

CAT

The Newsletter of the Cumbria Amenity Trust
Mining History Society



Florence Mine – Upper Heapstead. Photo by Martin Lawton.

No. 145

November 2021

Cumbria Amenity Trust Mining History Society

Newsletter No 145, November 2021.

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Society Officers and Committee Members

Back cover

Welcome to new members:

Thomas Calpin, from Carnforth. Tom goes caving twice a week with Kendal Caving Club and is keen to get down some mines.

Angus Gurr. Angus is Robert's son, and has been active with his dad for a while.

John Warner, from Stilton, in Cambridgeshire.

James & Janet Barrie, from Rossendale.

Membership renewal

The Society currently has about 190 members. CATMHS membership renewal is due on 1st November. You should find a renewal form accompanying this newsletter. Please renew your membership promptly, as it makes administration so much easier. Note that BCA insurance will lapse on 31st December if you have not renewed by that time.

Forthcoming Meets

Saturday, 13th November. Nenthead Traverse

The Great Nenthead Traverse. This is an eight mile epic underground with neck deep water SRT and dodgy shale crawls. Please allow for twelve hours underground. Not for those of a nervous disposition. Meet leader is Leif Andrew's and capacity is six. Meet at the Assay house on Sat at 9am. It's worth mentioning that this trip requires a good level of fitness - it's long and very wet.

21st November SRT. (Single rope technique) basic/advanced training session.

Exclusive use has been arranged of an SRT venue in Ingleton. Here you can practice your techniques in a safe and warm environment. Get advice and tips from experienced members and basically have a social day out.

11-12th December. Annual Dinner

The AGM will be held on Saturday afternoon at Rydal Hall and will be followed by the annual dinner in the evening. Participants can stay overnight at Rydal Hall (or elsewhere) and on the Sunday there will be a walk suitable for everyone, not involving mines. You should find a booking form and AGM Agenda with this newsletter.

ZOOM meets

Starting in January there will be a meet held by Zoom at 19.30 on the last Thursday of each month. Some will be presentations and some just social meetings. Talks on Silvergill mine, Forty years of CATMHS and the Tilberthwaite dig are planned. Members are invited to contribute their own subjects and additional dates can be added if required. Keep an eye on the CATMHS website and Facebook page for details.

Meet Reports

From formation of CAT in 1979, it has been considered important to keep a record of all our meets. At first, in the days before use of computers became universal, reports were hand written by meet leaders and kept in a loose leaf file. This ran to two volumes covering activities from January 1983 until January 1992. The records were augmented by an annual overview in the newsletter by Alen McFadzean. The early log books were digitised by Tony Holland and the originals are now the CATMHS Archive at the Armit Museum in Ambleside.

In order to make the reports more accessible, the logbook accounts were discontinued and instead meet reports were routinely published in the newsletter. The complete set of newsletters are available online on the CATMHS website for anyone to read, and people do read them,

especially during lockdowns! The logbooks are also available on the website, so there is a complete record of CATMHS meets from the beginning to the present time.

It used to be an accepted part of a meet leaders duties to provide a meet report for the newsletter, and as editor I expected and received reports as a matter of routine. There is an excellent and comprehensive collection of meet reports in this issue, but that isn't always the case. Quite a lot of information appears on Facebook which could be converted into proper reports. It is important that we maintain a record of our activities, and I appeal to all meet leaders to provide a report of their meet, and to do so whilst memory is fresh. If you can't do it yourself then maybe you could get one of the participants to contribute?

Ian Matheson.

The 2023 NAMHO Conference

The National Association of Mining History Organisations was formed in 1979 to act as the national body for mining history in the United Kingdom in order to promote education and research in mining history. There are more than seventy members, including mining history societies, underground exploration and recording groups, mining museums and corporate bodies. There is a website - www.namho.org and a Facebook page.

NAMHO organises an annual Mining History Conference, which is held in different parts of the UK and is hosted by one of the member organisations. It takes place over an extended weekend and events include lectures, seminars and field trips. In June 2022 it is to be at Grosmont, in the North York Moors, hosted by the Cleveland Mining Heritage Society. CATMHS organised the conference in 1989 based in Ambleside, and in 2004 at Coniston. It has been proposed that we should do so again in 2023.

The date and venue have yet to be decided, but it will probably avoid school holidays and times when the Lake District is most congested. To assess the viability of the venture we need to make sure that we have enough volunteers to make it work. There would be a small core committee organising things, but for the event we would need people to lead and to assist at surface and underground meets and to marshal and direct delegates around the conference base. If you would be prepared in principle to assist in any way at all, then please would you make yourself known, now, to namho@catmhs.org.uk.

CATMHS Logbooks

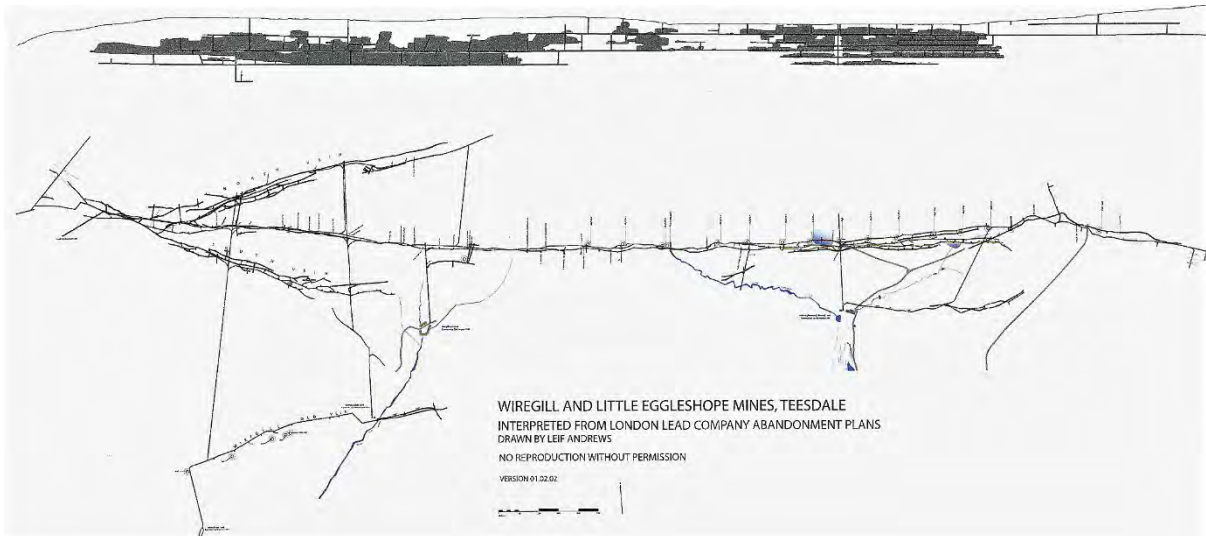
From 1983 until 1992 meet reports were recorded in logbooks, and subsequently they were included in the newsletter. There are two volumes of handwritten reports which are in our archive at the Armitt Museum in Ambleside. Some years ago Tony Holland digitised these reports, and they have recently been added to the CATMHS website: www.catmhs.org.uk – Resources – Logbooks 1983- 1992.

The Mine Explorer, CATMHS Journal Vol.7.

CATMHS Journal No.7 has been launched, with a view to publishing it later next year. Seventeen articles have been offered or commissioned, which makes it a viable proposition, providing that everyone who has agreed fulfils their commitment. This should serve as a reminder to contributors, if they haven't already done so, to make a start and get busy.

Leif Andrews mine plan.

Leif has offered another of his beautifully drawn and highly detailed mine plans – this one is of Wiregill and Little Egglestone mines. Email membership@catmhs.org.uk for a PDF.



Deep Level Gate Installation at Coniston Coppermines

Before we had Covid 19 in our language, CATMHS had been asked by the Lake District National Park Authority (LDNPA) to consider installing a gravity closure gate in the entrance to Deep Level at Coniston Coppermines.

Interest in this area stemmed from a large landslip at the end of January 2013 which had deposited material across the end of the level, causing water to build up in the level. Interested parties ensured the water flowed out of the level; but clearance of the many tons of debris required machinery and of course permission, since the area is a SSSI.



Landslip adjacent to Deep Level portal

Through the LDNPA a project was initiated which resulted in landscaping of the area to contain the landslip debris and to free most of the water from the Deep Level Adit. Following on from this activity a bridge has now been installed across Red Dell Beck to allow safe access for the walker's path up the valley beside the beck. Finally, it was decided that the level should be

gated to prevent access by inquisitive children etc. as the development of the adjacent Bonsor Mill Site by Mr Johnson would increase the number of people in this area.

Thus, CATMHS agreed to procure and install a gravity closure gate, that was not to be locked, but one that would deter all but dedicated and prepared explorers. Hopefully this would not become a target for vandalism since the bottom of the gate could be lifted up towards the person to readily gain access. The “Bat Friendly” gate was designed and with LDNPA agreement a contract was placed for the manufacture over in Darlington. Along came Covid! The gate was completed between lockdowns and CATMHS were reimbursed by the LDNPA. Installation had to wait its time until things returned to normal and the bridge across the stream was completed.

At the end of July 2021 CATMHS received a copy of a license by Natural England which had been issued to Rydal Estates (Carter Jonas the agent) allowing the gate to be installed. Upon LDNPA instruction we planned the installation following collection of the gate from Darlington.

On the 18th August 2021 John Brown and Colin Woollard went to site and installed the gate as shown on the photograph. A wonderful day out – someone suggested lowering the water first. Not really an option for us as the debris in the entrance had solidified and would take a long time to dig out. It may need a machine to lift out the heavier debris and also a second landslip has recently occurred during heavy rain. So - it was either blunder around in chest waders or get wet. We chose the latter option with the water just over wellie deep and the level blowing a gale of cold air.



The installation went as planned with brackets affixed to the bedrock using bolts set in resin with much care taken not to drop our nuts etc. into the water. A longish day but all completed with a pair of wet and soggy CATs crawling home.

C Woollard / J Brown

Progress at Newland Furnace

Heritage open Days: We were open to visitors on four days and counted 148 adults and 16 children. Sales and donations totalled £428.98, which is good, but they are the only visitors we have had this year.

Climate change has brought a series of floods and droughts which has enabled us to recover samples of Valley brand pig iron from the bed of the Leven. Other pigs have been found at Ainslie pier at Ulverston and at Askam pier. This year the water was low enough to reach the pug mill which was once the site of the forge. No new pigs were found but a piece of wrought iron bar was found and added to the display of finished products. Unfortunately one of our earlier exhibits was exposed as a fraud. It was found by a visitor near the rolling mill and we never questioned their belief that it was a tuyere. When it fell off the bench the scale came away revealing an ornate pattern more suitable for a hat stand.



The pug mill, site of a forge which existed prior to 1711.



The tuyere, now debunked.

Measures were taken to support the broken rafter without interfering with the flow of visitors. A draft plan to splice the rafter with steel plate has been submitted to English Heritage.

Exploration of blowing chamber: The photograph of the floor of the blowing chamber was taken by Dave Robson from a high shelf to show the progress of the ongoing dig. Work has been intermittent between lockdowns and has concentrated on a pit in the floor. It is about six feet deep so far and surrounded by masonry. It was filled in with some very large blocks, one of which must have bridged the pit before it was broken. The only purpose we can think of is a space for counterweights. My photograph taken looking upwards shows the very large beam above it with marks where heavy brackets have been attached.

Newland blacking mill and rolling mill: The rebuilding of this historic site is now complete and has featured on Grand Designs without any mention of its historic use. “Fred’s garage”, the large shed attached to the blowing chamber is also converted to a house now.



Newland Furnace blowing chamber

A. The pit, about feet deep.

B and D. These blocks were lifted out of the pit. B is a continuation of E and required the 3 ton chain hoist to lift it.

E. Large block still in place and surrounded by masonry.

F. 3 ton chain hoist

G. Axle of waterwheel (site of)

Red circles: marks on the floor indicating the possible position of blowing cylinders

Looking up from block E to the floor of the charge house showing where machinery has been attached to the large beam.



The competition: Backbarrow Ironworks Heritage Trust exists and they have given guided tours but they do not yet have the lease of the preserved buildings. It appears there was no serious intention to preserve the pug mill and the ore bunkers and these areas have now been sold on again to be developed as housing. At the time of writing the wall which hid the ore bunkers has been taken down.

References: Anton Thomas's account of recovering a pig at Ainslie Pier can be found on his YouTube channel "on any Sundry Mule"

Walney Island – A correction

A meet report for Walney Island in newsletter 144 showed Sankey photograph 1806 as an illustration of one of the Walney brine wells. Further research has shown that it is in fact a brine well at Preesall. The brine wells on Walney can be seen in the background of Sankey photograph 950 of the tanker *Appalachee*.



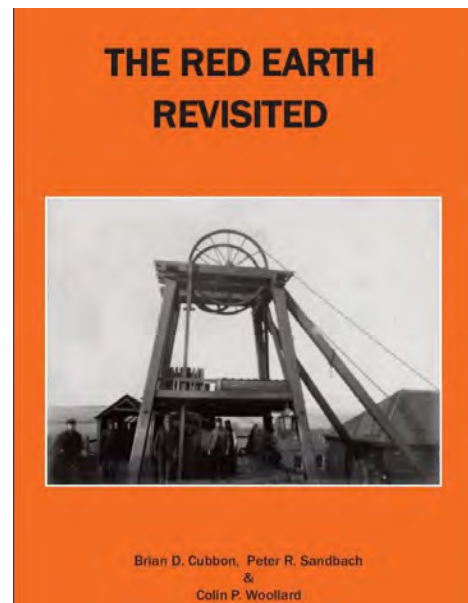
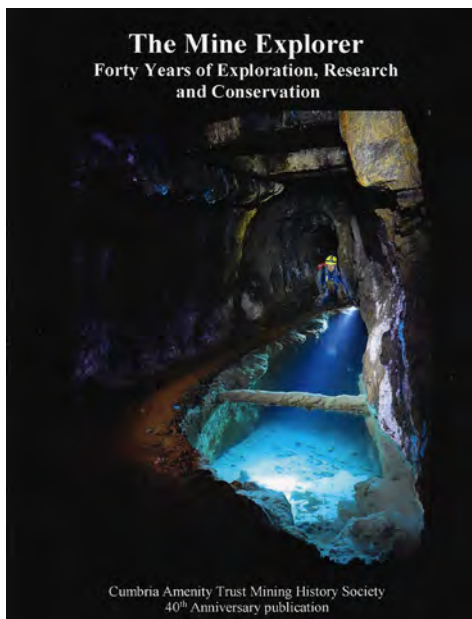
Appalachee leaving Barrow docks on March 24th 1910 with Walney brine wells in the background. Sankey photograph 950 © Cumbria Archive Service.

CATMHS Publications

Some CATMHS publications have recently been reprinted. You might consider buying one for yourself, or as a present or as a Christmas stocking filler! Available from the online shop on the CATMHS website or from the CATMHS Treasurer, 1 Hillcroft Crescent, London W5 2SG.

The Red Earth Revisited

A comprehensive coverage of the Furness Iron Industry. Based upon David Kelley's Red Earth first published twenty years ago, it provides a review of iron mining in Furness, describing its mines, their owners and management, employment and production, illustrated with photographs and updated maps. Hardback, 270 pages. The first print run sold out very quickly! £27 delivered.

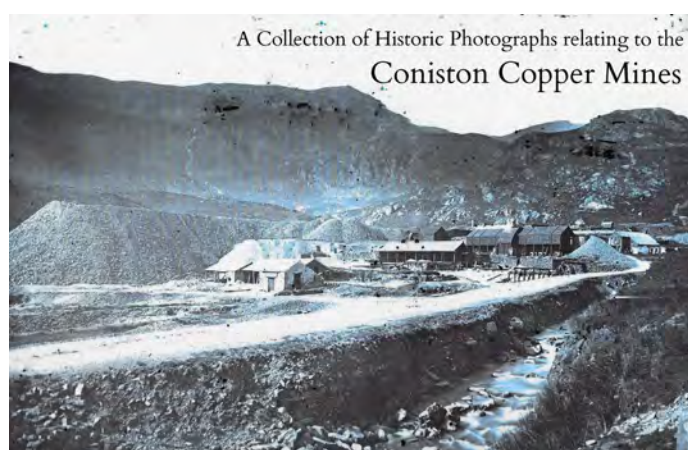


CATMHS - The First 40 Years

An anthology of articles and reports on CATMHS activities collected to celebrate the 40th anniversary of the founding of CAT in November 1979. It is a good read, and people have said that they found it hard to put down! A4 softback, 120 pages, lots of photographs. £12.50 delivered

Historic Photographs relating to Coniston Copper Mines.

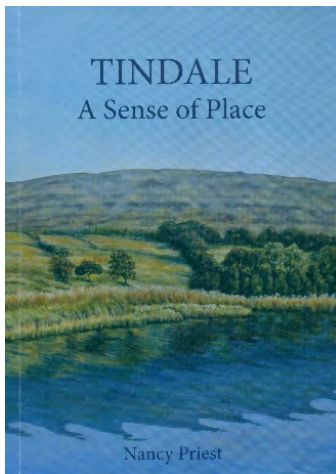
All the contemporary photographs that could be found of Coniston Coppermines Valley have been brought together in one volume, which shows the development and decline of the works over more than 150 years. There is an introduction with a brief history of the mines, and a section on dating the photographs, which are presented in chronological order with additional notes. At the end are some images from the late 20th century and a very short section on transport. A4 hardback, 100 pages. £20 delivered.



Book reviews

Two interesting books have been published which included description of coal mining, quarrying and zinc smelting in the area around Tindale by Nancy Priest in the north of the county, and coal, lead and copper mining at Hartley, near Kirby Stephen, by Sir Martin Holdgate.

Tindale - A Sense of Place



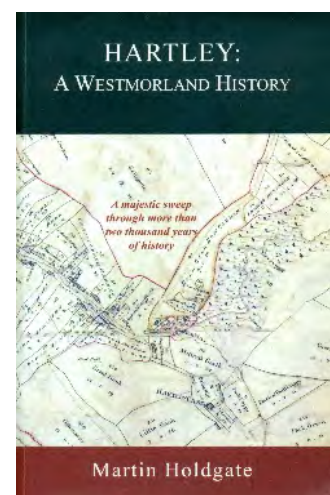
Nancy Priest covers the history of Tindale starting with “Setting the Scene” 10,000 BC to 74AD, through the conquest and ancient kingdoms, Romans, other medieval roots, the turbulent times 1296 to 1603, farms, Tindal village, social life. However, seven of the twenty chapters cover mining, quarrying and the zinc spelterworks.

It is rumoured that coal mining was started by the Romans, but mining expanded in the 1700’s and by 1798 the fifth Earl of Carlisle had built a wooden wagonway for horse-drawn wagons from Tarnhouse Colliery to Brampton. By 1808 the wooden wagonway was replaced by cast iron rails on stone blocks. Amongst some of the interesting facts are that George Stephenson, who is renowned as the “Father of Railways”, became instrumental in the development of the railways in the area from the mines. What I hadn’t realised is that the line from Hallbankgate to Midegholme was built to 48.5 inches which became the standard gauge adopted nationally, and is used in over half the rail networks worldwide. By 1836 steam locomotives were in use and even Stephenson’s Rocket was used on the lines to haul coal. There are chapters on the Thompson era from 1837 to 1908 which ended in the disaster at Roachburn Pit, through to the last days of coal and rail when the King Pit at Midegholme closed in 1955. The famous Zinc Spelterworks which operated intermittently from 1845 to 1937 using zinc ore from Alston and the quarrying of limestone and whinsill are also covered. This is a well written book made more interesting by being written by someone from the community they live in.

Hartley- A Westmorland History

In a way this is similar to the Tindal book in what it covers, but is more in-depth and referenced. There is a single chapter on the Hartley Mines which worked lead, copper, and coal. The highest mines were for coal and were well established by the 17th century. There are descriptions of the various buildings associated with mining and where the names originated from. One was built by Richard Faraday who was a slater and builder, and mentioned is his brother James who moved to London and whose son Michael was the discoverer of the fundamental properties of electricity and magnetism.

The main lead and copper workings were at Birkett Riggs and Long Rigg and ore was also smelted in the area. Records show that they were working in the 17th century. There is mention of hushing and the plan shows at least three hushes at Birkett Riggs. Considering the mines were worked for a considerable period of time, although intermittently, there is little in the way of records in existence. Sam Murphy and Richard Smith also covered these mines in British Mining No 91, Mines of the West Pennines.



As far as I know both are areas that CATMHS has not really taken an interest in, but I am sure would be worth visiting, and I will be speaking to Michael Oddie to arrange meets there in 2022. I also recently joined a Facebook group, which covers the Coanwood Featherstone Lambley, Hartleyburn, Park Village, Kellah, Eals, Plenmeller, Tindale and Roachburn areas, and is interested in the history of the area covered by Nancy's book, and there have been some fantastic photographs and information turning up about the mines. I am going to see if there might be a possibility of someone from the group showing us round the area.

Warren Allison.

A Pennington Pepys, edited and annotated by John Graeme Livingstone

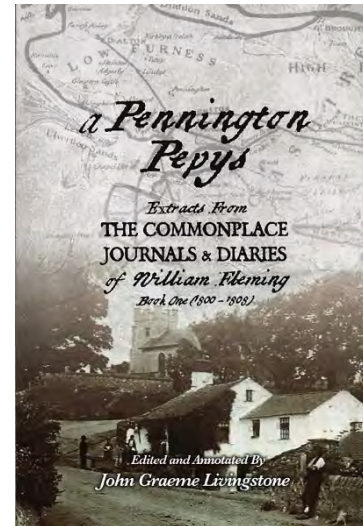
William Fleming was a landowner who kept a journal from about 1800. He recorded the weather, market prices and the activities of the gentry. He writes with a kind of self-righteous rage and I would be inclined to dismiss the entire book as scurrilous gossip were it not that he gives a view of people that will not be found in newspaper reports or obituaries. Doctor William Close (who brought smallpox inoculation to Walney and edited "The Antiquities of Furness") was one subject of his ire, he does not explain why. A small sample will have to suffice as his character assassination goes on for many pages:

"The interval between having his masters counter and his removal to Edinburgh was devoted chiefly to his improvement in music, and all study omitted which could contribute to perfect him in the surgical profession. He strove to equal Amphion

more than Aescapulus but his melodious strains had contrary effect, for the enchanting notes of the son of Jupiter and Antiope attracted the attention even of the wild beasts, but the discordant sounds of Master William's improved bugle horn scared them away and moreover caused such fear in many of the old women of Dalton, who we may safely affirm had no ears, lest the vicious bull of Elliscales had broke out of his pasture and was committing havoc at the other end of town ... When he arrived in Edinburgh, the deficiency of his education and his want of skill in the profession he was intended for were too evident and he was the butt of many a joke on account of his whims and pretended qualifications" (That reference to the vicious bull of Elliscales was a remarkable piece of prophesy; John Ashburner of Elliscales was gored by his bull in 1846)

What makes this book of interest to the mining historian is that some people mentioned in the diary crop up forty years later in the Wadham diaries. A syndicate consisting of Thomas Fisher, Malachi Cranke and Matthew Denney were boring for coal near Dendron, and William Fleming took a close interest. He states that Matthew Denny was a skinflint, but we knew that already from the case of Denny v Loam (NL132). Regarding Thomas Fisher, he says that he began investing in shares in coasters to fund his love life ... in the prosecution of which his ardour has carried him beyond the bounds of prudence, for when he had got smock tail in his teeth, he was a very bulldog and would break through every impediment in the indulgence of his vulvic propensity. He was possessed by a rabies that hurried him beyond himself and the gratification of this appetite, which was almost insatiable, drew from him considerable sums". Now there is a detail that you will not find in "Around the Coast and Across the Seas", the semi-official history of James Fisher and Sons. I look forward to the second volume, but not as a source of reliable information.

Peter Sandbach.



Mines Forum field meeting at Greenside mine, 29th July 2021.

As reported in the July newsletter, Eleanor Kingston from the LDNPA secured funding from the Covid Heritage at Risk Fund to produce a management plan for Greenside Mine. A Mines Forum meeting was held at the mine on 29th July to discuss the proposed plan.

In attendance - E Kingston (LDNPA), D Angus, A Cameron, L Withey (Environment Agency), N Hammond (Archaeo-Environment Ltd), P Claughton (NAMHO), W Allison (CATMHS), J Barnes (Historic England).

We met at the mine, and Warren Allison gave a brief outline of the buildings still intact, and a discussion was had regarding the scheduling of the mine, which only covers the ground the buildings are on and not the actual structures. This was especially relevant given the conversion of the smelt mill into three holiday lets and the potential for discovery of hearths and flues which may still be intact.

We then moved onto the Lucy entrance and again discussions were held regarding what should be covered by the plan, which included opening the entrance to the incline slightly to one side of the entrance, which is currently blocked, and to install a grill. This would allow people to view this superb incline which, before 1936 when the area was reorganised by the Basinghall Mining Syndicate Ltd, allowed the tubs of ore from the mine to be hauled up to the crusher above the old dressing floors. Every few months Warren clears the drainage pipes in the level, but a long-term solution to prevent the pipes getting blocked would be to open the entrance as it was when the mine was working, and gate it.

We moved up the old incline which brought the crushed ore from the Low Horse Level down to the dressing floors above the Lucy Level and saw the damage that the beck in spate is doing. In one area the banks are being washed away and part of an old leat, weir and walls have gone.



Left hand wall being washed away with water getting in behind, and the right hand bank where the leat ran has gone.

Arriving at the Low Horse Level area there was a debate around the structures at this fascinating area and whether all of them such as the ore bins could be conserved.



Waterwheel pit for the crusher



Crusher and ore bins

After lunch we moved up towards the area around Top Dam (old reservoir) and the High Horse Level dressing floor where unfortunately the cloud came down. There was consensus as to which structures could be conserved, with the most important being the beck walls which would stop erosion of the dressing floors and subsequent pollution of the beck. This is a very interesting area about which little is known and there is the potential for research including surveying and archaeological digs being carried out.



Looking down onto the dressing floors serving High Horse Level

There is also the potential for Natural Flood Measures to be installed in the area at Top Dam and beyond to slow the water down, which could reduce the impact of erosion of mining features lower down the valley. This would be similar to when the mine was working, when the company deliberately dropped the level in the reservoirs to accommodate the rainfall.

We returned by the main track, stopping to look at the drain which takes the water running off the fellside to stop erosion of the ground above the mine, and this is one of the most important structures in need of conservation. In 1985 and 1995, because of the drain getting blocked, the water found its way onto No.2 tailing dam and washed part of it away.

Everyone agreed that this had been a very productive day and would help towards producing the management plan to allow funding to be sought.

Warren Allison.

Visit to Carrock Fell Mine – 25th August 2021

On an earlier visit to Carrock Fell Mine to repair the damaged gate mechanism we met a local tenant farmer tending his sheep on the fell. This was Andrew Fell of Mosedale End Farm who has sheep hefted on the surrounding fells and knows the area quite well. In discussion he said he would like to see into the mine later in the year when the farming calendar would allow time.

Having obtained permission from the landowner, Dalemain Estates, the visit was arranged for Andrew, his two children and three friends. The visit was set for an evening visit on the 25th August 2021. John Brown and Colin Woollard met the group and with helmets and lights issued from the CATMHS store we provided a simple overview of the mine locality to supplement the adjacent display board.



Carrock Fell Mine Visit Group – photo by John Brown

The gate was found to be intact and the group proceeded to the intersection of the Canadian Level and the Harding Level. Water levels were relatively low at this point. The visit proceeded across and then up along the Smith Vein North Level to its forehead – the cross cut to the Wilson Vein which represented the limit reached in 1980.

Footsteps retraced, the group explored the Harding Vein Level past hoppers and viewing the exploratory works visible from this level. The wellie boot test came next with some members of the party failing the depth test. The collapsed hopper prevented progress at the junction of the Emerson Vein cross-cut so we had to turn along the Emerson Vein cross-cut as far as the little ladder up to the Waterfall Vein. Wellies for some in overload here! We continued up the Waterfall Vein to regain the Harding Vein Level and on up to the No. 5 rise location and end of the level.



Hopper investigation – photo by John Brown

We retraced our steps and emerged into the warm evening sunshine. Gate left secure and operational.

Colin Woollard and John Brown.

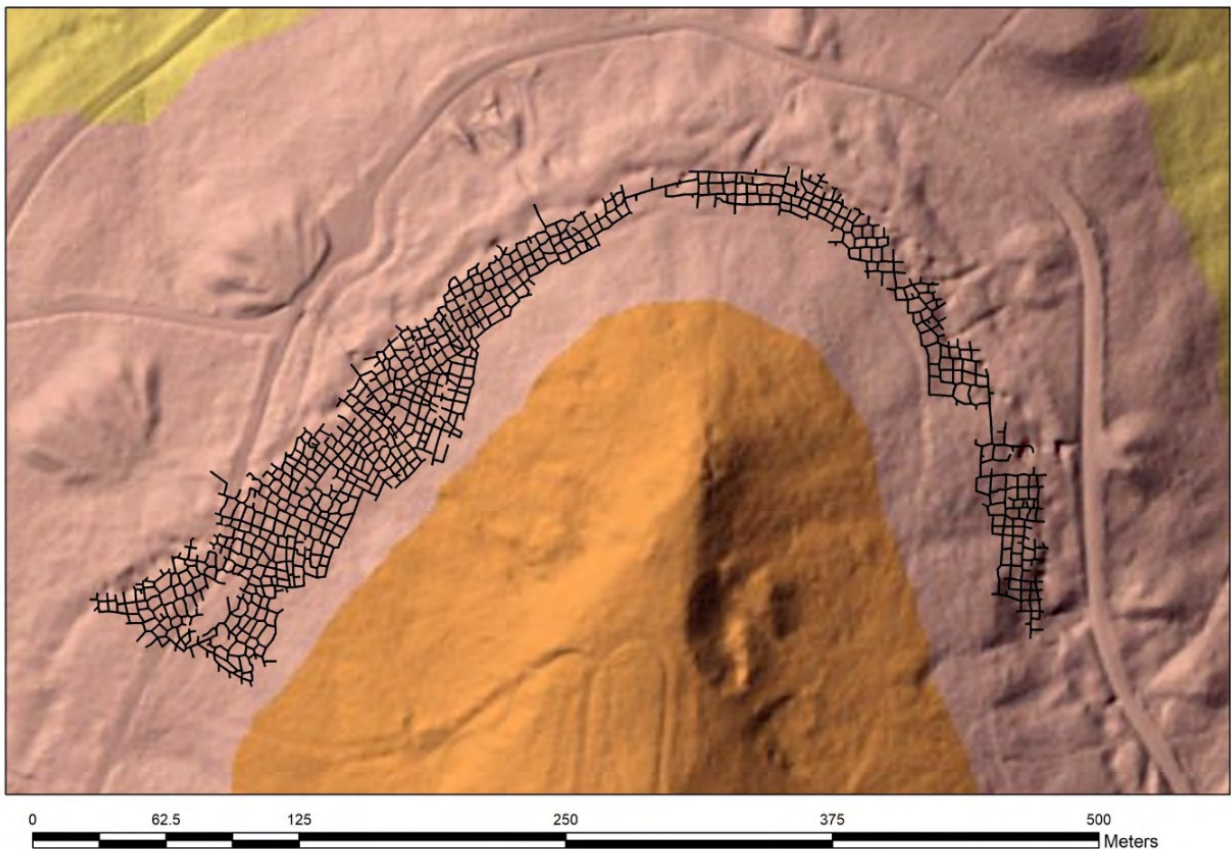
Hutton Lowcross Jet Mine, 18th July 2021.

During a Zoom talk to CATMHS on 26th April 2021, I explained how the jewellers of Whitby would have you believe that jet mining only occurs on the coast near Whitby and started when Queen Victoria went into mourning after the death of Prince Albert in 1861. The truth is much less clear-cut, with largely undatable evidence of jet working having taken place across the Cleveland Hills back across the ages into the Viking, Roman, Bronze Age and even Neolithic times.

Jet is fossilized wood found in the rocks of the Whitby Mudstone Formation across Cleveland and North Yorkshire. The wood has been altered under extreme pressure and is valued as a gemstone due to its ability to take a deep and intense lustrous shine when polished, although essentially it is just a lignite coal.



Neolithic Jet Beads



Survey of workings, overlaid onto Lidar scan

Jet mines have historically been thought of as extremely modest affairs, the only contemporary account of the industry being “On Jet Mining” presented by Chares Parkin to the North of England Institute of Mining and Mechanical Engineers in 1881, where it is stated that “the workings seldom extend beyond a hundred yards at the most from the drift mouth” Despite that modest size, my talk must have tempted a few to venture to the ‘wrong’ end of the A66 on one of the hottest days of the year. We met at Hutton Lowcross, where one of the few documented jet mines was worked for a relatively short period between 1868 and 1872, at the height of “jet-mania”. This brief window fortunately coincides with the 1871 census, where we find William T Bewick, a jet miner who employed just twelve men.

Since 2015 members of the North York Moors Caving Club and Cleveland Mining Heritage Society have been surveying the underground workings that remain, as no contemporary surveys are known to exist. This work with a DistoX and SurveX software has revealed an extremely large grid of workings in 3D, with passages measuring over seven kilometres in length across just five hundred meters of hillside. Due to the extremely complex nature of the workings a guide rope has already been laid through the workings as part of the surveying.

CATMHS members on the day were guinea pigs for what will be one of the underground trips at NAMHO 2022, which is being hosted by Cleveland Mining Heritage Society from Friday 17th to Monday 20th June 2022. Everyone was informed to leave the rope at their peril as we entered the western end of the workings, making detailed notes on timing and features of interest for the NAMHO trip.



The meet leader revealing the western entrance to the workings

Much of the progress through the mine involves stooping and crawling through the loose shale passage left as the miners dug a grid pattern (bord and pillar) in the search for randomly deposited planks of jet amongst the shales. The working method involved pulling the roof down on themselves to progress from the bottom to the top of the twenty foot band of jet shales, hoping on the way that they would be lucky enough to encounter some jet.

Stops were made to allow CATMHS members to have a go at jet mining themselves, as generally a penknife is sufficient to cut away the soft shale surround the hard black jet. I must be honest and say the mine is not rich in artefacts or graffiti, the soft nature of the shale means few tools were needed and any discarded objects have been buried in the debris as the roof was pulled down.



We progressed through the workings from West to East over roughly two hours, generally following the back wall where the shale passages are most stable. The notes from the day will prove extremely useful in fine-tuning the NAMHO trip. My personal favourite occurs when the notebooks states: “1hr 20mins: Iwan has gone rogue”

The artefact”. The scant remains of a spade, the only item to be found in 7km of passages”.

Having left the relatively security of the blue poly-prop rope to explore the maze, fortunately his sense of direction was excellent and he re-appeared back on the rope half a dozen junctions further on!

Chris Twigg.

Iwan had gone rogue, now he just looks suitably chastised.



Maenofferen Slate Mine 31st July & 1st August 2021

Attendees:-

Chris Cowdery, Tom Hallett, Dave Donkin, Peter Archer, David Lund, Liz Withey
Sarah Westmacott, Warren Allison, Mark Hatton, Celia Burbush, Iwan Fletcher
Julian Cruickshank, Tom Ferry, Rosemary Lord, Lee Rooksby.



Over the two days fifteen members were taken on an easy tour through the extensive Maenofferen Slate Mine at Blaenau Ffestiniog. The last official CAT trip was in 1994, at which time the mine was still in operation. The Welsh team has since undertaken much exploration here in recent years, with the owner's permission,

History

The land in this area was historically owned by Lord Newborough of Glynllifon. Significant commercial operation commenced circa 1823 and in 1834 the site was leased to Edwin Shelton who worked it and the other quarries on Newborough land, at Bowydd and Glyn Rhonwy, with his partner John Whitehead Greaves. This continued until 1847 when the lease was surrendered. Both partners deciding to concentrate on the more lucrative Llechwedd site nearby.

The site was operated by the Maenofferen Slate Quarry C. Ltd from the 1860's till the 1970's when the site was purchased by J.W.Greaves & Sons Ltd. Underground extraction continued until 1997 and the mill remained in operation, processing material from limited surface working until 2001.

The site was developed using two approaches. Chambers were developed along Floor B following the strike of the vein between the Votty & Bowydd workings below and those of Diffwys above – these being termed the Lower Workings. Concurrently the Upper Workings were developed downwards from Floors 2 and 3 to eventually connect with the lower workings on Floor B. Over time the workings continued downwards to Floor I at 642’ above sea level and thus 668’ below the highest underground floor (3) at 1310’ asl giving a total of twelve underground floors. At their greatest extent the workings extend for fifty seven chambers over a distance of 1.6km along the strike from what is termed the Votty Pit to underneath Llyn Bowydd. With only the lowest four floors being inaccessible due to flooding it is suggested that this is the largest accessible slate mine in the world.

For most of its existence extraction was taken down two gravity inclines (Rhiwbach No.1 and No.2) to the Ffestiniog Railway at Duffws station.

The underground workings were in the Old and Back (sometimes termed Middle) Veins of Ordovician Slate which are approximately 450 million years old.

The extensive Mill Buildings at surface are a key feature of the site and whilst now in very poor condition one can only hope that a use for them and money for repairs can be found, particularly now that these are included within the area of the World Heritage Site.

Originally the site was water powered although this was soon augmented by steam until the latter was replaced by wide scale electrification starting in 1904, supplied from the Company’s own hydro-electric power station. This remains in use and exports up to 180kW to the grid. Whilst the original machinery is no longer used a Gilkes turbine from 1927 remains in daily use.

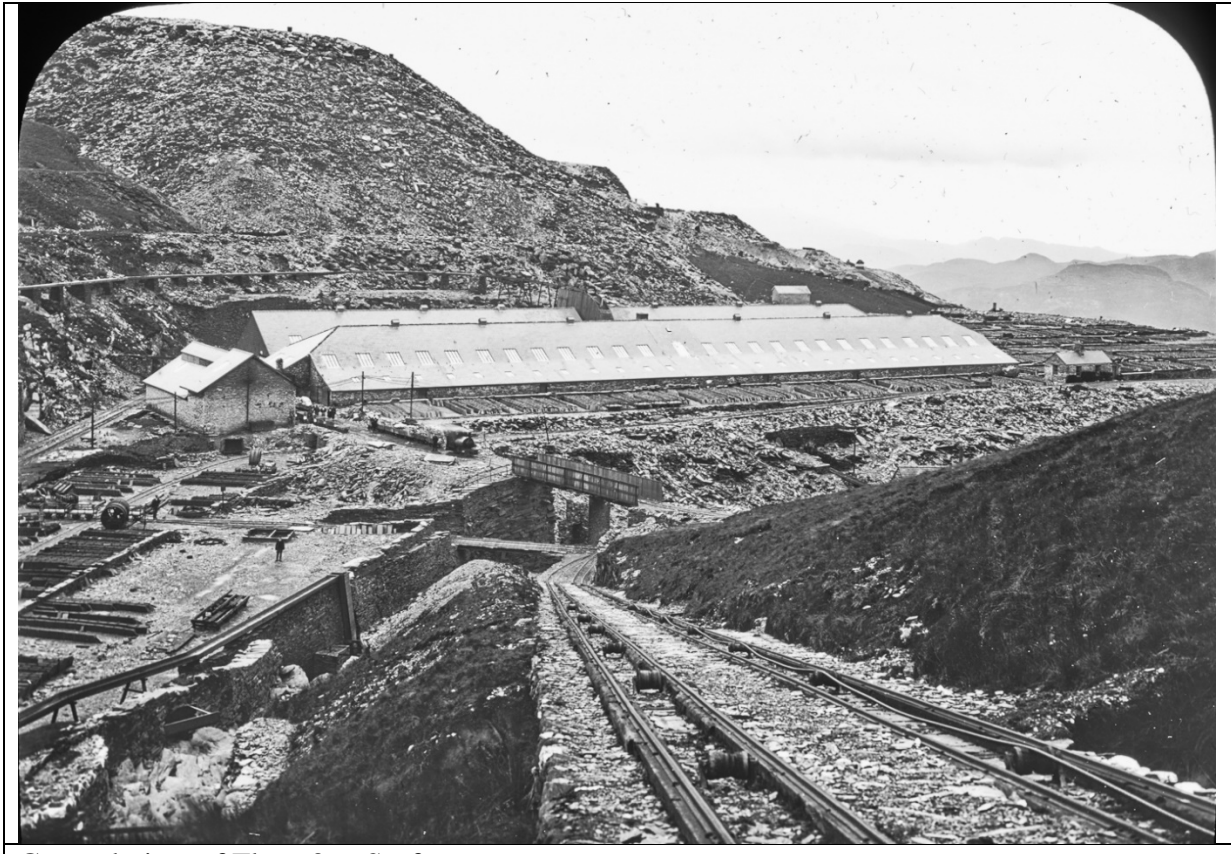
The circular tour, which was far too complicated to detail here, descended through the workings, progressing in-by as far as chamber 33 and down to the lowest accessible workings on Floor E before traversing the workings just above water level and coming back up the B8 incline. Numerous artefacts were seen including, inclines, an Eimco rocker shovel, ventilation fan, ladders, slate slab staircases, machine bored tunnel, a sledge etc.

On arrival back at surface the Mills and Workshops were entered.

My thanks to my employers J.W.Greaves for granting permission for the trip and for the attendees in donating to the companies preferred charity – The Friends of Ysbyty Alltwn (Porthmadog Hospital).

Jon Knowles, Meet Leader.

The photographs following are a mixture of archive images and those that the leader has taken over many years.



General view of Floor 3 at Surface.



Mill circa. 1895 with only one of the four sections complete.



Back vein incline, the principal route by which waste and rock was brought out of the mine.



General view inside the Mill shortly after completion.



Chamber 8 Back Vein showing compressors and switchgear room.



Chamber 8 old vein showing incline winder. This was initially steam powered but then converted to electricity at 500V dc.



Chamber 31 ventilation fan.



Pack wall in Chamber E31OV

Dinowig Quarry meet, 1st August.

The meet was part of a weekend in Wales looking at the surface remains of Dinorwig quarry (Saturday), the underground trip at the quarry called “snakes and ladders” (Sunday) and a special underground visit to Maenofferen Quarry at Blaenau Festiniog led by Jon Knowles (both days).

Liz and I travelled down from Carnforth, which took some four and a half hours due to traffic, and en-route we decided to cut off and go via Ruthin using the scenic route, other said it took them even longer. Arriving at the camp site, Michael Oddie had already set up camp with his flag “Bar is open”. Booking in we joined him as did the others as they arrived, although Dave Donkin had set up on a different part but joined us on Saturday as it had been too noisy where he was at on Friday night.

Attending- M Oddie (meet leader), C Burbrush, J Cruickshank, R Lord, P Archer, T Hallett, L Withey, W Allison.

After a very pleasant evening, we woke to a cloudy but warm day and after breakfast Michael gave instructions to both groups as some were going to Blaenau Festiniog. Travelling through Llanberis we arrived at a point about halfway up the mountain at one of the main roads to the quarry. After about ¼ mile we arrived at the main site, and it was instantly mind blowing as to how large it was and Michael then mentioned “you haven’t seen anything yet”. The first building was one of the three mills powered by electricity, which covered the same area as two football pitches, and started operating in 1927. Next to it was the power station.

We then went over the locked gate as everyone else apparently does and started to work our way through the workings called “California” stretching as far as the eye could see, partially covered in low cloud. They were immense with remains of buildings, spoil and inclines everywhere.



Michael took us through the workings to a short level which led into part of the quarry with a ledge leading through another short level which was originally a continuation of the one we had just exited to where the “snakes and ladders” would start.



After retracing our steps, we started to walk up the beautifully laid slate staircase leading towards the upper workings. There were many of these stairs which are still in remarkably good condition all over the site.

Arriving we were greeted with several buildings, all still intact and roofed with the remains of a Blondin and winding gear. What was puzzling was there were two winders, and it was difficult to work out what they actually ran. As it was starting to drizzle, before exploring this part of the quarry we took shelter in the largest building, which must have been accommodation of some type for the quarrymen, and for most of the time the mist was swirling round which made it very atmospheric. It was at this time that Carl Barrow who had driven down from Barrow that morning rang Michael asking where we were. Michael then spotted him on the other side of the quarry, and we all waved to him and as they were talking, we could hear Carl as clear as day, didn't really need the phone. As Carl was some time away from us, he decided to carry on and do his own thing.



Looking down into the quarry- notice the remains

of yet more buildings



One of the winders



Remains of the Blondin and a winding shed

On leaving we worked our way round to the second set of workings known as Australia, I cannot quite remember how, but think we went up an incline or was it two, but we did arrive via a set of steps. This area was even more impressive, and the remains of machinery was unbelievable. Michael explained that when the dressing sheds had shut down the main access road had been cut by other workings which prevented the scrap men getting here.



Air compressor



Electric generator?



Remains of one of the many incline winders



The most impressive sight of the whole trip was the saw shed with 36 benches which was just mind blowing as to the scale of it.

There were remains of many other buildings even weighbridges and even more inclines which were the cheapest method of moving the finished slate to the bottom of the mountain. The incline in the photo below still had the carragies for the trucks and unusually the winder was below ground level. It appears the slate was being moved from the upper part via a series of inclines and in many places the rail, points and turntables were still in place



This incline winding house was unusual in the style of slate used to build it as it had been shaped and there was lovely fire place in the back.



Rosie at one of the sets of points.



We worked our way up to the top of the workings and one of the last inclines which was unusual in that the drum was mounted on a wooden frame.

Arriving at the road which serves the surge chamber for the modern hydro-electric plant we worked our way back down the other side of the “California” workings where there were even more buildings, inclines, etc. including this beautifully built set of steps. Here Michael pondered how he was going to get to some of the areas he had not yet explored.

Arriving back at the cars we returned to the camp site exhilarated at what we had seen which words cannot describe, the sheer scale of the site, the inclines which are two a penny and the number of buildings in good condition and the machinery still there.

That evening there was the promise of another spectacular day which others are reporting on. The weekend has been fantastic, made better by most people being able to stay on the same camp site and all together. There are a couple of incidents to report, Dave Donkin certainly lifted the standards for dining which were taken onboard by everyone and Michael’s offer of “anyone one want more Port, more cheese”, not sure how he managed to do the Snakes and Ladders next day?



This report, which could have been much longer, cannot really convey just how fantastic the quarries of North Wales are, but you can see how it has just been granted World Heritage status. This had been a wonderful weekend and we should do it again as there is still so much to see at both Dirnorig and Blaenau Festiniog.

Warren Allison

Williamson tunnels in Liverpool, 8th August.

Meet leader- Mark Hatton in the absence of Michael Oddie, Liz Withey, John Ashby, Warren Allison, Michael Pringle, Kevin Timmins, Steve Sim, Belles Knott, Lorraine Crip, Kevin Crisp, David Lund, Brian Sutton, Sarah Westmacott, Iwan Fletcher.

This was an unusual place for a meet virtually in the middle of Liverpool but having heard so much about the tunnels this was one on the list to visit. Michael had organised the meet but unfortunately had a prior engagement, so Mark took over. There are two organisations involved in the tunnels “The Williamson Tunnels Heritage Centre” owned and operated by the Joseph Williamson Society” and the “Friends of Williamson’s Tunnels” which operate independently although they are literally yards apart, only separated by one of the main railway lines which cuts through the tunnels.

The meet had been arranged with the Friends of Williamson’s Tunnels, so having managed to get through the streets of Liverpool we met at their site on Mason Street, which is believed to be part of Joseph Williamson’s house, Our guests split us into two groups; one would visit the “Paddington” group of excavated tunnels and the other the “Banqueting Hall”, then swap over after lunch.

The following from Wikipedia provides some historical context:

“The Williamson Tunnels are a series of extensive subterranean excavations, of unknown purpose, in the Edge Hill area of Liverpool, England. They are thought to have been created under the direction of tobacco merchant, landowner and philanthropist Joseph Williamson between 1810 and 1840. Although popularly described as "tunnels", the majority comprise brick or stone vaulting over excavations in the underlying sandstone. The purpose of the works remains unclear and remains a subject of heavy speculation; suggestions include commercial quarrying, a philanthropic desire to provide employment, and Williamson's own eccentric interests.

After being gradually infilled with rubble and spoil during the late 19th and early 20th centuries, they remained largely inaccessible until archaeological investigations were carried out in 1995. Since then, volunteers have rediscovered and excavated an extensive network of tunnels, chambers and voids across several sites, with sections open to the public. Guided tours are available at the Williamson Tunnels Heritage Centre and the Friends Of Williamson's Tunnels, and excavation continues as volunteers continue to uncover new sections.

In 1805, wealthy businessman Joseph Williamson acquired an area of land in Mason Street, Edge Hill, Liverpool, which was then a largely undeveloped outcrop of sandstone with a scattering of scars from small-scale quarrying. The land was held under a lease from the West Derby Waste Commissioners, who retained rights to the minerals under it: Williamson started to build houses on the site, which then adjoined growing and fashionable areas of Liverpool.

According to the account of a 19th-century Liverpool antiquarian, James Stonehouse, these houses were eccentric in design and "of the strangest description" without any rational plans. The ground behind them dropped sharply, and in order to provide large gardens Williamson built arched terraces over which the gardens could be extended. He continued to erect and alter many further buildings on the site during the period, including a large house in Mason Street occupied by himself and his wife. To carry out the work he recruited a large pool of

labour from among the poor and needy of the area, including soldiers left unemployed at the end of the Napoleonic War; according to Stonehouse, he occasionally engaged them to carry out apparently pointless tasks, such as moving rubble from one place to another, then back again.

Over the same period, his workers also excavated a series of brick-arched tunnels and vaults at various depths within the sandstone. They covered a wide area, extending to the boundaries of Williamson's lease and possibly beyond. Stonehouse, who traversed parts of the tunnels in 1845, described the excavations as a labyrinth of "vaulted passages [...] pits deep, and yawning chasms", including a "fearful opening" beneath Grinfield Street with two "complete four-roomed houses" in the side of it connected by a spiral passage. This apparent tunnel-building activity continued until Williamson's death in 1840. In August 1867 the *Liverpool Porcupine* described the tunnels as being "a great nuisance" because drains ran straight into them, in one place creating a cess pool full of offensive water 15 feet deep, and they were being used for dumping refuse, including down chutes built into the buildings above for the purpose.

In the later 19th century the Corporation of Liverpool began backfilling the tunnels with rubble and other waste from building demolition, a process that continued sporadically into the 20th century. Little information about the excavations had been recorded and nearly all knowledge of them, and of Williamson's life in general, was derived from the 1845 account of James Stonehouse. Although not published at the time it was written, it was referenced in Stonehouse's later works and was finally reprinted in full by Charles Hand as part of a 1916 article, "Joseph Williamson, the King of Edge Hill", published in the *Transactions* of the Lancashire and Cheshire Historical Society. Hand's work saw a brief revival of interest in Williamson and his life.

Early investigations and archaeology

In 1881, the North Staffordshire Institute of Mining and Mechanical Engineers conducted a field trip to Liverpool during which they surveyed some of the surviving excavations, producing a plan and dog-leg section of the main parts of the site.

In the early 20th century, soldiers from the 1st Lancashire Engineers and the West Lancashire Territorial Forces Association, whose drill hall in Mason Street stood on top of one of the tunnels, carried out additional surveys. The Association produced a map of the excavations although, as many were filled with rubble, this had to be left incomplete. The map also showed the course of the London and North Western Railway cutting between Edge Hill and Lime Street stations which ran through the area.

Public interest in the tunnels waned through much of the 20th century and many of the sites were further buried or destroyed by new construction. However, from the 1980s onwards interest in Williamson steadily increased, leading to the formation of the two major societies and, eventually, excavation of tunnels across several sites. In 1995 a geology student from Liverpool University carried out a micro-gravity survey of the site. Some of his findings were ambiguous, perhaps due to rubble infill, and not all of them seemed to correspond with those of the Forces Association's 1907 map. Later that year a professional firm, Parkman, carried out a survey on behalf of the Joseph Williamson Society.

Both societies eventually acquired the rights to begin digging, and over time a considerable portion of Williamson's legacy has been rediscovered and cleared of the last two centuries'

accumulated spoil and rubble. In the course of excavation, a substantial number of artefacts have been found - some dating back as far as the 1830s - including bottles, plates and other crockery, pipes, vintage signs, military items and other items, much of which was probably refuse dumped in the tunnels. Many of these finds have been cleaned and put on display.

Extent of the excavations

The known tunnels are in an area to the east of the Liverpool Metropolitan Cathedral in a rectangle bordered by Mason Street, Grinfield Street, Smithdown Lane and Paddington. Their full extent is unknown, and many are still blocked by rubble. They encompass a range of designs and sizes, from vast chambers to spaces inaccessible by an average human. The "Banqueting Hall" is around sixty feet long and up to twenty seven feet high, while the largest "Paddington" chamber is shorter but an impressive forty feet deep. Still larger excavations, such as the vaulted "Great Tunnel" seen by James Stonehouse and Charles Hand and noted on the Army surveys, have yet to be rediscovered.

Purpose of the tunnels

The purpose of the excavations has been the subject of widespread speculation. According to Stonehouse's near-contemporary account, Williamson was secretive about his motives, leading to a great deal of speculative local folklore. Upon hearing that Stonehouse planned to publish his research on Williamson's excavations, Williamson's friend, the artist Cornelius Henderson, threatened to sue Stonehouse both for libel and trespass, leading to the paper's suppression for some years.

The most commonly related explanation is that they were a philanthropic endeavour. Williamson's own explanation was reputed to be that his motive was "the employment of the poor"; his workers "all received a weekly wage and were thus enabled to enjoy the blessing of charity without the attendant curse of stifled self-respect". Certain features of the tunnels appear to support this theory; there are many architectural features that seem unnecessarily decorative, hidden deep below the ground in chambers that would likely have been dimly lit and rarely seen. By way of example, at the Mason Street site a beautifully constructed stone arch was recently uncovered in an otherwise plainly constructed side chamber, deep underground, with no obvious explanation for its purpose. These features could be interpreted as Williamson helping his employees improve their skills.

Another suggestion, that he was a member of an extremist religious sect fearing that the end of the world was near and that the tunnels were built to provide refuge for him and his friends, originated in recent times with a casual suggestion made on a television programme.

No evidence has been found to support the existence of such a sect or that Williamson, a practising member of the Church of England, belonged to one. Stonehouse and Hand both felt the excavations were simply the largely purposeless folly of an eccentric man: however while Stonehouse called the works "stupendously useless", Hand concluded that Williamson's philanthropic purpose was a noble one and felt he "should have been both pleased and proud to have known him". Many of Williamson's workers were said to have later found employment in railway construction with the skills they had learned.

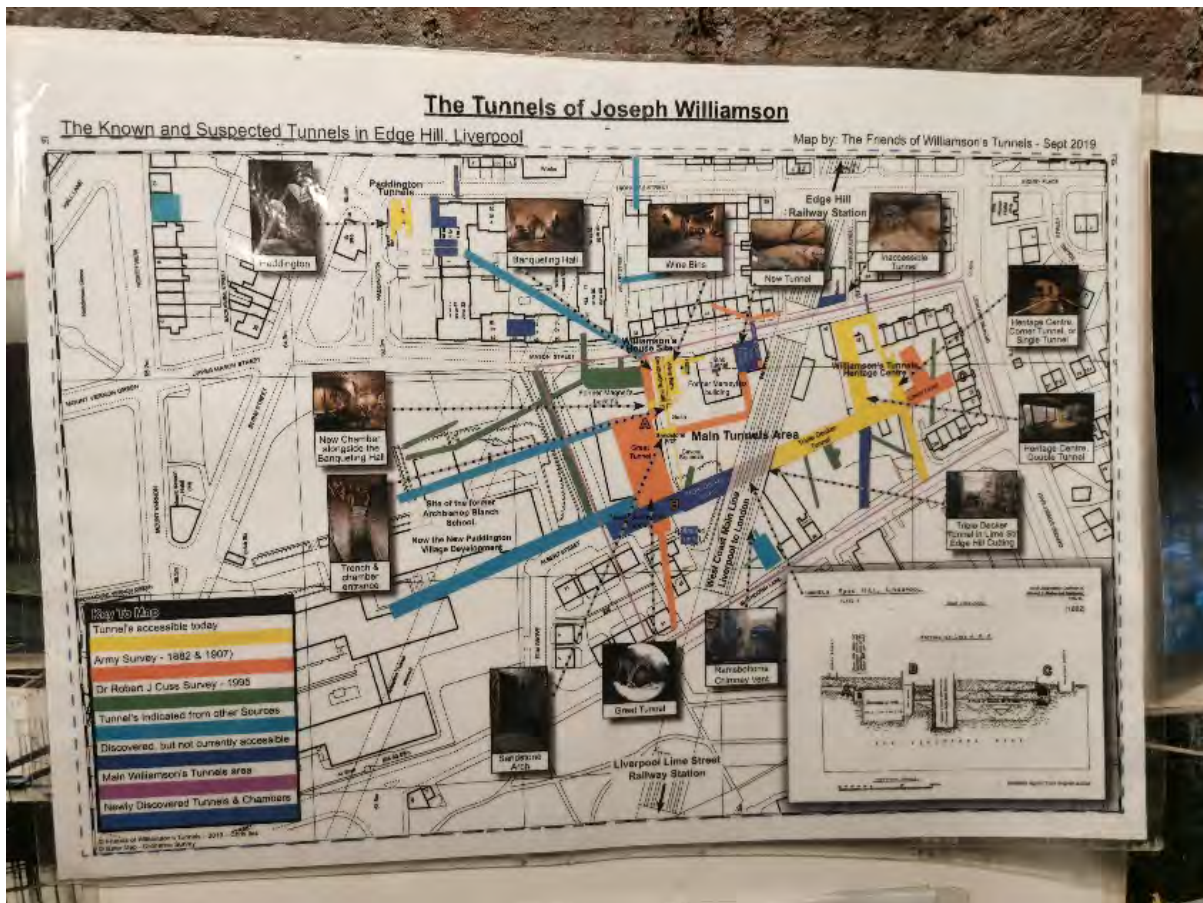
More recent research by academics at Edge Hill University has concluded that the 'tunnels' were in fact the result of work by Williamson to restore ground levels after quarrying. Most of the excavations are directly within a band of high-quality sandstone and show clear signs of having been carried out using established quarrying techniques designed to produce single

large pieces of stone suitable for building use. In addition, the cross-sections of the works produced by the 1881 survey reveal a typical stone quarry profile. The apparently aimless nature of the excavations was likely a reflection of the work following the best "seam" of stone, avoiding imperfections and master joints. The tunnels had, therefore, originally been unregulated "slot quarries" for sandstone, used for prestige buildings in the rapidly-expanding Liverpool of the Georgian era, and by subsequently vaulting them over Williamson was able to restore ground levels, facilitating his extensive housing developments on the site.

While during Williamson's lifetime it was locally rumoured that he was earning large sums from unlicensed quarrying, Williamson had apparently claimed that he made little money, using extracted sandstone largely within his own properties. It seems possible that his secrecy was at least partly driven by a need to conceal his avoidance of both large amounts of income tax and mineral rights duties due to the West Derby Waste Commission from the sale of sandstone. Knowledge of the latter dealings may have been the reason behind Henderson's threat to sue James Stonehouse. Despite retiring from the tobacco trade in 1818, Williamson left an estate valued at £40,000 - the equivalent of around £3.3 million in 2019 - and it appears that a large proportion of this income must have come from his excavations and subsequent property development".

The meet

I was on the trip to "Paddington" which meant the entrance to it was a short walk away and en-route our guide explained the history of the area which has changed considerably. The entrance is in a small fenced off part of the University student accommodation and on descending some steps there is an information board which helps to explain the workings.





The entrance to “Paddington”



One of the first chambers

We descended a few more steps and ended up in a series of incredible chambers which the group had removed the back filling from to expose the elaborate brickwork, which was just amazing. Our guide explained that the debris had been a mixture of demolition rubble and domestic waste from which a huge amount of pottery, glass, etc had been recovered, most of it unbroken and now on display.



Artifacts recovered (Photo by Mark Hatton)

We moved on to a chamber, which was probably forty feet high, which we went to the bottom of. Here you could see how the sandstone quarries had been worked and there appeared to be two different types of stone with pillars left in and the arching built on top.



Near the top of the chamber



Bottom of the chamber



Looking up from the bottom of the chamber

After lunch and swopping over, we walked down a few steps in the ground which had been excavated and we were standing in what appeared to have been a house with a bay window, and a courtyard which had a number of ovens and from when the army occupied the buildings a set of latrines, all below what is now ground level.



Bay window of the house



Row of ovens

We descended further into another set of chambers like the ones we had looked at in the morning, but just as good, there was even a wine rack in one. We then came to a series of steps which took us down a gash in the sandstone to another large chamber. Another set of steps through a small hole led us into a chamber where the group is currently digging hoping to break in to the “Great Tunnel”.



The “Banqueting Hall”



The gash in sandstone

Back at the cars we thanked our hosts for what had been a fantastic day, great admiration for what the organisation has achieved, especially in the hundreds of tons of debris they have moved in ten kilo buckets, a place I am sure other trips will be organised in the future, and we agreed to organise a reciprocal trip to a mine in Cumbria.

Warren Allison.

Florence Mine meet report, 21st August

A select but enthusiastic group gathered at Florence on a rather inclement day. Steve Sim, Roger Ramsden, Martin Lawton and Bob Mayow. The Plan was to visit parts of the site not seen on the previous meet, when we could not gain access to the Winder or the upper floors of the Heapstead. A secondary aim of the meet was to conduct a survey of building condition, as there has been a steady deterioration over the fourteen years the mine has been closed. It was also hoped to record and protect the many artefacts of mining, and historical interest which are located around the site.



On the previous Florence meet we visited the Haile Moor Shaft of the Beckermest Mine, and the sites of No.1 and the main No.7 shaft at Ullcoats Mine. Ullcoats mine and Flo were owned by the same company, and were worked together and connected underground in the 1950s. In total there were nine shafts. The ore from Ullcoats and Flo went to Millom, while the ore from the nearby Beckermest mine, owned by United Steels, went to Workington. Gradually the local furnaces closed, and of all the local independent iron ore mines only Ullcoats and Florence survived. As a result of nationalisation, (or not being nationalised) they were closed on 'Black Friday' 13th September 1986. The Millom operation also went out of business.

Beckermest Mines (part of the newly nationalised British Steel Corporation) took over Flo in 1969, pumped out the water, and in 1970 the Beckermest mine was connected to Flo underground. The new mine then stretched almost five miles from the Uldale valley to Calderbridge. All ore was then taken out through Beckermest mine for shipment to Workington steelworks for processing into steel by the 'Acid Bessemer' process. Workington Steelworks produced railway lines manufactured from West Cumbrian ore. The then set level of production for the mine was 1500 tonnes per week. BSC had several other holdings at this time allied to steel making, including the Micklam brickworks near Lowca (fire brick), limestone quarries, and the Blackdene lead mine (fluorspar) in Weardale County Durham. Florence, the last remaining deep iron ore mine in Europe, finally closed in 2007 when the cost of de watering became prohibitive.

In 2018 the site was listed grade 2 by Historic England for its special architectural or historical interest. *“as a remarkably intact mining pit head complex including a full suite of buildings retaining 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.”*

Gilbert Findlinson, the mine manager and owner, met us at the mine. He was on good form. We started by visiting the proposed ‘heritage’ room at the Florence Arts Centre (volunteer time and finance permitting) to view the magnificent 3D model of the southern part of the West Cumberland Iron Ore field. Gilbert then showed us around the English Heritage listed buildings. We started with the Heapstead, and viewed the shaft which is a thousand feet deep; it remains uncapped and is flooded to a depth of approximately fifteen feet from surface. The shaft in the later years was only used down to a depth of 175ft. Several of us could remember having gone down the shaft in the cage when the mine was still open, and the Heritage Centre and Gilbert were conducting mine tours. Just below the lip of the shaft there is the ventilation tunnel which leads to the adjacent fan house.



We then moved on to the magnificent electric winder by Robey & Co of Lincoln, which is thought to be the only remaining winder of its type in the country. The winding house is on two levels. We looked at the quite complex braking system and the centrifugal governor. There is a stand-by Perkins diesel generator, which could be used to operate the winder in case of power failure.





The ore processing plant was visited next. This crushed the ore in two stages, first by a jaw crusher and then by a cone crusher, which reduced the ore to the size of gravel. On the site there is the steelwork for a further crusher which was bought by Gilbert to reduce the ore to a finer grade for pigments. However this was not assembled and brought into use. We then had time to explore the rest

of the site, and view the 'drift' which was constructed to access the later more shallow workings, The drift took over from the electric winder as the main access into and out of the mine. It has now suffered a roof fall close to the entrance.

Martin flew his drone in order to look at the external condition of some of the more inaccessible structures. The site is full of interesting mining relics, and we finished off by moving some instruments and breathing apparatus to a more secure location.



As we went around the site we made a point of discussing building condition, and also the condition of the remaining equipment on site. With the aid of pictures taken by Steve Sim and Martin Lawton, a report on the condition of the mine will be prepared in order to help inform future decision making.

Bob Mayow.

Kirkby Steven lead & copper, Clouds mine meet, 12th September

Attending- Warren Allison, Bob Mayow, Liz Withey, Dave Donkin, Ormonde Joel, Brian Sutton, Magnus McIntosh, Michael Pringle, Dez Mitchell, Loraine Crisp, Kevin Crisp.

The mine is located near Ravenstonedale on the outcrop of the Great Limestone near Stennerskeugh, NW of the summit of Wild Boar Fell. Little is known about the mine or has been written, apart from Ian Tyler in Cross Fell and Mines of the Cumbria Pennines, Yvonne Luke in British Mining No.75, Sam Murphy and Richard Smith in British Mining No.91. It is attributed to having been worked in the 1st Century Millennium A.D. which, without actual evidence on site, Yvonne Luke explains the reasons behind the assumption, especially with the site of a Roman fort in the field to the south-west of Stennerskeugh Bridge.

There are reputed to be eleven lead and copper veins running NE/SW being worked for 2000 yards along the escarpment by hushing, levels, shafts, and surface workings. The first record starts in November 1760 when William Chaytor from Richmond took a lease from Sir John Lowther, followed in February 1763 by John Summers. Sir John Lowther received another request in November 1777 to work the mine, but there is little in the way of records.

The London Lead Company (LLC) and John Bland of Barnard Castle both showed an interest in 1802. The LLC sunk two shafts and raised a small quantity of ore and then left. John Bland, who was working Mason's Holes in Murton, took over the mine and drove a Horse Level at the northern end of the mines for some 57 fathoms with a shaft to surface. Bland persisted until around 1819 and did raise some ore. Between 1870 and 1875 Henry Pease of Darlington held the lease, but there is no record of output and then in 1884 a company was formed with £10,000 of shares, but little work seemed to have been done.



Worked part of the escarpment

We met at the old Limestone quarry just off the main road between Kirby Stephen and Sedbergh. Starting up the fell we soon came across a well-engineered road taking us towards the top of the escarpment passing through the Limestone pavement which gave the impression of having been worked.

Not long and we arrived at the first mine workings at Dale Slack consisting of a couple of surface shafts and closed levels. A short stroll took us on to the top of the escarpment and we walked north along it to the end to explain where the John Bland workings were as we were not going to descend to them to have to walk back up, before traversing east to look at another part of the limestone pavement, which appeared to have been folded. Here we had lunch before walking to look at the numerous surface workings including remains of buildings which dot this landscape.



One of the levels at Dale Slack which looks inviting from a distance



One of the surface workings

Having stopped to look at some workings we were asked the way to Ravenstondale by a walker who had lost contact with the people he was with. After giving him instructions we saw his party and reunited them; they said this happens to him all the time.

We made our way along the edge of the escarpment, stopping to admire the semi wild horses which graze up here, before arriving at the top of the ancient workings of Fell End Clouds. There were two dams and leats leading to the multitude of open workings which in my opinion are the finest in the county. These workings stretch for over 300 yards and over 100 yards wide, varying in width up to eight feet wide and more than ten feet deep. A tree marks the reputed site of a bale site, and in amongst the workings were two small buildings. There was a lot of mooching around, examining the workings and taking photographs.

Lorraine and Ormonde found small, rounded pieces of a harder rock which were not from this area, which gave the impression that they could have been used to dress ore? We followed the track along the bottom of the fell stopping to look at two lovely lime kilns before walking back to the cars where Liz, with help from Bob, served homemade cake with tea and coffee to finish what had been a superb day, great crack and a place we need to come back and have a another look at.



Top of the workings



Covered leat?

Tree marking bale site



Towards the bottom of the workings

Stone used for ore dressing?



The two line kilns.



Tea is served!

Warren Allison.

Low Water Smithy and Powerhouse Inspection and Discussion

Attending- Robert Gurr (ML), Alistair Cameron, Liz Withey, Warren Allison

Meeting at Walna Scar car park on a dismal drizzly day we soon got changed into wet weather gear. The chatter started as soon as we set off and it was surprising how many people were also walking towards the Old Man. Robert and Alistair pointed out various structures and points of interest along the way related to the quarries, some of which I had either forgotten or had not known about. We arrived at the turn off the main road to the quarries and made our way towards the powerhouse/smithy where we decided that Liz should fly her drone as the weather conditions had improved. It was disappointing to find that rubbish had been left lying around which we buried as we had no bags to take it away.



After Liz had finished, we made our way to the building where Robert explained his proposal. It was in the late 1980's that CATMHS carried out conservation work, but today's visit was to come up with a plan as to how to carry on the maintenance that the society had started many years ago. Even though the scrap men have over the years removed an amount of machinery it is still an impressive site. The roof timbers which were still intact when CATMHS carried out its conservation work have largely collapsed and damaged the walls/gable ends of the building.



A Pelton wheel supplied with water from Low Water drove an air compressor, generator, and drill in one room, while the smithy was in the adjoining room.



Pelton wheel and generator



Governor for the Pelton wheel



Drill



Air compressor

Robert has done work on his own to repair the walls and after explaining his ideas we came up with a plan to put to the committee. One aspect of this potential project is how to get material to the site, Robert has sussed a route out using an ATV which gets you right there.

A group of walkers came into view, one of who I recognised, and Robert was kind enough to show them around the building, while we made our way towards the quarries above to look at Alistair's project to conserve the buildings. We soon arrived at Smithy Bank worked 1740 to 1950 where we had hoped Liz could have flown her drone, but the weather was poor by now.

Walking on we arrived at Saddlestones worked 1690 to 1960 and it is here that there is a fair amount of conservation work to be done. Robert has put up sympathetic signage on all the various sites which states the name of the area, date, and names of buildings of interest. Alistair explained what the project was about and what stage it was at. It was surprising as to how much interest there was into the history of the quarries from people walking up and down the track to the Old Man.



Saw shed and office, level at bottom of spoil



Inside the saw shed

Even though the weather was not good, we decided to carry on up to Smithy Bank worked 1740 to 1950 and looked at the work needed at the site.



As time was getting on, we decided it was time to return and made our way back still chatting. Arriving back at the cars we had a plan as to how both projects could be taken forward and although the weather had not been kind it had been a really good day, with the potential for a project to continue work started many years ago by the Society.

Warren Allison on behalf of Meet Leader Robert Gurr.

Prominent coal mine features in the Kells area of Whitehaven, 10th October.

Attending: Kevin Timmins (ML), Mark Hatton, Steve Sims, Bob Mayow, Ian Green, Michael Pringle, Costas Andreou, Liz Withey, Warren Allison.

The meet was in an area that CATMHS don't visit very often, and Kevin offered to lead it, being in his hometown. Meeting at the Haig Pit car park, Kevin explained the route we would take, the geology, and that the coalfield extended in length some fourteen miles from Whitehaven to Maryport, with a breadth of some four to six miles from the coast inland. It had a great advantage being on the coast as sea transport could be used for longer distance trade, especially to the Irish market.

We started walking south along the cliff top footpath, which was originally a railway line from various coal mines to Whitehaven harbour, arriving above Saltom Pit, a scheduled monument and a place of great history. Looking down from above on what could be described as a mine like the ones on the Cornish coast, with its engine house looking out onto the sea, Kevin gave us an overview of the area. I cannot remember everything Kevin said so it is probably best summarised from the following article from the Haig Pit Mining and Colliery Museum:

“The Whitehaven mines were owned and worked by Sir James Lowther and to keep his mines ahead of the competition such as at Workington and Maryport he employed a quite remarkable man called Carlisle Spedding

The main problem facing Lowther in achieving these ambitions was technology. He sent his steward of the estate, Carlisle Spedding, to Newcastle, to learn about the improvements in coal mining being developed there. Spedding gained work as a hewer in several collieries under a fictitious name until he was burnt in an explosion and his true identity was revealed. After his return in the 1720s, Spedding sunk an exploratory bore at Saltom, on the Cumbrian coast near Whitehaven, and found the Main Band at a depth of eighty fathoms. He proposed to sink a pit just above the high-water mark and erect a powerful pumping engine, ‘which would drain hundreds of acres under the land, and an unknown, but enormous extent under the sea’. Work began in 1729, and by 1731 the pit had reached a depth of 456ft.

The sinking of Saltom Pit was a huge undertaking, described by Spedding himself as ‘perhaps the boldest thing that was ever undertaken’. It represented the first attempt at undersea mining in England, and was the deepest undersea mine ever at that time.

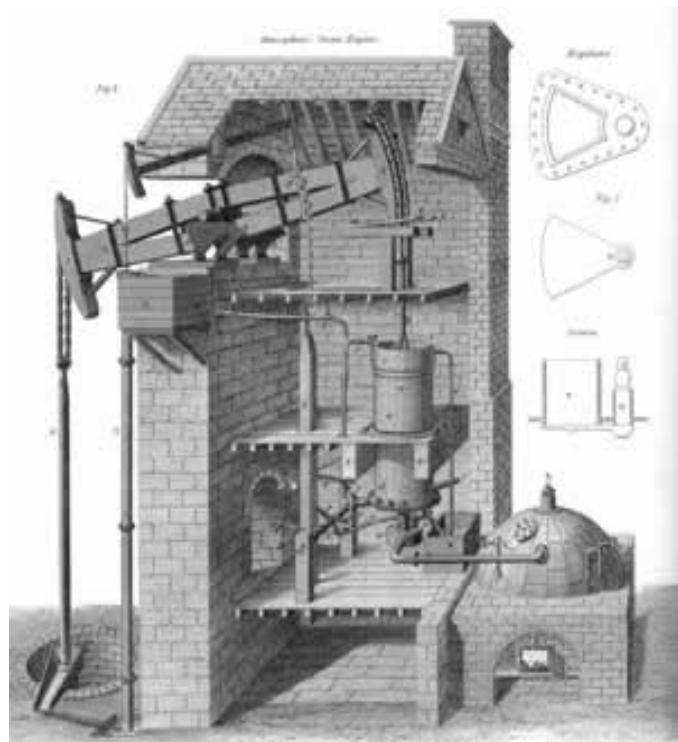
A major problem with deep mines was the very real risk of underground gases exploding, particularly methane or ‘firedamp’. Although firedamp had been encountered in earlier shallow workings, the sinking of Saltom Pit brought the miners sharply into contact with its dangers.

When the shaft had reached a depth of 252ft, a large pocket of firedamp was encountered. Like a true entrepreneur, Spedding's response was to have the gas piped to the top of the pit and offered for sale for the illumination of Whitehaven! More importantly, he experimented with the gas and its characteristics, and shortly afterwards invented the ‘Steel Mill’ lighting device (a forerunner of the celebrated Davy Lamp). Essentially, this was a piece of flint that was pressed against a small wheel and produced a shower of sparks when the wheel was rotated. Spedding had discovered that momentary sparks were less likely to ignite firedamp than the flame given off from the only alternative lighting system of the time – candles.

The most effective way of protecting against explosions, however, was an adequate system of ventilation. The problem of ventilation was especially significant at Saltom; not only was there a greater amount of firedamp at this depth, but also the traditional practice of a separate upcast flue could not be used under the sea. In order to solve the problem, Spedding split the shaft into two with timber boarding and designed a system of ‘coursing the air’ to allow the passage of air throughout the workings. It worked by a system of boarding and doorways (usually operated by boys) which forced an air-current to sweep through every part of the mine between its entrance at the downcast and its exit at the upcast pit. The oval-shaped shaft, which was introduced by Spedding at Saltom Pit, made this much more effective.

This design also made the pumping of water and the winding of coal to the top of the pit easier. A Newcomen-type atmospheric steam engine was used to pump the water, whilst the winding of baskets of coal from the pit bottom was originally done using a horse gin. This was replaced later by a steam-powered beam engine, which stood in a purpose-built engine house. The engine house still stands on a shelf of bedrock some six metres above the high-water mark of Saltom Bay. The structure is roofless, but otherwise almost intact and contains housing for a winding engine and winding gear. The layout of the building is unusual, possibly unique amongst surviving examples, not least because the engine was completely enclosed within the structure and the beam of the engine appears to have been supported within the framework of the engine itself, rather than on a huge cross-beam or cross-wall.

Example of a Newcomen-style atmospheric engine, the first in Cumbria.



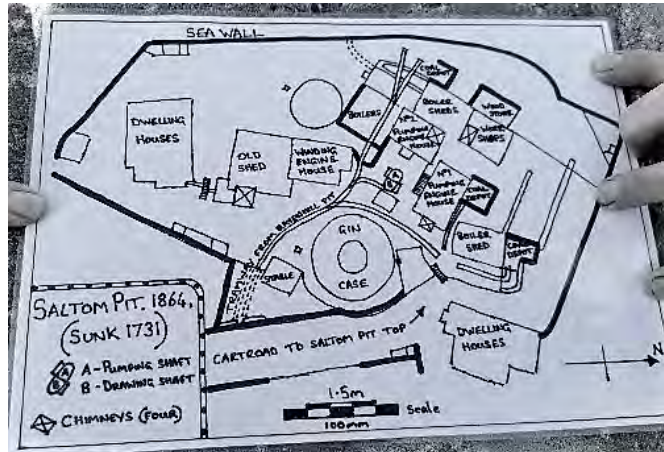
Once extracted from the mine, the coal was transported to ships. For this purpose, Spedding built one of the earliest examples of a tracked waggon way. At the same time, Lowther built a small pier and staith in Saltom Bay, to allow ships to approach the pit. He hoped to increase profit by exporting from the site, rather than moving the coal to Whitehaven by cart. The new quay was completed in 1732, but it proved hazardous and colliery accounts record shipments there only in November 1735 and June 1736. By 1738 the pier had been almost abandoned. Potentially the most important factor of all, however, was that Saltom Pit demonstrated the feasibility of extracting profitably the vast quantities of coal underlying the Solway Firth, which put the Cumbrian coalfield at the forefront of mining technology. This paved the way for further mining under the Irish Sea, firstly at William Pit (sunk 1804-12), then at Wellington Pit (sunk 1840), and more recently, Haig Pit (sunk 1907).

Saltom Pit was abandoned in 1848, but today it is a Scheduled Ancient Monument (SM 27801) and is the best-known surviving example of a predominantly 18th century nucleated colliery layout”.

We walked down to the remains and spent a fair bit of time in discussing this remarkable mine.



Saltom Pit



Drawing of the site when working



Photos taken by Liz. Returning to the footpath we retraced our footsteps, going towards Whitehaven passing Haig Pit before reaching a beehive structure which marked the site of King Pit which had the following inscription: “This shaft was sunk in 1750 by Carlisle Spedding, the mining agent for the Lowther family. By 1793 it had reached a depth of 160 fathoms which at that time was the deepest pit in the world”



Haig Pit



King Pit

Walking on we came to the top of the How Gill incline which took the wagons of coal down to the harbour while pulling empty ones back up. Kevin took us through a tunnel under the incline to the site of Dukes pit fan house, another scheduled monument and within the town.

Duke Pit was close to Wellington Pit and was sunk by Carlisle Spedding in 1747, closing in 1844. However, the original fan house was built in 1836 to circulate air through the workings and in 1870 the current larger structure was built to house a 36-foot Guibal fan to ventilate the nearby Wellington pit and is regarded as the best surviving example in the country which was nearly demolished in 1969 until local people stepped in to stop it.

Duke Pit fan house



A short walk down a set of steep steps which had rows of houses on either side brought us to the harbour which was a lovely place to stop for lunch beneath the remains of Wellington Pit. The pit, with No.1 and 2 shafts, was sunk between 1840 and 1845. No.3 shaft, which became the upcast shaft with the workings extending four miles out to sea, was sunk between 1903/05 and was designed by Sydney Smirke, an eminent architect of his time who also designed the circular reading room at the British Museum, The Imperial War Museum, Carlton Club in Pall Mall, Brookwood Cemetery, and the Nave Roof at York Minister. The most striking feature left of what was a very impressive site is the Candlestick chimney, now used to vent the mine. There are information boards and a memorial to the 136 men and boys who died in May 1910 in an explosion, which is well documented and a tragic read, with the pit closing in 1932.



Memorial to the men and boys who died



Memorial to the end of an area, with remains of the pit in background



Group photo by Mark Hatton on the site of the pit

We started back towards Haig Pit pausing to look at the remains of the How Gill self-acting incline built in 1813 to replace an earlier horse drawn tramway from Saltom pit wagon way. It was 230 yards long with a drop of 115 feet. A second incline starting at the same place on the cliff was built in 1923 as the old incline could not handle the output from Haig Pit. It ran past the candlestick and went through a tunnel which is now filled in, ending at the harbour.



Candlestick, remains of How Gill incline to the right, harbour in background. W. Allison



Outer harbour and Johnathan Swift's house who wrote Gulliver's travels. L. Withey

We passed the car park and carried along south on a footpath which was originally the railway line from Ladysmith Pit. We arrived at what is now the old Marchon chemical works built on the site of the pit along with the Sandwith Anhydrite Mine. This mine supplied the basic material for the works to turn into a variety of products. The cleared works is now the site of the proposed Woodside Coking Coal Mine and the two entrances to Sandwith Mine are to be used as the entrances to the mine.



A great day, excellently led by Kevin, and so much history that we will be back again. Bob has also suggested a meet for next year at the quarries near St Bees, where there are remains of 13th century coal workings.

Warren Allison on behalf of Kevin Timmins.

A Visit to the iron ore mining area of The Pilbara in Western Australia

Having spent time working as an artist at Florence Iron Ore Mine at Egremont, West Cumbria, the opportunity to visit one of Flo's 'big sisters' in The Pilbara was too good to miss. A visit to see a friend in Perth allowed me to travel north to this hot and remote area where the arid red landscape gives ample evidence of why this is one of the most important iron ore mining areas in the world.

On the 95 seater plane from Perth to Newman at 6am on a Monday morning ninety of the seats were occupied by men and women wearing 'hi-vis' in either yellow, if they worked for Rio Tinto, or orange, if they worked for BHP. These are the two main mining companies in the area and the mine I was heading for, Mount Whaleback, was run by BHP. The scale of mining in the area has been a controversial issue over the years owing to its impact on the environment, effect on traditional life styles and damage to sacred sites.

The airport at Newman was a modest affair with a simple open sided canopy as the arrival 'lounge'. There was no public bus into the town so I shared a pre-ordered taxi with a woman visiting her son who was in hospital after a fracas in a local bar. This gave me a flavour of some of the social difficulties raised by large numbers of, mainly male, 'fiffo' (fly in fly out) workers, away from their families with money in their pockets and time on their hands. Mining dominates the town of Newman and if the mine closed the town would die but this imbalance in the population can have a detrimental effect on the community and such towns have worked closely with the mining companies to encourage families to settle in the area and create less volatile environments.



Attempting to give a sense of the scale of things!

Mount Whaleback claims to be the largest single open-cut iron ore mine in the world. I joined the daily tour twice during my three day visit and we were able to get a grand view of the working area, the processing plants and the railway sidings. The mine is currently 5.5 km long and 2 km wide. The ore is one of the highest grades in the world and is transported to Port Hedland for export on the longest privately-owned railroad in the Southern Hemisphere at 426km. A typical train is 2.7 km long and has four locomotives, one at each end and two in the middle, two hundred and sixty eight ore cars, and one driver. They are the heaviest trains in the world and amongst the longest. They carry about thirty three thousand tonnes of ore. In 2001 BHP ran the world's longest train on the line at 7.3 km. The trains are monitored and controlled by a computer centre in Perth. Shortly after my visit a 'runaway' led to the 'world's biggest train crash'. Rio Tinto are already using driverless trains entirely controlled from Perth.

As well as mining the ore out of the ground there is some processing of the ore carried out at the mine. Dust is a major problem in the mine and there are a number of water spraying vehicles which keep it under control. This has to be carefully judged. Water soon evaporates in the extreme heat, but too much and the huge lorries which move the ore around the mine could lose traction and start to slide. 40% of the truck drivers are women as they are apparently more gentle on the gears and engines.



A corner of Mount Whaleback Mine

The only way for me to travel to Port Hedland from Newman was by the elderly weekly bus which I shared with only five other people. It comes up from Perth (a thirty hour journey) and then takes a further five and a half hours to Hedland before travelling even further to some of the surfing areas. Once we left the small township of Newman the only building we saw before reaching the outskirts of Hedland was Auski Roadhouse, a place for general refuelling and basic overnight accommodation. The heat throughout my visit was a major challenge but at nearly 40 degrees, Auski was the worst and opening the cafe door was a major mistake as I was met by a gust of even hotter grease-laden air.

There are very few cars up there and most transport is pickup trucks. Once on the open road the scant traffic is mainly huge 'road trains' – trucks pulling typically five huge trailers taking everything needed in the remote mining communities without rail access to the coast, and returning with iron ore from mines. The drivers keep in touch about road conditions by CB radio and we were often 'let through' as a public bus which travelled slightly faster.

Port Hedland claims to be the largest bulk export port in the world. It is a natural deep anchorage harbour and receives ore mainly by rail from four major iron ore deposits in the Pilbara. BHP alone sends between twelve and fourteen ore trains a day from Mount Whaleback, and there are other trains as well; in addition there are up to four hundred road trains arriving at the port, so it is a busy place. The ore is exported by some of the largest freight ships in the world and at any one time I could see between twenty and twenty five ships out at sea waiting to come into the harbour. According to the daily charts at the Seafarers Centre (formerly known as the Seamen's Mission) there were as many more waiting out of sight over the horizon. The huge ships are guided by pilots who are constantly seen flying back and forth in helicopters. Large tugs assist in manoeuvring these huge vessels safely in and out of dock.



Tugs manoeuvring an iron ore tanker at Port Hedland

About 80% of the ore goes to China where it is stockpiled as a future investment, a fact which has given rise to controversy in Australia. The ships have crews of only twenty three people mainly from the Far East. They are often only in dock for twenty four hours and their time off duty is short. The Seafarers Centre provides a ferry service allowing access to shore services as well as providing a daily tour for tourists and bringing professionals such as environmental health staff onto the ships, who test the bilge waters for pathogens prior to discharging anything into the docks. These activities help fund the Centre which provides a number of pastoral and other welfare services as well as having a bar, chapel and games area.

Tourism is not well developed in the Pilbara, very different to Kalgoorlie for instance, a mining centre to the East of Perth. Public transport is thin on the ground and air travel is expensive. Advertised tours were not always running due to obscure local reasons or simply lack of visitors. My accommodation in Newman was at the modest Visitor Centre where I had one of five small chalets in a heavily fenced compound. In Port Hedland I stayed at the 'top hotel', The Esplanade, ('The Nard') where, in common with many hospitality venues in the area, I was met with the sign 'No Hi Vis after 6pm'. An injunction to which no-one takes offence. There are other less sophisticated establishments where the scale of beer glass breakages has warranted coverage by the BBC. These are communities of independent spirits, yet with a strong sense of mutual support, there is a frontier feeling about them.

The Pilbara may have some marked differences to mining in West Cumbria: the scale and the weather for a start; the use of computer technology. There are nonetheless similarities in terms of the basic digging and crushing techniques, the dependence of isolated communities on a single industry and a sense of individual pride and self-reliance. It may not be at the top of everyone's bucket list, nor does one come across it by chance, but to anyone with the slightest interest in mining the Pilbara offers a unique and dramatic insight into a very particular contemporary mining environment. A visit there is highly recommended and I am happy to have a chat if that would be of any help.

Photos don't really do the place justice so here are some YouTube clips:

The early days [From the Archives: The Newman Story \(1969\) - YouTube](#)
Mount Whaleback as it is now. A bit 'naff' but the best I could find giving the sense of scale

[Iron Ore Mining - Mt. Whaleback Minesite - YouTube](#)

Port Hedland [Today Tonight Port Hedland.wmv - YouTube](#)

The world's longest train crash [Train Derailment | 9 News Perth - YouTube](#)

Robust words about Auski Roadhouse! [Auski Roadhouse Pilbara - YouTube](#)

Jane Foale, August 2021.

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