# INDUSTRIAL ARCHAEOLOGY NEW 102 102 10997

THE BULLETIN OF THE ASSOCIATION FOR INDUSTRIAL ARCHAEOLOGY

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Ironbridge weekend ● Australian notes ● steam giants ● Boulton's Soho lighthouses ● Catalan chimneys ● hatting museum ● education ● regional news



## INDUSTRIAL **ARCHAEOLOGY NEWS 102** Autumn 1997

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#### **COVER PICTURE**

Lighthouse at Trinity Buoy Wharf, London (see page 9) Photo: R. J. M. Carr

### AIA Ironbridge Weekend

#### Margaret Tylee

The 1997 Ironbridge Weekend had the theme 'Problems Presented by the Preservation of Major Structures'. About 50 gathered at the Long Warehouse, Coalbrookdale, on 5-6 April to renew old acquaintances, make new friends and hear an interesting range of speakers. The very full and enjoyable programme was organised and introduced by Gordon Knowles, the AIA Affiliated Societies Officer.

The keynote address was given by Dr Anthony Streeton, Secretary to English Heritage's IA Advisory Panel, on 'Scale, Complexity and Viability: the Future of England's Major Structures'. His talk was an overview of the issues related to the future of major structures such as engineering structures and the buildings and sites associated with extractive, process and manufacturing industries. He discussed whether the listing of a building interfered with any future development and outlined some of the problems and issues which had to be considered, such as economic and social change, changes in technology and perceptions. For example, many people who had unpleasant memories of working in the coal industry were only too glad to see its remains swept away. There were options to be considered; should we try and maintain the building for its original purpose or adapt it for a different use; should it be preserved in its original form or in a later adaptation; should it be preserved as a monument or museum? Examples included the Waltham Abbey site, the Anderton Boat Lift, Battersea Power Station, Salts Mill and the GMex centre. Also, would any scheme be technically or financially viable. Anthony cited the example of railway viaducts now used as walking and cycle paths. He concluded that once all the economic, social, organisational and financial viability factors had been assessed, it was sometimes preferable to record a building rather than conserve or preserve it. This well illustrated talk raised a number of issues to stimulate our thoughts for the weekend.

Dr Peter Wakelin then spoke about the

Blaenavon Ironworks as a practical example of the problems faced when conserving and interpreting a large industrial site. The site dates from 1788-9 and was the first purpose-built multi-furnace ironworks in Wales. By 1796 it was the second largest in Wales, producing 5,400 tons of iron a year and continued in production until closure in 1904. In the 1960s, redevelopment plans were opposed by industrial historians and the site is now the responsibility of Cadw. Peter illustrated the many problems faced by the team, for example the structures were in poor condition and the site was very exposed. He then spoke about the work done over the past 25 years in repairing the furnaces, buildings and water balance tower. There is an ongoing problem of funding. Visitor levels are low and efforts have to be made to attract interest and investment in the site.

Mark Watson, an Inspector of Historic Buildings for Scotland, spoke on 'Listed Building Consent as a Negotiating Tool'. Industrial sites are increasingly threatened by redevelopment, but he argued that this should be seen as an opportunity for an imaginative re-use and re-adaptation of sites rather than a threat. He gave illustrations of listed buildings put to new uses and challenged the view that the best use of a listed building was that for which it was originally built - any use was better than demolition, but piecemeal development should be avoided. He also argued that changes to a building should be made deliberately modern and distinguishable from the original rather than a pastiche or copy. This was illustrated by the Luma Lightbulb factory in Glasgow, now converted into flats and listed in the 1980s. Only the lamp testing tower remains unaltered. Mark showed examples of conversions of flax and jute mills where he had negotiated with the developer over aspects of the work to ensure important features of the buildings remained. In Dundee, nine mills had been converted and three are in the process of being converted. This includes the famous Camperdown Works of Cox Bros, a 35-acre site now converted for leisure purposes, supermarket and housing.

Harley Thomas, Conservation Officer with Shropshire County Council, spoke about the



A trough-full of delegates at the Longdon-upon-Tern iron aqueduct

Photo: Peter Stanier

problems of preserving a very different type of structure - the Snailbeach Mining Complex. With such a large site it was important to look at the range of structures which made up the whole complex. He also pointed out that most problems could be solved with large amounts of money! The mine was most active in the 1850s when 3,500 tons of ore were mined annually. Lead production ceased in 1911, but mining for barytes continued until 1955. Since then the buildings decayed and were becoming a safety hazard. The County Council realised that something had to be done, initially to consolidate the structures for health and safety reasons and later to interpret the site for visitors. The award of a Department of the Environment Derelict Land Grant allowed for consolidation and preservation but the control of vegetation remains a continuing problem. An award from the National Lottery will now enable the site to be interpreted. To date, £500,000 has been spent on the site.

After lunch, we travelled to Longdon-upon-Tern to view the 62-yard cast-iron aqueduct that formerly carried the Shrewsbury Canal over the River Tern. The aqueduct was designed by Thomas Telford, cast at Ketley and was the first iron trough aqueduct when built in 1796. It now stands isolated in a field, with no sign of the canal which was abandoned in the 1960s. We spoke to the landowner who allowed us to walk across and underneath. He had not experienced any problems, indeed he was not even sure who had responsibility for its upkeep. The structure is listed and was maintained by the DoE, who painted it about 10 years ago.

After a very pleasant dinner at the New Inn in the Blists Hill Museum, Mark Sissons presented a humorous Patents Quiz in which most of us did very badly, but then how many people would recognise the patent for a tape worm extractor or a musical toilet roll holder!

Sunday morning saw us reassemble to hear Shane Gould from the Archaeology Advisory Group, Essex County Council speak on 'A Guide to PPG15 & 16'. These Planning Policy Guidance Notes are issued by government to give advice on planning matters covering archaeology and the historic environment. He described the methodology used in Essex for recording industrial structures which had been started in 1994 and covered sites and buildings from 1750 onwards. Illustrated examples showed where the guidance notes had been used to good effect, such as maltings, World War II airfields, hospitals, a sugar beet factory and the Waltham Abbey site. The ability to insist that developers record sites and buildings as part of the development agreement had proved very important and had added valuable information to the County SMR and the NMR. Shane summed up by saying that it was essential to record a site before development and PPG 15 & 16 can be used to secure adequate records.

'Conservation vs. Conservation - keeping the balance between the Industrial Archaeologist and the Naturalist' was the final presentation given by Alan Oakley, Countryside Manager for Surrey County Council. He proposed that conservation is about compromise and involves balancing the needs of heritage, wildlife and people. He gave three examples in Surrey where the balance was difficult, with strong



Chris Irwin knows an aqueduct when he sees one

Photo: Peter Stanier

feelings on all sides. The Basingstoke Canal was one that could be summed up as 'bats vs. boats'. The canal runs through Surrey and Hampshire and was purchased by the two councils in 1973 with the aim of restoration. The original terminus at Basingstoke is cut off by the Greywell Tunnel, restoration of which would disturb a rare bat colony but would allow boaters access to the whole canal. However, boat users only make up 3% of the canal's users and after travelling through the tunnel they would have to turn round and come back. The Council is in the middle of the debate! The Brockham Lime Works could be developed as a historic site, but public access is difficult and lots of people would disturb the bats (again!) and rare flora and reptiles existing in the microclimate of an inland cliff face. Norbury Park, originally a private estate, is now being opened up to be more accessible and this has destroyed its original purpose as a private park. Alan had no magic solution for these problems, but stressed the importance of all parties working together and to prevent developers with no understanding of the problems coming in and destroying it all.

Time was allowed for members' contributions and at the end of the morning we heard Mike Clarke talking about canals in Germany, Roger Holden on Non-Conformist Chapels and Meeting Houses. Amber Patrick on her work as a consultant on Malthouses for the Ancient Monuments Society and Paul Sowan on investigating holes in the ground another form of a large structure. Hilary Malaws, AIA President, summed up the weekend and there was general agreement that the topic was important. solutions were difficult without money and resources, but that we were now better informed about the problem.



Discussion beneath the aqueduct

Photo: Peter Stanier

#### **Australian notes**

#### Derek Bayliss

The following notes were taken on a visit to Australia, in October-November 1996, and concern the industrial archaeology of the country's early iron industry and twentieth-century gold dredging.

A blacksmith was at work at Sydney Cove within a day or two of the arrival of the First Fleet in 1788, but for 60 years the new Australian colonies depended on imported iron. The first ironworks in Australia began in 1848 at Mittagong, New South Wales, between Sydney and Canberra. First known as New Sheffield, and from 1850 as Fitzroy, it closed in 1878 and the only remains are some foundations cut into the rock and two pieces of slag.

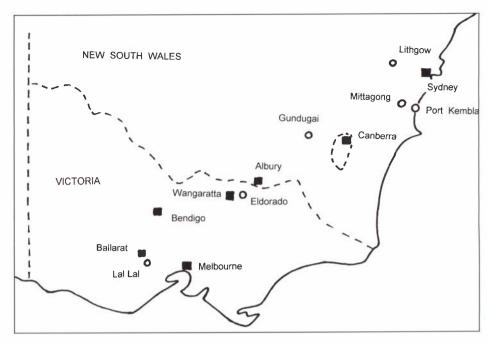
The first large castings made there were the cylindrical piers of the 1867 Prince Alfred road bridge over the Murrumbidgee at Gundagai, NSW, on the Hume Highway west of Canberra. A timber trestle, 921 metres long and rebuilt in 1896, links the bridge to the east end of the town. Another long trestle of 1903 carried a branch railway. Both are now closed to traffic and preserved as monuments; visitors can walk along the road trestle to the bridge.

At Lal Lal, south east of Ballarat, Victoria, a blast furnace of 1880-81 is preserved as a monument and is claimed to be the only surviving nineteenth-century blast furnace in the Southern Hemisphere. Lal Lal is an area rather than a place, and the furnace is signposted from the main road down a dead-end track. It has a car park, graded paths and good interpretation panels, but no staff on site. The furnace is of stone with a lining of firebricks from Stourbridge, England. It is round on a square base and tapers towards the top. It is 17 metres high and 7.6 metres wide at the base. Much of the stone cladding has gone. It stands on a platform high on a steep wooded



Lal Lal furnace, Victoria, Australia

Photo: Derek Bayliss



hillside; on one side are the casting floor, the supports of a blowing engine and the site of a tramway link to the nearest railway, while uphill are the charging level, traces of tramways to bring the ore from the opencast pits where it was dug. The deposits were exploited from 1873 by the Phoenix Foundry, Ballarat, and there was a furnace of 1874 two miles away of which nothing remains. The surviving furnace was only in use until 1884.

The site of a later and larger ironworks can be visited at Lithgow, in the Blue Mountains west of Sydney. A 1906 blowing engine house, for a Davy air blower, stands like a ruined castle keep. A 'skull' of slag marks the base of one of the furnaces. Other remains include the bases of a second furnace, Cowper stoves and the foundations of three Parsons turbines used for blowing. There is no interpretation



Iron works blowing engine house, Lithgow, New South Wales, Australia Photo: Derek Bayliss

on site at present, but a useful leaflet with a plan is available at the town's tourist information office.

Nothing is left of the first ironworks here which was less than a mile away. It had a stone blast furnace from 1876 to 1883 and then continued as a foundry. An open hearth furnace was installed in 1900 to make steel from scrap; this was the first steelworks in Australia.

The present works was built in 1906-7 and a second furnace added in 1913. For seven years it was the only iron producer in Australia. In 1914, a private rail line was built to take molten iron to the steelworks, but this was unsuccessful because the iron cooled too much. A railway bridge survives near the site. Lithgow closed in 1928, two years after the owners, the firm of Hoskins, had begun the works at Port Kembla, which is still active.

The former gold mining areas, particularly around Ballarat and Bendigo, have tourist attractions based on the industry and the gold rushes. A more recent and less-publicised site is a surviving gold dredge near Eldorado, between Wangaratta and Beechworth in northern Victoria. This bucket dredger dug up alluvial gravel, the gold bearing ore being separated in the floating body of the dredge and the waste discharged at the other end. This example worked from 1936 to 1954, and when in action it could be heard several miles away. It was saved from being scrapped and now sits on the shallow bed of a flooded gravel pit, but for safety reasons visitors are not allowed on board.

I am grateful to John Frost who took me to Lal Lal and told me about the Eldorado gold dredge. Historical information came from Judy Birmingham, Ian Jack and Denis Jeans, *Australian Pioneer Technology* (Heinemann Educational Australia, 1979).

#### **Time Team at Soho**

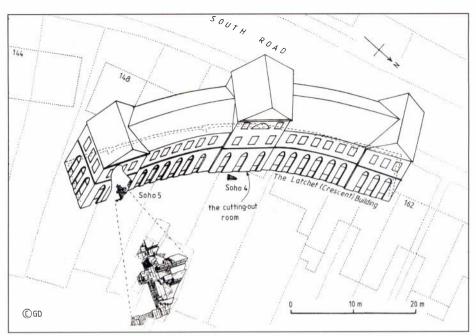
#### George Demidowicz

The Channel 4 programme in which the 'Time Team' archaeologists descended on Matthew Boulton's Soho received a brief mention in IA News 101, page 13. A little more background information is provided here.

In my spare time I am an industrial archaeologist and historian to the Soho House project, my full-time job being Conservation Officer for Coventry City Council. Readers may know that Matthew Boulton's house was opened as a museum by Birmingham City in October 1995. None of the Soho Manufactory and Mint survives above ground, being demolished in the 1850s and early 1860s. From research in the splendid Matthew Boulton and Boulton and Watt collections in Birmingham Central Library it has been possible to reconstruct a 3-D view of the whole Soho complex, but it was still not certain where the buildings stood exactly and whether they had survived below ground.

I persuaded Time Team, despite the difficulties of digging in people's gardens, that the site had great potential taking into account its national and international significance. Considerable preparation, in the shape of documentary research, was necessary, as hopping about from one suspected site to another was clearly impossible in the environment we would be working in. The programme also demonstrated that archaeology as defined by excavation and other work in the field is considerably enhanced as a discipline when documentary evidence is available to guide and interpret findings. Moreover, the documents certainly did not have all the answers, since the result of one excavation moved the Mint 4.2 metres northwards from the position assumed at the beginning of the programme.

Overcoming their trepidation, Time Team arrived on site at Easter 1996 and were delighted with the results obtained over the three days. We likewise were thrilled, as we managed to locate the front wall of the principal building on the main Manufactory complex, the one that appears most commonly in historic



Latchet Building located and reconstructed

Drawing: George Demidowicz

views. We also established the potential of the cellars and the floors of this building surviving at about 3 metres below the ground surface, although we could not excavate to this level for safety reasons. Two areas of the Latchet or Crescent buildings were also discovered and its plan finally fixed within the gardens and under the houses of the present street (see illustration). The latchet was a springy removable buckle which ceased production in about 1808. The building was incorporated in the Mint in 1824-6 and the coin blank cutting-out room placed in its very centre. A 61-metre tunnel which contained a castiron shaft was excavated in three places, including the vital junction with the steam engine. The shaft was belt-driven directly by the engine and was able to power many machines such as the cutting-out presses, milling machines, shaking machines, lathes and drills. Boulton's son, Matthew Robinson Boulton, who reorganised the Mint, even had a pump fixed to the end of the shaft to deliver water up the hill to Soho House. Most of the steam engine foundations had been destroyed by sand extraction in the early

twentieth century, but we hoped to find the very bottom of the water well for the engine. Probing deeper following the Time Team excavations, we continued to encounter large pieces of brick masonry and it was possible that the well and the adjoining culvert had been completely broken up by the quarrying.

The Time Team excavations are being published in 1998 as part of a large volume in the English Heritage Archaeology series entitled Matthew Boulton and Soho. This is a multi-disciplinary and jointlyauthored work and I have provided a general chapter on the Manufactory and Mint, more detailed chapters on the Mill, the Engine Works, the Mint and the network of businesses. My approach will concentrate on the physical layout, development, function and power systems of the Soho buildings. There are also chapters on Matthew Boulton, Soho House, the Soho gardens and park, and the history of Soho after the Boultons. The book will be copiously illustrated with hitherto unpublished archival material and many original line drawings and reconstructions.

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# **Brede Valley** giants

#### George Coleman

In East Sussex, the Brede Steam Engine Society's enormous task of restoring the magnificent 1903 Tangve and 1939 Worthington-Simpson triple expansion steam engines has aroused much interest in the history of the Brede Valley waterworks which they served for so many years. A brief account is given of their history and restoration.

In the 1890s Hastings Council, faced with an urgent need for additional water, went along with the opinion of the Chairman of their Water Committee - an amateur geologist - that ample supplies would be found in the Ashdown Sandstone underlying the Brede Valley, only six miles distant, ignoring warnings from their Engineer and a consultant geologist that such supplies would be 'precarious'. Test borings eventually produced the sought-after target of one million gallons per day.

Brede Valley Waterworks was developed with three wells, 200 and 275 feet deep, connected by 2,700 feet of adits, one running beneath the River Brede. The engine house was built over two of the wells, with an adjoining boiler house, but the first of the problems was the enormous difficulty in digging the wells. Commenced in 1899, this took nearly four years, including the total collapse of one well after two years' work, necessitating a restart nearby. As a result, the final cost of £133,267 (currently around £6m) represented a 42% overspend.

The plant first installed comprised two (twin) 410 HP triple expansion surface condensing engines, each engine driving three vertical ram force pumps and a pair of standpipe bucket and plunger type well pumps. In the 1906 final commissioning trial of one of the engines, the well pump delivered 330,502 gallons and the ram pumps 308,502 gallons over four hours. Sadly, only one engine remains, its twin having been scrapped in 1969. Steam was provided



Changing fashions: a plainer design for the 1940 engine house



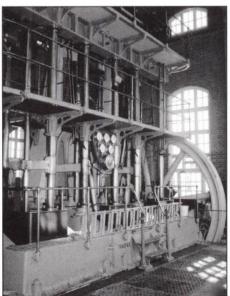
The fine architecture of the Grade II listed Brede Valley engine house

Photo: John Foxley

at 160 p.s.i. from four Babcock & Willcox water tube boilers, manually stoked with Bwllfa No.1 large steam coal; the total cost of engines and boilers was £25,089.

Construction and equipping the works was made even more difficult by lack of road access, so all materials and equipment had to be brought up the Brede River from Rye, a few miles away, in 20-ton loads on sailing barges. Unloaded at a specially constructed wharf, the cargoes were taken to the works on an 18-inch gauge tramway, by a Bagnall saddle tank steam locomotive hauling four 4-ton wagons. That system continued for coal deliveries until 1928 when the river became too silted up.

The design duty of each engine was a mean 232.5 feet well pump lift of 90,000 gallons per hour and a 515 feet lift of 80,000 g.p.h. by ram pumps to Hastings, six miles away. In the early years, from 1904, the one million gallons per day target was not required but as demand grew it was found, by 1917, that only 458,000 g.p.d. was available in the wells - confirming the dire predictions of the experts. There was a



The 1903 Tangye triple expansion engine is the survivor of a pair in its original engine house Photo: John Foxley

prospect that the works would become an expensive white elephant, but fortunately, in 1930, it was possible to create a 188 m.g. impounding reservoir only 11/2 miles away, from which 500,000 g.p.d. would gravitate to Brede, and thus the full potential of the engines could at last be utilised.

Eventual demands led to another reservoir being created 61/2 away. To deal with this, and projected further deliveries, a second engine house was built in 1939-40 for the Worthington-Simpson 420 HP vertical triple expansion surface condensing steam engine, driving three ram force pumps. This gave a pumping duty of 151,200 g.p.h., raised to 515 and 400 feet, but no well-pumping task; its cost was £24,125. The old boilers were replaced by three Babcock & Willcox multi-tube high pressure boilers, fitted with chain-grate automatic stokers to feed Betteshanger Washed Smalls in place of Welsh steam coal. All boiler plant has now been removed.

In 1964 electric pumping plant was installed and the steam engines placed in reserve. The Worthington-Simpson engine was sadly neglected but the Tangye engine now remaining was carefully maintained and steamed-up on occasions. After its last run, in 1974, it was deemed no longer viable as reserve plant and stand-by generators were installed to provide emergency electric power. Serious doubts arose as to the ultimate fate of the two abandoned engines, relieved a little in 1987 when the complex of both engine houses and boiler house was listed as Grade II – unfortunately minus the 99-foot chimney which had become unsafe and was demolished. By 1993 moves were afoot in Southern Water Services Ltd to investigate possible restoration of the engines for public exhibition. Following an inaugural meeting in January 1994, the Brede Steam Engine Society was formed and an enthusiastic band of volunteers began the task - deemed impossible by some pessimists - of restoration. Both engines were first freed-up manually, then run through engagement of barring engines powered by compressed air. Currently both are running on compressed air feed to each of the high-pressure cylinders and the declared object of the Society is to obtain a boiler large enough to steam-power the running of these magnificent and stately 'Giants'.

#### Northern Ireland visit

The 11 members who joined the Association's visit to Northern Ireland (29 May to 1 June) enjoyed perfect weather and a most interesting programme. This included numerous civil engineering works, such as Rennie's Donaghadee harbour as well as traditional industries, most notably linen manufacture. The highlight was Eugene McConville's working scutch mill, as much for its owner as the process. It is only a pity that so few took part. A fuller report will be in the next IA News.

#### Dr Beauchamp

Congratulations to Victoria Beauchamp (our Fieldwork and Recording Award Officer), who has gained her PhD from the University of Sheffield. Her thesis on 'The Cutlery Workshops of Hallamshire, 1750-1900' should be available for consultation in the university library.

#### Wedding

Council members John Crompton and Carol Whittaker were married on 16 May at Christ Church, Falkirk. Stuart Warburton was best man and the wedding cake included a model of a Welsh slate quarry (what, grey icing?) with working narrow-gauge railway, courtesy of Hilary and Brian Malaws. Our best wishes to the happy couple.

#### New AIA logo

Members will soon be noticing this new logo which has been designed for use on the Association's future publicity material, letter headings and other communications.



#### **New members**

The Association welcomes the following new members:

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Dr Stuart Mitchell, Wokingham

Dr Jean Mitchell, Wokingham

Hirovuki Nakai, Tokyo, Japan

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R.J. Osborne, Brisbane,

Australia

#### **LETTERS**

Readers are encouraged to write to the Editor with their views on matters raised in IA News, or other current issues.

#### Sheep and coke

The articles on sheepwashes in issues 100 and 101 were of great interest. We have a fine example here in Wingerford (SK 36956710), which is owned by the parish council and maintained in good condition. It has two stone-built pens, one each side of a channel in which the Tricket Brook could be dammed to provide about a metre depth of water. and a paved incline at the rear of one pen to allow washed sheep to leave. The sheepwash was constructed around 1850 and was in use until at least 1927. The parish council archives contain a cash book recording payments for washing sheep and expenses between 188 and 1927.

The article on the millennium exhibition site was also of interest. The East Greenwich gasworks was one of only three gasworks in the country to install coke ovens (the others were Saltley and Beckton). The South-Eastern Gas Board had altogether 88 Simon-Carves ovens there, started up in 1950 and 1953 and capable of carbonising nearly three-quarters of a million tonnes of coal annually. Because of their relative inflexibility of gas output, such plants could be used mainly to provide a base load and hence were not more widely installed in the gas industry. I have recently been compiling a gazetteer and bibliography of UK by-

product coking plants; it is only in draft for so far, requiring further work for completion, but I should be glad to provide information to any interested readers. I feel that the coking industry is a somewhat neglected topic in industrial archaeology, considering its past (and indeed present) importance to the economy of the country.

> David G. Edwards 29 Florence Road Wingerworth, Chesterfield Derbyshire S42 6SW

#### Making links with Europe

I have just returned from Poland, where I went with friends to record water mills near Lodz and also visited a number of museums in Upper Silesia. I also met the students on the post-graduate industrial archaeology course based in Wrocław, who were presenting their theses. One was about the inclined planes on the Klodnice Canal. I had sent this student details of the inclines in Britain and also translated and passed on information and archive material sent to me by a friend in Germany. Using this information, and archive material from Poland, he has deduced that the Klodnice inclines were the first to use a lock at the summit. This allowed the boat to settle directly on a cradle, rather than the boat and cradle being drawn out of the

water by a short reverse incline.

S.J. Marsh, Herne Bay

Whilst returning, I visited the archives in Berlin to look for further material. Amongst the Ministerium für Handel & Gewerbe Abteilung für Bergwerks-, Hüttenund Salinenwesen papers I found the following:

121 D III 2 Research visits:

1 vol.1 1778-1780 Oberbergrat Waltz, von Eschen and Bückling to England, Sweden and France.

2 vol.1 (1783-1824) Eversmann to Holland and England.

3 vol.1 (1814-25) Eckhart and Krigar to ironworks, etc. in England.

5 vol.1 (1826-28) Krigar to ironworks, etc. in England.

5 vol.2 (1829), 102 vol.1 (1850-60) and vol.2 (1861-65) ironworks in England.

I think some of these may be known, but the results of this visit do show how important it is for us to develop links with other countries. Not only can we help other researchers, but we can also find material which is of direct relevance to our own history.

> Mike Clarke 41 Fountain Street Accrington BB5 0QR

#### Miners' request

I am currently collecting information for an American colleague who is researching into the role of the Cornish

tin miners in the development of the gold and silver mnines of Mid-West America. The first wave of immigrants from South-West England settled in the gold mines of the Mid-West in the midnineteenth century. A second, larger wave of immigrants followed at the end of the century and the beginning of the twentieth century.

It is known that many of these immigrants came from Cornish miners who had firstly migrated into the coalfields of Northumberland and Durham and into the lead mines of Weardale. My colleague has little information about the lives and times of the Cornish miners who settled in these regions but is seeking to establish contact with any persons who are living in Northumberland and Durham who can provide information about members of their families who originally came from Cornwall but who subsequently emigrated to the United States to work in the mines of the Mid-Western states.

If you are able to provide any information which is likely to facilitate this enquiry, I would be pleased to receive your help and comments.

> John F. Aitchison 11 Woodstock Road Low Fell, Gateshead Tyne & Wear NE9 7TS.

#### LIGHTHOUSE FEATURE

#### Leasowe Lighthouse

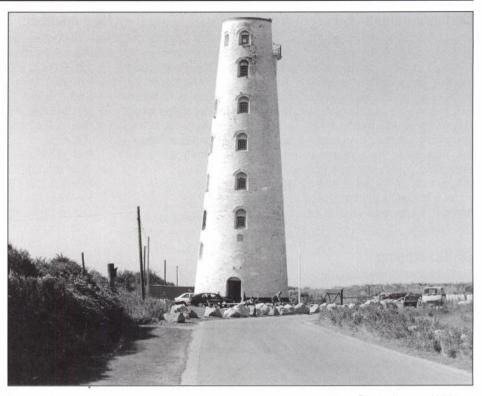
Following an Act of Parliament in 1761, Leasowe Lighthouse was built two years later on the North Wirral Coast, exactly midway between the River Dee and the River Mersey, and is one of the oldest lighthouses in the country. It is said (although very difficult to prove) that because the land was so boggy, the foundations of the lighthouse were built on bales of cotton from the cargo of a wrecked ship. Four lights were built at roughly the same time, two at Leasowe and two at Hoylake, all for use of coastal shipping.

Standing 110 feet (33.5 metres) high, with seven floors and 130 cast-iron steps to the lamp room, the building is a local landmark. The original staircase was wooden, but after a fire at another lighthouse the new staircase was fitted in 1824. At the same time, white asbestos was fitted to the door frames as a further fire precaution. Removal of the asbestos during recent restoration required the services of a team from BNFL Capenhurst.

The original light was coal-fired, but later became oil-fired until it ceased altogether; it was never electrically operated. The Leasowe beacon was one of the first to use the Hutchinson parabolic reflecting mirror, illuminated by a fixed white light with a catoptric lantern of three burners, which was installed in 1772 and used three gallons of oil a day. The light was finally extinguished in 1908, when buoys were introduced.

In about 1894, Mr and Mrs Williams became Keepers of the Lighthouse, but Mr Williams became ill and died shortly after. His wife was left as the first and only female lighthouse keeper of the time, and was allowed to employ her daughter as an assistant. When the Lighthouse ceased to operate, Mrs Williams, who died in 1935, ran the building as a cafe. Mersey Docks & Harbour Board sold the lighthouse to Wallasey Corporation in 1930 for £900; by 1935 it was left untenanted and became a target for vandals.

In 1991, the 'Friends of Leasowe Lighthouse' began restoration, and after six years' hard work there is still much to be done. Made to the original design, 132 cast-iron steps and 60 balustrades have been installed, doors and windows re-fitted, emergency lighting installed on the stairs, general painting and



Leasowe Lighthouse

Photo: Friends of Leasowe Lighthouse

plastering carried out and the lamp room has been fitted with a viewing platform. In addition, the safety demands of the Local Authority, Fire Service and Safety Officers had to be met before the general public could have access to the building.

Established links with local schools (there are 20 within walking distance) have led to the setting up of an education room, where a variety of subjects can be taught, including geography, local history, natural history and computer-related subjects. Conservation is seen as one of the prime areas of interest at the lighthouse – in the Coastal Park there is a blend of salt and fresh water habitat, and the North Wirral coastal areas boasts SSSI status and is a RAMSAR site.

Leasowe Lighthouse is now a Grade II listed building and the base for three Countryside Rangers, who are responsible for the Coastal Park and 27 miles

of Wirral coastline. Funding is now being sought for the rebuilding of the outbuildings shown in photographs of c.1908, to provide further educational and office accommodation and easy use and access for the disabled.

Various groups of lighthouse enthusiasts have shown an interest in and visited Leasowe, where an enthusiastic team of Friends offer tea, coffee, information and – for the energetic – a walk to the top platform. The lighthouse is open to the public April-October, first and third Sunday in the month, and November-March, first Sunday in month, 1-4pm. Further details are available from the Chairman of 'The Friends', Eric Johnson, c/o Leasowe Lighthouse, Leasowe Common, Moreton, Wirral L46 4TA.

Edwina Alcock



Looking up the original cast-iron staircase at Leasowe before restoration

Photo: Friends of Leasowe Lighthouse



Leasowe Lighthouse in 1905

Photo: Leasowe Friends

#### LIGHTHOUSE FEATURE

#### **London light**

This seemingly unimportant lighthouse which one might think simply marks the entrance to Bow Creek, off the Thames, has quite an interesting background. London. It is on the site of the Trinity Buoy Wharf, where buovs and lightships etc were formerly maintained. In 1854, an experimental lighthouse lantern was erected at the Wharf on one of the storehouses, for use in trials of electric lighting under the direction of no less than Michael Faraday, scientific adviser to Trinity House. This led in 1858 to the installation of the first operational electrically-lit lighthouse at South Foreland on the Kent coast (see article opposite).

When further storage capacity at Trinity Buoy Wharf was required it was proposed to replace the existing chain store by a new Chain and Buoy Store. In 1864-6, the Engineer-in-Chief Sir James N. Douglass erected a substantial building with the intention of placing the 1854 experimental lantern on top in the centre. Eventually, however, a new lighthouse and lantern was built against the east end of the new store and the old light was placed on top at the other end of the building. It was enlarged in 1858, presumably to match the second light.

Having two similar lights, comparisons were now possible. For example, in 1869 trails were conducted using both lanterns to determine the balance required between red and white light so that they should appear equally bright. The western lighthouse showed white and the eastern red. The effect was observed across the Thames at Charlton. The results were used in the design of the Wolf Rock Lighthouse, eight miles off Land's End.

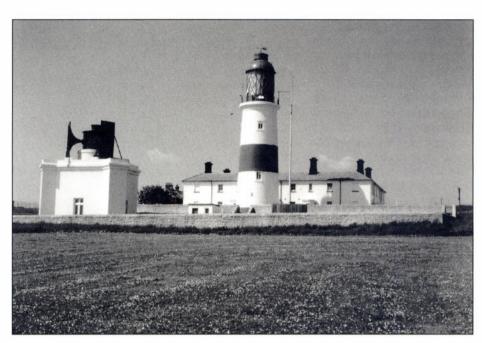
The Chain and Buoy Store of 1864-6 is now the largest of the surviving nineteenth-century buildings at Trinity Buoy Wharf. The western light lasted until the 1920s, but the eastern lighthouse survives as shown in the photograph. An anemometer was

placed on top in the 1950s. This traditional brickbuilt lighthouse has a total height of 57 feet (17.4 metres) and, perhaps not surprisingly, it is the only substantial example in Greater London. There are proposals for a museum and art gallery here. During the period of the London Docklands Development Corporation occupancy, Trinity Buoy Wharf has been notable for installation art. Probably the most ambitious event was 'Pitch', an exhibition of sitespecific installations by ten artists making excellent use of the interiors of buildings on the wharf. This brief display of conceptual art only lasted for about a week in September 1994.

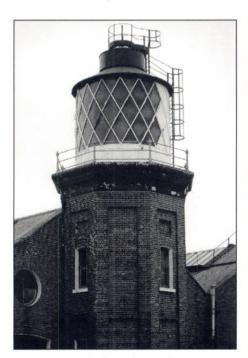
Robert Carr

#### **National Lighthouse Week**

The first week in May saw 'National Lighthouse Week', an initiative established by Barclays Savings to raise money for the preservation of lighthouses under the care of the National Trust and increase public awareness of Britain's lighthouses and nautical heritage. The idea came out of Barclays' existing involvement with the National Trust and the promotion was linked to customers opening savings accounts, the aim being to raise £25,000 towards the protection and enhancement of two of the Trust's lighthouses -Souter in Tyne and Wear, and South Foreland in Kent.



Souter Lighthouse, Tyne & Wear, set to benefit from National Lighthouse Week



The lighthouse at Trinity Buoy Wharf at the mouth of Bow Creek (west bank), London. Looking north west, September 1994. The Chain and Buoy Store is behind

Photo: R J M Carr



#### New lantern

As reported in IA News 97, the old lighthouse on Smeaton's Pier at St Ives, Cornwall, was outted in an arson attack in February 1996. Restoration took a step nearer in June this year when a new dome, lined with American white oak, was lifted onto the granite base of the tower. The operation involved carrying the dome on a trailer across the harbour to the pier at low tide.

Photo: Tobi Carver, St Ives Times & Echo

#### Catalan chimney challenge

An architect in Barcelona, Carlos Pereria, was surprised to find that enough people shared his enthusiasm for industrial chimneys for him to set up the Amics de les Ximeneies, a heterogeneous group including photographers, art historians, anthropologists, architects and conservationists, who are in their different ways challenged by the chimney's unique presence. Early in May they held their first conference at the Catalan industrial museum in Terrassa, a polyglot event including contributions in Catalan, Castilian, Portuguese and Italian, as well as your correspondent's Spanish, which might as well be a separate language.

Chimneys did not appear in numbers on the Catalan landscape until the mid-nineteenth century, and were as much associated with the diffusion of the Hoffman brick kiln as the steam engine. Indeed, they were all built of brick until the appearance of concrete systems like Mannoyer's early this century. One presentation examined the family structure of the specialist builders, a dense network of cousins and sons-in-law. Another showed how, from the 1920s, they began to use an external scaffold in place of the traditional narrow internal platform, to concentrate more men at the 'growing point' of the stack. This made easier the critical task of keeping the centre line of the chimney plumb. An important difference with British practice was that work continued uninterrupted, whereas the northern builder had to stop over the winter months because of frost getting in mortar - interruptions which can often be recognised in the irregular profile of the chimney.

A study of the pathology of almost 30 chimneys by Dr Cesar Diaz Gomez, however, found that some degree of inclination was practically universal. He attributed this to unequal sulfation in the bricks and mortar produced by humidity variations under a prevailing wind. The other common failure. vertical cracking, he associated with the extremely steep thermal gradients which form when the chimney is in use.

Most of the surviving chimneys in the textile towns of Catalunya have been catalogued, and many are protected. Some form part of whole works complexes, like that at the museum in Terrassa - probably the most beautiful north-light shed in the world - but many more have been preserved in splendid isolation. A number of towns, including Barcelona, have passed through a post-industrial rebuilding of their inner areas, and chimneys have frequently been kept as monuments to the earlier epoch. This contrasts with English policy, at least as applied to the listing of Manchester or the East Cheshire mills, where the aim was to preserve the functional context of the chimney, within complete sites.

This 'monumentalisation' of the Catalan chimney was the focus of the final part of the conference. Iconic chimneys can be found at the centre of a number of new public spaces. This was reflected at the conference in the popularity of chimneys among photographers, as well anthropologists. In an iconoclastic address, Manuel Delgado Ruiz of the Catalan Institute of Anthropology claimed that the preservation of the chimneys arose from a shortage of suitable contemporary symbols of urban identity, and called 'the great chimneys the true chapels of the collective memory.' It seems that the chimney's unusual capacity for symbolic representation, demonstrated throughout the industrial revolution, still holds good in the post-industrial period.

The Amics de les Xemeneies exists as a 'virtual organisation', having a mailing list for the exchange of information, until it has it gets its own e-mail address. Meanwhile, it can be contacted through Carlos Pereira Castro, Lull, 96 1.1. Barcelona 08005, or myself at Casp 61, 2.1. Barcelona 08010, Spain.

James Donet

#### More London news

Further to my report in IA News 101, pages 14-15, on closer inspection the gasholders at Bromley-by-Bow are not as depleted as the view from the A102 (M) suggests. The holders to the east are in reasonable condition and most have gas in them. Capitals on three holders are missing, making the view from the north west disagreeable. The aerial photograph shows the situation in May 1997, looking north east.

Generally speaking, more low pressure gas holders are to be phased out. A trunk main for natural gas is being constructed from the Luton area to London. It is planned that the listed gas holders to the north east of St Pancras railway station will be taken down and put in store with a view to re-erection elsewhere.

It is very likely that the 1840 pumping station building at Battersea



The stack of the former Almiral brickworks, Terrassa, is now the centre of a small urban park. The stairs may be climbed on Saturday Photo: J Donet

will now be demolished. If so, it is imperative that serious and detailed recording work is done here first. There are further plans for the re-use of the Gilbert-Scott Power Station next-door involving Warner Brothers who propose a 32-screen cinema centre. Various shopping facilities are also planned.

Civil engineering works at the Brunel Thames Tunnel are completed. The new reinforced-concrete lining will reproduce the architectural effect of the 1840s. It is intended to light the interior so that passengers will see a little of this work on their way through by train. Robert Carr

#### **Stockport Hatting** Museum

On 5 February 1997 it was announced that Stockport Council had succeeded in their bid for Lottery funds for the Hatting Museum. This means that the museum will be moved from its present location in the former Battersby's Hat Works on Hempshaw Lane to Wellington Mill in the town centre. The current setting in a purpose-built hat works seems very appropriate and the move to a former cotton mill may seem less so. However, Wellington Mill housed Ward's hat works from 1895 to 1935 so it does have hatting connections. Certainly this is a much more central site for attracting visitors. being right next to Mersey Square. The museum will have four times the space, occupying three floors of the mill. The new museum, to be called the Hat Works, should be open in 1999.

The current museum on Hempshaw Lane is open on Sundays only from 13.00 to 17.00 but presumably will be closing at some time for the move. There are exhibits of hat making machinery, much of it locally made by Turner Atherton of Stockport. In one corner is the reconstruction of William Plant's Hat Block Making Workshop which actually comes from Ancoats in Manchester but was donated to Stockport Museum when the firm, the last of the traditional hat block makers, closed down in 1976. There are displays of hats themselves and also a small steam engine from a mill in Hazel Grove. In the audio-visual room two films are shown, one of William Plant's workshop before it



Aerial view of the Bromley-by-Bow gasholders, looking north east, May 1997. 'X' marks where Photo: R.J.M.Carr masonry from the Euston Arch is submerged

closed down, and one of hat making at Battersby's between the wars. There is also, inevitably one feels, the Mad Hatter's Tea Room.

Battersby's hat works was built in 1886 and rebuilt after a fire in 1906. It has a prominent water tower which is a local landmark and for many years has been labelled 'Brinksway Motors' but the name 'Battersbys' can be discerned painted out underneath this letterina.

The last hatters in Stockport are Christy & Co. They were planning to move out of their historic Hillgate premises but have now abandoned this idea This raises the question of the industrial archaeology of the industry. It was dealt with by Owen Ashmore but there is scope for a detailed survey of

the hatting industry in Stockport, including hatters' machinists like Turner Atherton.

This article first appeared in the Newsletter of the Manchester Region Industrial Archaeological Society. March 1997. Since then, it has been announced that Christy & Co. are to close with the loss of 111 jobs, transferring production to their Bury factory. Roger N. Holden

#### First English blast furnace

The 500th anniversary of the earliest documented blast furnace in England at Newbridge, Sussex, was commemorated last December when a plaque was erected by the Wealden Iron Research Group at Ashdown Forest. The iron industry in the Weald is much older than 1496, but the new furnace marked an important advance in iron technology, allowing the expansion of the industry there.

#### Mills for Miles

The Editor apologises for a slip of the keyboard. The article in issue 101 on the Greenwich millennium exhibition site was by Mary Mills, not Miles.

#### French cement heritage

The latest TICCIH Bulletin reports that the Chabrolles lime and cement works in the Val de Germiany has been conserved as a heritage site. The works was important from the late nineteenth century to the 1930s, and includes a very large drying hall, 17 lime kilns and a wharf on the Loire lateral canal.

#### **Baltic Flour Mill**

Ambitious plans have been announced for the conversion of the 140-foot high Baltic Flour Mill of 1950 into a multimillion pound arts complex which will transform Gateshead into the 'South Bank of the North'. This Tyneside scheme is receiving lottery and Arts Council money.

#### Project 2001

Plans are under way to build a replica of Richard Trevithick's first road locomotive in time for its bicentenary on Christmas Eve, 2001.

#### **EDUCATION**

#### IA prospers at Nene

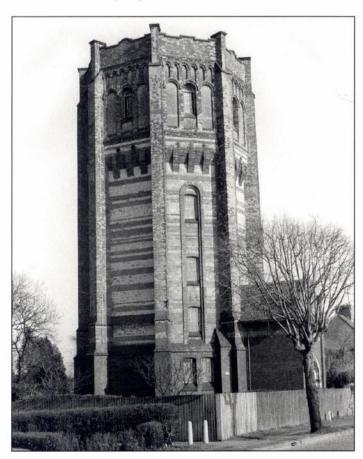
The undergraduate course in Industrial Archaeology at Nene College, Northampton, continues to expand. Over 70 students were enrolled in the academic year 1996-97, the first in which it has been taught in the third year. The course forms part of Nene's Combined Honours programme, in which it is now possible to study IA as a Major during all three years of a first degree programme.

The teaching personnel on the course have changed considerably during the past year. Dr Kathleen Langley, who established the course, has retired and Rodger Alder died in March after a lengthy illness. Course leader is now Stephen Young, assisted by Dr Barrie Trinder, who moved to Nene College in February 1996. They will be joined during the summer of 1997 by AIA Council member David Cranstone, who will add valuable expertise from the world of professional field archaeology. Geoffrey Starmer continues to contribute to the course, particularly on Northamptonshire topics.

A field trip based at Abergavenny in South Wales at the start of the third year is now an established part of the course. In 1996 students worked with David Percival and Brian Malaws of the Welsh Royal Commission on a survey of Goytre Wharf on the Brecknock and Abergavenny Canal, and on a project for Cadw which involved documenting and placing in safe storage some of the iron artefacts which have come to light during conservation work on the Blaenavon blast furnaces. Visits were made to other sites in the vicinity, and to Gloucester Docks and the RCHME headquarters at Swindon.

The course is contributing significantly to the study of IA in Northamptonshire. Second year students have produced elevations and sections of one of the principal boot

and shoe factories and have made records utilising census returns of some of the surrounding streets of terraced housing. Third year students have carried out a geophysical survey of the blast furnaces alongside the West Coast Main Line at Lower Heyford. In 1997-98 it is planned to teach the



The study of public utilities forms an important part of the second year IA syllabus at Nene College. One of the most impressive monuments of Northamptonshire's public utilities is the 1904-5 polychrome brick water tower at Finedon Photo: Barrie Trinder

elements of surveying to first year students during a project which will record some of the shoemakers' workshops in Rothwell.

professionally-orientated Master's course in IA, much of which will be delivered through distance learning, is currently being planned and, if validated, will be launched during

Further details of Industrial Archaeology at Nene College can be obtained from the course leader, Stephen Young, Nene College Avenue Campus, St George's Avenue, Northampton NN2 6JD.

#### **Courses at Camborne**

Three courses on Industrial Heritage have been planned this autumn at the Camborne School of Mines, in partnership with the Institute of Cornish Studies, Cornwall Archaeological Unit and Trevithick Trust. Each intensive course is for a week, with projected themes on Industrial Heritage: Protection, Survey and Analysis; Museums: Philosophy, Management and Conservation; and Industrial Heritage: From Industrial to Post Industrial Society. Courses may be taken independently or as modules within the part of the University of Exeter's Postgraduate Continuing Professional Development Award Scheme. For further information on these courses, please contact Jean Taylor, CPD Development Officer, Camborne School of Mines, Pool, Redruth, Cornwall TR15 3SE, 2 01209 714866, Fax 01209 716977, e-mail J.Taylor@csm.ex.ac.uk.

#### **SOUTH WALES AND WEST OF ENGLAND**

The 28th Industrial Archaeology Conference of the Region was hosted at the Royal Agricultural College at Cirencester by the Gloucester IA Society on 12 April 1997. It was opened by the Deputy Chairman of the Cotswold District Council, who gave us the glad news that the new Cirencester by-pass will not now destroy the Thames and Severn Canal route. Instead, the sides will be piled and a slab laid to make restoration possible in the future.

Ray Wilson gave a most interesting talk on the old and new Sharpness docks. After a period of decline, these have been privatised and the future is looking brighter. The main trade was in timber, grain and oil and petrol, but the old dock is now a marina.

Jim Covne of the National Trust spoke about the Finch Foundry at Sticklepath, Devon, set up in 1814 by the Tavistock Ironworks as a general smithy. There is a 13 ft x 4 ft wheel, which powers the trip wheel for the hammer - which is capable of 240 blows per minute - and the shears. Another waterwheel runs the grinding wheel for the edge tools.

Pontypool Japanware was the subject of Robin Williams, who has studied this process and showed slides of the results, many from his collection. In the 1660s, much lacquered wood was imported from the East Indies and became fashionable. In about 1700, the Hanbury family produced black plate iron by rolling, making a smooth surface to which tin and then lacquer would adhere. They chiefly made 'trays', varying from 6 to 36 inches diameter.

Slides of engine houses from Cornwall to South Australia were shown by Kenneth Brown of the Trevithick Society in his talk on 'The Cornish Beam Engine Today'. Engines at Crofton and Kew have been restored and are still working, but some of the houses have been converted into dwellings and others are ruins.

Westonzoyland pumps were described by Keith Evans. Here is the largest collection of steam engines in the West Country, based on the first pumping engine installed to drain the Somerset levels. There are also engines, a loco and deep well pump by Lister of Dursley.

Henry Gunston described the soda ash factory of Lake Magadi in Kenya and its railway. The soda crystallises on the lake and is removed by a floating dredge, passed as a slurry to calciners where it is cooled and packed. The 1 metre gauge railway carried the result to the coast for shipping.

Derrick Warren spoke on the crawler tractor and the part played in its development by Joseph Hawker of Chard, who in 1872, took out the patent for the endless chain used to turn the wheel of the driving sprocket and thus make caterpillar tracks work.

The Avon Industrial Buildings Trust was described by Will Harris, giving the Saltford Brass Mill, Nailsea coal mine engine house and Somerset Coal Canal as examples of complexes saved by their intervention.

After the Conference closed. delegates went on to look at the restoration work on the Thames and Severn Canal.

Mary Yoward

#### **EAST MIDLANDS**

The 53rd East Midlands Industrial Archaeology Conference was held on 10 May in New Mills in North West Derbyshire. Despite being held in the extreme northern corner of the East Midlands, only a mile out of Cheshire. over 120 attended the conference. We were given a comprehensive presentation on the history of industry in New Mills. The town is set on high ground which is divided by the deep gorge known as the Torrs around the confluence of the rivers Goyt and Sett. While these rivers provided ample water power for a series of mills, their gorge also produced a formidable barrier to local communications.

Derek Brumhead spoke on the geology of the area, the development of the water-powered cotton mills in the Torrs from 1788 onwards, and the steam powered mills in the hamlet of New Town, which grew up around the Peak Forest Canal between 1855 and

Roger Bryant spoke on the work of John Potts and on calico printing in the Sett Valley. Potts (1791-1841) developed the engraving of rollers and the printing of fabrics from a somewhat crude process to a state of great refinement. Work ascribed to Potts can be seen in the Victoria & Albert Museum. A brief picture of the seven major calico print works in the Sett and Goyt valleys was given. These were once the predominant employer in the

Ron Weston introduced us to the history of transport in the New Mills area from prehistory through to the present

day. The problems of the local terrain have produced a rich mixture of tunnels and bridges for road, rail and canal around the town. These range from ancient packhorse bridges to the Midland Railway 1902 avoiding line viaduct. Many of the bridges in the area of the Torrs accommodated crossings for mill leats as well as the main river.

Keith Falconer and Mike Williams spoke briefly on the current survey work that the RCHME are conducting on mills in North West Derbyshire and the Derwent Valley.

In the afternoon, visits were made to the remaining sites in the Torrs which have now been consolidated after vears of nealect. New Mills is well worth a visit to anyone with an interest in mill development. This has been well interpreted in the New Mills heritage centre in Rock Lane.

Mark Sissons

#### SOUTH EAST

This year the Greater London IA Society hosted the event on 12 April at the Avery Hill campus of Greenwich University in Eltham. It was a sell-out and 200 delegates filled the new lecture theatre to capacity.

The seven illustrated papers were all concerned with different aspects of 'Themes in Urban IA'. Geoffrey Mead (Sussex IA Society) spoke on 'How our Cities Grew', using Brighton to illustrate his interesting approach. Cities tend to develop from a historic core, dispersion a function of income and subsequently ease of travel, David Perrett (GLIAS) spoke on 'Housing the Multitudes', taking us on a tour of London industrial housing from the Metropolitan Association for Improving the Dwellings of the Industrious Classes of the 1840s to the beginnings of the LCC in 1889. We also saw along the way Prince Albert's Model Dwelling House from the 1851 Great Exhibition (it still exists in Kennington Park) and the Peabody Estates, set up by an American benefactor.

Francis Ward (Greenwich Local History Society) told the story of 'Avery Hill, the Norths and the Guano Industry' and how the very grand mansion at Avery Hill was founded on the South American nitrate trade. Much of the lavish building was lost through bombing during WW2. The entrance hall and winter garden are about all that remain, being incorporated into the Teacher Training College in the late 1940s. It now forms part of the new University of Greenwich.

Edwin Course (Southampton

University IA Group) gave us a quick tour of the development of 'Suburban Railways', using as a case study the Bexley Heath Railway of 1895 and associated lines through and around Eltham. He showed us many 'then and now' pictures - some stations and other sites hardly changed, others unrecognisable. Mark Dennison (London Transport Museum) considered 'Urban Road Transport', concentrating on the growth of London trams, followed by a brief trolley bus period, the rise of the bus, until coming full circle to the light rail systems presently under consideration.

Sue Hayton (GLIAS) in 'Workers Playtime - the Archaeology of Home and Entertainment' looked at the means by which the workers during the last 100 years relaxed in what little time was available to them. The music hall, the pub, the dog track and the cinema were all illustrated. The final presentation, 'A Dving Trade' by Bob Flanagan (Friends of Norwood Cemetery), was the story of the problem caused by the growth of industrial cities and the need for new land for burying the dead. He concentrated on London, instancing the new cemeteries at Highgate, Kensal Green, Tower Hamlets, Norwood and the Necropolis at Brookwood.

An excellent conference with a good venue, excellent speakers and an interesting theme.

Gordon Knowles



# CONFERENCE REMINDER

It's never too late to attend the AIA annual conference at Newcastle on September 5-7, with the additional programme to September 12. If you've forgotten, or lost the details, contact the Conference Secretary immediately (see Diary page).

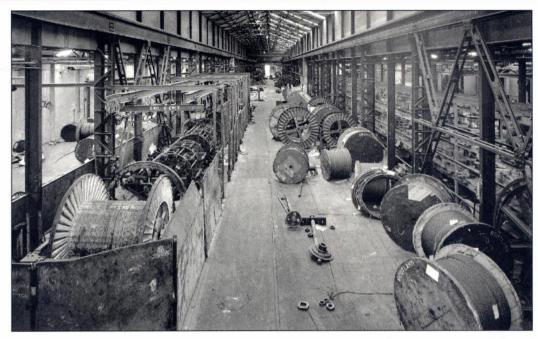
#### Scotland

Industrial heritage continues to attract both interest and funding in Scotland. and a number of projects and events during the last 12 months are worthy of note. First, it is good to be able to report that several Scottish projects have benefited from substantial Lottery-funded grants, some of the most important being Stanley Mills in Perthshire, New Lanark's No.1 Mill, the Clyde Maritime Trust's Glenlee (ship), the Scottish Mining Museum, and the 'Big Idea' (Nobel and invention-based) project at Irvine in Ayrshire. The latter occurs against the background of celebrations commemorating the life of Alfred Nobel in Glasgow in December (100 years after his death), which resulted in the publication by RCAHMS and ICI Explosives of the book, Explosives in the Service of Man: Ardeer and the Nobel Heritage.

The work of RCAHMS has continued during the year, with recording activities covering a wide variety of subjects, ranging from more parts of the Ardeer explosives factory to lace mills in the Irvine Valley, and a whaling station on the island of Harris. One of the more recent tasks has been the recording of the Ropery at Brunton's Wire Works in Musselburgh. which closed in March 1997. Bruntons produced a wide variety of wire products, but are perhaps best known for supplying the ropes for many of the world's most famous suspension bridges. Some of their last orders included rope for the new Tsing-Ma-Lantau bridge in Hong Kong, and arrester ropes for aircraft carriers.

Through the Scottish Industrial Archaeology Panel, RCAHMS has also been involved in an initiative to produce a leaflet providing guidance on the salvage, rescue and donation of industrial archives. Its main aim is to discourage companies, institutions and individuals from destroying holdings of industrial archive material, suggesting specialist institutions who might be able to help.

Historic Scotland has also had a busy year, important projects having included Stanley Mills, the acquisition of Bridge of Oich, and the scheduling of the Forth & Clyde Canal. Support is continuing for the Millennium Link designed to re-establish navigation across Scotland on the Forth & Clyde and Union Canals, Funding is also being provided to assist repair and maintenance in a number of other schemes, which include the giant cantilever crane at James Watt Dock in Greenock, Meanwhile, the mistrust



Brunton's Wire Works, Musselburgh: interior view of the Ropery, where wire rope for some of the most famous suspension bridges in the world was manufactured. This part of the factory was closed in March 1997 Photo: RCAHMS Crown Copyright

of cast-iron as a reliable material by modern engineers and architects continues to cause problems, and following difficulties experienced at Crofthead Works at Neilston, Historic Scotland is drafting an advice note on cast-iron to assist the constructive reuse of buildings containing cast-iron.

For the museums, the largest project continues to be the National Museums of Scotland Lottery-assisted Museum of Scotland, the latest additions to which have been the insertion during the construction of the new building of the locomotive, 'Ellesmere', and a coal-fired pot still from Glenfiddich Distillery. The most important new development has been the Heritage Lottery award of £3.8 million for the development of the Museum of Country Life, to occur at Wester Kittochside Farm near East Kilbride, in partnership with the National Trust for Scotland. Examples of activity within the independent sector include the work at Newtongrange, work on the restoration of the old coal preparation plant buildings at the Scottish Mining Museum's Lady Victoria Colliery being well under way.

Other events of importance have included the completion on time within its £1.1 million budget of the restoration of Laigh Milton Mill Viaduct, which was formally opened on 29 October 1996. and which was handed over to East and South Ayrshire Councils on 18 April 1997, Professor Roland Paxton, the prime mover of this project, has since turned his attentions to developing the Forth Bridge Visitor Centre, which has now re-opened at a new site in North Queensferry. It is also worth acknowledging the efforts he and others made to ensure that the Forth Bridge is properly maintained, the result of which has been the implementation of a multi-million-pound maintenance programme by Railtrack.

On a sadder note, the effects of cuts in local authority budgets continue, and it is taking a long time for planning departments in particular to settle down. There remain very real concerns about the provision for industrial heritage in many areas of Scotland. In some cases, the fall in funding has had particularly severe effects, not least in Glasgow where the museums director's strategy for coping with a 6% budget reduction has been to reduce by up to 43 the number of professional full-time posts. Given the immense importance of the industrial holdings within Glasgow Museums, these developments are particularly disturbing.

Cuts in mainstream funding are now the norm for most institutions, and as a result of a voluntary early retirement scheme, RCAHMS has lost the services of Graham Douglas. Graham's support and expertise will be sorely missed, and it is hoped that he will keep in touch and remain active within industrial archaeology in Scotland. In the meantime, the future of the Scottish Farm Buildings Survey to which he was dedicated has yet to be decided, although it is hoped that means can be found to revive it in the near future.

Finally, the Scottish Industrial Archaeology Panel was sad to hear of the death of Professor S G E Lythe, who was responsible for nurturing Scottish industrial archaeology in its infancy through his work at Strathclyde University. The death was also announced of Dr Ted Patterson, one of the most valued experts on explosives (particularly black powder, detonators and fuses), and a keen member of the AIA.

Miles Oglethorpe

#### Wales

Although the last 12 months have seen the usual flurries of archaeological activity, in terms of industrial archaeology, at least, things have been relatively quiet. The regional archaeological trusts have been undertaking Cadw-funded coastal surveys, many of which have increased the level of knowledge concerning coastal industries. In particular, the Dyfed Archaeological Trust have noted a significant density of former coastal quarrying activity along the south west of the Principality.

Perhaps the most significant piece of work currently being undertaken is a survey of slate quarries in Gwynedd by the Gwynedd Archaeological Trust. The Cadw-funded thematic survey has concentrated on four different aspects of the industry: processing areas. workmen's accommodation, uphaulage systems and power sources. The survey includes a review of documentary sources together with fieldwork and measured surveys. Still in the north west, the Welsh Mines Preservation Trust have undertaken initial conservation works at the former

Pearl Engine House on Anglesey's Parvs Mountain.

In Wrexham, a Heritage Lottery Fund application has been submitted for the headgear of the former Bersham Colliery. A decision is expected soon which should allow work to start in the autumn. Work is expected to start on the Penrhos Engine House project in August. Finally, over the year Cadw have scheduled 20 new industrial monuments.

Stephen Grenter

#### **Northern England**

This year is the 150th anniversary of the opening of Carlisle's Citadel Station, a joint venture by the Lancaster and Carlisle and the Caledonian Railway companies. Eventually seven separate railway companies were to focus on Carlisle, bringing a rich variety of rolling stock and locomotives. The years immediately prior to 1847 had seen vigorous promotion and construction of routes. To the south the LCR took its 69-mile line over Shap summit, an enterprise which used 10,000 navvies and 1.000 horses working around the clock. To the north the Caledonian. using 20,000 men, took the line over Beattock Summit to connect with an existing network near Glasgow. The LCR's official opening was on 15 December 1946. The Caledonian service from Beattock to Carlisle opened on 10 September 1847.

The site of Citadel was fixed in 1845 and the LCR commissioned William Tite, who had just completed the London Stock Exchange, to design it. The contract was given to Brassey and Stephenson and a completion

date set for 1 June 1847. Work did not go according to plan. There were delays, and other companies who were to use Citadel did not provide financial support. By August enough had been done for Tite to pronounce the station as 'being used'. It was, however, a station of temporary facilities which saw the official opening a month later. Not until March 1850 did Tite grant a final certificate of completion.

Carlisle Citadel is a fine structure. and many of the buildings are but little changed from the last century. The facade faces north east into Court Square, with the entrance portico bearing the royal coat of arms, flanked by those of the LCR and CR. On the south side is the County Hotel (1853). now renamed the Cumbria. Without such a hotel, no railway square is complete. In front of the square is Botchergate and English Street, which carry the old A6 road from London to Scotland through the heart of Carlisle. Is there any other station where main line and main road are so close?

Last July it was a great pleasure to join David George and Derek Brumhead and their Study Holiday guests for a weekend based in Carlisle. One of the many interesting places visited was Port Carlisle, to see the remains of the harbour and basin built there to enable transfer to take place between canal and the Solway. This 11½-mile navigation was opened in 1823, but was redundant some quarter of a century later. The canal was filled in and a railway put down along its line, thus prolonging Port Carlisle's life.

In the previous century, two canal schemes had been proposed to link the

Solway with the North Sea. One, proposed by William Chapman in 1795, was for a line from Newcastle-upon-Tyne to Maryport on the Cumberland coast. It included many branches serving northern valleys, such as one from Brampton to Appleby through the Vale of Eden. In the end, only the short Carlisle canal was built.

In 1824, Chapman issued a report on the relative merits and costs of railway and canal between the two northern cities. The railway lobby won hands down, and what became the Newcastle and Carlisle Railway opened officially in June 1838. It followed the proposed line of Chapman's canal, and gave Carlisle its first railway station.

There is now a proposal to build a modern inter-sea canal through the Tyne Valley, much of which would be covered by a chain of lakes. One of these would be at the bottom of my garden. I am not sure that I am ready for the sight of the 9.25 Bremen to Belfast chugging past my window. And what would happen to the track of the Newcastle to Carlisle Railway?

Fred Brook

#### **Home Counties**

This issue concentrates on Bedfordshire. I can still remember walks with my parents in the then countryside to the north west of Luton in the 1940s. One walk passed the Electrolux factory in Oakley Road, Leagrave. It used to amuse me to run along the brick wall which separated the gardens in front of the building from the path – then unpaved but covered in clinker presumably from one of the works furnaces. The wall seemed to go on

for ever, but in reality was about 500 metres in length. Today, although part of the office area built in the 1930s is still there, much of the works has been demolished recently and production has shifted to a new site in Dunstable.

The Leagrave site was originally known as the Omnia works when Oakely Road was Oak Road. During the 1914-18 war it was the home of Hewlett and Blondeau's Aircraft Works. Mrs Maurice Hewlett – the wife of one of the partners was the first British woman to obtain a pilot's licence, and during that war the majority of the workforce were also young women, particularly in the dope shop. Their work song was:

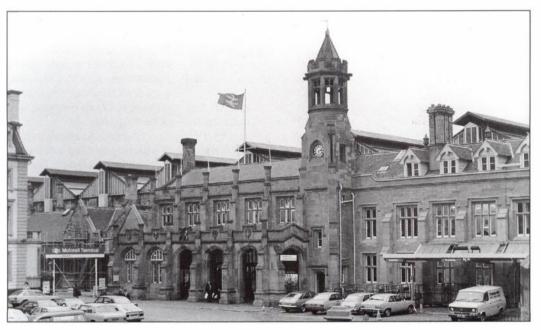
We are at Hewlett and Blondeau's All working in a row,
Doping wings for aeroplanes
For men whom we don't know
And when this war is over,
Far scattered we shall be,
Some of us in other lands
Across the distant sea.
But whatever life may bring us,
If fair or stormy weather
We'll never forget the war-time
When we all worked together.

Chris Baldwin (2 Fieldgate Road, Luton LU4 9TA) is researching Hewlett and Blondeau's and would be interested to hear from anyone with information.

The Electrolux Company took over the old Omnia works in 1927 and at the height of production the factory, together with its purpose-built offices and welfare and social buildings covered several hectares, and employed vast numbers of Lutonians.

This year the Bedfordshire Magazine celebrates its 50th anniversary and it seems appropriate for the AIA to congratulate it on what it has achieved in that time. Bedfordshire is one of our smallest counties but its history, including its industrial history, has been particularly well recorded. A major part in this has been played by the magazine. The first issue appeared in the summer of 1947. At a time of paper rationing and post-war austerity its launch was an achievement in itself - an act of faith by its publisher Harold White and its first editor, Charles Freeman.

During the past half-century, as well as commenting on Bedfordshire's folklore, its large houses and their families, its wildlife and geology, its villages and towns, and aspects of prehistoric archaeology, the magazine has written on Bedfordshire's people and their occupations. Each issue has



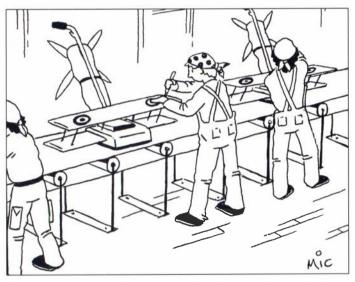
Carlisle Station in 1978

Photo: Cumbrian Newspapers

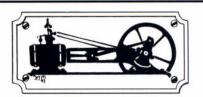
commented on changes in the county's industrial scene and articles have appeared on ice houses, mills, breweries, turnpikes, canals, railways, straw plait, early motor vehicles, guarrying and dovecotes. For anyone interested in the industrial archaeology of this part of the Home Counties, the Bedfordshire Magazine is a must. Recently it was feared that it might have to cease publication this spring, but with help from the county's Local History Association and a number of individuals with influence, a campaign has started to double the current number of subscriptions and increase the magazine's advertising revenue.

If anyone would like a sample copy of the Bedfordshire Magazine, write to White Crescent Press Ltd, Crescent Road, Luton, LU2 0AG, or better still send £18 for the eight issues of Volume 26. Alternatively, £2,25 will get you issue 200 (Spring 1997) with a facsimile of issue One, which contained an article on Stevington post mill and a description of the Rush Mat Industry based on the River Ouse.

Phil Morris



On the secret production-line of the unsuccessful flying Electrolux at the Omnia Works



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All proceeds contribute to the costs of the Newsletter and the work of the Association which is a Registered Charity. Inserts may be mailed with IA News at a charge of £25.

> For further details, contact the Editor.

#### 5-12 September 1997 AIA ANNUAL CONFERENCE 1997

in Newcastle upon Tyne, with preconference seminar, conference weekend and following programme. Details from David Alderton, 48 Quay Street, Halesworth, Suffolk IP19 8EY.

# 6-8 October 1997 MINING - ENERGETICS INDUSTRY

in Wroclaw. International scientific conference devoted to the problems of protecting technical monuments of water power. Details and applications from Fundacja Otwartego Muzeum Techniki, 50-421 Wroclaw. ul. Na Grobli 14/16. Poland.

★/fax 048/071/34-36-714.

#### 11 October 1997 WATERWAYS HISTORY CONFERENCE

at the Manchester Conference Centre, UMIST, Sackville Street, Manchester. A conference to encourage new research themes, stimulate debate and encourage a positive move forward in the research and promotion of waterways history. For details and booking form, send SAE to Paul Sillitoe, 2 Oaken Clough Terrace, Limehurst, Ashton-under-Lyne, OL7 9NY.

# 11 October 1997 THE ARCHAEOLOGY OF EXPLOITATION

at Tavistock, a joint symposium organised by the Devon and Cornwall Archaeological Societies, on using local geological resources for quarrying, building and mining from Roman to Victorian times. For details, send SAE to Richard Davin, 4 Oxford Road, St James, Exeter EX4 6QU.

## 18 October 1997 EMIAC 54

at the Royal Air Force College, Cranwell, the 54th East Midlands IA Conference on the theme of 'RAF Lincolnshire', with lectures on aircraft production, RAF infrastructure and Defence of Britain, and guided tours. Send SAE for details from N.R. Wright, 32 Yarborough Road, Lincoln LN1 1HS.

#### 18 October 1997 KNIGHTS OF THE ROAD

at the Museum of British Road Transport, St Agnes Lane, Hales Street, Coventry, a symposium on the History of Road Freight Transport. Details from Dr Corinne Mulley, Department of Accounting and Finance, University of Newcastle, Newcastle upon Tyne NE1 7RU.

#### 8 November 1997 NORTH WEST IA CONFERENCE

at Manchester College of Arts and Technology, the 21st regional conference on 'Manchester's Waterside Heritage' with lectures and guided walks. Booking forms from Sue Mitchell, GMAU, University of Manchester, Oxford Road, Manchester M13 9PL. \$\mathbb{C}\$ 0161 275 2314.

#### 15 November 1997 CURRENT PERSPECTIVES IN SCOTTISH INDUSTRIAL ARCHAEOLOGY

at the Department of Archaeology, University of Edinburgh, a one-day workshop on aspects of previous, continuing and future research in Scottish IA. Details from Dr Mike Cressey, Centre for Field Archaeology, 12 Infirmary Street, Edinburgh EH1 1LT. 
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e-mail michael.cressey@ed.ac.uk.

#### 4-5 April 1998 AIA IRONBRIDGE WEEKEND

at Ironbridge, annual weekend on the theme of 'Museums in Crisis'. All welcome. Advance notice only.

#### 25 April 1998 SOUTH EAST REGION IA CONFERENCE

At Princes Hall, Aldershot on the theme of 'Secret South East'. Details from J.D. Asteraki, 122 Reading Road, Finchampstead, Wokingham, Bucks RG40 4RA.

Information for the diary should be sent directly to the Editor as soon as it is available. Dates of mailing and last dates for receipt of copy are given below. Items will normally appear in successive issues up to the date of the event. Please ensure details are sent in if you wish your event to be advised.



#### INDUSTRIAL ARCHAEOLOGY NEWS

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Editor: Dr Peter Stanier

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Final copy dates are as follows:

- 30 March for May mailing
- 30 June for August mailing
- 30 September for November mailing
- 30 December for February mailing

The AIA was established in 1973 to promote the study of Industrial Archaeology and encourage improved standards of recording, research, conservation and publication. It aims to assist and support regional and specialist survey groups and bodies involved in the preservation of industrial monuments, to represent the interests of Industrial Archaeology at national level, to hold conferences and seminars and to publish the results of research. The AIA publishes an annual Review and quarterly News bulletin. Further details may be obtained from the Membership Secretary, Association for Industrial Archaeology, The Wharfage, Ironbridge, Telford, Shropshire TF8 7AW, England. 2 01952 433522.

The views expressed in this bulletin are not necessarily those of the Association for Industrial Archaeology.

