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Please note that the deadline for inclusion in the May 2019 Newsletter is the 26th April 2019.

Society News

On behalf of our NMRS Committee I would like to wish you all a Happy and Healthy New Year. Also this being the first newsletter of another year I would like to thank all who have paid their **membership fees** promptly which is a big help for our membership secretary, Gary Topping. Those who are now paid up should find their membership card and meet list enclosed. If you feel you have paid and there is not a membership card enclosed please contact me and I will endeavour to sort it out. Watch out for any meet events added in future newsletters. A gentle reminder to those of you who have not paid up this will be your last newsletter! Thank you to Graham Topping for organising and posting out membership cards and newsletters where needed. It is a welcome break for Rex and I.

Our **A.G.M** this year is on Saturday April 27th. Graham has kindly organised this and full details will be found elsewhere. He is also taking care of bookings and our attendance register. Thank you Graham. Also in order to save time and photocopying please look at the minutes of our Autumn meeting on our website prior to the meeting. If you are unable to access a computer please let Graham know on booking. He will pass on details to me and I will make sure a copy with your name on it is available when you arrive at the Hall.

If no-one comes forward to volunteer as our **Secretary** before the AGM we will have this **position vacant**. I find it very disappointing that out of our expanding membership there is not a soul prepared to help us. You are all happy to receive newsletters, our publications, have an opportunity to go on our meets and enjoy our excellent meetings but there are very few prepared to give anything back. With the continuing use of email our secretary's input is not very onerous – taking minutes at meetings (or finding someone willing to do it for them), condensing committee emails into a monthly digest to be sent to all, and replying to letters – the last one nearly a year ago!

On Saturday May 18th the **Yorkshire Mineral & Fossil Fair** is taking place at Tennants in Leyburn and as in previous years Northern Mine Research Society will have a stand for our publications. There is a flyer printed elsewhere in our Newsletter. As it is a free event with free parking and plenty to see on site please try and come along and introduce yourself to me. Also if you want to save on postage you could collect orders from me there.

You will all be pleased to know that the **Second International Early Engines Conference (IEEC2)** is at the early stage of planning for mid May 2020 – date to be announced and at the Black Country Living Museum. Those who went last year thoroughly enjoyed it, commenting how friendly and welcoming everyone was. It is planned the event will start at noon on the Friday and finish at noon on Sunday and will be concurrent with Museums "Red by Night" event which involved many of the engines being in steam and working into the night. The format will be similar to that of IEEC1 including publication of the Transactions. Our Editor, Richard Smith, has offered to help with the publications and act as our representative on the organising committee. If any of our members have proposals for papers please contact Steve Grudgings at steve.grudgings@btinternet.com Further details will be available in future newsletters.

On behalf of NMRS I would like to welcome the following **new members**

Dr David Amos	Eastwood
Mr Pierre Botcherby	Kennilworth
Mr Andrew Claughton	Leyburn
Mr Tim Colman	Keyworth, Notts.
Mr James Cooper	Arizona, U.S.A.

Mr Graham Cottrell	Keighley
Mr Trevor Fenwick	East Lothian
Mr Peter Giroux	Darlington
Mr Adrian Gott	Cadiz, Spain
Mr Philip Harvey	Shrewsbury
Mr Tony Nicholson	Bristol
Mr John Rushworth	Halifax
Mr Andrew Schofield	Keighley
Mr Nigel Smalley	Stonehouse
Dr Ian Taylor	Warrington
Mr Mark Thompson	Romford
Mr Derek Rigby	Burton-Bradstock
Dr Phil Shelton	Stone
Mr Gavin Stronach	Skipton
Mr Alan Telford	Co Durham
Mr David Winter	Pershore

We were sorry to hear of the **death** of a former long time member Dr J K Almond (Jake) on 13th December 2018. He was a Trustee of the North Pennines Heritage Trust, a mineral processing engineer, writer about fluorspar and zinc mining, researcher and writer of the history of lead smelting who cared passionately about the heritage of UK mining.

Our **Facebook page** continues to be well received and we now have over 1350 followers eager to read both our news and that of other members and organisations with similar interests.

Please remember this is **your** newsletter. It is so much more interesting when contributions are from our members. We all have so many diverse interests. Please consider sharing yours with our membership.

Just a reminder that we at NMRS are well aware of the **Data Protection Act** (www.gov.uk/data-protection-act) and how it should be implemented and can confirm that we use any data we receive in approved ways. It is kept for membership purposes only. If a member resigns their entry is erased from our database. Details are never passed to third parties.

Checklist

Do I need to renew my membership?

Could I take on the role of Secretary?

Have I booked for the AGM?

Can I offer a contribution to our next newsletter?

Barbara Sutcliffe.

Email: mansemins@btopenworld.com

LIBRARY NEWS

We are very grateful for many interesting recent donations. Thank you to Guy Hindley for a large box of books he brought to the Autumn Meeting, including caving gazetteers for "Wales and the Marches" and for several parts of the north of England (these include mines as well as caves and are wonderful nostalgia for 'oldies' like me as well as excellent guides for the young and energetic), "Coal Mines of Buxton", geological field guide for Northumbria and articles about Teesdale mines by Harold Beadle. Thank you to Lynne Mayers for a boxful of books including Denise Bates' "Pit Lasses", Alun Richards "Slate Quarrying in Wales", a fascinating Pelican book "Explosives" published in 1943, books on mining in Wales, Douglas Glendinning's text on

Thomas Hair's "Watercolours of the Northern Coalfield", Rick Stewart & Robert Waterhouse's compilation of William Woolcock's Notebook on Devon Great Consols and Walter Minchinton's "A Limekiln Miscellany: the South-West & South Wales. Thank you to Gary Topping for the NCB's Winding Enginemen's Manual for Bold Colliery. Thank you to Rob Roberts for Frank Machin's "The Yorkshire Miners", Ministry of Fuel & Power Survey Reports, Gerard McLister's "Cadeby: the end of an era", "An Illustrated Record of Coal Mining in St Helens", Nigel Chapman's books on Sandwell Park and Hob Hill Ironstone mines and several definitive books on coal mining by R Page Arnot. Thank you to Richard Smith for arranging a donation of books belonging to the late Sam Murphy including English Heritage's Survey Report on Roughton Gill, the Monuments Protection Programme' Step 4 Report on lead, the World Heritage List Draft on Cornwall & West Devon and a wonderful bound set of Historical Metallurgy Society Bulletins and Journals. Thank you to Lorraine Luescher for copies of her books on Louisa Mine and on Thomas Telford – see the November Newsletter for reviews. Thank you to Barbara for recent copies of "Down to Earth" and for Peter Joseph & Alasdair Neill's "Wheal Trewavas". With so many donations recently, I may have missed someone – if so, I apologise; please let me know so I can acknowledge your gift in a future Newsletter.

Sallie Bassham. {Honorary Librarian}

Weardale Meet

The first of this years meets is on the 13th April , as last year numbers are restricted. I might add that everybody who attended thoroughly enjoyed themselves. I will be away from 22nd Febuary until 8th April, I can be contacted by email but not by phone.

Mick Cooke.

2019 AGM details.

The AGM will be held on April 27th at, Slaidburn Parish Hall. The Green. Slaidburn. Clitheroe. BB7 3ES. Book sales will commence at 11.30, tea and sandwiches at 12 o'clock.

Parking and disabled access are very good. Accommodation can be found at the Youth Hostel in the village or the local pub, Hark to The Bounty.

After the AGM I will be leading a short walk to, Jumbles Quarry. This walk is reasonably flat and about 2 miles in all. As we will have to cross a small stream I would recommend Wellington or waterproof boots.

Please contact me to book your place using the details posted on the front page under "editor".

Graham Topping.

The "Louisa Mine" book details.

Following my article in the November Newsletter, I have been asked to give a postal address for those Society members who were unable to use the web address I gave; either directly or to get a postal address, Lorraine Luescher's books may be obtained from the author at Glendinning Farm, Megdale, Westerkirk, Langholm, Dumfriesshire, DG13 0NN

Sallie Bassham.



MAIDEN CROSS COLLIERY OBJECT

On 11 June 2016, nine members walked to the site of, Maiden Cross Colliery which is situated just off the Long Causeway Cliviger Nr. Burnley. One of the extant features was a large engine bed (NMRS Newsletter August 2016, Page 7). In one of the bolting holes there was a roughly cylindrical iron object, which is shown in DSC095595.

The object was, with an allowance for corrosion, 340 mm (13 3/8") long. Its shape reminds me of a belaying pin with a handle and a hilt at one end and the remainder gradually tapering to the other end where there is a ghost of a spline (DSC05599). My belief is that the shape indicates that the object was made for a specific purpose. Since it may have been associated with the ginny, I wonder if it was something to do with speed adjustment or braking. Suggestions are very welcome.

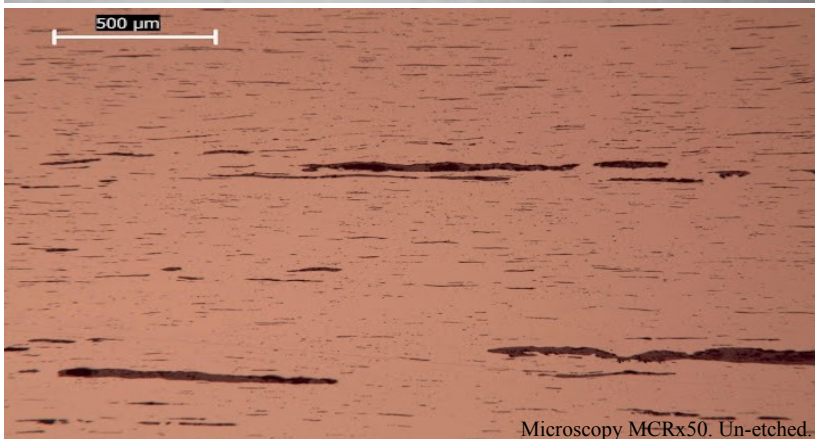
The most common question that was asked when on-site was, "Is it wrought iron, mild steel or cast iron?"

The fibrous appearance of the rust suggested wrought iron. This was confirmed by microscopy; "MCRx50 un-etched" shows the microstructure of the object and there is no doubt that the object is made of wrought iron.

While sources differ, the peak of wrought iron production was between 1866 and 1869, a date range that tallies well with the start of Maiden Cross Colliery in 1868.

Thereafter, progressively less wrought iron was produced due to improvements in the quality of mild steel. Interestingly, as far as I can ascertain, the last 'new' wrought iron was made in the Atlas Forge, Bolton (Thomas Walmsley) with production ceasing in 1975. Wrought iron is now recycled by the "Real Wrought Iron Co."

James Cleland.



Giant redwood trees could be under threat from quarrying, say campaigners

Majestic redwood trees on Cambusbarron's Gillies Hill are among the environmental 'treasures' threatened by the resumption of quarrying in the area, say campaigners. It is thought that the five giant sequoias, each standing at a height of up to 164ft on the hill's summit, were planted in the mid-19th century by the owners of Polmaise Estate along with four others elsewhere on the hill. Save Gillies Hill campaigners had commissioned an impact study during a previous fight to stop quarrying four years ago. It emphasised the significance of the giant sequoias, the largest trees on the planet, which can grow to a height of more than 300ft.

They had thought the matter had been brought to an end after the rejection of Patersons' Quarries appeal more than a year ago against Stirling Council's failure to determine plans to resume quarrying. But Patersons recently lodged access road plans for Gillies Hill's Murrayshall Quarry, which has lain dormant for around a decade. This followed an application for a review of old mineral permissions at the site.

Save Gillies Hill campaigners responded last month by presenting a 500-signature petition to council planners opposing Patersons' plans pointing to polluting fumes and noise from HGV traffic serving the quarry, in residential areas of Stirling. Concerned that the giant sequoias will be a casualty of quarrying, they have enlisted the help of a botanist from California where the huge redwood trees can be found growing on the western foothills of the Sierra Nevada mountains.

The Daily Record. Dec 2018. {Edited}

Mines and Miners during the First World War

On 18 November 2018, a NAMHO seminar was held at Carnforth Railway Heritage Centre. I did not know about it in advance; so I am sorry, but I was not able to publicise it in the Newsletter.

On the train to the seminar, I read Pete Joseph's article in British Mining 106 about the explosive bellite; so I wondered about the increased need for explosives during the First World War, but the seminar concentrated on coal, wolfram, iron and steel. Not only was there an increased need for fuel and minerals for the war; but there were problems because, before the war, the industries were heavily dependent on imported materials. Also, unlike during the Second World War, there was no concept of 'reserved occupations' and so many miners were persuaded to join the army.

During the First World War, the government produced "Special Reports on the Mineral Resources of Great Britain"; but most government strategy seems to have been re-acting to crises as they arose, rather than planning for extraction, processing, research and sufficient skilled labour in mining and in processing of metals. There certainly seems to have been little consideration of the values of self-sufficiency in raw materials and in processing; and many mines were closed very soon after fighting ceased. Perhaps it is difficult, from our perspective one hundred years later, to understand how convinced people were that it was the war "to end all wars".

Warren Allison gave a detailed paper about Carrock Wolfram Mine. The German influence on Cumbrian mining is well known, especially the sixteenth and seventeenth century work in the Keswick area. However, early in the twentieth century, Germans bought the ailing mines at Carrock. At that time tungsten was used only in light bulbs and the processing was done in Germany. The ore was worth £75 a ton. During the war, it was discovered that tungsten could be used to make the hardened steel needed for armaments and the price rose to £140 a ton.

In 1913, Carrock mine was owned by the Carrock Syndicate formed by British business men and steel manufacturers. They took the mine out of 'care and maintenance' and invested £3,000. The government invested £5,000. Pelton wheels were installed to generate electricity, but the water supply was insufficient and the mine ran at a loss during the war. In 1918, twenty-five people were employed; but in late 1919 the mine closed as the tungsten price dropped because of imports from China.

Peter Claughton spoke about "Maintaining Resources in the Face of Conflict" looking particularly at iron and steel.

In 1914, the iron and steel industry was strong, but it was heavily reliant on imported ores. During the war, there was insufficient iron ore, particularly low phosphorus ores. The demand for "shell steel" outstripped production capacity and there were only six British firms capable of producing the steel required. As well as tungsten, steels could be hardened using manganese, chrome, nickel, molybdenum and vanadium; but all these metals were largely imported. The North Wales manganese mines, which had been abandoned, were re-opened and transport routes improved; but, these mines were abandoned after the war. The steel industry also needed fluxes and refractory materials

Another resource in short supply was labour. Miners were called up despite their expertise. For example, many of the Hodbarrow miners enlisted, but then they were recalled from the army in 1915. However, these men were still in 'military service' and so were not allowed to strike. This caused problems, and was one reason why the Ministry of Munitions took over control of mines. There was some increased mechanisation in mines; but Prisoners of War were used in ironstone and limestone extraction: this may have been in contravention of the Hague Convention which stated that PoWs should have "no connection with the operation of war". Raasay mine was an example of the use of PoWs, including as underground workers. Like many others, this mine was abandoned after war.

Many of the necessary developments were hindered by labour shortages. Although many explosives workers were women; before the war their use in metal mining and processing was minimal. However, by the end of the war 74 women worked in Cleveland mines, making up 4% of the surface workforce. At Wheal Mary, women re-worked dumps for tungsten ores. There is photographic evidence of other women mine workers.

Another requirement in short supply was power. Electric arc furnaces were used for special steel production (eg armoured steel) but this demand for electricity led to rationing. There was only one British tungsten processing plant (in Luton); but the works were idle for part of nearly every day because of lack of power.

Development of the metal mining industry was left largely to the economic market. The Ministry of Munitions took limited control of some sectors, but merely re-acted to crises as they arose. As with ore extraction, developments were hampered by labour shortages.

Dave Sables concentrated on the coal industry and set the First World War work in the context of the 1912 and 1926 miners' strikes. For metal mines, seminar attendees seemed to agree that greater government foresight and intervention would have helped during the war: more strategic deployment of resources was needed, and a better overview of competing needs. However, in coal mining, government actions were unhelpful, perhaps because they were political rather than strategic. Mines were swapped from private ownership to nationalisation and back again. There were disputes and broken promises.

After the war, the return to the gold standard was disastrous, because it meant that exports were expensive and imports were cheap. As profits went down, so did miners' wages. Also Germany was asked to pay some of its reparation in coal, and this also caused coal prices to fall. Then, in 1926, one million miners were locked out of work. The coal mining industry was adversely affected for decades to come.

{Before attending this seminar I knew very little of the implications for the mining industries of the First World War and its ensuing politics. Not only were the talks and the following discussions fascinating – "How did we manage to win the war?" someone asked – but I have since re-read some of our library books, publications on Lake District Mining and on women working in mines, the Drapers' "The Raasay Iron Mine" and R Page Arnot's "The Miners: Years of Struggle", with greater understanding.

**Thank you to all involved.
Sallie Bassham.**

The British: Heritage Plan for Iron Works in Torfaen

A derelict iron works is set to be transformed by a heritage trail and cafe in a £3.7m project. It follows decades of uncertainty over the future of the 19th Century site of The British works in Abersychan.

A local business has proposed creating an activity centre and trekking routes, while three sites have been identified for possible housing. Torfaen council leader Anthony Hunt said it had the potential to be one of the area's "jewels in the crown".

A report to the council's cabinet on Tuesday said the authority took the opportunity to buy the derelict site in 2016 as a "once in a generation" opportunity, ending a cycle of private sector speculation that had been a barrier to regeneration for more than 30 years.

The cafe would be opened in a restored engine house, while the heritage trail would be marked by interactive interpretation panels, according to the Local DA a landscape corridor around the ponds would also be created, with new paths for water-side walks.

Mr Hunt said the site presented financial and technical challenges, but could be of great value to the area.

"I'm glad we've moved from that situation of almost despair and lack of hope to one where, yes, there are challenges, but we can bring a positive resolution," he added.

Council officers will now prepare the final designs ahead of a planning application being submitted.

Remediation works would then begin to tackle flood risks and mine shaft safety.



Gwyn Jenkins.

Built in the 1800s, the British iron works site at Abersychan has been derelict for 40 years.



Torfaen county council.

BBC News {Wales} Nov 2018.

An artists impression of the restored engine house.

Coal Authority Wins Welsh Contract

The Coal Authority has been awarded a contract by Natural Resources Wales as part of its programme to clean up metal-polluted rivers across Wales.

The year-long contract will see the Coal Authority carry out 4 feasibility studies on priority metal mine sites in addition to other mine-related assessments. The contract will also include the development of a long term metal mine programme within Wales.

The Coal Authority will be looking at proposals for re-mediating Dylife, which is the main source of metals in the Dyfi catchment, that impacts over 35km of watercourse. Remediation at Frongoch-Wemyss that could improve 32km of watercourse. Treatment of mine water from the Cwmystwyth mine complex that impacts approximately 33km of the Afon Ystwyth.

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Remediation plans for the Cwm Rheidol mine site that is located in the picturesque Rheidol Valley, with the impacts of the mine water extending to the coast at Aberystwyth, and additional assessments for Parys Mountain which is one of the most polluting metal mines in the UK.

The Coal Authority will conduct assessments of the legacy and features of pre-selected mine sites together with an inspection of selected mine drainage adits and shafts. The organisation will also be identifying the best way to compile a cost efficient metal mine programme, which could run for the next 15 years.

The work is all part of the Metal Mines Strategy for Wales, which was originally launched in 2002 to tackle pollution from abandoned mines. Abandoned mines present significant sources of both land contamination and water pollution and are the main reason why Welsh water bodies are unable to achieve 'Good Status' under the national Water Framework Directive.

Carl Banton, Acting Head of Environment for the Coal Authority, said the authority is looking forward to working with Natural Resources Wales (NRW) on this important project that will help protect and restore the environment.

He added: "We are delighted to be playing our part in the Welsh metal mine strategy. We believe that our ongoing work and expertise currently being utilised within the English metal mine programme will allow us to help NRW move this project forward and achieve its objectives for cleaner watercourses. Our task is to identify the best solutions for a number of different priority sites that have been identified during previous scoping work and to find out how feasible they are to implement. We will also be carrying out other inspections of various different sites."

Peter Stanley of Natural Resources Wales Geoscience Team said: "The Metal Mine Programme in Wales is at a very exciting stage restoring rivers back to health.

"Metal mining is an important part of our heritage, once providing an economic stimulus driving the industrial revolution. Abandoned metal mines have however left a distinct mark on our environment and cause pollution to more than 600km of rivers and streams.

"The mines and their discharges require cleaning up to revitalise today's environment for river wildlife to thrive and people to enjoy.

"The Coal Authority will complete studies at 4 complex sites to enable remediation including water treatment solutions to be designed at 2 of these sites in preparation for construction. The Coal Authority is also assisting with additional assessments at Parys Mountain and addressing mine hazards to reduce environmental impacts and help make them safer. We very much look forward to working with them to help deliver these improvements."

Coal Authority {press release.} Nov 2018.

Welsh Slate region to be nominated as UNESCO world heritage site

The shattered slate quarry landscape of north-west Wales is to be nominated for world heritage status, a distinction enjoyed by sites such as the Great Barrier Reef, the Taj Mahal and the abandoned southern African kingdom of Mapungubwe.



Penrhyn slate quarry. Photo. RCAHMW/PA

The UK Government can put forward one site per calendar year to be considered for UNESCO world heritage site status and on Tuesday the heritage minister Michael Ellis announced that it would be Gwynedd's slate landscape. The area is described as having "roofed the 19th-century world", with vast quantities of slate being sent around Britain as well as expanding towns across Europe, the US and Australia.

"Gwynedd's slate landscape is hugely important," Ellis said. "Its vast quarries and mines have not only shaped the countryside of the region but also countless buildings across the UK and the world. "This is a crucial milestone on the road to becoming a world heritage site and the global recognition that brings. While the UNESCO nomination process is very thorough, I believe

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this unique landscape would be a worthy addition to the list.” The landscape of quarries, mines, railways and villages will be formally presented as a nomination next year. The selection process culminates in a decision in 2021.

If successful, the landscape would be the fourth world heritage site in Wales, joining the Blaenavon industrial landscape, the 13th-century castles and town walls built in Gwynedd by King Edward I, and the Pontcysyllte Aqueduct.

The UK has 31 world heritage sites, including places as varied as the Lake District, the Forth Bridge, the Tower of London, Blenheim Palace and neolithic monuments on Orkney. Worldwide, there are more than 1,092 sites across 167 countries. Italy has the most, with 54 sites from the rock drawings of Valcamonica to the industrial northern city of Ivrea where Olivetti has its headquarters.

The UK’s most recent nomination was for the Jodrell Bank Observatory. It was nominated in January 2018 and recently underwent an evaluation by UNESCO experts. A decision is expected next summer. The UK government’s minister for Wales, Mims Davies, said she hoped the status would help “revive and grow the economy” of the slate areas. “An accolade such as this not only highlights the immense beauty and history that Wales has to offer but also acts as a catalyst to investment and tourism.”

The area includes the slate mines, quarries and railway of Ffestiniog; the Dinorwig slate quarry mountain landscape; and the Aberllefenni slate quarry, which is one of the oldest in Wales, possibly dating from the early 16th century.

The Guardian . Oct 2018.

New website 'Dalesrocks' looks at fascinating geology of Yorkshire Dales National Park

A PRIMARY school teacher who describes Ingleborough as ‘the most interesting mountain in Britain’ has helped produce a website on the fascinating geology of the Yorkshire Dales.

Stephen Oldfield, 49, a teacher in Accrington, provided the words and most of the pictures in Dalesrocks.org - a project funded by the National Lottery.

The website uses phrases such as ‘Gritty Flat Caps’ and ‘Rocky Sandwiches’ to tell the story of ‘Limestone Country’. It also includes an interactive map of all the geological sites as well as suggested walks.

Specially commissioned work by illustrator, Elizabeth Pickett, is also included on the website, along with drawings of imagined, ancient landscapes by Richard Bell and John Sibbick.

“The whole landscape means more when you know how it was formed,” said Mr Oldfield. “It becomes a story that you can walk in – and that is especially evident on Ingleborough. “On Ingleborough you can trace the journey of water from the cap to the bottom, through the caves and through all the bands of rock. It is the most interesting mountain in Britain. He spent eight months of his own time writing the content – but had already done much of the work after 40 years of visiting the area and carrying out specialist research. “I used to spend every single minute of my time in the Three Peaks,” he said. “It became an obsession from

the age of seven when I visited Weathercote cave in Chapel-le-Dale. I used to camp with my dad on land owned by one of his friends, Stanley Bargh. Ingleborough was a Mount Everest to me.”

Included in the website is Thornton Force, near Ingleton, described as a ‘place of wonder’; and Trow Gill, near Clapham, described as an ‘impressive gorge’ which ‘numbs the senses like the main water-feature of some ambitious giant’s garden’.



Looking up Chapel-Dale from above Thornton Force.

The website project was managed by the Yorkshire Dales National Park and funded by the Yorkshire Dales Millennium Trust, through Heritage Lottery funded Stories in Stone.

Karen Griffiths, interpretation officer at the national park, who helped design and write the website, said: “The national park was designated in 1954 in large part due to its stunning geology. Dalesrocks has been created to help people explore and learn more about this special part of the Yorkshire Dales. Stephen Oldfield’s enthusiasm for the Ingleborough area shines through.”

And Debbie Boswell, Stories in Stone project officer at the millennium trust, said: “This is a really exciting, attractive and easy to use website which offers a real element of discovery. It explains the local geology well and interprets the striking landforms that we all see around the area on a daily basis and often take for granted.”

To find out more about the fascinating geology of the Dales, visit: Dalesrocks.org.uk.

Craven Herald and Pioneer. Nov 2018.



Rex and I will be at this event so why not pay us a visit?

Barbara Sutcliffe.

John Ruskin

2019 marks the bi-centenary of John Ruskin who was born in 1819 the only son of a successful Scottish sherry merchant. Educated at home and at Christ Church, Oxford where he was influenced by the evolutionary science of the day, especially geology. In August 1871 Ruskin purchased Brantwood, on the shore of Coniston water, paying £1500 and from the following year until his death in 1900 it was his main home. It was here on a residential geography “A” level trip that I had my first introduction to geology.

Some of the following information has been gleaned from “Robbing the Sparry Garniture – A 200 year History of British Mineral Dealers” written and researched by the Late Michael P. Cooper. In this excellent publication all information is fully referenced.

It was Crosthwaites Museum, and the purchase of a five shilling collection of minerals that was bought for the young John Ruskin by his father that laid the foundation for a life-long passion for mineralogy.

In 1837 Charles Hewes Wright served as a guide to the Ruskins in their tour of the Lake District. He also considered himself a dealer in minerals and a notorious story teller although Ruskin later commented “Wright at Keswick knows more about the country than any other guide, but don’t believe anything he tells you about anything but rock.”

At one time he bought a collection of agates from John Frederick Calvert for £3000. However Ruskin took Calvert to court in the belief it was only worth £500. Unfortunately the case was delayed and Ruskin asked his lawyers to make the best settlement they could get out of court. The lawyers charged him £1000, gave him £1000 back and made Mr Calvert give him another £500 worth of specimens.

Ruskin was known to be generous to others. He bought agates, sapphires and opal from R C Nockold a gem dealer and cutter of Soho and some of these were included in his donations to various schools he supported. An extravagant purchase was the “Colenso” diamond for £1000 which he presented to the British Museum (Natural History) in 1887.

Like many collectors today John Ruskin had an interest in Cornish specimens and he bought specimens of chalcotrichite from Richard Talling (1820-1883) of Lostwithiel. He was so pleased with them that he stored them “under glass on little white satin padded cushions” to protect them from the “accursed smoke of London.” In fact Ruskin was one of Talling’s best customers and he bought some 1,200 specimens from him between 1865 – 1873. He did not always appreciate his “abominable carelessness in packing”. One example from a letter from Ruskin to Talling now in the Bernecke library, Yale University states “I was horribly provoked with you for thrusting the calcite with galena down at the side of the box as if it had been made of cast iron, of course the most interesting bit of galena was broken off never send me minerals when you are hurried.”

Ruskin bought part of the Stowe Collection from Tennant and many of these specimens were used in the collections that he gave to the Ruskin Gallery in Sheffield. Other specimens for this

collection are also identifiable in the collection of George Allen, his publisher, now in the Oxford University Museum of Natural History. He may have acquired these from Ruskin.

He was also a regular customer of the Bryce-Wrights and complained about their rising prices and over-valuations. Of a Kongsberg silver bought for £70 he said “the price seems to me awful. It (the price label) must always be attached to it at the Museum, and I feel great displeasure from the public for giving such a price” This too went to the Ruskin Gallery in Sheffield.

Museums Sheffield have also been extremely helpful in providing information and generously gave NMRS permission to use the photos for this article which should be credited to the Collection of the Guild of St George, Museums, Sheffield. In 1875 John Ruskin established a museum in Walkley containing a collection of material he hoped would inspire Sheffield’s workforce at the newly founded St George’s Museum, Sheffield. In 1890 this Collection of the Guild of St George was moved to Meersbrook Park House, and renamed the Ruskin Museum. The original museum was found to be too small for the collection. In addition, Ruskin’s chosen curator, Henry Swan had recently died. Whilst Ruskin insisted that the council should not own the collection itself, the display and maintenance of the collection became linked to the council from that date. William White, the first curator at Meersbrook was devoted to the idea of Ruskin but nevertheless split the collection up into different rooms including a Gallery or Picture Room, Turner Room, and Mineral and Cast Room. Ruskin intended all elements of the collection to be seen together and he refused to have anything to do with White or the Museum again. The collection of watercolours, prints, minerals, illustrated books, manuscripts and coins is still owned by the Guild of St George and is now in the Millennium gallery in the centre of Sheffield and is maintained and displayed by Museums Sheffield.



The original St George's Museum at Walkley in about 1880-85



The Mineral and Plaster Cast Gallery, Ruskin Museum, Meersbrook Park 1890-19



One of the items in the museum collection now is a study of a block of Queensland Opal. For Ruskin, colour was an expression of God's desire for a beautiful world. He wrote opals were one of the colourful objects God "painted" for human enjoyment. It is one of several mineral studies Ruskin commissioned from MacDonald. It is very similar to an opal specimen in Sheffield's Ruskin Collection which he boasted was "the finest hitherto found"

Wikipedia gives his occupations as writer, art critic, draughtsman, water colourist, social thinker amongst other.

Many of his quotations are well known but I particularly like,

"Quality is never an accident, it is always the result of intelligent effort"

Barbara Sutcliffe.

John Mc Neil's Seat.

John was our NMRS Secretary 1978-1989 and President 1990-1992. The official seat opening was Sunday 18th July 1993 when 64 of John's friends and companions attended the dedication of the seat in his memory. John having passed away in August 1992. It is to be found at the path junction at Flintergill and the Occupation road above the village of Dent. Grid reference S.D. 698859. The plaque reads "In Memory of John Mc Neil 1953- 1992." Now with 25 years of seat maintenance by myself, Janet and others the seat's condition is as described in our NMRS Newsletter Feb 2012 in "Fine Fettle."



The photo was taken on my last visit on 2nd November 2018

Bernard Bond.



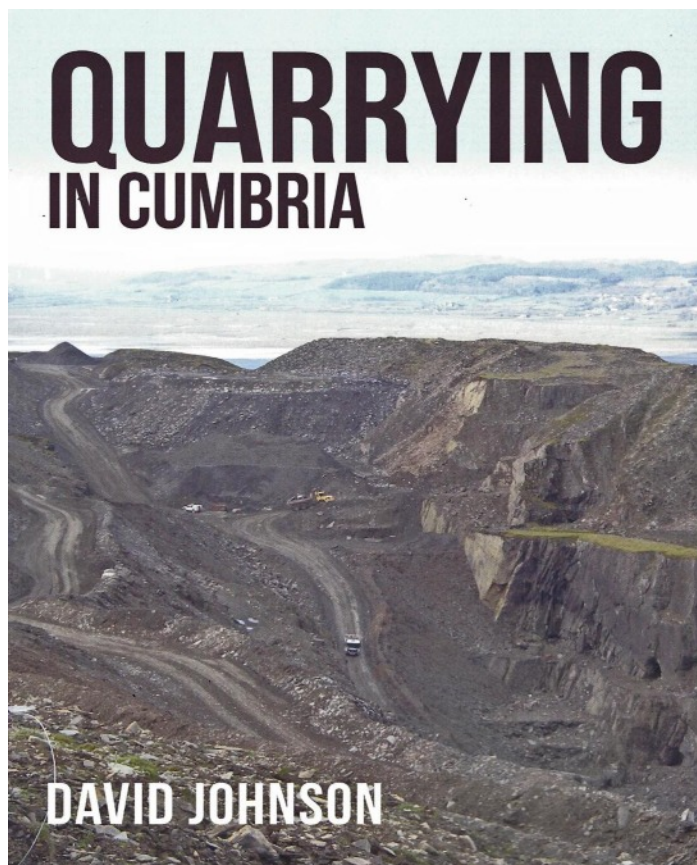
Date of March 2019 given for new mining heritage visitor centre at Betteshanger Park, Deal

A fundraising campaign has been launched for the redevelopment of the former Betteshanger Colliery site. Kent Mining Heritage Foundation launched the appeal for £250,000 towards a £1.8 million fundraising target for the Betteshanger Project near Deal. Development manager Tamasin Jarrett said yesterday: "We're launching a public appeal to enable the community to play a part in the future of the Betteshanger Project. "We are offering the opportunity for people to donate and receive their own, limited edition, miners' pit check and upload a photograph to become part of the huge collage of the Waiting Miner.

"We have already raised £1.3m towards the required £1.8m. "We now just need the support of park users and our local community to get this amazing project over the line. " The public are invited to make a personal style donation through two main products. Firstly there is the Waiting Miner Collage. A photo tile can be bought for £10 to become part of a 5 metre tall mosaic of the image. It will be displayed on the café wall a new £9.5 million visitor centre, which opens next March.

Kent On-line. July 2018. {Edited}

Book Review – “Quarrying in Cumbria” by David Johnson



Cumbria has a wide variety of types of rock that have proved suitable for building and other uses such that quarries, large and small, can be found across the county. Abandoned workings testify to the extraction of limestone, sandstone, flagstone, slate, granite, sand, clays and gypsum. Some still operate today supplying markets across the country. The subject of quarrying has not received the attention that has been given to metal and coal mining and historical records are often very sketchy because of the relatively low value of the commodity.

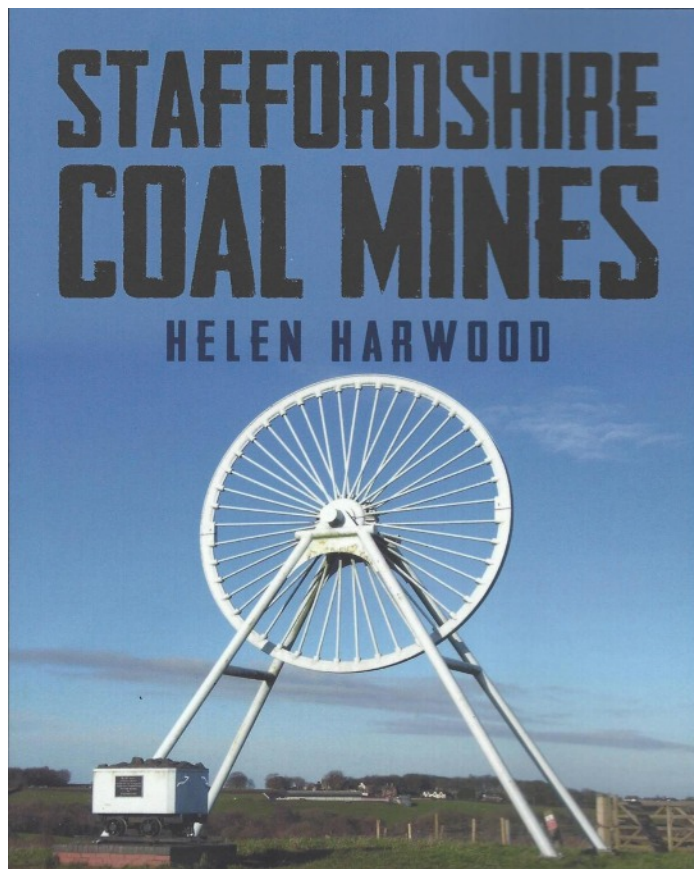
Although the book is essentially a pictorial record, the author has managed to cram valuable facts into the captions which accompany the illustrations. There is a short section on geology and a section on early stone getting. The main part of the book is divided into sections dealing with the various minerals and tells the story of each. The illustrations have been well-chosen and include maps, photographs and diagrams covering all aspects of the particular industry. Map references are included and there are sections on quarry infrastructure and abandoned site. For those wishing to follow up in the subject, there is a list of references and a bibliography. The book is well set out, with a contents page and short index.

The author is to be congratulated on squeezing a wealth of information on a large subject into a modestly sized book. There is something here for those who wish to dip into the pages from time to time and also for the more systematic reader. It is to be highly recommended for those with interests in earth sciences, the North of England and the shaping of our landscape.

Johnson D., ‘Quarrying in Cumbria’, Amberley Publishing, Stroud, 2018, 96pp. ISBN 978-1-4456-7236-5. Paperback, £14.99.

Richard Smith.

Book Review – “Staffordshire Coal Mines” by Helen Harwood



This book on Staffordshire coal mines is divided into two parts - North and South Staffordshire. Within these, the mines are given in alphabetical order and there is a short history of each mine of about two or three paragraphs. It is well-illustrated and includes several photographs from the author’s own collection. It is a useful book for anyone interested in the industrial history of Staffordshire, for which the pits were an important factor and will also be of interest to those who have had personal connections with the coalfield.

The introduction gives a brief description of the early beginnings in Roman times through to the start of the Industrial Revolution. Staffordshire coal played a key role in shaping the economy of the county and in particular the pottery and iron industries there.

Mining historians would, no doubt, have liked to see some information on topics such as geology, methods of mining and the particular hazards of this coalfield. Although the mines can probably be identified from 1st Edition O. S. maps, National Grid References would have been useful as would a list of references and a contents page. Nevertheless, this is a handy and well-produced book which should find a place on the shelves of those with an interest in Staffordshire history.

Richard Smith.

Harwood H., ‘Staffordshire Coal Mines’, Amberley Publishing, Stroud, 2018, 96pp. ISBN 978-1-4456-7787-0. Paperback, £14.99.

Highlights from the NMRS 2018 Autumn Meeting.



Moving buildings at Hibbing to make room for the open pit

north on the Vermilion Range at very deep horizons and were commercialised when Charlemagne Tower built the Duluth, Mesabi & Iron Range Railroad to Two Harbours on Lake Superior and later to Duluth. The first train load of ore was sent in 1884 and Tower received ten square miles of land for every mile of track laid (600,000 acres).

Iron mines developed on the Mesabi and Vermilion Ranges; some like the Soudan Mine, which is 2341 feet deep (889 feet below sea level), others like Hibbing (home of Bob Dylan) were open pits. The ores were from haematite/magnetite/limonite deposits known locally as 'natural ore'. In the 1920's the Mines Department of the University of Minnesota recognised that the large deposits of natural ore would not last forever and started developing a process to exploit the low grade taconite. This took them over 30 years.

One of the main disincentives to mining was the state taxation system. There were four taxes levied on the ore but the most important one in terms of burden and state income was the so-called 'ad valorem tax'. This was assessed on the value of the mine and meant that tax had to be paid on unexploited reserves – bad enough for natural ore mines but huge low-grade deposits were not viable. The townships were awash with money and had some of the best schools and municipal facilities in the country. Hibbing imported star basketball players and employed them as painters during the close season.

The Soudan Mine (near Tower), now a heritage centre with very good underground visits, and the open pit at Hibbing were visited together with Pioneer Mine (near Ely, abandoned but intact) and Babbitt taconite mine (courtesy of a friend). At Hibbing the town was moved to make room for the open pit and some of the street lamps and foundations have been left. Moving the wooden buildings was by lifting them on to large low-loaders and hauling them by traction engine to the new town.

Although taconite ore was mined and processed at Babbitt in 1922-4, the sintered product was not accepted by the iron smelters in Ohio and the project folded. Later in 1955 a new process was developed and concentrate supplied as pellets. These smelted at about twice the rate of sintered ore and also enabled much higher blowing rates to be used. The smelters could not afford to ignore taconite. The ore was processed at a new facility at Silver Bay on Lake Superior which provided water, a means of disposal for tailings and a shipping point. (Taconite is a magnetite ore which is concentrated by milling and magnetic separation; about 45 tons of water are needed per ton of concentrate and this is not available on the high ground of the Vermilion and Mesabi ranges). The tax laws were changed in 1964.

Taconite Mining in Minnesota

Richard Smith described a visit in 1996 to the Iron Range in Minnesota. The state was opened for settlement in 1854 and interest in its mineral wealth began with the Minnesota Gold Rush of 1865. No gold was actually found but in 1870 Peter Mitchell discovered a huge deposit of iron near Mesabi. The deposit consisted of a hard low grade ore called 'taconite' which had no value at the time. Soon after around 1872, soft, high-grade iron ores were found further



Pioneer mine Ely.



Soudan mine loading gantry.

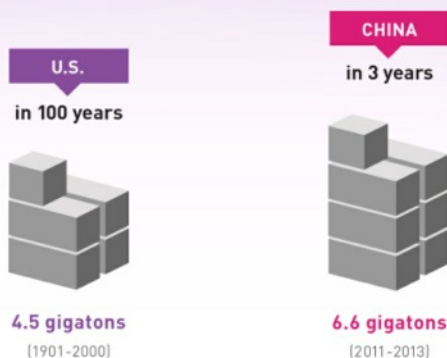


The Hibbing open pit.

Presented at the NMRS 2018 Autumn Meeting by Richard Smith.

China's Cement Industry.

China used more cement in the last three years than the U.S. used in the entire 20th century.



SOURCES: USGS, Cement Statistics 1900-2012; USGS, Mineral Industry of China 1990-2013

China used more cement between 2011 and 2013 than the U.S. used in an entire century. It's a statistic that almost mind blowing and it has stunned many Politicians, Commerce, Environmentalists and the General Public. The production of cement is closely linked to the explosion in China's economy, infrastructure and population growth.

In the 20th century the U.S. built much of its infrastructure like, roads, bridges, the Interstate System, the Hoover Dam, and many of the worlds tallest Skyscrapers. All were massive cement users. The U.S. and China are roughly the same size in Geographic area but China has four times the population of the U.S.

It has been said that "China is the worlds King of concrete" {Bill Gates}. This is because most of its cement production is for its home market and is used in the concrete industry. The United States Geological Survey Report for 2017 states that "China produced more cement in 2017 than the rest of the world combined". The figures are staggering:

China's total cement production 2017..... 2.4 billion metric tons. Capacity..... 3.3 billion tons.

The rest of the worlds cement production 20171.7 billion metric tons. Capacity2 billion tons

In 2017 the U.S. Produced 86.3 million tons an amount that China blitzes every single month. For example, in July 2017 China produced 221 million tons more than twice that of the U.S. annual output. When you consider that the average mix of concrete consists of a ratio of, {4 aggregate/ 2 sand/ 1 cement} the demand on the natural resources of the country is staggering. In the chart below it can be seen that China is not only the worlds biggest cement producer but also the biggest consumer and exporter.

CHINA CEMENT Sector in numbers



Where is all this cement produced you may ask? As a comparison in 2017 there were: 14 operational cement plants and 2 mothballed in the UK. In the US there were 90 plants and 9 mothballed. In China there were 803 plants and 56 mothballed. As can be seen China's cement producing infrastructure far exceeds the rest of the worlds capacity by far.

However all is not well as its cement industry is much larger than it should be. Many of the manufactures are state owned and benefit from Government support and cheap capital. Employment takes precedence over quality and profits.

China's massive cement industry takes a heavy toll on the environment. The global cement industry accounts for around 5% of the worlds Carbon emissions with China being by far the biggest contributor. In an effort to reduce its Carbon footprint it is currently in the process of relocating some of its cement production facilities to other countries such as, India and Nepal.

Working conditions and Health and Safety are also of major concern with many plants being outdated and in some cases dangerous. It is currently in the process of rebuilding new plants which will be state of the art.

What of the future? In a recent report by Goldman Sachs. Which estimates that the majority of China's buildings may have to be demolished and rebuilt in the next 20 to 30 years due to poor quality control and standards of construction. So hold on to your chop sticks because here we go again was the cry.

Presented at the NMRS 2018 Autumn Meeting by Graham Topping.

NMRS - Newsletter Feb 2019

Revisiting Colliery Closures in Coal – NUM South Yorkshire vs. UDM Nottinghamshire, 1986-87

The decline of the British deep coal industry is a well-worn tale. The statistics are telling of this decline: in 1947, 711,000 men worked underground, declining to a mere 54 by October 2017. The final colliery, Kellingley, closed in 2015, leaving only a handful of small-scale private pits. The trade union movement within the coal industry has fared no better. The South Yorkshire-based National Union of Mineworkers (NUM), reported in December 2017 it has only 319 members, compared to 716,500 in 1948. The Nottinghamshire-based Union of Democratic Mineworkers (UDM) reported at the same time a membership of only 99, down from 28,000 in 1986. The demise of the coal industry and its trade union movement was hastened in the 1980s by a Conservative Government wedded to an ideology of profitability above all else; and politically motivated to break the powerful trade union movement.

Previously (February 2018) I discussed how declassified documents from the National Archives in London demonstrate that commitment to neutralising the trade union movement. Files revealed how the Government and taxpayer-owned National Coal Board (NCB) supported the moderate UDM at the expense of the militant NUM, confirming many long-held suspicions about their relationship. Indeed, one of the more noteworthy discoveries was how the unprofitable UDM-majority pit of Cadley Hill was kept open by virtue of its trade union membership, seemingly anathema to the neo liberal dogma which now ruled the coal industry. Thatcher stated in her 1993 memoirs, “Where would we be if we had closed the pits at which moderate miners would have gone on working, and kept more profitable but more left-wing pits open?” Whilst all pits ultimately suffered the same fate regardless of their majority union, this does suggest that profitability was not the only metric by which closure was decided. This raises a compelling question: was profitability or trade union membership more likely to keep a pit open?

Recently declassified files can help answer this question. Among these files, were several reams of printouts containing manpower statistics in incredible detail, offering fascinating insights into the culture and make-up of a particular colliery. Indeed, they reveal the number of workers at every colliery, in every area, every week between March 1986 and March 1987. Similarly, they demonstrate how employment changed in the coalfields: how many men left a certain colliery on a particular week, and for what reasons.

For example, in the NUM heartlands of South Yorkshire, Frickley had the highest number of redundancies that year (164), and Bentley the highest as a proportion of the workforce (14.3%). Markham Main was the most unruly pit, with 19 dismissals, and Barnburgh the best behaved with only one. Rossington reported the highest number of deaths at work (5), and Bentley the highest number of medical leavers (37). South Yorkshire ended March 1986 with a total of 17,915 men, declining to 15,291 by the end of March 1987: 2,624 men left the industry in that 12-month period, a decline of 14.6%. The number of collieries in South Yorkshire also declined: there were 24 collieries in March 1986, down to 18 by March 1987, a 25% decline.

The UDM stronghold of Nottinghamshire, despite receiving direct political protection from the Government and the NCB, curiously suffered a similar decline that year: Mansfield had the highest number of redundancies (319), although Sutton had the largest as a proportion of the workforce (28.3%). Gedling was the most unruly pit, with 24 dismissals, and Sutton the best behaved with zero. Bevercotes reported the highest number of medical leavers (11), with only Sherwood reporting none. Bilsthorpe had the highest number of deaths (5), with Annesley, Bentinck, Bevercotes, and Silverhill reporting none. Nottinghamshire ended March 1986 with a total of 26,103 men, declining to 20,321 a year later: 5,782 men left the industry, a reduction of 22.2%. The number of collieries in Nottinghamshire also suffered a decline: there were 23 collieries in March 1986, down to 20 by March 1987, a 13% reduction.

When comparing these headline figures directly, it becomes apparent that whilst Nottinghamshire lost more men (as a number and as a percentage, albeit starting from a larger overall figure), South Yorkshire lost more collieries. Given the efforts of the Government and NCB to protect UDM collieries and workers, this suggests that trade union membership alone was not the major factor in the overall contraction of the industry. Does this suggest profitability mattered more?

Unfortunately, a conclusive answer to this cannot be provided. As of writing, I have yet to locate financial accounts by colliery (although I have no doubt they exist), leaving me to rely upon publically released NCB annual reports from the financial years ending 1986 and 1987, which reveal the overall health of the coal industry by region. This can help provide some clarity on the importance of profitability.

South Yorkshire in 1986 had an overall operating profit of £33m, with each man producing an average profit of £1,842, and each pit an average profit of £1.4m. By 1987, these figures had increased substantially: South Yorkshire produced an overall profit of £62m (+£29m/+88%), each man an average profit of £4,055 (+£2,213/+120%), and each pit a staggering average profit of £3.5m (+£2.1m/+150%). These figures are remarkable, given the reduction in manpower and operating collieries in the area.

Nottinghamshire in 1986 had an overall operating profit of £102m, by far the largest in the country. Each man produced an average profit of £3,907, and each pit an average profit of £4.4m. By 1987, these figures had all declined: Nottinghamshire’s overall profit, whilst still the highest in the country, is down to £73m (-£29m/-30%). The average Nottinghamshire man was now less profitable than the average South Yorkshire man, earning £3,592 (-£315/-8%), and the average Nottinghamshire pit struggled to keep pace with the average South Yorkshire pit, down to £3.7m (-£0.7m/-16%). Unlike South Yorkshire, Nottinghamshire appeared to struggle with a reduced workforce. However, Nottinghamshire remained the most profitable region in the country, despite this decline.

It can therefore be seen that, on the surface, profitability mattered more than trade union membership. Despite the NUM heartlands of South Yorkshire containing more left-wing pits, they justified their existence with an incredible increase in productivity and profitability. The politically protected, moderate UDM fortress of Nottinghamshire, whilst still the most profitable region, suffered an overall decline.

Unfortunately, the lack of financial data at a colliery level can only offer a limited insight into how much that protection mattered, and indeed only raises more questions. Did a stronger UDM presence at a colliery buy protection? Did South Yorkshire pits have to achieve higher viability to remain open compared to Nottinghamshire? Ultimately, more data is needed to answer conclusively which was more important to the Government and the NCB.

Steven Daniels (s.j.daniels@liverpool.ac.uk) is a PhD candidate and tutor at the University of Liverpool, researching the Thatcher Government and the decline of the National Union of Mineworkers, c.1985-1990.

**Presented at the NMRS 2018 Autumn Meeting
by Stephen Daniels.**

Who Lived in Mining Landscapes?

For all its ramifications, mining history is essentially the story of the people involved in the industry at all levels. With this belief, Mike Gill told us how his research into mining related features and archival evidence at Grassington has revealed much about the development of the mines over four centuries. He is now seeking to advance his work by re-populating those mining landscapes at Grassington with real people.

Reasoning that most people who lived in the village for more than a couple of years would have been involved in a baptism, marriage or funeral, Mike imported all entries from the Linton parish registers up to 1852 into a database. Sorting that data by name and date allows the reconstruction of family relationships and, with a good degree of reliability, the filling in of missing details such as age at marriage or death. Times of prosperity and stress are also revealed by plotting totals for each event over time.

Being mobile, miners soon moved on if a mine's prosperity faltered. Most came from local mining parishes, so Mike added registers for all of upper Wharfedale from Burnsall to Hubberholme. He also added upper Wensleydale (thanks to Ian Spensley), upper Swaledale and Arkengarthdale.

For the eighteenth century, the Duke of Devonshire's archives contain much information on shareholders in various mines, and Mike has been able to map, with reasonable accuracy, where those mines were. Such sources as Burke's Landed Gentry and Professor Google are expanding our knowledge of them, many of whom did not live locally. From 1841 to 1881, the census returns (also now in a database) give decennial samples of the population and show that miners also came from the Lakes, Alston Moor, Derbyshire, Shropshire, Wales, Cornwall and even Norfolk.



Meersone for George Fletcher & Co. { Curate of Linton }

Presented at the NMRS 2018 Autumn Meeting by Mike Gill.

Middlecale Pumping Wheel.



Middlecale Colliery in Lyme Handley, Cheshire was sunk c.1867 by Thomas Brocklehurst on land owned by the Leghs of Lyme Hall. The colliery worked the New or Accommodation seam and below that the Arley seam. The colliery operated until 1878 when it closed due to having exhausted the reserves.

My attention was drawn to the Middlecale workings whilst researching the adjacent Poynton Collieries. The 1864 Poynton Colliery Report, written by the Engineer and agent G C Greenwell, states:

"Messrs Brocklehurst Colliery at Norburyhave a Pit sunk to the Red Acre Mine which lies about 100 yards under the Accommodation Seam, which is the lowest seam we work and to which the Canal Pit is sunk. Messrs Brocklehurst's pumping arrangements are by means of a Steam Engine to pump the water of the Red Acre Mine up to the Accommodation Seam whence it runs to another pump, worked by a water wheel, which ought to lift this and the other water to the surface at a Pit also on the Norbury Estate..... In dry weather however there is not sufficient water in the Brook to drive the Water wheel fast enough to pump their water. Consequently it flows through a communication made, I am informed some time ago, by the Norbury Lessees with the Poynton workings. They are at present raising about 500,000 gallons of water per week by their pumping engine from the Red Acre Seam to the Accommodation Seam, but only pumping about 175,000 gallons per week from this Seam to the surface thus allowing about 325,000 gallons per week to flow to Poynton. We are at

present pumping about 500,000 gallons per week at the Canal Pit, two thirds of which I am satisfied does not belong to us."

This was the first I had heard of the use of a waterwheel here and I was determined to find where it had been situated and to see whether anything remained. Further evidence came from advert for the dispersal sale after closure which suggested that the wheel was sold at that time.

Stockport Advertiser 1 February 1878

MIDDLE CALE COLLIERY, LYME, HIGH LANE, NEAR STOCKPORT,

Thomas Turner (Instructed by Messrs J. Brocklehurst and Co., who are declining business in consequence of the exhaustion of the mine), will SELL BY AUCTION, on WEDNESDAY and THURSDAY, February 13th and 14th, their extensive and valuable COLLIERY PLANT, including - two beam condensing engines, and two horizontal high pressure engines, with fittings complete, four steam boilers with fittings, &c., two of which are about 37 ft long and 7ft. diameter; water wheel, six canal boats, about 30 tons of cast iron rails, five various lift pump trees complete, 150 yards.

A hint as to the location came from an early rambling book which was fairly easy to follow, even though the paths by the author no longer exist.

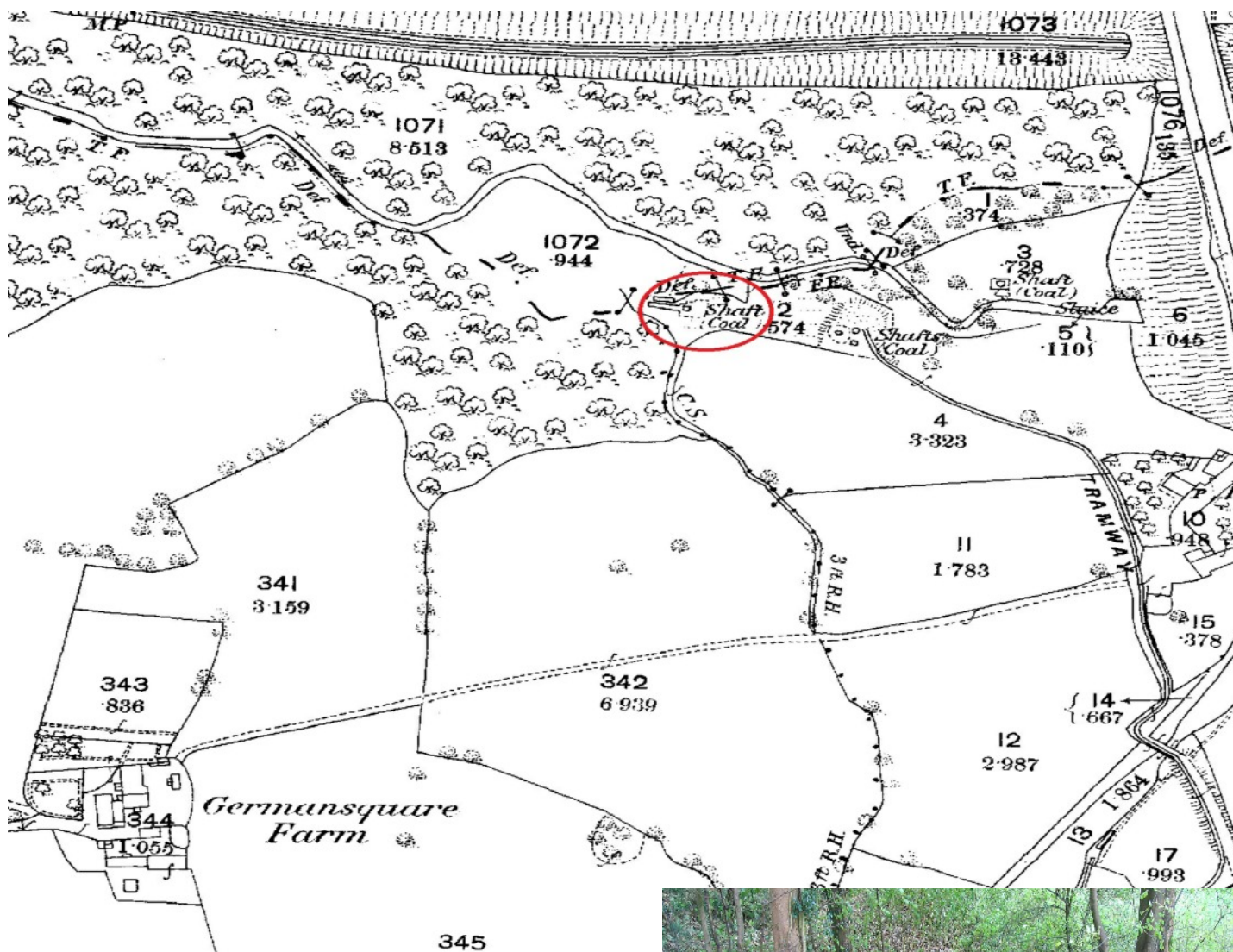
Summer Rambles by Leo H Grindon

Published by Palmer & Howe, Manchester; Simpkin, Marshall & Co, London, 1866, pages 16-17.

Across the stream, we are in the beautiful grove or natural plantation called MIDDLE-WOOD — that long and romantic strip of sylvan covert which borders the right-hand side of the railway just below Disley, and which in some parts forms a green wall both right and left. From the tree- concealed hollow near the meadow, we hear the sound made by a great water-wheel.

This pointed to the obvious area at the lower end of the Middlecale estate by the Norbury Brook. The location was then confirmed by the deposited plan of the North Staffordshire and Manchester, Sheffield and Lincolnshire Railways Junction line of 1849 which showed a waterwheel and associated leat to the west of the Macclesfield Canal embankment at the western end of the Middlecale land. This is also then obvious on the 1st edition 1:2,500 OS Map which clearly shows the wheel pit, pump rod channel and pumping shaft.

Exploration on the ground first revealed nearby two shafts and a horse gin circle just to the east of the pumping pit. The pumping shaft to was clearly visible along with the flat rod channel and the wheelpit. The stonework was beginning to collapse but a small group led by Dr John Barnatt were able to undertake a survey of the site and produce a couple of drawings to record the remains. Ian Castledine has also painted a reconstruction of what it may have looked like whilst working. The wheel was of the undershot type with a diameter



Middle Cae map 1872, with Water Wheel location ringed.

of about 21ft. The Geological Survey 1:10560 map suggests that the Accommodation seam from which it was pumping was at a depth of 120ft in the pumping shaft.



Middle Cae Waterwheel pump.



Middle Cae Waterwheel pit.

This is a rare survivor of water powered pumping archaeology for coal mining and was well worth recording before the structure collapses and is lost.

**Presented at the NMRS 2018
Autumn Meeting by
David Kitching**

A Visit to the Tin Coast

On holiday in Cornwall in September 2018, despite a raised eyebrow from my girlfriend. I was allowed to visit several of the county's mines. There is an old saying that there is as much tin left in the county as has been taken out of it over the centuries.

Botallack

First off were the extensive remains at Botallack. If you weren't aware, mining began here in earnest in 1862, although there is evidence of earlier workings. Engine houses were developed so that deeper tin and copper veins could be worked. The mine was so renowned in its day, it was visited by royalty and became known as Crowns.

From 1860 to 1895, Botallack Mine sold £830,000 of black tin, £220,700 of copper ore and £6,500 of arsenic. In 1895, the company running the mine went bust. However, in 1906, a new company decided to re-open the old workings and this is when the arsenic calciners were built (flues and chambers leading away from the main chimney, where black tin was roasted to drive off arsenic and sulphur).

Allen's Shaft on the site hides a story of three years of continual excavation to the deepest part of the mine. However, it is rumoured that no ore was brought to the surface before the mine went bust for a second time in 1914.

Levant

Almost next door to Botallack and equally complex, Levant is in a more ruinous state and harder to identify. It began in the 1820s, working the copper lode and has as its unique feature the oldest working steam engine in Cornwall, which is still in-situ and able to be viewed by visitors to this National Trust site.



The remains of Levant Mine.



The remains of Botallack Mine.

transported miners to and from the surface) collapsed when a pin failed, causing it to crash down the shaft. 31 men were killed and 19 more injured – a huge loss for the local community.

Wheal Coates

Further up the coast (having had to pacify the girlfriend with a wander round the National Trust gardens at Treliassick), we came to the remains of Wheal Coates, which was open from 1870 to 1914. The landscape here belies how steep the cliff is.

It was never a very rich mine, but was worked for both tin and copper at various times. The Towanroth Engine Shaft on the cliff-edge is 106 fathoms (nearly 200m) deep. In 1872, a second engine house was built for hoisting the ore to the surface and powering a set of stamps. The tin was crushed down into sand, which was processed on the dressing floors. Of this building, only the walls remain.

As with many other Cornish tin mines, the last attempt to make money from the lode was expensive to set up, at a time when prices were low, and the venture failed. The last investment was in 1910 with the building of a calciner and flue.

It is worth remembering that in the great industry collapse of the 1920s, the cause was not so much the exhaustion of the minerals, so much as four years of wartime exploitation, followed by soaring costs, particularly for coal, at a time of debilitating low ore prices.

Sources: *National Trust information leaflets for Botallack and Levant*; *A Guide to Mines of West Cornwall* by D Barton; *Industrial Archaeology of Cornwall* by Todd and Laws.

**Presented at the NMRS 2018
Autumn Meeting by Mathew Hatton.**

In support of the Nation.



Coal miner working under timber pit props circa 1800s.

With the start of the Industrial Revolution in Britain and the arrival of the Railways in the mid 1800s the demand for coal for fuel was increasing at a phenomenal rate. Thus in response to meet this demand the coal mining industry developed a new type of extraction system. Instead of leaving pillars of coal to support the exposed roof (stoop and room method). The Long Wall and Short Wall systems of coal extraction was developed. This could only be achieved with the introduction of timber pit props in underground workings. This also made the mines safer and enabled a greater yield of coal to be achieved from the workings.

The supply of sufficient pit timber was a challenge for such a small Island. Thus a whole new timber supply chain was established to meet the need. To satisfy this demand the vast majority of timber had to be imported from countries in Scandinavia and Canada.

The preferred timber was coniferous such as Spruce or Firs and some deciduous trees. At first long lengths of timber were imported and distributed to the Collieries and were sawn into pit props at the Collieries by the colliers at the beginning of their shift. It was soon realised that this was not a very good use of timber resources and certainly not cost effective as large amounts of waste timber was being produced in the form of off-cuts. This led to Entrepreneurs like, George Cadell Stewart a clerk at Grange Colliery Cumbria who saw an opportunity to establish a supply chain of pit props to Collieries in his area. In the late 1840's he went into partnership with a Glasgow businessman and set up a Pit Wood Yard in Bo'ness Cumbria. They imported timber from Scandinavia in a variety of lengths and diameters and cut them to the required size for each Colliery in their own yard at Bo'ness. This had the effect of reducing the waste to a minimum and large stocks of timber could be held in reserve at their vast Pit Wood Yard. This yard at its peak was supplying over 145,000 tons of pit timber per year. This type of supply chain for pit wood was soon adopted in all the coal producing areas of the country. As Coal production increased the pit timber supply industry also increased to meet the demand.

This type of supply chain worked well and the pit timber entrepreneurs became very wealthy as coal production and pit timber supplies were intrinsically linked. All was



Tyneside docks circa 1900. Unloading pit props from Scandinavia.

fine until the outbreak of the First World War. The future of Britain lay in the hands of its Military might particular its Royal and Merchant Navies. Most of the fleet were powered by massive steam turbines with steam being raised from coal fired boilers. The demand for coal was unprecedented in light of this the humble pit prop was pivotal if military success was to be achieved. However a



A Merchant ship laden with pit props is sunk by a German U-Boat. Circa 1916.

paper industry railways and construction industry. Grants were made available to landowners for the establishing of new forests and management of existing ones. The first of the new commission forests were planted on the 8th December 1919 at Eggesford Forest Devon.

The scale was fast and far reaching. By September 1929 around 600,000 acres were managed in 152 forests. More than 138,000 acres of new forests had been planted with the private sector adding another 54,000 acres. By the early 1940s the commission employed over 13,000 people and managed over 1.6 million hectares of forests. This proved to be prudent, by the start of the Second World War only



"Lumber Jill's" loading pit props.

Types of timber to be used.

As we have already mentioned softwoods such as Spruce and Firs were the best timber. They are fast growing trees which are long grained so that it possess elasticity as well as strength. A good timber prop should be able to yield to a load by bending outwards before breaking. The bark was always removed before being used underground. The reason for this is that the bark was not included in the diameter and strength of the prop. Mine owners would only pay for the diameter of the solid section of timber as props were priced in

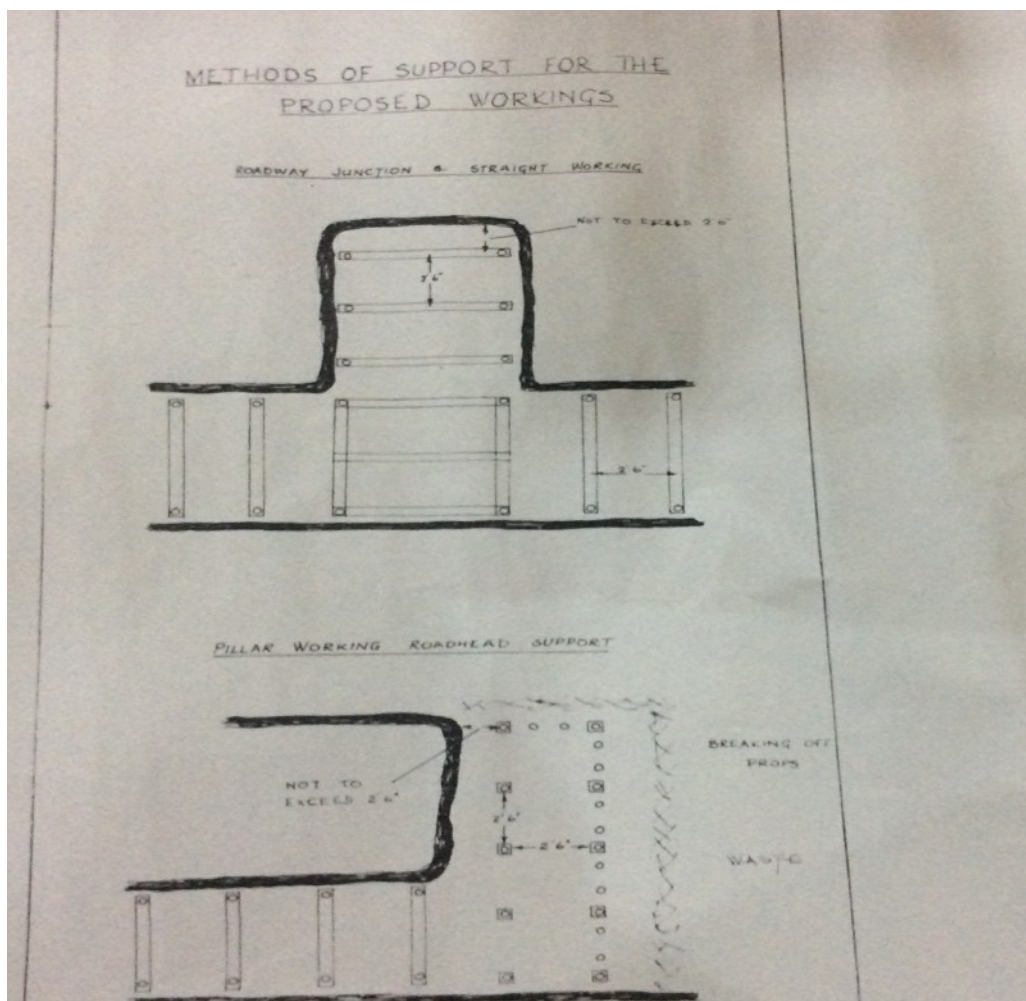
problem arose in the timber supply chains from Europe and Canada in that this imported timber could no longer be guaranteed. This was due to the threat from German U-Boats who were sinking merchant shipping at a colossal rate. Thus Britain had to look elsewhere to meet the demand for pit wood. Demand could only be guaranteed by using its own home grown timber reserves.

The pit wood supply industry was also in competition with the Army who demanded huge reserves of timber for their trenches on the Western Front. This meant that by the end of the First World War Britain's home grown timber reserves were all but exhausted. Britain's woodland resources had been in decline since the Middle Ages, but it reached an all time low of just 5% of land area by the beginning of the 20th century. The Government of the day under the premiership of, David Lloyd George ordered the reforestation of vast areas of land to meet the country's need for timber in the future. On 1st September 1919 the Forestry Act came into force. The administrative arm of the act was the formation of the Forestry Commission whose remit was to coordinate, oversee and promote reforestation and the production of timber for the mining industry,

5% of Britain's timber came from domestic sources. By the end of the war this had increased to over 60%. This resulted in the removal of 524,000 acres of woodland in just five years. This timber was used for pit props, telegraph poles, aircraft, shipping and charcoal production which was used in explosives. The labour force to supply this timber was mainly met by women who were respectfully known as "Lumber Jill's". There numbers reached a peak of over 6000 during the course of the war.

Features and Regulations relating to pit props.

Surprisingly the Mines Act of 1887 and its subsequent revisions has very little guidance on the type and size of pit props that should be used underground. Under the section "supports" it states that "*only timber of sufficient size and strength and round in shape are to be used*". Thus the interpretation and enforcement of the regulation was actually left to the mine owners and their management. However local knowledge of underground conditions would have a considerable influence on a collieries "Support Rules".



Support Rules for Merriles Vale Colliery No 3. Circa 1980.

half inch diameter increments and per foot length.

Pit prop size

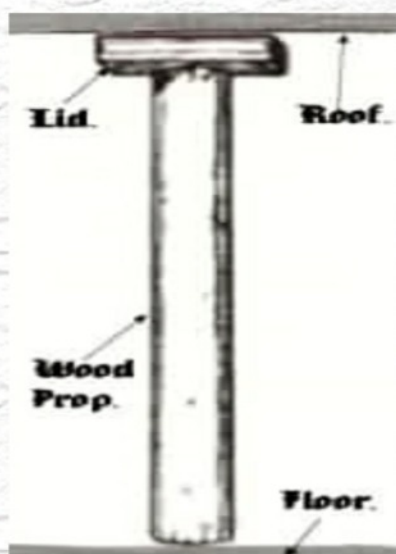
With no maximum or minimum size being stated in the Mines Act a general rule of thumb was adopted by the industry. This is as follows:

“A pit prop should be one inch in diameter for every foot in length. Thus a five foot prop should be five inch in diameter. Props less than two and a half inches in diameter should not be used even in low seams”.

Shape.

It was considered that round timber was stronger and would be easier to handle in low seams. They would also be easier to withdraw when retreat mining. A four inch round spruce prop at five foot in length would support twenty tons approximately. The Mines Act also states that *“the Mine Owner is responsible for sufficient reserves of pit supports to be held on site for daily use and for emergencies”*. Most collieries would have a large stock yard for various types of timber

Wood Prop.



Colliery Support Rules.

Each Colliery has to have its own stated “Support Rules” which is usually a diagram. This is drawn up by the mine owner and manager. It should clearly indicate the following:

1. Maximum timber spacing allowed.
2. Maximum roof exposure between the last support and the coal face.
3. Positioning of breaker props when retreat mining.
4. Setting out of roadway junctions and straight workings.

Cost

The cost of a pit prop is dependent on many factors such as availability, type of timber, transport and size.

Setting props

Props are used for three general purposes. First is to make safe any exposed roof areas from falling. Second to give support to areas of roof which are broken or fractured. Third to give a warning when an unexpected load comes on the supporting timbers. Props should be set tight often with caps or lids on the top. The prop should be set at right angles to the load and as straight as possible.

In Summary

As we can see the humble pit prop has had a heavy load to carry in more ways than one. Not only has it for many century's protected the mine workers from roof falls and collapse. It has also enabled Britain to successfully defend its shores from invasion. It was central to the rapid growth of the Industrial Revolution which started in Britain. The use of wooden pit prop has almost disappeared from modern mining. But it is fair to say that vast areas of this green and pleasant land have been supported by theses simple but effective props.

Graham Topping.

References used.

1. The Bo' ness Pit Prop Industry.
2. The History of the Forestry Commission.
3. HSE. The Mines and Quarries Act.
4. The Women's Land Army.

The beautiful Northumberland landscape which was once a powerhouse of North East industry

It wasn't only on Tyneside and Wearside that industry operated at full throttle in past centuries.

Some places which today are quiet, rural locations were once part of the North East production powerhouse – such as the Allen smelt mill in what is now the North Pennines Area of Outstanding Natural Beauty.

The lead processing factory, near Allendale in Northumberland, started up in 1692 on the south bank of the River East Allen and continued until 1896 as the centre of the lead industry in the Allen Valley.

Now volunteers who have worked to uncover the remains of the factory and turn the site into a heritage asset have been shortlisted for a Historic England Angel award.

What also drove the volunteers on was the aim of preserving this nationally-important part of the cultural heritage of the Allen valleys, which was on the brink of being lost.

The smelt mill must have been an astonishing sight. An 1847 document lists five roasting furnaces, ore bunkers, eight ore hearths, a refining furnace, two reducing furnaces, two calcining furnaces, two reverberatory furnaces, a slag hearth and a separating house with 18 pots. Much of the flue system – one of the best preserved in the country – survives in mounds up to eight metres wide. The flues dealt with the noxious fumes from the furnaces and run for more than two miles up to open moorland where they end in two chimneys. The deposits which formed on the flue inside walls were removed to recover lead and silver. The site was one of the largest producers of Northumbrian silver at more than 16,000 ounces a year. Power for the mill came from a water wheel, driven by supplies from 10 reservoirs which began in Weardale.

The volunteers' involvement began in 2014 when the North Pennines AONB Partnership was preparing to investigate the mill as part of the £2.7m Allen Valleys Landscape Partnership Scheme, backed by the Heritage Lottery Fund. An appeal went out for help to clear rubble and vegetation which had buried the remains of the factory, which is a scheduled monument. The volunteers responded with hard-graft weekends to reveal the ruins and a number returned to carry on working, which enabled the AONB to win additional funding for a wider scheme than originally planned. Lead volunteer Helen Wilkinson said: "When we first arrived on the site there were just a few bits of masonry poking out from the vegetation. But as we started to clear the ground everyone was so amazed by what we were finding. "What we've achieved together so far is something to be really proud of, but we're not about to stop now. I'm really excited about plans to restore a working water wheel on the site." The AONB Partnership has made the site safe for public access and has installed physical and digital interpretation to show how it would have looked when in use.

Andy Lees, programme development manager for the AONB Partnership, said: "This nationally significant and rare example of a lead smelting factory has been saved by excellent teamwork. " This involved Hexham-based Doonan Architects and Heritage Consolidation Ltd. "Volunteers, specialist contractors, architect and site owners worked hand in hand. The skills and labour of the

volunteers allowed us to secure further funding from Historic England and for more of the site to be worked on," said Andy. "There is now an exciting project underway to repair the water



wheel pit and to install a replica waterwheel. "We are delighted that the work we have done, supported by such a knowledgeable and enthusiastic team of volunteers, has transformed a neglected site into an understandable, accessible and safe historical asset that helps to encourage tourism and a better understanding of the industrial heritage of the North Pennines."

The smelt mill originally belonged to the Bacon family. During the 18th century it was leased from Sir William Blackett by Lancelot Algood who used it to smelt ore from his Alston Moor mines. From 1786 the mill was owned by the Beaumont Company becoming one of the largest in the country with the capacity to process over 2,000 tons of lead ore annually. Over the centuries hundreds of thousands of tons of lead left the Blackett and later Beaumont smelt mills for Newcastle, to be transported to the rest of the country, or exported overseas. In 1854 the Beaumont family were reported as producing one fourth of the lead in England and about one tenth of that of the whole of Europe. Between 1725 and 1870 their mills produced three million ounces of silver. The 2.5-hectare site is now owned by artists Christopher and Anne Bacon, who moved to Allendale in 1996.

Christopher was an art teacher, printmaker and painter and Anne worked as head of picture conservation at Northumbria University. They saw the potential of the once-abandoned site for arts, heritage and business development which would boost the Allen Valley economy. "We saw this derelict site and thought something should be done about it," said Christopher. Restored buildings now house nine businesses. Allendale Brewery and the Spice Mill restaurant are on site, which also features sculptures by eight internationally-known artists, while a sculpture trail is part of the riverside walk to Allendale. Two other heritage buildings have been saved as part of the Allen Valleys Landscape Partnership Scheme.

WWW.chroniclive.co.uk 2018.

Lake District mining must continue despite it being a World Heritage Site

UNESCO, which granted the status for the area in 2017, frowns on the heavy industry because of its impact on heavily protected landscapes. It has suggested quarrying in the Lakes be “downsized” and extraction volumes “limited”. It was one of nine recommendations the Government was asked to consider and provide feedback on before UNESCO makes a decision in 2019.

Bosses at the Lake District National Park Authority have told a meeting that they have argued that quarrying in the Lakes should carry on. The park said it does not plan to allow any new quarrying sites but those which do remain are an intrinsic part of the Lake District’s culture and heritage.

The Lake District is home to 10 “active” mineral sites, not least at Honister near Keswick, England’s last working slate mine. Steve Ratcliffe, director of sustainable development at the LDNPA, said they had made a “number” of representations to the Department for Culture, Media and Sport. He said this was to ensure that UNESCO’s concerns are addressed while ensuring the centuries-old industry is not brought to a grinding halt.

Mr Ratcliffe told the meeting: “Quarrying is part of our cultural heritage and has shaped the English Lake District. It’s important that quarrying continues.” The Government has submitted a 14-page response which will be discussed by UNESCO at the annual WHS conference next summer.

The park has argued that if quarrying or production stopped, the Lake District would not be able to preserve the aesthetic of the area – another key element of WHS status. Mr Ratcliffe told the meeting: “It is important that people appreciate while we have a process, we don’t have any control over the end of that process. “This is a response by the Government. It is their words and we have had an influence. We will now wait until July next year to see what UNESCO itself wishes to say.”

Park authority member Michael Carter, of Skelwith Bridge, said: “My understanding is that UNESCO wants us to reduce quarrying, but we are saying there will be no new sites considered but we want quarrying to continue at its current level. It will be interesting to see how that works out.

The Cumberland News and Star. Dec 2018

Florence Iron Mining Pit Head listed

Overview

Heritage Category: Listed Building

Grade: II

List Entry Number: 1449212

Date first listed: 01-Oct-2018

Statutory Address: Florence Mine, Egremont, Cumbria, CA22 2NR

Summary

Iron mining pithead opened 1947, including headframe and heapstead, winding engine house, fan house, ore processing plant, compressor plant and workshop. All largely complete, still retaining its machinery and equipment.

Reasons for Designation

Florence iron mining pit head, which opened in 1947, is listed at Grade II for the following principal reasons:

Architectural 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.

Historic interest: * iron mining from the mid-C19 fundamentally altered western Cumbria, but has left very little direct evidence in the form of surviving structures. Florence marks the culmination of the iron industry in the region, built just before peak production, and was worked through the decline of the industry through the second half of the C20, being the last mine to close. The rich deposits of iron ore found in western Cumbria were exploited from prehistoric times, but mining dramatically expanded in the second half of the C19, the ore, mainly hematite, being particularly suitable for mild steel production via the Bessemer Process. Iron mining and the burgeoning heavy engineering industries which it supplied, dramatically changed western Cumberland and the Furness peninsular, although industrial decline in the second half of the C20 has left few surviving remains of the iron industry.

Shaft sinking for Florence Mine commenced in 1913, with the first ore raised in 1923 from what proved to be the largest ore body to be found in West Cumberland: Florence Mine produced some 20 million tonnes during its lifetime and was not worked out. The sinking of Number 2 Shaft started in 1940 by the Millom and Askam Hematite Company, with working transferred to this new pit head in 1947 to allow the extraction of ore around the original shaft which was nearly 200m to the south. Florence was interconnected underground with the neighbouring Ullcoats Mine in the 1950s and then worked with Beckermere Mine from 1969 following nationalisation, supplying the steelworks at Workington. Closed by British Steel in 1980 it was partly reopened by redundant miners and worked on a small scale until 2006, the hematite mainly being ground and sold as a pigment, Egremont Red. During this period access to the mine workings was principally via a new drift entrance just over 100m to the north east of the shaft. This later drift entrance is not included in the listing. In 1996, the underground workings were designated as a Site of Special Scientific Interest (SSSI) for their geological interest.

At the time of the site inspection (2017) the machinery and equipment was reported to be complete and effectively still operational. West of the heapstead, north of the fanhouse is an office range, this office range is not included in the listing. The drift entrance opened in the 1980s lies approximately 100m north-east of the heapstead, but is also not included in the listing.

Details

Iron mining pit head, 1940s for the Millom and Askam Hematite Company.

LAYOUT: the head frame rises from the heapstead building which encloses the head of the shaft. The winding engine house lies immediately to the south-east; ore processing plant, connected via belt conveyors, extends to the north-east; the fan house lies to the south-west. To the east of the winding engine house there is the compressor house and a larger workshop.

HEAD FRAME: this is of steel girder construction, rising from the heapstead, the backstays extending from the engine house to the south-east. The western backstay supports a stepped access to

the platforms at the top of the frame. The frame carries a pair of spoked winding wheels. The run for the lift cages between the roof of the heapstead and the platform above is enclosed with corrugated iron sheeting.

HEAPSTEAD: is of three storeys, being steel-framed with brick infill panels and a flat concrete roof. The top floor, accessed via an external staircase, is lit by picture windows divided into twelve panes. On the north-east side a large door gives access to the head of an ore conveyor. Just below this there is a single storey flat roofed projection forming part of the ore processing plant. On the north-west side there are a pair of ore chutes extending out at second floor level, originating from the top floor. On the south-east side there is a single storey lean-to which provided access to the ground floor of the heapstead, this being used by miners entering the mine via the shaft. This remains uncapped and the interior of the heapstead retains much of its original equipment and fittings, most obviously the cages, guides, railings and gates forming the working parts of the headframe and shaft.



WINDING ENGINE HOUSE: this has a concrete and brick basement supporting a large, but light-weight steel-framed shed that is clad and roofed with corrugated-iron, the roof being low-pitched, supported by fink trusses. The building retains most of its original equipment and control gear including the electric powered winding engine with its electrical equipment and operator's cabin. The winding engine is thought to be the earliest electrical winding engine nationally to still survive in situ. The building also includes a travelling crane which was used to facilitate maintenance work. Many smaller details such as signage also survive in situ.

ORE PROCESSING PLANT: this extends north eastwards from the heapstead and includes a first stage jaw crusher, vibrating screens, trommel, secondary crusher, ball mill and final stage screens, all being belt driven. Some of the equipment is housed within a single storey projection on the north east side of the heapstead, with some housed within small sheds clad with corrugated iron that lie to the north east, linked to the heapstead by two conveyor belts, one being enclosed.

FAN HOUSE: this includes the concrete walled fan drift which descends at an incline north-eastwards to join the shaft below the heapstead. A short, square-section, brick-built chimney rises from the head of this drift, this being the evasée for the fan. Attached on

the north side of the drift is a small, single storey brick building with a corrugated iron roof retaining a ridge ventilator. This houses the electrical motor for the fan and associated electrical equipment.

COMPRESSOR HOUSE: this lies immediately to the east of the winding engine house and is a low, single-storey corrugated iron shed lit with square windows. This retains its equipment, the air reservoir tank being sited immediately outside the building.

WORKSHOP: lying immediately to the east of the compressor house is a larger brick-built building with two large openings in its northern gable end. This retains a simple forge along with some pumping equipment.

Sources

Books and journals

Kelly, D, *The Red Hills: Iron Mines of West Cumberland*, (1994), 107-110

Legal

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.

Historic England. Oct 2018.

NMRS book Donations for sale.

Here are a few more books that have been kindly donated to us with permission to sell them on. Payment via cheque made out to NMRS.

The Non-Ferrous metal mines of south-west Scotland by James R. Foster-Smith

NCMRS Individual survey series Publication No 2 1967. P/b 25pp done on a gestetner duplicator with 3 illustrations, 2 of which are pull out £10, P&p £1.50

The Teign Valley Lead Mine by C J Schmitz

NCMRS Occasional Publications no 6. 1973 P/b 125pp done on a gestetner with b&w maps, diagrams. £12. P&p £2

Lathkill Dale – its mines and miners by J.H. Rieuwerts

Moorland Publishing 1973. p/b 100pp with b&w photos, pull out maps. Previous owners name inside. £3. P7p £2

The Copper & Lead Mines of Ecton Hill, Staffordshire by John A Robey & Lindsey Porter

Moorland Publishing & PDMHS 1972. P/b 92pp with b&w photos, drawings and map. Previous owner's name inside. £3. P7p £2

Peakland lead Mines and Miners by H.M. Parker & L. Willies

Moorland Publishing 1979. P/b Lots of b&w photos. Previous owners name inside. £2.50. P&p £1.50

The Cavern & Mines of Matlock Bath 1. The Nestus Mines:

Rutland Massan Cavern by Roger Findall, Andrew Hays Moorland Publishd 1976. P?b 72pp with b&w photos & diagrams. Previous owner's name inside. £3. P&p £1.50

If interested in any of the above please contact Barbara Sutcliffe email mansemmins@btopenworld.com

Remember we also have an extremely good selection of out of print BMs available both the very early A4 ones and the newer A5 ones. Why get a download when you can have a physical copy.

Editors Notes.

1. As this Newsletter is representative of its members interests, hobbies and working lives. Why don't you tell the membership what your interest is or what your hobbies are and what you have done throughout your working life? As long as its connected in some way to mining all articles will be published. If you need help or guidance in doing so please contact me.

2. Have you noticed that a few members have made appeals for information in the last few issues? These have meet with a very good response. So if you have something puzzling you that's mining related why not ask the membership for information?

Disclaimer

The views expressed in this newsletter are not necessarily agreed with or shared by the Northern Mine Research Society, its Officers or the Newsletter Editor. The accuracy of statements made in articles submitted for publication will not normally be checked for validity by the Newsletter Editor. The responsibility for the content of articles submitted by individual members or groups remains with the authors and cannot be accepted by the Society, its Officers or the Newsletter Editor.

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Members are reminded that the NMRS maintains a list of their names and addresses solely for the purposes of printing labels for Membership Cards and posting newsletters and publications. Such details are deleted from the database for any member who leaves the Society, either after the committee have been notified or after it has been determined that an overdue subscription has not been paid for several months.

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Can We Help Leeds Industrial Museum?

I am working at Leeds Industrial Museum, Armley Mills, to audit, assess and research its long-neglected collection of industrial railway wagons, many of which originated in mines. Most of the wagon types are easy to identify, even if as yet I don't know their stories or functions. I'll hopefully be probing your collective expertise in search of some of these over the next few months.

First, a mystery wagon that I can't find in the museum records and have no idea as to its function. It's pretty hefty despite its small size (scale = 1 metre), with slots and bolts and weights. Have any of you come across anything like this? All suggestions gratefully received and acknowledged! — at Leeds Industrial Museum at Armley Mills



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At the above
Establishment.
Or via the
editor.**