

# North East Derbyshire Industrial Archaeology Society



**NEDIAS Newsletter No. 60 – November 2015**  
**Price: £2.00 (Free to Members)**



## Silica Mines at Pontneddfechan

*Cliff Lea*



On an Autumn walking break in the Brecon Beacons, one of the fascinating areas we passed through was the so-called “Waterfalls Area” at the head of the Vale of Neath. After walking past many spectacular falls, one which we walked right behind, we quite unexpectedly along the River Mellte came upon the adits of long-defunct silica mines and signs of associated tramway bed.



**ABOVE:** Walking behind the *Sgwd yr Eira* waterfall in the *Afon Hepste Gorge*

**RIGHT:** One of three adits to silica mines passed

Whilst sand, quartz and millstone grit are comprised of silica, the gritstone found around Pontneddfechan has an almost 100% silica purity. In 1821-22 Wm. Weston Young in that area developed a method of producing what was to become a highly favoured type of fire-clay bricks for lining metal smelting furnaces. The silica is said to have been mined there since the late 18th century, ceasing in the 1960s.



The underground galleries dug out using a “pillar and stall” method in the area were said to have been very extensive, spreading for thousands of yards underground. Firing was done at night, and there had also been a local 180 acre powder works,

***In this issue:*** ■ Silica Mines at Pontneddfechan ■ What's On? ■ For Sale – Parkhead Hall, Ecclesall Road South, Sheffield, S11 9PX ■ Wheelbirks Farm – *A Tanner's Transition From Tees to Tyne* ■ I A News & Notes ■ Chairman's Chat ■ Frogmore Paper Mill – *Birthplace of Paper's Industrial Revolution* ■ And Finally ... *what's in a name – “Birdswood”* ■

apparently the only gunpowder works of its type in Wales at the time. The powder works eventually became part of the Nobel Explosives Division.

The silica was mainly carried about 2 miles by horse tramway to the Port Walby brickworks, which closed about 1920. NEDIAS members may even have examples of Port Walby fire-clay bricks in their collections labelled "DINAS". There had been at least two tramway systems in the area; I saw signs of one with track-bed of 2ft 6in gauge.

Isn't it amazing what one finds on a simple country ramble!



Two photos showing signs of track-bed for horse-drawn tramway from the silica mines.

## WHAT'S ON?

### NEDIAS Lecture Programme

**M**eetings are held at: St Thomas' Centre, Chatsworth Road, Brampton (opposite Vauxhall/Bristol St Motors) S40 3AW. There's plenty of parking in their own car park, including disabled spaces, as well as on-road parking in front of the Church. All meetings commence at 7:30pm.

Monday, 14th December 2015	<b>Christmas Meeting.</b> Photographs from this year's visits to Lion Salt Works, Lea Wood, Anderton Boat Lift, Derby Roundhouse, etc. Plus the NEDIAS Christmas Quiz! Accompanied of course by mince pies.
Monday, 11th January 2016	"Sheffield – Salesman to the World" by Mike Spick
Mon 8th February 2016	"The Railways of the Upper Derwent Valley Part 2 – Bamford filters, Rivelin Tunnel and Ladybower Reservoir" by Ted Hancock

### Other Diary Dates

Currently on until 9th January 2016	"Made in Chesterfield". This exhibition celebrates the wide range of amazing and sometimes quirky products being made in Chesterfield today. Chesterfield Museum.
Monday, 16th November 2015	"Charcoal from the Bronze Age to the present day". Talk by Don Kelley at SYIHS. 7:30pm at Kelham Island. Info: Derek Bayliss, 0114 230 7693.

<b>Tuesday, 17th November 2015</b>	<b>“The Historic Derbyshire Oilwells of 1918”</b> . Talk by Cliff Lea. 2:00pm at Eyre Chapel, Newbold, Chesterfield. Info Gemma Mason 01709 838673.
<b>Tuesday, 17th November 2015</b>	<b>“The Smiths of Chesterfield”</b> . The first major industrial concern in Chesterfield, begun in 1775. Talk by Peter Hawkins, 7:30pm at Chesterfield & District Local History Society, Rose Hill United Reformed Church. Info 01246 270812.
<b>Monday, 30th November 2015</b>	<b>“Chesterfield 1914”</b> . Talk by Janet Murphy. Brampton Living History Society. 7:30pm at St Thomas’ Church Centre, Chatsworth Road, Brampton, Chesterfield.
<b>Monday, 14th December 2015</b>	<b>“Wortley Tin Mill: Did it really use tin?”</b> . Talk by Barry Tylee at SYIHS. 7:30pm at Kelham Island. Info: Derek Bayliss, 0114 230 7693.
<b>Saturday, 9th January 2016</b>	<b>Derbyshire Archaeology Day</b> . Chesterfield Pomegranate Theatre
<b>Monday, 18th January 2016</b>	<b>“Women workers in Sheffield’s metal trades, c 1742-1867”</b> . Talk by Laura Bracey at SYIHS. 7.30 at Kelham Island. Info: Derek Bayliss, 0114 230 7693.
<b>Thursday, 28th January 2016</b>	<b>Nick Wheat – British Transport Films</b> – Nick will be sharing further extracts from his archive of various British Transport Films. 7:30pm at Brimington & Tapton Local History Group, St Michael’s Church Hall, Church Street Brimington. Info 01246 224678.
<b>Friday, 29th January 2016</b>	<b>“The Derby Roundhouse”</b> . Talk by Ian Harris. 7:30pm at Derbyshire Archaeology Society, St Marys Church Hall, Darley Lane, Derby.

**For Sale – Parkhead Hall, Ecclesall Road South, Sheffield, S11 9PX**

***Derek Grindell***

**NEDIAS** members with troublesome neighbours and a bottomless pocket could do worse than consider a change of address. A property that might appeal merited a two-page spread in the September issue of ‘Westside’, a magazine that serves Sheffield and North Derbyshire. Parkhead Hall on Ecclesall Road South is a Grade 2 listed building described as a beautifully appointed ‘Gentleman’s Residence’ with a wealth of period features. Set in ‘fabulous’ gardens and grounds of approximately three acres with an option to acquire a further acre, the property was on offer for £2,995,000.

Parkhead Hall was built to a design by and for a local architect in 1864-65, which incorporated oak panelling from Sheffield Manor. In June 1898 it was sold to Robert Abbott Hadfield, one of Sheffield’s most illustrious citizens. A trained chemist and pioneering metallurgist he had taken over his father’s

**RIGHT: Seen from Ecclesall Road South. The best public view of the hall.**

“Parkhead Hall 4” by Mick Knapton – Own work. Licensed under CC BY-SA 3.0 via Commons – [https://commons.wikimedia.org/wiki/File:Parkhead\\_Hall\\_4.jpg#/media/File:Parkhead\\_Hall\\_4.jpg](https://commons.wikimedia.org/wiki/File:Parkhead_Hall_4.jpg#/media/File:Parkhead_Hall_4.jpg)





business in 1882 at the age of 24. Between 1884 and 1914 the firm of Hadfield's capital grew from £135,750 to £700,000 and the workforce from 520 to 5980.

Hadfield married his American wife Frances, the daughter of a wealthy American family in 1894. They made their home at Parkhead and added a two storey extension, incorporating two additional bedrooms, a bathroom, billiard room and library and renamed the property Parkhead House. During the period 1909-1911 they toured the world and on their return moved to Carlton Terrace, one of London's most exclusive addresses. They passed the winters in the South of France but retained the Sheffield home for their frequent visits to the city. Between 1894 and 1897 new factory premises were built at Tinsley adjoining Hadfield's Hecla works on the site now occupied by Meadowhall. Inevitably the new investment was named the East Hecla Works and its establishment was timely since WW1 saw a leap in demand for manganese steel and also increasing interest in silicon steel.

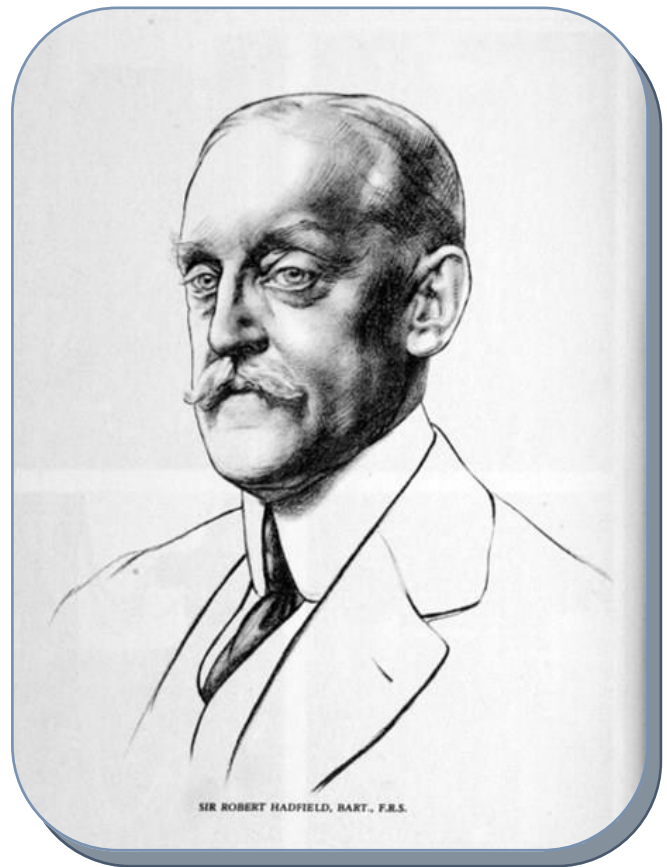
One of England's most prominent industrialists, Hadfield was pre-eminent in the field of metallurgy and a list of his achievements and the many honours bestowed on him filled more than a column in *Who's Who*. Following his death in Kingston Surrey, on September 30, 1940, as the first air raids on London began, he was given a two page obituary in the 1941 issue of the *Transactions of the Institution of Naval Architects*. This was in recognition of his pioneering work as a metallurgist and its significant impact in the field

of naval architecture. Special or alloy steels of many kinds are used in marine engineering, whether, for example, as high tensile steels in propulsion machinery, non-corrodible steels in turbine blading, steam valves, pumps and deck fittings, or as heat-resisting steels for super-heaters, mechanical stokers and furnace components, or for Diesel engine valves.

Credit for the inception of the age of alloy steels must be accorded to Sir Robert Hadfield for his discovery of manganese steel and silicon steel. The former found immediate application not only in marine engineering but in such essential auxiliaries to shipping as dredgers, in which it provides an invaluable material for those parts subject to excessive abrasion, as, for example, the buckets and their connecting pins. Today, earth moving equipment of varying sizes can be found on every building site, quarry and mine around the world. The non-magnetic character of manganese steel found a ready application in ship's bulk heads and fittings in proximity to the compass.

Silicon steel, on account of its special electrical and magnetic properties, offered dramatic improvement in the reduction of losses in electrical transformers and drastically reduced the cost of electricity transmission and distribution, thereby facilitating the rapid development of electricity undertakings across the world. Astonishingly, the R.I.N.A. essayed an estimate of the value of the savings achieved by Hadfield's discovery of manganese and silicon steel in "all their various applications and amounts...to not less than 1,000 million pounds sterling down to the present time". Perhaps wisely, the obituary omits mention of the formula used to arrive at this estimate but, safe to say, Sir Robert Hadfield, BT., DSc., F.R.S. did unquestionably perform the world a great service and saved the world an incalculable amount of expenditure, certainly of the order of many £billions.

Sir Robert also demonstrated the merits of silicon steel of a different grade, that is, high tensile steel with superior mechanical properties, thereby dispelling 'generally held notions as to the baneful influence of silicon on steel'. In consequence it was used as a structural steel and plates of silicon steel were used in the construction of both the *Mauretania* and the ill-fated *Lusitania*. As a result their respective upper deck structures were lightened considerably by reducing the thickness of their scantlings. The 34,000 ton *Mauretania*, the largest merchant vessel ever constructed in England was built by Cammell Laird at Birkenhead and launched on 28th July 1938. In June 1939 its owners, Cunard White Star, advertised trips to see America. Their Atlantic Excursion Fare (third class) was £27-5s-0d return. As we all know a little man in



**ABOVE: Sir Robert Abbott Hadfield**

Courtesy of Grace's Guide to British Industrial History – [http://www.gracesguide.co.uk/Main\\_Page](http://www.gracesguide.co.uk/Main_Page)

Berlin was about to 'spoil the party' for years to come.

On behalf of the Royal Navy, Hadfield also led progress in the development of armaments, especially in respect of the armour-piercing shell and the design of protective helmets but this aspect of his research must await space in a future Newsletter. Parkhead Hall had a variety of occupants following the departure of the Hadfields. Purchased by Sheffield Corporation in 1939 for £6,756 it became the WW2 H.Q of No. 33 Group R.A.F. Balloon Command and post-war was an Old People's Home. In June 1989 it was purchased for £1.2 million by a private company. Subsequently it suffered the indignity of a raid by the Serious Fraud Office and South Yorkshire Police. What would Sir Robert Hadfield have said?

## Wheelbirks Farm – A Tanner's Transition From Tees to Tyne

**Derek Grindell**

**O**ur annual family holiday in Northumberland, just south of Hadrian's Wall, would not be the same without a visit to at least one of the rural ice cream parlours that are now a feature of the county. One favourite is located at Morwick, a matter of only a few minutes by car from Warkworth Castle, which is located on a winding loop of the river Coquet a short distance from where it meets the North Sea in Alnmouth Bay. Three scenes from Shakespeare's Henry IV are set at the castle, which dates from the 12thC. It was here that the 3rd Earl Percy and his son Harry Hotspur plotted to set Henry IV on the English throne. Until the 16thC the castle was the home of the Percys and their present home, Alnwick Castle, served as fortress. Although still owned by the Percy family, Warkworth is now cared for by English Heritage. The Morwick Ice Cream Parlour is very modest in scale. Its customer outlet comprises a small shop, a modest car park and a children's play area, which are very much overshadowed by a large working farm. Their ice cream, however, is available in numerous flavours and is of a standard not attainable by mass production. Some 30 miles to the SSE and a mere five miles from Corbridge lies the small village of Stocksfield where a herd of 120 Jersey cows enables Wheelbirks Farm to produce ice cream of the highest quality and in sufficient quantity to supply its many visitors and other retail outlets around Northumberland.



Wheelbirks' customers are able to enjoy their purchases in a large indoor café area and outside on tables overlooking an orchard. It was whilst gazing over the orchard fence at some of the Jersey herd that I noticed on the farthest boundary of the field a large glass building (Fig.1), which clearly had no agricultural purpose and had a distinct appearance of neglect. On enquiring about its



**Fig. 1 Wheelbirks' sanatorium**



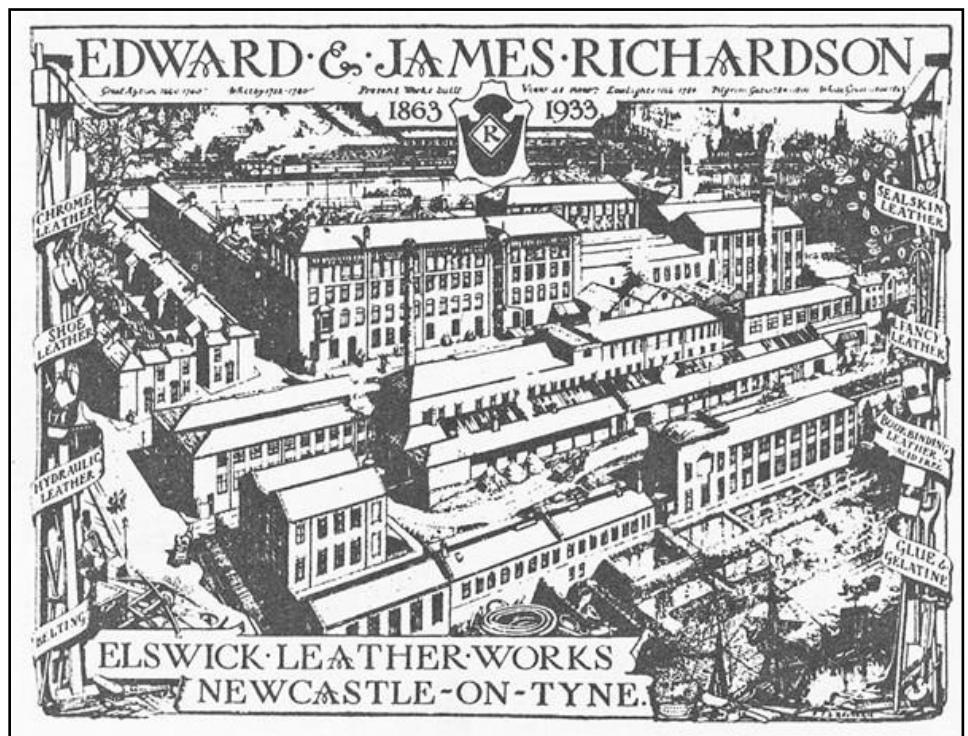
**Fig. 2 David Richardson**

William Richardson's descendants went on to establish tanneries at Whitby and Newcastle, the latter growing into the major business of E & J Richardson Ltd. (Fig.3) One family member, the industrial chemist Professor Henry Richardson Proctor was an international figure in the application of science to leather tanning.

Pre-industrialisation leather tanning was the process by which animal skins were transformed into leather. Before the application of science and industrialisation in the 18th and 19th centuries, it was a long, messy and very smelly process. First, the feet, tail and upper skull with horns attached, had to be removed from the hide, which was thoroughly washed in water. Then all hair, wool and flesh had to be removed by scraping after steeping in lime, in ash solution or in urine for over a week. The hair was sold for use in mortar and upholstery whilst the fleshings went into the manufacture of gelatine and glue. Next came mastering, the soaking of the skins in a hot mixture of water and dog faeces, to remove the lime and soften the hides. In cities the collection of dog faeces was a recognised occupation by the whimsically-named 'pure-finders'. The hide was then cut up in a process called 'rounding', to separate the pieces of different quality. Tanning was achieved by placing alternate layers of hides and oak bark in a tanning pit, and adding a little water. This part of the process would take between seven and eighteen months. After a final washing and drying, the final stage was currying, the softening of the leather through the application of oil. Instead of tanning with oak bark, thinner hides could be treated with alum or other salts to produce tawed leather. This was of better quality and did not have the dark colour associated with tanning. It was used for producing white leather, and leather used for gloves and book binding. Some leathers were partly tawed and then slightly tanned.

origins, one of the parlour's staff directed my gaze to a large explanatory notice on the wall, which was in a dark corner by the entrance. I suspect I was not the first customer to pass it by without a second glance.

There have been farm buildings at Wheelbirks since the 17thC and the Richardson family have been in residence since 1882 when it was purchased by David, a Quaker and owner one of the largest tanneries in the country at Elswick on the Tyne. Some grasp of the sheer size of the site can be gained by reference to fig. 1. In fact the Richardson family could trace their origins as tanners to Great Ayton in Cleveland in the mid 16thC when they owned land there and accrued more via the 1658 Enclosure Agreement. They were affluent farmers at Old Langbaugh, on the southern edge of Langbaugh Ridge. William Richardson (1660-1740) became a Quaker and started tanning leather towards the end of the 17thC in order to supplement his income from farming. His three sons all became tanners: John (1698-1786) at Old Langbaugh, William (1700-1794) in his Cleveland Tannery at Great Ayton where he had 92 pits and Isaac (1707-1780) at Bog Hall, Whitby. A part of the tannery buildings, the stone barn used for drying hides, remains at Old Langbaugh and can be clearly seen today from the Middlesbrough Road.



**Fig. 3 Elswick Leather Works**

David Richardson replaced the old farmhouse and farm buildings at Wheelbirks with cottages in 1902 and a further four houses were built on the estate. In 1911 the farmhouse was greatly extended and an outbreak of TB prompted David to build the sanatorium for his leather workers that has survived more than a century in its peaceful rural location (Fig.1).

In 1913 the Wheelbirks estate was inherited by David's eldest son Hugh, a teacher at Bootham School, York and over the ensuing decades acres of timber were felled to create the 100 acres of forest that are enjoyed today.



**A member of the Production Team**

Dairy farming commenced in 1925 when a pedigree Jersey herd was introduced to the 360 acre estate. Ninety years later, fifth generation farmers Hugh and Tom Richardson still maintain the family tradition but have successfully diversified with their bold venture into quality ice cream. Although not directly affected by the foot & mouth crisis of 2001, it gave the family cause to reflect on the sustainability of their conventional farming activities and they gambled that their pedigree Jersey herd, the only one in the county, provided the key to growing the business. The sheep flock was sold, ice cream making equipment purchased and training in commercial production acquired. The retail business was launched in 2002 but initially ice cream and Jersey milk was sold from the farmhouse porch using an honesty-box. Over the ensuing years the brother's faith in their venture was more than justified with a growing sales volume to local retailers, pubs and restaurants. Wheelbirks had been transformed into a busy rural parlour attracting many visitors. The Elswick Tannery was acquired by Barrow Hepburn & Gale in 1969 but shut down two years later.

On returning to the car park a bright blue enamel sign affixed to one of the barns bore, in white letters, the name 'Boulton & Paul'. It immediately 'rang a bell' since only a few weeks previously I had purchased an intriguing 65 page memoir entitled *Boulton & Paul Ltd. And The Great War*. Written by William H. Fiske and printed for 'Private Circulation' in 1919 it was dedicated, with permission, to David Lloyd George O.M., M.P., who had been the creator of the Ministry of Munitions. In a hand written letter, dated May 1916, prompted by the Labour Supply Department of the Ministry he acknowledged the firm's contribution to the war effort.



Prior to acquiring the book I had associated Boulton Paul solely as WW2 plane makers and their *Defiant* fighter in particular. No mention is made of the firm's origins but a drawing of 1868 shows their modest Works in Rose Lane, Norwich. Another drawing of the same location in 1918 shows the site complete transformed into a factory complex with two smoking chimneys. Their pre-war business had been the manufacture of bespoke buildings small and large but mainly for agricultural use. During the war they were obliged to diversify at short notice. The author, clearly a senior management figure in the firm, had decided post war to set down in print his personal experiences in dealing with both the civil service and government contractors and subcontractors. I suspect that the dedication to Lloyd George was undertaken in the hope of eliciting some response from the politician but by 1919 he had moved on and was preoccupied with the Versailles Treaty and probably beyond the author's reach. As we remember these momentous events of a century ago it might be of interest to NEDIAS members to have a summary, in a future Newsletter, of W. H. Fiske's account of a firm undergoing great enforced change in a time of war.

## **IA News and Notes**

### **Bricks**

***Martyn Fretwell***

The Editor has had recent correspondence with Martyn Fretwell, who has mentioned that he's currently working on producing a website posting about the brickworks in the Chesterfield area, and that he hopes to publish soon. He went on to say:

*"With your saying that NEDIAS have quite a few members who are brick collectors or have an interest in brick companies, I have two brick websites which your members may be interested in reading, one covering the East Midlands and the other the rest of the UK. The sites contain photos of bricks that I and fellow collectors have found, plus information*



about the makers and their works. I have been fortunate to have received or obtained information and photos for at least six posts from the descendants of these makers. So it makes the posts more interesting to read.

<http://eastmidlandsnamedbricks.blogspot.co.uk>

(... with the very latest new Chesterfield section <http://eastmidlandsnamedbricks.blogspot.co.uk/2015/09/chesterfield-staveley-brickworks.html>)

<http://uknamedbricks.blogspot.co.uk>

Please see the above links to websites on this subject”.



**ABOVE: W. H. & J. Slater, Denby in the 1930s** from the Nigel Aspdin Collection.

**RIGHT: Photo of brick showing ‘SIC’ identification**

*SIC could stand for Staveley Iron & Chemical Co. which was a subsidiary of the Staveley Coal & Iron Co. between 1948 to 1951. Staveley Iron & Chemical Co. was nationalised in 1951 to 1960, but I am not sure if the Campbell Brickworks still operated under the Staveley name during this period.*

*So if this brick was made at Barrow Hill, it may only date between 1948 & 1951.*

*Hoping that you can help, Martyn Fretwell.” – Email: [daysnbricks4u@btinternet.com](mailto:daysnbricks4u@btinternet.com)*

Martyn passed to me this illustration of the Slater yard at Denby, typical of the jewels to be found on his sites.

Martyn has added a request, and if anyone can help with the following query, please contact him directly on

*“Just wondered if any of your members of your society may have worked at Campbell Brickworks between 1948 & 1960, as I am trying to find out if this brick marked SIC was made at this works. I found this brick on the old GKN Sheepbridge site in Chesterfield and a fellow collector has also photographed one in the town.*



## The new East Midlands History and Heritage Magazine

Have you seen the new *East Midlands History and Heritage* website magazine? It describes itself as “the magazine that uniquely caters for local history societies, schools and colleges, heritage practitioners and history professionals across the region, putting them in contact with you and you with them.”

The very first Issue was published in June this year and is available to download at <http://eastmidlandshistory.org.uk/magazine/>



## Industrial Heritage Day EMIAC 90

The Railway and Canal Historical Society are organising the next Industrial Heritage Day/EMIAC 90 which will be held on Saturday 14th May 2016 at The National Forest Waterside Visitors’ Centre Bath Lane, Moira, DE12 6BA.



The subject is to be the Ashby Canal which was built between 1794 and 1804 to serve the eastern basin of the Leicestershire and Derbyshire coalfield. Originally 31 miles long, running from Ashby Wolds to the Coventry Canal at Marston Junction, it continued to serve this purpose until the 1960s, despite being taken over by the Midland Railway Company in 1845. The canal suffered decline and gradual partial closure in the 20th century but the section from Snarestone down to the Coventry Canal remained open and is still navigable today. In recent years much progress has been made in getting the canal restored north of its present terminus by the Quarry Lane Pumping station, near Snarestone.

The day includes talks on *The Ashby Canal and Tramroads*, by Dr. Wendy Freer and *The Ashby Canal, decline and restoration*, by Geoff Pursglove, and during the afternoon the hosts offer choice of two guided walks to view sites of interest:

1. Walk along the restored canal from The Waterside to Moira Furnace and early 19th century Blast Furnace, now a museum. Visit does not include entry to the museum which costs £2. An easy return walk of 2 miles along the towpath.
2. Visit to Snarestone Wharf, (off Quarry Lane, by the old pumphouse) to see the length of canal recently restored, part of the abandoned length and what is planned for the future. This will be about a 1.5 mile easy return walk.

This looks like it will be a popular day, and the Registration Form is now available on our NEDIAS website, at our meetings, as well as from Railway and Canal Historical Society. Queries e-mail – wild141@talktalk.net

## **Barnsley Company Ltd., Sheffield.**

***Jacky Currell***

**A**t our September meeting, we had a fascinating talk on the Sheffield firm of knife-makers by Colin Barnsley, a family company that had run through five generations.

George Barnsley and Sons Ltd. had been founded 1836 and were in Cornish Place on the Don, specializing in forged filing and cutting tools for leather workers and shoe makers. One George Barnsley was Master Cutler in 1883.

George Barnsley and Son is listed in the 1837 Sheffield Directory as a file manufacture situated on Wheeldon Street, and the 1849 listing records a move to Cornhill and the 1852 to Cornesh works, Cornesh Street. They had by this time also increased their product range to include steel files, shoe and butchers knives.

Our speaker displayed a mysterious object – and we were asked to guess what it was. A big chunk of metal with a flat top and a narrow shape underneath?

And of course, it was me who instantly recognised it – another piece of my favourite types of technology – another LAPTOP!

Put it on your lap and hold it between your knees, and its lovely solid feel and shiny flat surface make it ideal for polishing knives or working leather, and also for all kinds of arts-and-crafts work.

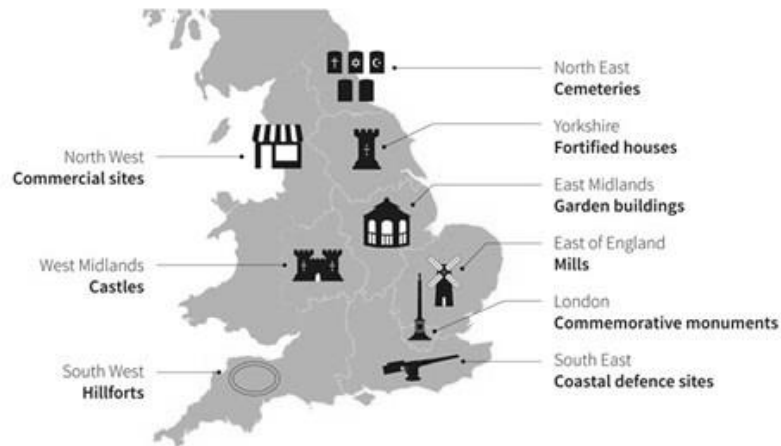
So, can I have one?



## Historic England

You may have heard the recent news from Historic England, with details of “sites at risk”. They have issued a map of the country, showing the type of heritage site currently classified as at risk, and I have no idea why there should be so many cemeteries at risk in the North-East, whereas in the East Midlands, it is garden buildings that pose the greatest threat.

### The most common Heritage at Risk across the country



See [www.historicengland.org.uk/advice/heritage-at-risk/findings/](http://www.historicengland.org.uk/advice/heritage-at-risk/findings/) for more details.

## Chairman's Chat

**Cliff Lea**

**T**he NEDIAS area is awash with industrial heritage, and it's no surprise that it abounds with many celebrations, centenaries, anniversaries and historic milestones of national and international significance. Next year we shall be marking the tercentenary of the birth of the enterprising James Brindley (1716, born in Tunstead, near Buxton), and in the last edition I mentioned that this year marks the 150th anniversary of the birth of Charles Paxton Markham. NEDIAS is collating a spreadsheet which contains dates and details of those important and historical milestones – you can see the first draft on our website at [http://nedias.co.uk/?page\\_id=57](http://nedias.co.uk/?page_id=57). I'd like members to let me know of any other milestone years which so far we have missed, and which we should add.

This year also marks the 175th anniversary of the founding of Joseph Clayton's tannery in Chesterfield – probably the oldest surviving tannery in Britain. Having recently merged with another traditional tannery, it is part of the largest vegetable tanning group in Britain. Barry Knight, who was then Clayton's production manager, came to speak to NEDIAS in 2003 about the various processes and types of products produced, and we followed up with a visit to the site. Apart from a myriad of domestic items, we saw that they specialised in all sorts of industrial tanned goods – machine belting, clutch drive seals, gaskets, marine and hydraulic seals, gauntlets and aprons, as well as their famous red hide for test-match cricket balls. We even saw a section of historical tanned elephant hide! In his talk to us Barry mentioned:

*“Only last year I was working on a project to make super-strong leather. I chose to make an alum rawhide leather. This is where we intentionally leave an untanned strip in the middle of the leather. The results were astounding, it was probably the strongest leather we have ever produced. So what do I find researching for this talk? That Howard Carter the famous Egyptologist had found alum tanned rawhide which was used for bindings on the royal carriage wheels of king Tutankhamen over 4000 years old.”*

Clearly, Claytons has continued onwards to its bicentenary because it innovates, yet still follows traditional techniques, producing exactly what the users need. Barry showed us a number of historical photos from the Clayton archives – these can be viewed on their website at <http://www.claytonleather.com/clayton-leather-products.php?cid=8>; those of us who took the visit, were pleased that we managed to avoid slipping into the tan vessels sunk into the floor and which still survived from the early days.

Do we have any more anniversaries on the horizon? Please pass me the details! I'll add them to the list – you can find it at [http://nedias.co.uk/?page\\_id=57](http://nedias.co.uk/?page_id=57)

## **Frogmore Paper Mill – Birthplace of Paper's Industrial Revolution**

**Doug Spencer**

**I**n July of this year I lead a Matlock Travel Society day excursion to Frogmore Paper Mill in Apsley, near Hemel Hempstead. Frogmore Paper Mill is the world's oldest mechanised paper mill – the birthplace of paper's Industrial Revolution. It is still a working paper mill and home to two Fourdrinier paper machines, both of which are well over 100 years old. The mill is now managed and operated by the Apsley Paper Trail charity, with the aim of keeping it open to the public for visits, learning and community use. It turned out to be a very interesting day out and the tour guides were excellent – as was the Fish'n'Chip lunch provided by one of the Mill's close neighbours. We were also able to enjoy a short cruise on board the *Bryan Donkin* on the River Gade and the Grand Union Canal. There was also time to visit the 'Blitz and Beyond' Experience, which is a comprehensive exhibition dedicated to the work of the Auxiliary Fire Service and the National Fire Service during World War Two. It also incorporates much information about the history of the John Dickinsons and the British Paper Company Works Fire Brigades. We also had a demonstration of letterpress printing with an explanation of its history and the links to the John Dickinson Mills, Bryan Donkin who developed the Fourdrinier paper making machine and letterpress printing pioneer, and the neighbouring town of Watford where printing used to be a major industry.

John Dickinson had print shops in the mills which mainly produced printed packaging and printed paper products such as scrap albums. In addition there was research into printing on the papers produced and examples of printing bound into copies of the monthly trade publication, *The British Printer*. One of the old presses, an Albion may be seen in Watford Museum.

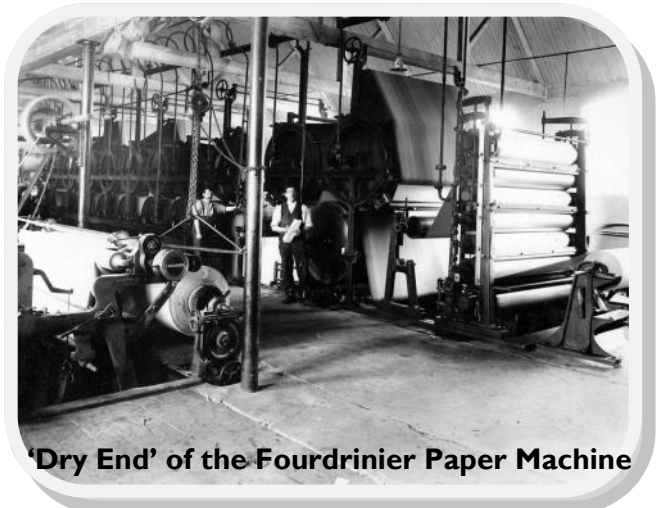
Bryan Donkin worked with Richard Bacon, a printer in Norwich, to patent the first rotary printing press which was the first to use composition rollers and an ink duct. Unfortunately there were a number of technical problems and it is believed only three were built.

It was the diversion of the Grand Junction Canal at Apsley in 1818 from its original route to follow the course of the Gade by Apsley and Nash Mills which gave John Dickinson direct access to the canal network. All the Dickinson mills were connected by canal to the Dickinson depot at Paddington (later Kings Cross). From there deliveries were made to the London area.

The original concept of a continuous paper-making machine was the invention of a Frenchman, Nicholas Louis Robert. He worked at a paper mill near Paris and whilst there, developed his ideas for making a continuous sheet of paper by mechanical means. A French patent was registered by Robert in 1799 but he subsequently sold the patent and a model of his machine to his employer, Leger Didot.

Didot did not find conditions in revolutionary France suitable for the development of the patent and he turned to England for help. He was related by marriage to an Englishman, John Gamble, who was at that time in Paris acting for the British government in prisoner of war exchanges. Gamble returned to England, registered the patent in London and was later joined by Didot with Robert's model machine. In London financial support was obtained from Henry and Sealy Fourdrinier, brothers who were wholesale stationers of some substance. The Fourdriniers commissioned Bryan Donkin to develop Robert's model and the world's very first continuous paper-making machine was installed at Frogmore Mill in 1803.

John Dickinson was the holder of many patents relating to paper and its use. His first was for a non-smouldering paper for use in rifles called Cartridge Paper; said to have been particularly helpful to Wellington's Peninsular campaign and at Waterloo by increasing the British firing rate whilst simultaneously reducing premature firing accidents. His next patent was for a means of making paper in a continuous sheet in what has become known as the Cylinder Mould machine. He would have known of the Fourdrinier patent for making paper continuously which was tied up by patents. Dickinson arranged financing to buy Apsley mill in 1809 and the nearby Nash Mill in 1811 where he installed and developed machines of his design which were producing some of the best and most consistent paper in the country.



**'Dry End' of the Fourdrinier Paper Machine**



**And finally ....**

**.... what's in a name – “Birdswood”**

**Cliff Lea**

**O**n a glorious Autumn afternoon this year, the trip boat run by the Friends of Cromford Canal was spotted as it passed through the swing bridge at High Peak Junction, and I mused as to the source of the name “Birdswood”. A quick search revealed that it had originally been built in 1938 by Yarwoods in Northwich for the LMS Railway and used on the Birmingham Canal Navigation operating from railway interchange points until 1955 when it started long distance carriage operations for British Waterways. In the early 1970s it operated as a horse drawn passenger boat from Froghall on the Caldon Canal, before being purchased by the Friends of Cromford Canal for trip-boat operations from Cromford Wharf.

But why Birdswood? Whilst its original name had been “Ross”, it was re-christened in 1955. It's thought that it was named after the LMS Bird's Wood flyover and junction signal box near Dutton in Cheshire!

REF: Historic Narrow Boat Club's website – <http://www.hnbc.org.uk/boats/birdswood>



**The Cromford Canal trip boat, Birdswood, seen at High Peak Junction on a glorious Autumn day**

*(Photo: Cliff Lea)*

**REMINDER: NEDIAS Membership Renewal falls due at Year End**

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