

# CAT

The Newsletter of the Cumbria Amenity Trust  
Mining History Society

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The underground Elizabethan wheelpit in Goldscope Mine  
Photo by Liz Withey

# **Cumbria Amenity Trust Mining History Society**

## **Newsletter No 128, August 2017**

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#### **Society Officers and Committee Members**

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## **Membership - Subscriptions for 2018**

Basic Membership provides four Newsletters each year by email along with access to the website, the archive at the Armitt Library & Museum, and the right to attend and vote at General Meetings. At £10 this offers outstanding value and allows many members of other Societies and Clubs to access our newsletters. Basic members cover their share of the running costs and provide a small surplus to allow the Society to support projects, appeals and exhibitions.

From the next renewal, due in November, basic membership will remain at £10. For those who prefer to receive printed newsletters there will be an additional £15 to cover the cost of production and postage. For those who attend any Society meets there will be an additional charge for appropriate BCA third party insurance. Members will receive a reminder and a renewal form with the November newsletter

In order to give the Treasurer time to arrange the insurance, which commences on 1<sup>st</sup> January, CATMHS Membership fees become payable in November.

Ian Matheson  
Membership Secretary

## **Access to the CATMHS Archive at the Armitt**

I have discussed this with the curator. There is no charge to CATMHS members for the use of the Armitt library or to access our archive. They would, however, appreciate two days notice by phone or email and would be grateful for a donation. IM.

## **New members**

We would like to welcome:

John Greasley, from Whitehaven.

Nigel Addy from Huddersfield. Nigel is a member of several caving clubs, is a BCRA member and also a DCRO and WMRT member.

Stuart Whitfield, from Durham.

Gavin Stewart, from Nenthead.

David Hughes, from Broughton in Furness.

Christopher Bell, from Consett, Co Durham.

Peter & Beth Knight, from New Mills, Derbyshire. They are both members of the Darkside Caving & Mining Club. Peter is DCA Projects Officer and is a trainer/assessor for Cave & Mine Leader qualifications.

Kenneth Lindley, from The Green, near Millom. Member of the Duddon Valley Group.

David Appleby and Hilary Drydale, from Bedale, N Yorks.

Roy Meldrum, from Caine in Wiltshire. Roy is Editor for NAMHO.

Ormonde Joel, from Sedburgh. Ormonde is a National Trust guide at Force Crag mine.

Annie Eaton, from Low Mill Outdoor Centre, Askrigg, N Yorks.

Oliver Trampert, from Wadgassen, Saarland, Germany. Oliver is a Member of a German Visitors Slate Mine and also in a French WW2 Bunker.

Anthony Brooke, from Dalton in Furness.

Bettina Vieweg, from Blieskastel, Germany.

### **Public Liability Insurance and CATMHS**

As all members will remember from their careful study of the Constitution, prior to joining the Society, it is a condition of membership that “Surface and Underground Members must have appropriate Public Liability Insurance cover as determined by the Committee”. This insurance is provided by the BCA who purchase a single policy, the cost of which is covered by charging Clubs and their individual members.

CATMHS “Basic” members fall outside this scheme because they only have the right to receive Newsletters and vote at General Meetings. They cannot attend any other activities unless they already have insurance, either as direct members of the BCA or via another club (no matter how many clubs you are a member of, the BCA only requires you to pay via one for insurance).

The £5 million of insurance cover functions in two ways: -

1) Land Owners/Mineral Rights Owners; the cover ensures that they are not at risk from claims by anyone injured on their property and are covered for any damage that may result from the activities of Society members. Were this cover not in place then in many areas of the UK the owners would simply refuse to allow access.

2) The Officers, Trustees, and Members of CATMHS are protected from claims (including libel and slander) from any of their number or any member of the public and any legal costs that may go with such claims. (Legal costs cover is provided in addition to the £5 million). Cover applies both to members as individuals and when taking part in meets. While members may consider it unlikely their fellow members and friends might claim against them or the Society’s Officers/Trustees, in the event of a serious accident it may well be their heirs or executors who make the claim, using a solicitor who is prepared to work on a “no win no fee” basis. Legal costs are such that I do not believe there is any member of CATMHS wealthy enough to consider being without this protection. The present insurance arrangements have run since 2002 without any claims.

Insurance is not a one-way process, while we pay premiums and expect claims to be met, the insurer expects that we will behave in a “reasonable” manner. This does not mean that no risks are taken (going underground is inherently risky!) but that potential problems are considered in advance and all appropriate steps are taken to minimise any adverse consequences. The insurer is also concerned that all participants have cover. To address this latter concern, this statement was produced: -

***For the Attention of Meet Leaders and Committee Members:  
Qualification of those attending Meets in order to meet the requirements of the BCA Public Liability Insurance Policy.***

***Everyone*** attending a CATMHS Meet ***must*** be insured under the BCA Public Liability Policy in order for the insurance to be valid. A single attendee without insurance invalidates the policy, not merely for those attending but for the whole Society, the Officers, and the Trustees.

*Those attending may be covered in a number of ways: -*

*CATMHS members with Underground Insurance (Green Card); may attend any Meet without restriction.*

*CATMHS members with Surface Insurance (Orange Card); may attend Surface Meets, they ***must not*** go underground and that includes simple walk in trips such as Tilberthwaite Horse Crag level, Greenside Lucy Tongue level and quarry close heads.*

*Non CATMHS members with BCA Insurance through other clubs or societies holding Green or Orange cards may attend CATMHS Meets (appropriate to the insured category) without restriction.*

*Non CATMHS members who do not have BCA Insurance may attend a single Meet (which could be two days over a weekend) without joining CATMHS subject to their providing the Meet Leader with their full names and addresses. In turn, the Leader must retain the data and forward it to the Treasurer since the details must be returned to the BCA on an annual basis. So long as these requirements are complied with then BCA Insurance is in place for this single Meet.*

*Additionally, the Meet Leader ***must*** ensure that every ***non CATMHS*** member who attends completes and signs the “Release of Claims” form found in the “Memorandum of Agreed Policies Attached to the Constitution”*

*Obviously, none of the above in any way interferes with Meet Leader’s responsibility for ensuring that all attendees are competent to achieve the Meet Grading or the Meet Leader’s absolute right to refuse to take any member or non-member on a Meet.*

*To ensure we meet the “reasonable behaviour” test, all must wear appropriate clothing and footwear; to go underground a caving helmet with a fixed lamp is an absolute requirement.*

*Meet Leaders are tasked with grading the meet in accordance with the Meet Grading System:-*

***MEET GRADING SYSTEM***

***It is your responsibility to ensure that you are competent at the grade of the meet, your own safety and that of others depends on this. Members attending must have a valid BCA insurance card available at the start of the meet. Meet leaders may refuse to take individuals who are ill-equipped, or who in their sole judgement are not competent at the grade of the meet. Please always phone first.***

*Meets are graded according to the following system:*

***E- Easy.*** *This will involve level walking, scrambling on easy ground, no SRT or electron ladders. Good footwear/waterproof clothing is required.*

*D-Difficult. Abseil or ladder pitches and awkward ground. Short prussicking pitches may be included, in which case the meet will be designated **D, SRT**.*

*S-Severe. Long or awkward SRT pitches, and unstable or serious ground may be encountered. For the safety of the party all participants must be fully SRT competent.*

*EXP-Exploratory. These meets are intended to push into unknown ground, and long and difficult abseiling and prussicking pitches may be expected. Rope traverses, pendules and deep water may be encountered. For the safety of the party all participants must be fully SRT competent, and able to exercise their own judgement in all underground situations.*

None of the above is intended to discourage potential attendees, if in doubt then discussion with the Meet Leader will resolve the situation.

Having graded the meet, the Leader then carries out a Risk Assessment; this consists of first listing all the potential problems the party may encounter and then recording the steps that should be taken to minimise the associated risks. An example on a recent meet was the condition of fixed ladders, the method of mitigation being “Extreme care to be taken on aged ladders/ only one person at a time/ those having descended to move away from base of ladder”. All attending should read the Risk Assessment before the start of the meet and record their names on the reverse.

If you have read this far, you’re probably thinking this is all a bureaucratic nightmare, far removed from a good day out underground, and if you regularly go out with the same small group of highly competent explorers of new ground and have been doing so for fifteen years then it’s all completely self-evident and each of you knows what the other is going to do before they do it. However these arrangements are to cope with a different set of circumstances, where attendees do not know each other and are of differing levels of skill and experience. Conscientiously following these procedures maximises the protection provided by our insurance cover, minimises the risks and gives the best chance of a great day out for all of us.

References: -

[www.catmhs.org.uk](http://www.catmhs.org.uk) “Home” “Constitution” “CATMHS Constitution annex”

[www.catmhs.org.uk](http://www.catmhs.org.uk) “Members” “Documents”

**If anyone reading this is in anyway interested in leading a Meet (anything from a stroll round on the surface to a multi pitch SRT exploratory trip involving swimming) please come forward, the Society always needs Leaders!**

John Aird.

**Time Team report Coniston Copper Mines, February 2016 Report Ref: 85208.01  
CONISTON COPPER MINES, CONISTON, CUMBRIA, Archaeological Evaluation  
and Assessment of Results**

The report from the Time Team dig, carried out in July 2012 for Channel 4, is available from Wessex Archaeology’s web site: [www.wessexarch.co.uk](http://www.wessexarch.co.uk)

**LDNPA Archaeology Conference**

The Annual Archaeology Conference will be held on Sunday 15 October 2017 at the Theatre by the Lake, Keswick. Please save the date in your diaries. The programme is currently being prepared and will be circulated as soon as it is confirmed.



### **Coniston HLF Grant update**

This has been a very busy year with a huge amount of work being done, the surveys and the dig at Penny Rigg Mill will be described in separate articles. However there has been a lot done with the primary and secondary schools through many projects, including art, history and practical demonstrations of equipment such as stamps, waterwheels, rag and chain pump etc., which have been built by Stephe Cove (a new member), and trips to the mine to explain the site as part of the industrial revolution as well as the geology.

Work is ongoing with the local community to promote Coniston through its copper mining history, which will hopefully bring people in to the area and make them stay for longer.

There are volunteers who are delving into the archives, newspapers and other sources with guidance from Ian Matheson who has suggested the areas which would be of the greatest benefit and that have not been looked at before. There is a huge amount of new information turning up, such as probably one of Ian's favourites - There is a ledger which lists the miners and how much it cost them to have their drills sharpened, which was done by weighing the drill steel before and after so they could be charged for the lost metal. Maureen Fleming and others are researching the development of the village and this is throwing up some fascinating facts, such as how buildings had many uses, for example going from being a mill to cottages for the miners, and it has now gone.

Interpretation panels which will be at discrete locations have been agreed with Rydal Estates and will also use information from the archive research.

New people have come forward to become guides on walks to the mines and a day was recently organised to follow an existing guided walk to see what route was followed and what information was being given to the public. After a discussion near the end the walk the route has been slightly changed and a pack with information and old photographs will be produced to help the guides with the walk.

There will also be a trail leaflet produced which will take people around the village for those who do not necessarily want to go to the mines, but want a better understanding of how the village developed.

Consolidation work is carrying on, with the Paddy End Mill and Low Bonsor Mill being completed, and the contractors have now moved onto the Upper Bonsor Mill.



*One of the buildings at Low Bonsor Mill before and after*

Three people who the Society owes a great deal of gratitude to for making this project such a success are:

John Hodgson (Senior LDNPA archaeologist) for submitting the first grant application to the Higher-Level Stewardship scheme, which unfortunately failed; he then had a Plan B to submit an application to the Heritage Lottery Fund, which succeeded.

Eleanor Kingston (LDNPA archaeologist) who took over the application and has been instrumental in delivering the project. She has put in a huge amount of her own time.

Lisa Keys (Project Manager) who has been working with the schools, the archive volunteers and local community and again has put in a huge amount of her own time.

A special mention must be made of the contractors who have done incredible work in consolidating the various structures, which were in a really dilapidated state and have now been rescued from further decline.

On a personal level, I have found this project to be superb, far exceeding expectations, having met a lot of very nice people; the NAA staff who have been with the volunteers have been brilliant and, although not yet finished, the project is a great testament to our Society, whose members have for many years fought to have this kind of work carried out. It is not yet finished.

Warren Allison

### **Lake District National Park Authority Volunteers Day**

Each year the LDNPA organise a day with various activities for their volunteers as a thank you for all the work they have done over the last year. Last year it was held at Coniston and I was asked, as a representative of CAT, to do a walk around the copper mines. This year on the 17<sup>th</sup> June the event was held at Watermillock on the side of Ullswater and I was asked to lead a meet to Greenside Mine. There were also several other trips organised at different locations in the valley.

Martin Lord from the LDNPA property department was also on the walk to explain how the authority manages the site and the work that had been done since Storm Desmond. We met the eleven volunteers at the mine and explained the history of the site before starting on a whistle stop tour over the next three hours, which took in the area at the High Horse Level back to the lower part of the mine.



Warren Allison

*At the High Horse area on top of the finger spoil heaps with the collapsed workings in the background.*



### **The John Muir Trust taking a lease on Glenridding Common**

The LDNPA, who owns the common which covers a huge area from Glenridding to the summit of Helvellyn, has been in discussion with the John Muir Trust, who intend to let it on an initial three-year lease, which excludes the scheduled area of Greenside Mine. CATMHS was asked, as part of the public consultation, to make comment on the proposal, which it did. On behalf of the society Colin wrote an excellent letter, pointing out that there were mining remains on the common which were not covered by the scheduled monument and which could be at risk, including Brown Cove Mine, Kepplecove and Brown Cove dams, the huge leat systems which are stone lined, the remains of the first hydroelectric power station at the junction of Red Tarn Beck and Glenridding Beck.

The trust has decided that the following statement be included in the draft management plan

The 'high level' management plan is being updated following the consultation period and this is the wording presently under **Archaeology**:

*If granted a lease, the John Muir Trust will be meeting with local experts in the field of industrial archaeology around Glenridding with the intention of collating an inventory of condition, if not already available, of important features and how we can best prioritise future work of stabilisation and repair. We will work with these local interest groups to assess the availability of funding for enhancement, repair or interpretation. With expert guidance, there may also be the potential for engaging volunteers in these works.*

On the 22<sup>nd</sup> June, it was announced that the LDNPA has agreed to a three-year lease on the common and Pete Barron, who used to be a LDNPA Ranger and now works for the Trust, is meeting with CATMHS in late July to walk the common in order to gain a better understanding of the remains.

Warren Allison

### **Life of a Mountain - Blencathra**

Terry Abraham, who is an independent film maker and has produced widely acclaimed films about Scafell Pike and Blencathra has, in conjunction with Keswick Museum, put together an exhibition about the mountain and its people, especially from Threlkeld. We provided material on Threlkeld Mine and the others in the area which has been incorporated into the exhibition.

All though the part on the mining is quite small, if you are in Keswick, it is certainly worth having a look at the exhibition which has been put together with information from the local community, and apparently it was difficult to choose what to leave out. The exhibition runs until the 4<sup>th</sup> January 2018.

Towards the end of the year, Terry will start filming on the last of the trilogy, and that is Helvellyn. I spoke to him at the exhibition and have provided information on Greenside Mine and the parish, much of which he did not know about. He said that he will be in touch and that he would be keen to visit the mine before filming starts. This could end up involving CATMHS, especially as he has already spoken to the LDNPA about filming underground.

Warren Allison

## **Book Review:**

### **The Industrial Railways and Locomotives of Cumberland, by Peter Holmes**

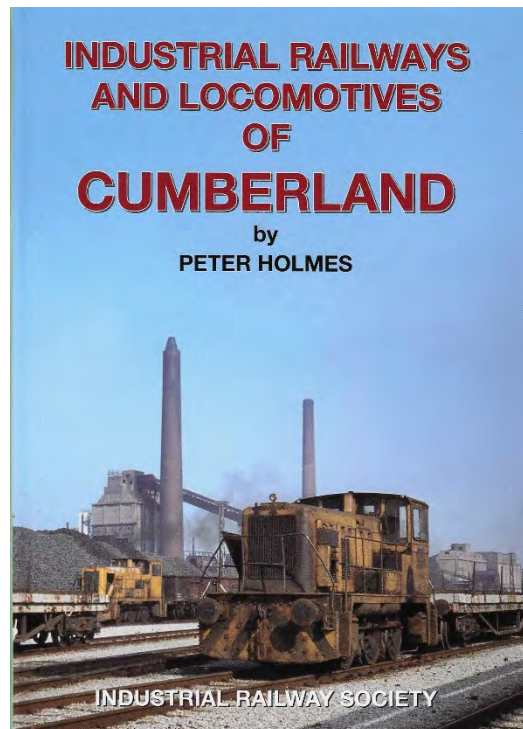
This book, by CAT member Peter Holmes, is the result of over 40 years work. Impressively researched, organised and cross referenced, it covers industrial railways in the former county of Cumberland. A second volume will cover Westmorland, Furness and the Isle of Man, which may well end up titled just 'South Cumbria'.

There are over 450 pages with more than 200 historic photographs, each with a descriptive note, 18 key maps, and a section of explanatory notes. It describes every conceivable industrial railway or locomotive, and is divided into chapters on Locomotive worked sites, National Coal Board, Contractors Locomotives, Preserved Sites and Non Locomotive Worked Sites. At the back are comprehensive indexes of Locomotives, Locomotive Names and Owners and Locations.

The Ravenglass & Eskdale Railway and Ministry of Defence railways are included. For the mine historian, most of the railways are in or to do with quarries, mines or ports. Just leafing through at random, one can find headings on Nenthead Mines, Force Crag Mine, Hodbarrow Sea Wall, Haig Colliery, Millom Ironworks, Florence Mine, Honister Slate Quarries, Hartside Barytes Mine; even Goldscope, Borrowdale Graphite Mine and the Elizabethan Silver Gill Lead Mine are covered.

Whilst principally a reference book, with detailed information about the history of each railway or locomotive, one can find anecdotes of the life and times which make good reading. I can't wait to see the second volume, which should include Barrow, Furness and Coniston.

Ian Matheson.



The book can be purchased from [www.irsociety.co.uk](http://www.irsociety.co.uk), Ravenglass Railway, Lakeside Railway or from well-known railway booksellers. It is available from the IRS Sales Officer Mr S. Geeson at 24 Dulverton Road, Melton Mowbray, Leicestershire, LE13 0SF. Price is £25 for IRS members, £35 for non-members, postage is an extra 20% up to a maximum of £6. (In other words a total of £30 for members or £41 for non-members). Cheques payable to Industrial Railway Society.

There is a trade discount of 33.33% and if four or more copies are ordered (trade or not) they will be sent post free. So the trade and/or 'bulk' terms are quite generous if anyone in CAT did want to do a bulk order.

## **Lake District Mines Forum. Ruskin Institute Reading room, Coniston on June 6<sup>th</sup>.**

Present: LPDNA: Eleanor Kingston, John Hodgson, Environment Agency: Liz Withey, NAMHO: Peter Cloughton, Coniston History Society and Honister Quarry: Alastair Cameron. CATMHS: Warren Allison, Ian Matheson and Mark Simpson.

### **Heritage crime.**

Eleanor Kingston started by saying that she was making enquiries as to how to work effectively with the police in relation to Heritage Crime, damage to historic sites caused by quad bikes, vandalism, etc.

### **Force Crag**

Ground water currently enters the mine just inside No. 3 Level portal. The National Trust want to control this as, if No. 1 Level portal were to become blocked, then water would rise in the mine causing risk by hydrostatic pressure. CATMHS has been asked to do this, and has produced a risk assessment. There is some concern that the Coal Board, who are responsible for permission, might regard this as work rather than stabilisation.

### **Greenside**

The enquiry of the application by the John Muir Trust to purchase land at Greenside is in abeyance until after the General Election. The John Muir Trust have included a section in their plan on preserving the archaeology. A hostel at Greenside hope to extend their accommodation by building on to it. This would need to be in keeping with the site. Warren Allison has photographs of the original building.

### **Greenburn**

Inadequate drainage is thought to be the reason for the collapse of the revetment wall above the wheelpit, which had been rebuilt in a previous conservation project. It would be good if it could be restored, but it would be difficult to find the resources. There are photographs in existence of the structure before the first collapse.

### **Yew Crag incline**

Mark Simpson has made a video record with his drone. The site is not a Scheduled Monument, but the structures are at risk from collapse and erosion. A discussion ensued regarding drone photography. The National Trust will not give permission to fly drones over any of their property unless the operators are certified.

### **Tilberthwaite**

Warren Allison reported that, following completion of the dig to re-open the Penny Rigg Horse Level, all CATMHS equipment has now been removed from the mine.

### **Threlkeld**

A public consultation on water treatment had been delayed.

### **Sandbeds/Carrock**

A three month water quality survey is to be carried out by the Environment Agency. Alastair Cameron suggested that there may be value to be got if the zinc present in the run-off water could be extracted, but it was said that the cost of doing so would be too great.

## Honister

ADC reported that good rock was being found in the Kimberly No. 5 level and also in the Honister vein. The management are planning ahead for future tourist events, including a trip in the spring to view white orchids that grow on the crags.

Lord Cavendish has retired as director of Burlington and his daughter Lucy is now CEO.

Alastair's new book on Lake District mines, with photos by Liz Withey, is due out in September

## Coniston

Eleanor reported on the Coniston Copper Project:

The conservation team started back in April. They will finish work on Bonsor Lower Mill and then move to Bonsor Upper Mill.

The LDNPA are seeking planning consent for interpretation boards.

Lisa Keyes has been doing a lot of work with schools.

The final survey, of Tilberthwaite Mine, will be finished this week.

Training for guided walk leaders is being given under the LDNPA volunteers organisation

Excavations have been carried out at Penny Rigg Mill using money that had been earmarked for Paddy End. It was decided that the features at Paddy End had been too badly damaged by flooding and erosion to be worthwhile.

Mike Mitchell and Mark Simpson had carried out a photographic investigation of a buried culvert at Penny Rigg, using a video camera mounted on drain rods. This is worthy of further examination.

At the conclusion of the meeting John Hodgson announced that he is retiring in July after more than 25 years as LDNPA Archaeologist.

The next Mines Forum will be held in October. At the LDNPA Helvellyn Base Camp.

## **Retirement of John Hodgson (Senior LDNPA archaeologist) - a great supporter of our Society**

John first joined the Lake District National Park Authority (LDNPA) in August 1993, not long after CATMHS and MOLES had been given permission to re-open the Lucy Tongue Level at Greenside Mine. He has always had an interest in what the Society does and has been very supportive from day one, which led to the formation of the Mines Forum some twenty years ago.

This forum is quite unique in the country and currently there is only one other, which meets about once a year in Wales. The forum has developed, from a meeting of John and the two mining societies at the time, to now include organisations such as the Environment Agency, National Trust, Historic England and others, which has over many years allowed all to work together to a common goal, no matter what each other's aims or interests were. This has now been recognised by NAMHO, the national organisation for mining history societies, and other forums are in the process of being set up in the country - quite a legacy.

John has helped to develop awareness of the importance of mining and quarrying in the Lake District and recognised the importance of using local knowledge to assist the National Park Authority and other organisations in protecting various sites and gathering information on them. This has developed a strong relationship with CATMHS, which would not have achieved as much as it has without it. A few examples include:

- Re-opening Levers Water Mine and Kernal Level at Coniston copper mines, both on a scheduled ancient monument and SSSI.
- The discovery of the German workings at Silver Gill Mine, Caldbeck on a scheduled ancient monument and SSSI and the earliest example in Europe of a wooden waggon way, dating back to the German period, which is now of international significance; the carbon dating of a hand shovel, discovered 80 yards underground, which was dated to 1020-1200, making the site the earliest known mining site in Cumbria.
- The program made by Time Team on Coniston copper mines.
- Using information from the issues with mineral collecting on the Caldbeck Fells he enabled the permit scheme to be implemented, which prevented further destruction of the mining remains.
- Seeking advice on the restoration of No 2 tip at Greenside mine and the work with the Environment Agency on the contaminated land issues at that mine.

Perhaps one of the most important examples was the initial bid for £500,000 to the High-Level Stewardship Scheme for the conservation work at Coniston copper mines, which only failed because some of the farmers did not want to join the scheme. Although John was bitterly disappointed, he had a Plan B, and that was to apply for Heritage Lottery Funding, which was successful. So far it has been an amazing project.

It is a testament to how much CATMHS thinks of John and Eleanor Kingston (his partner in crime at the Authority) that on two occasions it felt it had to write to the Chief Executive when there were redundancies being made in the authority to say how vital it was that it kept them on, especially as both were highly thought of within the National Park by local people and other groups, as well as the large amount of money they were bringing in through HLF funding.

On a personal level, I have always found John to be very friendly, keen to use local people's knowledge for the benefit of everyone, prepared to listen to what we had to say even when the so-called professionals had a different view. An example being at Greenside Mine, when invited to discuss the water sampling programme that a national company had undertaken, some pertinent questions were asked to which they had no answers. John said, "so we have just wasted £20,000 of public money"; that was when the Environment Agency took over.

The Society wishes John a long and happy retirement, but apparently he is not going away, as Eleanor has persuaded him that as a condition of retiring, he must become a LDNPA volunteer. (I propose that we also make him an Honorary member of CATMHS, in recognition of our relationship and achievements. IM.)

Warren Allison



### **Coniston Copper HLF project: Low Bonsor Mill survey**

A survey of the Low Bonsor Mill was one of the volunteer projects, which ran from the 13<sup>th</sup> March to the 31<sup>st</sup> March, with six people attending each day and was oversubscribed. Under the watch of John Pickin and Kate Chapman from Northern Archaeological Associates, the volunteers surveyed the whole of the site, and on some days it was carried out in what could be deemed to be challenging weather conditions. The mill treated the poorer material from the upper mill and had stamps, jigs, buddles and settling ponds. The results will be published later in the year and will provide a better understanding of the site. The processing mill at Coniston Copper Mines was in area probably the largest in Cumbria.



*The Bonsor jig house, buddles and settling ponds*



*The site of the Bonsor stamps with jig house below*



*Surveying in difficult weather conditions.*

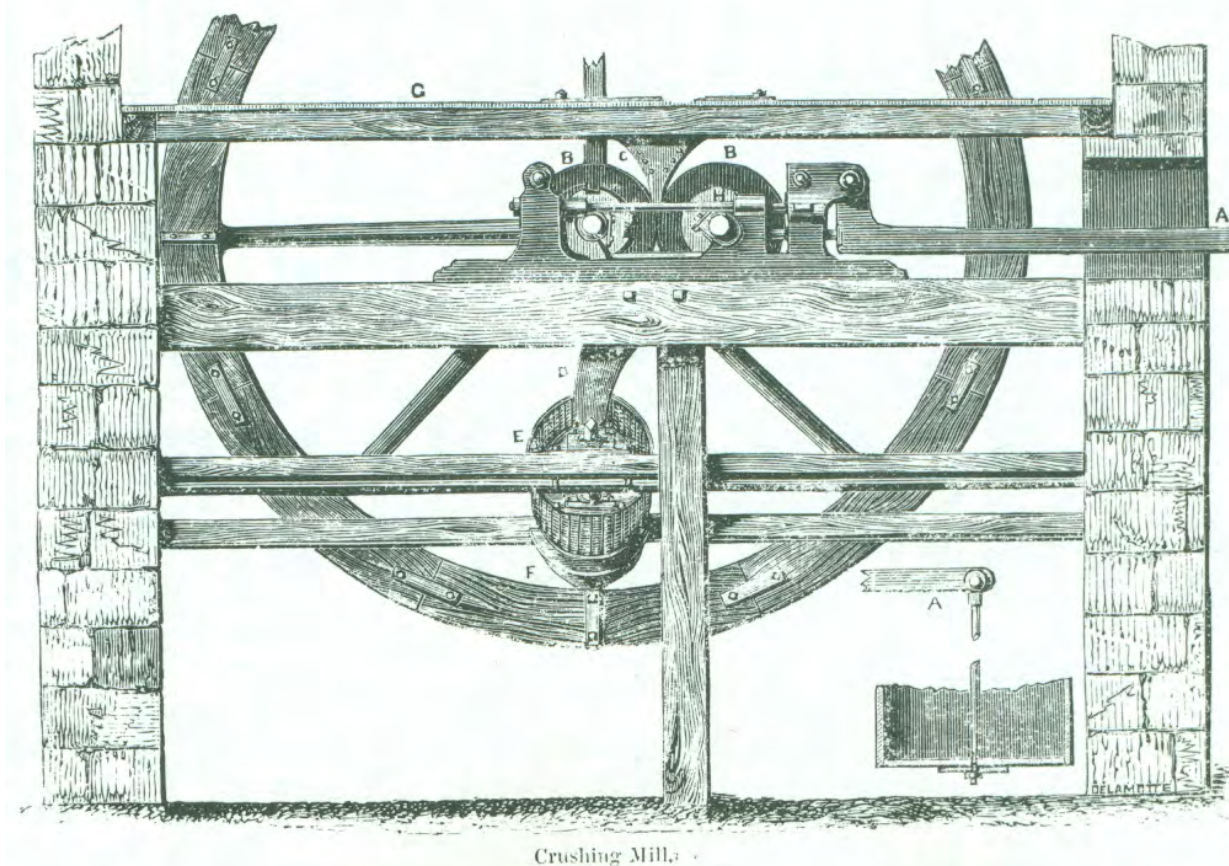


### Coniston Copper HLF project: Penny Rigg Mill archaeological dig

Again, under the careful watch of John Pickin and Kate Chapman from Northern Archaeological Associates, a dig of the crushing house and jigging house floors was undertaken between the 24<sup>th</sup> and 28<sup>th</sup> March, which would hopefully answer some of the questions which came out of the survey carried out last year, and provide a better understanding of the mill. Mike Mitchell also flew his drone over the site while the dig was going on.

On the first day, the turf from part of the floor of each area was removed, which uncovered a superb flagged floor in the crushing house and a cobbled floor in the jigging house. Over the week, the volunteers surveyed and recorded the floors, and various other features in the crushing house were also discovered.

The remains of three post holes, in which vertical timbers some eight by ten inches had been inserted, sat on what seemed to be another floor some twenty inches under the top one. Timber also appeared to have been placed horizontally between the vertical timbers with the gap between the floors filled in with well compacted material. The vertical timbers were to help carry the upper floor, where the crusher was situated with the trommels and elevators underneath to return the oversized material back to the crusher. There were also bolts still in-situ in the flagged floor which could have been to hold down the elevators and trommels. The diagram below from Mining Facsimiles, published in 1857, shows how the crushing house may have looked.



Crushing Mills

The ore to be crushed is lodged on a floor, G, and is then introduced into a hopper, C, from which it falls between the crushing rolls, B B; these are mounted in a framework of cast iron stayed by a wrought iron bar, H, and firmly bolted to longitudinal beams inserted into the walls of the crushing house. To keep the rolls in contact a weighted bar, A, is placed on either side, which, by means of a sliding bar acting against the bearings, keeps a constant pressure upon the rollers.



The crushed ore passes from between the rolls through the chute, D, into the higher extremity of an inclined cylinder, E, of coarse wire gauze (known at Penny Rigg as a trommel). That portion which passes through the sieve falls onto the crusher house floor while the other, which is too large, is carried to the lower end of the trommel and passes into a kind of inverted bucket-wheel, F, to be conveyed into the hopper to be re-crushed.

The material passing through the trommel would then have gone onto be processed by jigs. The waste from the jigs would have passed through a wooden chute into a wooden launder to be carried to the settling ponds, which is what appears to have happened at Penny Rigg.



*The crushing house as it is today*

At Killhope Mining Museum are all the pieces of machinery which would have been at Penny Rigg Mill, as shown in the following photographs.



*Crushing rolls*



*Example of a trommel*





*Working jigs*



*Outlet for the waste from the jigs*



*Launder carrying the waste from the jigs to the next process*

### **The dig at Tilberthwaite**



*The flagged floor of the crushing house with the three post holes in a line in the middle*





*Remains of bolts in the flagged floor*

*Bottom of a post hole showing the lower floor and timber. The hole to the left was for a diagonal piece of timber to provide additional rigidity*



*The cobbled floor of the crushing house, where the jigs would have just sat on the floor, as at Killhope, with no need for fixing bolts. The launder for carrying the waste would have been in the wall at the bottom of the photograph.*

This dig has shown just how much effort and expense went into building the mill on what is quite a steep hillside. The crushing house is particularly impressive, given that there appears to be two floors at ground level, which have been infilled in between them to provide stability to carry the upper floor where the crusher was located.

In the future, it would be pertinent to consider completely uncovering both floors, but in the meantime, I look forward to both reports being published.

Warren Allison



### HLF Upper Tilberthwaite Mine survey

Between the 22<sup>nd</sup> May and 9<sup>th</sup> June 2017, the last survey by volunteers was carried out on the upper part of the mine near the head of Muckle Gill in two areas, one being around Benson's level and the other at the long open work further up the gill. It was hoped that this survey would make some sense of the myriad of different periods of working from when it was reported in "Dutch Agnus Her Valentine", the journal of the Curate of Coniston 1616-1623. At Whitsuntide 1617 the Curate walked with Balthazar Puthparker, known as Towsie, to view the newly discovered mines at Tilberthwaite known as the "Three King's". (we may have also



discovered the actual workings). Dutch Agnes was produced by W. G. Collingwood in 1910 and was based on a transcript by the curate which, in 1716, was sent by Thomas Rawlinson Esquire, Barrister-in-Law and Fellow of the Royal Society, to his brother the Rev. Richard Rawlinson, at St John's College, Oxford University. A letter has been written to the Bodleian Library at the University asking if the transcript is still there to see how much of Dutch Agnus is related to it.

*Surveying a small working above Bensons level which has a (newly discovered) bucking stone, so possibly dating it back to the 1600's.*

The mine always showed great promise, hence why many different companies took out leases over a long period of time, and this has made it difficult to try and work out what period the various workings related to, especially the buildings that remain. The location of the stamp mill which was there in the 1690's has never really been proven, although production figures were quite high for that period.

The volunteers were getting quite good at doing the surveys and, as usual, in all sorts of weather, from torrential rain through to a heatwave. The survey was completed on time, but there are still many questions which remain unanswered, possibly because the boundary between the Rydal and Pennington estates runs right through the mine. The survey was carried out under Northern Archaeological Associates (NAA) who had also done the previous ones at Coniston Copper Mines and Penny Rigg Mill, this time under John Pickin (who has worked on all of them) and Clare Henderson (who has an interest in mining) as Kate Chapman, who worked on the other projects, was unavailable. The volunteers have commented on how professional the NAA staff have been, especially around asking them what their thoughts were on aspects of the survey and listening to their comments, which has added greatly to the survey.



*Drawing up the buildings and trying to make some sense of them*





*John (left) and Clare with some of the volunteers at the entrance to Waterfall Level*

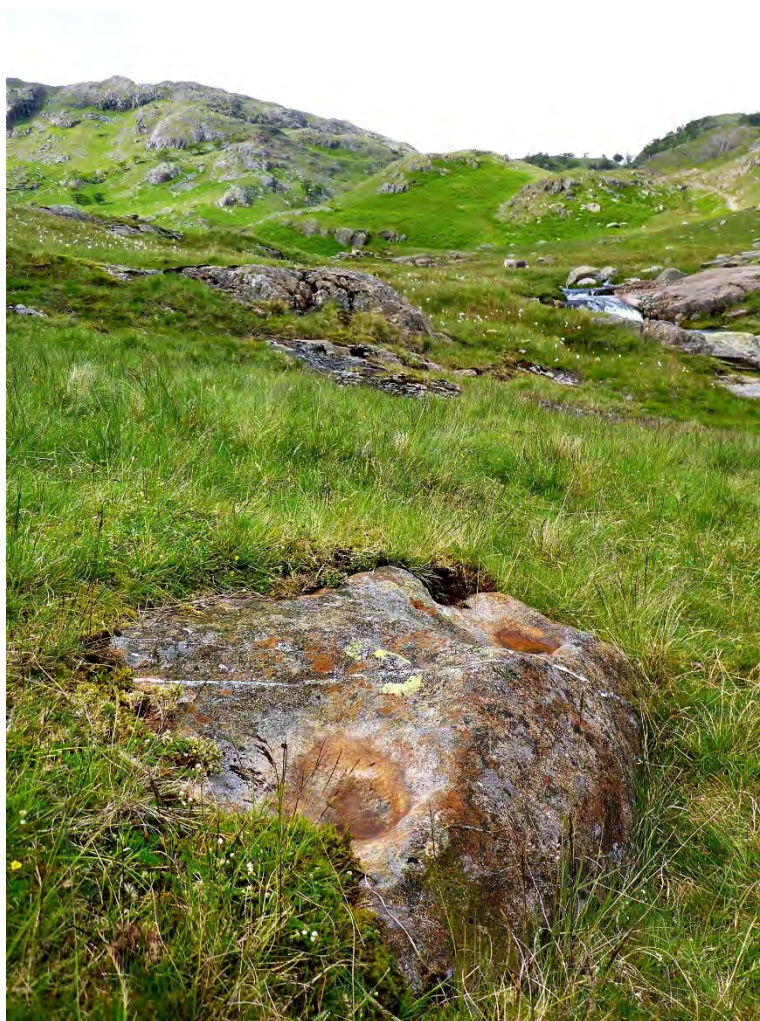
The work in the archive by other volunteers has also been beneficial, especially the work that Jeremy Rowan Robinson has done on trying to piece together the chronology of the leases.

During the survey, a large bucking stone (previously unknown) was found close to one of the open workings on the west side of the gill, as well as possible peat cutting, which may be one of the sources of fuel for fire setting, as described in Dutch Agnus.

On Tuesday, the 6<sup>th</sup> June, following the Mines Forum meeting, Eleanor Kingston and I met BBC North West at the mine in appalling weather conditions. They were producing a news item on the survey. As we arrived they had already interviewed the volunteers and John Picken, so we proceeded to do our bit, with the news item going out on the following day. There will also be an article in Cumbria Life magazine.

It has been very difficult to interpret the site, especially the buildings, which caused Clare a great deal of frustration, but hopefully the final report will have some answers.

Warren Allison



*The large bucking stone found during the survey. Photo by Mark Hatton.*



### Bannerdale lead mine, 7<sup>th</sup> May

This meet didn't take place, due to lack of interest.

### Evening meet, Lowfield, 10<sup>th</sup> May

Present: D Robson, Charlie and Sue Fowler and dog, P Sandbach (ML) and dog.

The bed of the Hathorn Davey engine at Bercune is still there, but it is now fenced off. We looked at the Lowfield and Diamond engine houses from a distance, then walked up Carkettle Lane to a mine for which I cannot find a name or any history. All that I can say is that it is just inside the Pennington royalty; it is not shown on the 1850 map and seems to be abandoned on the 1895 map. By 1910 the incline leading to it had been converted to a reservoir and the subsidences were marked as "old quarries". The view from here over the main vein was a good illustration of the huge amount of ore that had been taken from the moor.



1895 OS map.



1910 OS map.



Engine bed at the nameless pit. Photo P Sandbach. Robson.



The view over the main vein. Photo D

## Duddon Valley Slate Mines, Sunday 28th May.

Attendees : Mark Hatton, Stephe Cove, Oliver Trampert & Bettina Vieweg (2 visitors from Germany who love exploring old Mine workings), Carl Barrow, Bob Mayow, Derek Mitchell, Paul Loftus (guest), Steve Loftus (guest), Peter Sandbach.

Location: Walna Scar, Duddon Valley. The plan today was to explore the extensive Slate workings on the Western flanks of White Maiden, off the Walna Scar Road. These workings are famous for their beautiful banded slate, and mysterious because there is so little known about the extent of the underground workings, and glorious because of their location in perhaps the most beautiful valley in Cumbria, with such magnificent views. The thick grey clag that surrounded the quarries as we started our walk didn't dampen our spirits, but did prevent us viewing just how big the spoil heaps are, as we climbed towards them. The first large spoil heap (like several more on this hill side) sits in front of an obvious entrance channel that sadly leads to a thoroughly run in portal. We speculated just how large the closeheads here must be, but none are now accessible (unless anyone reading this knows otherwise). We then walked to the lowest working, where entry can be won after a bit of a squeeze through a letter box sized slot. The level here is a beautifully oblong cut, so characteristic of all of the slate workings in this Valley. It runs for some 150 yards to a delicious stone vaulted section through which access to the closehead is



again sadly denied due to a collapse. Off the main level are a couple of other short headings, one into an interesting but dangerous section containing rotting wooden roof supports (worth a quick look but don't enter) the other in to a fascinating large rise. Our group spent quite some time peering up the rise to the inaccessible upper working, speculating what was out of sight here. It seems this might offer a way up to higher closeheads, but how to find out?

Returning via the tight portal to day, we started the climb up to various higher processing areas and open air Quarry workings. There are at least four areas where there are clusters of buildings and processing floors dotted about this extensive







site. Some large walls clearly served as huge wind breaks, reminding us just how high and exposed this site is. Some buildings are two storey and amply repay a lingering examination, as they reveal clues to their role as dormitories, stables, living rooms, smithy and riving sheds. The whole site is linked together by beautifully built waggon ways, which, in one case, bridges over an entrance cutting.

We then explored the open works at the highest point of the Quarry. The largest and deepest of these has clearly been worked at various horizons at

different dates, possibly as a closehead before being opened up. At the far end the working drops to a light-hole (large overhanging roof with some alarming fractures in it) from which a short level takes you to a dangerous open shaft to a closehead below. A couple of the SRT equipped participants descended this shaft into an interesting small closehead and a large level, which again was sadly run after about 60 yards. Where this level goes to day, and what the purpose of this area was, again creates far more questions than answers.



Returning to day we found the clag had lifted, the warm sunshine had returned and the stupendous views of the Scafell range had opened up. So we gently strolled around the rest of the site, lingering over levels, buildings and waggon ways, speculating on their roles, the ingenuity of the men who built them and the working conditions they experienced.



The descent of the Walna Scar Road was taken at a stroll and everyone agreed that we should adjourn to the Newfield Inn for further research and refreshment. The glorious banded slate floor in the pub amply illustrates the beauty of the output from the quarries above. And the beer garden in warm sunshine was a lovely place in which to discuss the day.

As everyone said their goodbyes Warren arrived. Surely seven hours late for a meet is a record, but too much sun and too little hydration at Penny Rigg earlier in the week meant Warren had not felt like an early start today.

Our German Mine Explorer visitors set off towards Wales, thinking that The English Lake District was a sunkist heaven of mountains and mines. Something we of course have all known for many years.

Mark Hatton.



## Coniston meet, 11<sup>th</sup> June

Attendees: Mark Hatton, Warren Allison, Meet leaders.

Carl Barrow, Derek Mitchel, Hilary Drysdale, David Appleby, Michael Pringle, Anthony Brooke, Stephe Cove, Steve Owens, Clare Harvey, Jeremy Hunt, James Eccles, Ormonde Joel, Steve Sim.

Fran Brocklehurst, Paul Loftus, guests.

Seventeen enthusiastic Mine explorers met in Coniston on a very windy and showery day. But there was no dampening of our spirits as we sorted everyone's gear before striding purposefully up to Hospital Level.



Now seventeen people in any level is a bit of a crowd, but today we had a very well behaved group with Warren, Carl and Mark acting as shepherds (or should that be sheep dogs). The group smoothly navigated the open shafts, the Great Open, the Horse Gin etc, reaching the far end of the mine quite quickly. A more leisurely return to day found the wind had risen to gale force, causing Levers Water Beck to blow right back up from whence it came.

Next on our itinerary was Kernal Level. The collapsed false floor and the high stope in here are well worth a look on the way up to Levers Water. The safety rope down to Levers Water Mine entrance was quickly rigged and everyone reached the portal without drama. The group then set about exploring Levers Water Mine, gleefully absorbing all the delightful sights in this ever so colourful level.

Everyone was feeling very pleased with themselves as we walked over to Red Dell and checked out the Thriddle Shaft. The Balance Bob here was much admired by all. Descending to the New Engine Wheel, the tale of Millican's Wheel and his gruesome death were recounted. We calmed down by searching for mortar stones around Low Work, finding 3 good ones. And then



we cooled down by exploring Cobblers. The hand chipped Level was much appreciated by all.

The final level of the day was Deep Level which definitely refreshes the parts! So some seven hours after setting off we were back at the cars. Everyone had thoroughly enjoyed this tour, which for some was their first experience of Coniston Coppermines. I am pretty sure everyone will be back for more in future.

Mark Hatton

### **Report on CATMHS meet, Castle Crag, Borrowdale, 2<sup>nd</sup> July 2017**

Despite bad weather earlier in the week, Sunday 2<sup>nd</sup> July proved to be a sunny and warm day, ideal for plans ahead. Two meet leaders took part in the day's events to allow the party, if necessary, to split into two groups.



Discussions had taken place as to where the group should meet up. Rosthwaite proved to be an excellent decision as a starting point, as parking was easy and the welcoming Yew Tree Farm 'Flock-in' cafe at Rosthwaite would be a perfect venue later in the day for ending the trip.

Before setting off, the proposals for the day were reviewed. There are a number of interesting sites in the area. Recent studies have given a good indication that, as with the Coniston / Langdale area, a series of parallel slate bands might run through the Borrowdale area from Dubbs Quarry, through Castle Crag to Quay Foot Quarry near to Bowder Crag. This would be one of the points reviewed during the day.

The group set off and took the footpaths through the in-by fields and along the river bank towards Castle Crag. The first location of interest here were two of the many slate workings within High Hows Wood. The first, a small working, was formerly an underground site, but towards the end of operations had had the roof removed. This had created a small narrow gully. On a rock face, which formed a sill, an excellent example of a 'rock wave' formation was examined and keenly photographed, one of only a very few examples of this phenomena known in the district. The group then proceeded onwards, climbing up to Millican Dalton's caves for



a brief inspection of this well-known site before retracing their steps back out of the wood to the river bank.



The group then started to climb up the steep hillside towards the extensive spoil tips just below the summit of Castle Crag. On the way up a short detour to the south led to a small slate mine which included a sizeable spoil tip clearly visible earlier in the day from the valley below. From the tip a level ran into a closehead, from which another level continued on for a short distance to a forehead. The slate here appeared to be dark-grey in colour. Nearby a small shelter bothy is

still relatively intact. Long may it remain so!

At the top of the climb, directly below the tail of the spoil tip, some of the group headed up to the summit of Castle Crag to allow Dave Donkin to complete another 'Wainwright'.

After a short lunch stop the party descended the steep footpath down to the Rigghead Road. Directly opposite was the lowest of the three workings on the Lobstone Band. Waste slate here was a grey-green colour. The meet leader pointed out that this site had been served by a cart track, the route of which had been surveyed by a CATMHS survey team in 2009. The second working was then visited. This had also been surveyed by CATMHS and the access route was found to be a pack-pony track, despite the fact that the workings it served were much more extensive.

Finally access was gained to the third site, which is much higher up the fell. There were no obvious tracks serving this site but a route of a possible former sledge-way could be made out, running down to a higher part of the Rigghead Road. It was also noted that much of the split slate pieces at the site had a distinctive blue/grey colour.

Time was now moving on and several of the group had many miles to travel before they got home. A return to Rosthwaite was quickly made and tea and sticky cake was enjoyed by all at the Flock-in Cafe.

Several features at Castle Crag had not been visited during the day, including other small slate mines and also the site of the saline spring to the south of the Crag. However, it had been a good day, and the meet leaders were warmly thanked.

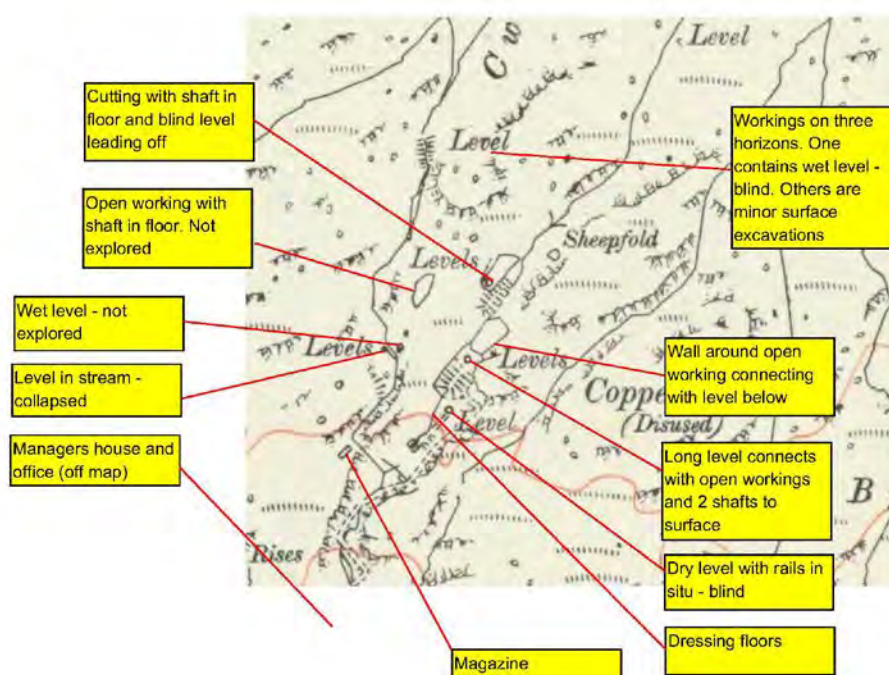
Liz Withey, Alastair Cameron.

## Braich-yr-Onen & Hafod-y-Porth Copper Mines

Over the last 10 years the Welsh team have explored most of the Copper Mines of Snowdonia and, whilst not an “official” CAT trip, the visit by John Aird and the author to the above on 14<sup>th</sup> May 2017 is worth recording. Initially it was thought that little had been written about the sites other than that contained in the “Old Copper Mines of Snowdonia” (the only book that the author is aware of which has a photo of John Aird on the rear cover) however John drew my attention to a very detailed article on Hafod-y-Port by J.L.Agnew which is contained in the Bulletin of the Peak District Mines Historical Society Vol.10 No.6, Winter 1989. Readers should consult this for details of mineralogy and plans of the levels.

The mines were visited in a linear walk starting at the National Trust car park at Craflwyn and then ascending through the Hafod-y-Porth workings before continuing up Cwm-y-Bleddiaid and descending via Braich-yr-onen and its tramway to the Watkin path and hence to a second vehicle left at Nantgwynant.

## Hafod-y-Porth



A good track ascends to the site passing the remains of a large Managers residence complete with office, smithy, store room and walled yard. Slightly higher is a powder house which would appear to have been large enough to contain all the explosive that was ever used on the set. At a higher level again are a miner's barracks, much smaller than the Manager's house, although sited in a more sheltered location, and a substantial smithy. Ascending from the Manager's house a series of levels and open workings, some of which connect with the levels, rise up the Cwm on what appears to be two parallel veins. These are detailed on the



marked up OS map. It is clear that there were multiple loads none of which were very productive. Track of approximately 18" gauge is common in most of the levels. A drawing in Bick indicates that stamps were provided and whilst there is a point ideally suited for the installation of a water wheel, there is no evidence on the ground that one was ever provided.

The geology of the site is complex (Bick shows at least 3 veins) and at one point two adits, which are within about 4m of each other, set off approximately 90 degrees apart. These were the only 2 adits not explored since one has collapsed, its location under a stream not helping stability, and the other being very wet. The underground workings are strange and have



*Remains of the dressing floors*

developed beneath surface pits. The longest level passes through a small ore "quarry" before twisting and turning past two shafts to surface and ending in a 3 way junction, all of which are blind.



*The Treasurer stands on top of the ore bins*



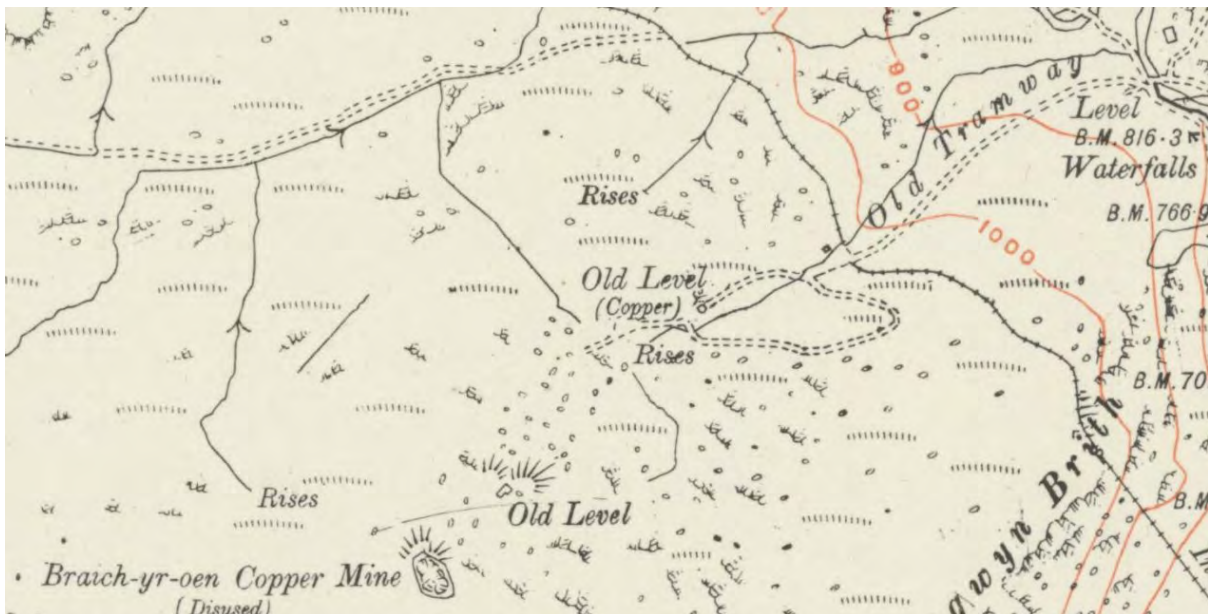
*Shaft breaking surface in surface digging.*

*Trackwork in the level. Note there are no points so presumably the drive to the left was the final work undertaken.*



## Braich-yr-Onen

The obvious feature of this site is a deep and un-fenced open stope. This can be entered through an adit lower down, although the workings appear to be just a large pocket of ore with no development along the strike but which must have realised a reasonable quantity of ore. Transport of the ore down to Nantgwynant must have been a challenge and all those who have studied this, the present author included, have been unable to fully explain the remains, but it appears that ore was tipped down chutes interconnected with railed sections where the ore must have been moved by wagon. Lower down the hillside numerous stone sleepers indicate a tramway, but this would have been very steep. It is suggested that the 6" OS Map is incorrect, since no trace could be found of the "Old Level Copper)" at the position shown although one was found, not indicated on the map, to the north-west of the bottom of the first ore slide. This level was nearly completely full of ochrous water and was not explored.



*Part of the single stope*



*The stope where it has been worked through to surface*

Note that the workings at Hafod-y-lan, which appear to be on a near vertical mountainside, were not visited.

Jon Knowles

### **More on the Copperplate mine, from Richard Hewer**

During 1979 I was invited to lead a meet around Keswick for the Northern Mines Research Society. I thought I would finish the first day by leading twenty or so members to the Copperplate mine at Ellers in Borrowdale. As the latter was partly in the back garden of High Close, it was necessary to knock on the front door and take a step back. We all put on our 'Minion' smiley faces and the surprised owner looked curiously down at the twenty odd characters wearing all sorts of clothing, boiler suits, helmets and carrying carbide lamps.

I introduced our team and requested if we may follow Ellers Beck in his property up to the fell property boundary. He smiled with relief and guided us first to his outhouse where he produced a shallow circular dish, three feet in diameter made from copper. An open spout projected outwards from half way up the side, the top was turned over a wooden former and opposite the spout there was a handle. Was it associated with mining? He had found it buried under a large rhododendron bush!



We followed the stream and located a primitive dressing floor and the remains of a waterwheel pit. Moving up towards the rear of the property we discovered an adit on the property side of the beck; just inside the level a flooded sump could be seen. The water was crystal clear and we could see a staging under the water. Moving forward we entered what had been a large stope, open to the surface. Large boulders had been placed over the outcrop and the base of the stope was strewn with Victorian pottery.

I am now wondering whether this part of mine had been reworked, as mentioned by Postlethwaite, stating a date of around 1817. He records that numerous tools were discovered whilst digging out the foundations for the house in 1871.

Back to 1979, we retreated, and crossed the beck, following the open-cut to another adit; this was waist deep and very cold. Sweeping pick marks could be seen on either side. The narrow workings bore quite a haze, were arched and coffin shaped, typically Elizabethan. A fall through a shaft had partially blocked the level. We continued into deeper water; a further fall was encountered before we turned around and made a shivering exit.



Thirty eight years later; mid-afternoon. I decided to see if I could locate the vein/open-cut on the fell of Maiden Moor. As the footpath was only yards away from the hotel I was staying at, it only required an easy uphill walk around the periphery of High Close (Now with a CCTV camera warning notice in operation. I kept smiling in case it was watching me).

A large open-cut came into view on the fell at the edge of the High Close fence. It was quite deep, though covered with grass; only the sloping sides were exposed. I followed the open-cut upwards, over the footpath, and up to a level. This was open

and the vein had been worked out to surface. The interior was quite wet and I was not suitably dressed to explore; definitely next time. To the right of the level a large bucking/dressing floor had been cut into the fell, a dry stone retaining wall held back the turf. The wall was about forty feet long, ten feet wide and in good condition. There were no signs of any minerals apart from quartz and slate.

Higher up the fell the open-cut standing and hanging walls started to pinch in, eventually closing up altogether. Further small trials were observed further up the flank of Maiden Moor. Looking back down the line of the vein, it was clear that a great quantity of copper ore had been recovered.

I was quite pleased with my finds; I became overconfident, my left leg shot away and I tumbled down 'x' number of feet before being deposited on to the dressing floor. Luckily my Nikon SLR camera acted as a braking anchor, a humiliating end to a lovely day.

Richard Hewer.

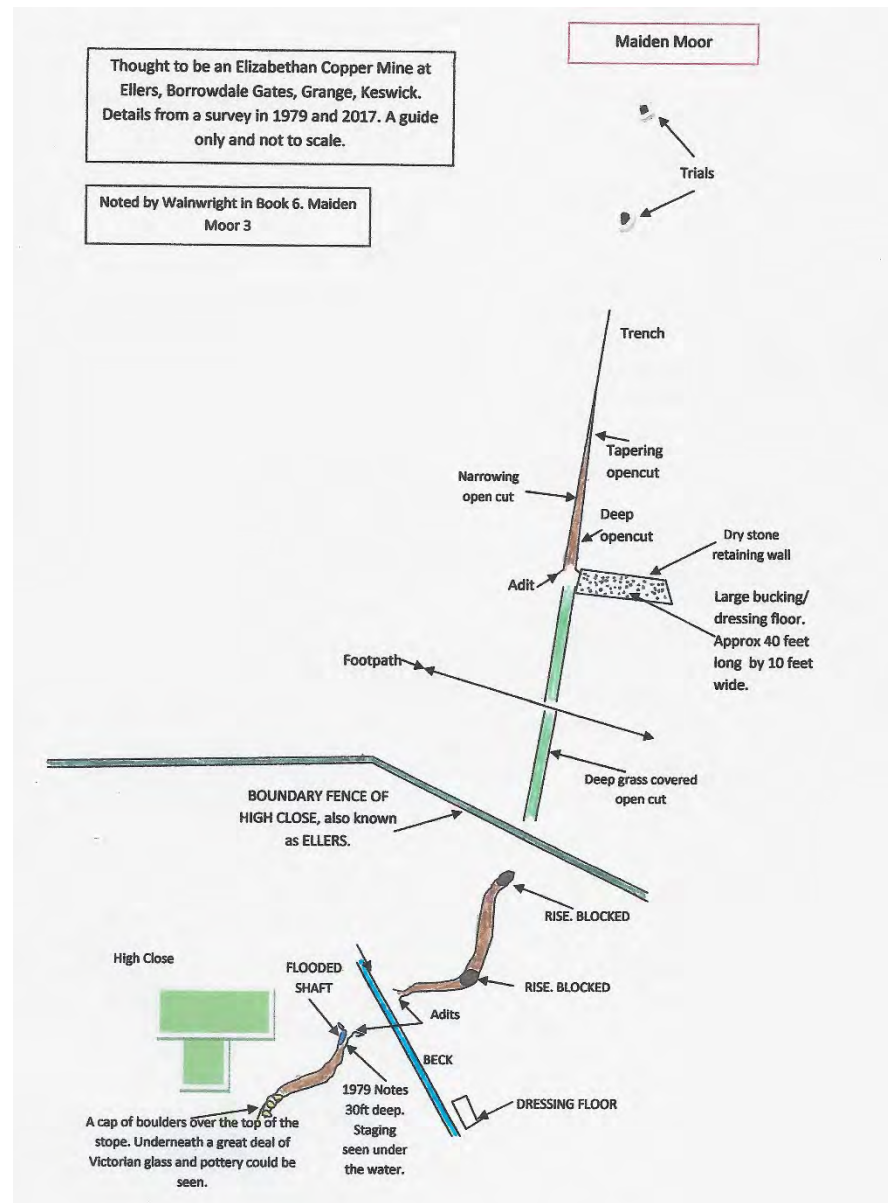




Photo 2017. Ellers Copper Workings above High Close, on Maiden Moor. Open works above the fence.

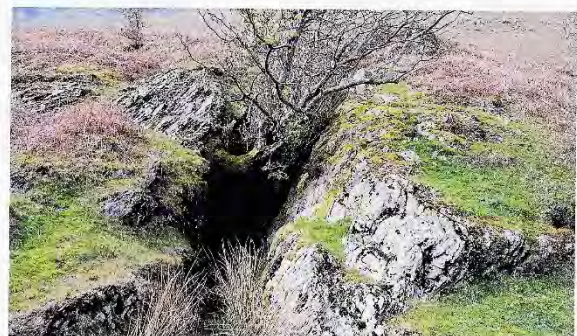


Photo 2017. Ellers Opencut and adit. To the right is a large and wide dressing floor.



Photo 2017. Ellers Copper workings. Dressing floor.



Photo 2017. Looking down towards High Close from the top of the openworks, trials continue up the Moor.

### Further reading.

Reynolds Historical Geneology. Allen County Library,  
<http://www.archive.org/details/tractseries08cumb>. Q 23 9H 98 106

The Great Copperplate vein above Ellers. Described as a new site in August 1567 Officers of the Earl of Northumberland objected to the mine as it was not in the compass of Newlands.

In 1569 the mine was known as The Borrowdale Copperplate vein above Ellers. The Copperplate vein was being worked in 1571. The output was included with God's Gift with St. Peter, Caldbeck, Grassmere, Borrowdale and Buttermere, 12,026cwt, 306lbs of massy and shaley copper ore, it was estimated it would produce 928cwt 27lbs of copper. Valued at £2,784 14s 5d.

During 1571 The Copperplate mine was being worked by W. Hochholzer - foreman. Underweger? Dorn, Jacob Hofcr, Jorg Bachmasr, W. Binder, J. Heiscl, and J. Cohnanstetter. The mine worked from January until later in the year after which it was no longer mentioned. Ref. Postlethwaite. Mining in the English Lake Counties. 1877.

R.E.Hewer.

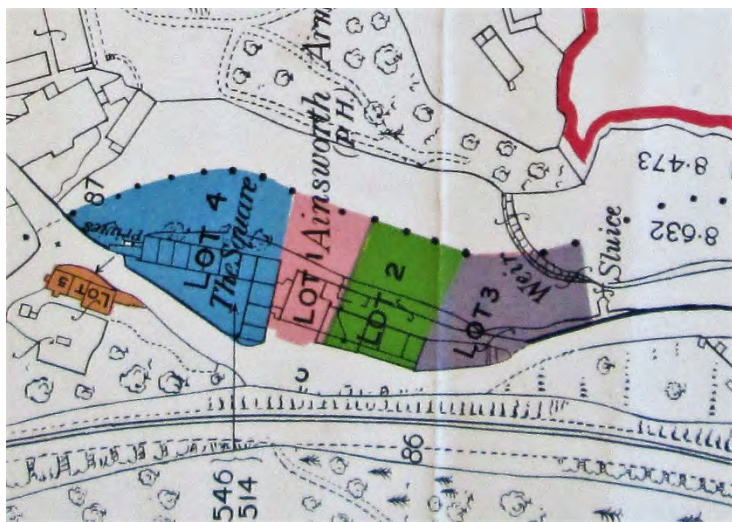


## Backbarrow & Low Wood, evening meet, 7 June

Present: P Timewell, D Robson, M B Oddie, C Barrow, G Howard, P Sandbach (ML) and dog



*The gunpowder works on the 1915 OS map*



*Lot 1: Fully licensed house known as "The Ainsworth Arms" as let to Messrs R & PO Hartley, brewers, Ulverston, together with the cottage adjoining on the South side of the pub now in the occupation of Mr T Bevins, and let to the Low Wood Gunpowder Company.*

*Lot 2: Church room and 7 cottages*

*Lot 3: Two cottages with two wash houses*

*Lot 4: "The Square", 10 cottages and some old tenements*

*Lot 5: a shop and 2 cottages.*

*From the Sale prospectus of Backbarrow estate, 28 May 1915.*

We began the evening by looking at the site of the Ainsworth Arms. A sale plan of 1915 indicates

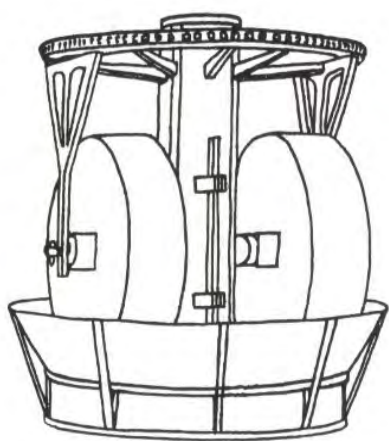
that twenty cottages and a pub occupied what is now rough woodland on the bank of the river. Passing the site of Backbarrow ironworks, still as derelict as ever, we proceeded via Isaac Wilkinson's house to the footbridge over the river, now in flood, under the A590 and up the hill to Trundle Brow.



*The boilerhouse at Lowwood.*



*The steam plant, possibly taken from a traction engine. Photos M B Oddie.*



*Incorporating mill, by permission of Glenys Crocker*

From there the path through the woods took us down to the clock tower buildings. The new hydroelectric plant was working hard and the millrace looked threatening with the water running fast and deep. The millrace was built for the Low Wood ironworks in 1748 and then used by the Low Wood Gunpowder Company. We were able to view the boiler which provided low pressure steam for drying the powder, some houses that were previously charcoal barns and the clock tower buildings which housed the offices and saltpetre refinery. The powder was taken from the works on a horse-drawn tramway to Haverthwaite station, where, later on, we viewed the narrow gauge powder vans



*Inspecting the gunpowder vans*

From there it was a stroll along the river to Haverthwaite cemetery to the grave of Augustus While. James Morgan While was the general manager of Darlington steelworks in 1891, but by 1899 he had moved to Barrow Haematite Steel. With his wife Ann and daughter Edith he established the Charcoal Iron Co to run Backbarrow ironworks in May 1917 following the second bankruptcy of Harrison Ainslie.

We continued along an abandoned section of the A590 to Hollow Oak, home of the Machell family, who first started the ironworks, and also of Augustus While who inherited the new company in 1919. From there it was a walk in the woods via Haverthwaite railway yard to the charcoal barn where the dog pleaded to be let loose among the abundant rabbits, and back to the cars just before the rain.

Peter Sandbach



## Breakup at Backbarrow

The Backbarrow Company was established in 1711 to smelt the local ores in charcoal blast furnaces, replacing the existing bloomsmithies. The initial partnership included Thomas Rawlinson and John Machell. The Machells of Hollow Oak and the Rawlinsons of Greythwaite Hall, along with the Penny family of Pennybridge were the major woodland owners in the area. They built the first blast furnace in the area and completed a second at Leighton in 1715. The main product was bar iron, ie iron smelted in the blast furnaces then refined in finery forges at Force Forge, Cunsey, Coniston and Backbarrow. Some castings were made, hammers, anvils, plates, girdles and hursts (the pivot of a tilt hammer), but these were for use in their own furnaces and forges. The pig iron was valued at £5 16s a ton and the bar iron at £14 7s 6d. There were no sales of ore at this stage.

When Isaac Wilkinson joined the company in 1735, the partnership consisted of John Machell (1 share), William Rawlinson (2 shares) and James Machell (1 share). The company worked Adgarley mine and Hills mine jointly with the Newland Company, and paid half of Thomas Crossfield's salary to manage them. Force bloomery forge and Coniston forge were also worked jointly with the Newland Company. They had a 2/3 share in the sloop "Leighton", a half share in a coal boat on Coniston and a coal boat on Windermere. They maintained warehouses in Ulverston and Coniston.

Isaac Wilkinson was then aged 40 and accompanied by his wife and 7 year old son John. His terms of employment were summarised in this note<sup>1</sup>:

Agreement 25 Jul 1735

*Isaac Wilkinson of Clifton agrees to cast at Backbarrow and Leighton for 21 years.*

*Pots and pans all sizes* £2 7s 6d a ton

*Girdles and boshes* £1 4s a ton

*Backs, grates and heaters* £1 a ton

*Weights* *15s a ton*

*Wagon wheels* £1 18s a ton

*If Backbarrow Co incline to have wares made by an air furnace when the blast furnaces are out, Isaac Wilkinson agrees to build an air furnace at his own charge and to cast the wares at the above rates but not to find the fuel for that purpose.*

In the first year a new pothouse was built for him and about 50 tons of castings were made. It seems Isaac had at least one man working for him and his skills were used in the mines on at least one occasion:<sup>ii</sup>

*Aug 13 1736, Wet Flatt Pits*

*To Isaac Wilkinson for his time, labour and expenses about the pumps & to the pitts* 10s

*To ditto for his man 11 days at boring pumps* 11s

|   |       |
|---|-------|
| To ditto for 1/2 a hundred of lead for the swing &c | 8s 5d |
|---|-------|

*To John Wilkinson for making a new beam and sweep for the pumps* 15s

In 1736 the journal (?) mentions a pair of blowing cylinders made for Backbarrow forge. The development of blowing cylinders to replace bellows in blast furnaces and forges was one of the many ways in which the Wilkinson family speeded the industrial revolution, but their design was not patented until 1757 and not developed successfully until the 1770s. In 1738 Isaac patented a method of casting box smoothing irons and negotiated a contract with the Company;<sup>iii</sup>

*I perpose to take of Backbarrow Compnay 4 tuns smoothing irons the first year; and as many afterwards as I can rent or sell, in case the compnay not sell to aney other;- By this methed I think it would take of 4 times as maney as if all had thair libertey to by; - I think it cunnot be supoused that above 2 tun would be souled in a year in case all had that calles for them; - The reasson is plain for the Smiths would every one get 2 or 3 and fit up to sarve thear Customers; and by keeping them up*

at a great prise they would still give liberty for the Shiffel, Brimegram and Wolverhamton Irons to com abroad; whear as if they be a good quantety fitted up and sould at a low rate, it would stop the trade from the above named plases or anay other furdur as they would be three sises onely. Heaters might be mad for them all in general, but if the Smithes get them they will make Heaters them selves so that branch would be lost which I think would over do the other in time; furdur I can prove that they heath been more money paid for fitting up one iron by 1s 6d then I would ax for the iron and fitting up and all; which planly shows that it would stop the trade from spreding remaining in that way; furdur as the payments would be next to redey money and the money at hoam without aney expenses; I think 13 pounds a tun and the same wages as for pots and pans would be a sufishant prise as they souled in to the hand of one that sells them again; and for aney one to pay redey money and keep the goods lying upon hand and then sell them upon credit it will not Answer to give a great prise at first.

The within proposalls are accepted and agreed on by both Parties, with these differences that the rate is concluded at Fourteen pounds p tun and that the Company will Exchange such Irons as may fail in Grinding, Isaac Wilkinson also losing the Workmanship in Casting them.

As Witness our hands Octo 18th 1737

Witness

Ben Ayrey

John Maychell

W Rawlinson

Jas Maychell

Isaac Wilkinson

During 1739 guns were cast and powder bought for testing but 5 ton 15 cwt of guns were returned from Whitehaven as scrap metal and a new agreement made<sup>iv</sup>:

Some conclusions with Isaac Wilkinson 14 March 1742

That the damages the company has suffered by casting of guns shall be balanced by the workmanship of casting hammers and anvils at Leighton last blast so that the demands of both sides shall cease and be evened.

The rate of casting scale and jack weights to be reduced from 15s a ton to 10s a ton.

Isaac Wilkinson to sink a pit in the casting house and line it with wood for the purpose of casting long items. To be paid £10 if completed.

Isaac Wilkinson has of late flaked both round and longer girdles, it is concluded that the rate for casting these items is £1 10s a ton.

The pit for casting long items sounds as if it was intended for canon. The £10 was paid but there are no more guns mentioned in the ledgers.

The journal lists Isaac's earnings for the 1742 campaign:

To Isaac Wilkinson for workmanship between 2 Feb 1742 and 29 Feb 1743 £742 1s 2 ¼ d Viz:

|                             |                    | Tons  | Cwt | Qr | lb |
|-----------------------------|--------------------|-------|-----|----|----|
| Pots, pans, boilers & pipes | @ £2 7s 6d a ton   | 217   | 12  | 1  | 10 |
| Backs & plaits              | @ £1 4s a ton      | 2     |     |    |    |
| ditto, flaked               | @ £1 10s a ton     | 109   | 15  |    |    |
| Girdles & boshes            | @ £1 4s a ton      | 8     | 11  |    |    |
| Heaters, bars etc           | @ £1 a ton         | 19    | 19  | 1  | 20 |
| Weights                     | @ 15s a ton        | 6     | 8   | 3  | 8  |
| ditto                       | @ 10s a ton        | 17    | 14  | 1  | 17 |
| Loomwork                    | @ £4 a ton         | 2     | 14  | 1  | 6  |
| Saucepans                   | 143 @ 3d each      |       |     |    |    |
| Thomas Titley               | Roles and an anvil | Total | 384 | 15 |    |

This was in addition to his earnings from the sale or rental of smoothing irons and compares to the founder's wages of 10s a week, ie about 25 times the earnings of a skilled man.



In this 13 month period Backbarrow produced 480 tons of pigs and 385 tons of castings. 205 tons of the pigs were converted to 162 tons of bar iron in the forges. At Leighton a six month campaign made 306 tons of pig iron and 51 tons of hammers and anvils. 1743 saw a new pothouse built at Leighton and the Backbarrow pothouse extended. There is also a mention of pit coals for the air furnace charged to the cast iron account and the first mention of sales of iron ore, shipped to Kidwelly and Carmarthen.

In November 1744 Isaac signed an agreement to purchase Wilson House in Lindale for £800<sup>v</sup>. In September 1747 Isaac signed the lease of a new charcoal blast furnace to be built at Low Wood, along with William Crossfield, the mines manager and George Drinkall. The Backbarrow Company sought legal advice and were told<sup>vi</sup>:

*I think the articles do not oblige Wilk<sup>n</sup> to act for nobody else provided he casts for the Backbarrow Company all they have occasion for and does it according to his contract. I don't therefore see any way either by action at law or by fact in equity to prevent him from casting for ye other Company.*

*D Ryder*

*16 Nov 1747*

At the same time there was a solicitor's letter sent from Rawlinson to Machell<sup>vii</sup>  
Rusland Jun 3rd 1748

Sir, By your not complying with my request of giving me the meeting at Backbarrow this afternoon; not appointing any other time for doing so, it serves to show me that you are not inclinable to give me a meeting atal. Therefore I'm under a necessity of telling you that Mr William Rawlinson by one his Lawful attorney Desires his immediate answer to the following Demands.

1<sup>st</sup> That I have the books belonging to Backbarrow Company produced to me in order to take Coppys of the three last years accts ending the 2nd of Feb 1747.

2<sup>dly</sup> That I have the keys of the warehouses etc belonging to the s<sup>d</sup> Company at Backbarrow, the Craine, Ulverston, Kendall & Leighton, produced to me in order to weigh the stock therein.

3<sup>dly</sup> That if you and I cannot agree in the appointing a proper person to sell off the stock belonging to the Backbarrow Company, that we shall cast Lotts which of us shall appoint such a person, upon giving good security for the behaviour of the person so appointed, or otherwise I will divide the said stock with you and take one moiety for the use of the owner, Mr W Rawlinson.

4<sup>thly</sup> That Cowperthwaite the stocktaker at Backbarrow be immediately Discharged as I can prove him guilty of fraud and neglect of Duty, and that another be appointed in his place by you or me.

5<sup>thly</sup> That either you or your agent do inform me what quantity of coals the Cunsey Company stands indebted to the Backbarrow Company.

I'm very Inclenable to be Instrumental in making up all matters of dispute between you and Mr Rawlinson in an amicable manner, but if contrary to either Law or reason you will persist in secreting from him those Books, Accts, &c upon which depends matters of so great consequence to his Interests, and to which he has a just & equitable right, it is very destructive of that peace you have repeatedly professed to both Mr Gibson & myself, and I think such a piece of behaviour as neither Law nor Equity can justify, however it's what you are answerable for and not me, therefore your direct and positive answer to the above Demands will oblige.

Sir,

Your very humble servant,

*In Sunderland*

The reply from John and James Machell was that they had only kept the company accounts from Mr Rawlinson to prevent him having an account of debts owing, which he might collect for his own use. It included a statement that they believed Cowperthwaite to be a very honest and careful man and they intended to continue his employment until he sees fit to leave. They did not want to sell the business unless Mr Rawlinson was determined to dissolve the copartnership.

It seems Mr Rawlinson *was* so determined because a new partnership was created on 11 September 1750 between William Penny and eight other partners in the Pennybridge Company and John and James Machell. The Backbarrow and Pennybridge Company was valued at £16,000 with the Machells owning 7/16ths. The lease stated that William Rawlinson had lately conveyed his share of the property to the Machells and that the new company would own Cunsey furnace and Cunsey Mill. The new partnership continued after the closure of Pennybridge furnace in 1780 until Backbarrow furnace was bought by the Newland Company in 1818. Leighton furnace was sold to the Halton Company in 1755.

**Later events - Wilkinson family** Isaac Wilkinson did not see out his contract, he moved his smoothing iron business to Wilson House where it is alleged, on very slim evidence, that he built the first iron boat.

The rise of John Wilkinson to become one of the foremost ironmasters in the land is well documented elsewhere<sup>viii</sup>. What is relevant here is that he later bought the Castlehead estate, next door to Wilson house, where the cast iron pillar that now stands in Lindale was intended to be his tombstone. If his father's iron boat is a myth, it is certain that he built some of the earliest successful iron narrowboats and they were used to move ore shipped by the Backbarrow Company via Runcorn.

**Later events – Backbarrow** The last record of castings made by Isaac was 7<sup>th</sup> March 1748 when the furnace was blown out after a 69 week campaign. The company found another potfounder but cast ironware ceased to be an important product, in fact by 1787 they were buying their hammers and anvils from John Wilkinson's Brosley foundry. The export of iron ore to the Midlands became an increasing part of the business, firstly via Chepstow, later via Runcorn and the Trent and Mersey Canal. Under Harrison Ainslie the company ran the last four charcoal blast furnaces in the country, but this was still a minor part of the business.

There is no record of Backbarrow forge working after 1820. Bar iron was made at Spark and Nibthwaite forges until this part of the business ceased in 1850.

The bellows were replaced by blowing cylinders and the waterwheel was replaced by a steam engine. This steam driven blowing engine is probably the most significant relic on site and very relevant to the work of John Wilkinson who worked with Boulton and Watt on boring machines for steam engines, cannons and blowing cylinders.

Harrison Ainslie experimented with hydroelectricity here, firstly for lighting and later for blowing the furnace. Their turbine still exists in the ironworks building but the leat is now used by a modern hydroelectric plant. The Charcoal Iron Company last used the site in 1966

**Later events - Low Wood** When the articles of agreement were signed on 12 December 1748, Job Rawlinson, brother of William, had taken the place of Isaac Wilkinson in the partnership<sup>ix</sup>. The furnace and forge were built, and operated until 1785. The lease of the site was assigned to the Backbarrow and Newland companies in 1782 after the death of the partners. They ran the furnace jointly for a few years and then left it idle.

At the end of the lease the site was taken by Daye Barker & Co to build a gunpowder works. The mills used a series of branches from the main leat to drive waterwheels. Each wheel drove a pair of



incorporating mills where charcoal and sulphur were ground under millstones running on edge with saturated saltpetre solution. The mills were later driven by Gilkes turbines. Daye Barker died in 1835, leaving the works to a son with the same name who expanded the works and built the clocktower buildings in 1849. The works were sold to W H Wakefield & Co in 1882 and to ICI in 1926. They last worked in 1935.

The hydroelectric plant was installed in 1952 and refurbished in 2011.

Peter Sandbach.

<sup>i</sup>DDMC 30/28 at Lancashire Records office, Preston

<sup>ii</sup>Backbarrow ledgers 1738 – 42 at LRO, Preston DDMC 30/1 - 9

<sup>iii</sup>DDMC 30/33 at LRO, Preston

<sup>iv</sup>DDMC 30/42

<sup>v</sup>DDTY 1/5/2

<sup>vi</sup>DDMC 30/56

<sup>vii</sup>DDMC 30/58/1

<sup>viii</sup>most recently by Frank Dawson in John Wilkinson, King of the ironmasters

<sup>ix</sup>DDHJ 2/3/11 at CRO, Barrow

**TO IRON MERCHANTS, WIRE DRAWERS,  
ENGINEERS, and STEEL CONVERTERS.**  
Having decided on abandoning the Manufacture of CHARCOAL BAR-IRON and BILLETS, we are prepared to DISPOSE OF OUR STOCK of BACKBARROW IRON, at much below its Manufacturing Cost, and in quantities of not less than Five Tons. The Stock of Bars consists of about 200 Tons of Flat, Square, Octagon, and Round, of various sizes, and about the same quantity of Billets. This Iron is made entirely from our Charcoal Pigs and refined with Charcoal, and is, consequently, of very superior strength and quality.  
**HARRISON, AINSLIE, & Co.**  
**NEWBELL FURNACE, Ulverston.**  
P.S. Samples of Iron and Steel may be seen at Mrs. TUCKER's, No. 7, York street, Sheffield, Agent for the Sale of Lorn Pig Iron.

*The Sheffield & Rotherham Independent December 18, 1852*

**Pig Iron.**—The **Backbarrow furnace**, belonging to Messrs. Harrison, Ainslie, and Co., was blown out on Friday, the 17th inst., to undergo repairs, after being in blast 135 weeks, and during that time, she has made 2,846 tons of pig iron; the largest make on record for one furnace. We hope that this extraordinary blast, in connection with the excellent railway accommodation and fine water power at command, may induce the Messrs. Harrison, Ainslie, and Co., to further extend their iron works on the banks of the river Leven, and if so, may it prove profitable to themselves and a benefit to the neighbourhood.—*Cor.*

*The Lancaster Gazette, and General Advertiser for Lancashire, Westmorland, Yorkshire, &c. January 25, 1873*

## More on Cobalt

In the May 2017 newsletter I attempted to draw together the available information on the mining of cobalt in the Lake District. Several people responded with information:

On 3<sup>rd</sup> May, Steve Sim posted a link on the CAT Facebook page regarding current uses and shortages of Cobalt. To summarise, Cobalt is critical to the electric vehicle revolution, and it makes up some 35 percent of the lithium-ion battery mix. By weight, lithium-ion batteries use more cobalt than lithium. There is a developing shortage of cobalt. The battery industry already uses some 42 percent of global cobalt production, while the rest is used in industrial and military applications.



60 percent of the world's supply is unethical, and mined by children under inhuman conditions in the Democratic Republic of Congo.

From Dave Bridge: "The following references might throw a little more light on the production of cobalt ore during the last years of operation at Coniston mine. In the Proceedings of the 1958 symposium on the Future of Non-ferrous Mining in Great Britain and Ireland Eastwood states on page 172 that "Three tons of nickel and cobalt were raised at Coniston copper mine in 1855". This ties in with J H Williamson's letter to John Barrett dated 7 October 1857 saying that he had been informed that cobalt had been found in the mine. At a later date, after Thomas Wynne had taken over the mine, the geologist J D Kendall, in his excellent and informative paper 'The Mineral Veins of the Lake District' which was published in 1884 (Trans Manchester Geological Society Vol 17), states on page 320 that "Small quantities of the ores of nickel and cobalt have been met with at Coniston along with Chalcopyrite, and about half a ton of each has already been sold". It is clear from this that sales of cobalt ore were taking place before J H Williamson's letter of Sept 3rd 1891, but leaves to the imagination whether the Goldenhill Cobalt and Chemical Works received the 5 tons they were asking for.

In view of Jeff Wilkinson's observation, that the post mine staining of the cobalt ore erythrite in Grey Crag level beyond Paddy End shaft is now more prominent and widespread than before, it would be worth revisiting Cobalt Passage off Top Level Extension near Chain Stope where similar erythrite staining occurs. As you know this was first discovered during CAT's exploration of this area in 1987 and recorded by Peter Fleming in The Mine Explorer Vol III, but to get to it involves traversing MAG's Catwalk, making the dubious descent of the timbered incline/shaft to Top Level and crossing Ore Wagon Stope. Anyone interested?"



Don Borthwick compiled the following references to cobalt at Coniston:

Mine Explorer Vol. 3 Coniston Copper Mines Rediscovered, Part 3 p15, Peter Fleming.

‘Not far beyond the backfilled junction, the main passage widens out and this is where the jackroll was re-assembled. To the right is another side passage which displays an interesting vein of erythrite or cobalt bloom. It is recorded that in 1885 Cobalt was mined at Coniston, and perhaps this was the place.’

Vol. XXX, Copper Ore of the Midlands, Wales, the Lake District and the Isle of Man, Dewey and Eastwood, Mem. Geological Survey 1925.

‘In the past small quantities of the ores of cobalt and nickel were obtained. (p63)

Beneath a table entitled ‘Output in tons of dressed copper ore’, there is the line ‘In 1855, 3 tons of nickel and cobalt ore was raised at Coniston and in 1893, 12 tons of lead ore (p62).’

Minerals of Northern England, R.F. Symes and B. Young, NMS, 2008.

In the veins of the Coniston area, small local concentrations of the nickel and cobalt ores nickeline (NiAs), rammelsbergite (NiAs<sub>2</sub>), safflorite (CoAs<sub>2</sub>) and skutterudite ((Co,Fe,Ni)As<sub>2-3</sub>), were mined alongside copper ores during the 19<sup>th</sup> century. (p21.2.8)

‘South of Force Crag, near the summit of Scar Crag, lie the very small workings of the notorious Cobalt mine. Considerable sums were raised to open and equip this mine in 1848, although little if any cobalt was ever recovered, and the project may have been little more than an opportunistic money-raising venture. Cobalt has been shown to occur here in very small amounts in alloclasite (Co<sub>1-x</sub>Fe<sub>x</sub>AsS) and skutterudite, which occur as small inclusions within abundant arsenopyrite. The vein is also of interest as a source of apatite crystals W and small specimens of wavellite (Al<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub>(OH,F)<sub>3</sub> 5H<sub>2</sub>O) and variscite (AlPO<sub>4</sub> 2H<sub>2</sub>O)). (p40.1.7)’

Mines of the Lake District Fells, John Adams, Dalesman Books, 1988.

Copper pyrite was the main ore, though in 1855, three tons of nickel and cobalt ore was raised and in 1893, 12 tons of lead ore (p147) (Coniston Copper mines). (Probably from Dewey & Eastwood – above)

The Future of Non-Ferrous Mining in Great Britain and Ireland 1959 – T. Eastwood ‘The Lake District Mining Field’ p172.9.

Nickel and Cobalt. Three tons of nickel and cobalt ore were raised at Coniston copper mine in 1855. Expensive trials 1/2 mile SE of Force Crag dressing floors were fruitless, though little was spent on mining

Glossary of the minerals of the Lake District and adjoining areas, B. Young, BGS, 1987.

Brian Young LD Minerals – details of mineral specimens in the British Museum from Coniston – no link to 1855 or a date when they were collected. Merely further evidence that ores of Cobalt have been found at Coniston.

p77.7.4 ‘Niccolite, accompanied by smaltite occurred in the Bonser vein and in the Paddy End sections of the mines (J. Hellen, personal communications in Russell, 1925)’.

P84.1.2 Kendal (1884); ‘with niccolite in the Bonser Vein in and in the Paddy End section of mines. The largest cube measures 9 mm along the edge, the largest crystals being thickly encrusted except along their edges with a confused aggregate of small interpenetrating cubes.

These specimens are by far the best crystallised examples of smaltite so far met with in the British Isles (Russell 1925)',

Cobalt by R. W. Andrews, Overseas Geological Surveys Mineral Resources Division, HMSO, London. 1963.

Lake District: The Coniston district has in the past yielded cobalt ores from mines situated south-east of Levers Water, near Coniston Church. These ores occur in the form of patches and stringers running through veins. Andrews also mentions cobalt deposits in Cornwall, Cheshire, Shropshire, Wales and Scotland.

FC500D CATMHS storage\Stavely Strontian\_P Meta.

Letter from Goldenhill Cobalt, Nickle Colours & Chemical Works, Newcastle, Staffordshire to John Barrett following a conversation in a railway carriage enquiring about ore. Letter is dated October 1857

W.T. Shaw papers list p29 (Paddy End).

John Crompton's Coniston cost books at Cumbria County Record Office Carlisle.

From CAT NL 38, April 1994 - Post Mine mineralisation in the Coniston Copper Mines.

Brian Young, British Geological Survey

Exploration of old underground mine workings commonly reveals deposits of minerals on the walls of old workings which quite clearly have formed since the workings were excavated: in many instances these deposits are still forming today. The term 'post-mine' is generally applied to these. A great variety of mineral species may occur in this situation. The elements which form these minerals are derived from both the mineralised bodies and the wallrocks in which they occur by the action of groundwater percolating through the old workings.

Bright rose-pink crusts locally attract interest at Coniston. Samples of these so far studied consist of erythrite, either alone or perhaps more commonly as an intergrowth in postmine calcite coatings. The cobalt has been derived either from discrete cobalt minerals in the ore or present as traces within the other sulphides (Russell, 1925). In this context it is worth noting that when found on the Paddy End dump the closely associated sulphide has always proved to be tennantite. The occurrence of any sulphide associated with erythrite in the workings is worth investigating as the nature of the primary cobalt, and associated nickel, assemblages have never been investigated *in situ*.

### **Iron Mining and Ginger Beer – a family history**

In early June a lady wrote to CATMHS asking if we could help her research her great grandfather's history as a miner in Cumberland in the late 1800s.

She wrote "*I am researching my great grandfather's history as a miner in the late 19th century and have heard a story of how a group of businessman in the Whitehaven area opened a mine, greatly exaggerating the size of the seam they had found. They attracted a lot of investment and miners to the project, but the mine was soon worked out and the miners were left without*

*work. My great grandfather then moved on to Wales before returning to Cornwall. Do you know what mine that might be? I believe he lived in a miner's camp. It was there he met my great grandmother who had come with her father from Ireland, via Paisley in Scotland."*

As this was not much to go on we requested the name of her relative and what material was mined so we could start to look at our archives. Meg replied *"My great grandfather was Martin Goldsworthy, who would have left Cornwall for the northwest in about 1870. He was back in Cornwall by 1886 but spent some time in Wales before returning home. My great grandmother's family name was Rankin, so her father was probably working at the same mine. As he came from a tin mining area, I imagine he was mining iron ore rather than coal."*

At last something to go on! A look at the 1881 census revealed Martin living in Barrow in Furness at North Row and working as an Iron Miner. Would he have worked at nearby Stank Mine? Martin was 36 years old and born at Gwennap near Redruth in Cornwall. His wife, Elizabeth, was 24 and was born in Paisley in Scotland. The children provided a good clue to the family's travels since the eldest son was four years old and born in Lamplugh, Cumberland. The second son was only two years old but was born in Barrow in Furness and carried a second forename of Rankin. The third child was a girl who was one year old, also shown on the census as born in Barrow in Furness, but later research revealed her birth appeared to be registered in Wales. This supported Meg's information quite well, so it looked like the Whitehaven connection was realistic and Martin's journey was credible.

Looking at the marriage records for Whitehaven; Martin married Elizabeth Rankin in 1875, and one may assume the Lamplugh parish is where they lived for at least a year. Kirkland is thus a probable location and the iron mining around Rowrah, Kelton, Knockmurton and Ennerdale are likely candidates to consider. Further, the crisis year to enforce a move would be 1877 - after the birth of the first son and before the birth of the second son in Barrow in Furness.

As to what mining venture enticed Martin to Cumberland, it may be difficult to prove, since boom and bust scenarios were common in the mining field. The main Kelton and Knockmurton mining was conducted by William Baird and Co of Gartsherrie in Ayrshire and was relatively stable, with the railway arriving in 1877. Other iron mining ventures in the area saw many small workings exploited to search for ore while the price was high due to the Franco-Prussian war. Often these ventures failed when price of ore fell below economic levels. One such company was the Whitehaven Iron Mines Company, specifically formed in 1871 to work the Eskdale, Knockmurton and Floutern Royalties. The Knockmurton interest fell away quickly as the company had taken on too much at three locations. Work on the Floutern Tarn Sett of levels continued but they were never very successful. It is reported that in 1877 financial difficulties further impacted the Whitehaven Iron Mines Company and they withdrew from Floutern to concentrate on their Eskdale works. They constructed the "Ratty" railway from Boot to Ravenglass as a mineral line but fell into liquidation in 1882. The selling price of iron ore had fallen from 30 shillings per ton in 1871 to 8 shillings in 1881. The cessation of mining at the Floutern Tarn Sett within this company in 1877 provides a scenario that fits Martin's situation. This would cause him to seek employment elsewhere to support his young family.



Around this time Martin Boundy was involved in speculative mining with the Lonsdale Red Haematite Iron Ore Company, adjacent to the Knockmurton mines. The work was sporadic with poor returns. It is recorded that he had difficulties housing his workmen and that timber dwellings were constructed at Cross Rigg as accommodation for them. Could this point to an association with this mining venture, as Meg believes Martin stayed in a construction camp at some stage?

Looking a little further at Martin's life it seems he was born around 1855 near Gwennap and was the son of a mine engine man. In 1871 he was recorded as a farmer's son, his father having turned to farming for a living. Later, in 1891, having returned to Cornwall he is recorded as being a Ginger Beer Manufacturer at Gwennap.

Meg said she knew more about the ginger beer side of Martin's life than the mining. She thought there were 10,000 thirsty miners back in Gwennap and Carharrack at that time, with a strong Wesleyan Methodist tradition influencing their lives. There was also plenty of fresh water around. She thought that the ginger may have taken away any metallic taste in the water. Her mother had a ginger beer recipe which she had used for many years.

The accounts of mining at Kelton and Knockmurton by Richard Hewer in British Mining No. 36, record the mine manager of Knockmurton as a William Rankin, and indeed show a photograph of him. Is this William Rankin possibly Elizabeth Goldsworthy's brother? It would be a wonderful breakthrough for Meg if it could be substantiated. However, this interesting connection does not look likely, although the Rankins may well be related.

Elizabeth Rankin was the daughter of Irish immigrants William Rankin and Catherine Shaw, and she was baptised in Paisley on the 15<sup>th</sup> May 1856. In 1871 Elizabeth is working as a servant in Ennerdale and her parents are also resident in Ennerdale. The Rankin family living in Ennerdale had a son called William F Rankin who was born in 1865 and is described as a miner's son. The photograph in BM No 36. shows a man who looks older than this man would have been. The 1891 census shows a William Rankin living at Kirkland, who is an Accountant and Iron Ore Miner, with wife Jane and six children. This William was born in 1847 and would thus be of the right age to match the photograph and he would have the skills to become the agent / manager.

An interesting tale from a simple enquiry. To prove this story Meg will need to obtain documents and carefully examine the relationships and timeline to compare them with her family's recollections and stories. Meg is intending to visit Cumbria to get a feel for the area and to continue her research. I can only wish her luck in her quest.

If anyone can add to this story please let me know and we can pass the information on.

Colin Woollard.

#### **Further Reading:**

1. The Red Hills by Dave Kelly
2. Mines of the Lake District Fells by John Adams
3. NMRS British Mining No 36 – The Kelton and Knockmurton Iron Mines 1852 – 1923 by Richard E Hewer

## REMINISCING

Jeff Wilkinson.

Isn't nostalgia great? Looking back into the mists of time, often through rose-tinted-spectacles at all manner of memories. After my recent brief return underground, and the subsequent article in Newsletter 124 my nostalgia cells were truly tweaked! What follows are some of my distant underground memories...*none remarkable*, of places, events and people.

### First Trip Underground

I guess it would be fair to say that most people's first venture into the underground world may be, say, a look in Deep Level or perhaps a guided trip around Hospital Level. My first trip was somewhat different. I was not then a C.A.T. member, but I knew the late, great Peter Fleming from the rock climbing/mountaineering world that I was in at that time. He mentioned an upcoming C.A.T. meet going to various places in the Coniston mine. I cobbled together some basic kit from climbing etc., and duly turned up at the BMSC club hut. I still remember the warm, friendly welcome this newcomer received from those experienced explorers. As well as Peter the route we were going to do also had Pete Blezard and Anne Danson in tow. *Who could ask for a more experienced, knowledgeable and friendly group?*

After visiting the colourful Levers Water Mine I came to the first shock to the system – “MAGS” catwalk. Back then there was no permanent safety line in place. When it was rigged there seemed to me to be an awfully “*excessive*” amount of slack in the safety line that would result in a scary drop below the stemples! Next test was the 30ft ascent up a rope leading to the “Oak Plug” tunnel. Not having caving equipment for ascending, only rudimentary climbing hardware and brute force made this a really physical challenge, but having heard about this wonder there was no way I was going to cop-out! By the time we had explored Top Level Extension I was sold on mine exploring and knew this was the next pursuit to master. We then started on the Through Trip. What springs to mind about the first 90ft abseil to Top Level was that a single rope descent using a mountaineering figure of eight descender was “considerably” faster than using two nine mil ropes! After looking through Hospital Level we exited the mine in what had been quite an introduction to mine exploring.



First trip underground, “MAGS” Catwalk.  
Circa. 1990.

### Triddle Shaft.

This meet was some years later. It was a route I had always wanted to do. An abseil of at least 450ft. One team rigged the Open Stopes in Red Dell while we rigged Triddle Shaft all the way down to Deep Level; parties would meet in the middle, swap over routes then de-rig on the way out. On this meet we were joined by a couple of guys who turned up for the meet on spec...no-one knew who they were. This was not un-heard of back then. As we were about to start the descent someone happened to say to our two guys, more as a conversation piece



*Adam Gourlay starting the 180ft ascent up to Red Dell*

“do you know how to pass a re-belay?” “No” came back the answer! Amazingly after a basic instruction they continued on the meet...I doubt that would happen today? The descent went to plan, thankfully. After a short pendulum into the tunnel containing the spectacular Blue Cascade we arrived at Deep Level. I was stood with the late Adam Gourlay. Suddenly there was a faint whirring sound from above, then a huge impact right next to us, followed by that distinctive smell of smashed rock. One of the “guests” had dislodged a large rock! You do take it for granted just how methodical and careful “experienced” mine explorers are. Back then there was a detour to join Taylor’s Level, leaving just the 180ft rope climb to the fenced off area in Red Dell. This is always a hard climb out at the end of a day but it’s a pitch I always liked and returned to many times. Like most, this fenced off area was a place I had often peered into and wondered: “*WHAT IS IT LIKE DOWN THERE?*”

### **Solo Days.**

Exploring mine workings alone can never be recommended and certainly not when rope work is used. However I suspect that most have done it at some point! It’s a strange activity; all of the senses are heightened. It’s not unlike solo ice climbing on a mountain where you’re totally alone. You do everything in a more controlled manner, double check everything and remind yourself “*DON’T FALL OFF!*”

While living in Coniston I did my fair share, often to replace worn-out hand-lines. I self-belayed across “MAGS” and replaced the rope by the ore waggon, descended to Top Level then the short drop down to the “Green Ginnel.” I walked to the end of the short tunnel to where it intersects the “The Funnel.” I was here to smooth out the footprints in the copper stained mud and get a photo of it. Suddenly there was a tremendous roar like an express train passing through a station. It was amazing. Turns out it was very windy above ground and strong gusts were racing down The Funnel...A very memorable sound.

Another trip took me down to Middle Level to replace the hand line below the “Blue Rock Chamber.” Again even the sound of dripping water seemed extra loud in this deadly silent place. I do also have to confess to doing the Through Trip on my own, just the once. Not proud of that now but, hey, I got away with it!



*The Green Ginnel, now with a blue tint of copper stained mud...minus footprints.*





*Dave Bridge descending the narrow, vein pitch.*

### **The Longest Through Trip.**

Talking to the experienced Dave Bridge one day he mentioned that he had found a new route that reached Middle Level from the highest point of the Back Strings. We formalized a plan to do what would probably be the first continuous Through Route decent to Hospital Level from this high point. We arrived at the small fenced off area above the Back Strings heavily laden with ropes for this long decent. The vein near the surface was quite narrow but soon opened out and came to a false floor in poor condition. From here Dave ran out “one” really long pitch all the way down to Middle Level which required him to place bolts on route, rig deviations and re-belays.

It was a strange feeling landing at Middle Level from a different route yet still quite close to where the normal through route lands. From here it was the usual route to Hospital Level pulling the rope through on the last abseil. The next day I returned, repeated the route down to Middle Level, retrieved the ropes/crabs and then retraced the route back up. *A trip I won't forget.*

My first visit to the Graphite Mine was probable when I got the geology bug.

*What happened here? How were those Pipes formed?* My history with this mine is documented in print so further comment here is not necessary.

### **Brewery Shaft, Nenthead.**

A club meet to descend the approx. 250ft Brewery Shaft at Nenthead sticks out. I remember Ian Matheson rigged the pitch. While stood at the bottom of the shaft I heard a disturbingly familiar whirring sound from above. Yes crashing within inches was (this time) a large chunk of wood. My immediate thought was there must be a clumsy novice above. Worryingly Adam Gourlay was stood right next to me...*AGAIN!!* We had the usual look around and then ascended the shaft. While in the tunnel it became clear there was a situation occurring. It transpired that the “novice” was stuck somewhere on the return ascent of the Shaft, either through exhaustion or lack of climbing technique. Immediately Mike Mitchell, Ian and others took charge and went into “rescue mode,” set up a pulley and winch system and we all started to pull on the rope to winch the person up. Those guys really knew their stuff! When he arrived from the shaft he was soaking wet and I seem to recall that he was suffering from hypothermia. It turned out that Adam had given this person a lift and was told by him that he was experienced underground! I also seem to recall that this incident caused quite a stir through the society at the time? It was probable the start of questioning who should be allowed on underground club meets, route grading and the contacting of meet leaders.

Who next to share their memories?

Jeff Wilkinson.

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