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The Newsletter of the Cumbria Amenity Trust Mining History Society

Margaret mine, Lindal Moor, Dalton in Furness, 1959
From the WT Shaw collection at Kendal Museum, courtesy of Colin Woolard

No. 146 **February 2022**

Cumbria Amenity Trust Mining History Society
Newsletter No 146, February 2022.

CATMHS AGM AND DINNER, 11th December 2021

I have looked back to Newsletters 134 and 138 to see what had been reported in February 2019 and February 2020 under this heading but could find nothing for February 2021! How could the Newsletter Editor have failed in this egregious manner? (That's because we didn't hold it last year because of Covid, so there was nothing to report. The committee discussed other ways of holding the AGM, but in the end it didn't happen. ED.)

Evening at Rydal Hall – photo by Mark Hatton.

Alright, enough already, reporting in the Covid era is no joke. Thirty-three brave or foolhardy souls had opted to attend the AGM and dinner; that is until the "Omicron" variant reared its ugly head, which reduced attendance (for completely understandable reasons) to twenty-two. From as far away as Moray to the north and London to the south, we assembled to the usual warm welcome at Rydal Hall: some earlier than others. The organiser should know by now that herding cats is a thankless task and telling people not to arrive before 16.00 means that the early birds have checked in by 12.30 and got a good couple of hours kip in before anyone else arrived.

John Brown, Mark Hatton and Colin Woollard kindly attended just the AGM; Colin's Minutes will tell you all about the AGM but it's appropriate to draw attention to Chis Cowdery's pitch for support from all members (no matter how small a contribution you can make) for the Society's staging of NAMHO 2023. This will be the third time the Society has run the event and we have our good reputation to maintain.

The dinner was a more sober occasion than has been the norm, no food fights, no crackers, no silly string, no balloons and above all no raffle! Still the food was good, the drink flowed and

so did the conversations – linking long-standing members and new. The Chairman's award was announced before retiring to the room where the AGM had been held for a slide show.

Brief slide shows occurred both before and after dinner and then the bar was occupied for a prolonged period of time. Rydal Hall itself had not been immune to Covid problems resulting in staff shortages, and it gives me great pleasure to report that the "honesty bar" of putting out drinks that people took, signed for and then paid for the following morning was 100% successful. (I believe the Chairman may have paid for rather more drink than he consumed!). Most people retired to bed just before one in the morning, but the Welsh contingency, who also led some others astray, carried on for a little while longer.

The Sunday morning walk was abandoned by the organiser on the basis that it was already raining at 0900 and was only going to get worse, but some hardy souls did still go and walk, whilst others had a look round the grounds of the hall and met up at the café before making their way home.

I hope (and believe) a good time was had by all, let's look forward to next year and an unimpeded full attendance

John R Aird, CATMHS Treasurer.

A huge thank you should go to John Aird for organising yet another successful AGM and dinner, and it was lovely to see people attend who had not been before.

Chairman's Award 2021

Looking back there are several people who could receive the award:
Brian Cubbon, Peter Sandbach and Colin Woolard for "The Red Earth Revisited", which is just a superb publication, extremely well researched and presented; Michael Oddie who, given the Covid restrictions, managed to put together a varied meets list without which the Society would much the poorer; Ian Matheson for compiling "A collection of Historic Photographs relating to the Coniston Copper Mines", which I know how much time and effort he put into it, and after many years continues to produce a superb newsletter which the Society would be much diminished without, and he has now turned his attention to Journal Seven; Michael Oddie and Mark Hatton for organising the Zoom talks which helped become a substitute for the lack of meets due to the pandemic, and became a way for members to be able to see one another, have a chat and promote the Society in a different way.

This year's award goes to Michael Oddie for arranging the meets under what were difficult conditions due to the pandemic.

Warren Allison, CATMHS Chairman.

Chairman's Report

Due to the pandemic this is really a report of the last two years, which have been very difficult for many societies, and CATMHS is no different. This meant that the 2020 AGM and most of last year's meets and activities were cancelled, although a few were held when restrictions allowed, so the Committee took the decision to waive the subscription. However, several Zoom talks were organised by Mark Hatton and Michael Oddie and were very well attended, with the intention to continue with these during the winter months.

Even though the pandemic has impacted on the Society, for some unknown reason it now has the highest membership in its 42 year history. Surprisingly the newsletter has not suffered and

there seem to be more people willing to write articles, the last edition being a bumper one with some material that has been carried over to the next one.

This year's activities were much improved, with from July a full list of meets which Michael Oddie must be commended for in cajoling people to act as meet leaders and for the variety of meets. One of my personal favourites was the Wales trip, which was just mind blowing on surface and underground, and the brilliant crack in the evenings at the camp site.

In 2020, the Society published "The Red Earth Revisited" written by Brian Cubbon, Peter Sandbach and Colin Woolard, and a "Collection of Historic Photographs relating to the Coniston Copper Mine" compiled by Ian Matheson and myself, with Ian planning for Journal Seven which he will probably elaborate more on in his report.

The Society has contributed to the Force Crag Mine Management Plan, which has been delayed due to the pandemic but hopefully will allow No.3 level to be re-opened, and to the draft Greenside Management Plan, which should enable funding to be sought to carry out conservation work similar to the Coniston Copper Project.

A full meets programme is being put together for 2022 and the Society has agreed to host the 2023 NAMHO conference. There are potential projects in the offing, with more detail to come in the February newsletter. I hope everyone enjoys the weekend and hopefully life will return to normality in 2022.

Warren Allison.

Secretary's Report
Administrative:
Because of the arrival of Covid 19 and government restrictions that particularly affected the type of activities within CATMHS, our 2020 AGM was delayed until now, making it two years since our last AGM. In this time we had one face to face committee meeting, one by correspondence and the remaining four meetings by Zoom conferencing.

In May 2021 we appointed Lorraine Crisp as a trustee to bring our trusteeship up to thirteen. A requirement under our new constitution is for a third of the trustees to stand down each year. The four longest standing trustees that are standing down are J Aird, J Brown, I Matheson and C Woollard. All four are willing to stand for re-election. We have no other candidates proposed. If there are no objections from any member present - I propose that we conduct the re-election of the four retired trustees en-bloc with a nominator and seconder. This process will keep our new trustee membership at thirteen, which is within our constitution and will leave capacity for any future trustees to join.

Liaison:
We have collectively provided over fifteen walks and talks with the use of Zoom. We have also supported enquiries with information etc to many members.

We have had discussion with the Dalemain Estates and this has resulted in the signing of a Letter of Understanding. We will therefore tell Dalemain before we take a CATMHS meet to Carrock Mine and we also monitor the gate condition and provide an annual summary of the location as part of a goodwill gesture.

Ongoing activities:
We completed the installation of the Deep Level portal gravity close gate this Autumn. The LDNPA have funded the costs and the work was completed under license from Natural England via the land agent Carter Jonas.

Just prior to the Covid situation we became involved in the Radon issues – particularly at Hudgillburn Mine as it is a known source of Radon. The resolution of this matter awaits the technical evaluation within the caving world and also the end of Covid restrictions. Until then we are restricting our entry to this mine to limit dose uptake.

Colin Woolard

Treasurer's Report
In time honoured fashion I will open by expressing my gratitude to our Auditor Mr Douglas Harrison and to our Webmaster Chris Cowdery, both of whose hard work has made my task considerably easier.

Given the general situation in the country I can only say that the Society's financial position is very good. Obviously, the Society's activities have been restricted out in the field but our publishing ventures have been an outstanding success due to the efforts of Ian Matheson, Brian Cubbon, Peter Sandbach and Colin Woollard. We have published "The Red Earth Revisited", "A Collection of Historic Photographs relating to the Coniston Copper Mines" and reprinted the 40th Anniversary Newsletter. These activities are reflected in our payments and publications income figures.

Some of you will have noticed that no rent payment has been made to the LNDPA for the use of Mandall's building at Coniston. This is because we have not been invoiced. Apparently, they have noticed that the lease we have on the property expired a number of years ago and are considering what to do about the situation. I have made clear to them that we are happy to continue renting the property.

In conclusion we go forward into the New Year in an excellent financial position.

John Aird.

Membership Secretary's report.
Despite Covid, there has been a steady trickle of applications to join our Society, and this year we reached an all-time high of 196 members. In 2020 there were thirty three new members with a further twenty seven this year. I think that the majority of new members have been generated by Social Media and by our website.

BCA membership which includes third party insurance cover is a requirement in order to participate in meets. Last year ninety two members paid for BCA membership with underground insurance, and sixteen for surface insurance. A further forty one had BCA membership via other organisations and forty four had basic CATMHS membership.

Last year the basic membership fee of £10 was waived for renewing members because of restricted activities due to Covid, but it has been reinstated for 2022. Membership fees are to be reviewed for next year and may have to be increased in order to cover costs. Renewals were due on 1st November and so far just over half have been received. A second reminder will be sent after the New Year to those who still haven't renewed.

The quarterly newsletter is distributed by email, but members can choose to have a printed version delivered by post on payment of an extra fee to cover the cost. Forty eight people chose this option. Barrow, Carlisle, Kendal and Whitehaven libraries each pay for a copy, and one goes to our archive at the Armitt Museum and Library in Ambleside

Newsletter Editor's report.
I am very grateful to contributors to the newsletter, which, despite a curtailment of activities and meetings due to Covid, has enabled me to produce the usual number and size of newsletters.

The newsletter is a record of the activities and interests of the Society, and I think it is important that we keep a complete record of our official meets. Meet reports are often of very high quality and contain context and history as well as a record of the activity. It used to be accepted as part of a Meet Leader's duties to provide a report of the event, but this seems no longer to be universally acknowledged. I appeal to all meet leaders to compile a report of the event whilst memory is fresh, or to arrange for someone else to do so.

Journal 7
The last CAT journal was published in 2008, and the Committee has decided that we should produce another one, which will be 'The Mine Explorer No 7'. It will have a similar format to the 40th Anniversary publication, A4 softback with colour photos.

It was announced in the May newsletter, and I also sent out a number of personal invitations to likely contributors. It will include reports on CATMHS projects the Tilberthwaite Dig and the Re-opening of Carrock Mine, an overview of the Coniston Copper Project, and a variety of articles concerning mining history in Cumbria. I have asked for draft text by April, and I hope to be able to publish it in autumn 2022.There is still time for new contributors to come forward.
Ian Matheson.

Meets Report
Unfortunately the Meets Secretary Michael Oddie was not able to be present at the AGM, so Warren Allison agreed to do the meets report. Due to Covid restrictions in the early part of the year no meets were allowed to be held, so eleven Zoom talks were arranged covering a variety of mines from Cumbria to The Mines of Rio Tinto and Mining in the mountains of Carnigon in the Pyrenees in France.

Following the lifting of Covid Restriction in July a full and varied list of around twelve meets were arranged to suit all abilities, ranging from Cumbria to the Jet Mines on the East Coast, a weekend in North Wales at Dinorwig Slate Quarry and Maenofferen Slate Mine at Blaenau Ffestiniog, and the Williamson Tunnels in Liverpool. There were also guided walks to Coniston and Greenside Mines and an underground trip at Carrock Mine for one of the commoners and friends on the Caldbeck Fells, for which permission was given by Dalmain Estate.

We should be very grateful and offer our sincere appreciation to those who arranged and were meet leaders, especially as some of them would have taken a great deal of organising behind the scenes. The Society should also extend its appreciation to Burlington Slate for allowing the meets at its Kirby Quarry, and to Jon Knowles employer J.W.Greaves, for granting permission

for the Maenofferen Slate Mine trip, and to the attendees in donating to the Company's preferred charity – The Friends of Ysbyty Alltwen (Porthmadog Hospital).

Michael (Oddie) and I have a draft list for several meets in 2022 which will appear in the February newsletter and more will be added in due course. Zoom talks will also re-commence in January, so if there is anyone who would like to do a talk please get in touch.

Warren Allison on behalf of Michael Oddie.

Forthcoming CATMHS meets

As Covid restrictions are relaxed, it is now possible for the Society to start to plan for meets to resume, knowing that some people will be cautious about meeting lots of others. In the first quarter there are two mainly surface meets. It is also intended that Zoom talks/lectures are to be offered during the winter months.

Zoom talk, 11th February.

The geology and history of Carrock Mine, near Caldbeck and how CATMHS reopened the main entrance. The Zoom will open at 7.30pm with time to chat before the presentation starts at 8pm. For more information contact Warren Allison or Mark Hatton.

Tilberthwaite Valley Slate Quarries, surface walk 20th March.

Mark Hatton is leading a circular walk around the Slate Quarries of the Tilberthwaite Valley taking in Hodge Close, Parrock, Moss Rigg, Cathedral, Black Hole, Atkinson Coppice and many more workings that proliferate in this valley. This is a principally a surface walk but a couple of short underground sections and a bit of scrambling. Meet at the car park at Hodge Close (GR NY 316 017) ready for a 10am start. Bring your helmet & torch.

Hartley Birkett Mines near Kirby Stephen, 24th April

Warren Allison is leading a surface walk to explore these very early (circa 1300) and forgotten lead and copper mines just to the east of Kirkby Stephen, with hushing, bell pits, levels, shafts, crushing mill and smelter to see. Bring a helmet & torch just in-case there are levels to look at. It is an area that the Society has not previously visited.

Meet at the Christian Head Car Park in Kirkby Stephen just before the Grammar School, CA17 4HA at 10.00am and we will move on from there to make sure everyone is together. If time permits there maybe the opportunity to have a quick look at Hartley Quarry.

Meets Secretary Vacancy

Michael Oddie has done a splendid job as Meets Secretary, maintaining a varied and interesting physical programme especially during Covid restrictions and along with Mark Hatton introduced Zoom talks to make up for the lack of actual meets. He has now decided to pass it on, so there is a vacancy. The job involves arranging meets and meet leaders with the help of the Committee and publishing a meets programme on a four months ahead basis. The Meets Secretary is usually part of the CATMHS committee, but that isn't essential. It is an interesting task, with good social connections. Anyone who would consider taking it on please contact the Chairman or Secretary; contact details can be found on the back cover of any CATMHS newsletter.

CATMHS Twitter account

CATMHS has increased its social media presence. Liz Withey has set up a Twitter feed to complement our Facebook page. The intention is to provide a source of high-quality photographs of Cumbrian Mines and links to sources of useful CATMHS information,

including links to the Facebook page. The text in a Twitter post is limited to 280 characters but this can include links to any other material posted online, including articles, book reviews, newsletters etc. It's particularly good for sharing high quality photographs.

In addition to any original CATMHS material we can also signpost other sites of interest particularly other mine heritage organisations that have an interest in mining history and exploration. If they return the favour we can rapidly increase our audience

Personally, I use Twitter a lot. The feed you curate is up to you and mine is a treasure trove of free information on stuff I'm interested in. I've discovered new sources for research, bought books and registered for newsletters as a result.

Please take a look and give us a 'follow'. If you have anything you might think would suit the feed please let us know via twitter@catmhs.org.uk. Lorraine Crisp.

Welcome to new members:

Geoff Stebbens, from Allithwaite, Cumbria.
Geoff is a member of the Earby Mines Research Group and is involved with the Newland Furnace Trust. He has written two books on the Duddon Valley. The second, Duddon Valley Revisited, is available to CATMHS members at a reduced price of £12.

Richard Elliot, from Merseyside.

Harry Mcghie, from Kendal.

Chris Arthur, from Coniston.
Chris has recently moved to Coniston and is keen to explore the mines. He has a bat survey license.

Andrew Woolard, from Cockermouth.
Andrew has re-joined after an interval. He was a valuable member of the digging team in his student days.

Anthony Philip Newton, from Keswick.

George Taylor, from Loweswater.

George North, from Kendal.
George is a professional rope access technician working for a local geotechnical engineering company.

Advice sought for research on 19thC Twigg family

CATMHS member John Craig would appreciate some advice or help. He has been researching a family of miners for several years and believes that they may have worked at the Tilberthwaite Mines. The names are Twigg, Davies and Kennedy. Would anyone in the Society know whether they have come across these names in any records covering Tilberthwaite Mines?

By way of background, the Twigg family originally came from the Youlgreave/Birchover area of Derbyshire, members working in the Portway mines before migrating to Butterton and Wetton areas of North Staffordshire where William Twigg was an underground overseer in the Mixon lead mine. His son John Twigg and his family is the current interest. John Twigg moved to Monaghan in Ireland to live, and he worked there in the c1836-1843 period in the lead mines of the Monaghan and Armagh borders around Castleblayney. One specific mine there was Derrynoose, where he appears to have been an overseer, supporting the manager called Bullock. However, later in the 1840s (probably due to the Potato famine) he moves with his family back to England to the Coniston/Tilberthwaite area, and census data shows them living at Hall Garth in Langdale.

He has brothers, George and Joseph Twigg definitely working at the Coniston Copper Mines at this time (the late Eric Holland helped with that by tracing them in the Coniston Mine Cost Books), but given John Twigg had previously held a more senior mining position and is not specifically recorded at Coniston Mines, and he is living nearer Tilberthwaite, suggests that he is possibly working at this mine.

John Twigg had two sons, William and John, in their teens, that would have been working with him and he had a son in law Thomas Davies also working in the Langdale area, as well as a brother in law John Kennedy. By the early 1860s all this family had left Langdale and started work in the haematite ore mines of Frizington. John Twigg died in Frizington in the 1870s, but his son William with a large family emigrated in 1885 to work as a contractor in the Kimberley Diamond Mine. The Kennedys also emigrated, with a son of John Kennedy, William, working as underground foreman at the Premier Diamond Mine, Wesselton near Kimberley. Thomas Davies also emigrated with his family but was a Mining Superintendant at a gold mine at Lead in South Dakota, USA, probably one of the Homestake Mines. Two of his sons, Tom and John moved to South Africa in 1890s and were mine managers at the Geldenhuis Deep Gold Mine at Johannesburg. Whilst this mine was owned by a New Zealand enterprise, it was staffed by many Cumbrian and Furness miners, with many of William Twigg's sons working there also. Needless to say, most died of pthisis.

The period of research of particular interest is c1842 - 1870, the mining area would be Tilberthwaite and Langdale areas, and the family names would be Twigg (especially John Twigg), Davies (especially Thomas Davies) and Kennedy. Any advice would be appreciated regarding what primary documents may exist for any of these miners in this period, whether anyone has come across these names, and a practical way forward. More specific detail on these miners could be supplied if that would help.

CATMHS is hosting the NAMHO Conference in 2023!

NAMHO (National Association of Mining History Organisations) have accepted our offer to host the NAMHO Conference in 2023. The Conference will run over the long weekend of Friday 7th to Sunday 9th July 2023, and be based at Grasmere Village Hall. There will be a programme of surface walks, underground visits and lectures. The occasion will also be social, and an opportunity to meet and compare notes.

The Conference is a great annual meeting of like-minded folk interested in mines and industrial archaeology from all over the UK and further afield. In 2022, it will be held in Grosmont in the North York Moors, and will no doubt be excellent and well worth attending. The organising committee currently comprises Chris Cowdery and John Aird, although a couple more people will be needed. If you would like to get involved, please let Chris or John know. In due course, the committee will be looking for volunteers to lead trips, both surface and underground, person reception desks, chair lectures (indeed give lectures!) and assist in many areas. If you are familiar with a location that you think suitable please let the Committee know.

Future newsletters will keep everybody updated. To contact us email namho@catmhs.org.uk

LDNPA Archaeology Conference 2021

This year the annual Archaeology conference was held as a Zoom meeting. The talks were recorded and are now available on the LDNPA website at:
https://www.lakedistrict.gov.uk/learning/archaeologyhistory/archaeologyconference

There were no titles directly related to mining history, but Eleanor Kingston gave a review of Archaeology in the Lake District National Park 2019-21, which included a report on completion of conservation work at Backbarrow furnace, which has been thirty years in process. Backbarrow was the last British furnace to convert to coke and closed in 1966. Conservation has been completed on the furnace stack, blowing house, ovens and some related buildings, all of which have been taken off the "At Risk" register. Work is still to do on the charcoal and iron stores and the pugmill. The site will be transferred to Backbarrow Ironworks Heritage Trust for management and future opening to visitors.

Eleanor went on to give an overview of the Greenside lead mine site, the largest and most complex heritage at risk site in the Lake District, 360 hectares in area and worked continuously from 1825 to 1962. A Conservation Management Plan, funded by the Covid at risk Fund from Historic England will set out the significance of the site, not just mining but ecology, access and recreation issues and water pollution, to provide a framework to manage the site in future and produce an action plan.

Lead sling bullets of Roman origin have been found near the Roman Fort in Ambleside and elsewhere, and there is a collection at the Armitt Museum. Analysis of the metal might indicate the location of the source of the lead. Samples of lead ore from Lake District mines are being collected and it will be interesting to see if any of the bullets are made from Lake District lead. If they are, this would be the first evidence that the Romans actually mined lead in the Lake District.

Proposed Visitor Attraction at Elterwater Quarry

From the Wetmorland Gazette, 11th November 2021

Proposals for the future of Elterwater Quarry as a Heritage and Visitor Attraction were outlined at last week's meeting of Lakes Parish council. Elterwater quarries and caverns, owned by the Holker Estate have been worked since the mid-19th century, extracting slate and aggregate. However, Burlington said it was reducing the number of its working quarries from eleven to three and quarrying at Elterwater was about to end, as operations were concentrated on better locations. Elterwater was no longer economic for extraction and access was difficult for quarry trucks.

Instead, Burlington wants to restore the quarry by bringing to life the legacy and history of the site by developing it as a unique visitor attraction. This would include visitor trails, a sky ropes course, tours of the quarries and access to the cavern using self-propelled gravity coasters while visitors learn about the site's heritage. A new car park could alleviatethe pressure on local visitor parking. The Council strongly opposed the proposal, saying that the area didn't need any more visitor traffic

Mine plan – Greenlaws mine, Weardale.
Another one of Leif Andrews' informative and carefully drawn mine plans. For a PDF email membership@catmhs.org.uk

Greenside Mine Conservation Management Plan Update
The draft plan was sent out for comment just before Christmas and the report includes the following acknowledgement:

"A considerable number of people helped to make this report possible. From the Lake District National Park Authority Eleanor Kingston (Lead Strategy Adviser - Historic Environment) commissioned the work and managed the project, Suzy Hankin (Area Ranger, LDNPA), Martin Lord (LDNPA); members of CATMHS and the Lake District mining history community, especially Warren Allison, Mike Mitchell, Ian Matheson and the Lakeland Mining Forum who were all generous with their time and detailed knowledge of the site. Liz Withey and Peter Bardsley of the Environment Agency, Pete Barron (John Muir Trust); Sara Watson, Environmental Protection Manager Eden District Council; Simon Webb, the lead adviser from Natural England covering the SSSI was consulted. Hugh Potter of the Environment Agency and Katie Shorrock from the Coal Authority were both consultees. Members of the local community including Rob Shephard of Glenridding Parish Council and Anne Locke".

The plan covers:

1. Introduction
2. Conservation Management Plan Structure
3. Designations and Policy
4. Geology
5. History of Greenside Mine
6. Historic Environment
7. Ecology
8. Agriculture
9. Collections
10. Access, Interpretation and Education
11. Water and Pollution
12. Statement of Significance and Contribution to OUV and Landscape Character
13. Conservation and Management Actions

The important part from a mining viewpoint is the potential conservation of the various structures on the site which have been subject to a structural engineering survey and costed. There is also the possibility of installing natural flood measures in the area around Top Dam to reduce the flow of water during heavy rainfall which mimics what the mining company did by lowering the level in its reservoirs to act as attenuation ponds. This could help reduce the erosion which is occurring lower down and damaging various features. Some of the previous work that CATMHS has done has been included such as the excavation of a buddle at the High Horse dressing floors, the re-opening of the Lucy Tongue Level, etc.

The plan is in place for at least ten years and offers the opportunity to apply for funding to carry out the various aims listed in the report, similar to the Coniston Copper Project, which received a £455,000 grant from the Heritage Lottery Fund in 2016. Extracts below from the draft plan:

Previous Archaeological Interventions.
"Previous archaeological study of the site began with the excavation of a buddle and roller crusher at High Mill by CATMHS in 1980 (figure 26), and the observation in 1989 by Samuel Murphy of a reverberatory furnace under the former Low Mill buildings. These were followed by a whole site survey by the former Royal Commission on the Historic Monuments of England (RCHME) in the early 1990s. Evaluation/monitoring work was undertaken by Oxford

Archaeology North (OAN) on the site of Tip 2 as part of Environment Agency work to stabilise the tip between 2001 and 2003. Further detailed survey of the site was undertaken for the LDNPA by OAN in 2015. This 2015 work was accompanied by a condition survey and conservation recommendations by Blackett-Ord Conservation Engineering".

Figure 1. Excavation of a buddle at High Mill/Swart Beck dressing floors by members of CATMHS on 25 & 26 May 1980 (courtesy of Mike Mitchell). A nearby roller crusher was examined as well (CATMHS NL 001 page 4)

One of the examples of potential conservation work:

Figure 2. The Swart Beck looking south-east as it passes in a culverted channel through the High Mill dressing floors. The retaining wall to the left (north-east side), requires repair to prevent erosion into an area of area of high archaeological significance. The opposing bank is less sensitive, but requires reinforcement with either rock armour or stone filled gabion baskets to prevent erosion and potential discharge of pollution into the beck.

Another part of the report, which is repeated below, is on the CATMHS archive and is a good example of how it helps the Society demonstrate its charitable aims:

"The largest collection of Greenside Mine plans, as well as some published material, is held by CATMHS and comprises twenty one items of which twelve are mine plans dating from 1858 to 1976, as well as published sources. Much of this material is curated by the Armitt Museum in Ambleside. A short index is included in Appendix 8 of this CMP. The majority of the CATMHS archive plans of Greenside have been digitised by the Society and are available through their website. CATMHS newsletters including accounts of the mine are also digitised and available to the public". Warren Allison.

Possibility of evidence for Roman mining in the Lake District
We know that mining in Cumbria dates to the medieval period at Silvergill Mine and the Calebrack Smelter, both near Caldbeck, having been dated to 1020-1220. There are probably sites in the North Pennines which date to the Roman period, but exact locations are as yet unproven. Eleanor Kingston contacted me about an excavation at Ambleside Roman Fort run by Dr John Reid, Chair of the Trimontium Trust at Melrose, and Dr Manuel Fernández-Götz from Edinburgh University, who are working at Ambleside Roman Fort where lead sling bullets have been found. There is a collection in the Armitt Museum.

Summary from the project brief
This project aims to apply a variety of conflict archaeology methods to study evidence for violence at the Roman Fort of Ambleside, Cumbria, where scattered Roman sling bullets have been discovered over the years, suggesting an external attack. In light of recent developments in battlefield landscape assessment, LIDAR data and aerial images will be analysed, and systematic *non-invasive* metal detector surveys carried out in order to acquire new data points to help define the choreography of the suspected conflict.

Lead sling bullets from the fort, held in the collections of the Armitt Museum, will be reviewed. Their morphology will be compared to a dataset of Roman lead sling bullets from other sites in Britain. It is proposed that lead isotope analysis (LIA) should be performed to allow further comparisons and allow an assessment of lead ore origin. The project has the potential to define a previously overlooked conflict scenario from the Roman occupation of Britain.

A selection of lead slingshot from Ambleside fort. Note the variability in size and morphology. The bulk of the 21 bullets are plump and tend to have nipple like ends similar to those retrieved at Bunswark, in Dumfriesshire.

I contacted Dr Reid; he commented that it might be possible to identify which mine the lead came from as the isotopes vary for different ores. I have agreed to send him samples from various sites. So far Hartsop Hall and Greenside Mines have been collected but samples are needed from other sites such as Silver Gill Mine, Eagle Crag Mine, etc. The samples will be sent to Germany for analysis.

This reminded me of the Roman lead smelter excavated in Carlisle, where the lead ore was identified to have come from Alston area or Central Lakes including Caldbeck. The excavation was written up in the Carlisle Excavations at Rickergate, 1998-9 and at 53-55 Botchergate, 2001, published by the Cumberland and Westmorland Antiquarian and Archaeological Society (CWAAS) in 2011.

By chance, when looking on Historic England's web site I found references to two Roman forts and three sections of Roman road at Caermote, just off the A591 north of Bassenthwaite, excavated in 1901 and 1958, and the discovery of a Roman lead vat near Ireby reported in CWAAS transactions. The relevant parts are repeated below:

Drone photographs of the fort taken by Liz Withey

CWAAS Transaction 1904, Report of the Cumberland Excavation Committee for 1902.
The work done by the Cumberland Excavation Committee in the ninth successive year of its activity concerned two sites. In Mid-Cumberland a camp near Caermot, in the parish of Torpenhow was provisionally explored, and on the Wall the researches of 1900-1 near Castlesteads were continued and practically completed. In both cases definite results were obtained. The Torpenhow camp was proved to be definitely a Roman site, though perhaps occupied only for a little while.

Camphill, Torpenhow.
Among the western outliers of the Skiddaw range is a high ridge which rises steeply to the south of Torpenhow and Bothel. On the top of this ridge is the rocky eminence of Caermot, which, despite its name, seems never to have been fortified by man, and a little north of it a small irregular earthwork called the “Battery." Southwards, the ridge slopes sharply down to the north end of Bassenthwaite Lake, and on this southern slope, a little way from the summit and perhaps seventy feet below it, is Camp Hill Field. This is an expanse of seventy acres, formerly part of Torpenhow common land, and at the enclosures assigned to the vicar as glebe. It adjoins the road from Torpenhow village to Bewaldeth and Bassenthwaite, and in it, close to the same road, is the "camp" which gives it its name.

In 1882 a Mr. J. Robinson of Maryport dug some trenches: Outside the camp on the north, he discovered foundations of rude buildings, "over three stones" of melted lead, some iron nails, charcoal, and decayed bricks, but nothing that he recognised as Roman. The account of his work in these Transactions was illustrated by an indifferent plan, and a worse one, an utter travesty of the actual remains, was inserted in the second edition of the Ordnance Maps of the neighbourhood issued in 1900.

CWAAS Transactions 1945. A Roman vat of lead from Ireby, Cumberland. By I. A. Richmond.
When the March ploughing of 1943 was breaking up a field four hundred yards west of the village of Low Ireby, Cumberland, on the south side of the road leading to the ancient twelfth-century church of now unknown dedication, a heavy round object was caught by the ploughshare and brought to the surface. On examination the thing proved to be a round trough or vat of lead, which was presented by the landowner, Mr. Joseph Hope of Ireby Hall, to Tullie House Museum, Carlisle, and is now to be described. The vessel built up from sheet lead half an inch thick, is composed of three main pieces forming the base eighteen inches in diameter and the two halves of vertical sides averaging six and a half inches in internal depth. The capacity of the vat has thus been approximately 10.06 gallons.

Further discoveries at Ireby will obviously be worth attention. Meanwhile, it may be remarked that the raw material for the lead vessel need not here have come from far away. There are abundant lead deposits in the adjacent hills, while two buildings immediately outside the fort at Torpenhow yielded just over three hundredweights of melted lead. The excavators were inclined to think that the metal had come from the roof of the buildings. But they noted that both buildings were constructed of rough masonry, like most Roman annexe buildings or workshops. A leaden roof for buildings of this type, one eighteen feet wide and thirty five feet long, and the other twelve feet wide and eighteen feet long, is out of the question. It may be regarded as virtually certain that the lead was gathered there for smelting or for despatch to another centre, and that it provides one more example of the Roman capacity to develop local resources through their local garrisons. Ireby itself, however, is not in this lead-bearing area, which lies to south-east, in the Caldbeck fells.

This supports the possibility of the Romans mining in the Lake District, which the project at Ambleside might be able to prove.

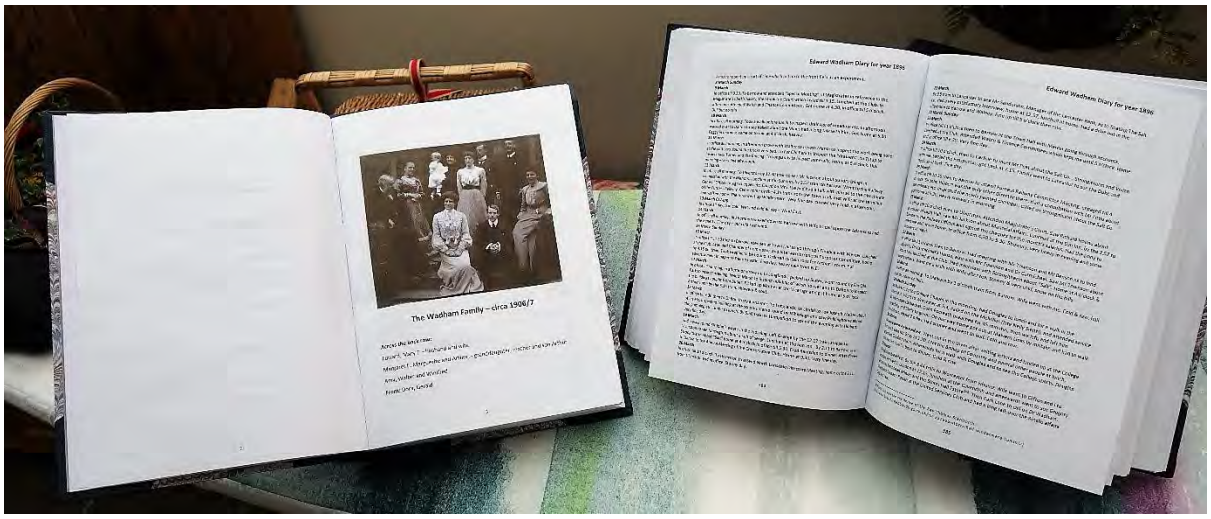
Warren Allison.

The Diaries of Edward Wadham

A few years ago a group of nearly twenty volunteers transcribed the diaries of Edward Wadham, JP, DL, which were a detailed account of Edward's life from 1851 up to 1913. Edward was the Duke of Buccleuch's Agent for much of his working life and helped shape both the Furness mines and the development of Barrow in Furness. The transcriptions were made in various formats and have been used to illustrate the mining development in the Furness area.

Using the various search facilities for documents researchers have been able to pull out key information, but the differing formats made this a little difficult at times. I became interested and started to compile a single document which could be searched electronically. This completed, I had become fascinated with the style of life over the sixty or so years in and around this emerging town. Some of his experiences are interesting. He went out shooting and shot off his thumb/finger – a muzzle loader I assume. A comment "I am going to try a drunk women" gave quite the wrong impression! He was at that time a JP.

I then set about splitting the text into two volumes of around eight hundred and forty pages each, providing an index and then printing them out. I have then half leather bound them in the style of a springback and boxed them into two large volumes, so that those without computer literacy can thumb through them and hopefully enjoy reading his exploits. Since they relate to the development of Barrow in Furness these two volumes will be deposited in the Barrow Record Office.



Colin Woollard 2021

Proposed CATMHS meets for 2022

Hartley Birkett Mine near Kirby Stephen

A surface walk to visit these very early and forgotten lead and copper mines with hushing, bell pits, levels, shafts, crushing mill and smelter to see. It is an area that the Society has not previously visited. Scheduled for 24th April.

Greenside Mine – three proposed meets:
A surface walk with a trip into the Low Horse Level using original photographs to explain the site.
An easy underground trip along the Lucy Tongue Level to the shaft from the upper workings.
A meet for those members who want the time to take and practise their photographic skills along the Lucy Tongue Level.

Coniston Slate Quarries – two proposed meets
A visit to these very interesting Quarries on Coniston Old Man with easy underground trips.
A meet for those members who want the time to take and practise their photographic skills in the large Closeheads.

Carrock Mine near Caldbeck
Subject to approval by Dalmain Estates this will be a meet offering SRT, easy walk in, and time for those who want to take photographs.

Augill Mine and Smelter surface and SRT near Brough, Appleby
A visit to this mine near Brough, Appleby to see hushing, levels, openworks accessible by SRT, inclines, crushing plant and the smelter all of which is a scheduled monument. This is a mine not previously visited by the Society.

Spot How Gill copper mine and Eskdale mines
This fairly extensive copper mine at the foot of Hard Knott Pass was worked by three levels and there are remains of a dressing floor and ruined buildings. Depending on time and weather followed by visiting the nearby Nab Gill or Gill Force Iron Mines in Eskdale.

Roughtongill and Silvergill Mines at Caldbeck
A surface walk and easy underground to these famous mines on the Caldbeck Fells. Silvergill proven to have been worked in the medieval period 1020-1200 and the site of the main German workings in the Lake District as well as having evidence of the wooden waggon way until a few years ago was the earliest evidence in Europe which the National Railway Museum considers to be the birth of the railway and is a site of international importance.

Hallbankgate coal mines
This coal field stretches from Brampton nearly to Alston and is an area not previously visited by the Society. This will be a surface walk and led by Clive Seal who is an ex-coal miner from Alston. There is much of interest, and it is where Stephenson's famous railway engine "The Rocket" ended its working life hauling coal.

Elterwater and Lingmoor Quarries
A visit to these very interesting quarries with easy underground and spectacular views.

Possible by others:
Whitehaven coal mines or Workington- Asked Kevin Timmins if he would lead a meet.
West Cumbria Iron Mines- Bob Mayow is asking a couple of people over there.

Zoom meetings for this winter which Warren has offered:
Silvergill Mine. Took place 14th Jan
Carrock Mine. Facebook users will already know that this event is scheduled for February 11th
CATMHS 40 year celebration. Tilberthwaite 7 year dig. Warren Alison.

Coniston Through trip, 23rd October 2021

Attendees: Rob McClymont (Meet Leader), Carl Barrow (Deputy Meet Leader), Martin Lawton, Costa Andreou, Mike Simpson, Chris Little, Tom Calpin, David Lund, Mark Hatton.

Meeting at Coniston copper mine YHA for 10am we all suited up for the first Coniston through trip for CATHMS post lockdown. As well as my first club meet.

It was typical Lake District weather, raining, as we walked up to Levers Water. We were lucky enough to meet up with Mr Hatton, who had been checking on Deep Level Gate amongst a few other things in the valley. Mark decided to have a walk up with us and answered a few questions regarding Kernal Crag level, giving the group a brief talk about the level.

Carl had gone on ahead to open up the gate into Levers Water mine, When we arrived at the entrance Mark went off to show Mike's partner a few interesting surface areas while the rest of us went in to Levers Water mine, before doing the through trip. We covered all the main areas showing the group the CMC Ladder, Blue Lagoon, Blue Passage, and the ladder way which leads down to the bottom of Brow Stope. We then made our way out to enter via the normal through trip.

To make the trip safe as possible it was agreed that I would lead, with Carl following from the rear; at any technical part of the trip we would pass the message on down the line. It was only right that we went and took in part of the Top Level Extension, so as we arrived at Arrête Chamber we headed around to MAG's Catwalk. This posed no problem for the group. As we waited for the final members to cross, a couple of participants went to have a look at the next stope and the remains of a jack roll. Once regrouped we headed down the Six Meter Dig site and through into the Top Level Extension, where the ore tub awaited the group. As always it is custom to take your photo next to the tub, which was done by most.

We soon all made it back into Arrête Chamber and were all waiting at the top of pitch 1 (down to Top Level.) I stayed at the top of pitch 1 to make sure everyone got on the rope safely. To make it slightly quicker due to the size of the group it was agreed that Carl & Chris would head down first because they both knew the route. Carl waited at the top of pitch 2 (To Middle Level), making sure everyone got on the rope safely and Chris waited down on Middle level to point the rest of the group in the correct direction.

Once on Middle Level the group checked out all the usual areas, having a look along Middle Level past the sump, looking down the ladder way, checking out the Twin Tunnels and the mass amount of boulders lying below them in Paddy End stope. Of course the green pool being one of the highlights of the trip. We eventually moved further down Middle Level to the Blue Rock, where we stopped for lunch.

When we all had re-energised we set off again, heading down to the final pitch that would take us onto Grey Crag level. Due to the amount of loose rock at the top of Pitch 3 it was agreed that Carl would wait with the group just down from the Pinnacle rock in a safe location so as not to dislodge any rocks onto the person descending the pitch. Again Chris went first as he had done the trip before. It was agreed that once at Grey Crag level the group would go off and explore while the rest of the group headed down. As the last member landed down everyone was back and ready to head into the Horse Gin area. Most people had seen the rest of Grey Crag and Hospital Levels, so we made our way out to Hospital Level portal, to be met just past the water treatment works by Mark, and Mike's partner, who had been on their very own mini trip.

Rob McClymont.

Tilberthwaite meet, Sunday 7th November

Attendees : Carl Barrow (Meet Leader), David Lund, Jonathan Lynch, Thomas Hallett, Duncan Scott, Roger Ramsden, Martin Lawton, Mark Hatton, Robert Stephenson (DCC), James Johnson (DCC), Alastair Cameron (Part)

Winding gear, Hellen's Mine

Tilberthwaite has a rich Copper Mining and Slate Quarrying History dating back over four hundred years. Today's meet was aiming to walk through that history in the most stunning landscape. We started up the south side of Tilberthwaite Gill, taking a look at the Penny Rigg slate quarries as we passed by. Then we descended into the ghyll itself to explore the Water Adit (dug along the south side of the steep ghyll to carry water to power the copper mill). We then climbed up the North side of Tilberthwaite Ghyll and along the side of Muckle Gill. This area saw multiple attempts on numerous Copper veins over the centuries and there is much remaining to see of the labours and ingenuity of the Old Men.

Water was always a problem for the mine workings here as there was rather a lot of it, often in the wrong place. At one stage the whole river was diverted along a 120 yard long man made channel, that must have required a huge amount of effort to construct. But it was getting water out of the mine workings that presented the biggest problem. As the working went deeper, particularly on the North Vein, the water problem got bigger. And hauling up rock and then carrying the ore away was also a very labour intensive and costly exercise here. Eventually, in the 1860's, the whole mining area was drained by driving a 1,000 yard long tunnel through difficult ground. This was Horse Crag Level, which would also serve as the haulage level. Unfortunately for the miners and investors, by the time that level was completed the copper veins had pinched in, meaning there was very little mineral riches left to justify the huge cost of driving the drainage and haulage level.

Our walk took us across the North Vein and up in to the ironically named "Dry Cove Bottom". Here we took a quick look at the tiny Haystacks Vein before passing by Hellen's Mine, then plunging in to the watery labyrinth that is Lower Borlase. This mine was another money pit, costing far more than it ever yielded. Driven in very hard rock the miners clearly never found what they were looking for, despite driving left, right and centre in their futile search.

We then crossed over to Man Arm Mine and back down to the North Vein, peeking in to a couple of workings and visiting a huge mortar stone on the way. Next we strode across to Wetherlam Mine, where half the group enjoyed a leisurely lunch whilst the rest squeezed in to the wet, rotten and crumbling mine working. This really is the type of working you should only ever visit once, for it is a particularly intimidating and dangerous place. The horse gin mechanism outside the mine is well worth walking over to see though, particularly now it has been cleaned up.

Next stop was Waterfall Level, the first 75 yards of which are a much more inviting and enjoyable place to visit. This level crosses several marginally productive veins before eventually reaching the North Vein. Unfortunately the sections of soft ground through which it was driven means it was always prone to collapses and blockages.

Time was now getting on so the group made its way back to Penny Rigg, took a short detour into a small slate working, before descending to the entrance of Horse Crag Level. Most of the group spent the last hour of the meet walking the full length of Horse Crag Level, marvelling at the sheer scale of the work done over seven years by a CATMHS team to clear the multiple collapses in this level and make it good.

Tilberthwaite never fails to deliver a great day out and this meet was no exception to that rule. Thanks to Carl for leading us so well and to everyone for participating with such enthusiasm.

Mark Hatton.

Unfortunately I have not received reports of the meets which took place on 13th and 21st November. For the record, the following has been copied from social Media. IM.

Nenthead Traverse, 13th November 2021
The great Nenthead Traverse. This is an eight mile epic underground with neck deep water SRT and dodgy shale crawls. Please allow for twelve hours underground. Not for those of a nervous disposition. Meet leader is Leif Andrew's and capacity is six. It's worth mentioning that this trip requires a good level of fitness - it's long and very wet.

Led by Leif Andrews with Carl Barrow providing rope collection and shuttle bus services 6 CAT members and one guest enjoyed today's epic 8 mile adventure. Starting at 9.30 and finishing at 5.30 (I think) A simply stunning route taking in lots of SRT, shale crawls, swimming and artefacts galore. A four inch air gap in one of the tunnels nearly caused an early bath for the trip but everyone braved it and the trip was still on!

Thanks again to Leif for running the trip and to Carl, Iwan Fletcher, Harry Mcghie, Costas Andreou and Robert Stevenson for a memorable day out.

21st November SRT. (Single rope technique) basic/advanced training session.
I have arranged for exclusive use of an SRT venue in Ingleton. Here you can practice your techniques in a safe and warm environment. Get advice and tips from experienced members and basically have a social day out. I have a spare set of kit should anyone not have kit and would like a go. Bring your helmets with you. The cost is £10 per person. Location is the "Cave and Canyon" venue based behind the old Ingleton climbing wall. Open to all members from novice to expert. If any knowledgeable members would like to attend and assist with the novices that would be appreciated.

Coniston Copper Mines Meet, 2nd January.
ML Mark Hatton, Clare Harvey, Bob Mayow, Duncan Scott, Rosie Lord, Tanya Savage, Neil Patey, Liz Withey, Warren Allison.

Mark put a message out on Facebook on New Year's Eve asking if anyone wanted to have an impromptu stroll round the copper mines on the day after New Year's Day. We thought it was because he had been cooped up and needed to get out with like-minded people for a walk and chat, but the truth was it was change over day at his holiday let, and he didn't want to do it as he had done it the previous weekend. Meeting behind the Ruskin Museum, Mark explained the route of the walk and that we would be stopping below the Old Engine Shaft to look for mortar

stones, and then again at Flemings Level to look at and discuss the crushing plant, which so little is still known about.

Arriving at the Hydro Electric intake, we walked up the track behind Irish Row, stopping to discuss the cottages, of which there used to be two, before walking on and stopping just before the large rock on the side of the track on which the names of some of the miners are carved. Mark explained about the Blue Quarries above, which apparently shut in the 1950's and are more extensive than one thinks. There used to be an arial ropeway from the top quarry to the building below the old sawmill at the copper mines, and two of the clogs which fell off the carrier are laying by the track to this day.

Arriving at Bonsor East Shaft, the working on the Bonsor Vein were discussed and how the Germans must have worked them, followed by Charles Roe from Macclesfield in the mid to late 1700's, and then by John Taylor in the early 1800's. Moving on we spread out over the tips below the Old Engine Shaft and looked for mortar stones, and we discovered one not seen before which appeared to still be in-situ.

Moving past the waterwheel pit and arriving at the New Engine shaft, there was much discussion about the area and why the Thriddle Incline was built. Mark had a theory that at one time the mine was worked in three independent sections by the Thriddle Shaft, Flemings Level and Deep Level before they were all connected, at which point everything came out of Deep Level. Lunch was at the crushing plant at Flemings Level which is an interesting area where a lot of talking was done, but we were no further forward with an answer to what went on. Mark then took most people further up the beck to look at a level that few ever visit.

The wind was getting up and we made our way up the fell and round towards Levers Water stopping to look at the various workings and leats in the area. Arriving at the track to the tarn, there was a good view of Simon's Nick and the workings around Top Level, before we started to walk down the track, stopping at Kernal Level where Tanya and Neil had a quick look in. A short stroll brought us to the waterwheel which Phil Johnstone has installed which is a magnificent site. Then it was a slow walk back to the cars where Liz passed cake around to end what had been an enjoyable day, and so good to see people again.

I am thinking of organising a meet later in the year to focus on looking at the area where the mortar stones are, to see if there are any more, record their location and if they are on benches, as well as to examine in more detail the area around Flemings Level and the crushing plant.

Warren Allison.

Cwm Eigiau and Seathwaite Rock Canon
An emailed query sent to Helen Caldwell, CIHS secretary, from Ken Howarth from Flookburgh generated some interest and correspondence:

'Hi Helen. When I lived down in North Wales, in many of the principal slate mining and quarrying areas the workforce would create what is known as a rock cannon. The 'cannon' were cut into a slate or flat rock slab. Not a cannon in the military sense but a series of shallow-linked channels and holes. When Queen Victoria visited the area, or a new railway opened, the men would fill the holes and link cuts with black powder. Light a primitive fuse and run for cover. The result was a 'percussive firework display' with the main bangs crudely approximating the National Anthem. Wales seems to be the centre for this, although few are known to exist in Cornwall, and to bring into focus the reason for this long-winded introduction is that one is recorded in the Lake District at Seathwaite. The reference does not say which Seathwaite. It would be interesting to find it and indeed if any others exist in Cumbria. Please can you circulate this to members and see if anyone out there can shed some light on this rather unusual aspect of industrial history.'

The Cwm Eigiau rock canon, showing the grooves linking the shot holes.

CATMHS member Jon Knowles responded:
'Rock Canon were very common in North Wales and the late Griff Jones wrote up his detailed research on the subject in "The Rock Cannon of Gwynedd". One of Griff's partners in crime in his research was our new member Pred Hughes. Griff's book gives the reference of the Seathwaite Wad Mine Canon as NGR NY 232128. Griff and his team were instrumental in having a rock canon fired in Blaenau Ffestiniog in the early 1990's.'

Mark Hatton replied:
'Afraid the "Rock Cannon" at Seathwaite is either fictitious or "lost". There are relatively few rocky outcrops around the Wad Mine and I have checked them all without finding anything

that could have been a rock cannon. It is possible that turf has grown across and "hidden" the cannon, but I peeled back the turf in the most likely areas without finding anything.'

Response from Jon:
'Here is the photo from the book – together with Bill Jones O.B.E in shorts! Does this assist in locating it?'

So Mark followed it up:
'This Rock Cannon enquiry seems to have taken on a life of its own. I have been approached by three separate people through three different channels enquiring about the wondrous Rock Cannon at Seathwaite. I fear that using the name "Rock Cannon" makes it sound rather impressive and special. Afraid in reality the "Cannon" is just a few small holes hand drilled in to a rather scrubby rock face that are barely visible. It isn't as pretty as the slate rock cannon in Wales due to the nature of the rock at Seathwaite. The rock here is uneven, splintering, covered in moss and currently largely obscured by bracken.

Somewhat similar hand drilled holes appear at almost every mine site I know in Cumbria. Usually they are peppered around near the entrance to an adit and/or on stones near the location of the smithy. The miners and the smith probably were simply testing their jumpers, practicing the technique of drilling in the safety of daylight, or having competitions to see which pair of miners were most efficient at drilling. Maybe a few ounces of black powder were fired from these holes too, again to practice the technique as much as celebrate some event. To describe such holes as a "Rock Cannon" gives them a mystique which risks inflating their importance or interest.'

Plate 44. Seathwaite Wad Mine Cannon. 7 Holes. Borrowdale, Cumbria. NGR. NY 232128. *Courtesy of Mary Jones.*

Photograph of the Seathwaite example from Griff Jones' book 'The Rock Canon of Gwynedd' compared with one taken recently by Mark Hatton. There are only five holes to be seen!

From Lorraine Crisp:
'In Cornwall they called them 'merriment holes' …. I wonder what they called them here? I assume they'd have created some brilliant echoes.'

From Chris Cowdery:
'In light of your earlier suggestions, is it a rock cannon or just some holes?'

Reply from Mark:
'It is definitely "some holes", but whether it qualifies as a "Rock Cannon" or not I am not qualified to judge. Certainly the Seathwaite Holes are rather underwhelming when compared to the Welsh Rock Cannon. Check out this video on YouTube to see how "fancy" and sophisticated some of the Welsh versions are.' https://youtu.be/J3F2odr2MsQ

Mark also posted the following on Facebook:
'I have been on a bit of a mission to track down this Rock Cannon at The Wad Mine. This was shown in a book on the subject written by Griff Jones called "The Rock Cannon of Gwynedd". Armed with the old black & white photo from that book the Cannon was easy to find. The Cannon is five shot holes, each about four inches deep. These would be charged with black powder then set off. Usually used to celebrate an event. Three of the shot holes are circular, two are triangular and all are on an almost vertical rock face about seventy five yards NE of the entrance to Harrison's Stage.'

Having viewed the very informative YouTube clip, in which a reproduction of the Cwym Eggiau 'Rock Canon' was constructed and fired, it would appear that in order to fire a set of holes in sequence they had to be drilled in a horizontal slab and connected by shallow grooves filled with black powder in order to arrange the sequence of firing. It wouldn't work on a vertical face. So the Seathwaite version is probably 'just some holes'. Although they could have been linked with a continuous fuse … Ed.

Letter from 1937 regarding Greenside Mine reopening
I have been working on a book of photos of Greenside when it was working and came across a letter I received in 2002 with a couple of photographs from Denis Champion, who went to work for the Basinghall Mining Company in 1937. I had forgotten about it and looking back should have visited him, but given his circumstances at the time did not feel it would be right. However, it contains information from someone at that time, which is reproduced below:

Dear Mr Allison, Thank you for your letter of 28/04/2002.

With F&M outbreak I did not think you would have had an exhibition in 2001. My daughter-in-law did manage to improve the enclosed two photographs, details on the reverse of each, but as she has a terminal illness, much of her time is spent in bed and I am unable to ask her to process other photos which were unsuitable for exhibiting but which she would improve on her computer.

Some points which came to mind:
1. To the best of my knowledge when Basinghall re-opened Greenside, the mine manager was Mr William Harry a fellow Cornishman who subsequently invited my father Mr Oscar D Champion to join him as mine surveyor.

2. It was perhaps unfortunate that senior staff under the Basinghall regime were uncomfortable and there was a tendency to co-opt people they had previously worked with, and people in post were dispersed with for no apparent reason. For example, when Halkyn

mine in North Wales closed, senior staff were transferred to Greenside which meant exit for staff in post.

3. There was an interesting "side-line" operated outside the mine entrance. When large pieces of lead were mined these were diverted to a man on the surface (from memory Mr Hicks) who broke them down into small pieces which were sold to the cosmetic industry, much exported to India. This was selling at about £80 ton against £28 to for concentrate from the mill.

4. Efforts were made to re-open the extension of the Lucy Level where the lode had been extinguished by a very large clay fault. Diamond core drilling was carried out, but no trace could be found of the lode which must have been displaced by a large distance and lost completely. During this exercise buckets and shovels from decades earlier were found when first entered.

5. Samples were taken at regular intervals on all working levels, a fine out across the tunnel, initially this was performed by a Mr Tomes, also from Cornwall + when he left the duty was taken over by yours truly in addition to my duties as Assistant Surveyor. These were sent to Assay Dept.

6. I arrived in Glenridding 6/11/37 and stayed until 1940, my father having left a few months previously. I them worked with his successor Mr Len Hagan, a Tynesider who I eventually left to work with in Yorkshire. This was about the time of the arrival of the people from Halykn.

I am not as mobile now and would be unable to make a firm commitment to come over to see the photographs you have. As it is over sixty years since I left Greenside, I would imagine I would recognise faces without always being able to put names forward. However, if you would care to mail them to me, I will do the best I can to return them quickly, bearing in mind your preparation for the year's event.

You are very dedicated to spend so much time on this project but it must give you much satisfaction.

I am sorry there are so few photographs but hope you will understand the circumstances - my daughter-in-law is fighting her illness valiantly, but we all wonder how much longer she can hold the illness at bay.

Incidentally did you know at the time one of the cages on Smiths shaft broke away + went through to the water sump at the foot of the shaft?

With best wishes
Yours sincerely
Dennis Champion

Greenside Mine 70th anniversary of the 1952 accident

On the 7th July 1952 four men died at Greenside in a terrible accident which is still a very emotive subject with those in the parish who remember it. Over the years, from being a child to organising the exhibitions on the mine and life in the parish with a friend, I met or knew seven of the men who entered the mine that day, not including two of my uncles who were in the mine that day.

I asked Patterdale Church to commemorate the 50th and 60th anniversaries and helped to write the service as well as making sure there were flowers on the graves. I also had the pleasure of meeting Richard Mallinson's daughter Elaine and Iris Miller and her two daughters as well; Iris's husband Johnny was one of the men killed. I have written articles for past newsletters on the accident, and one included reference to my grandmother being engaged to George Gibson (family rumour) who was also one of the men killed.

I have approached Patterdale Church to ask if the 70th anniversary can be commemorated, and it has agreed, with the details still to be confirmed. I will be contacting the relatives of the men who were killed to let them know and will ensure there are flowers on the graves.

Warren Allison

1952 accident - Taken from Grey Gold, by Sam Murphey

The main entrance for nearly a hundred years was the lowest tunnel to surface known as the Lucy Tongue Level or Lucy, located at the main site just above Glenridding Beck. The mine workings below it were 1420 feet below it (320 feet below sea level) and the furthest were nearly two miles away. It was on the fateful day of the 7th July 1952 that four men were killed in a tragic accident in the mine the most in one go.

At 8.00am on the 7th July 1952, 36 miners gathered for the morning shift at the Lucy Level entrance on a bright summer's day. The men rode along the Lucy Level in the mine wagons and although some noticed an unusual smell as they went deeper into the mine it was put down to some creosoting which had been done over the weekend. At Warsop's crosscut Tommy Hind had set the big Sentinel air compressor going nearly an hour before and at Smith's shaft the hoist man took up his position. Unusually for some reason the underground power supply had been left on over the weekend. The men entered the cages and went down to the 90 fathom level where the smell was stronger, then a few yards to Murray's shaft. The loco driver and the hoist man took up their duties and soon the men were descending Murray's shaft where they separated to go to their various places of work.

The men who entered the mine that morning were: Harry Birkett, John Blair, Alfred Blamire, Robert Borrowdale, John Brown, William Brown and his son Alfred, Robert Corlett, Jack Coulston, Fred Dawes, Robert Denwood, Leslie Dixon, Robert Gardner, Frank Hadwin, John Hamilton, Tommy Hind, Harry Holliday, Thomas Hope and his son Joseph, brothers Wilfred and Robert Jenkinson, Arnold Lewis, Richard Mallinson, Jack Martin, brothers Tom and Leo Mulryan, William Murray, Tom Nicholson and his nephew Howard, Henry Richards, Jack Teasdale, Edwin Turner, Andrew Wilson, Daniel Wilson, Tom Wilson and Fred Wynn.

It was at the bottom of Murray's shaft on the 175 fathom level that some of the men began to feel ill. One of the miners said: "*It was a sickly smell and first caught me in the stomach. Then my knees began to give out and I had a violent pain behind both eyes, then I passed out*".

The gas was not due to blasting, but to a fire in the woodwork of North shaft at the far Northern end of the mine. Over the weekend the timbering above the 200 fathom level station had been set ablaze and a section of the burnt timber lagging eventually collapsed, allowing rock to spill into the shaft. Although the men knew nothing about this, the compressed air line which took air down the North Shaft had been broken by the rock fall and when the compressor at Warsop's crosscut had been started up, the blast of air from the fractured pipe fanned the flames into an inferno and blew the gases from the fire down the shaft. The gases then flowed along the 200 and 217 fathom levels, rose up the 940 N Winze and the stopes of the 175 fathom level, drifted along that level to Murray's shaft and into the rest of the mine. So as the men were making their way into the mine the lower levels were gradually filling with smoke and more insidiously with an invisible cloud of gas: mainly carbon dioxide which will suffocate a man and some carbon monoxide which destroys the ability of blood to carry oxygen.

As men began to collapse at the 175-fathom station some realised that they were in danger and dragged their unconscious comrades with them and back to Smiths shaft where the alarm was given and the cage was lowered to bring the men back up. Assisted by men from the morning shift of surface workers, who had raced into the mine to help as soon as the alarm was given, these miners eventually staggered into the fresh air.

The mine manager Cyril Conner finding that a number of men were unaccounted for telephoned the Mine's Rescue organisation at Whitehaven asking them to send a rescue team over. However as Whitehaven was over two hours away he and another group of surface workers climbed into the wagons behind the Lucy loco and set off into the mine to find the missing men.

At the 940 winze, which was a major shaft, Leo Mulyran had jumped into the kibble and William Murray used the air hoist to lower him the 150 feet down the shaft to his workplace. Very soon as he had got out of the kibble he became ill. Another group of miners had begun to feel the effects of the fumes in the north end of the mine and were retreating along the 175 fathom level past the 940 winze when they found Mulryan in trouble. One of these miners later said "*We could hear Leo Mulryan moaning down the winze and Dick Mallinson said he would go and get him. The other two of us were not sure we could make it to the top and we carried on. I passed out coming up one of the shaft in the cage"* Mallinson set off down the ladderway and on reaching the bottom shouted up to Murray that Mulryan was in a bad way and he was '*feeling queer'* and was coming back up. He managed to get part way back up before collapsing. Other men retreating picked up Murray at the head of the 940 winze on their way back to Murray's shaft.

Meanwhile, surface workers George Gibson, 33 years old, Eddie Poole, 22 years old, and John Miller, 29 years old, who had started in with Cyril Conner the mine manager, had raced ahead of the main party. On reaching the head of the 940 winze peered down and saw Mallinson slumped on a ledge partway down the ladderway and thought they could hear Mulryan moaning at the bottom. Scorning the obvious danger, Gibson and Miller set off down the ladders leaving Poole to operate the air hoist which they intended to use to bring the men out in the kibble. Miller carried Mallinson to the bottom of the winze and the two men managed to get one of the unconscious miners into the kibble and shouted up for Poole to bring him up. Unfortunately air was being rapidly lost from the broken air pipe so that the winch was inoperable. Poole began to slide into unconsciousness and moments later Tom Hodgson, Adam Copper, Walter Burnett and Cyril Conner arrived. Tom Hodgson and Walter Burnett picked Poole up and carried him out, Adam Cooper left to collect the gas masks and was eventually followed by Cyril Conner

who realised that "*If I stay here, I'll be no use to anyone'* Arriving back at Murray's shaft there was a fresh pocket of air where the men had gathered and there was a quick conference and Douglas Hodgson and Gordon Hamilton volunteered to go down the 175 fathom level and disconnect the air line so the escaping air would blow the gas back down the level and supply some fresh air to the trapped men.

On the 175 fathom level the deadly gas was flowing too strongly and Hodgson was soon overcome and was put into the cage by two other stricken men. Unfortunately Hodgson feet were left protruding from the cage and as it came up to the 90 fathom level were crushed between the cage floor and landing stage slicing through the bone and leaving both of his feet dangling from his legs by flaps of skin.

Just before noon five men rescue team men arrived from West Cumberland, but Greenside was a deep mine in the heart of the mountain, reached only by a single very long tunnel making it very dangerous to attempt a rescue. Nevertheless Walter Kirk and Richard Glaister from the Winscales Rescue station in Cumberland donned oxygen masks and were taken back into the mine by the loco. At the collar of Smiths shaft they met Conner and the other eighteen men, but a gas test showed the presence of carbon monoxide and the unprotected men were ordered to get out.

The depth of the mine and lack of any form of controlled ventilation meant that the rescuers could neither establish fresh air stations, nor go the entire way to the 940 winze and back using oxygen masks, because the oxygen supply was insufficient. The leader of the West Houghton team explained "*The hoists are tricky to operate except by skilled men. The mine hoist men are eager to go in to assist, but they have never been instructed in the use of breathing equipment and might get into difficulties and possibly endanger further lives*" All that day the fire raged on in North shaft and the gas increased inexorably and by 10.00pm that Monday night the carbon monoxide concentration at the Lucy Level had reached such a level that the rescue workers were driven from the mine. The agonising decision was finally made that the four men must be dead, and the mine was closed until such time that the gas had cleared sufficiently for the bodies to be brought out.

On Wednesday the 16th July, nine days after the accident the gas had dispersed sufficiently for the bodies to be recovered. This dreadful accident, the worst ever at Greenside, shocked the whole community, but the incredible bravery of the men who risked and lost their lives in trying to save their comrades was something of which they could all be proud. Official recognition came early the following year when George Gibson, Richard Mallinson and John Miller were posthumously awarded the Edward Medal by the Queen. Cyril Conner was awarded the MBE and Walter Burnett the BEM. Walter Kirk and Richard Glaister were awarded the Queen's Commendation for bravery. Incredibly the surgeons who attended Douglas Hodgson managed to sew his feet back on and pin the shattered bones so that although lame he was able to walk again.

The exact cause of the fire remained a mystery.

Exploring the Forgotten Sulphur Industry of the Gwydyr Forest

Drainage level ore chute

What traces can be found today in 2021 for the active mine explorer? Before we start on our trip let's have a very brief look on where this all began. Working for sulphur or iron pyrites in the Gwydyr Forest is believed to date back to Roman times, however like many of these Roman working "myths" there is no evidence today and what workings may have existed now have been re worked many times since then. So we shall start our very small history chapter at a date of 1607, when a Sir John Wyn mentions a store of brimstone at Cae Coch mine. I am going to list some key activities in Cae Coch history. In its early days production fluctuated; in the 1830s an average sulphur output was 30-80 tons a month. During the period of 1850-1880s it ran an average production of 1100 tons per annum and by 1895 production once again had increased with Cae Coch producing in total 81,634 tonnes. Nothing was done after this time except maintenance work until the start of WW1. During the start of the Great War 230 men were sent to work in Cae Coch mine introducing more modern mining techniques and compressed air tools. In seven months they had produced nearly sixteen thousand tonnes of pyrites. Production continued until 1919 then all work went again on hold with only mining trials carrying on in the number 2, 3 and 4 extensions. You shall see these extensions during your visit. In WW2 it was put on emergency standby as it was considered a valuable emergency source of sulphur; these trials carried on up to 1966 when it finally was abandoned.

This area of the Gwydyr Forest was keen for sulphur ventures due to its rich geology, it holds a two metre thick bed of quartzite pyrites sandwiched between the underlying Dolgarrog volcanic formation and the overlaying Llanrhychwyn mudstones which are both Ordovician in age. The deposit is a major source of pyrite in Wales containing 46.6% iron and 53.4% sulphur. Cae Coch was by far the largest scale operation for sulphur in the Gwydyr Forest, but there were multiple other ventures. One of the other two main mines are Tyddyn Wilym sulphur mine which can be found at:

Tyddyn Wilym (Google maps location: 53.1739440 - 3.8454030)
The only traces I manage to find of this mine are a large cutting in the hillside, but there is no trace of an adit anymore. It's possible with the location and the vegetation that the entrance has been claimed back by nature. The cutting measures around 3m wide 2m deep and 30m long; I suspect this was originally the main entrance for the mine and further investigation with permission on the site could reveal a whole lost mine network.

Ardda sulphur mine (Google maps location: 53.1753860, - 3.8555460)
At Ardda sulphur mine the only obvious remains are the tips which can be spotted via Google satellite. There is a cutting nearby which could be part of the mining site but very little precise evidence exists for this site.

If anyone is interested in viewing these sites the same day as Cae Coch it is worth parking at the upper road parking mentioned on the Cave Access Ltd (CAL) website. At the end of this article the CAL website is listed and the information on this route can be found on their site.

Cae Coch

There are few mining artefacts left today in Cae Coch mine, although perhaps more impressive are the workings left by the miners and the blood red pools it is well known for. There are also massive amounts of flowing ochre which now form at the No.2 adit and flow through the mine to the No.4 drainage adit. It's worth mentioning this mine was worked from the No.2 adit; the majority of its life as the No.1 adit had been worked out completely in the mines early days.

Ochre flow at Cae Coch

Our walk shall now begin at the Forestry gate (Google Earth location: 53.1734270, -3.8303060) When using the lower road parking you can get three cars parked here but it's important not to block the gate. After leaving the car park location follow the forest road up the hillside; it shall eventually fork, take the left. You shall have a small stream running along the right hand side of the track which sometimes has a pH of 4. This is coming out of the No. 4 drainage adit. As we carry on walking you shall notice a death strip of vegetation on your right where the out flow from the drainage adit has killed all in its path. There are a few concrete foundations near by the death strip, these are the remains from the aerial ropeway that sent the Iron Pyrites across the Conwy valley to the railway line. As we carry on along the track you shall start to notice a transformer house ahead of you on your right but before you take the short climb up to this, just past it is a large stream which is worth mentioning because it's a great spot to wash your kit after the trip today. Now you move up to the transformer house, to your left there is the lower remains of the mill/ore bins. The transformer house holds some nice wood work and ceramic insulators. Explore the remains of the mill and the ore bins as these also hold some nice features and most people miss these due to the over-growing nature here.

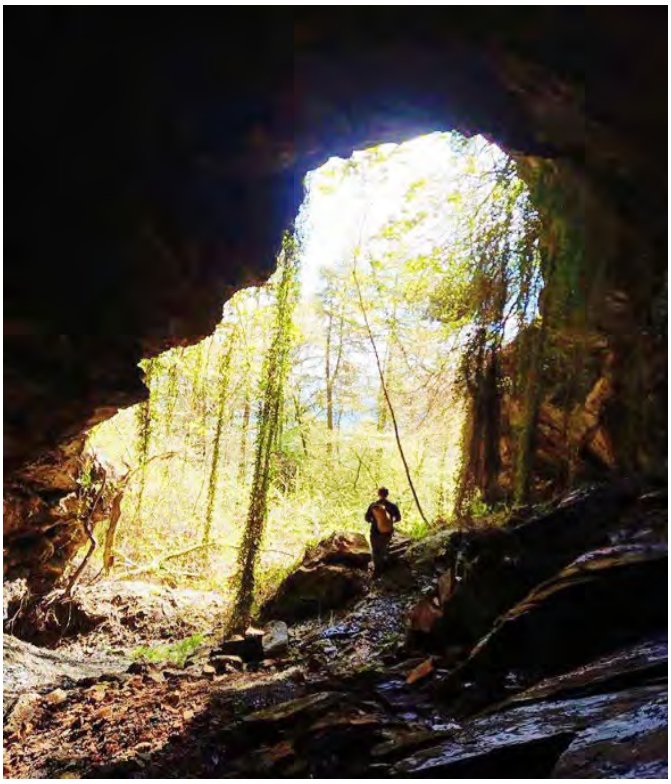
Now we have 2 route options….

- Route 1 shall walk you to the number 2 adit via all the external buildings and other remains.
- Route 2 shall walk you directly to the number 2 adit.

- **Route 1 via the buildings**

  This is a longer harder walk, it shall add one or even two hours on your day. It's very overgrown which has kept the majority of people away from visiting these parts of the site. The route starts at the mill remains near the transformer house. If you follow the main incline remains up beside the mill this is by far the best route. In a short while you will reach a flat plateau, this is a good place to catch your breath and have a short look around. I believe there is an old shed which has now collapsed and behind this is the original tramway remains which would have led to the No.3 Adit, this route is not worth following as it holds no remains, all has been lost in landslides. There are plans which show remains of a crane on this site but I have found no remains or trace of this myself. Once ready, follow up the main incline again; it's very demanding walking but the rewards are worthwhile. Once at the top you shall be greeted with a lovely winding house and the tramway that goes to your left and to your right. Follow the left hand tramway over the bridge and this will lead you to the macadam quarry. En-route to here, just after the bridge, there are some remains of tippler carts and a few buildings, including some explosive stores and blasting shelters from the quarry. If you turn around and re-trace your steps they would take you to what would of been a right hand turn. Now follow this tramway along, there are some building remains which are worth looking at. Eventually you shall reach a small path which shall lead you to fences around the No.2 adit.

  Before crossing the fence to the no.2 adit it's worth carrying on the trail, go up the first slope on your right, if looking at the adit you shall see a lovely aerial ropeway wheel. This is the top of the system which you saw the bases of earlier on the start of your walk. At this point the remains which are left do not warrant the hardness of the terrain to reach them. The majority of the path has washed away and there are only some collapsed-in adits and a few blind heading trials which are deep in ochre. These are thought to be the original early workings or trials. I would turn around go back to adit No.2 and get ready for the real explore. Skip reading walking guide 2 and go to the next section of the article.

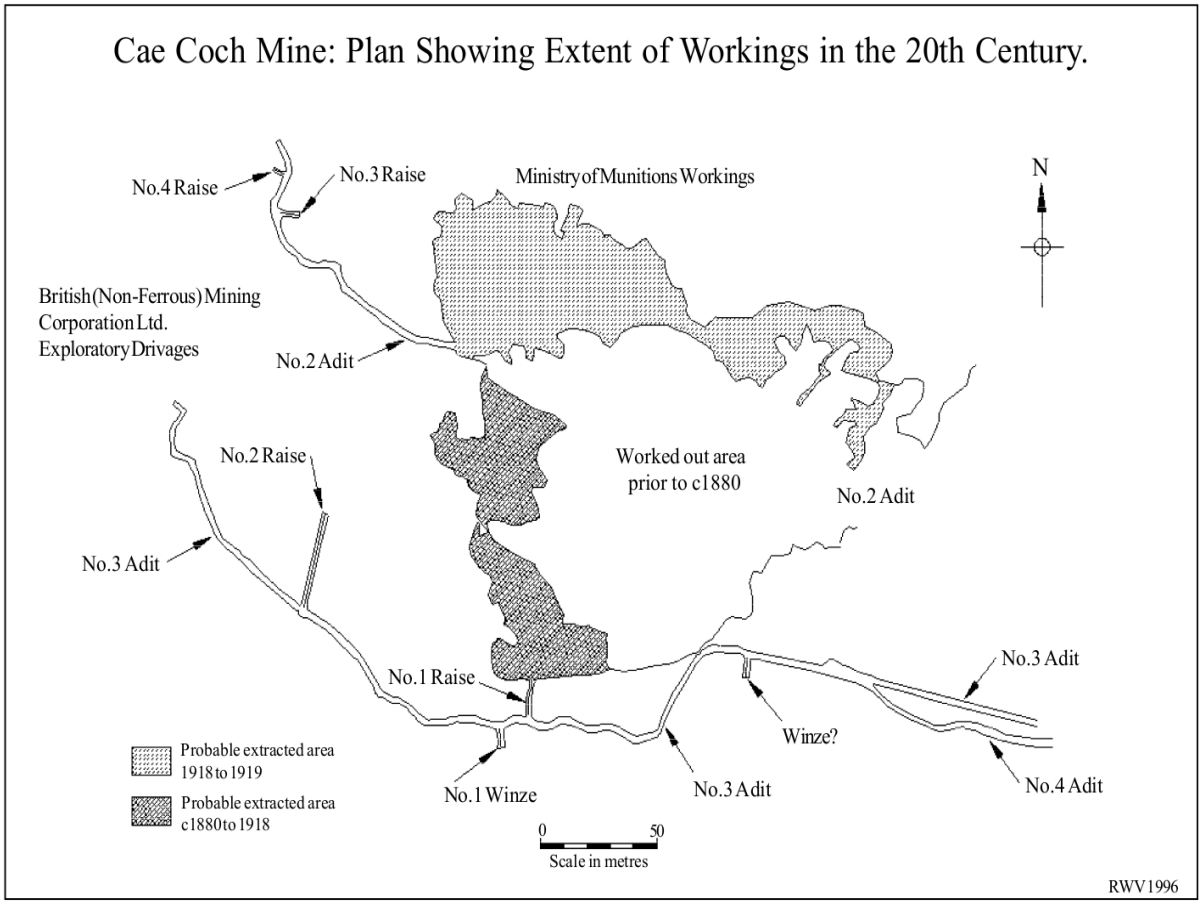


Tom Ferry in the No.2 Adit

Route 2 directly to adit 2

Starting at the transformer house walk around the back of the transformer house on to the small footpath that winds its way up the hill side. You shall pass the aerial rope way foundations you could see from the forest track earlier, the path now shall lead you pass the death strip of woodland. There is an outcrop of geology with water running over with some nice formations on your right. This is not to do with the mine it's not really worth getting soaked for. If you

carry on up the path on your right you shall see a drop down to adit No.4 with water coming out of it. Do not enter this adit, carry on up the hill side, there is a thin blue hand-line on this section. In bad weather the landslide area is hard going, once 95% of the way up there is a right hand turn where the track carries on, take this and follow the path again. You should soon be



Plan from 'Mines of the Gwydyr Forest - Part 7 Cae Coch, Coed Gwydyr & Trecastell Mines' by John Bennett and Rob Vernon. Reproduced by kind permission of Rob Vernon.

standing in-front of the No.2 adit. Before crossing the fence to the No.2 adit it is worth carrying on the trail; go up the first slope and on your right you shall see a lovely aerial rope way wheel. This is the top of the system which you saw the bases of on the start of your walk and at this point the remains which are left do not warrant the hardness of the terrain to reach them. The majority of the path has washed away and there is only some collapsed in adits and a few blind heading trials which are deep in ochre. These are thought to be the remains of the original early workings or trials. I would turn around go back to adit No.2 and get ready for the real explore.

Entering the No.2

So, entering the mine both the entrances will lead you the same way; the mine is a very large flat plateau with pillars supporting a large amount of the roof area and where they have been removed. Cogs have been installed and the right hand side of the plateau has been worked in between a 30° to 45° angle. There are also many props installed which have perished, so a lot of care should be taken in this section as some areas are still unstable. The first section you shall cross is the large fault line causing many large collapses. When possible choose an easy

route to turn right and make your way up and explore around the wheel-barrow ways. On the higher up plateau there are some fabulous formations in this area, but there are a few mining remains and nothing worth mentioning. Once the wheel-barrow ways have all been completed it's best to come back down to the entrance level and continue on making your way into the mine.

pH pool

Eventually you shall reach a dead end where a waterfall of ochre is flowing deeper into the mine, if you turn right here and follow the wall you shall come to the No.2 extension; this has the No. 3,4 raises in it, which are both blind. This area was driven by many companies at various stages but during the World War efforts it saw most of its action. Follow your path back to the waterfall, it shall lead you down to the No.1 raise. On the way you should pass a lovely ore chute on your left. This route is on a 30° to 45° angle. Once at the No.1 raise it's time to get ready for a deep wade in some ochre. A hand line has been installed here and the condition of this should be checked by each individual before use.

Drainage levels

After going down the No.1 raise, turn right and follow this, being careful on the left where it is flooded. No.1 winze is marked by a steel sheet standing on edge around it. It shall dry out shortly after. There is the No.2 adit raise, which is a blind heading the same as the others. Once this section has been explored, head back to the No.1 raise you came down and now go straight, you shall pass an area on your right which is marked as a winze trial on the survey. Here there is a well preserved ore chute which has a constant flow of water. Most of the year all of this fluid is coming from the No.2 adit; it enters the mine ponds and on the left it works its way down the waterfalls through this chute and into the last photo, waiting to exit at the No.4 drainage level adit. Now we shall pass a strange object; I believe this is a bell type device for possibly operating a door? It reminds me of reading different design ideas put forward for trap doors/ventilation doors. I shall let you decide.

After seeing this device you shall notice a fork in the level where the water is flowing down to your right, take the left hand path this shall lead you to the old No.3 Adit. If you took the No.1 walk earlier, the tramway behind the wooden shed would have met up to this. This adit is now under the landslide and its timber work is most impressive. Following your steps back to the fork now take the other option down the slope to water.

After starting your wade, follow it all the way to the very end and you shall see daylight. There is a short dirty crawl and you shall be outside. If you took the No.2 route earlier you shall realise where you are immediately. If not take a short scramble to your right and you shall be on a small path. You have exited Cae Coch by the No.4 drainage adit and completed a through trip. Follow this track down the hill side and you shall pass the aerial ropeway foundations and eventually be back at the transformer house/mill, and also you will be at the large stream-way. If you need to wash off after this follow the track downhill take your first right hand turn follow it again and you shall be back at the Forestry gate .

Dave Tyson on the No.4 Adit

Cae Coch mine is a Cave Access Ltd site and all access is strictly controlled through them. Please view their website and contact the permit secretary and follow their own guide lines and rules. http://www.caveaccess.co.uk/

Further Reading:
Mines of the Gwydyr Forest - Part 7 Cae Coch, Coed Gwydyr & Trecastell Mines by John Bennett and Rob Vernon. Supplied by
https://www.moorebooks.co.uk/Mines-of-the-Gwydyr-Forest-Part-7-Cae-Coch-Coed-Gwydyr-and-Trecastell-Mines.html

I hope you have enjoyed your time around Cae Coch sulphur mine as much as I did. The link below will show you my collection of photos from the sulphur sites.

https://flickr.com/photos/193182234@N06/albums/72157719347047442

Thanks for reading. Thomas Ferry.

A Brief History of John Taylor 1779 - 1863 Any study of the History of Mining in Britain during the 19th Century keeps coming up with one man's name above all others. That man is John Taylor, who has been described as "The Patriarch of British Mining". John was the most prolific mining engineer in this period. He played a major part in the development of many metal mining sites throughout Britain and beyond. His role was critical to the rate at which mining advanced in Britain, growing enormously in scale and sophistication, attracting huge amounts of capital which was invested in the infrastructure, technology and processing machinery. This allowed Britain's output of lead, copper and iron to keep pace with the growing demand from the rapid industrialization of the British economy. The British mining industry also became a major exporter of metals and technology, creating huge economic and strategic power for the Nation.

But who was John Taylor, how did he make such a big impact on the metal mining industry and where was his impact most felt?

He was born in 1779 in Norwich, the first of seven children, to a family of moderately successful yarn manufacturers who were staunch Unitarian Dissenters, active in local politics and well connected with the local social scene. John was brought up in an environment of intellectual enquiry, debate and discovery with high moral values of honesty, endeavor and self-improvement. Financial disciplines were drilled in to John from an early age, including the need to avoid debt and maintain scrupulous records. These disciplines were to guide John throughout his career as a Mine Engineer. However Norwich had no local mining activities and John's first apprenticeship was as a Surveyor and Civil Engineer. In 1798 a family contact took him to visit the Wheal Friendship Copper Mines in Devon. Based on the excellent impression he made on this visit he was invited to take on the role as Mine Manager at the age of 19. This rather extraordinary change in his career direction and very bold (perhaps

audacious) decision on the part of the Mine owners to trust him with this responsibility certainly paid off. Within a few years John had initiated some major developments of water power involving a complex series of leats, which transformed the profitability of the mine. So straight away John was deploying ambitious engineering schemes to increase the mechanisation and resulting efficiency of mining and processing operations. This was to be the manner of all of his interventions in subsequent decades at other mines throughout Britain.

Over the decade John spent managing various mines in Devon and Cornwall he designed and implemented major projects including the construction of canals, large inclines, pumping systems, ventilation machinery, deep shafts and efficient dressing floors. All of these systems enhanced the productivity, profitability and sustainability of these mines. Still in his 20's, John was so highly regarded by his contemporaries that he was appointed to lead negotiations with landowners on behalf of all of the local mines, succeeding in reducing royalties, further improving the future of these mines. John's excellent reputation was not just earned by his engineering vision and prowess. His scrupulous fairness, even-handedness and honesty made him a hero to the investors, managers and workers at the mines. When he left the area he departed to a huge send-off from many hundreds of miners and their families.

In 1813 John moved up to the Halkyn lead mines in Flintshire to accept an appointment by Lord Grosvenor as manager, with the specific task of improving their operating efficiency. Here he quickly introduced Cornish pumping and dressing machinery, together with new working practices that transformed the profitability of these mines. John moved back to Devon for a while where he became a shareholder and landowner, before moving on to Ecton Hill and Grassington Moor in 1818 by appointment as Mineral Agent to The Duke of Devonshire. John quickly replaced the existing mine management personnel with men he knew and respected from his time working in Devon and Cornwall, including John Barratt. The introduction of Cornish mining technology and working practices followed on at pace. Over the 1820's and 30's John and his team worked the same magic at mine fields in Cumberland, Cardiganshire, Ireland, Cornwall, Alston Moor, County Durham, Central Wales, Derbyshire, the Pennines and Shropshire. Capital investment in sophisticated water management and water powered machinery, steam powered pumps and winches, stamping and crushing machinery, railway lines, inclines and deep shafts, deployed in a highly systematic and sophisticated manner, were all part of the formula. Miles of leats, large waterwheels and thousands of yards of pump rods were often implemented without flinching at the cost or technical challenges involved. And equally important were new working systems based on Cornish practices to incentivise the miners to produce higher quality and more efficient work. Whilst these were often resisted at first, they were also seen as essential to ensure success.

After sixty years in the industry there was barely any mining area in the UK that John Taylor had not improved, following the formula of heavy investment in infrastructure, modern machinery, efficient working practices and bold planning. John's sons, John Junior and Richard became important parts of the family business and carried on the good work well beyond John Senior's retirement and death in 1863. His reputation for honesty, effectiveness and success survived a substantial failure to re-establish Silver Mining in Mexico.

Mark Hatton.

Doctor Descender

Dear Descender,
At a recent two day Meet in North Wales a senior (not to say elderly) Society member failed on three occasions to get “his leg over” and without any sign of embarrassment or concern at this lamentable lack of performance proceeded to importune other members to assist with the manoeuvre.

Is it not certain that once news of these failures leaks (sic) out the society will become a laughing stock in the mine exploring community with much sniggering and smuttery following from us allowing membership to someone with such poor performance and lack of basic fitness. What is to be done to rectify this distressing circumstance?

Yours Sincerely,
Inflexible Parc.

Dear Parc,

Is it not well said that there is “No fool like an old fool”! Therein lies your salvation given that another year or two will see the end to these embarrassing moments, indeed it’s not unlikely that the culprit may not make it to the Namho Conference at Grasmere in 2023.

Yours Sincerely,
Descender.

CUMBRIA AMENITY TRUST MINING HISTORY SOCIETY

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