WARWICKSHIRE WIAS
Industrial Archaeology Society

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NEWSLETTER

FROM THE CHAIRMAN

A recent WIAS meeting looked at the history of brewing in Warwickshire, including the rise (and in some cases, fall) of a variety of micro-breweries in more recent times. These were themes explored in a national context at two recent events at the National Brewery Centre in Burton on Trent.

Saturday March 12th marked the launch of a report on England's brewing heritage prepared by Dr. Lynn Pearson and the Brewery History Society as part of English Heritage's SHIER (Strategy for the Historic Industrial Environment Reports) programme, and on the following Thursday a conference was organised to look at some of the issues raised by the potential regeneration of old brewery buildings.

I could not attend the Saturday conference but managed to squeeze myself into the regeneration seminar, and greatly enjoyed the experience of listening to professionals talking about some of the issues raised by potential regeneration. The AIA was well represented with Tony Crosby (Chairman, AIA) and Amber Patrick (Endangered Sites Officer, AIA), who had already done much pioneering work on the recording of maltings), with Keith Falconer (Head of Industrial Archaeology at English Heritage) delivering a keynote address on the brewing industry's SHIER.

There was much talk of funding, and one of the workshop groups sought to explore ways of raising money in a period of economic austerity. Other groups looked at the specific problems associated with the fabric of brewery buildings that made adaptive re-use more or less difficult. Issues such as 'the need for compromise', 'the new economy', 'localism', 'co-operative ventures', the 'Big Society' all received an airing, as well as much discussion of the role and future of the micro-brewing sector.

Also of great interest was a presentation by Cordelia Mellor-Whiting, curator of the National Brewery Centre, and the efforts involved in trying to make the Centre a going concern after a two-year period of closure. The land, buildings and many of the artefacts are all owned by the parent US brewing company – Molson Coors – and they lease the Centre to the current operators – Plant Solutions Ltd (a company specialising in visitor attractions). With the site in private hands, this presents interesting issues over funding – Heritage Lottery funds, for example, would be difficult to secure because those funds need to directly linked to public (rather than private) benefit. As with so many museums of this type the skill of the curator not only lies in making the museum itself an attractive option to a range of potential visitors (from dedicated industrial archaeologist to casual passers-by), but also in utilising the facilities of the site for a variety of other activities in order to boost revenue. The original museum was very much related to the Bass company, and one of the issues discussed was the possibility of bringing historical material from other breweries onto this site in order to develop the concept of a national brewing centre.

The Centre deserves our support as visitors, and I would heartily recommend it to you. At lunch, I also met a volunteer from the (nearby) Claymills Victorian Pumping station – and she argued strongly for a dual site visit to make the most of a day trip to Burton on Trent! www.nationalbrewerycentre.co.uk. 01283 532880 and www.claymills.org.uk.+ 01283 509929

Martin Green

PROGRAMME

April 14th 2011
Tim Booth:
Warwickshire Mills, news of research and updates on the state of various mills in the county
May 12th 2011
Members Evening:
a chance for several short contributions from members
June 9th 2011
Damien Kimberley, of Coventry Transport Museum:
The Coventry motor-cycle industry

Meeting Reports

January 2011: Sarah Chubb, Sandwell Borough Archivist
Chance Brothers: glassmakers of Smethwick

Sarah Chubb, of the Sandwell Community History & Archives Service, gave us a new perspective on Industrial Archaeology, that of a professional archivist. Whilst amongst members there is a considerable amount of knowledge concerning the activities of Chance Brothers of Smethwick and their expertise in many fields of glass manufacture, few have had experience of the behind the scenes work needed to preserve company records for posterity. And the Chance Brothers archive is undoubtedly an important record.

Sandwell is one of the four Black Country Authorities and includes the towns of Oldbury, Rowley Regis, Smethwick, Tipton, Wednesbury and West Bromwich. Consequently, there is a rich industrial past that needs to be conserved. Engineering, chemicals, brewing and steel as well as glass-making have all taken advantage of the area's natural resources and skilled workers.

The Chances were a yeoman family whose members included both farmers and craftsmen. In 1824 Robert Lucas Chance, bought the glassworks of the British Crown Glass Company in Spon Lane, which specialised in making blown window glass

Prior to this, Chance had worked at the Nailsea glassworks near Bristol, owned by his father William Chance where he was affectionally known as a twelve year old as *the little master in the jacket*. John Hartley, a crown glass expert, became a partner of the company in 1828 after being brought from the Nailsea glassworks. Robert's brother, William became a partner three years later. In 1832, Chance introduced the blown glass cylinder method for the production of sheet glass and opened a chemical works at Oldbury in 1835 to supply the chemicals required for glass manufacture. Following the death of John Hartley in 1833, the company was renamed 'Chance Brothers'.

The early Victorian era saw an explosive growth amongst the aristocracy and wealthy for ostentatious glazed buildings to house exotic plant collections and to provide year-round fruit for the table. Joseph Paxton's great glasshouse at Chatsworth was the forerunner of the Crystal Palace built in 1851 to house the Great Exhibition. Chance Brothers secured the glazing contracts for both buildings from which flowed other prestigious work, including glazing for the new Houses of Parliament (the opal glass for the four faces of the Westminster Clock was unique to Chance) and the ornamental windows for the White House in Washington. Other products included stained glass windows, ornamental lamp shades, microscope glass slides, painted glassware, glass tubing and other specialist types of glass.

Chance Brothers exhibited at the Great Exhibition and the archive includes copies of the catalogue. The exhibits showed their expertise extending from ultra-thin glass for microscope slides to complex lenses for lighthouses. This expertise owed much to Frenchman Georges Bontemps and his fellow countrymen who had come to work in Smethwick. Their skills were closely protected and only passed down from father to son.

However, James Timmins Chance, who had joined the firm in 1840 at the age of 26 was a prolific inventor and engineer who was responsible for many advances. He took a particular interest in optics and the Lighthouse Works was created in 1851 to meet the demand from around the world – especially from the maritime traders of the British Empire – for better aids to navigation and safety. Chance capitalised on the work of Fresnel in France to develop better and larger lighthouse lenses and eventually supplied some 2,400 lenses to over 80 countries.

Chance created a coloured and ornamental glass department in 1848 under Bontemps although this lasted only until 1866. A licence was taken out in 1852 for the use of the Mason and Conqueror machine to produce rolled glass. Chance developed the process into a double rolling machine for the lamination of glass between rollers and using a second pair of rollers to imprint a pattern on the glass. This double rolling process was used to create a range of white and tinted figured/cathedral glasses.

As with many of their contemporaries, the Chances became involved in civic affairs and in 1900 a baronetcy was created for James Timmins Chance

Advanced technology was never neglected; using the pioneering work of Sir William Crookes, Chance perfected optical glass that blocked harmful UV rays and indeed used the Crookes name as a trade mark into the 1960s. Chance also developed, in the 1930s, the manufacturing technology needed for cathode ray tubes – just in time for their widespread use in radar during the war. A 22" tube was exhibited at the 1938 Berlin Radio Show.

Chance played an important role during WW2 supplying optical glass for telescope and binocular lenses, Aldis lamps, Crookes UV lenses and special dark-lensed goggles for night fighter crews. Many of these items were produced in a shadow factory jointly owned with Pilkington.

In 1945 Pilkington acquired a 50% shareholding in the company but the Chance operation continued to be largely separately managed and a factory was established in Malvern, Worcestershire in 1947 to specialise in laboratory glass. The operation was incorporated as an arms-length subsidiary under the old name Chance Brothers Ltd. In 1948 the Malvern plant produced the world's first interchangeable syringe. When plastic disposable syringes displaced glass in the late 1960s, the range of its precision bore product was diversified.

By the end of 1952 Pilkington had assumed full financial control of Chance Brothers, but did not become actively involved in its management until later. Subsequently, the lighthouse works was sold in 1954, the optical division relocated to St Asaph in 1957, the Glasgow works closed in 1964, the rolled-plate division in 1976 and finally in 1981 the Spon Lane site was closed. The seven-storey listed building still stands alongside the M5 motorway but it is in a poor state of repair.

Sarah closed her talk with a review of the work undertaken by her department and shared some of the interesting finds that had been made. The extensive family papers, lodged in the Sandwell Borough Archive in 1990, confirmed the family's involvement in civic affairs. The bulk of the business archive had gone to Pilkington who eventually released the material to Sandwell where it now occupies some 30 cubic metres in 60 bays of shelving.

There are immediate issues to be addressed; original leather bindings have deteriorated badly plus cataloguing is being hindered by the random order in which the material has been stored. Of particular interest has been examples of pre-war glassware from the Orlac range, patents and trade mark applications, personnel records (including the notice of a drowning in Liverpool Docks and a knuckleduster made in the works). Not all available material is in the archive; at least two large photographic collections are known to be in private hands.

Finally, we in Leamington can see examples of Chance's ecclesiastical glass in three windows in the Parish Church.

February 2011: Peter Cross-Rudkin
The life and works of John Rennie (1761-1821)

Given the scale and quality of his work, it is surprising that John Rennie is relatively unknown; at least, in comparison with Telford, the Stephensons and Brunel, to name but a few of his peers in the pantheon of British Civil Engineers. Peter Cross-Rudkin, himself a distinguished engineer, lecturer and author provided a necessary correction and opened many eyes to the range of Rennie's works. The forthcoming London exhibition in July to celebrate the 250th anniversary of Rennie's birth is awaited with interest. Evidently there is a wealth of material available, not least thanks to a bequest in the 1930s to the National Library of Scotland by a descendant of Rennie and also within the Boulton & Watt papers.

Rennie's was not a rags to riches story. He was born the ninth child of a reasonably prosperous tenant farmer at Phantassie, East Lothian. The family house still exists. His older brothers found success in other fields but John Rennie showed an early interest in things mechanical spending much time in the workshops of a local millwright, Andrew Meikle, for whom he subsequently worked

Rennie set up in business on his own account in 1779. His first job was to rebuild Knowe Mill whose ruins still stand. Practising mainly as a millwright, he showed an early interest in fire engines. However, he also saw the need for more formal qualifications and enrolled at Edinburgh University for three years in 1780 to study natural philosophy, becoming the first civil engineer at the university.

In 1784 Rennie made a study tour to Birmingham and was offered a 7 year contract by Boulton & Watt who needed a millwright to supervise the construction of the Albion Mills in London. The mills became operational in 1768/9 but Rennie was allowed to undertake private work and set up his own manufactory in Southwark. A surviving testimonial letter recommends him as *'a country man of great integrity & of equal genius in the science of mechanics – he has not much fortune, but great knowledge as an Engineer'*

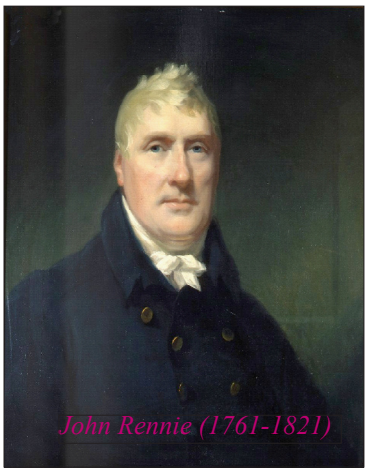
After meeting John Smeaton, one of the leading engineers of the day, Rennie was introduced into the business of canal surveying and building and over the next twenty years worked on many projects all over England and Scotland. His notable, and lasting contribution has been a number of elegant bridges. His first major work was on the Lancaster canal, crossing the River Lune with the only bridge to bear his name. Another river crossing used a siphon to duct the river under the canal. In Scotland the Crinan canal is still used by 'Puffers'.

Rennie foreshadowed Brunel in his use of a post chaise as a travelling office. An extract from his diary gives some idea of his hectic schedule; *'Left London for Scotland on Friday Octr 17th. 94. Got to Fantacy Tuesday 21st. Was on the London Canal business till Friday 24th. Arrived Inverary on Monday 27th. Left Crinan on Saturday Nov15th. Stayed in Glasgow on ditto business till Wednesday the 19th. Got to Busbie (?) Saturday Nov 22nd. Was at Dunbar & Edinburgh on London Canal from 19th to 22nd.'*

Aqueducts on the Kennet & Avon showed his inventive architecture and the Calne Hill flight of 27 locks his determination. At the summit Rennie wanted a long tunnel but at Jessop's suggestion built the Crofton pumping station and a shorter tunnel with a watermill-powered pump at the Bath end in which Rennie pioneered the use of cast iron gearing.

Another example of Rennie's skills as a draughtsman was shown in the great detail included in the plans for the Act of Parliament drawing for the proposed Croydon & Rotherhithe Canal.

Rennie's first major work: carrying the Lancaster canal over the River Lune



Stoneleigh Abbey Bridge

Other canal work throughout the British Isles has left us many examples of Rennie's bridges and their routes show his feeling for the countryside. His Boston Town footbridge was notable for its use of cast iron box-sections as if they were pieces of traditional masonry.

The bridge at Chepstow is not by Rennie, as is often said, but the confusion may be caused because he did submit a design. Two major bridges in London were his innovative Southwark bridge which nearly bankrupted the contractor and the impressive Waterloo bridge, similar to the earlier one at Kelso, which was opened by the Prince Regent in 1871. Rennie subsequently declined to accept a proffered knighthood.

In Warwickshire Rennie built the attractive balustraded bridge at Stoneleigh Abbey. However, his work was by no means confined to canals and bridges. He was extensively engaged in docks and harbour works, Grimsby, Sheerness with its innovative cellular walls and coffer dams, London Docks and harbours from Ramsgate to Peterhead and across the Irish Sea to Louth and Dun Laoghaire. Perhaps the most famous work at the time of his death was the massive breakwater outside Plymouth.

Rennie's involvement in the Bell Rock lighthouse remains disputed, Stephenson was the resident engineer but was not responsible for the design. Elsewhere, Rennie was involved in several East Anglian fen drainage schemes and water supply schemes for Manchester and London. A quarry at Stow on the Wold provided stone pipes, some relics of which can still be seen incorporated into a wall, but the joints proved unsuitable and cast iron was used instead.

Other works such as the sea walls at Reculver and the elegant cast iron pillars and trusses of the Dublin Customs House and steam ship schematics showed Rennie's mastery of different engineering techniques.

With such a body of work behind him, why is Rennie relatively unknown, especially compared with his contemporary Thomas Telford? Peter Cross-Rudkin suggested that Rennie was, in his time, regarded as pre-eminent but Telford survived him by 13 years and significantly became the first President of the Institution of Civil Engineers and, furthermore, had a body of work that has survived better than those of Rennie. Undoubtedly, the two men were serious rivals with very different attitudes to their profession. Rennie with his formal qualifications and consequent exposure to French engineering practices contrasted with Telford's attitude that a degree was unnecessary for an engineer.

Happily, enough of Rennie's work has survived for us to judge that he made a most significant contribution to our industrial and architectural heritage.

March 2011: Anthony Leahy and Sam Nelson:
Nelsons of Warwick – gelatine and a great deal more

An attendance of members and visitors totalling 134 stretched the Pyne Room facilities to the utmost whilst local historian Anthony Leahy and fifth generation family member Sam Nelson gave a fascinating presentation of the history of one of Warwick's most important family businesses.

The Nelson story involved much more than gelatine, ranging over food products, advanced manufacturing processes, cement works, the development of New Zealand's frozen meat trade, marketing methods used in Victorian times that are still used today, company housing and civic duty, photographic materials and finally a poignant explanation for the decline of a great family business.

Anthony Leahy led us through the Nelson history with a sure touch. George Nelson was born in Nottingham in 1800. After studying chemistry, he moved to Leamington and produced the first Leamington Salts by evaporation from the celebrated saline. He took out his first patent for the manufacture of gelatine in 1837.

George Nelson prepared his gelatine from buffalo hides. His vision was to create a product that was colourless, odourless and consistent. The sales of his gelatine product, increased rapidly, and the firm moved to Emscote Mills in 1841. George Nelson died in 1850, leaving five sons.

Thomas Bellamy Dale was the cousin and partner of George Nelson. He too had studied as a chemist and was involved in the business from its beginnings. He took an active part in local affairs, and was elected Mayor of Warwick on three occasions.

Gelatine softens and swells in cold water, but does not dissolve until it is heated; when the solution cools it solidifies to a firm jelly. Sources of gelatine are hides, calves' feet, and various animal tissues. Hides were used at Emscote. Gelatine was largely consumed as a food; blanc-mange, creams, table jellies, in extracts of meat, soups, and in many preparations of confectionary.

Emscote Mills are situated in Wharf Street on the Grand union Canal. The site was probably three times larger than today. The mills were largely self-sufficient, with all support trades on site. In 1899 there were thirty-eight steam engines on the premises pumping the wells, feeding the steam boilers, the filter presses, supplying power to the lifts and driving the endless belts and machinery.

Charles Nelson was the eldest of the five brothers, he started at the family's lime and cement works at Stockton. Thomas Dale ran the gelatine factory. Later Charles took a more active role in the gelatine business in partnership with his younger brothers, Edward Montague and George Henry. As in Warwick, Nelson constructed houses at Stockton, for their workers. The Village Hall and later the Nelson Club provided recreational and educational facilities. The Nelson Village in Warwick was a model development, containing work-men's cottages and two villas for the works managers. The village forms part of Charles Street and now, is all but lost in the expanse of the Percy Estate. In Charles Street stands the "Nelson Workmen's Club," opened in 1883 and is still in use.

George Henry Nelson devoted his life exclusively to the gelatine business. Despite his 40 years' service, very little is known about him as yet. For the most part he lived at the Lawn at Emscote which was home to the Nelson family from the 1840's up until the early 1920's.

The Nelson involvement in photography was established by 1880. Gelatine was one of the substances used to mount prints. It promised to replace collodion as the medium for forming the sensitive layer on glass plates. In 1896 the Warwick Dry Plate Company was formed to develop gelatine for improved photographic processing.

Nelson's advertised their products in many ways. One of the most popular being *'Nelson's Home Comforts'* a hard back cookery book, that was available for the cost of a stamp. Over a million were distributed between 1880 and 1910.

The value of a celebrity chef's endorsement was also recognised and in 1882 Mary Hooper was commissioned to revise *Nelson's Home Comforts*. It is more than likely that Miss Hooper was sponsored prior to this engagement as all but one of her cookery books promoted Nelson's Gelatine exclusively. Mary began her literary career as a sub editor on the "Household Words" a weekly magazine edited by Charles Dickens

Edward Montague Nelson had a head for business. He was a deal maker who became head of the Colonial Consignment and Distributing Company and of Nelson Brothers, New Zealand. He was the Charter Mayor of Ealing, a Sheriff of Middlesex, as well as a mayor of Warwick. He was knighted for services to the Australasian Colonies, and in recognition of his public services.

William Nelson, the youngest of the five brothers has left us a valuable document in his diaries. These describe his time in Warwick and New Zealand whither, in 1863 he and his brother Frederick went. After abortive attempts at sheep farming William returned to England and married before returning to New Zealand but returning again to England in 1872 with his family before making a final move back to New Zealand in 1879. He established a tallow and canned-meat factory at Hawkes Bay with his brother Frederick. William Nelson is known in New Zealand as The Father of Hawke's Bay and is commemorated with Parks in both Napier and Hastings.

Nelsons played a significant part in the history of the frozen meat trade. William Nelson managed the New Zealand operation where works and a village for workers were established on the same principles as in Warwick and Stockton. The first cargo of frozen meat was successfully shipped to London in 1882. The Nelson brothers had established a new industry and over the next decade dominated the frozen-meat trade.

We learnt little about the next generation, save that Walter Nelson was killed in action during WW1. Of the fourth generation, the important figure was Guy Nelson who became Managing director in 1924. Much involved in civic affairs and charities, he was an Honorary Freeman of the Borough of Warwick, Deputy Lieutenant of the County, twice Mayor and an Alderman. He served on the Warwickshire Police Authority, the County Council and as a JP. He was a long-serving Chairman of Governors of Warwick School and the Guy Nelson Hall is named after him.

Finally, representing the fifth generation, his son Edward Montague (Sam) joined the firm in 1953 after spending time in East Africa serving in the Kenyan police force. However, the business was not in the best of health, the workforce of some 600 in 1900 had declined to only 90 in 1950 and competition was intense from some 60 other gelatine manufacturers. In 1957 Davis Gelatine, brought in as a knowledgeable and natural partner, took a 51% controlling share in George Nelson Dale & Co.

In a lively discussion following the presentation Sam Nelson's response to the question; 'what happened to the business', was a very clear rationale for the decline of many Victorian family businesses. Bluntly, their families were too large. Several of the five brothers in the second generation had ten children, whilst the older brothers ran the business and their siblings found success overseas, the ownership of the relatively small business became fragmented over the generations. Couple this with family feuding, ending in an expensive court action, plus growing technical competition and the seeds of eventual decline were sown.

Many former employees and residents of the company village contributed reminiscences of the works and their homes ranging from health hazards, clogs and smells to the problems of painting the front door white (not the company colour) and the pugilistic achievements of the Turpin family. By common consent, members and visitors had greatly enjoyed the story of an important Warwick family.