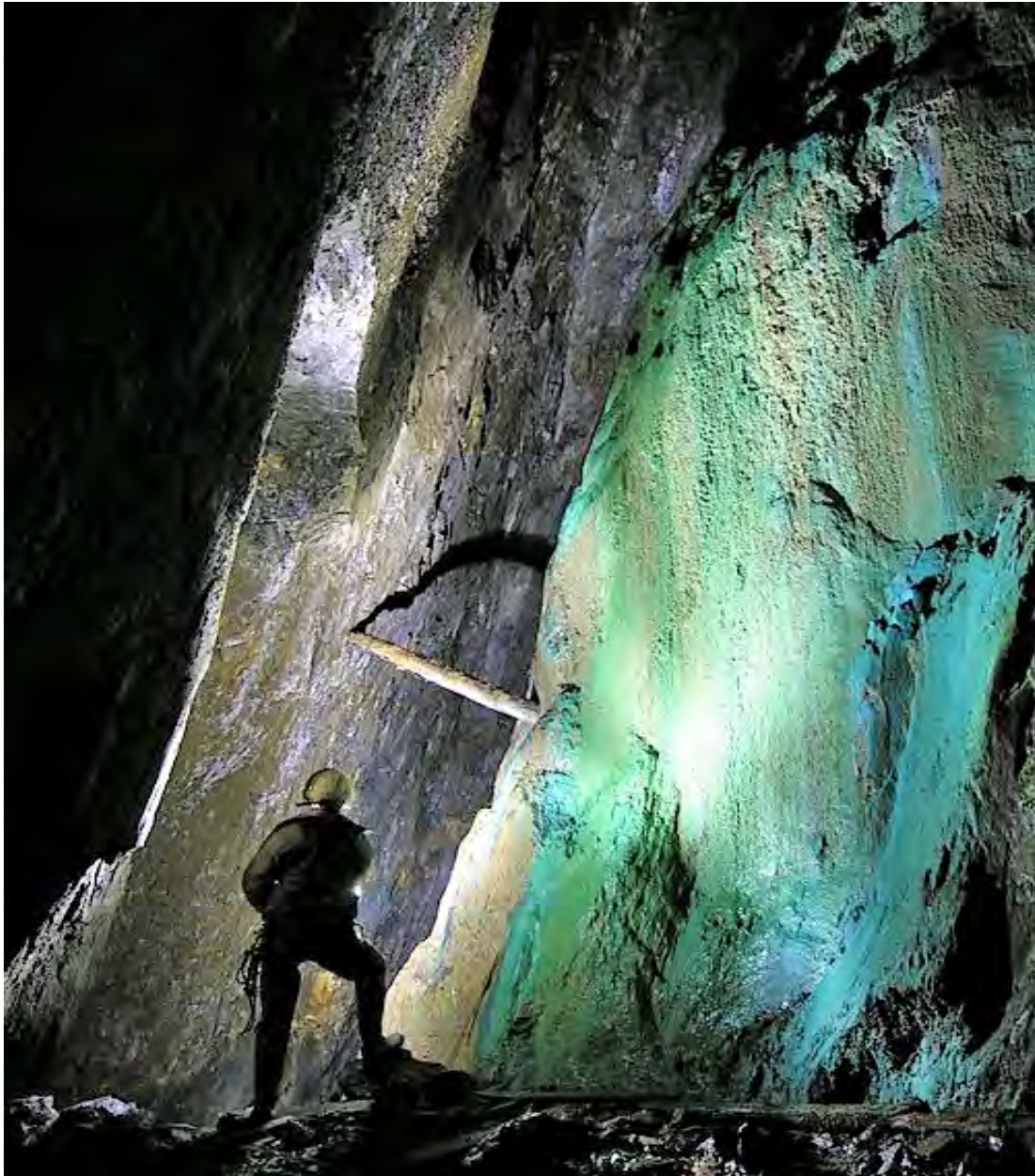


CAT

The Newsletter of the Cumbria Amenity Trust
Mining History Society



Paddy End Stopes at Coniston

No. 142

February 2021

Cumbria Amenity Trust Mining History Society Newsletter No 142, February 2021.

Membership

New members	Page 2
Impact of Covid.	Page 2
Logo Competition	Page 3
The 2021 NAMHO Conference	Page 4
CATMHS anniversary photographs	Page 5
Newland Furnace update	Page 6
New book	Page 6
French letters, Coniston Electrolytic Works	Page 7

Meets

Meet Secretary's report	Page 8
Forthcoming Zoom talk – History of the Wad mine	Page 9
Zoom talk - The Wad Rush	Page 9
Zoom talk - German miners in Tudor Cumberland	Page 11
Zoom talk - History of Coniston Coppermines	Page 12
Zoom talk – The Mine of Carlisle	Page 14

News

Proposed Florence mine survey	Page 17
Report on the Coniston Old Man slate quarries project	Page 19
New Ground at Greenside mine	Page 21

Articles

The Heslop beam engine	Page 26
Collyweston slate	Page 30
Sandbeds mine dig	Page 33
Americans	Page 39

Society Officers and Committee Members	Back cover
---	------------

Membership

New members:

Adam Edmondson, from Keswick.

Adam is an Outdoor Instructor, MRT member and an Advanced Rope Rescue Technician.

Simon Papaleo, from Wigton. A willing volunteer.

Adam Clenton, from Otley

Adam is a Master Stonemason and builder and a keen cave and mine explorer/digger. He rebuilt the weir in Chapel Stile, Great Langdale ten years ago. He is also interested in water management industrial archaeology.

Chris Jones, from Todmorden.

Chris is Leader of COMRU and a returning member of CATMHS. In the good old days he was a very active mine explorer, involved in all the major discoveries at Coniston. He was our only Tacklemaster and in collaboration with Alen McFadzean was Newsletter and Journal Editor.

Graeme Farrer, from Darlington. Member of Durham University Speliological Association.

Duncan Scott from Ulverston. Scuba diving is one of his interests.

Impact of COVID-19

I sincerely hope that everyone is managing to cope with the current crisis, although from my own experience at work being heavily involved in implementing measures for the last eleven months at the factories to keep 1500+ people as safe as we can, I understand how difficult this has been for people in so many ways. All our activities since March 2020 have been put on hold, apart from a couple of meets in September when Government restrictions allowed (and cancelling the AGM) and this will be for the foreseeable future. So, the committee decided that in view of the lack of activities then the membership would be free for 2021, although the insurance would still need to be paid by the member.

Michael Oddie has organised some Zoom lectures and quiz's which are proving popular and more have been planned for the coming months which are listed in the newsletter. He has also organised various meets with dates, so that they are in place. This will depend on what the Government restrictions are at the time as to whether they happen, but it was felt that members should know that there were plans in place for the future.

There have been no committee meetings, although John Aird has had the accounts audited. However, Colin Woollard has organised a Zoom meeting for the 9th February at which arrangements for the AGM will be discussed.

Just as the Society, in conjunction with the LDNPA volunteers, started a survey of the mines in the Buttermere valley. Covid stopped it, although one survey was carried out. This will resume once restrictions have been lifted. Before Covid the National Trust had commissioned Archaeo-Environment Ltd to produce a draft Management Plan for the Coledale valley which includes Force Crag Mine and would replace the previous one. CATMHS was asked to contribute to this, and it was also discussed at the last Mines Forum meeting. A draft copy was sent out just after the first lockdown and comments have been returned.

In December, Eleanor Kingston from the LDNPA contacted me to say that the LDNPA had secured funding from Historic England to have a Conservation Management Plan produced for Greenside Mine. She said “The aim of the plan will form the basis for informed conservation and future management of the site, bringing together all the conservation interests and management concerns under one document. (e.g. archaeology, ecology, mining history, access, pollution and water management) It will provide a prioritised list of actions and costings which will help take the mine off the Heritage at Risk Register and create an interpretation and access policy which will look at the interpretation of the industrial landscape. Archaeo-Environment Ltd., who have previously completed conservation management plans at Force Crag Mine, Coniston Coper Mines, Penny Rigg Mill and Carrock Fell Mine, have been appointed. CATMHS will be involved in this as well as other organisations including Patterdale Parish Council, Environment Agency, etc who have also been approached.

Eleanor asked if as CATMHS chair, I would represent the Society as part of the Lake District National Park Partnership Historic Environment Subgroup. This will support the Lake District National Park Partnership in its approach to the historic environment in the Lake District, which would advise the Authority on the development of its Historic Environment Strategy. Membership would include the National Trust, Historic England, University representation, CWAAS, Natural England and the Lakeland Mining Forum.

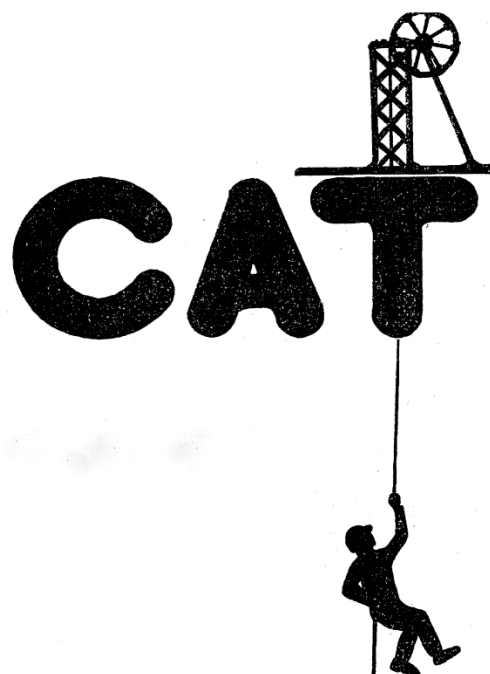
These are times which none of us have experienced before and I would hope that at some point things will return to normal with plans being formulated for this, which could also provide potential new projects for the society to become involved in.

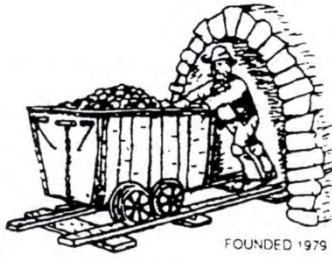
Warren Allison
CATMHS Chairman

Logo Competition.

So what is a Logo and why do we need one? A logo is an instantly recognisable image that give people their first impressions of a club/organisation. It tells people what we do and who we are. I am proud to be a member of CAT and I would like to wear clothing that shows that. CAT has two logos, one with the explorer hanging from a rope which was designed by Chris Jones and was used for meets lists. It was produced before the words ‘Mining History Society’ were added to our title. The official Logo is an old time miner pushing a full ore tub out of a level. Some say they see false teeth!

I would like to run a competition for a new logo designed by members that we can use on Newsletters, online presentations, and have printed onto stickers, badges and clothing that members would be proud to wear. I would like members who are interested to design a logo and submit it to myself or the Newsletter Editor. The closing date for entries is 1st April.





CUMBRIA AMENITY TRUST MINING HISTORY SOCIETY

Honorary President. Lord Egremont

Some things to note for a logo are:

Keep it simple, the most impactful logos are surprisingly simple.

Not too many colours if anything all. A white logo on a black background is quite striking.

Memorable, so when people see it they will remember it when they see it again.

We may have an online vote by members and possibly combine logos designed to come up designed to come up with a winner. The winner/winners will have their logo used for years to come by CATMHS.

Michael Oddie

The 2021 NAMHO Conference

NAMHO is The National Association of Mining History Organisations and they have been arranging Annual Conferences for over three decades now. Each year these conferences are hosted by one of the fifty mining history societies that make up the membership of NAMHO. CATMHS have hosted the NAMHO conference in the Lake District several times over the years.

The hosts for the 2021 NAMHO Conference will be The Shropshire Caving and Mining Club (SCMC), which it is hoped will take place between Friday 2nd July and Monday 5th July at Preston Montford, near Shrewsbury. Obviously the Pandemic means that there needs to be some flexibility in the arrangements being made. But some optimism is present that by July it will be possible to hold the conference and carry out multiple field trips. If Covid restrictions are still in place, plans will be flexed accordingly.

The Conference consists of multiple opportunities to take part in exploring local mines (some of which are only accessible on special occasions) with the company of an expert guide. The trips include multi pitch SRT venues and simple walk in venues and all types in between. There are a program of talks and many social opportunities as well. There will be a camp site, trade stands and other Clubs and Rescue Organisations will put up displays.

Anyone who is interested in attending the NAMHO Conference in 2021 should send an expression of interest via email to NAMHO.21@shropshirecmc.org.uk By so doing you will be included on a mailing list and will be the first to receive details about the conference, how to book a place and how to sign up for the Trips. Other details are on the NAMHO website at NAMHO.org.

Hope to see you there!

CATMHS 30th Anniversary photograph

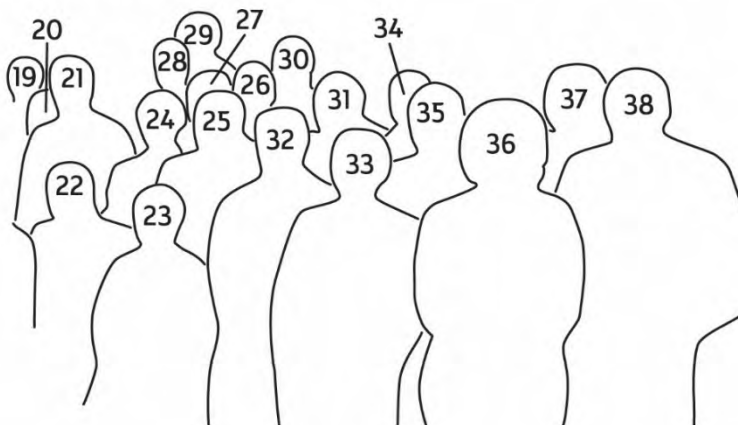
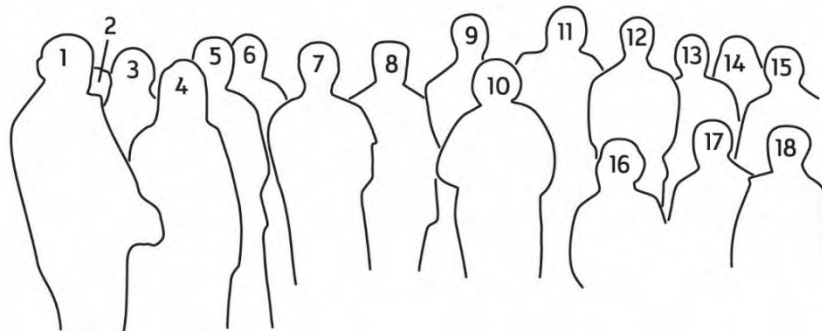
As reported in the last newsletter a page was inserted into Newsletter No. 63 identifying the individuals at the CATMHS 21st Anniversary pictured on the cover page. We have now identified those photographed at the 30th Anniversary. Don Borthwick has produced a key which has been inserted into Newsletter No 98, February 2010.

Members and guests attending the CATMHS 30th Anniversary celebration at Rydal Hall



John Aird
Man behind the Camera

- 1 Chris Jones
- 2 Margaret Fleming
- 3 Ros Leach
- 4 Jen Kaines
- 5 Mark Scott
- 6 John Helme
- 7 Warren Alison
- 8 Don Borthwick
- 9 Alan McFadzean
- 10 Ann McFadzean
- 11 Kate Tyler
- 12 Tony Holland
- 13 Peter Blezard
- 14 Anne Danson
- 15 Joan Helme
- 16 Barbara Mitchell
- 17 Mike Mitchell
- 18 Sheila Barker



- 19 Peter Fleming
- 20 Diedre Ryan
- 21 Alan Westall
- 22 Mark Simpson
- 23 Angela Wilson
- 24 Lesley Aird
- 25 Ronnie Calvin
- 26 John Brown
- 27 Jane Brown
- 28 Chris Cowdery
- 29 Joanne Cowdery
- 30 Mark Waite
- 31 Phil Meredith
- 32 Roger Ramsden
- 33 Barbara Ramsden
- 34 Monique Devriese
- 35 John Ashby
- 36 Meg Matheson
- 37 Rudy Devriese
- 38 Ian Matheson

Newland Furnace update – December 2020

About this time of year there would normally be a meeting of the Trust to review progress and plan the next objectives, however, due to the COVID-19 situation, it is not possible to meet face to face. The last ordinary meeting of the Trust was held on 26th November 2019. There were two actions from this. One was to contact Cumbria Magazine about them doing an article on the furnace and the other to contact the Egton-cum-Newland, Mansriggs and Osmotherley (ENMO) Parish Council for funding. ENMO Parish council have kindly donated £250 towards the Trusts funds.

Heritage Open Days:

Despite the COVID situation, the NFT managed to successfully open the furnace to the public for the Heritage Open Day weekends of the 12-13 and 19-20 September. Around eighty visitors came to look round and there were some good discussions with the possibility of future visits for 2021.

Unfortunately, one of the roof beams in the loading barn has become damaged, through natural wear and tear. Historic England (HE) has been contacted and the NFT are currently working up potential solutions which will be put to HE for consideration and then hopefully formal approval. In the meantime the roof has been supported with acro props to take the strain off the beam.

Excavation of the Blowing Chamber has continued at a slower pace due to the beam, COVID and Heritage Open Day situations.



Insurance: This year a valuation was required which cost £594, and a further £285 to insure the buildings for the present year. In future building insurance will cost about £720, which is not sustainable. There is little room to negotiate with the insurance companies as very few companies will insure buildings of this kind. A way forward might be to renegotiate the lease so that the NFT are not bound to insure for the full rebuilding cost.

New book

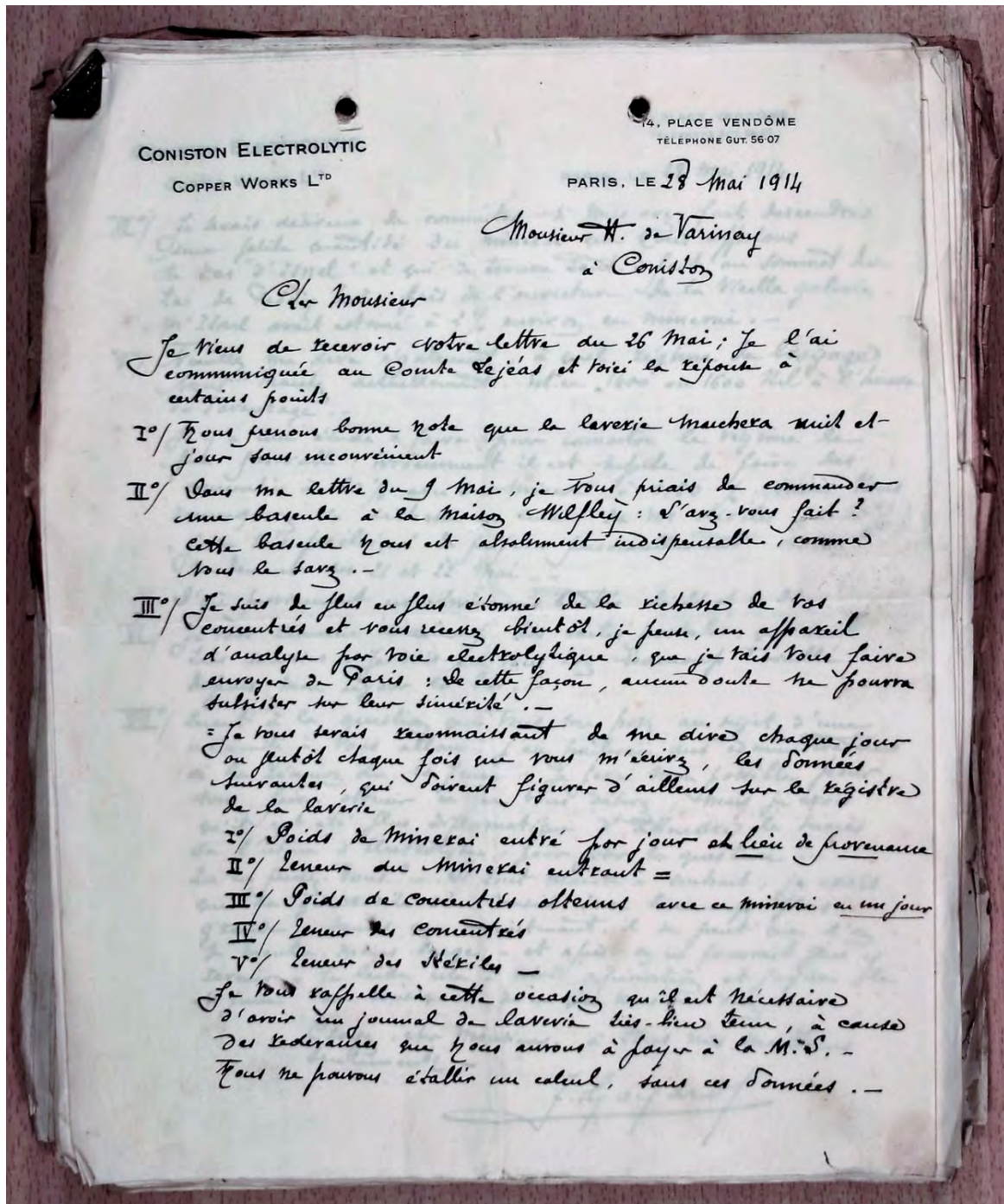
Ulverston Canal, its Ships, Shipbuilders and Seamen by Jennifer Snell. Softback 170 pages and priced at £19.

Its available either from Suttons Bookshop in Ulverston, other outlets in Ulverston that stock it are currently closed or direct from Jennifer at Wreay, North Lonsdale Road, Ulverston. LA12 9DH. 01229 585542

The book is Jennifer's lifetime work researching the canal and its history as its title suggests. It has numerous paintings in full colour by herself as well as line drawings of the ships mentioned. Plenty of maps and other photos complement the text.

French letters, Coniston Electrolytic Works.

In 1914 a French company, Societe des Mines, set up the Coniston Electrolytic Company to process the waste dumps in Coppermines Valley in order to extract copper metal by electrolysis. There was correspondence between the Paris office and the Coniston manager, Henri de Varinay, and the Ruskin Museum at Coniston has a collection of these letters. Several year ago the museum allowed Ian Matheson and Mark Simpson to photograph the letters and the digital images are in the CATMHS archive. Translating these letters would shed more light on the history of the Coniston copper mines. Is there anyone amongst our members who might do this or who knows of someone else who willing to do so? I would be pleased to email sample copies to anyone who is prepared to have a go. imatheson007@btinternet.com



Meet Secretary's Report, January 2021

Well I don't know if I'm coming or going at the moment with all these lockdowns, tiers, government guidance etc. It's certainly making it awkward to plan face to face meets that's for sure. I was probably being over optimistic planning meets early in the year but I hoped that all this Covid drama would be blown over by now and I just wanted to give members a little bit of hope and something to look forward to. Never mind, the main thing is that we all stay safe until we are allowed to meet up again. (whenever that may be). In the interim we are pressing ahead with the Zoom online presentations which seem to be going down well with everyone.

Peter Cloughton gave the first talk of the year on February the 8th. A very high number (28 I think) joined the Zoom presentation on 'The Mine of Carlisle' which was very interesting. The video is saved online should anyone want to view it. Just drop me a message if you are struggling to access it. In fact that goes for anyone at all that is nervous or wants a little help getting 'on-line'. I am happy to do private chats, phone calls etc. to give advice and help out. We currently have five more online presentations on the Facebook page and these are -

1. Quiz night, 19th Jan, 7pm. Stephe Cove
2. History of Greenside, 5th Feb, 7.30pm. Warren Allison
3. History of the Wad Mine, 26th Feb, 7.30pm. Mark Hatton
4. History of Hodbarrow, 16th March, 7.00pm. Stephe Cove
5. Jet Mines, 16th April, 7.30pm. Chris Twigg.

I hope you can join all join me at these events. Also while the lockdown continues I will be running a 'social' Zoom meeting on Fridays that don't have a presentation planned. This is just for people to chat about anything! Most Zoom presentations finish and people leave, which is absolutely fine, but some of us stay on, open a few more beers and chat about all sorts. Feel free to join us.

We do still have 'Face to Face Meets' planned but obviously these are being monitored regarding Government Guidance and will be postponed nearer the time should that be required.

1. Walney Island Gravel and Salt Mines, 7th March, 10.00am. Peter Sandbach
2. Jet Mines, 4th April, 11.00am. Chris Twigg
3. Kirkby Moor, 6th June, 10.00am. Carl Barrow
4. Wales weekend, Dorothea and Pen-yr-Orsedd, 3rd-4th July. Michael Oddie + Special Guest
5. Wales Weekend, Dinorwic and 'nameless quarry', 31st July-1st August. Michael Oddie and Jon Knowles
6. Nenthead Traverse, 13th November, 9.00am. Leif Andrews

Unfortunately, due to restrictions, we have had to postpone the Middleclough to Barron's sump meet, being led by Leif Andrews that was due to go ahead on 7th Feb.

I am always looking for meet ideas and meet leaders and apologise if you have messaged me regarding an idea and I may not have got back to you. Please message me again if this is the case as I do sometimes get 'bogged down' in messages. Ha! Also if anyone has any quizzes or questions for quizzes please feel free to give an online Zoom presentation. If you don't want to present it yourself please send them my way as I'm always more than happy to listen to my own voice.

Hope to see you all in person at some point this year! Until then, just push on as best we can!

Michael (Bill) Oddie. Meet Secretary

Forthcoming Zoom talk, History of the Wad mine, 26th February, 7.30

“Seathwaite isn’t just the wettest inhabited place in England. It is also the location of the richest mine ever to be worked in the county. Fortunes were made and some were stolen here. The source of this wealth was the finest quality Wad, Plumbago or Black Lead (today known as Graphite) ever found in the world. This is the story of the mine and the material that came from it, the men who worked it, the robbers who stole from it and the owners who got rich from it. And the impact on Keswick, where some of the money made ended up, where the finest black lead pencils in the world were manufactured and where the Black Market in illicit Plumbago thrived. And the impact on the Nation, whose Military and Navy had the best armaments in the world as a result of the magical properties of this wonder material”.

Zoom Talk – The Wad Rush

Mark Hatton gave a brief Online Presentation to CATMHS members on a few quite desperate efforts to find other deposits of Wad in The Lake District to compete with the famous Wad Mine at Seathwaite in Borrowdale. During the 18th and 19th Centuries, the Wad Mine at Seathwaite was enjoying spectacular financial returns for its owners. With a monopoly on the supply of Wad (also known as Plumbago, Black Lead, today known as Graphite) and increasing high value applications being developed for this wonder material, the price per pound of Wad rose higher and higher.

Landowners all over Cumbria were keen to get a piece of the action. The only way to do so was by attempting to find Graphite deposits on their land. The problem was that no one really understood how Graphite was formed, in what type of ground it may be found and what sort of vein pattern (if any) it might be found in. But this ignorance didn’t deter the efforts being made, if anything it probably increased them as people thought it worth-while looking everywhere. Anywhere a dark, flakey, soft material was found, hopes were raised that a rich deposit of Wad lay underground. Holes were dug on any such “lodes” with great expectations that the solid grey, shiny and slippery material would soon come to hand. But it never did. These workings were all failures, and the material that caused the initial optimism was probably simply dark areas of shale or mica or even just mud. So the shareholders of The Seathwaite Wad Mine got richer and richer, whilst the other landowners who funded the fruitless searches and digs became poorer and poorer. The records about these failures to find graphite are none existent, as the landowners didn’t want to advertise their futility or folly. But the efforts that are thought to have been made include the following:

Hol Beck Ghyll

Towards the top of the steep sided and thickly wooded ghyll is a trial off to the east. It runs for some 35 yards through dark shaley material. No one knows for



sure, who, when or why this trial was dug. But it seems likely that this was an attempt to find the precious Wad.



Bannerdale Crag

To the south of the lead vein on the face of Bannerdale Crag is a trial. The dig is wide and quite high, but only runs a few yards into the face of the steep ground, creating something more like a cave than a mine. Again here we find dark shaley material that crumbles easily. But it isn't Wad and no one got rich here, that's for certain.

Mealy Gill, Coniston

Off the steep section of the Ghyll near Coniston Copper Station is a trial into hard rock. No dark shaley material appears here today, but in the past it was known as "The Boot Polish Mine" as the material that was "won" here was apparently suitable for blackening shoe leather. Quite what it was or why it was worked is far from clear, but some say this was an effort to find the precious Wad.



Watermillock- rumours exist of a working near Watermillock on Ullswater that produced a material that could substitute for pencil lead. But precisely where these workings were or what was found there is lost in the mists of time. I suspect this one was even less "real" than the other three and based entirely on pub talk rather than substance. Or possibly this was an effort to set up a Pencil Mill using the graphite from Seathwaite. Does anyone know of any others?

13th November.

A Zoom Quiz and Social evening was held.

29th November

German Miners in Tudor Cumberland – The start of an Industrial Revolution with long term implications for the development of Britain, OR a failed venture with no enduring legacy?

This was the topic of a talk by Mark Hatton to CATMHS Members on Friday 20th November 2020 via ZOOM. Mark's presentation lasted about an hour and an interesting debate ensued on which version of the above is best supported by the facts. Twenty nine members listened to the talk and then joined in the discussion.

To summarise, there is a case for saying that the arrival of the German miners at Keswick in 1565 ushered in to England & Wales a new age of technology based manufacturing industries and shareholder funded joint stock companies with legal protections in the form of patents and monopolies. Arguably the seeds of The Industrial Revolution were sown here, which went on to make Britain one of the wealthiest and most powerful industrialised nations on earth in the late 18th and 19th Centuries. Furthermore, the Society of Cumberland was transformed from an inward looking, rural backwater, subsisting on poor agriculture and wool trades to a more outward looking and progressive society, with a vibrant cash economy, famous throughout Elizabethan England.

There is also a case for saying that the whole German Mining “Adventure” was a complete failure. It never achieved its aim of finding and producing precious gold or silver metals, but it did flood the market with supplies of Copper that were well in excess of demand. It made substantial trading losses, careering from one cash crisis to the next, which deterred any further bold investments, international joint ventures and commercial developments of this kind. And it set back the whole development of metal mining in England and Wales by the creation of enduring legal constraints such as the Royal Mining Monopoly and Technology patents, that the venture had been granted. And everything that it developed in Cumberland withered, with no lasting impact on future generations. So perhaps the only legacy of the German miners are some holes in the ground and forest free uplands in the Derwent Fells, the recipe for the Cumberland sausage and a few Germanic surnames in local phonebooks.

The people who favour the “Important Lasting Legacy Theory” tend to be those with a Cumbrian heart and a deep love of the remarkable Tudor mining efforts which are still much in evidence on and under the Lake District fells today, whilst those in favour of the “Commercial Disaster and Failure to Create any Enduring Legacy Theory” tend to be those who take a more holistic view of the whole story of Mining and Technology development across England & Wales over a longer sweep of centuries.

Whichever theory you favour, we can all agree that the sudden arrival in Keswick in 1565 of dozens of German Miners, some bringing women and children with them, must have been a huge shock to the local community. That the local women welcomed the influx of blond, blue eyed, strong youthful single men, with well paid jobs and unusual accents, is borne out by just

how quickly and how many marriages and births (not always in that order) took place involving local women and the "Duchmen". Equally, how the local men were initially threatened by this influx of competition and took every opportunity to harass the Germans, sometimes even escalating to violence and reputedly, in one case, murder.

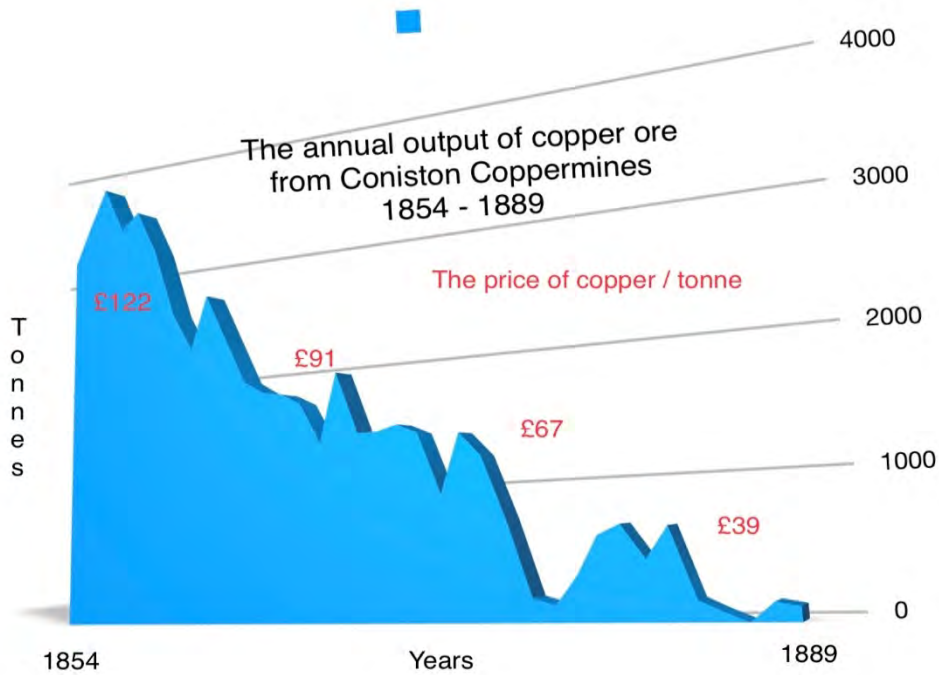
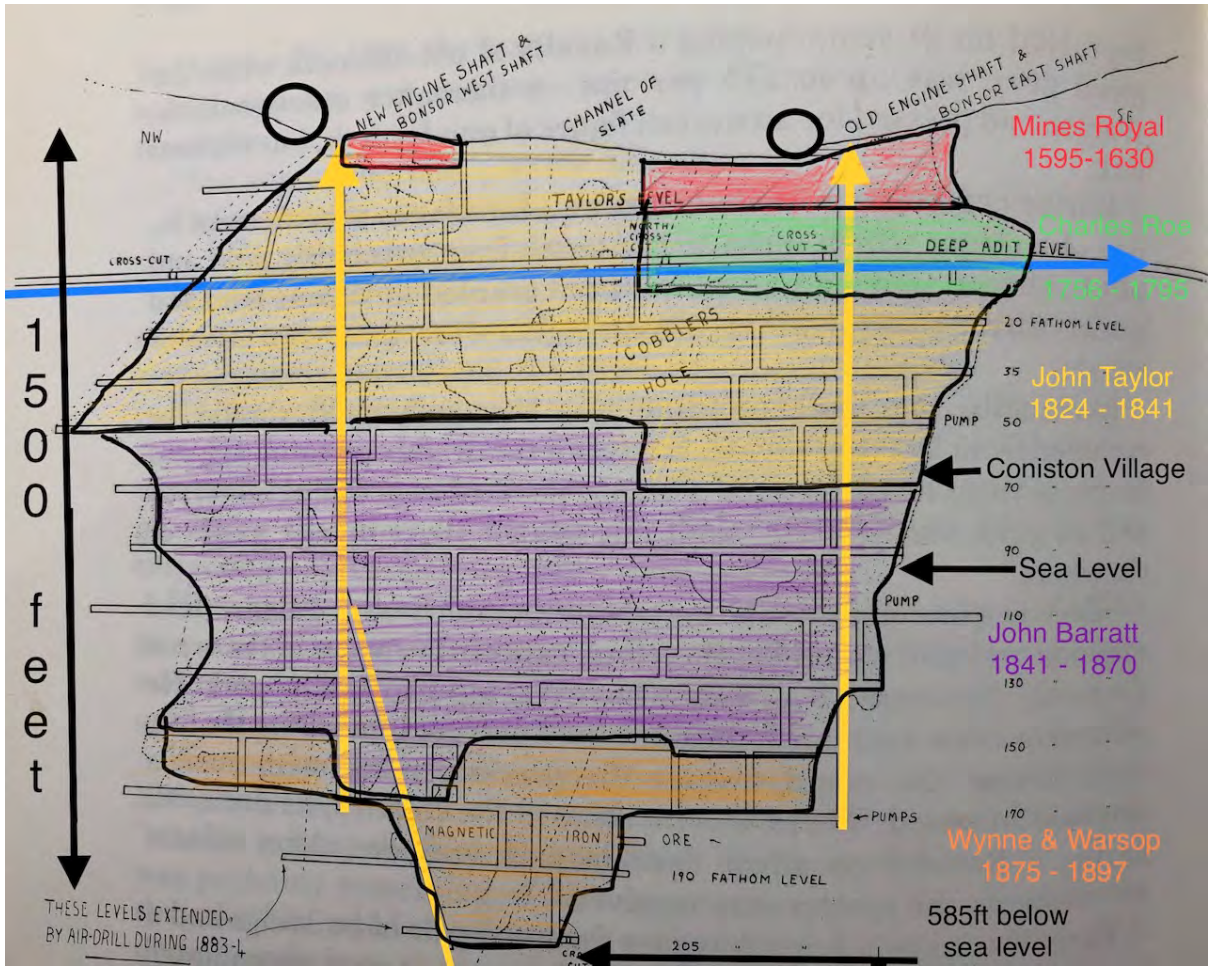
Undoubtedly, the local landowner, Earl Percy of Northumberland, resented the German miners and railed against the Queen's insistence that he had no rights over the metals they were digging from his land. Perhaps the Earl was so resentful he deliberately encouraged, maybe funded, those local men who sought to harass the Germans, then went on the lead the Rebellion of The North. But, can any visitor to Goldscope, even today, fail to be impressed by the scale of the engineering, the boldness of the ambition and the sheer meticulous beauty of the workings, some of which are still just as crafted by the Germans almost four hundred and fifty years ago.

Zoom Talk – A Brief Illustrated History of Coniston Coppermines – 18 December 2020

Mark Hatton gave an Online Presentation on the History of Coniston Coppermines to twenty CATMHS Members. The talk started with the question of whether there was any firm evidence of Pre Elizabethan Mining at Coniston. The conclusion reached was "not yet", but we remain open minded on the subject. We then looked at the late Elizabethan and early C17th works, where they were, how far they went and why they came to an end. The conclusion reached here was that whilst Coniston had been quite vigorously worked for copper in this period, the logistical problems of getting the ore to the Keswick smelter, the hardness of the rock and the problems of working vertical veins all conspired against Coniston mine working for more than a couple of decades.

The next large scale mining at Coniston was thought to be Charles Roe's Macclesfield Copper Company in the second half of the 18th Century. The investment in a pumping and winching system at East Bonser allowed these miners to take the Bonser Vein down quite a bit further than the C17th efforts had reached. Over the forty years that they held the lease, mining efforts seem to have been quite sporadic. No doubt the Macclesfield Copper Co's discovery of The Great Lode at Parys Mountain in Anglesey in 1768 created such an abundance of copper, worked at low cost and well placed to be shipped straight to the St Helens smelters, that made the Coniston Mines look very poor by comparison.

The next and most serious effort of them all came when John Taylor & Sons took on the lease in 1824. John Taylor was a highly accomplished engineer, chemist and entrepreneur with mining interests in Yorkshire and Cornwall. He sent his manager, John Barratt over to Coniston to assess the potential of the mine. John saw something that no one else had seen and persuaded John Taylor to invest heavily in the mine. Over the next few years, at huge cost, the Bonser Vein was attacked from three new levels at three different horizons. Taylors Level (named after the boss), Flemings Level (named after the landowner) and Deep Level were pushed forward through extremely hard rock, whilst the Bonsor Mill was made ready and wheelpits and water leats were dug. The returns were initially quite modest relative to the



investment made and certainly John Taylor was enjoying far better returns from his Cornish copper mines at Gwenapp. But after much stubborn persistence on the part of John Barratt, the returns started to look a bit more respectable. This was particularly true after John Barratt himself had acquired most of John Taylor's shares and was promoted from Mine Manager to "Mine Adventurer" in the 1841 census.

Over the next twenty five years, up to John Barratt's death in 1866, Coniston Coppermines was mostly thriving, employing hundreds of men, women and children. Coniston village grew rapidly as families arrived from Ireland, Cornwall and Yorkshire to find employment at the mines. The mine itself was worked vigorously at both Paddy End and Bonser, with plentiful supplies of water power working large waterwheels for pumping, winching, stamping, sorting and wood working duties. Copper ore in this period was mainly sent down to South Wales for smelting, which would have reduced profit margins quite considerably. The arrival of the Railway Line at Coniston in 1859 would have helped, but only briefly, as by then the mine was so deep, and cheap copper ore was being imported from Scandinavia and South America. There were a number of efforts to keep the mine alive after 1866, but none could possibly succeed against the triple evils of rising costs, falling yields and falling prices. Whilst the mine hung on for a few more decades, it was a shadow of its former self. Various efforts were made during the 20thC to rejuvenate the mine, none of which were successful, and everyone who tried went home that much poorer as a result.

8th January. The (silver) mine of Carlisle

On the 8th January Peter Claughton gave a lecture, on line through the medium of Zoom, on *English, or Scottish , Silver in the 12th Century - the Mine of Carlisle.*

In the latter half of the century money supply in England increased by a factor of at least four – with perhaps £250,000 in circulation by 1205. Over the same period Scotland was able to introduce a separate national currency. Payments in silver received in respect of exports to continental Europe would have contributed in part to the increase in supply but the major contribution came from a significant increase in silver produced from the Northern Pennine Orefield - in particular from the northern part of the orefield, the Alston Block, from Alston in the west into Weardale in the east.

The silver workings to the east, in Weardale, were on the Bishop of Durham's estate but those focussed on in the presentation, collectively known as the Mine of Carlisle, lay within the Liberty of Tyndale, the south Tyne valley, controlled by the English Crown. They were also known as 'the mine of Aldneston (Alston), currently in the Exchequer by the name of the mine of Carlisle'.

The documentary evidence for silver production comes primarily from entries in the Pipe Rolls. These were –

- 1) The farm of the mine – an entry in 1130, and then annually from 1158. The farm of the mine being a lease of Crown income from the working of the minerals, i.e. that portion of the ore due to the Crown from the miners. It was not a lease of the minerals and the farmer did not control the working of the mine.
- 2) The debts of the farmers.

- 3) The value of lead taken by the Crown for castles and grants to ecclesiastical institutions.
- 4) The profit, to the Crown, from the mine in 1184 and 1185 when the farm was not leased out. And there were also references in chronicles of the period. These confirm the discovery of silver and one, Henry of Hexham, claims that the miners were paying the Crown £500 yearly in the early 1130s.

The working of the mine was governed by what may have been customary regulations, and they may have been codified in the 12th century. Although the regulations have not survived in written form, they were referred to in enquiries carried out from the 13th century onwards.

They included –

- 1) That ‘The King shall receive each ninth *disc* (dish) dug by the miners. And each *disc* should contain as much ore as a man can lift from the ground. And as to the remaining eight *discs*, the King should have the 15th penny of all the ore sold’. The ‘ninth *disc*’ in reality amounted to a tenth part of the ore mined – the church having taken the first dish as tithes. And it was the tenth part of the ore mined, due to the King, which was referred to in the Pipe Rolls – being farmed out to a third party.

- 2) That ‘The King shall find at his expense for said miners, a certain man called *Drivere* who knows how to separate silver from lead’.

- 3) That ‘The miners had the right to take wood for burning and smelting the ore’. And,

- 4) that the miners had ‘the liberty to elect one of themselves to be coroner and a bailiff called *Kyngessergeant*, who had criminal and civil jurisdiction in all matters concerning them and their servants’

Using the information provided by the Pipe Roll entries, along with information from the chronicles of the period it is possible to determine the approximate levels of production. In the 1130s production probably peaked at around 54-59,000 ounces per annum. There was then a period when we have little information during the occupation of the northern counties by the Scots. There appears to have been a second peak of around 36-39,000 ounces in 1166 followed by a period of significant decline during which the debts of the farmers rose significantly. In 1184, when the farm was not let, production had fallen to around 7,300 ounces, followed by an increase to around 11,000 ounces two years later, before tailing off to around 700 ounces per annum by the turn of the century. By comparison – the Bishop of Durham’s estate in Weardale, for which we have not got the detailed statistical evidence, probably peaked in the early 12th century at perhaps 43,200 ounces per annum. This was followed by decline, with a second peak in 1196 of 20,904 ounces.

In 1135, taking advantage of the instability in England during the reign of Stephen, the Scottish Crown occupied Cumberland and Northumberland. Although repulsed at the Battle of the Standard a few years later, the Scots retained control of the northern counties until 1154, and Carlisle became effectively the administrative capital of Scotland. David, the king of Scotland, made grants to ecclesiastical institutions based on the silver he was receiving from the mines. He also made gifts of lead from the mines to roof abbeys in southern Scotland, and the supply of silver allowed Scotland to establish its own currency, independent of that in England.

The presentation then looked at the evidence for the location of the workings of the Mine of Carlisle within Tynedale and the area known as Alston. Unfortunately we have limited knowledge on their location. No workings, or smelting sites, have been dated to the 12th century – in fact there is little, if any, dating evidence at Alston for medieval workings. In the 19th century iron tools of ‘an antiquated form’ along with coins of William Rufus were found in ‘old

workings' on Browngill Vein 'about Thortergill Syke' – probably where the vein cuts the Firestone Sill. At a similar horizon on the Briglaburn Vein, 1.5kms north-east of Thortergill Syke, evidence of firesetting was noted in the late 19th century. And plaited leather ropes have been found at Blagill and in the Tyne Green mines, and a stone hammer is reported from the latter.

What we have however are those mines which have been identified in the past as having a higher than average silver content. Thomas Sopwith (1833) noted that in 1821 Hudgillburn Mine, with silver at 13ozs/fother, produced 32,000ozs worth £8400, and that some 30-50 years earlier the silver yield per fother of lead at the following mines was - Thortergill Vein – 21ozs 5dwt, Nentsberry Hags – 21ozs 18 dwt, and Windy Brow – 17ozs 12dwt. With veins cutting the Firestone Sill around Middle Fell as likely candidates for early silver production.

Other mines with higher than average silver content include the Stow Crag and Sir John veins at Tynehead which could return over 40ozs of silver per ton. The same is reported for Clargillhead and Baxters in the same area, and the name Steel Vein at Tynehead suggests a lead vein containing galena and associated silver-rich ores. In fact there is evidence to suggest that supergene enrichment had affected the veins at Tynehead, with boulders of rich silver vein material, yielding over 2000ppm (well in excess of that which can be carried by galena alone), in the area of Chesters, having probably been eroded by glacial action from the veins at Tynehead.

We might also consider the smelting sites which would have been active in the 12th century. If they can be identified and fragments of burnt wood recovered, they are the easiest to date. But that work has yet to be carried out. The prime candidate is the area known as Bayles, 1 kilometer south-east of Alston town, but there are others – the speaker has found smelting slag on Fletcheras Vein, where it crosses the Firestone Sill, but failed to identify the site of the hearth itself.

The presentation was then opened up to the audience, who would have a good knowledge of the landscape of the area – both above and below ground. And, in the long term, there is surely the potential for an investigation focussing on mining in the medieval period.

Subsequent discussion covered a number of potential early sites. It also highlighted a recent discovery, published in the latest Journal of the Russell Society, of microscopic levels of native silver in vein material recovered from Clargillhead, supporting the idea that the veins in that area of Tynehead retained evidence of supergene enrichment. Information was also provided on the discovery of 'smelting slag' at Carlisle, which warrants further investigation. And, later, photographic evidence was provided for potentially early ore preparation sites, with mortar stones, at Browngill Sun Vein and another site to the east, on the southern side of Middle Fell. It was also felt that there was clear potential for a field visit to Alston once the conditions allow.

The speaker would like to thank the society for the opportunity to deliver the lecture, and the audience for their active discussion of the evidence presented.

Peter Cloughton.
P.F.Cloughton@exeter.ac.uk

DRAFT: Proposed Florence Mine Survey. Condition and artefacts

Introduction

The Mine shut down in 2008 and since that time the site has been utilised by the Florence Arts Centre, which is accommodated in the former shower/workshop/office block. The former carpenter's shop has also been used for the manufacture of gates and railings and is currently being used by a welder/fabricator. Over time there has been a steady deterioration in the condition of the buildings and many artefacts including mineral specimens have been taken from the site with, and without, the permission of the owner. Florence mine was listed by English Heritage in October 2018, grade 11, due to its historical and architectural interest. To quote; "as a remarkably intact mining pit head complex including a full suite of buildings containing most of its machinery and equipment in situ: one of the best surviving mining sites of any type nationally, certainly the best surviving example of an iron mining pit head in the country".

There has been previously a heritage centre at Florence but this closed following a difference of opinion between Gilbert Findlinson, the owner, and the heritage centre on how to spend the residue of the money provided by BNFL for extracting water from the mine. The Florence Arts Centre, which now occupies the former heritage centre but is separate from the mine, continues to attract visitors who are primarily interested in the mine and are disappointed to learn that the heritage centre has closed. Following the closure of the heritage centre the contents were offered to the Beacon Museum in Whitehaven. There are some artefacts remaining at the Arts Centre, which would like to open up an artefacts room, funding permitting.

Future of the mine

It is unlikely in the extreme that there will be any more deep mining at Florence due to the cost of pumping water and the loss or deterioration in the plant and fittings. It is no longer possible to go underground as the mine is flooded to approximately three metres of the surface. There is an amount of processed iron ore on site which is occasionally sold by Gilbert by the lorry load. In the meantime there has been a steady deterioration in the buildings, the contents and there have been a number of 'break ins'. Gilbert has remained optimistic that the mine can live on but there is no immediate prospect of funding to enable this to happen, and Gilbert I am sure would admit that he is no longer in the first flush of youth! There are no grants currently available through English Heritage for grade 11 listed sites.

Survey

The purpose of undertaking a survey is to record the current physical condition of the buildings and to record and conserve the mining artefacts remaining on site. With information gained from a survey, Gilbert Findlinson, the mine owner, and the local community can then make informed decisions on what measures need to be taken to protect and preserve this mining site of architectural and historic interest. Gilbert is in agreement with a survey and will permit access to locked areas.

Method

CATMHS members and the Society undoubtedly have the knowledge and expertise to undertake a survey to inform decision making. CATMHS has a track record in this regard, having previously undertaken valuable work to secure and preserve Cumbria's mining heritage. There are a number of options on how the survey might be conducted.

A CATMHS meet(s) could be organised with due regard to Covid 19, government legislation and the health and safety of members, and or, individuals or smaller groups or pairings could also contribute specific skills in construction, building, surveying, use of drones, cartographic skills, recording and photography. Split into achievable chunks.

Artefacts can be recorded labelled and if necessary moved to a more secure location.

Scope of survey

1) Buildings:

Heapstead with head frame
Winding Engine house
Ore processing plant
Fan house
Compressor house
Workshop
Power house
Former shower block and mine office (Florence Arts Centre)

Former use and description of function.

Construction

Contents

Power, machinery and artefacts

Condition including defects

Any remedial work required.

2) Mine yard:

Layout and contents

Action required to conserve or preserve.

3) Former rail and road network, movement of men and materials. The context and all relationship with Ullcoats and Beckermets mines.

Method

Split into defined areas and tasks Determine method of recording, template, computer files. photographic record, drone survey, plan etc.

Label and move artefacts to more secure location as required. Assessment of condition and repairs required.

Work in pairs, social distancing.

First Aid Telephone at Florence Arts centre

Buildings trip hazards – lighting

Health and safety:

Working from heights. Safety rope harness with belaying off secure anchors

PPE: Helmets, overalls, gloves.

Use the Arts centre as a base while recording is in progress.

There is a large amount of recorded history of the mine from TV programmes such as Fred Dibna's visit. 'Hettie Wainthroe' and archive material held by individuals, the Beacon, the Whitehaven records office, the Egremont estate and the Florence Arts centre etc. It would be a useful exercise to establish what exists and where.

An Artefact room at Florence

A space has been 'ear marked' for this but work will be needed to secure funding, permit public access, publicity, interpretation and to collect mining artefacts for display.

Bob Mayow 8/8/2020

Update Report on the Stabilisation and Interpretation Project on Coniston Old Man

This brief report gives current details of the extensive work that continues to be carried out on the Stabilisation and Interpretation (S & I) project at the former workings known as Old Man Quarries on the north east shoulder of Coniston Old Man.



The lower section of the Old Man Quarries complex can be seen in this drone image taken by Mark Simpson. Originally the three banks shown, Low Bank, Saddlestone Bank and Smithy Bank, were established when slate rock was mined from locations deep within the mountain and slates made on the respective banks. The mines themselves have been surveyed in past years but the entrances blocked more recently to avoid damage by ‘explorers’. Above Smithy Bank the cave-workings of Fisher Bank and ‘Light Hole’ are very evident now that the roofs have collapsed. In more recent years Saddlestone Bank became the main processing site for these workings with slate clog transported down to the bank from above by horse drawn sledges and, more recently, by aerial flights.

In the last newsletter I explained that the team was preparing for the bidding stage of the project and had selected three wallers to quote for stabilisation work on three of the nine former quarry banks which make up Old Man Quarries. The three sites, Saddlestone, Smithy and Spion Kop Banks, had been selected as a result of a ranking exercise carried out earlier in the year, based on the ‘scoring’ of site suitability. The results of this bidding showed that the sites needed to be reduced from three to two and the method of wall-head capping of the old buildings on the sites changed to avoid expensive helicopter-lifts of materials. As a result, a Phase 1 of the work will take place at Saddlestone and Smithy Banks, but further work in the future may be undertaken at the higher banks. Following several visits to the site by Eleanor Kingston and myself a modified specification for the work was set out in autumn of 2020 and a formal visit to the site took place on 10th December for a meeting with the three wallers. A specification for the stabilisation work has now been drawn up and passed to the wallers who will respond during January. Most of the interpretation work for panels etc has now also been completed in draft form. We plan to include some aspects of The Smithy on the Low Bank horizon as part of the overall interpretation of the Old Man Quarries and the slate-working process in general.

There has been some uncertainty over funding for the project as the High Level Stewardship Scheme, which had initially been earmarked for the funding source, will not now be able to do so. However Eleanor has two other possible sources of funding to cover the cost of the wallers work and also interpretation panels for the site and I have located a third source, so it looks as if sufficient funding will be available. We are aiming for a start of the work to take place in the Autumn of 2021 or Spring of 2022. I have also kept Carter Jonas, Kendal, property agents for the owners of the site, up to speed on the project. What is extremely important is that there is a lot of interest in this project within the Coniston community, which is understandable as a high percentage of local people in the village have had a father or grandfather who worked at the site.

Eleanor is keen to become more aware of the full production operation at the Old Man Quarries site and I am arranging to take her into High Moss Head and Spion Kop to look at what became known as the 'weasel' system that was developed when these chambers were being worked. I hope that Ian Kelly, whose dad spent many years working in Moss Head, might drive us up to nearby Brossen Stone and join us on this trip. However this is for the future. Fortunately the present work up on the mountain has been completed and the next stage of the project will be a significant amount of desk-work! There will be little delay as a result of the pandemic. Eleanor is also planning to see if the Coniston Old Man web site can be included in a local collection of other similar web sites and also find a suitable 'home' for the valuable collection of oral history recordings made with former slate-quarrymen who worked at the site. These were prepared during the English Heritage project undertaken by us on the Old Man in the 2000's. Subsequently these recordings became fundamental to the success of the work to identify the production methods used at the site during the last century of operation.

Alastair Cameron. Jan 2021.



The drum-house contained the mechanism that controlled the aerial flight that transported slate clog down from Moss Head to Saddlestone Bank. This photograph, taken about twenty years ago, shows the structure partially collapsed. The horizontal sheathed wheel that controlled the rate of descent can be made out within the structure. Plans are being drawn up to partially restore the building to avoid further deterioration.

Greenside Exploration - A new ground pick-me-up for troubled times

When Mines of Lakeland Exploration Society was wound up as an official society, a small group of its active members, Tony Holland, Dave Gledhill, Roger Ramsden, Martin Willey and myself, decided to continue exploring under the MoLES name. Still exploring into 2021, apart from poor old Martin, we have been extremely successful, with significant areas of new ground still being regularly gained. All discoveries are recorded, but in contrast to mineral harvesting and the internet glory hunters, who have no regard for safeguarding the places they publicise, we opt to keep many of our successes under our rather large hats.

The “Lucy Shaft Task Specification” recently came to my attention whilst idly browsing the CATMHS archive, and since Greenside access is controlled, and also the CATMHS health and safety framework has apparently not facilitated its aficionados in rediscovering this area themselves, I thought I had better extract this one from under my woollen headgear where it has been gathering dust for some time.

Having a little break from the North Pennines, MoLES had a bit of a jolly down into the depths of Greenside. Whilst examining one of the stopes, Tony remarked that he could hear running water, before stepping aside and prodding me towards the boulder choke. With a bit of thrutching around I eventually found a good foot hold and wriggled a path between the mostly wedged rocks, finally emerging on a rubble pile at the base of the wide, but choked stope.

Looking around, the way along the vein to my right and above was blocked with boulders, to my left the slope descended steeply to what appeared to be a railed level, ahead of me, up a small but awkward step I could see a smaller level... it was this that I decided to investigate first as I had an idea where it was heading. But first I called the rest of the gang to join me. After a couple of failed attempts, I was up the step and, seeing the level was a goer, set up a bit of rope to help the lads up. The level went into the footwall of the vein, the floor covered in clog and hobnail boot prints and also the remains of a small wooden barrel or bucket. Shortly the level curved to the right and ended in a small hole which, on looking through, confirmed my hunch. I was looking down into a large chamber containing concrete engine beds with numerous protruding holding down bolts – we had found the elusive Lucy Shaft.

After retrieving our rope and a short length of iron bar, we managed to rig a belay to allow us to get down into the engine room, the floor of which was quite muddy and strewn with rotten timber. The layout of the engine room and shaft top was unusual in that the chamber was sited approximately 15ft above the shaft collar, and the shaft lay between the engine and the now blocked branch of Lucy Level. Men had accessed the engine via a ledge alongside the shaft, into a short bit of level and



Engine beds, the access hole is visible upper centre of the picture.

up through a hole in the engine room floor. It meant that during construction, all the winding and pumping machinery had either gone through this tunnel, or up and over the shaft top. Lying amongst the mud on the Lucy Level floor was a small segment of the winding sheave wheel. The now flooded shaft was massive, approximately fifteen feet square, a very impressive sight. Although all of the pitwork from the shaft has been removed, there are numerous large 'notches' cut in the wall above the shaft to support massive timbers for the winding & pumping equipment.



*Lucy Shaft.
Top left is
the blocked
passage to
Lucy Level
main drive.*



Shaft on Right, access level to engine room on left.

After having a good poke about and photographing various small artefacts lying about, we climbed out of the engine room and continued our exploration of our new ground.



Bucket remains & clog prints



Oil can

Back to the start of the little access level, we crawled past a partial collapse into another branch of the level. Here the miners had set up a simple means of collecting water from a spring in the level wall using a 'U' shaped piece of corrugated sheet. Around a corner, at the top of a shallow, choked sump the water was collected and fed into a small pipe by a low concrete dam. Across the sump and around another bend, we reached an iron ladder back down onto Lucy Level horizon. Across from the top of the ladder, on a ledge, was another low concrete dam overhung by huge blocks in a choked rise/stope. I managed to get up to this ledge by repositioning the ladder, getting soaked in the process as the stope above was pouring with water. Unfortunately there was no way further upwards – completely choked.

At the base of the ladder, we followed the level west to a wide junction, where it took a sharp left turn. A small hole cut in a side drive was squeezed through into another choked & flooded stope, but again no further ways on from here. Back in the



main level, miners had written their initials TM & TW in soot adjacent to this small access hole. There were also a number of iron hoops from a wooden barrel. We then followed the main level around a few twists & turns, eventually reaching Lucy Level's southern forehead with more miners' graffiti, names & dates from 1918 and 1923 scratched on the walls.



Launder from wet stope

Re-tracing our footsteps back to the iron ladder, we explored the level in the other direction. Down a little rubble heap at the bottom of the rise and back into the level, it became apparent that the water pouring down from the stope above had been a problem to the miners in the days of working, they had constructed a large wooden launder which ran down the rubble heap and along the level floor, this was in nice condition. After a short distance we passed over a number of corrugated iron sheets which had dropped from the roof onto the launder, then passed a short drive on the left – this had at one time connected with the sump at the first concrete dam on the level above. Passing under another waterfall from the choked stope above, we emerged back where we first entered this new ground, looking back at the launder through the falling water, we had mistaken this for railway lines when we first entered. Well chuffed with our unexpected new Lakeland discovery, we headed for the climb back to day.

Records suggest that pumping and winding was carried out by a hydraulic engine, using water carried down from the upper workings of the mine, we didn't see any obvious clues to the route of the supply pipeline, but it may have been brought through the small level that we used to gain access to the engine chamber. The small hole where the level breaks through the chamber wall didn't look as if it had been created for men to use for regular access, but from what I remember, there were no signs of supports for a pipeline, or any imprints of pipework in the mud on the floor. This area needs some serious investigation.

Apologies for any errors in this account and the poor quality pictures as we hadn't gone prepared for new discoveries and class pictures. We have been unable to go back to refresh our memories of the area as apparently the ladders from Glencoyne are currently impassable. Hopefully when normality returns, we might be granted access via the front door rather than the long walk to use the tradesmen's entrance.

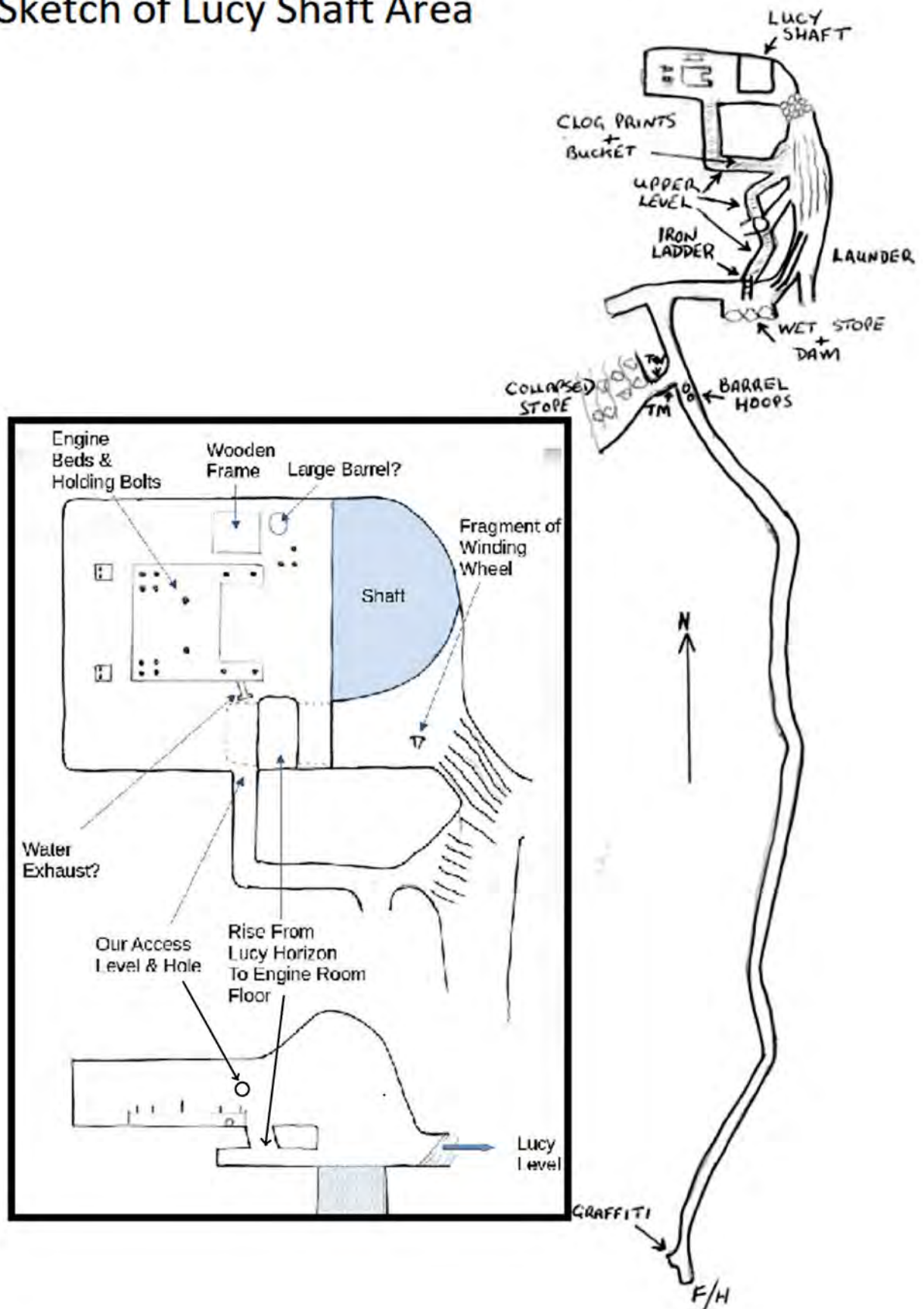


Lucy Level southern forehead

Ian Hebson.

Greenside Mine

Sketch of Lucy Shaft Area



Seeing the North with Sankey:

From 1895 to 1965, father and son team Edward and Raymond Sankey photographed Barrow-in-Furness and the wider area of Cumbria and Lancashire. The 15,000 images they took have been passed on to the Barrow Archives. Beginning in January 2020, we started workshops with our local communities in describing, cataloguing and researching this unique Sankey Family Photography Collection. During lockdown, we invited all those involved to choose a favourite photograph to explore in depth for a new online exhibition called 'Photo in Focus'.

The following article is based on research by Les Eveson of Barrow



9382, Heslop Beam Engine, Sankey Family Photography Collection, published courtesy of Signal Film and Media. © Cumbria Archive Service.

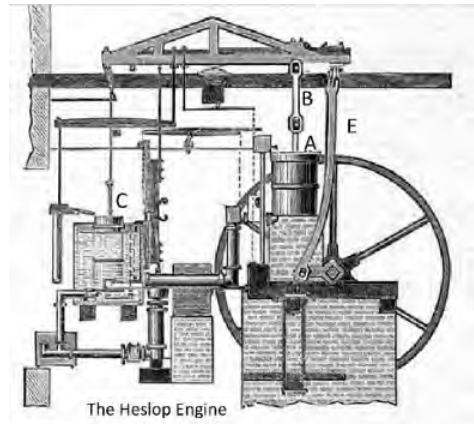
Unfortunately, the location of this engine is not known. Was it a Northern survivor, one of the earliest pictures in the collection, or is this a picture of an earlier picture? We are hoping that this article will provide us with more information.

A short introduction to the inventor

Adam Heslop was born in 1759, the son of a Scottish Blacksmith, just as the Industrial Revolution was starting. His early career was at the Seaton Works near Whitehaven, where he made cannon for local merchant ships. In 1790, he had moved to Shropshire, and worked at the Ketley Ironworks for “improvement and experience” with William Reynolds, a Shropshire Ironmaster, who was very impressed by him. He saw a way to make a “portable” winding

engine which was also more efficient, and having patented it, built several engines while in that area.

In 1794 Adam established Lowca Engine Works to build Heslop Engines, as they became known. One of the first of at least fifteen engines built was installed in 1795 at Kells Pit, Whitehaven, then moved to Castlerigg, and in 1837 was moved to Wreah Pit, part of the Whitehaven Colliery, where it ran until 1878, when it was donated to the Patent Office (later the Science Museum), by the Earl of Lonsdale. They claimed that at eighty years running, it was the oldest one still running. One of the old Lowca patternmakers had secured a position at the Kensington Museum and was instrumental in saving the engine. See:



<https://www.scienceandsociety.co.uk/results.asp?image=10280787>

<https://collection.sciencemuseumgroup.org.uk/objects/co50951/heslops-winding-and-pumping-engine-1795-the-win-stationary-engine>

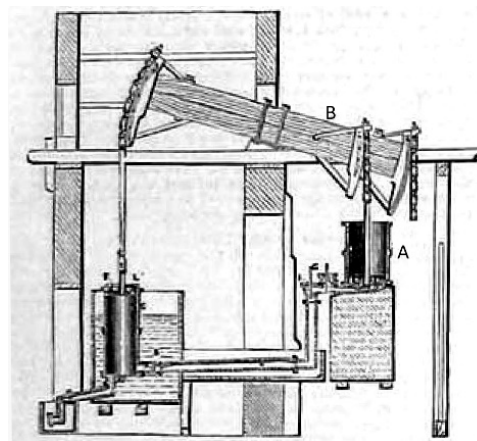
The development of steam engines

Steam engines provided a major impetus to the development of the Industrial Revolution. Their use moved industries away from fast flowing water needed for power to anywhere across the country where there were raw materials or manufacturing units. The first engines were stationary, used for winding or pumping and it was some time before the first locomotives used steam power for travelling. The Newcomen engine was invented 1712. It was operated by condensing steam drawn into the cylinder, thereby creating a partial vacuum which allowed the atmospheric pressure to push the piston into the cylinder. James Watt (1736 – 1819) was asked to repair a Newcomen Engine and realised he could make it more efficient by fitting an outside boiler. He patented his design in 1769 and joined forces with Matthew Boulton in 1775 to begin manufacture of what was a highly adaptable engine. As the need for coal, transport and speedier manufacturing increased, the race was on to provide more and more efficient steam engines, and in order to control competition, James Watt took out a series of restrictive patents.

How was the Heslop Engine different?

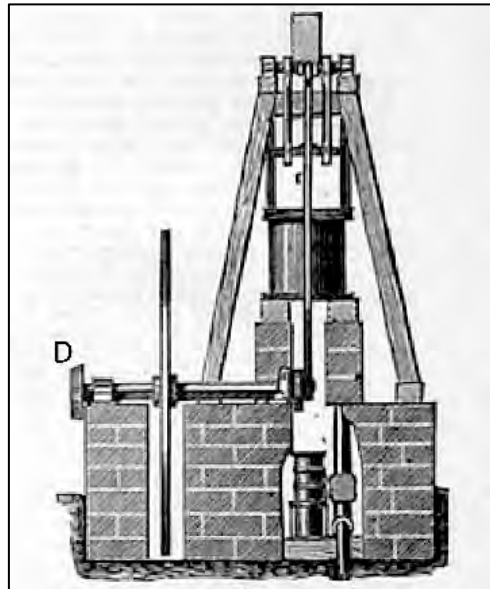
Heslop introduced two ideas that gave his engine an advantage. At the time, many enterprises were short lived, mines were shallow and became worked out, production moved to bigger sites and so Heslop made his engine “portable”. It meant that the whole thing could be dismantled and moved to a new site.

In technical terms, the improvement in power came from using two cylinders. Smeaton, working with Newcomen Engines, estimated 60% of power was lost heating and cooling the single cylinder. By

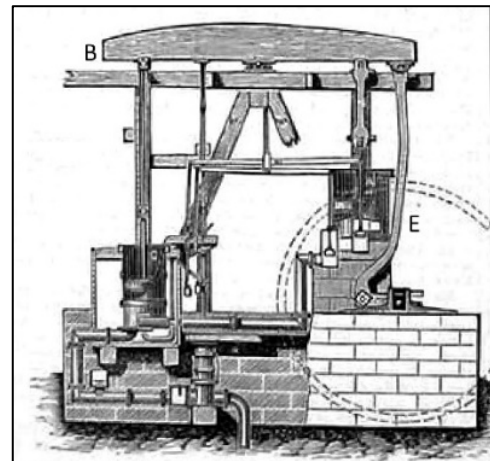


having a hot and a cold cylinder, Heslop increased the efficiency of the engine.

‘The steam, on being admitted into the first, or ‘hot’ cylinder, raises the piston by its pressure underneath; the return stroke is then made by the weight of the connecting rod and by the momentum given to the fly-wheel. The eduction valve being now open, the steam passes from this cylinder to the second or ‘cold’ cylinder by means of the connecting pipe, which, being constantly immersed in cold water, produces sufficient condensation to ‘kill’ or reduce it to atmospheric pressure as it enters and fills the cold cylinder. The cold piston having arrived at the top of its stroke, and its cylinder being thus filled with steam and the injection valve being now open, a jet of water is admitted, thus bringing a vacuum into play.’



At this time, iron-making and mining interests were expanding and owners recognized that there were now opportunities to clear out more water from their mines and increase the blast into their furnaces. Heslop was careful not to infringe Watt and Boulton’s patents so he didn’t use the term “condensing” in describing the cold cylinder’s purpose. Heslop was also helped by the fact that, very soon, his design was being used to produce parts for Watt’s own machines. A very detailed description of the working of the engine can be found at <https://davidhulse.co.uk/steam-engines/adam-heslop-winding-engine/>



This includes videos of the replica engine he has built showing it in operation

Heslop Engines in Shropshire

In the 1780s, Shropshire was at the heart of the Industrial Revolution with mining, iron smelting, foundries, potteries and other industries concentrated around Coalbrookdale. Originally Blists Hill was an industrial region consisting of a brick and tile works, blast furnaces and coal, iron and fire clay mines.

Heslop manufactured three beam engines for the Blist Hill mines, furnaces and brickworks. When reading of the donation of the Whitehaven Engine, a Mr W Anstice remarked that they had three of the same engines now at work, and which had been at work for the past eighty years in the Madeley Wood Co.’s Field; that they still had five, and had had eight. This led to an interesting correspondence in the course of which Mr. Anstice sent up an original drawing, which proved to be one of an earlier engine even than the one they had, and the one for which the original specification was taken out. One of the engines was still running in 1912. The unique Heslop Engine House at Shawfield was demolished in the late 1970s for “safety

reasons” along with other buildings on the site. An excavation of the Heslop Engine House took place at Blists Hill in 1982.

(http://search.shropshirehistory.org.uk/collections/getrecord/CCS_ESA3226/)

A short section of the Shropshire Canal ran across the site to the Hay Inclined Plane, which transported tub boats in special cradles up and down the 207ft (63m) tall incline from Blists Hill to The River Severn at Coalport from 1790s to the 1890s. The inclines on this canal were the first of their type to be built in Britain. At the top of the incline was a steam engine that acted as either a brake or as a hoist for the full tub boats ensuring a continuous flow of traffic, counterbalanced by an empty boat being raised to the canal. At the bottom of the incline the rails went underwater allowing the boats to float free. Another construction, the Wrockwardine Wood inclined plane, began in 1791 after the Ironmaster, John Wilkinson had personally petitioned Parliament to extend the Shropshire Canal from Snedshill to form a junction with the Donnington Wood Canal. The engine that served the plane’s lifting operations was the work of Adam Heslop of the Ketley Works and had a 12 inch bore and a 7 foot 6 inch stroke.

Back in Cumberland.

It’s not known how many engines Heslop built after he returned north but it thought that it might have been fifteen. He was working with his two brothers, Thomas and Crosby. He died in Workington in 1826 aged 67. Graces Guide to British Industrial History shows two adverts:

1826 Advert: 'STEAM ENGINES FOR SALE. TO be SOLD, by PRIVATE CONTRACT, - A Second-hand Fourteen Horse double-powered ATMOSPHERIC ENGINE, originally constructed by Messrs. Heslop, Engineers. Also, Thirty Horse double-powered Engine, constructed upon what is usually called Bolton and Watts' Principle. Further Particulars may be known on Application to Mr. JOHN PEILE, at the Colliery Office, Whitehaven. 23d October, 1826.'

1837 Advertisement: 'ENGINES FOR SALE. TO be DISPOSED OF, in PRIVATE, at the BOLTON COLLIERY, near Wigton, TWO Good ENGINES, separately Six and Eight Horse Power, on Heslop's principle. Also THIRTY-SIX INCH CYLINDER, with Piston and Rod attached. Application to be made to Mr. Joseph Benn, Bolton Colliery, Nov. 1st, 1837.'

(https://www.gracesguide.co.uk/Adam_Heslop)

By the mid-1830s the three brothers were all dead, so the investors in the business sold up, and the works was taken over by local iron mining partnership Tulk and Ley which began a long tradition of locomotive manufacture. And I’ll finish with an article from the Whitehaven News 12th July 1906 in The Durham Mining Archives,

“Adam Heslop was a draughtsman, designer, manager, traveller, smithy, fitter, moulder, machine-hand, all trades in one, not a "Jack" of all trades, but a master of each, he and all those with him were capable of beginning and completing any piece of work they had in hand. Adam Heslop, a blacksmith, an expert in the boring of cannon, a colliery engineer, a pioneer in that field of engineering which has made England the greatest power in the world, surely such a man is worthy of a place in our memory, one of which the county and town may well be proud.” (<http://www.dmm.org.uk/news19/9060712.htm>)

Stephe Cove. Millom, December 2020.

Collyweston Slate

A tiny village in Northamptonshire is the unlikely source of Collyweston Slate. Collyweston slate is entirely different to the more common slate of North Wales by virtue of being oolitic limestone rather than a metamorphosed mudstone. It forms much thicker slates (average 15mm), and is arguably a flagstone rather than a slate.

The limestone from which Collyweston Slates are cut is part of the Jurassic limestone belt which runs from Portland in Dorset, via the Box Freestone Quarries near Bath, the Cotswolds, the East Midlands and up to the Humber Estuary at Scunthorpe. For most of the outcrop, the stone is used as a dimension stone for building, giving rise to the many 'chocolate box' villages along its route. It locally varies; as it passes through the East Midlands it becomes relatively iron rich, giving rise to the ironstone mines so extensively worked in locations such as Finedon, Irthlingborough and Corby, and the local stone built houses take on a darker brown appearance.

As the limestone passes along the escarpment formed by the downcutting of the River Welland on its way to the pretty town of Stamford, its properties change slightly once more, and it becomes relatively easy to split the material into thin sheets. It is this area around the villages of Collyweston and Easton-on-the-hill that Collyweston Slate is quarried.

Collyweston Slate has been used as a roofing material since Roman times, being widely used locally, and as far afield as Kings College, Cambridge, and Old Westbury Gardens in Long Island, New York. The arrival of the railways allowed cheaper slates from Wales to be used, so its use fell into decline until by the 1970's it was essentially obsolete.

The earliest slate was extracted from rock outcrops, or as a by-product of other quarrying activity, noting that the limestone was also used for building stone and for lime burning to improve the soil. The map shows the quarries in 1885.



Since then however, listed building status and heritage considerations, along with technological advances in extraction, have breathed a little new life into Collyweston Slate, so much so that a new underground quarry opened in 2015.



To extract the raw limestone blocks from an underground quarry (known locally as a fox-hole), the beds are undercut with a pick. The underlying strata is a highly compressed sand and therefore relatively easy to remove. As the ceiling is exposed, supports are built, either of stone, or more recently

acroprops. Eventually, the rock will start to 'talk', prompting the miners to retreat, removing the supports as they do so. The ceiling will fall, and the blocks can be taken out to day for further processing.

The worked out areas were filled to the roof with waste material. The working face was largely analagous to a 'long wall' as found in modern coal mines.

The method for splitting Collyweston Slate is quite unlike any other slate splitting process. The quarried blocks (logs) are left outside and kept damp so that the action of frost over the winter would weaken them in the cleaving plane. This however is not sufficient for modern production (and recent winters locally have sometimes been without sufficient frost), so an artifical process for this was developed by Sheffield Hallam University and Burghley Estate (who are the major landowner in the area) in association with Historic England [1].

Once a few freeze thaw cycles had been applied, the slates were cleaved with a 'cliving' hammer [2] and dressed to their final form. Once can't help but wonder if 'cliving' is a local dialect form of the word cleaving.

It transpires that there is a single underground quarry that can be visited, and so Chris Cowdery and Tom Ferry took a trip during the brief period between Lockdown #1 and Lockdown #2



The entrance is a single shaft, approximately ten meters deep. From the bottom, a level leads to the longwall working face, which is estimated to be a meandering 50m long. A second level leads back from the face but becomes choked. It probably lead to another (now lost) shaft to surface.

The workings are in remarkably good condition given the friable nature of the rock, and all the pertinent details are laid out for the visitor to see. A trip can be completed in less than fifteen minutes, such is the limited extent of the workings. A future trip should undertake to prepare a survey for the record.

Chris Cowdery.



Further reading:

[1] <http://shura.shu.ac.uk/17168/>

[2] <https://www.collywestonstoneslaterstrust.org.uk/gallery/tools#gallery-3>

http://www.stoneroof.org.uk/historic/Historic_Roofs/Collyweston_Slate.html

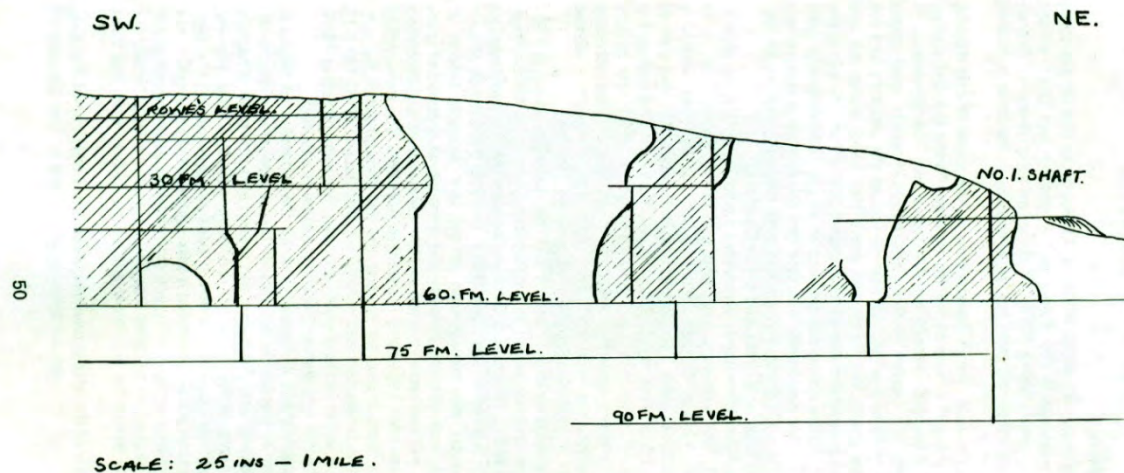
<https://www.collywestonstoneslaterstrust.org.uk/>

<https://www.collywestonhistoricalsociety.org.uk/collyweston-slate>



Sandbeds Lead Mine 60 fathom dig

Sandbeds Mine on the east side of the Caldbeck Fells is often thought of as being a Barytes mine worked in the mid-20th Century, but prior to that it was the lower part of Driggith Mine working the Roughtongill South Lode which was a Lead vein running NE-SW. In 1822, R.G. Braddyll of Conishead Priory started the 60 fathom level to undercut the upper part of the mine, but gave up in 1834. The mine was taken over by John Barratt of Coniston who worked the mine for four years and then a number of companies, some successfully ran the mine until 1879. The 60 and 90 fathom levels driven from surface with an internal 75 fathom level were connected with the upper workings and a large dressing plant was built below the 90-fathom level.



Longitudinal section of part of Driggith Mine

Section from W.T. Shaw "Mining in the Lake Counties"

A barytes vein was discovered running SE/NW in 1927 by John Hemmingway and William Blockley and was vigorously worked by McKecknie Brothers Ltd from the late 1940's to 1966 when the mine closed. The company also re-opened the old 60 fathom Lead level in search of additional barytes.

On a New Year's Day (from memory) in 1990, members of Mines of Lakeland Exploration Society (MoLES) met at Calebreck and went to the 60 fathom level which had two entrances, the original one and a newer one driven by McKecknies Brothers Ltd which still had the timber work exposed. Working out where the bedrock was, after a few hours the newer entrance was (illegally) opened.



Warren Allison (in much younger days) at the reopened entrance

We explored the level which, was fairly dry for a considerable distance, and on returning to the entrance, backfilled it.



In early 1996, permission was obtained from the LDNPA as landowner to dig out the original entrance, which unfortunately proved to be a mistake.

The timbered entrance is the one McKecknies Brothers Ltd drove and to the right is the original entrance.

However, we also suspected that there was a possible third level driven on a different vein and possibly older than the original entrance as the spoil heaps were at very slightly different heights, and so we started a dig on that one. Although we found remains of timber uprights, it was felt that the bedrock would be too far away and the level would probably not go for a relatively short distance, so it was abandoned.



This shows all three entrances.



Colin and Andrew Woolard digging with Pete Sedgewick supervising.



As the dig progressed water started to issue from the entrance and so we laid drainage pipes on the sole which we then backfilled. Norman Thompson (worked at Rotherhope Fell Mine near Alston as a chemist just after the Second World War) and Andrew Woolard. On exposing the bedrock unfortunately a large hole/collapse to surface was exposed and so we decided to use the techniques learnt from Greenside mine to dig through the collapse. We set timber uprights where the original ones had been and built a pack wall between them for stability.



Andrew Woolard standing on top of the new roof while timber from my old garage roof was laid to seal it.



Ready to drive into the collapsed ground.



The front of the dig as we drove timber into the soft ground in front.



Restoring the entrance and note the hole above.



Material from the collapse was wheelbarrowed to back fill above the level.



Unfortunately, due to the soft ground a second hole appeared, but we were still confident of breaking through.

It became harder to move the material up the hill, so a post was driven in the ground and a rope attached to the wheelbarrow, Colin Woolard would then pull on the rope to assist the wheelbarrow. Norman Thompson at the bottom of the photograph, Warren Allison on the wheelbarrow and Colin on the rope.



However, in October 1996 the MOLES committee decided that enough time had been spent on the project and called a halt to it. Fortunately, there was a small level approximately fifteen feet higher than the level just round the corner, which may have been used as a waterblast when it was being driven, which was opened out and a concrete pipe installed with a locked lid. The issue with this is that the level is only accessible during dry weather as it sumps up.



Andrew Woolard and unknown



The concrete pipe had to be manhandled up the fell to its new home. Unknown, Malcolm Charlton, Warren Allison, (Old)Pete Blezard, Norman Thompson



Pipe in position



Job completed.

The level was driven in good ground for approximately four hundred yards to where the stoping started and a crawl through some collapsed timbering gave access to what we assumed was ground just before No 1 shaft. Here it appeared that McKecknies Brothers Ltd had driven a bypass level round the original one to save having to drive through the collapsed stopes.



Original level with the rails still down.



Timbering in the original level.



Artifacts near No 2 shaft



A rope was tied off around the original rail at No 2 shaft which gave access to the 75-fathom level, which had some superb timbering to support the stopes

Remains of broken waggon wheels





After a short distance going SW the stope had collapsed, but travelling NE, a shaft which was timbered to provide a ladderway and a large hopper was reached. Unfortunately, the top forty feet or so had collapsed which blocked the route down to the 90-fathom level, but about thirty feet down was a sub-level with a lovely wooden wheelbarrow and a shovel standing in it.

The main reason for the dig not succeeding was as happened in mining, a lack of capital. We were unable to purchase the materials required to make the dig a success and what material we used was scoured from anywhere we could get it. We even got material from some of the collapsed areas at Potts Ghyll Baryes Mine.

The entrance to the level was closed up, but left in such a state that it could be easily uncovered and work resume, or dig out the McKecknies Brothers Ltd entrance. This is a remarkably interesting mine and one which should be revisited, especially as photography has moved on so much since it was originally opened up.

Warren Allison.

The Americans Do It Differently

Unless you have been living under a stone for the last four years the following may not come as a complete surprise. However, whilst tidying up the office the other week I came across a brochure from the State of Colorado which I picked up when on holiday there a few years ago and some snippets from it highlight some of the additional risks our transatlantic cousins have to contend with when exploring underground. Whilst the document lists many common dangers some unusual ones stand out:



Animals live in abandoned mines. Rattlesnakes, bats, bears or mountain lions can den or escape the heat in the dark recesses of a mine. Underground mines can be critical habitat for such species. You should not disturb them.

A 17 year old youth was shot by another target practicing youth who discharged his gun into the adit where the youth, father, and a friend were collecting ore samples.

A 19 year old boy was walking around at night and fell 40 feet into a shaft. He held on to a rock to avoid falling an additional 600 feet. One of the rescuers suffered from shock.

A 17 year old youth was seriously injured when a motorcycle accident hurled him 200 feet down the shaft of the Glory Hole Mine.

An 11-year old died when he fell into a mine shaft while skiing out of bounds on Aspen Mountain.

Two 21-year old men were test driving a new 4-wheel drive vehicle in Gilpin County. One of the men was in the jeep when it went into the Empress Mine shaft, fell, and the jeep became lodged 24 feet down the shaft. The vehicle had to be removed in order to continue rescue efforts. The man's body was eventually found 350 feet below the surface.

Take care! Jon Knowles.

CUMBRIA AMENITY TRUST MINING HISTORY SOCIETY

Registered Charity No. 1180198

- Honorary President:** Lord Egremont
Petworth House, Sussex
- Chairman** Warren Allison
Phone: 01228 523923
Email: chairman@catmhs.org.uk
- Secretary:** Colin Woollard,
Phone 01900 823686
Email: secretary@catmhs.org.uk
- Treasurer:** John Aird,
Phone: 0208 997 5985
Email: treasurer@catmhs.org.uk
- Membership Secretary
& Newsletter Editor:** Ian Matheson
Phone: 015394 32957.
Email: membership@catmhs.org.uk
- Meets Secretary:** Michael Oddie
Phone 07747 607691
Email: meets@catmhs.org.uk
- Webmaster** Chris Cowdery
Email: webmaster@catmhs.org.uk
- Committee members:** John Aird, Warren Allison, John Brown,
Chris Bunker, Stephen Cove, Chris Cowdery,
Graham Derbyshire, Mark Hatton, Ian Matheson,
Michael Oddie, Michael Pringle, Colin Woollard
- CATMHS website:** www.catmhs.org.uk

CATMHS Newsletter No 142, February 2021