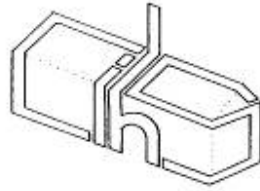


Cumbria Industrial History Society



BULLETIN

No. 98

www.Cumbria-industries.org.uk

AUGUST 2017



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EDITORIAL

The committee have started planning next years programme and it is looking good so far. The spring conference will be at Shap Wells as usual with the autumn conference being at Kirkby Stephen. Hopefully visits will include Warwick Bridge corn mill and other buildings in the area, Holme horn works, and the Flimby area as well other possibilities. But we still would like suggestions for either topics for conferences and or speakers and places suitable for day or evening visits. The committee is starting to look a little bit small again and we would love people to join us. The commitment is not great, we meet 4 times a year usually at one of the village halls on the A6 north of Kendal. Please feel free to contact any of the present members to discuss it further.

You will be happy to know that by the time you receive this Bulletin the book highlighting Mike Davies-Shiels slides should be all finished and be in the process of being printed. We intend to launch the book at the October conference at Caldbeck. This gives another incentive to attend to take advantage of the special launch offer.

This edition contains a couple of notices of industrial sites that have been conserved recently. If anyone knows of sites been conserved or worse demolished the editor is keen to hear about them for inclusion in future Bullettins.

COVER PHOTO. CARROCK FELL TUNGSTEN MINE BEFORE DEMOLITION. MDS COLLECTION 203. 49.

The subject of a talk at the Caldbeck conference.

SOCIETY EVENTS 2017

Saturday 12th August 2017 VISIT TO PRIVATE RAILWAY MUSEUM AT SAINT BEES.

This is a rearrangement of the meeting planned for July which was cancelled due to disruption to the trains. Meet at St Bees station at 1.30 pm. The owner would like to know numbers and so please let Helen know by 7th August if are going.

A description of industrial sites to look out for on the journey there if travelling by train is available on the website.

Carlisle to St Bees

9.38am arriving at 10.55
10.54am arriving at 12.11
11.56am arriving at 1.25pm

St Bees to Carlisle

2.57pm arriving 4.17pm
4.01pm arriving 5.20pm
4.46pm arriving 6.06pm

Lancaster to St Bees

9.02am arriving at 11.18
10am (change at Barrow) arriving at 12.57

St Bees to Lancaster

4.01pm (change at Barrow) arrive 7.05
4.43pm arriving 7.05pm

Sunday 24th September 2017 WALK AROUND THE ORIGINS OF BARROW. 11.00am.

Meet at the Dock Museum Car park. We have permission to park all day.

Saturday 14th October 2016 AUTUMN CONFERENCE INDUSTRIES OF THE CALDBECK AREA. 9.30AM.

In Caldbeck village hall. Booking form enclosed.

Tuesday 14th November 2017 7.30 pm VOLUNTEER RIFLE RANGES OF THE LAKE DISTRICT.

At Greenodd Village Hall. Talk on rifle ranges in Lakeland as used by the various local volunteer militia by Jeremy Rowan Robinson.

BOOK REVIEW

INDUSTRIAL RAILWAYS AND LOCOMOTIVES OF CUMBERLAND.

By Dr Peter Holme. Published Industrial Railway Society ISBN 9 781901 556957. £ 35.00

After 45 years of patient endeavour the light of day has dawned on a definitive account of the importance of railways in meeting the needs of industry in Cumbria. So substantial are the instances of railway installations on the local industrial scene that it requires two whole volumes to contain the Industrial Railway Society's records for Cumbria. Just released is the volume dealing with

the old county of Cumberland*. A second volumes will follow shortly covering Westmorland, the Furness area and the Isle of Man.

Credit for the collation of the records of businesses and industrial locations with railway facilities in the present county belongs with Dr Peter Holmes, a Barrovian and retired industrial chemist now living in Ulverston. From school days Peter was bitten by a fascination for the 'little' railways that he saw around Barrow - at the shipyard and the steelworks – which seemed to him to be 'off the radar' of people who took an interest in railways and locomotives. Only later did he realise that there existed another community of railway followers with a special regard for industrial railways. He discovered the Industrial Railway Society and membership brought an invitation to work on developing that Society's existing basic pocket guides to the area's industrial locomotives and to collect the information that would provide the contexts in which they had been and were still being used. The task was forbidding. In Cumberland alone there were over 320 industrial sites and operators to consider and more than 1,100 locomotives, either steam or internal combustion, that have been employed in specifically industrial settings within the county.

What the IRS county volumes catalogue is an industrial era during which steam reigned. No fewer than 160 companies once operated in the UK as builders and repairers of steam locomotives. This was in addition to the activities of the large companies operating the national railway system. Cumberland had its own locomotive builder at Lowca, serving an international market. Several of the large ironworks had engineering capability to deal in-house with boiler repairs and major overhauls. Each IRS volume aims to provide a reliable record of every locomotive that had operated in the industrial sector in the area. Registering the precise details of date, maker, type and history for each locomotive necessarily requires much use of abbreviations and codes which can be daunting to navigate at first. For the ordinary reader the text describing the industrial sites and operators is readily accessible and full of detail. A feature of particular local interest lies in the fact that over 400 of the steam locomotives that operated in Cumberland carried names. While some of these were no more than indicators of ownership or where the machine was to work – Yard No. B10 or Millom No. 5 – in other cases they were given the names of the wives or daughters of company directors or of their country seats. An opportunity here for armchair detective work.

The book includes a set of useful maps showing the location of the sites featured in the text as well as detailed site plans for many individual work places. A map reference is given to identify each site on the OS sheets. An amazing range of photographs and engravings has been discovered to illustrate the book. Unexpected curiosities are a Metropolitan Railway carriage displaced from the Circle line on a miners' train at Oatlands Colliery, Distington, and a US Baldwin tank engine of WW1 vintage at Eskmeals. As is often the case, the incidental details of archive images hold as much fascination as the main subject. A

company catalogue of the Lowca Engineering Company contains an engraving in the background of which is what could be a unique impression of the Parton Ironworks. Two other images have come to light which give an insight into the long-departed ironworks at Harrington.

This is a weighty book of 464 pages and best ordered through a bookshop to avoid postal charges. With its intended companion it will be a definitive record of industrial Cumbria at its most intense and varied period. Well done Peter for staying the course!

Alan Postlethwaite.

WATER-POWER MILLS OF SOUTH LAKELAND

by Michael Davies-Shiel. Hayloft Publishing Ltd, 2017. ISBN 978-1-910237-15-1. Hardback, 222 pages. £24.00

In 1930, when Mike was but an infant, John Somervell's 'The Water-Power Mills of South Westmorland' was published by Titus Wilson & Son of Kendal. It was a systematic survey of the known water mills on the Rivers Kent, Sprint and Mint, Peasey and St Sunday Becks, the Rivers Bela and Gilpin and the Eller Beck.

The book was written in response to the concern that such mills, for so long a central part of the local economy, were not only falling out of use, but were likely to be lost to memory unless someone recorded them. Notwithstanding Somervell's vital work, the situation had become much more critical by the 1960s and when, in 1964, Miss McPherson, senior archivist at Kendal Record Office, chanced to comment to Mike on the closure of water mills and the fact that they were not being recorded, she unwittingly ignited an interest that led to the present volume.

Mike had the greatest respect for Somervell's work, and treasured his copy of the book, but as his own field and documentary researches progressed he came to recognise Somervell's errors and omissions, and resolved to write his own successor volume on the subject. But Mike had many other interests and came to regard the writing of the planned book as a perfect task for his old age, when time would have wearied his legs, but not his mind.

It is, then, posterity's loss that he died before achieving this crowning ambition – what would have been his magnum opus. Indeed, it was at first thought that he hadn't even begun, so it was both a surprise and a delight to Noree, Mike's widow, when, searching through the contents of his computer, she discovered that he had in fact made a start.

The result is the present volume. Handsomely produced in hardback on high-quality paper and lavishly illustrated, it covers both the upper and middle reaches of the Kent, and the River Gowan. Fifty-one mills are given the full coverage that Mike had intended to use throughout. Each one is given its geographical, historical and functional context, supported by documentary references and Mike's commentary. A further 23 mills are named, located and illustrated, but lack documentary references and a commentary.

Throughout, the range and quality of the illustrations is outstanding, featuring Mike's own site photographs, other archive photographs, maps and plans, newspaper clippings, documents and diagrams. All of this is preceded by Mike's introduction and followed by six appendices, on: The Mill Structure; Sources of Research; The Mediaeval Process of Making Woollens; Abbreviations and General Sources; a Mills Index, and an Index of Millers.

The whole book is permeated by Mike's persona – down to earth, direct, conversational, inquisitive, questioning and, wherever necessary, emphatic. We can, then, regret that Mike failed to finish what would have been his magnum opus, but also rejoice that he made such an impressive start. This book should find a place on the shelves of all those who enjoy exploring the Westmorland countryside and who want to know how to read the landscape.

Geoff Brambles

ANSWER TO PHOTOGRAPH ID?

The last Bulletin had the photograph below to be identified if possible



Jonathan Wignall has come up with the answer. The above photo and also number 2 are the wood turning mill at Broughton Mills. It was originally built to

produce “Roman Cement” from the adjacent outcrop of the Coniston Limestone. The kiln is clearly visible on the right hand side of the photo. The waterwheel initially powered the grinding machinery in the main building. The site was later run by the Simpson family as a turning mill producing brushstocks and other items.



The mill today. (Roger Baker.)

SITE NEWS

MARYPORT LIGHTHOUSE.



Maryport has what is thought to be the earliest cast iron lighthouse in the world. Situated on the south breakwater it dates from 1846. The 4.7m octagonal lighthouse was initially run by the General Lighthouse Authority and was taken over by Trinity House in 1961. They handed over the light to the harbour commission after a new light was built. The beam could be seen up to 6.9 nautical miles out to sea.

The lighthouse has been repainted and a rusty steel panel has been replaced with a cast iron one under a renovation scheme funded by the government scheme to regenerate seaside towns.

The lighthouse features in a number of L S Lowry's paintings.

LIGHTHOUSE BEFORE RENOVATION.

KNOCK SMELT MILL.

Situated in Knock Ore Gill at NY 697 299, the date of construction is not known but it was out of use by 1820. It was probably built to smelt the ores from the Earl of Thanet's mines in the Knock lordship which date from 17th century. The remains are nearly complete to a few feet above ground level. These have been consolidated by Natural England as it lies within the Moor House National Nature Reserve.



THE SMELT MILL SITE IN THE VALLEY WITH THE PILES OF SLAG SURROUNDING IT,



THE NORTH SMELTING ROOM WITH ORE HEARTH KEEPER STONE.

THE JOLLY MILLER.

Once ubiquitous, the humble corn mill is now a lost aspect of our rural economy with only a very few still in operation. They are now very often viewed with a high level of nostalgia, which acts as camouflage for the reality of life in those mills. There are several versions of the folk song the Jolly Miller, all of which portray a carefree lifestyle of an eighteenth-century miller in an idyllic rural setting. However, both medical and industrial history describes a very different picture. From the late eighteenth century, the flour processing industry underwent a dramatic change in the type of technology deployed. There were two strands to the technological innovation for corn milling namely: a move from waterpower to steam power which enabled the establishment of bigger mills for large scale processing. A famous example of a steam operated flour mill is the Albion Mill on the banks of the Thames at Blackfriars. Secondly, from circa 1840 there was a gradual adoption of the Budapest system of grinding cereals using steam driven steel

rollers. Many of the traditional corn mills like the Heron Corn mill at Beetham soldered on into the twentieth century, although some had to change their product from flour production to animal feed stuff. The adoption of new technology created a unique opportunity for historians to compare the working environment of an industry at two stages of development. Two very different technologies producing essentially the same product, creating a situation which led to a significant improvement in the health of those employed.

During the first half of the nineteenth century the role of a corn miller was a very unhealthy occupation. The colloquial expression “miller’s lung” summarises the prominent malady prevailing at that time within the milling industry (sic). There was a hierarchy among corn mill workers and the degree of exposure to unhealthy working conditions would vary dependant on a worker’s status. A young boy would be at the base of mill with more exposure to flour dust than those working at a higher level in the mill. The average life span of a corn miller was 43 years which was much lower than other workers in the same district. The main cause attributed to the death rate was pulmonary consumption and other chest diseases. In addition to the incidental danger of working with unguarded machinery the high level of flour dust within mills meant workers faced the constant threat of fire and explosion. In common with many other trades personal hygiene was a strong element influencing the health of millers. When this aspect of their life fell to an unacceptable standard a miller became susceptible to skin infections and other conditions due to the high level of flour dust. The deleterious outcome of poor hygiene had been highlighted early in the eighteenth century in Italy; the message had not spread far enough to influence the behaviour of British millers.

One occupation which should have been comparable to the miller was that of baker, both occupation being exposed to a similar level of flour dust. For this period, medical statistics for the United Kingdom were difficult to obtain for purposes of comparison of the two occupations. However, some statistics started to become available from German sources which produced some unexpected results. It was anticipated that both occupations would show the same degree of victims for the same type of diseases.

However, the outcome was much different. Out of 100 bakers, 7 would die from phthisis compared to 10 Millers. Furthermore, concerning pneumonia out of 100 deaths, the rate for bakers was 8.4 compared to 42 deaths amongst millers for the same disease. This was a startling revelation, two occupations both subject to abnormal levels of flour dust but with strikingly different health outcomes. When later statistics became available in the United Kingdom this discrepancy was in dispute. One debate centred a belief that the discrepancy between German millers and bakers was more likely to be linked to the lifestyle millers or even the weather condition prevailing in that country. The question which arose was this purely a German phenomenon? Notwithstanding this controversy prominent medical people seventy years earlier had claimed that they had not found any aged and healthy millers.

Some members of the medical profession considering this difference reflected on the changing technology. Prior to circa 1870 the major part of flour grinding was done

between revolving stones after that time the situation changed to position where most flour was ground by steam driven steel rollers. It became accepted that stone grinding flour not only created unacceptable amounts of flour dust but also stone dust and it was deduced that it was this contaminant which led to the reported high death rate. There was also the popular belief that during the process of grinding flour in small rural mills contaminants such as chalk would be added (sic). Prior to the introduction of steel roller mills the trade of flour miller was considered so unhealthy that friendly societies (the main providers of funding for medical expenses) would not accept millers as members. By 1900 the occupation was not considered to be any more dangerous than other manual trade. The introduction of steel rollers did not make milling completely safe. There was the incidental danger of working with machinery, fire and explosion, but the exposure to flour dust was greatly reduced. The then modern methods of using steel roller in large scale mills also brought with it mechanical means of washing and removing physical contaminants from cereal. This was another factor contributing to general improvement to the health of flour millers.

In the old system (stone grinding) the atmosphere was laden with fine flour dust, thus with each inspiration of breath this fine dust would be drawn into the bronchial system of the millers. This dust formed plugs with mucus of the bronchial system. It took great effort on behalf of the miller to dislodge such plugs. It wasn't contended that the flour dust reached the lungs but other contaminants would have done. The flour dust would have also contained particles of harder grains than wheat, portions of hair from oats, bristles from rye and particles of mineral dust from millstones. This constant irritation to the bronchial system led to the development of pulmonary emphysema. By the end of the nineteenth century the advent of photomicrographs clearly demonstrates that some of this fine dust did reach the deepest parts of the respiratory system.

A visitor to the Heron corn mill will observe several old millstones on wooden display stands. These millstones have a unique oatmeal colour, which is a clear clue to their origin. The stone for these millstones was imported into this country from Epervan in the Valley of the Seine and from Fierté-sous-Jouarre, it is a flint-like stone in the trade referred to as French buhrstone. It is a type of quartz and is one of the hardest stones in nature not only most destructive to the steel tools used in the manufacture of a millstone but also to human life. As the plate below shows, the millstones are of a composite construction, individual pieces of stone are cemented together with plaster of Paris then permanently held together with one or more iron rings. One sign that a mason worked with French buhrstones was the bluish-black mottling of their forearms caused by fine particles of steel penetrating the skin. It was generally noted that masons following the trade would as a routine take the edge of ten chisels in as many minutes. To demonstrate the vast amount of minute steel particles being emitted by the process of dressing buhrstone a member of the late nineteenth century Dangerous Trades Committee had a unique method. He would place the magnetised blade of a pocketknife into waistcoat pocket of various mason move it from side to side for a few moments then withdrawing it to show the edge of the blade had a fern like growth of steel dust. The buhrstone workshop would be covered with heavy dust but this was misleading because there was

also a vast amount of fine mineral dust released into working environment.



FIGURE 1 FRENCH BUHRSTONES ON DISPLAY AT THE HERON CORN MILL BEETHAM.

This fine dust combined with fine steel particle would be inhaled by the mason and reach the deepest parts of the respiratory system with devastating results. Men entering the trade of buhrstone manufacture understood they would not be able to follow it for more than ten to fifteen years. Officially the life expectancy of men in this trade was between 36 and 40 years. After about ten years in this trade the first signs of pulmonary consumption would appear, manifest by a cough and blood-spitting. Once these symptoms became established a fatal termination would soon appear. As with many dangerous trades other influence would have had an impact on life expectancy. Buhrstone construction was usually conducted in sheds with open sides and in all types weather. It had been stated that these men were intemperate and careless in habit. It was considered that alcoholism and indiscretion at play contributed to a shorter life than many others. These men received wages of between fifty and sixty shilling per week this was a very good level of remuneration, when at the same time a miner at Nenthead would have received about twenty shilling. Clearly the ability to pay for alcohol any other distractions would not have been a problem.

An important question is: why were safety precautions not taken? The men should have been required to wear respirators but they felt respirator to be too irksome to wear. Mechanical means to control dust could have been deployed. However, means of powerful suction for dust capture would have been costly and this is probably the main reason such technology was not introduced. Moreover, the open sided workshops made it impossible for mechanical fans to clear the dangerous dust. When considering personal

protection, the Dangerous Trades Committee suggested goggles or face guards should be used. However, of more importance to creating an understanding of the social process extant at that time was this extract from their report:

“It is such a dangerous occupation that if the industry was swept out of existence altogether it would be no great loss either to the commercial world or to civilisation at large.”

The combination of steam power and steel roller grinding of cereals had two effects. The unhealthy working conditions of corn millers became transformed to a standard more acceptable to promote good health and improved longevity.

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F.I. Hill, PhD, MSc, LLM, BA(Hons) 2017.

COMMITTEE MEMBERS DETAILS

Roger Baker,
3 Sun St
Ulverston
Cumbria
LA12 7BX
mbarb@freenetname.co.uk

Geoff Brambles, Chairman
21 Derwent Drive
Kendal
LA9 7PB

Mrs Helen Caldwell, Secretary
Low Ludderburn
Cartmel Fell
Windermere LA23 3PD
lowludderburn@btinternet.com

Mr Dan Elsworth, Publicity Officer
6 Town Street
Ulverston
LA12 7EY
dwelsworth@cooptel.net

Mr Robin Yates Membership Secretary
Glenrae
Brigsteer Rd
Kendal
LA9 5DX

Bill Myers
20 Lord St.
Millom
Cumbria
LA18 4BL
bill.myers@nwemail.co.uk

Graham Brooks, Bulletin Editor
Fairhurst
Aglionby
Carlisle CA4 8AQ
solwaypast@yahoo.com

Hilary Corton Treasurer.
27 Fountain St
Ulverston
LA12 7EQ
hilarycorton@aol.com

Dr Ian Hill
5 Parkside Drive
Arnside
Cumbria LA5 0BU
fi.hill@btoopenworld.com

Mr David Beale, Minutes Secretary,
Low Row
Hesket Newmarket
Wigton
CA7 8JU

