

North East Derbyshire Industrial Archaeology Society



NEDIAS Newsletter No. 92 – November 2023
Price: £3.00



Touch of Glass

Chesterfield Museum Service

HERE WE LOOK AT THE HISTORY OF CHESTERFIELD'S GLASSWARE INDUSTRY OVER THE YEARS.

Whittington Glass

The earliest glassmaking business in Chesterfield was established at Whittington around 1704 by Richard Dixon.

The glasshouse initially made dark coloured glass bottles but soon began producing a wide range of decorative cut glass including dishes, drinking glasses and decanters.

The business was managed by the Dixon family for over a century. The last Whittington glass maker was John Dixon and the glasshouse appears to have ceased production shortly before his death in 1816.

Although, nothing survives of the glassworks today, it is most likely that the furnace was cone shaped. This was a common furnace design in the 18th century. This one (*pictured below*) at Catcliffe is one of the last surviving cone furnaces. The furnace and working area are located inside the cone. Air is drawn into the furnace through underground tunnels while the cone acts as a chimney to remove the fumes.

The location of the glassworks at Whittington had the advantage of locally available coal and clay (to make fire pots in which the raw ingredients for the glass were melted). Coal, in particular, was extracted from the common which adjoined the Glasshouse. This land was owned by the Dixons and was also mined for ironstone.

John Dixon was the grand-nephew of the founder, Richard Dixon and he was the driving force behind the glassworks for around forty years. By 1813, a wealthy man, he purchased much of the land in the Manor of Whittington. His step-son,



<https://www.facebook.com/nediaschesterfield/?fref=ts>

In this issue:

■ **Touch of Glass** ■ **Dates for your Diary** ■ **A Lucky Discovery at the Bottom of the Garden**
■ **Spital Mills History – part 1** ■ **Masson Mill**
■ **Caudwell's Mill** ■ **And finally Wingfield Station** ■



Pictured here are items of Whittington Glass. The 18th century saw great consumer demand for glassware and cut glass items were particularly fashionable. Whittington Glassworks supplied the Sitwells at nearby Renishaw Hall with numerous items including lamps, wine glasses, decanters and a chandelier.

thought to have built Whittington Hall.

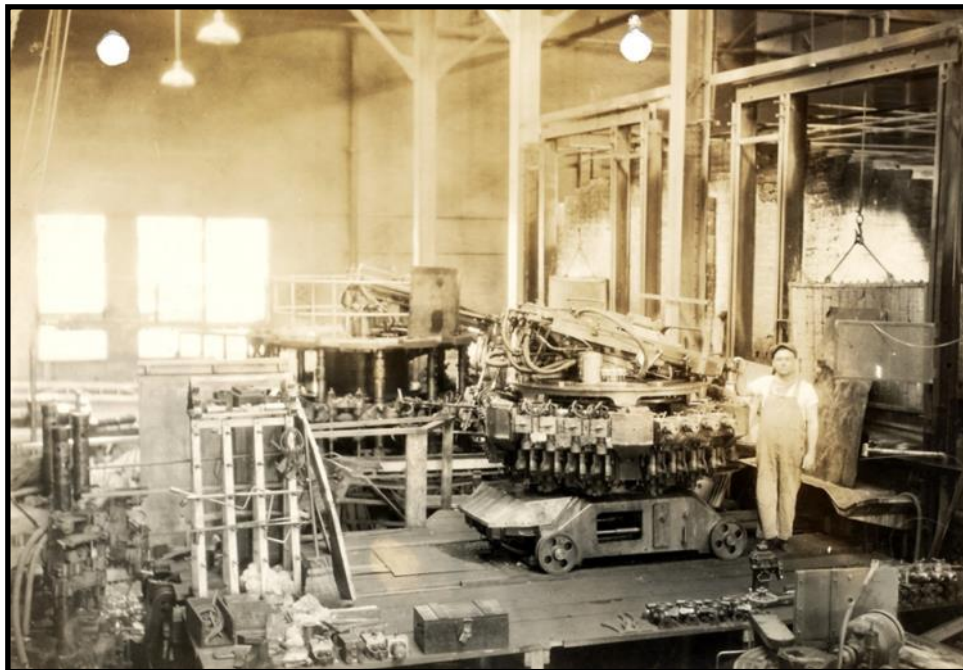
The building of Chesterfield Canal in 1777 was a great advantage for the Dixon's glass making company. It proved a convenient and cheaper means of distributing goods and also enabled the Glasshouse to receive delivery of high quality sand from King's Lynn for glassmaking rather than relying on local silicas.

Lighting the Way

Chesterfield Glassworks on Sheffield Road was established in 1923 by British Thomson-Houston (BT-H), an engineering company. The factory supplied glass for a wide variety of light bulbs, particularly Mazda Lamps, as well as tubes and rods for use in items such as radio valves and x-ray equipment.

The Glassworks expanded rapidly and investment in the latest glass working machines saw capacity double from around 450,000 bulbs per week in 1928 to up to 900,000 per week by 1937.

The Glassworks began making half pint glasses for the pub trade in the mid 1930s. This proved to be a



successful line, however the Second World War meant that production focused on the manufacture of glass for the war effort. Special lamps for aircraft, tanks and signalling and cathode ray tubes for radar were made.

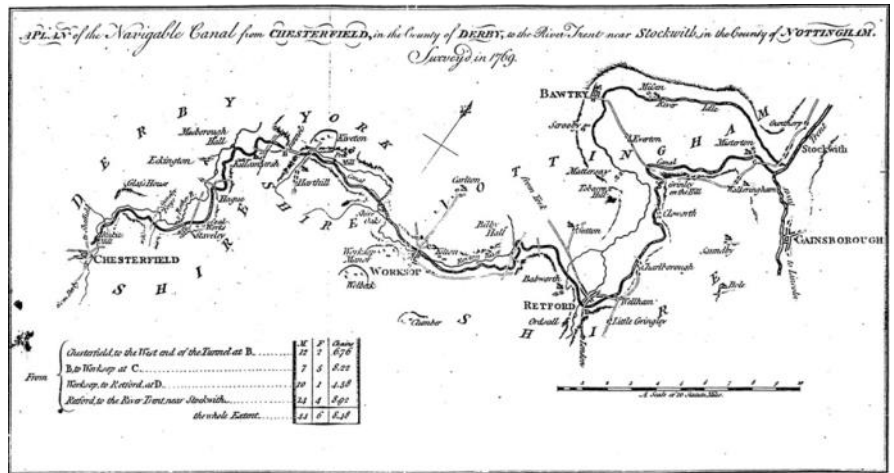
By the 1930s BT-H had established a glass research laboratory at Chesterfield to help develop new

Initially all light bulbs at Chesterfield were blown by hand but production quickly became semi-automatic through investment in the latest glassmaking technology like this Westlake machine (pictured left). The hand blower's skills were still needed though and all specialist lamps were made by hand.

Henry, inherited this on John's death along with the coal and ironstone mines on Glasshouse Common. The Glassworks did not continue and Henry lived the life of landed gentry. He is thought to have built Whittington Hall.

The location of the glassworks at Whittington had the advantage of locally available coal and clay (to make fire pots in which the raw ingredients for the glass were melted). Coal, in particular, was extracted from the common which adjoined the Glasshouse. This land was owned by the Dixons and was also mined for ironstone.

John Dixon was the grand-nephew of the founder, Richard Dixon and he was the driving force behind the glassworks for around forty years. By 1813, a wealthy man, he purchased much of the land in the Manor of Whittington. His step-son, Henry, inherited this on John's death along with the coal and ironstone mines on Glasshouse Common. The Glassworks did not continue and Henry lived the life of landed gentry. He is



products. Early work included the development of glass the use of cathode ray tubes to give high definition television reception.

Chesterfield Glassworks' main lighting product was the glass for Mazda Lamps. In the 1930s, they made about half a million per week. The light bulbs themselves were assembled at BT-H's factory in Rugby hence the 'Made in Rugby' stamp on the boxes.

At the beginning of the 1900s, BT-H had imported the bulk of its glass components from Europe. The First World War however brought supplies to a halt. As a result the company built its own glassworks. Chesterfield had a convenient location with good transport links and local coal supplies to make gas to power the furnaces.

Glass tubes and rods were a large part of Chesterfield Glassworks' production. They were intended for a wide range of uses including radio valves, lighting, x-ray equipment and in the pharmaceutical industry.

Tableware, Tubes and TVs

The Dema trademark for domestic glassware was registered in 1947 and the following year tableware production began in earnest at Chesterfield. In 1950, the bulk of light bulb production was transferred by British Thomson-Houston (BT-H) to their new factory, Glass Bulbs Ltd, in Harworth and the Glassworks supplied specialist glass tubes, lamps and components.

The 1950s saw the production of cathode ray tubes for television sets. These were all hand blown and by 1954 the factory was making 11,000 tubes a week to meet growing demand. Success for the Dema product continued and by 1957 a separate company, Dema Glass Ltd, was established to market the growing range of glassware.

AEI Lamp and Lighting took over BT-H in 1955 and in 1961, in partnership with GEC, the Chesterfield factory became Glass Tubes and Components. The capacity of the Chesterfield Glassworks was increased to meet the growing need for glass tubes and to continue to supply Dema's glasses.

After the takeover of BT-H by AEI Lamp and Lighting in 1955 and the formation of Glass Tubes and Components in 1961, Chesterfield Glassworks concentrated on the bulk manufacture of glass tubes and domestic tableware for Dema. The manufacture of valves and cathode ray tubes was discontinued at this time.



Throughout the 1950s cathode ray tubes for televisions were made at Chesterfield. They were hand blown ranging from 9 inches to 16 inches in diameter. As television screen sizes increased and the shape changed from round to rectangular, hand blowing was not possible and this method stopped in 1957. By 1962, Chesterfield no longer produced hand blown products.

The 1960s saw expansion on the Chesterfield site. A larger furnace built in 1961 and the extension of the tube factory enabled the company to produce larger tubing at tighter tolerances for florescent lighting and the pharmaceutical industry. Pictured left is the new chimney being built.

By the 1950s, the site on Whittington Moor consisted of the glassmaking factory, producing tubes, lamp components and domestic glassware and Dema Glass Ltd who acted as sole agents for the glassware. Lamp Caps Ltd continued to operate alongside.



Although Dema mainly supplied glassware for the hotel, pub and restaurant trade, the company saw a gap in the market in the 1960s and also produced decorated glasses for use in the home. Another product was decorated glass lampshades.

Dema's engineers developed a stretching machine in 1961 which was able to produce stemmed wine glasses in one piece rather than in two pieces. The process had the advantage that no mould lines were visible on the stem. The first wine glass ranges to be advertised were 'Ideal' and 'Paris'.

From Sand to Solid Glass

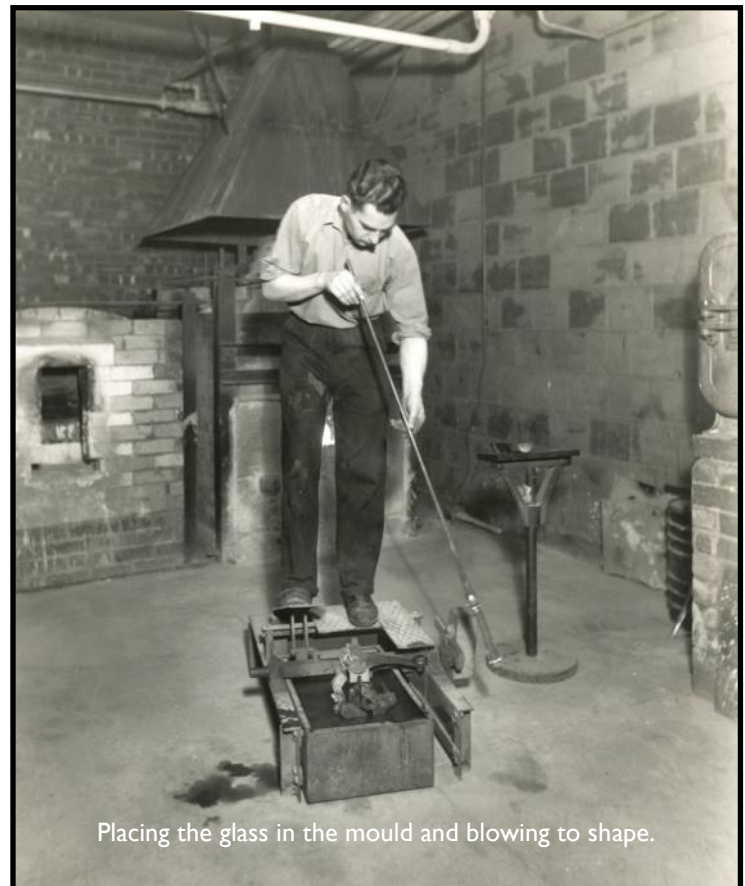
All glass is essentially a mixture of silica (sand), soda and lime which is heated to around 1,500°C and melted. Other ingredients are added depending on the type and colour of glass being produced. The glass is shaped and cooled gradually (annealed) to give it strength ready for any decoration.

Chesterfield's early glass makers were reliant on hand blowing techniques while the twentieth century glassworks embraced new technology alongside more traditional methods. Machine made glass enabled the production of consistent items on a large scale.

Blown Glass

This is one of the oldest methods of forming glass shapes. A highly skilled process, a hollow pipe is dipped into molten glass which is gathered at the end by rotating it. This 'gather' is rolled on an iron slab and its shape manipulated through blowing and movement. The final piece is then either made by hand using tongs and cutters or placed in a mould and blown into shape.

Specialist valves and lamps which did not fit the machines and TV tubes were hand blown at Chesterfield Glassworks until 1962.



Placing the glass in the mould and blowing to shape.



A Westlake machine with light bulb moulds.

Lamps to Lager

Chesterfield Glassworks were quick to embrace the new glassmaking technology available. Their first Westlake machine was installed in 1928 to make light bulbs. By 1978 ten such machines were in use; the world's largest Westlake operation. By this time they had been adapted to make drinking glasses and lampshades as well.

The machines gathered molten glass from the furnaces via a

vacuum which was then fed into the moulds. Air was blown into the moulds to form a rough shape then transferred to another mould to make the final piece. The glass was rotated constantly to stop it sticking to the mould. Excess glass was burned off and the product cooled off gradually in a part of the machine called a Lehr.

Generating Heat

The furnaces at Chesterfield Glassworks were powered by gas. This was initially produced on site using local coal. Later, oil was the main fuel source.

Melting for hand blown glass was done in pot furnaces. These were large containers into which the glassmaking ingredients were placed for melting. They had to be replaced on a regular basis were made on site until the 1960s.

Tank furnaces used for mass produced items as they held a larger amount of molten glass. Some furnaces by the later twentieth century could hold up to 1,000 tons of glass. The mixed ingredients were poured into the hottest end of a tank lined with refractory bricks for melting. They were extracted for working at the other, cooler end



Coal piles in the yard at Chesterfield Glassworks used to generate gas.

A Touch of Glass

From the 1970s onwards Chesterfield's glassmaking continued to go from strength to strength. Dema Glass became one of the leading glassware suppliers in the country, producing up to 100 million glasses a year by 1985.

It was a time, however, of change and takeovers. In 1971 Dema Glass became part of the Crown House Group (retaining its name) while Glass Tubes and Components was renamed Glass Bulbs Ltd as part of a merger with that company in 1978.

Dema was taken over for a second time in 1987 by furnishing retailer, Coloroll. This time 'Dema' simply became a brand name. Yet despite expansion and successful sales, the collapse of Coloroll in 1989 gave an uncertain future. Neighbouring G B Glass, who supplied the glasses to Dema, bought the company out, renaming the division Dema International.

In 1995 G B Glass transferred the manufacture of all light bulbs and tubes to its factory in Harworth and concentrated on producing glassware. The following year, the company was renamed Dema Glass with Chesterfield representing the tableware division. Despite lucrative contracts with Virgin Atlantic and the Ministry of Defence, Dema Glass went into receivership in 2000. The factory closed in 2001.



By 1994 Dema was supplying three fifths of the glasses used in British pubs and restaurants. Customers included Whitbread, Bass, Courage and Trust House Forte. Dema were also Britain's largest exporter of glassware. Their speciality was Weizenbier glasses for the German market (*pictured left*).



Pictured above - The Duke of Kent visited Dema in 1992 in his capacity as the Chair of the Overseas Trade Board. The visit was in recognition of GB Glass Engineering's achievement of the Queen's Award for Industry.



One of Dema's major selling points was their ability to work with customers to produce glasses to their exact specifications. The company were also able to offer personalised and branded decoration, much of which was done by hand using silk screen and transfer badge methods, like the picture left.



This article is taken from a Chesterfield Museum Service exhibition and is reproduced here with their permission.

Dates for your diary



NEDIAS Lecture Programme

Meetings 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 11 December 2023	CHRISTMAS MEETING ; quiz and thoughts on stabilisation and future of Cannon Mill
Monday 8 January 2024	David Skillen : "The Gretna Girls and the Devil's Porridge."
Monday 12 February 2024	Hugh Potter : "The Cromford Canal – new perspectives from the photo archive."
Monday 11 March 2024	Dr Stephen Walker : "History and operation of the historic Papplewick Cotton Mills"
Monday 8 April 2024	Dave Mullen : "Copper Mining at Alderley Edge"
Monday 13 May 2024	DAVID WILMOT MEMORIAL LECTURE Nick Wheat : "The Glory days of Steam"

Other Diary Dates

Saturday 20 January 2024	Derbyshire Archaeology Day from 9.45am to 4.15pm at the Winding Wheel Theatre. The line-up of speakers includes Tristan Cousins from York Archaeology, Alison James and Michael Lobb from MSDS Marine and Thomas Booth from The Crick Institute with many more to be announced. Subjects range from 'Holbrook's Hidden Heritage' to 'The Medieval Origins of Shirebrook' with other talks also focusing on the study of Ancient DNA and results of recent excavations. More information on the speakers and topics will be released here: www.chesterfieldtheatres.co.uk/archaeology . Derbyshire Archaeology Day tickets are on sale NOW. Book online using the link above or contact Chesterfield Visitor Information Centre Tel: 01246 345777 or Email: tourism@chesterfield.gov.uk
Monday 22 January 2024 @ 6:30pm	The Newcomen Society, South Yorkshire , Kelham Island Industrial Museum, Alma Street, Sheffield S3 8RY. Michael Eckert : Inspired by British Inventions: Joseph von Baader's (1763-1835) Technological Innovations in Bavaria - Hydraulic Machinery to Gas Lighting. Michael is a former curator at Deutsches Museum and the talk is being streamed live from Munich Zoom meeting ID: 828 2478 6912
Thursday 25 January 2024 @ 7:30pm	Brimington & Tpton Local History Group , Brimington Community Centre, High Street, Brimington, S43 1DB Holly Froggatt : The Mines Rescue Service, Chesterfield. – In operation for almost 75 years from 1918 to 1992, the Mines Rescue Station in Chesterfield provided the principal emergency service to all coal mines, private mines, and other establishments in the local area. For those that lived and worked there it was more than a job. It was a community. Capturing first hand reports of life at the Station, through interviews with Brigadesmen, their wives, and children who grew up on Infirmary Road, we aim to preserve the important social history of this remarkable building and keep those memories and voices alive for generations to come.
Monday 19 February 2024	The Newcomen Society, South Yorkshire , Kelham Island Industrial Museum, Alma Street, Sheffield S3 8RY. Michael Bailey : Progress in Design and Manufacture: The Steam Locomotive 1825-1830 Eventbrite: Free Online Admission —Booking essential for the online talk – Tickets available from 1/12/2023

A Lucky Discovery at the Bottom of the Garden

Martin Allen

It's certainly not every day that you discover an ancient artefact at the bottom of your garden. In the village of Fritchley near Crich, householder John Midgley was engaged in a casual conversation with his next door neighbour. He learnt that in 1977 the previous occupier of the property had built a rockery at the back of the garden and underneath there might be an old railway tunnel. John was intrigued and began to investigate.



© Derbyshire Archaeological Society/RPP

Hidden away: The historic Fritchley Tunnel, in Crich, Derbyshire, can be traced back to 1793, two years earlier than the previous record holder

As early as 1793, the Butterley Company established a limestone quarry at Crich, which they wished to connect via a railway to the Cromford Canal at Bullsbridge. The route passed through Fritchley and crossed at Chapel Street by means of a tunnel. Upon reaching the canal, the stone would be carried by narrow boat to the Butterley's iron foundry at Ripley. The limestone would be used as a flux to absorb impurities in the furnace during the melting of the iron ore. A "Gangway" or Plateway" was consequently built from what became known as Hilt's Quarry to transshipment sidings adjacent to the canal. The renowned engineer Benjamin Outram, one of the original founders of the Butterley Company was responsible for the construction of the line and the tunnel. The line was worked by horses, the average speed for hauling a train weighing up to 20 tons was 4mph. The entire route of the line was 1.5 miles long. In

the 1840s, steam locomotives took over, until the line eventually closed in 1933. The Butterley Gangroad was the first such line to be built in Derbyshire and this tunnel is thus the oldest in the world by a comfortable margin. Its nearest rival is a tunnel on the Peak Forest tramway, also in Derbyshire which dates from 1795. The Butterley Company was also famous in particular for providing the ironwork for two iconic structures in London, namely the overall roof of the Midland Railway station at St. Pancras and the Vauxhall Bridge over the River Thames. During the Second World War, the tunnel at Fritchley was used as an air raid shelter and the tunnel ends were finally bricked up in the 1980s, in order to make it safe.

With renewed enthusiasm, excavation work started in January 2013 and three metres of soil had to be removed before the tunnel portal could be revealed. Wessex Archaeology, a specialist consulting firm, was brought in to conduct a detailed examination of the tunnel, which is 18 metres long. As part of the study, a trial trench was excavated in the garden to the south of the tunnel, to investigate the original alignment of the line. A full archaeological survey was also carried out. The Heritage Lottery Fund had granted £17,000 to study the tunnel, which included using laser scanning to produce a 3D computer model of the excavation. It was discovered that only the far end of the tunnel had been blocked up, so it was decided to create a small hole, in order to use miniature cameras especially designed for caving work and laser scanners to see further. A single railway sleeper was found outside the tunnel, presumably everything else was removed in WW2, when it was converted into a shelter. The project leader responsible for the excavation was Trevor Griffin, who said "The



© Derbyshire Archaeological Society

Lost: The tunnel was sealed up 1977 by a previous land owner to build a rockery. The dig began in January and used heavy machinery to re-open the sealed passage

tunnel generally considered to be the world's oldest, although in the North East of England with claims to be older, but one of these no longer exists and the age of the other can't be proved. There are a lot of these railways in the Ripley area and many in the surrounding countryside that no one has done anything with. Hopefully, this will inspire others to do similar projects. Work on the tunnel excavation continued into September 2014 and several schools were invited to go on educational visits at the site. Eventually, the tunnel was sealed up again, to preserve it for future generations.



Waiting: Two figures in the foreground look on as a train approaches. The tunnel is connected to the Butterley Gangroad, a horse-operated railway built by the Butterley Company, a large local engineering firm

Spital Mills History – part 1

Derbyshire Victoria County History

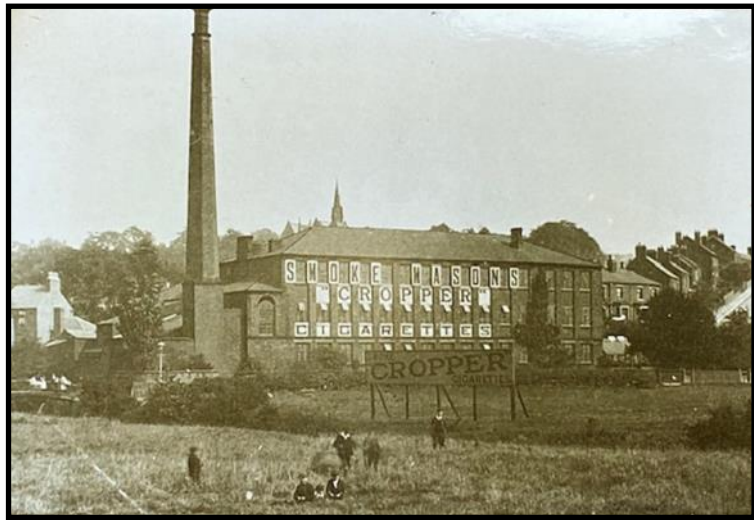
In this article we start reviewing the history of ‘Spital Mills’ – more recently known as the premises of Spital Tile – which started out as a steam-powered lace mill, probably in the 1840s. Today it is a dance studio with most of the former mill building used for storage.

A large, brick-built, steam-powered mill on the right bank of the Rother near the northern end of Spital Lane was probably erected by Thomas Holmes and Francis Algernon Sidney Smith, who in 1849 were the owners and occupiers, trading in partnership as Holmes & Smith, machine builders and lace manufacturers. Holmes appears previously to have been in partnership with Thomas Johnson, in a firm named Johnson & Holmes, which made gingham in a workshop in Castle Yard, behind the Castle Inn at 41 Low Pavement. He was living at Spital Lodge in 1841 and ten years later at The Terrace on Saltergate, when he gave his occupation as gingham manufacturer. Gingham is lightweight plain-woven cotton cloth. The firm of Holmes & Smith continued into the 1850s, but on 1 January 1858 the partnership was dissolved, and the business taken over by John Drabble (1834–1908) and William Edwin Dutton (1821–63), a master draper with a shop on Lordsmill Street.

By 1862 the works had evidently been divided between two firms, Drabble & Dutton, lace manufacturers, and Drabble, Dutton & Parker, gingham makers. The third partner was Richard Parker, a draper on Low Pavement. In 1860 Dutton was the defendant in an action brought by Richard Holland, a mechanic from Preston (Lancs.), who unsuccessfully claimed that he was owed money for obtaining, building, and installing improved gingham looms of his own invention at Spital. Both partnerships would have come to an end with Dutton's death in his early forties in June 1863.

In 1864 John Drabble applied for a patent for improvements in the manufacture of bobbin net, made on bobbin net or twist lace machines. The lace-making side was given up when the rising price of raw material made the business unprofitable, and the machinery was removed to the factory of Messrs Jacoby of Nottingham. A few years later gingham making also came to an end and Spital Mills (as the premises were always known, although there was only one mill building) became a tobacco manufacturing works.

In 1861, when he still had the lace-making business at Spital, Drabble was living in Nottingham. He later occupied the mill behind Lordsmill Street, on Hipper Street, which had once been a twist factory, and made



Spital Mills in its later guise as a tobacco manufactory – which we'll be exploring in the next part in this series.

tingham there, although in 1871–81 he described himself as a cotton doubler. He was then living at Herne House (in Calow).

Drabble was a member of Chesterfield corporation between 1871 and 1879, and mayor in 1877. In the 1891 census, by which date he had moved to Stanley Street in Spital, Drabble was enumerated as a commission agent and merchant, and ten years later as a timber merchant. He died at Spital in 1908, leaving personal estate of only £58.28.

We will be covering the later history these premises in future blogs, looking in particular at its short history as a tobacco manufactory under George Mason.

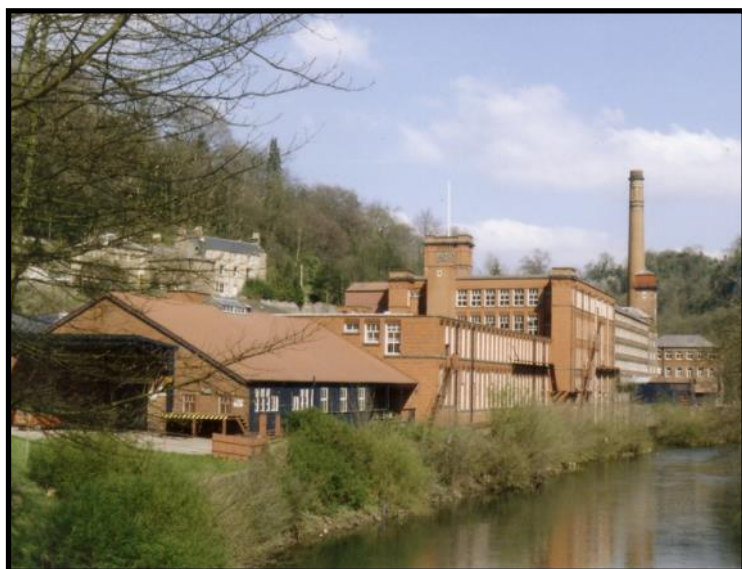
This text is a slightly edited version of that appearing in the Derbyshire Victoria County History's 'History of Hasland ...' book, which is now of print, but you can find copies in Chesterfield Local Studies Library. All sources are fully referenced in the book.

Masson Mill

Cliff Lea

Here are a couple of photos I took whilst on a guided tour of the newly re-opened Masson Mill. Good tour, and to be recommended; it takes 90 minutes, is good value for money, and accurate factual information.

The site was acquired this year by Derwent Hydroelectric Power Ltd, the hydro energy experts/installers who are currently fitting a water turbine and new wheel into the wheel-pit of the second water-powered mill built by Richard Arkwright at Cromford. By my reckoning, Masson is the eighth mill in which he had a financial involvement, but it had the longest continuous history of spinning of any cotton mill in the world. It finally closed in 1991, after spinning from 1783/4 – an impressive lifetime!



Caudwell's Mill

Cliff Lea

Here are a couple of photos I took recently of the sadly now closed-to-the-public Caudwell's Mill at Rowsley.



I have no firm information as to why it's closed but I hear about insolvency, assets being auctioned off and structural safety issues. Not sure which is true, probably all. Anyone got more information?



**And finally
.... Wingfield Station**

Cliff Lea

Many of our members joined us earlier this year on a visit to and guided tour of Wingfield Station during its final restoration work.

Since our visit, Derbyshire Historic Buildings Trust held at end October the grand opening of the fully and newly restored building. And it's such an important site: one of the many stations masterminded by Francis Thompson on the North Midland Railway line from Derby northwards - but since this station on the mainline had been drawn out of use and closed at end-1967 - probably saved because of this withdrawal from service - it was still a mothballed station rich in many of the original attributes from its opening in 1840. Some may say the oldest surviving railway station in the country (perhaps the world) - still in its original form as designed by Thompson without extensions.

Brilliantly restored, even down to matching the original wallpaper design in the Ladies' Waiting Room. Some NEDIAS members were at the Grand Re-opening, others went to the open day tours on the following weekend.

The ribbon cutting was carried out by Enid Buxton, the daughter of William Barlow, Stationmaster until 1961, who lived in the station house as a child. She was accompanied by Theresa Peltier, High Sheriff of Derbyshire.

Here are some of the photos courtesy of Jamie Mather, one of the DHBT volunteers officiating, and Cliff Lea.



© Jamie Mather



© Jamie Mather

/continued over leaf



FAR LEFT: 1840 Lithograph by William Russell (Midland Railway Study Centre)
LEFT: The North Midland Railway Crest which was removed from Derby Station when it was rebuilt has now found a suitable final (?) resting place at Wingfield Station on the North Midland line, probably the oldest surviving railway station in the world still as originally conceived and built.



© Jamie Mather

The ribbon cutting was carried out by Enid Buxton, the daughter of William Barlow, Stationmaster until 1961, who lived in the station house as a child. She was accompanied by Theresa Peltier, High Sheriff of Derbyshire.



© Jamie Mather

ABOVE The Porters' Room
RIGHT: Two original British Railways totem signs from the station, now owned by a private collector, which were on display. Jamie Mather



And finally, NEDIAS's first Chairman and founder of our Society, David Wilmot is remembered at the station. The bench on the platform carries a plaque in memory of David and jointly of the last Station Master to have officiated there. What a great memorial. And how splendid the building looks!

For other visits to see what else DHBT is up to check out their website at:

<https://www.derbyshirehistoricbuildingstrust.org.uk/whats-on>



© Cliff Lea

Contributions, no matter how short (maybe about a visit you have made), and preferably by email to editor@nedias.co.uk, for inclusion in future editions of this newsletter are most welcome.

COPY DEADLINE FOR THE NEXT EDITION: 5th January 2024

NEDIAS Committee:

Chairman – Cliff Lea; **Secretary** – Patricia Pick; **Treasurer** – Pamela Alton; **Membership Secretary** – Jean Heathcote; **Committee Members** – Brian Dick, Diana Allen, David Hart, David Palmer, Christine Thomason, Darrell Clark.

Published by: North East Derbyshire Industrial Archaeology Society.

Editor: Doug Spencer
☎ 01246 466925

or e-mail: editor@nedias.co.uk

Assistant Editor: Cliff Lea

The authors retain copyright of the contents.

