

WARWICKSHIRE

Industrial Archaeology Society

WIAS

NUMBER 32 December 2008

PUBLISHED QUARTERLY

THIS ISSUE

- From the Chairman
- Meetings programme
- Meeting Reports

FROM THE CHAIRMAN

Under new management

In what we hope will be a seamless transfer, responsibility for the production of the Newsletter has passed from Mark Abbott to Mike Hurn, and this issue represents the first production under new management. We are very grateful to Mark for his efforts over a long period of time, and delighted that Mike felt able to step in the breach. This responsibility comes in addition to Mike's willingness to co-ordinate the production of the monthly meeting reports produced so assiduously by Arthur Astrop over the years. I feel that it is imperative that we have a team of members willing to write up reports to help Mike, and I repeat my plea that anyone wishing to be involved should contact Mike or myself. My experience is that it really does concentrate the mind during a talk and ultimately means that one gets a lot more from it, as well, of course, as benefiting the members.

Publications

The process of transfer has had the side-effect of concentrating the minds of your Committee on the issue of the Society's publications. Taking a hard look at the work of the Society reveals that – with a few notable exceptions – we have not been very prolific in terms of published material. Those with long memories will recall the days of RETORT! – an (increasingly) occasional publication produced by the Society with myself as editor. This tried to fulfil several – perhaps too many? – functions and was replaced by the Newsletter which was launched to ensure that members would indeed receive regular information about

the Society and reports of the monthly meetings. What it does not do is to provide a vehicle for the publication of members' research of particular topics or specific sites in Warwickshire.

This is being given careful consideration by your Committee and the current feeling is that we should continue with the production of the Newsletter, perhaps with the inclusion of photographs and a brief section devoted to an individual site in Warwickshire. This latter opportunity would mean that a member might like to take a site and write it up for the Newsletter and thereby contribute to a longer list of the industrial archaeology sites of Warwickshire. Topics such as location, history, significance, current condition, access plus a photographic record would be such a useful addition to the work of the society.

In addition, we feel that we should make a real effort to try and produce more substantial Occasional Papers which might in time be included in a larger volume on the industrial archaeology of the county. The Occasional Paper has the added advantage of bringing the work of the Society to a wider audience, and the possibility of stimulating response and further research. Industrial archaeology societies elsewhere in the country provide many examples of such papers, with varying degrees of size, print quality, binding, illustration, photographs and all these matters would need to be carefully considered.

Twenty Years of WIAS

The Society was launched in the summer of 1989 and held its first meeting in September 1989. There are several members who have been with us from day one, and they will re-call the early days of meeting in a classroom at Warwick School with less than twenty in attendance.

Much has happened since then, but it is encouraging to report that membership and meeting attendances are at record levels. The Committee feels that the 20-Year Anniversary should be marked in some way and various options have been suggested. Perhaps the most useful step would be to produce the first Occasional Paper – 'An introduction to the Industrial Heritage of Warwickshire' – with a general article followed by the specific research that members have done over the twenty-year period. This would also be an effective use of the available funds that the Society has accumulated. It would be on sale to the general public, as well as being available to members. Food for thought ...

Martin Green

PROGRAMME

The programme through to June 2009 is as follows:

December 11th

Mr Malcolm Hancock: *The History of Rugby Radio Station.*

January 8th

Members' Research Evening.

February 12th

Mr Nicholas Billingham: *The early industrialisation of Stratford upon Avon.*

March 12th

Mr Brian Ellis: *Blinman: a nineteenth century South Australian copper mine and its environment.*

April 9th

Ms Joanne Gloger: *'There is more to a needle than meets the eye': Needle-making in Redditch and beyond.*

May 14th

Dr Jim Andrew: *The Smethwick Engine.*

June 11th

AGM followed by *The Chairman's Lecture.*

Summer Break

NEWSLETTER

Meeting Reports *by Arthur Astrop and Mike Hurn*

June 2008: Mr John Burton

Nineteenth-century Industry in the Nuneaton and Bedworth Areas

In his latest address to our Society, John Burton took a novel approach to the subject of 19th century industry in the Nuneaton/Bedworth areas by linking it with the life, times and works of novelist Mary Ann Evans (1819-80), aka George Eliot.

As a child, Mary Ann Evans enjoyed a lower middle class life. Her father, Robert Evans was agent to the large Newdigate estate and since she often accompanied him on his duties she was in a position to observe details of the lives of workers in the district's agricultural, mining, quarrying and weaving industries. Much of what she saw was to re-appear later in her novels and remains a valuable historical record. Her home life was deeply religious and her observations on clergymen were also to appear in her writing, although latterly not always in a complimentary fashion.

The Nuneaton and Bedworth areas, including their attendant villages, were rich with the industries mentioned above, and while agriculture, mining and quarrying were important it was weaving which, in the 19th century, provided the greatest employment opportunities. John Burton dealt extensively with the proliferation of home-based hand looms, predominantly used to produce single-width silk ribbons in an dazzling variety of designs, and he used many quotations from George Eliot's writing to describe the conditions of the loom workers. Each loom was, in effect, a 'family business', often operated by a mother and, once they were old enough, by her children as well. Weavers' children, and those of parents in other local industries, had little formal schooling, being needed to play their part in producing income for the family.

In the 19th century, ribbons were widely used for trimming ladies' dresses, were produced in enormous quantities and different designs, and the weavers of Nuneaton and Bedworth prospered. But ribbons were also victims of fickle changes in fashion, some advantageous some not, and demand could change almost overnight. The weavers were also highly independent folk, and when the trend towards multi-ribbon looms and the grouping of weavers into factories grew they resisted such changes vigorously. The advent of the Dutch engine loom and the Jacquard loom was likewise treated with suspicion and anger, yet competition from overseas was increasing.

The gradual and inevitable shift away from independent weavers with one hand-loom per house to large efficient factories with workers clocking on and off could not be resisted, despite the protests of weavers, and culminated ultimately in the establishment of a small number of large firms each with hundreds of looms. A compromise was attempted (in 1850) with the building of a so-called Cottage Factory. The idea was to provide facilities for a number of independent weavers each to operate a loom in the same building, taking power to run it from pulleys driven by a single

steam engine. The initiative did not prosper, however, largely because of the cost of needing to run the engine constantly regardless of the number of weavers who were at their looms.

The mining industry around Nuneaton and Bedworth was also a very important employer, and included the Charity Coal Mine from whose funds contributions were made to build almshouses in Bedworth. Robert Evans had a hand in designing these houses, which were built in 1839 for the sum of £9,000.

George Eliot's novels remain to this day as invaluable records of industrial life in Nuneaton and Bedworth in the 19th century, and in fact represent one of the few first-hand accounts of the conditions of the time. There is a thriving George Eliot Fellowship (of which John Burton is chairman), and a website at www.george-eliot-fellowship.com.

July 2008: AGM and HP

The AGM

The Annual General Meeting of WIAS was held in the Sixth Form Centre at Warwick School - a return to old haunts - because of problems over room hire at the very end of a busy summer term. This has prompted the Committee to decide to hold next year's AGM in June, and for the Society not to meet in July and August.

The Chairman reported on the healthy state of the Society - as judged by membership numbers and meeting attendances. Much of the energy of the Society is devoted to the monthly meetings, and the range of issues covered - both local and national - had generally been well received.

Richard Hartree, newly appointed WIAS Treasurer, reported on the (satisfactory) financial state of the Society and explained how this had followed very much the pattern of previous years. Subscriptions were held at £10 per head, with a rise to £12 for joint membership. Meeting fees were held at £1 for members, but raised to £2.50 for non-members.

The new membership secretary is Sue Hammon, and the Chairman reported that the Newsletter Editor (Mark Abbott) and the Meeting Reports Editor (Arthur Astrop) both wished to hand over their responsibilities to others for the 2008-9 season. Replacements would be urgently sought!

Opportunity was then given to members to discuss any matters they wished to raise.

Warwickshire Industrial Archaeology Society Newsletter: Number 32

September 2008: Mr Laurence Ince
Engine Building at Boulton & Watt's Soho Foundry

No Longer ... Made in Brum

For the second half of the meeting, the Chairman explored the history of three Birmingham-made goods that were British icons known throughout the world - Bird's Custard, Typhoo Tea and HP sauce. Shortage of time prevented examination of all three, and the Chairman concentrated on the rise and fall of HP sauce in Birmingham.

It was the decision of Edwin Samson Moore to set up a vinegar factory in Aston in 1875 that began the story, and he concentrated on making a high quality product, so much so that he claimed his Midland Vinegar Company had "the largest and most complete vinegar brewery in the world". Precisely how he got hold of the HP sauce recipe from Gartons of Nottingham in the 1890s is a matter of dispute, but once acquired, he and his son - Edwin Eastwood Moore - set about creating a sauce that would be popular with all. Further premises were acquired with the purchase of the Vulcan brewery in 1902. The company's marketing techniques were unusual - and ambitious - for the time, and success came quickly. The Moores also soon turned to export markets, with HP sauce sold to Canada in 1903, to New Zealand in 1905, and to the USA in 1913 - and, famously, to French troops in the First World War!

In 1924, the company was floated, and a period of growth and diversification occurred, with successive expansion of the Birmingham premises in the subsequent years. From the 1960s, the company eventually went through a series of changes of ownership ... Imperial Tobacco ... Imperial Foods ... amalgamation with Smedleys ... Hanson ... Danone ... Heinz. The current owners - Heinz - closed the factory in 2007 despite vociferous protests, and it was demolished in the same year, with production shifted to mainland Europe.

What issues are raised by this saga of the rise and fall of an iconic product? Certainly, there is a critical entrepreneurial role played by the Moore family, with both father and son blessed with great energy and business acumen. To some extent, the location of the factory in Birmingham is 'accidental' - Birmingham has no specific locational advantages for the production of vinegar - but the ambition, hard work and foresight of the Moore family meant that HP became a household name. Branding played a vital role in this success, and many advertisements were shown to illustrate this. Ultimately, however, the process of de-industrialisation took its toll and the power of multinational companies to decide the most appropriate location for their factories worked against the Birmingham operations. The buildings have all now disappeared, including, of course, the vinegar pipeline that used to cross the Aston Expressway.

Members wishing to learn more of the story might wish to consult 'The Road from Aston Cross: An industrial history 1875-1975' by Louise Wright.

It is a matter of lasting regret (some may even say of national shame), that only a few fragments of Boulton and Watt's historic works survive to this day; not least of their Soho Foundry, a pioneering purpose-built steam-engine building factory.

One of the most comprehensive research projects on Boulton & Watt in recent times, and in particular on its Soho Foundry, was carried out by Laurence Ince, and he brought the subject to life in his address to our September meeting. In 1769, James Watt was 33 years old, and heavily in debt, when he journeyed south from Scotland seeking support for his work on steam engines, on which he held valuable patents. *En route*, he visited the Soho Manufactory and there he met its owner, the already successful 41-year old Matthew Boulton. The entrepreneurial Matthew Boulton could recognize a business opportunity when he saw one, and Watt needed to look no further. From then on, he and Boulton were destined to form a formidable business partnership which, in time, was carried on by their sons.

Boulton's Soho Manufactory was highly successful before he met Watt, producing a wide range of relatively small items in different metals and in large quantities. So the sizes of the components in a Watt steam engine, and the materials from which they were made, must have been well outside Boulton's experience at the time. Nevertheless, undaunted he gave Watt all the technical support, manufacturing facilities, financial backing and encouragement he needed to develop his ideas, and eventually to make their Company Britain's leading producer of industrial steam-powered engines.

For a long time, indeed up to the point where Watt's patents were due to expire, the Company virtually had the field to itself. Not that competition was entirely absent. There were those who were experimenting with engines using 'high-pressure steam', a concept against which Watt firmly turned his face, considering it inherently highly dangerous. He held that view implacably, but the need to meet increasing demands for more power meant that his low-pressure steam engines were forced to incorporate cylinders and pistons of ever greater diameters. The problems associated with casting and machining these very large components were formidable.

Inevitably it became obvious that Soho Manufactory was simply inadequate for volume production of large steam engines. It was then that the specialized factory known as Soho Foundry was built. This factory, opened in 1796, was designed from scratch to suit engine building, and was equipped with what must have been the finest range of extremely large metal-cutting machine tools in Britain, if not in Europe. Britain's leading technical Journal *The Engineer* described this factory in detail in its issues of the time, and recorded many of its machines in a set of drawings unparalleled in their excellence. (Many of these drawings are reproduced in a book by W Steeds entitled *A History of Machine Tools 1700 - 1910*, Oxford University Press, 1969).

Matthew Boulton died in 1809 and James Watt 10 years later, but their sons ably continued the business. By the middle of the 19th century, however, Matthew Boulton Junior was ready to retire and James Watt Junior sought directors from outside the firm, including one H W Blake. Blake was eventually to head the Company, to which he was undeniably dedicated. But he also had a great admiration for I K Brunel which sometimes led him (even in the face of opposition from his fellow directors), to be unwisely drawn into some of the latter's less successful ventures, including engines for his giant ship *The Great Eastern*, for example.

James Watt & Co (as the firm was ultimately known) eventually embraced high-pressure steam technology for its engines, but its fortunes gradually declined. It built its last steam engine in 1885, and although there then followed a brief period of revival when it operated as a Mint, producing cupro-nickel coins of low denomination, it closed in 1895 and its works were taken over by Birmingham-based W & T Avery, weighing machine and scale makers of international renown. Today the Company is American-owned and is known as Avery Weigh-Tronix.

October 2008: Mr Michael Darby

Coal, Quakers and Charcoal:

Coalbrookdale and the Society of Friends from Ironworks to Museum and World Heritage Site.

There was a real sense of living history as Michael Darby, a direct descendant through eight generations, of 'The' Abraham Darby took us through the beginnings of the Industrial Revolution.

It was salutary to be reminded of how much was owed to Non-Conformism and to the Society of Friends or Quakers. Many Quakers were practical men, craftsmen and tradesmen. The river Severn played a central role, linking the various groups of 'Friends' from Chester to Bristol who met regularly for mutual support and to assist those suffering hardship or in need of education.

Michael Darby's journey began at Dolobran, near Welshpool, with the Lloyd family, who not only nurtured iron making but a later family member founded the bank of the same name. The first Lloyd in the story was imprisoned in Welshpool gaol for ten years because of his open observance of Quaker practices and whilst in prison met a number of people who were later associated with Abraham Darby I.

A small friends' meeting house near to Dolobran, which remains in use and in the Lloyd family's possession, was also home to John Kelsall, who was first employed as the school teacher but in 1713 was offered the 'clerkship' to the ironworks at Dolgellau under Abraham Darby I. In 1715 Kelsall went to the Coalbrookdale furnace but returned to Wales after Darby's death as clerk to various new forges set up around Dolobran and Dolgellau.

We followed the career of Abraham Darby I from his apprenticeship to W. Freeth, a malt mill maker in Birmingham through partnership in the Bristol Brass Works and a patent for iron bellied cooking pots in 1697 to his lease of the Coalbrookdale furnace in 1698 and the smelting of iron with coke in 1709 thus giving better quality and higher yields than smelting with charcoal.

Darby's choice of Coalbrookdale was probably due to a combination of factors: Quaker connections, Broseley was a flourishing Quaker centre; Shadrach Fox, a previous lessee of the furnace, had produced coal-run iron for shot ordered by the Board of Ordnance; Darby probably knew of coal usage in the brass industry and also that cementation steel had been produced at Madeley in the 1640s. Interestingly, Darby did not take out any patent on coke-run iron; possibly Fox or others had used coke for smelting as early as 1695 and thus established a prior use of the process.

The Quakers dominated the early iron industry. As pacifists the manufacture of armaments was an anathema to them but notwithstanding some 3,000 guns were cast at Coalbrookdale for use on merchant ships. However, there is later evidence of a refusal to cast cannon for use in the American War of Independence.

The Darby family was deeply involved in social welfare, sponsoring parks, housing, allotments and schools together with poor relief and food subsidies. Adult education was important and in Coalbrookdale a substantial building was provided to house an Institute for Design and Art - it is still in use as a hostel. The Darby connection with Coalbrookdale was broken in the 19th century when Abraham Darby IV moved to Ebbw Vale.

The rise of interest in Industrial Archaeology in the mid-twentieth century led to the creation of what is now a World Heritage Site at Coalbrookdale but in the 1940s the original furnace lay buried under the debris of later buildings. The history of the site was known to some specialists but few visitors came to view the industrial remains.

The area of the furnace, which was fortuitously intact, was cleared and we saw some evocative slides taken in the early 1950s around the time that the Shropshire Archaeological Society was bluntly advised that 'it was too late for anything to be done for the furnace ... preservation was impossible.'. Fortunately, others were less pessimistic and the work of preservation began.

In 1957 Allied Ironfounders, who then owned the site, funded the creation of a museum recognising the importance of the site and acknowledging that not much was then known about 18th century iron founding. The museum and the original furnace were opened to the public in 1959 celebrating the 250th anniversary of Darby's first coke-run iron and preparations are now in hand for commemorating the 300th anniversary in 2009.