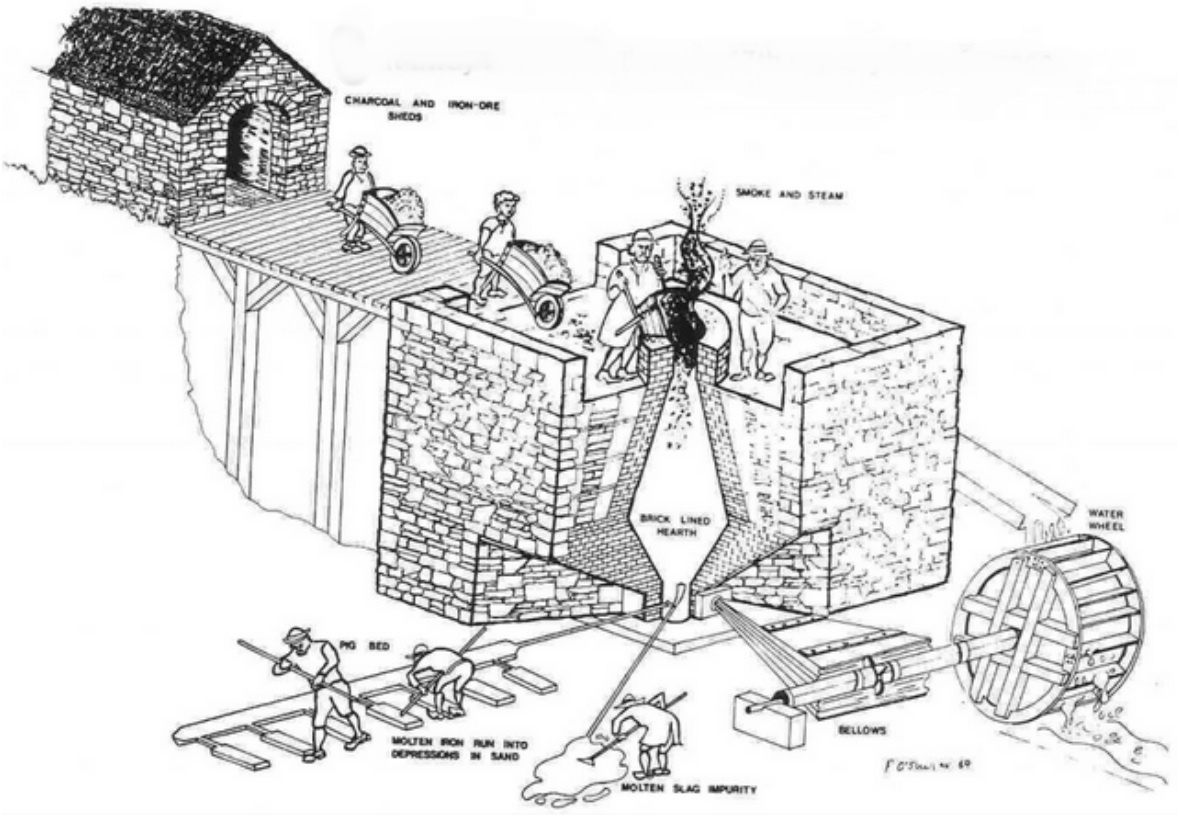
Meets

Proposed visit to Dyfi furnace, Friday 21st October

When we started work at Newland we had no idea that the walkway around the top of the furnace stack still existed. The firebrick lining had been removed from the top 12ft and the rubble core had crumbled away leaving a steep funnel, overgrown with brambles, leading to a 20ft drop to the hearth below. The furnace lining had to be replaced to support the rubble core but our only guide to the shape of the tunnel head was Duddon furnace, which has also been reconstructed. This was the point where the ore and charcoal was fed into the furnace, and also the site of the flame where the carbon monoxide was burnt off.

A visit to Dyfi has been arranged to see how much of the tunnel head survives there. CADW *(Apparently CADW is Welsh for English Heritage. IM)* have agreed to show us the parts of the furnace which are not open to the public once the horseshoe bats have moved to their winter quarters. They have some plans and drawings.

In the afternoon there will be a trip to Ystrad Einion copper mine to see the underground waterwheel.



Schematic drawing of the furnace at Dundaniel by the National Maritime Museum of Ireland. This furnace was operated by the East India Company between 1610 and 1641.

On Saturday 22nd, Jon Knowles has agreed to offer a tour of the surface remains at Corris. This is to be a joint CATMHS/NFT/CIHS meet. The Corris Slate District was the southern outlier of the Ordovician Slate on which the slate industry of Merioneth was based. Although never as large and certainly never as prosperous as Blaenau Ffestiniog to the north, it had a unique charm which persists to this day and, due to the nature of the rock, had noticeably different methods of extraction. The area never made it big either, as a slate producer or latterly as a tourist area, and is less disturbed and retains many original features. The walk will show some of the remains of the Corris Railway, its feeder tramways and the quarries which produced the slate. Depending on group size and ability there will be opportunity to go underground to get a feel for the size of the workings. Please bring walking boots, lunch, helmet and lamp/torch.

The walkway and reconstructed tunnel head at Newland Furnace, photo D Robson.

Penny Bridge Furnace 27th April
Present: D Robson, A Westall, E King, R Baker, P Sandbach and dog.

According to Phillip Ridden, Spark Bridge furnace was last used in 1780 and demolished in 1791. The Backbarrow ledger Z196 implies that it was dismantled in 1800, as that was when the bellows, cast iron weights, old timps etc were carted to Backbarrow. A flax mill was built on the site which was converted to a paper mill in 1861.

The meet was planned to consider the paradox that a blast furnace which worked for 32 years from 1748 left no blast furnace slag but was surrounded by mossers. Mossers are the slag from a finery and chafery forge, the nearest of which is upstream at Spark Bridge. Before we even set off, Alan pointed out that a wall opposite the junction was covered in mossers and we continued to find them on random walls throughout the evening, especially around the entrance to the furnace.

Mossers at Greenodd.

We went on to look at the charcoal barns, which later were part of a flax mill, then a paper mill, then a bobbin mill. Then we followed the leat up to the weir and the remains of the sluice gear.

Charcoal barn, later converted to a flax mill

Returning to the site of the furnace, the only building remaining was on the line of the leat, and in the back wall were two large arches which discharged the water into the wide tailrace. These arches were described in the Westmorland Gazette of 24 August 1867, when W Dixon was charged with lamping salmon. It was said that the tailrace was then 18" deep with the mill running and 6" deep when it was stopped. A later attempt to explore these arches was defeated by very deep mud.

In 1850 the flax mill had two waterwheels, 10ft wide and 20ft diameter, but these were replaced by a 10hp turbine, working at 200rpm in 1861.

The smaller of two arches discharging water from the turbine. There is little chance of gaffing a salmon now.

The paper mill was operated by Harrison and Long in 1875, when a revolving rag boiler exploded, killing six people, including Mr Long. The boiler contained 2 ½ tons of rags and was at 50psi when it burst. Then, in 1876, one of the buildings was destroyed by fire. The company went into liquidation in March 1877 and the resulting sale included three turbines. After this the buildings were used as a bobbin mill by Philipsons of Spark Bridge. They were still standing in 1963 when they were photographed by Mike Davis Shiel. His photographs show a whole row of buildings including the base of the furnace, where now there is only the shell of the turbine house.

Peter Sandbach.

References

Photographs by Mike Davis Shiel of buildings, turbine and newspaper clippings on CASCAT WDMDS/PC/14/130 to 134.

Acknowledgement

With thanks for information from Jonathan Wignall.

Silver Gill Mine meet
Warren Allison (Meet Leader), Mark Hatton, Sue Lund and Charlie Fowler.

Meeting at Fellside, we set off along the mine road which takes you to the head of the valley; each of the smaller side valleys have also been mined. We passed Ingray Gill, Hay Gill which is reputed to be Elizabethan, pausing at the smelt mill at the bottom of the gill, where I explained that it had been built by the company mining at Roughtongill Mine. The line of the flue can still clearly be seen. It only worked for a short length of time before being converted to a row of cottages. There is no slag remaining as, according to Sam Murphy, this was taken away when the cottages were built. In the 1890's it was converted to a baryte crushing mill which served the Potts Gill Mine approximately two miles to the east.

Carrying on, we passed Brae Fell Mine, with probably the best example of hushing in the Lake District, and Birk Gill with its three levels, before making a short detour to look at the closed level at the bottom of Swinburn Gill, its ore bin and hand-dressing floor. From here you look up into Dry Smale Gill and Wet Smale Gill which have small trial levels, and Red Gill Mine which is world famous for specimens of Linarite.

It wasn't much longer before we came to the site of the famous Roughtongill Lead and Copper Mine, with Mexico mine to the east and Silver Gill Mine to the west, and we stopped while I explained the history of the mine with its original workings being high up in Thief Gill. The 30 fathom level was driven from the gill to undercut these workings before the 60 fathom level was driven, followed in 1849 by the 90 fathom, which is now marked by the United Utility hut. Until recently the level was used as a water supply. The extensive dressing floor is below the level. The site of Lainton's engine shaft can be seen on the fell side as a flat top to the east, which is 300 feet to the 90 fathom level, and was used to pump water from below it using a Cornish Beam Engine. There seems to be no logical explanation as to why the company thought it was a good idea to sink the shaft on the open fell side and apparently it nearly bankrupted the company.

We slowly started to walk up Silver Gill, which was worked in the medieval period and was the site of the main German workings on Caldbeck, with evidence of an underground wooden trackway, all of which we discovered in the late 1990's. This research was published in the Cumberland and Westmorland Archaeological and Antiquarian Society journals in 2001, which is available for all to download from the society's web site, *Cumbria Past*, and in 2010, which is available to its members to download.

Just as we started, it was clear that there had been a lot of water coming down the beck, as part of a wall had been uncovered which has not been seen before and its use is unknown. We soon reached a level which had been driven in the early 1800's and was opened up many years ago, but nothing has been published and it could be considered as a future project.

Climbing higher we reached the site of where a few years ago the society (CATMHS) had got permission to open up the entrance to what was thought to be the proposed fourth German level, which was still being considered in 1620. Unfortunately, we were digging in the wrong place and have not yet found the entrance.

We soon reached the coffin level known as the New Stoln, where the crosscut is as it was when it was first worked around 1571. As there is not much room in the level, I stopped outside while the others went in. Although it is only 40 yards to the vein where it turns left and right, with a

flooded shaft in the floor and the right hand branch collapsed, a fair amount of time was spent underground photographing the level.

New Stoln cross-cut

Cross-cut on Emanuel

We then made our way to the next level which is Emanuel, probably named after Daniel Hochstetter's son, and was the level which confirmed that we had discovered the main German workings on Caldbeck. As the door had not been opened for a number of years it took a little while to gain access to the level. Again the crosscut is as it was when the Germans were working it and after about 30 yards the vein is reached, where the level turns left and right along it.

The left hand branch is approximately 40 yards long to a forehead and has been partially backfilled. There is 40-yard level going straight on from the crosscut and a 90 feet deep shaft with a jackroll (not German) down to the New Stoln, which had been filled with rubble when we first got in, which we emptied, giving access to around 30 yards of the New Stoln, which was found to be collapsed in both directions.

Jack roll over the shaft

Shaft now cleared

Walking along the level there are signs it has been blasted by later miners, but most of it is as it was when worked by the Germans. After 60 yards the ore bearing part of the vein is reached, where it is around 30 feet wide. It appears that the ore was on the hanging and footwalls with barren ground in between and at this point the level had been backfilled by later miners. We had removed 40 yard's worth until we got to a large stoped area where the backfilling had collapsed and could not be dug through. We had considered driving through it, but the level was too narrow at the top and virtually impossible to put any support in.

It was during the removal of the backfill that a small wooden sleeper fixed into the ground with a wooden peg was found, and several other similar pieces in the actual backfill along with three short boards. These were carbon dated, and Michael Lewis, who wrote the definitive work on early wooden waggon ways, visited the mine and confirmed that the timber was from the track that the Germans ran their rowle wagons on. Amongst the timber pulled from the back filling also appears to be a piece which could have come from a rag and chain pump.

Sleeper in-situ- note the wooden peg

The aborted dig

This discovery has made the mine of national, if not international, importance, as, according to the National Railway Museum, this technology led to the development of the railway. A paper on this discovery was presented (*by Warren Allison, Ed.*) in 2008 to the Fourth Early International Railway Conference at University College, London.

All the pieces of the waggon way collected together on the meet

Boards on top of the sleeper which the rowle wagons would have run on

An example of a wooden waggonway from the illustrated manuscript known as the Schwazer Bergbuch, published in 1556, which is in some respects the Austrian counterpart of Agricola and is much more relevant to us.

There was much photography going on and this allowed time to have a further look at the level and I found another piece of timber from the waggon way and also managed to completely uncover the second sleeper, which appears to be still in situ, but was difficult to photograph due to water running over it. A few years ago three pieces of similar timber were found in the collapse on the New Stoln which are now in safe keeping in Emanuel.

Left. Possible wooden pipe from a rag and chain pump

Right. Pieces of the waggon way from the New Stoln

We exited the mine and walked up the gill, passing the closed entrance to Fortune, and at the top of the gill reached a shaft working with some surface trials which were testing the vein. From here it is a short walk along a leat to the workings in Thief Gill. These workings are known as Dutchman's Moss and there has been a lot of activity here with levels (now closed) several hushes, shaft workings and ruins.

We dropped down to a small waterfall which is marked on an 1823 map as '*site of old waterwheel'*, with the small dam and leat still visible. It was not clear until a few years ago why anyone would put a waterwheel here right by the beck. It was only when on a previous visit I pushed the 30 fathom level which comes up underneath for some 200 yards in awful

ground (probably this was why no one else came with me) over several falls until another one blocked further progress, that a possible explanation came to light. It was when coming back through one of the collapses that I noticed one side of the level had been hand driven and the pick marks were going downhill. This suggested that the level had originally been driven from a shaft by the side of the waterwheel, and there are later accounts of water being taken down a shaft in Thief Gill through the 30 fathom level to drive a hydraulic engine on the 60 fathom level. It is probable that the level was driven by the Germans after 1620 as Silver Gill had been virtually continuously worked for over 50 years and they were looking for additional ore deposits.

Three intrepid explorers at the shaft with Mexico Mine on the far fell

Sue and Charlie at the site of the old waterwheel. The shaft is believed to be on the top side of the beck

Mark standing on the dam

Mark then pointed out it was four o'clock and we still had the workings of Roughtongill to look at. We quickly reached the 30 fathom level and were soon underground. Where the crosscut meets the vein there is a step up into what looks like hand cut workings which lends more weight to the level having being originally driven from Thief Gill.

Entrance to the 30 fathom level with the side walls still partially intact

Dropping down we came to the 60 fathom level with another coffin level on the opposite bank, known as the Blind Wastle, which was driven on the east end of the Silver Gill vein.

Blinde Wastle

Time was now getting on, so we made our way down to the dressing floors and arrived back at the cars at nearly seven o'clock, after what was a thoroughly excellent day, and we had not seen everything.

Warren Allison

Leighton Furnace 22 May

Present: P Timewell, D Benham, A Westall, P Sandbach (ML) and dog.

Parking at a nature reserve had unexpected benefits as we arrived on the day when Lady's slipper orchids were in flower and the Duke of Burgundy was flying. The Lady's Slipper was so rare that in 2010 the Daily Mail was able to write about the police guarding the last remaining specimen. Following decades of work by Kew gardens, seedlings germinated on agar jelly and grown on at Kew have been returned to the wild, some of which are now flowering at Gaitbarrow.

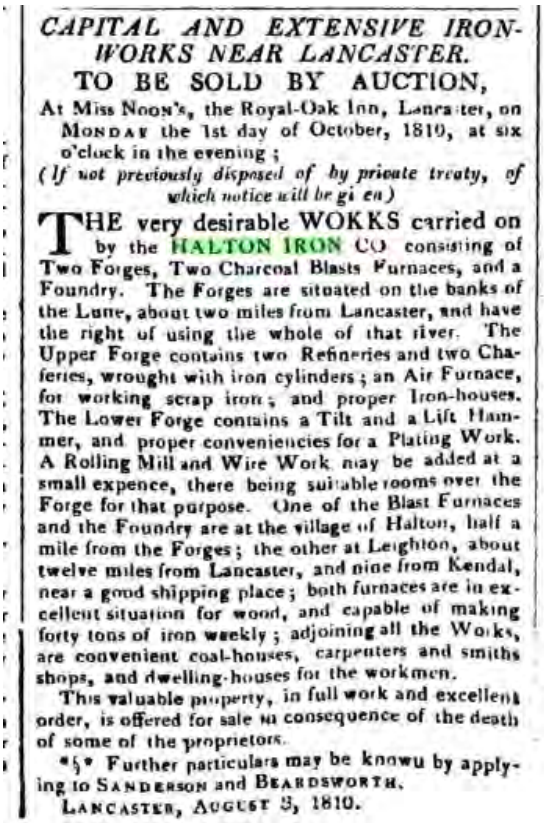
Duke of Burgundy. Photo D Benham

Lady's Slipper orchid. Photo DB

A short walk through the woods brought us out on the road near the site of Leighton furnace. This furnace was built in 1715 by the Backbarrow company but sold to the Halton company in 1755. It was fuelled at least partly by peat and an early recipe is found in the Backbarrow ledgers:

4 baskets coale
3 baskets of peates
4 baskets of Heaning Wood ore
1 basket and ½ of Adgarley ore
1 basket of catspole (ironstone)
½ basket of cynders
1 basket of limestones.

Most sources say that the furnace closed in 1806 but the CIHS website says that it blew up in 1803. The site was owned by the executors of Thomas Rawlinson and was offered



CAPITAL AND EXTENSIVE IRON-WORKS NEAR LANCASTER.

TO BE SOLD BY AUCTION,

At Miss Noon's, the Royal-Oak Inn, Lancaster, on MONDAY the 1st day of October, 1810, at six o'clock in the evening;

(If not previously disposed of by private treaty, of which notice will be given)

THE very desirable WORKS carried on by the HALTON IRON CO consisting of Two Forges, Two Charcoal Blasts Furnaces, and a Foundry. The Forges are situated on the banks of the Lune, about two miles from Lancaster, and have the right of using the whole of that river. The Upper Forge contains two Refineries and two Chaferies, wrought with iron cylinders; an Air Furnace, for working scrap iron; and proper Iron-houses. The Lower Forge contains a Tilt and a Lift Hammer, and proper conveniencies for a Plating Work. A Rolling Mill and Wire Work may be added at a small expence, there being suitable rooms over the Forge for that purpose. One of the Blast Furnaces and the Foundry are at the village of Halton, half a mile from the Forges; the other at Leighton, about twelve miles from Lancaster, and nine from Kendal, near a good shipping place; both furnaces are in excellent situation for wood, and capable of making forty tons of iron weekly; adjoining all the Works, are convenient coal-houses, carpenters and smiths shops, and dwelling-houses for the workmen.

This valuable property, in full work and excellent order, is offered for sale in consequence of the death of some of the proprietors.

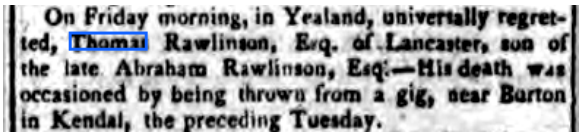
☞ Further particulars may be known by applying to SANDERSON and BEARDSWORTH.

LANCASTER, AUGUST 3, 1810.

Lancaster Gazette, 4th Aug 1810

for sale in 1804, 1815, 1816, 1821 and 1834.

The Halton Iron Company was wound up in 1808 following the death of several of the partners. The only building standing now is the charcoal barn, now a very good house but it was a roofless ruin in 1971. We spent some time tracing the line of the leat and looking at the slag before moving on.


On Friday morning, in Yealand, universally regretted, Thomas Rawlinson, Esq. of Lancaster, son of the late Abraham Rawlinson, Esq.—His death was occasioned by being thrown from a gig, near Burton in Kendal, the preceding Tuesday.

Chester Chronicle, 22nd Oct 1822

We passed the pele towers at Hazelslack and Arnside, both built as refuges during incursions of the Scots. Hazelslack tower is said to be late 14th century, Arnside tower slightly later.

Geologising on the slag bank.

A path through Eaves wood brought us out in Middlebarrow quarry. This is a huge limestone quarry last worked by ARC in 2000. After admiring the scale of the place we returned to more botanising among the Birds-eye primroses at Hawes Water.

Birds-eye Primrose

Middlebarrow Quarry. Photos P Sandbach

Greenside Mine meet
Warren Allison (meet leader), Mark Hatton, Sue Lund and Charlie Fowler.

This meet was to look at the water management system and remains of the hydroelectric plant, which in the early 1890's provided the electricity for the first underground electric locomotive and winding engine in a UK metal mine. This was to improve the efficiency of bringing ore out of the mine at a time of falling metal prices, and the locomotive would do the work of six men and horses. I have a number of old photographs which were used to interpret the remains still present.

It was a beautiful sunny day when we left the mine to walk up to Kepplecove Tarn, higher up the valley under the slopes of Helvellyn. Not long after leaving the mine buildings the three leats which brought water to the mine came into view. One served the smelt mill and is the oldest, being built in the 1820's, with the other two serving the dressing plant, one being built in the 1830's and the other in the 1860's. The leats are stone lined and have cobbled bottoms. They are a work of art; it is hard to think of the effort needed to build them, being dug by hand and also having to bring the stone in.

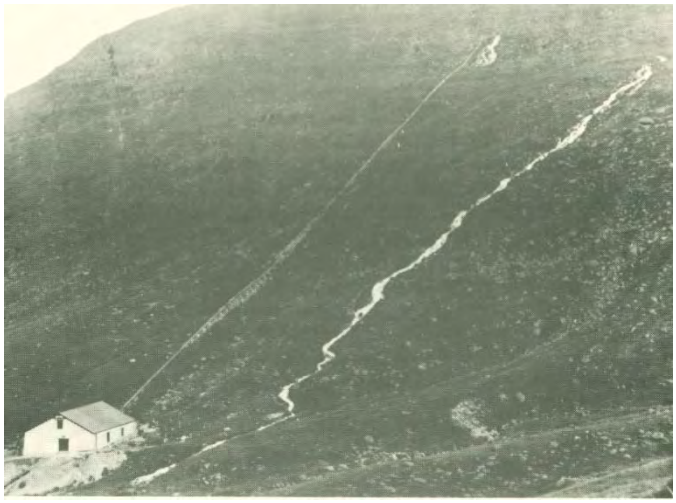
The middle leat

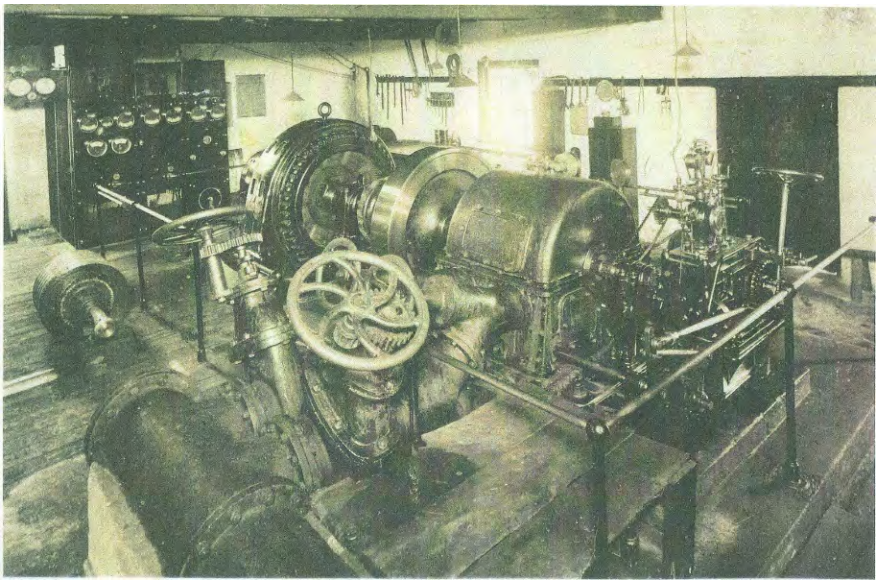
After about an hour, we arrived at Kepplecove Dam, which most people think was responsible for the tremendous flood in Glenridding on the night of the 28th/29th October 1927 from a huge storm, which was worse than the recent flooding during Storm Desmond. In the 1927 flood, debris, including dead animals, was washed down into the village and up onto the opposite side of the lake. However, it was not the concrete dam which was responsible for this, but the tarn round the corner.

Kepplecove Tarn was a natural tarn, which, in his book 'Grey Gold', Sam Murphy said that the Greenside mining company converted to a reservoir in 1871 by driving a tunnel through the bottom of the moraine and installing a valve so it could draw water off. The catchment area was increased by building leats to bring water from other becks. In the early 1890's, when the power station was being built, the leat to supply it ran from just below the tarn and under the slopes of Catstycam, crossing Red Tarn Beck and continuing round the fell to a point 400 feet above the power station (latterly known as No 1), which was close to the junction of Red Tarn and Glenridding Becks, from where the water was carried down in cast iron pipes. The two electric cables were carried on larch posts to the Low Horse Level and taken underground and down the Willie shaft to Warsop's Crosscut, a mile from surface to the electrical switch gear.

Post card showing Kepplecove Tarn being used as a reservoir pre 1927- note the tide mark

No1 power station





Due to the extending of the levels at the mine, the original plant was unable to provide sufficient power, so in 1899 a 100hp Pelton wheel from Gilbert Gilkes of Kendal (No 1286) and a 24 inch 500-volt dynamo from White Jacoby were installed, as seen in this photograph.

The breaching of the tarn in 1927 meant that the power plant was short of water, so the concrete dam was built. Its appearance indicates that it seems not to have been a well-built structure and was breached during a storm on the 19/20th August 1931, but with less damage to Glenridding than the previous flood.

Photo taken a few days after the breach

Kepplecove Tarn and dam today

We then made our way up to Brown Cove to look at the remains of another dam which has been the subject of much discussion over the years as to whether it was ever finished or used, and there is also a substantial building at the site.

Brown Cove dam

The walls of the actual dam appear to be two separate sets with a large pipe going through with a valve on the outfall end and long trenches running into the fellside on either end. What is also strange about the dam is another wall to the left. What purpose did it serve? After much discussion we came to the conclusion that the left hand wall standing on its own could have been the original dam and that it was dismantled to build the current dam which was never finished.

We made our way back down to Kepplecove Dam, pausing to look at the remains of the hopper where stone from the fellside was collected and taken to the dam using a short aerial flight. The valve assembly is still in place, with the maker's name of Davidson and Spencer of Hexham on the front, dated 1869, which was the original valve assembly used on the tarn and recovered after the flood.

We then followed the leat round towards the collection box above the power station, which is over mile in length. At a couple of places, it has been taken round crags in wooden launders, but one of them must have caused problems, as at a later date a rock cutting has been blasted through the crag. The leat had also been covered with timber boards to stop debris from the fell blocking it up and to help stop the water from freezing in winter. Remains of the timber can be seen near to the collection box.

We soon arrived at the collection box, marked by a tree, which is growing out of it. The outlet pipe is still in situ

We followed the line of the pipe, which is long gone, down to the power station, passing the stone pillars which supported it over a dip in the ground.

We used the old photograph of the inside of the building to work out what went where. The power station was still intact to the Second World War, but all that is now left is the concrete platform with the walls being pushed over on to it. However, can be seen crossing the footpath.

Original electric cable

We followed the path back down to the mine, which gives you a much better perspective of the water management system that carried the water to the mine from the beck; much of it is still intact.

This had been an interesting day and it showed what infrastructure was needed to support a successful mining operation, something we perhaps forget.

On getting back home, I looked at the 1st Edition OS six-inch map published in 1863, of the area around Kepplecove and Brown Cove, which shows that Kepplecove Tarn was being used as a reservoir and there is no dam marked in Brown Cove, so there is more to do to understand this area.

Warren Allison

Merseyside Industrial Heritage Society
The society was on a three-day trip to Cumbria looking at various industrial aspects of the county, including a trip to the Nenthead mines, and had also asked if they could be shown around the surface remains at Carrock mine.

I arranged to meet them at the Bobbin Mill at the Howk in Caldbeck, built in 1857 and closed in 1924. This is an impressive site and the waterwheel is reputed to have come from Carrock Mine.

We moved on to Carrock Mine, but first stopped off at Carrock End Mine just before Mosedale. This is an interesting site and worked a NW-SE copper vein. Both W T Shaw and I Tyler refer to the area around the mine as Dutchman's Moss and worked by the German miners, however Sam Murphy has identified Dutchman's Moss as being at Thief Gill above Roughtongill Mine.

The mine has two hushes which cut the vein, one at the main site and one to the north which has a superb stone built dam at the top of it. The mine also has four short levels, ancient shaft workings, an opencut, ore bins, hand dressing floor, remains of a horse whim with the centre stone still in place and a 23 fathom deep shaft which was pumped dry by pump rods. The waterwheel was approximately 300 yards from the shaft with water being brought from Carrock Beck.

Dr F. H. Day in his paper to the Carlisle Natural History Society 'Some notes on the minerals of the Caldbeck Fells', September 1927, quotes from an old record dated 3rd October 1794, as follows:

"A large copper vein had been discovered on the north side of Carrock mountain. Trials had formerly been made at several places. It is five feet wide and the copper worth £30 - £40 per ton. It is supposed that two workman got £80 worth one afternoon last week. The present lesees are Wm Rowe and Company of Liverpool. We have since heard that this vein has not turned out as well as expected."

It would seem that this could be the earliest date for working the mine.

There appears to have been several attempts to work the mine without success, until, in 1839, Rev, Francis Thompson took over the lease and sank a shaft 23 fathoms on what appears to have been a parallel vein. It must have been an impressive site to see the pump rods coming from the waterwheel, across the road and down the shaft. According to W. T. Shaw, the mine was being fully worked in 1841, employing 20 men, and eventually £15,000 of ore was produced, but it is not known when the mine closed.

Around 1865, the Caldbeck Fells Consolidated Lead and Copper Mining Company Ltd looked at the possibility of re-opening the mine, but it came to nothing and the mine has never been worked since.

The main site showing the line of the pump rods on the left hand side, two of the levels in the middle and to the right. The diagonal line is a hush with the shaft and dressing floor at the bottom of it.

The waterwheel was located in the stream bed just in front of the gorse with the leat coming from the left hand side of the photograph where it was raised off the ground where the sheep are (middle of the photograph)

The site of the horse whim with the centre stone in the middle.

Remains of an ore bin located well above the shaft, which may date from 1794 period of working.

Remains of the second ore bin just below the horse whim and shaft, which probably dates to the 1839 period of working.

We arrived at Carrock Mine, where the weather had taken a turn for the worse; it was very windy and cold. We spent an hour on site using old photographs to explain the history of this well-known mine before departing for the Mill Inn in Mungrisedale for lunch and to get warmed up.

The Society at the entrance to Carrock Mine Warren Allison

Carrock Mine with the Mineralogy Society of Hong Kong
Monday evening 13th June 2016.

I was approached by Mark Hatton to see if I could help out with a request to CATMHS from David Clayton to assist members of the Hong Kong Mineralogy Society in an evening exploration of Carrock Mine. The site is relatively close to where I live near Penrith, and the date and time fitted well with my work schedule so I was only too happy to agree. All it took was a few WhatsApp messages and the final arrangements were made.

We met in Mosedale at the appointed hour with a request to be out by 21.00 in order to allow time for late night fish and chips. The multinational group consisted of thirteen people in total. They had already enjoyed trips into Smallcleugh Mine at Nenthead and West Pasture Mine in Weardale during their stay, with a visit to the West Cumbrian iron mines earlier in the day, and were all keen and eager to get underground with due haste. One of the party (John Clayton) had had the pleasure of a previous visit to the mine when it was still in operation.

After a brief ceremony and photo shoot unveiling the MSHK banner at the entrance, the portal gate was opened and we made our way into the mine along the Canadian Cross-cut. Given the limited time schedule I suggested heading in past the Harding Vein to Smith Vein, and then the North branch to Smith Vein East.

The team was quick to start pointing out excellent examples of bladed Wolframite crystals and used their short wave UV lights to show up the fluorescence of the Scheelite present in the vein, along with evidence of Calcite showing a deep red colour. Arsenopyrite was also noted. At the furthest reaches everybody was suitably impressed by the large Quartz crystals of Smith Vein East, and by the condition of the hoppers along the way.

Time flew by as usual and soon an exit was due, on schedule for the fish and chips. All seemed pleased to have visited this most interesting site. Many thanks to the MSHK for a great evening out.

Graham Derbyshire June 2016

LDNPA volunteers walk at Coniston Copper Mines 4th June 2016

The LDNPA organise a day event for their volunteers and this year it was held in Coniston. Eleanor Kingston asked if I would lead a walk to have a look at the copper mines and explain how the Heritage Lottery Grant would be helping to conserve the remains, and interpret them. Everyone met on a glorious sunny day at the Coniston Sports and Social Club, where the 60 odd people split into various groups.

Bucking stone

Eleven of us were taken by mini bus to the copper mines youth hostel. Unfortunately we had to be back at the club house by 2.30pm so it was going to be a fairly quick walk. Copies of old photographs and plans were used to help explain the site before we walked to Deep Level and from there we walked up to Cobblers Level. Slowly heading towards Bonsor East Shaft, we stopped to look at the bucking stones in the spoil before reaching the waterwheel pit built in the mid 1750's by Charles Roe which is still in remarkable condition. We then walked along the line of the vein, which was worked by the Germans, before stopping at entrance to the Old Engine Shaft where we had lunch.

The set up at the Old Engine Shaft was explained and what an impressive structure the wheel pit is, people commenting on how did they actually build it? We walked over to the New Engine Shaft at the bottom of the Thriddle Incline, before dropping down to follow the leat round towards Hospital Level. After a short distance, you look across to the area around the Old Engine Shaft and Cobblers Level and what a superb view it is, with over 500 years of history in a relatively small area.

We soon reached Courtney's crosscut where we split the group into smaller numbers and donned helmets walking along the level looking first at the over and understoped ground approximately 20 yards from the entrance. Walking on we soon reached South Shaft where the vein has been stoped and wooden ladders are still in place.

Once everyone had been underground we walked back down the valley to the Social Club, where refreshments and various presentations were made. This was a fitting end to what had been a lovely day, good weather and a walk with interesting people.

The South West Historical Society walks at Coniston Copper Mines on 25th June 2016

Les Watson had been in touch and asked if a walk around the copper mines could be arranged. Seven members turned up in the lane behind the Ruskin Museum on yet another lovely sunny but cloudy day. We slowly set off up the road at a pace which suited my arthritic knees and soon reached Miners Bridge where the carts carrying the copper ore crossed the beck to go down to the copper house on the end of the railway. This is where the water intake for the Coniston hydro scheme commences, which follows the line of the original one. After about 100 yards we stopped where it is a perfect place to explain the site and what a view it is. Red Dell to the right with the tower of the Old Engine Shaft clearly visible, the Bonsor Dressing floors in the foreground with the Youth Hostel behind, the dressing floors and spoil heaps at Hospital Level, above which are Top and Middle Levels and higher up Simon's Nick, an area which is always intriguing.

The group standing on the leat to the New Engine Shaft with the dressing floors at Hospital Level and Simon's Nick in the background.

We had followed the same route a few weeks earlier on the walk with the LDNPA volunteers, but we had much more time, which allowed us to come back to Coniston by crossing over Miners Bridge, passing the copper house where the railway terminated, exiting at the Sun Inn and walking through the village back to the cars, completing what had been yet another superb day. I must say that these walks explain what CATMHS has done over many years to explore and try to conserve this special place.

Part of the control system on the leat.

The bridge for the railway just below the copper house.

These walks not only help to show what our society has done over many years but also fits with its charitable aims, which include disseminating information to the public.

Warren Allison

Chalcopyrite – Pyrite – Arsenopyrite Suite

Their genesis in the English Lake District

JEFF WILKINSON

Introduction: *Way back in C.A.T. Newsletter 47 (1996) there was a short write-up about a geological visit to Coniston by the B.G.S. and a possible discovery. The technical paper did not appear for another 3 years. Due to a recent email it is time (albeit very late) to submit a full report of the discoveries, implications and re-visit.*

It all started with an email from Alastair Cameron, that stalwart of C.A.T. and fountain of knowledge in all things slate. He wanted to rack my brain about something he recalled from years back. He was aware that there was a discovery in the Coniston mines that had implications in a geological/mineralogical context. He had a rough idea of where the first discovery was made but asked for clarification and any other information about the event.

Background:

In the early 1990s I had built up a close friendship with two geologists from the B.G.S. Over many meetings we came to the conclusion that there was a great opportunity to pool our individual expertise. I could take them underground to places professional geologists just would not dare visit and they would have the opportunity to view, among other things primary mineral exposures. Co-operation was important to me because … at that time I felt there were some assumptions and guess work regarding minerals and rock formations. This partnership came to fruition in January 1996 when they arrived at Coniston after receiving funding to carry out research.

Dave Millward's expertise was the volcanic rocks of the Lake District; Brian Young was a mineralogist with many decades of experience with North of England minerals. I also invited Dave Bridge, another C.A.T stalwart, a past Chairman and someone with whom I had enjoyed big underground trips. The places visited underground were Levers Water Mine, Deep Level, Top Level Extension, Hospital Level and Courtney's Crosscut. What surprised me was, that, unlike most viewing the stunning post-mine (supergene) minerals, they had no interest in them what-so-ever. To them they obscured the much more informative and important primary minerals.

Happy geologists: Dave Millward (left) & Brian Young: Hospital Level Photo Dave Bridge©

It was in the far reaches of Hospital level, beneath the Levers Water horizon that one became aware of two very excited geologists. Talk of a whisky celebration later suggested more than an addiction to the hard stuff! It transpired that for some time they had postulated that the time scale of the chalcopyrite – pyrite – arsenopyrite suite formed much earlier than the generally accepted time scale of early Devonian (Acadian Orogeny), around 390ml years ago. This is when the rocks were inverted, intensely

heated and squeezed, cumulating in the characteristic features of folds and cleavage imparted on rocks … most evident in the slate formations. Extensive faulting also occurred during this period. *Mineralization was thought to have happened "after" this event*.

Earlier geological mapping of the Coniston area had shown that faults (now mineralized) were also active during Ordovician volcanism (450/460ml years ago.) These faults were influencing the related caldera system. It's thought that these open, active fault fissures may have become an open pathway for migrating hydrothermal fluids rich in minerals.

Most of the copper mineralization at Coniston lies within silicic-ignimbrite rocks (welded tuffs.) These veins are wide and productive but fail as they pass into andesite and volcaniclastic sandstones. Ignimbrites are the result of very large pyroclastic flows. When the super-hot and energetic flows came to a stop the material within them welded together. At the same time the weight of hot, overlying material flattened lumps of pumice into thin streaks. This is a distinctive feature of ignimbrites and they can sometimes appear lava-like. It's best observed on white-weathered-surfaces of the well-known (rhyolitic) Paddy End Member. All of the productive veins at the Back Strings occur within this formation. The last eruption of a comparable ignimbrite was 74,000 years ago at Toba, Sumatra, Indonesia…a super volcano. It is credited with almost wiping out the human race, causing a "bottle neck" and leaving a much smaller variation of D.N.A than expected.

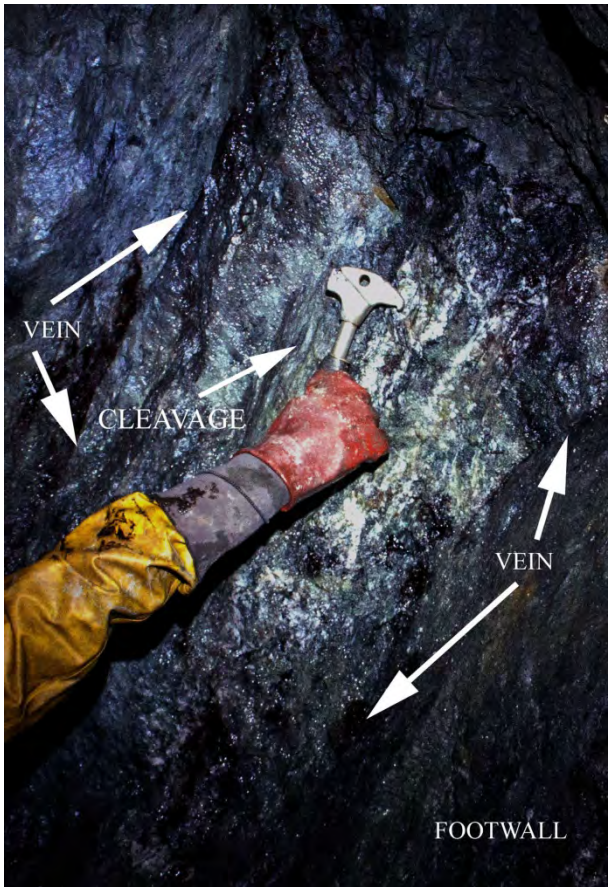
Weathered Paddy End Member rock showing "classic" streaking of flattened pumice. Small streaks are termed eutaxitic texture, large streaks are parataxitic; length 36cm - height 20cm. Wilkinson collection.

Discoveries:

A vein up to 0.65m wide was scrutinised in Hospital level. It contained quartz, chlorite, wall-rock fragments and small amounts of chalcopyrite. The host rock in this location is a bedded andesitic tuff. Cleavage in the host rock continues and is refracted through the vein. Cleavage is also consistently orientated in the rotated wall rock fragments within the vein. A vein of a single fracture a few centimetres wide in Courtney's Crosscut containing fault rock was also of interest. Cleavage passed from the host dacitic ignimbrite rock through the vein. Folded stringers of quartz of the same generation showed regional cleavage, axial planar to the folds.

(i.e. *where there are folds, axial planar cleavage is cleavage parallel to the axial planes of the fold. Both are usually perpendicular to the maximum compressional stress imparted on them.*)
Other observations at Wasdale, Honister, Dale Head, and Borrowdale, plus later detailed microstructural analysis at the B.G.S. Edinburgh office, confirmed their theory.

Conclusion*:*
Because there was a cleavage fabric in observed veins, those veins had to be in place "*before*" the later Acadian Orogeny event…not after it.
There is now evidence that mineralization of the chalcopyrite – pyrite – arsenopyrite suite occurred during or shortly after subduction-related volcanism had ceased. Minerals were partially or fully re-mobilized during the later Acadian Orogeny. This re-crystallization of minerals suggests that earlier research evidence from K-Ar age dating (1974) inferring a 390ml year genesis of the veins is incorrect. Mineralization was reset during deformation. This moves the formation of mineralization possibly back some 60ml years. More importantly mineralization has now been directly linked with Ordovician volcanism. Evidence has also strongly suggested that there was only a single mineralization period.
Within 3 months of the visit a major collapse in Hospital level blocked all access to the area and stayed blocked for a considerable time until C.A.T's digging team cleared and stabilized the area.



Subtle cleavage fabric within the vein -
(Parallel to hammer shaft left) Hospital level.
Photo Liz Withey©

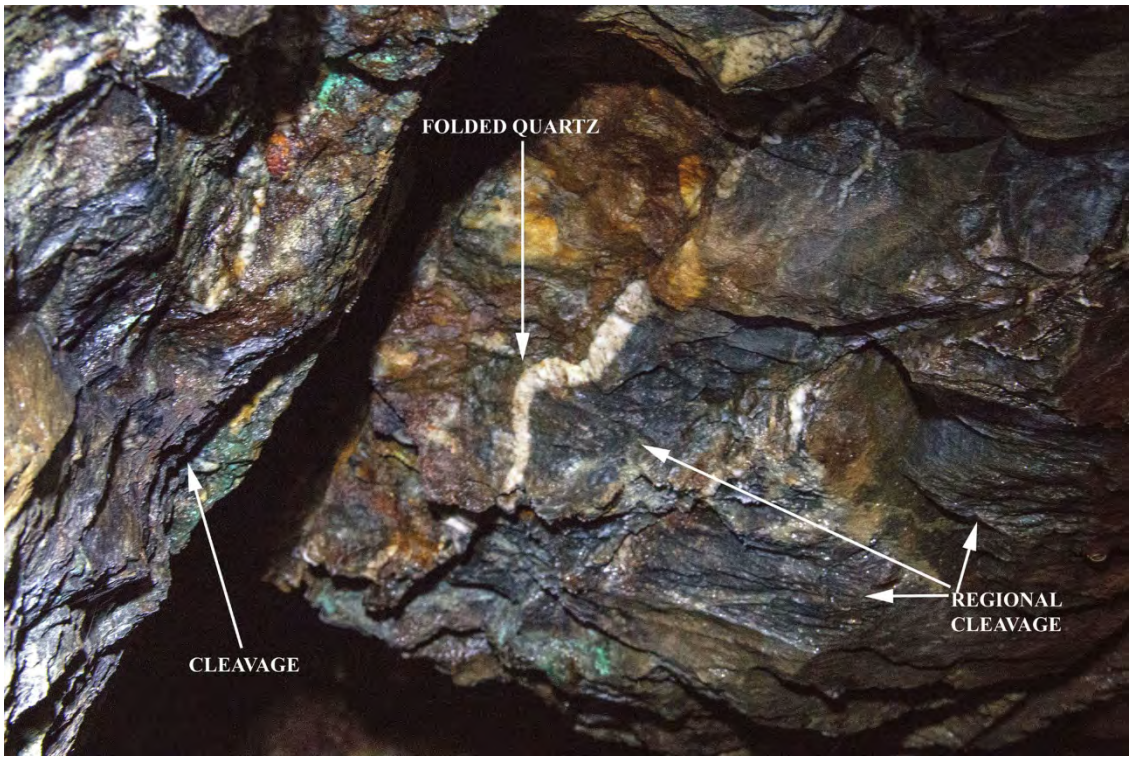
Re-visited:
Alastair asked if I would dust off the over-suit and show them the locations so he could photograph and record them. Although somewhat tentative as to whether we would see or understand the exposures, the lure of returning to the scene of the crime after 20 years was too much to refuse. So on June 4th 2016 we assembled in Copper-mines valley. There was Alastair, Mark Hatton and Liz Withey. I did feel a bit like the novice new boy at school but the


The vein in Hospital level - Photo Liz Withey©

natives were very friendly. I'd not been in the Coniston mines for many years due to recurring, chronic back and knee issues. We geared up, but before delving underground I did my best to explain the implications of the discoveries and set the scene. On becoming aware that their eyes were starting to glaze over I knew it was time to "*shut-up"* and get on with it...*Too much information!*
One of the issues for the team was going to be my slow progress in the mine. No not because I'm a physical wreck but because instead of racing through the level, as most do I move methodically looking for everything of geological interest. This is slow work and can be an absolute pain for mine explorers!

First impressions after 20 years away was the damage to the false floor at Paddy End shaft. The green post mine minerals at that location looked a lot smaller and not as vivid. Further along in a stoped area the staining of the Cobalt ore - "Erythrite" was much more prominent and wide-spread than before. This was a serious test for Liz's memory card as she flashed away with gay abandon. The shades of pink/purple are really stunning.
What can appear as a long nondescript tunnel on the way to the Y branch is still quite interesting…if geology is your thing of course. The often single fault fracture line running through the roof is regularly stained with Erythrite. It does make one wonder as to whether the source of the Erythrite staining; primary Cobalt is present somewhere above this horizon?

Eventually we reached our intended destination at the end of right branch. Here the host rock is an Andesitic tuff instead of welded tuff. While Alastair and Liz set up photographic equipment I made a very close study of the vein and thought about how I was going to blag my way through this! The details are without doubt subtle and unimpressive at a passing glance…but they are there.



Courtney's Crosscut: A folded string of Quartz. The regional cleavage forms approximately parallel to axial surfaces of the fold. Photo Liz Withey©

I think they were able to see the fine detail. There was a cleavage in the wall rocks and a faint cleavage fabric within the vein itself that is refracted at a slightly different angle to the wall rock cleavage. There were only the tiniest flecks of chalcopyrite. This "ordinary" insignificant vein is now credited as the first exposure visited to prove the theory.
We then decanted to Courtney's Crosscut to see if we could find the other site. Travelling as far as you can go to the ladder staging I got worried because nothing stood out at all. Amazingly on the return, "there it was," subtle yes, a narrow vein with slightly more chalcopyrite and bits of supergene staining. The cleavage details were the same. The thin quartz stringers showing folds and regional cleavage could also be seen.

Courtnev's Crosscut: wider view of the narrow vein

Returning underground at Coniston was great and brought back many fond memories of a great society, super experienced people and of course those amazing mines. So is this the start of a comeback? Sadly not. I originally stopped because I became a liability underground. That would undoubtable happen again at some point if I continued.

Thanks Alastair and team for a rewarding day. Either you were all genuinely interested in the geology or you are all very good actors and should be on the stage!!

Postscript:
The actual source of the minerals has not, as yet, been fully resolved. There are however indicators. Research of the graphite deposit at Seathwaite showed that the source carbon originated from biogenetic material within Skiddaw Slate mudstones. These rocks underlie the volcanic rocks. Isotopic studies of the Bonsor vein revealed that their sulphides contained isotopically heavy sulphur.* This is consistent with sulphur samples from Skiddaw Slate rocks**. It is suggested that metals, as well as sulphur, may have been scavenged from the Skiddaw Group rocks by migrating, hydrothermal fluids. More research is needed.

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Field meets and communications with Dave Millward & Brian Young.

NB. Jeff sent me a pdf of his article which has more full sized photos for better quality when zooming. If you would like a copy email me at membership@catmhs.org.uk

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"My name is Ozymandias, king of kings:
Look on my works, ye Mighty, and despair"

Flicking through the 1991 NAMHO Handbook, I came across the CATMHS entry for that year, membership around 100, four Newsletters a year; all pretty much as we still are today.

I then come across another Cumbrian organisation, membership 3624! Archive 5000 books, papers, photographs and maps; Artefacts 10,000 ranging from drill steels to locomotives; Owned or leased land 330 acres.

How are the mighty fallen! JA.

Allenheads Mine

During November, whilst visiting Hexham, I decided to come back through Allenheads in the Allen Valley, a place I had never visited before, but had always intended to. The mine was the most productive single mine in the Northern Pennine Orefield and produced approximately 260,000 tons of lead ore from twelve veins. There are many other mines in the valley as well as four large smelting mills at Langley, Whitefield, Allendale and Allenheads.

Much of the following is taken from Allenheads" The story of a lead mining village" published by the Allenheads Trust and Heritage Centre, and a survey carried out by Northumberland County Council.

The earliest documentary reference to lead mining in Allendale is in 1230, when Archbishop Gray granted one mine to Alan, son of Ralph, Robert le Tanur, Richard Mariscall, Simon de Alston and Alan Nentesbire. It is reported that in 1547 one mine in East Allendale farmed out to John Shele made a profit of nine shillings' and four pence.

By the 17th Century the Blackett family, under Sir William, had bought into the booming industry and started the Haugh level, eventually leading to the formation of the W B Lead company. Sir William died in 1728 and left instructions that his daughter Elizabeth could only inherit his estate and money if she married his nephew, Walter Cavely. They assumed the name Blackett to prevent the family wealth getting into the hands of anyone outside the family. Their only child pre-deceased them and on their death the estate passed to Diana, the seventh daughter of Sir William. Diana's granddaughter married into the Beaumont family and eventually the surname became Blackett Beaumont.

One of the first mine agents was William Westgarth, who was brought in from the London Lead Company's mines at Nenthead to run the operation at Allenheads, where he developed and installed a water pressure engine in 1760. Next came the Westgarth Fosters, father and son, and it was Westgarth Foster junior who wrote the famous treatise on the strata between Newcastle and Cross Fell which was hailed as a geological masterpiece, selling 850 copies in 1821 alone. His reputation grew and it is reported that he was earning £10,000 a year and yet he died in poverty in 1835 as the result of a shambolic series of business ventures. Both father and son are buried in Garrigill.

Thomas Wentworth Beaumont appointed Thomas Sopwith, another well-known mine agent, who initiated great improvements in both the way the mine was run and the way the workers lived.

It was Wentworth Blackett Beaumont, the first Lord Allendale who drove the famous Blackett level from Allendale Town which was designed to drain and explore the valley up to Allenheads, and by 1903, when work was suspended, it had been driven a distance 4.68 miles.

The mine was primarily worked by shafts below the Fawside level begun in 1776 which was located at the dressing floors in the middle of the village, with the ore being raised up the Gin Hill shaft, dug in 1793 just above the dressing floors. The mine was partially drained by levels, but necessary pumping was performed by four underground water wheels and the water was raised to be carried out to the East Allen river.

The mine closed in 1896 as a result of the falling price of lead, and, according to K C Dunham, no other minerals were extracted on a commercial basis. The population in the Allen valley peaked at over 6,000 between 1850 and 1860, but by 1900 had shrunk to 2,000.

In 1969/70 the British Steel Corporation began re-opening the mine under the name Beaumont Mine, in the hope of finding a major new source of fluorspar. They installed pumps in the Gin Hill shaft to dewater the mine via the Haugh level and sunk a new incline from the old dressing floors in the village. Work continued until 1981 when the mine closed having found no economically viable deposits of fluorspar.

In 1987 the Allenheads Trust was formed by local people to revitalise the social, economic and environmental fabric of the area. Old buildings have been restored and a heritage centre has been opened up. The Trust are to start work on conserving the old dressing floors which are a scheduled monument.

There is much of interest in the area which will be significantly enhanced by the proposed conservation work to the dressing floors.

The top of the Gin Hill shaft

Top of the incline where the horses were led down into the mine

At the bottom of the incline are stables and a blacksmiths shop.

The mine offices

Thomas Sopwith saw the potential for the use of new types of water power and worked with his friend William Armstrong, who developed a hydraulic reciprocating engine at his Elswick works in Newcastle for use in winding and pumping within the mines, as well as above-ground

applications for processing the ore on the dressing floor and sawmills. W B Lead bought nine of these engines and one remains in the village which was built in 1846. It was purchased in 1986 by Keenlyside Builders Merchants to ensure it was not lost, and it was restored to full working condition by British Steel apprentices from Teesside. There is also a Gilkes of Kendal impulse turbine in the same building which was installed in 1931 to provide electricity to the village. It was donated to the trust by Blakelaw Scrap Metal Merchants and restored by students at Kendal College of Further Education. Both of these engines were supplied with water from Spring House and East End reservoirs.

The old blacksmith shop has been restored with the forge in the bottom part of the building and a display in the top part which provides additional information on the mine, including a superb model of the dressing floors and one of the underground workings.

The blacksmiths forge and note the bellows in the corner.

The remains of the Allenhead Smelt Mill just downstream from Allenheads, at Dirtpot, was built by the Blackett's in the early 18th century. The mill mainly smelted ores from the Allenheads and Coalcleugh mines, but was kept to working capacity by Weardale ore until it closed in 1870. Surviving remains consist of a 3424ft long flue, an overgrown reservoir and the long peat house being the only building which remains intact.

This is a very interesting place and has much in common with Weardale, where both the Blackett Beaumont family and the London Lead Company worked the mines, and Nenthead which is just over the hill. It is worthy of having a meet there and the food at the heritage centre is superb.

Warren Allison.

Spotthow Gill Mine.

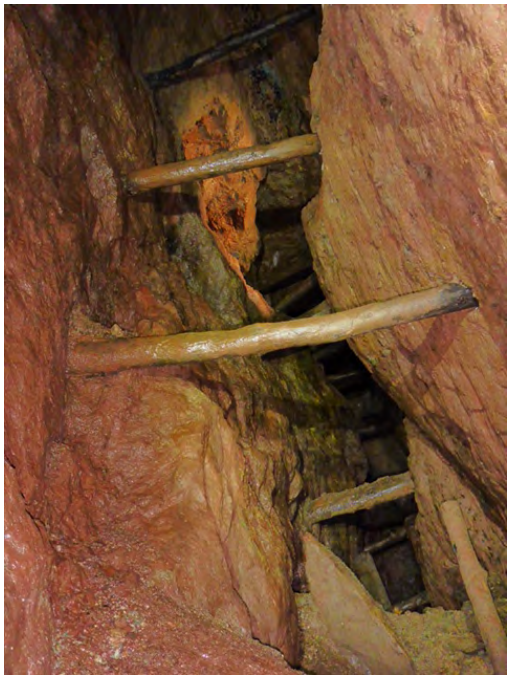
Eskdale is well known for its iron ore mines, but did you know that there is a delightful copper mine tucked away near the foot of Hardknott Pass? This working is beautifully situated in Spothow Gill, which is on the south side of the valley, about a mile east of The Woolpack Inn.

At valley floor level, in the woodland, is a good sized grass covered spoil heap, a cutting and a run in level entrance. About 100 yards

south of that entrance is a shaft that looks like it has been back filled with farm waste. So far, interesting, but not that exciting. Head south east a few yards, cross the wall and look near the footbridge over the gill. Here the river has been diverted by a stout wall and the old river bed appears to have been worked quite extensively.

Then carry on up the west side of the gill until after a few minutes climb you reach the foot of an obvious spoil heap. Look around in to the gill here and you will be met by the enticing view of a large level entrance in the east bank. That level initially holds a few inches of water but soon dries out. On reaching the vein it runs left, past some old

timber work, stacked deads and under a nasty cracked roof, to a collapse. To the right the level crosses under the gill, then rises and the roof height reduces, requiring a climbing crawl. Navigate a puddle and another corner to reach the main stope. This is around 25 feet high and sports a profusion of stemples, most still in place but a few others fallen in to the level. A beautiful and fascinating scene, for those who like such places. A light patch on the wall above provides a clue to another entrance further up the gill. Exploring beyond this point of this level may be possible, but the dangers of loose rock and collapses would increase significantly.



Returning to day, scramble steeply up the gill (not possible in high water and very slippery in low water) passing a sizeable man made wall on the west bank. This wall carried a plate rail taking rock and ore from the upper entrance to the processing floor which lies above the spoil heap visited earlier. The upper level entrance is in the west wall of the gill. Great care here as just inside the entrance is a 20 foot sump which holds no water. Carefully navigate around the sump and another few yards brings you to the edge of the stope that you were standing in earlier down below. You need to carefully take in the most attractive view from here up and down the stope.

There appears to be very little known about the history of this delightful small mine. Precisely who worked it or when is not entirely clear (unless you know differently) but the 1850's seem like the decade most of the work was done. But the miners have left a lot of evidence of their skill and determination to win copper riches from this beautiful place.

Please do take great care here and share news of this special place judiciously. It would be awful for it to be spoiled by inappropriate attention. Retiring to The Woolpack for a pint and maybe a bite to eat, would be a suitable way to savour the find a bit longer.

Mark Hatton.

Valentia slate Quarry
Whilst enjoying a scenic drive around the Ring of Kerry on Ireland's West Coast, we happened across a small Slate Quarry.

Valentia Slate Quarry is on Valentia Island, in the shadow of Geokaun Mountain. The Slate Quarry began operations in 1816 under the direction of the Knight of Kerry, a title held by one of the principal land owners on Valentia. Experts from Wales were initially brought in to instruct in slate working techniques.

In 1839 Messrs. Blackburn, an English firm, bought the quarry and traded as the Valentia Flag Company. Ownership returned to the Knight's estate in 1877, but competition from cheaper Welsh slate forced the quarry to close for a number of years during the 1880s. It reopened around 1900 in an attempt to give islanders employment. In 1911 however a massive rock fall closed the quarry.

Its output was used on the Houses of Parliament in London, Westminster Abbey and Cathedral, St. Paul's Cathedral, Waterloo Station, Charing Cross and Liverpool St. An enamelling business was set up in London by George Magnus, producing white enamelled Valentia Slate Billiard Tables. In 1954 statues of Our Lady & Bernadette were placed high above the quarry entrance, where they remain to this day.

The quarry re-opened in 1998 and is working once again, exporting worldwide.

Chris Cowdery.

A conversation from the CATMHS page of Facebook

Mark Hatton This intriguing graffiti in Smallcleugh shows a horse pulling a mine truck with a driver onboard. The name is I Archer and the date 23 August 1855. A quick search finds an Isaac Archer, born in Nenthead on 8 September 1833, making him 22 years old when he painted his name on the wall here. Isaac seems to have enjoyed graffiti as he did the same in Caplecleugh where he wrote "Isaac Archer Priorsdale House Aged 18 1850". And in Middlecleugh there is graffiti that reads simply "Isaac Archer 1849". What I love about exploring mines is the ability to connect with the men who worked these places.

Chris Twigg The horse has definitely been re-done in recent years. See this photo from 2008

Mark Hatton Not sure if repainted or cleaned? And if repainted, whether there was enough of the original left to ensure the same design was used.

Alen McFadzean Fascinating, that. Graffiti, like clog prints in the mud of a passage floor, adds a human link to the times when these were working places. Those blobs of clay on tunnel walls that hold candle stubs sometimes have the thumb-prints of the men who stuck them there. I've always found stuff like that intriguing. I've been in Smallcleugh a few times but never seen this example. Must keep my eyes open in future.

Check out the CATMS Facebook page for more news, and read Alen McFadzean's blog on 'The High and Mighty mines of Lujar'.

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