

# INDUSTRIAL ARCHAEOLOGY NEWS

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● **CARDIFF CONFERENCE SPECIAL** ●



# INDUSTRIAL ARCHAEOLOGY NEWS 127 Winter 2003

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## The 2003 AIA Conference: Cardiff and South East Wales

*The AIA's 2003 annual conference was held at the Cyncoed Campus, University of Wales Institute, Cardiff, on 5-11 September. The pre-conference seminar on the Friday was followed by the main conference, AGM, awards, the Rolt lecture and field visits, with four more days of lectures and visits for those who stayed for the whole programme.*

### Roger Ford

Terry Evans welcomed delegates to the conference on the Friday evening with a very amusing illustrated talk which explained how industry started with iron making in the Welsh valleys, the iron companies being mainly responsible for sinking the early coal mines. Three members' contributions followed, starting with Roger Holden on the more unusual Welsh chapels. Henry Gunston showed illustrations from the building of the Uganda Railway between 1896 and 1901, climbing from Mombasa via what is now Nairobi and incredibly heroic engineering across the Rift Valley to Lake Victoria. Robin Williams talked on the Pontypool Japanware industry created by heating linseed oil onto tinsplate, an early secret business that ceased in 1820; the pieces were for show rather than for use, being very expensive (circa 15 guineas).

The first treat on Saturday was a remarkable selection of slides showing paintings of eighteenth and early nineteenth century industrial scenes presented by Brian Davies of Pontypool Museum. Outstanding. David Jenkins,

Senior Curator of Museums and Galleries Wales, next lectured on 'shipping the coal'. In 1910 Cardiff docks despatched 10 million tons, Barry docks 11 million tons; in 1913 the total tonnage from all four Cardiff docks, including Barry, amounted to 24½ million tons; today, nothing is left. Dr Richard Bevins next spoke on the new National Waterfront Museum due to open in Swansea in 2005. This is an amazingly optimistic complex, high-tech affair. Reports from the Royal Commissions followed. Stephen Hughes recalled RCAHMW's achievements over the last 15 years, while Miles Oglethorpe of RCAHMS, who is the new TICCIH representative, talked mostly on TICCIH's recent Russian conference and plans for the future. Finally Paul Saulter spoke about the forthcoming 2004 AIA trip to Catalonia.

In the afternoon, a choice of three visits offered Rhondda Heritage Park (Lewis Merthyr) and Hetty Pit winding engine, which is partly restored; Newport docks and the restored Transporter Bridge (graphically illustrated in Falcon Hildred's award-winning book); or an expedition to the heart of Richard Crawshay's iron empire at Merthyr Tydfil, including surviving blast furnaces overlooked by Cyfarthfa Castle, now a museum.

Alan Pugh, Welsh Assembly minister for sport, culture and the languages of Wales, gave a brief speech at that evening's annual conference dinner held at the Cyncoed Campus. More members' contributions followed, with Brian Davis showing a video of the 1825 Hetty steam winder running slowly on compressed air. Robert Vogel from Washington DC showed an



AIA delegates with Tower Colliery Chairman Tyrone O'Sullivan  
Photo: M Harrison



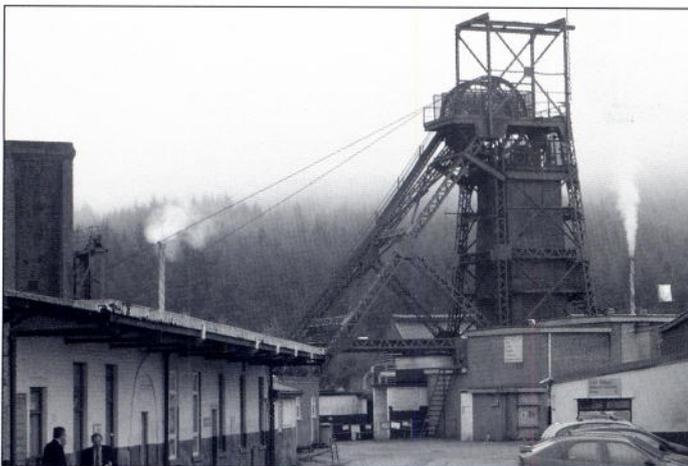
The Melingriffith water pump

Photo: M Harrison

### COVER PICTURE

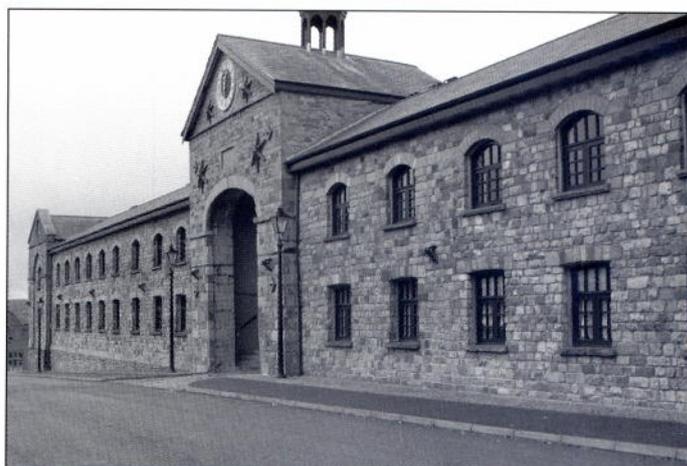
*Big Pit, Blaenavon, was a popular visit on the Cardiff Conference (see report)*

Photo: M. Harrison



*Tower Colliery is the last deep coal mine in South Wales*

*Photo: M Harrison*



*The former stables of the Dowlais Ironworks*

*Photo: M Harrison*



*The impressive length of the derelict Treforest tinplate works*

*Photo: M Harrison*



*Hetty Pit Colliery*

*Photo: Steve Dewhirst*



*Examining the engine at Hetty Pit*

*Photo: Steve Dewhirst*



*The Llanwern Zodiac galvanising plant*

*Photo: Steve Dewhirst*

atmospheric video of beehive coke ovens in full production at Bretz, Appalachia, during 1973, probably the last to operate in the world, to supply the Pittsburgh blast furnaces. Lastly, Tony Parkes showed slides of the rebuilding of a 16-foot backshot waterwheel near Betws y Coed for the National Trust.

Sunday morning saw the AGM, followed by the presentation of the Recording, Initiative and Student Awards and the Publications Awards (see separate reports). Then David de Haan delivered the Rolt Lecture on how research on the Iron Bridge has revealed how it was erected with its

individually tailored components. He showed a wonderful computer simulation of it coming apart and going together, with the pieces swirling about to be viewed from every angle!

There were again three choices for Sunday's field trips: underground at Big Pit, Blaenavon; Barry Island and the Vale of Glamorgan Railway; or the Melingriffith water pump, Nantgarw Pottery and the derelict Treforest tinplate works (this last outing attracted 50 takers on a 49-seater bus; standing was banned, so the last one on had to travel in the loo!). After dinner Steve Rowson spoke on the Glamorganshire Canal,

which climbed 106 feet by 16 very steep double locks and was the destination of the Penydarren tramroad on which Trevithick's 1804 locomotive was tried. The second lecturer Michael Davies spoke on the work of a conservation architect, concentrating on the dismantling and rebuilding of an unusual bottle kiln of 1840-50 at Nantgarw.

Monday marked the start of the all-day excursions, and amazingly the fine weather persisted. Two trips were on offer. The first started at the remains of Cefn Cribw charcoal-fired ironworks, followed by Tondy ironworks, a scheduled ancient monument at the centre of a



Whatever did the neighbours think? AIA enthusiasts inspecting copper slag building blocks at Chepstow  
Photo: Helena Wright



A close examination of a Victorian gun emplacement on Flat Holm

Photo: Peter Stanier



Cardiff docks hydraulic swingbridge

Photo: Steve Miles



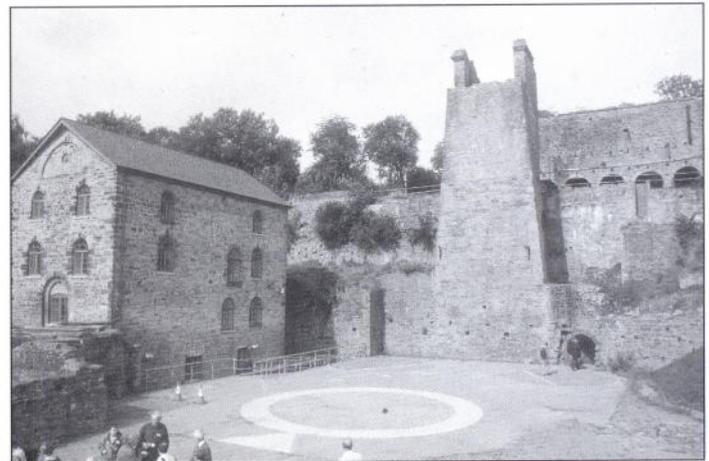
Fog warning station, Flat Holm

Photo: Steve Miles



The 1826 Rumney railway viaduct at Bassaleg

Photo: Rodney Hall



Visiting the Tondy ironworks

Photo: Steve Miles

park which is being gradually excavated and restored. The remains of a hundred beehive coke ovens were viewed. The coach went to Barry where some of the party took a 40-minute sea crossing to Flat Holm island, an SSSI possessing a derelict cholera hospital, a lighthouse, a powerful diesel-driven foghorn, a limekiln, 1866 Moncrieff gun positions and Second World War battery installations.

The other trip investigated Blaenavon, with Big Pit, the North Street ironworks where the basic steel-making process was invented (it shut

at the start of the twentieth century), and the early to mid-Victorian town (all company-owned shops, farm, hospital, church and houses) with little built after 1870. We all assembled in the evening at the Museum of Welsh Life at St Fagans for a tour and a buffet in the Oakdale Institute.

Tuesday offered Cardiff docks or coastal Gwent. The Cardiff visit started with a conducted tour of the beautifully restored 1861 bonded warehouse overlooking Bute East Dock. Gwyn Mcguire was our escort for a tour of the dock areas, including the 1904 hydraulic swing bridge

and the pumping house that works the sea lock (46 feet tidal rise and fall here). Then the barrage, where lock 2 was activated and the bridge raised for our benefit. A walkabout included the Hellwick lightship and the impressive interior of the 1883 coal exchange (now a night club) in Mount Stewart Square. The lunch venue was Brain's Brewery, where all present were astonished to find that drinking was strictly 'verboden' until the short conducted tour was over! Warehouses and the 1887 maltings were seen later.



Hetty Pit winding engine

Photo: Tony Killick



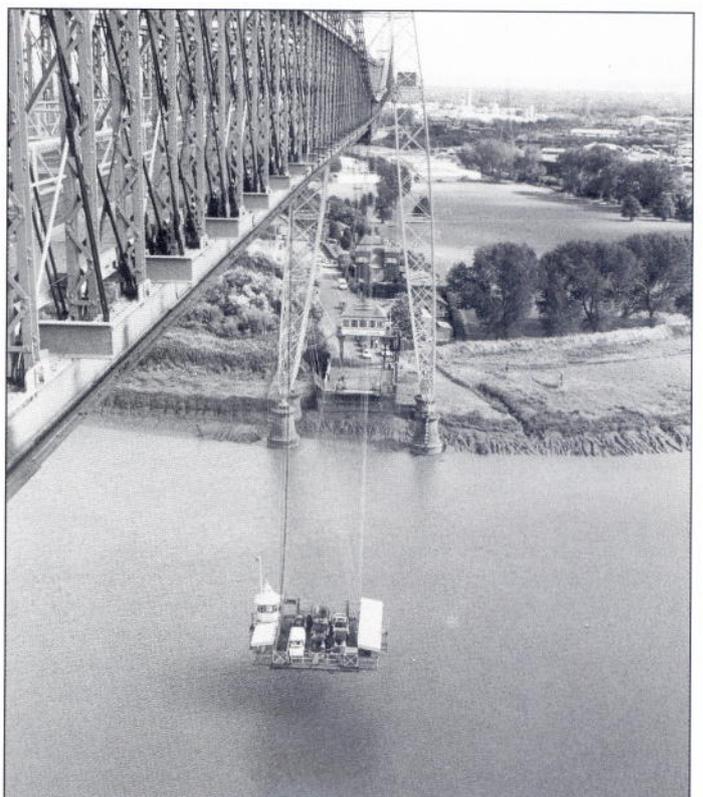
No trespassing on this railway, except for AIA

Photo: Bruce Hedge



Michael Messenger demonstrates the little-known Welsh sport of underground Frisbee-throwing

Photo: N Jopson



The precarious-looking gondola seen from the top of the Newport Transporter Bridge

Photo: Bruce Hedge

Coastal Gwent took delegates to the Zodiac galvanising plant (strip for the car industry) at Llanwern, the Severn Tunnel pumping station at Sudbrook, Portskewett pier (used by steamers before the tunnel was bored), and the main sites in the former frontier town of Chepstow. That evening Robin Williams again entertained us, this time with the restoration of the Melingriffith water pump in 1974-89 entirely by amateurs. After being handed over to the city of Cardiff it has been the subject of careful neglect ever since! Then followed a medley of assorted IA films which were frankly hilarious. The various subjects included tests showing what happens when huge currents pass through copper strip, the Ebbw Vale steelworks, construction of the Margam hot strip mill, high jinks at the opening of the Hoover factory, the last active steam winder in Wales, and a solid fuel heating system at Llandaff cathedral.

On the penultimate day field trips were offered to the upper Taff valley or the eastern valleys from Pontypool to the Usk valley. The Taff outing started at Abercanaid village, then via the superb 1866 Cefn viaduct at Merthyr passing Penydarren and on to Dowlais where the Bessemer Hotel laid on easily the best food of the week. Then half the party visited the National Museum of Wales' store while the other half toured the GE aircraft works (this party had to endure an hour-long brainwashing spiel from an American executive on what a wonderful company GE is!). While it drizzled in Dowlais, the eastern valleys trip enjoyed fine weather and a climb of 1,000 feet afforded splendid panoramic views. At Crumlin the Navigation Colliery is the best preserved colliery complex in South Wales, residing beside the last vestiges of the famous viaduct demolished in 1968. Then, from Cwmavon to Blaenavon, finishing with sites on the Brecon & Abergavenny Canal.

In the last evening's lectures Jeff Morgan took us to the Barry Railway (with a lot of the late Ray Bowen's slides), then Bob Trett described the finding on a Newport building site of the only known and almost complete fifteenth-century ship (dated by dendrochronology to 1465-6) ever found in

Europe. It is now receiving the *Mary Rose* treatment in a nearby warehouse.

The final day saw the choice of Rhymney valley or Rhondda valley for the last remaining deep colliery at Hirwaun. The Rhymney trip had the best of the weather and included Tredegar and Sirhowy. Sites included the Powell Duffryn complex at Penallta, presently being opencasted prior to building development, and Rhymney town and works where 5,000 people mined coal and made iron and bricks. Lunch was taken at the Farmers Arms, previously the Rhymney brewery taproom. Meanwhile, the coach to the Rhondda valley chugged gently upwards through ever-thickening mist. Views were non-existent, drizzle persisting until lunchtime. At Tower Colliery we were treated to a guided tour of the washing and grading plant, followed by a substantial lunch in the miners' canteen. Tyrone O'Sullivan, the chairman, next conducted us around the surface buildings. In 1993-4 the pit was purchased from British Coal by the workers for £12 million. It is 139 years old and contains reserves for the next ten years. The coach returned to Cardiff via Aberdare.

So ended a memorable annual conference, thanks to the hard works of Michael Messenger and Terry Evans, with stalwart support from the Oxford House Industrial History Society. We look forward to the 2004 conference at Hatfield at the earlier dates of 13 to 19 August.

# Industrial Landscapes: Research, Recording and Regeneration

*The annual research seminar took place at the Cardiff conference on Friday 5 September 2003. The theme chosen was industrial landscapes, as being particularly appropriate to Wales. The papers given in the morning session dealt with case studies in England, while the afternoon was devoted to Wales itself.*

Marilyn Palmer & Peter Neaverson

The first of the morning papers was given by Amber Patrick, who advises English Heritage on maltings and breweries. Her case study was the several Mistley maltings on the Essex bank of the River Stour, which was dominated throughout the twentieth century by at least 16 large, industrial-scale, maltings. The first malting was built in 1806 and the last in the early 1900s. By the last quarter of the twentieth century, all but one had ceased to be used for their original purpose and Amber considered the fate of the 14 maltings which survived into the 1990s. She made the point, which was echoed throughout the seminar, that all too often adaptive re-use or demolition precedes rather than follows detailed research.

This was a theme also taken up by Dr Michael Nevell, the Director of the University of Manchester Archaeology Unit. He considered the current regeneration of the Park Bridge Ironworks, an extensive industrial landscape in the Medlock Valley 10 km east of Manchester. In the last four years, UMAU have studied the remains which include not only the nineteenth-century wrought ironworks, but also its associated community, transport network and coal mines. Each of these features has had a different effect on the landscape since the opening of the first colliery in the area in the 1760s. A programme of landscape reclamation and display of the industrial structures has been underway since 1975, producing what amounts to a newly re-worked landscape. His paper explored the tensions between this heritage work and the main types of archaeological landscape in the area, posing the question to whom the landscape belongs now.

Two other papers dealt with the problems of regeneration in London. Dr Mary Mills, an industrial historian, discussed changes on the Greenwich Peninsula from a managed marshland to an area of heavy industry, served by river transport and fuelled by coal. She considered how the area was influenced by its proximity to both the City and the Port of London. Using a wealth of archive illustrations, she charted the heyday and decline of industry on the peninsula and concluded by asking if the Dome is in effect part of a new industrial landscape?

Catherine Cavanagh, an Archaeology Adviser to English Heritage for seven London Boroughs, made use of recent successful cases in London to illustrate that assessment of existing industrial buildings can have a positive influence on designs for redevelopment. She also examined cases where opportunities have been missed due to

inadequate use of existing planning guidance, and argued that there is a need to raise awareness in order to empower heritage professionals to use the tools at their disposal, especially for buildings afforded no statutory protection. Her positive attitude to the conservation of industrial remains was warmly welcomed by the delegates.

David Thomas of RCAHMW began the afternoon with a superb presentation of the GIS-based Blaenavon Landscape Project. The Commission has recorded the extensive industrial remains surrounding the town using a combination of air-photo rectification and historic map transcription. The use of this information in a GIS environment has produced a dynamic resource that can not only be used as an information base for the future management of the World Heritage Site, but also as an educational tool to raise public and professional awareness of the extent of the archaeological remains and their importance.

Stephen Hughes, Head of Survey at RCAHMW, next considered the recent Uplands Archaeology Initiative in Wales. The combination of intensive field survey, aerial photography and documentary research has demonstrated the longevity of many upland industrial sites, even their international importance in the prehistoric period. He emphasised the importance of social archaeology associated with industrial sites and settlements, together with the hitherto unrecognised class of local artisan engineers who had pioneered innovations in technology. To use this heritage as a motor for regeneration, landscape 'portals' are being developed with networks of foot and cycle ways furnished with strategically placed information boards.

Two other papers dealt with case studies in North Wales. David Gwyn, of the Govannon Consultancy, entitled his paper 'Going nowhere: post-industrial regeneration in a cold climate – the experience of the Nantlle valley'. He argued that the forces for change are not yet sufficiently powerful in this major quarrying landscape, and discussed the reasons why this might be the case. The Nantlle valley includes the important Dorothea engine house, now deteriorated following an earlier restoration, together with the remains of aerial ropeways. He concluded that the isolation of the area and heritage attractions on the north coast were partly responsible for this neglect, but hoped that the trend would reverse before this important industrial landscape was destroyed.

By contrast, the paper given by Falcon Hildred dealt with his efforts to record industrial landscapes by means of watercolour drawings. Following various commissions such as a detailed recording of the Newport Transporter Bridge, he had devoted his efforts to delineating the important landscape of Blaenau Ffestiniog, the hole in the middle of the Snowdonia National Park. This area of about 11 square miles includes over 21 quarries with the remains of tramways,

inclines, dams, mills, tips and so on. It is one of the richest concentrations of industrial remains in Britain and was included in the National Register of Historic Landscapes in 1998. His purpose was to produce an accurate record as well as an artistic statement, before further developments threaten the visual and cultural integrity of this community. His evocative drawings capture the atmosphere of 'the hole in the park'.

The National Trust cares for a wide range of properties in Wales which include several important industrial landscapes. The two final papers in the seminar were given by the Trust's two chief archaeologists in Wales. Emma Plunkett-Dillon discussed the research strategy being devised for the important property of Dolaucothi gold mine, where evidence remains for mining from the Roman period until the nineteenth century. She stressed the importance of the Trust's links with Europe, which had enabled the interpretation of this site to be set in an international context for the Roman period. A comprehensive survey had now been undertaken and limited excavation carried out, but much still remains to be learned about Dolaucothi.

John Latham described how the National Trust had found itself, by accident rather than design, the owner of a range of small-scale mineral extraction sites in Snowdonia. These include several highly significant copper mines, a complete slate quarry and a gold mine. The hastily built and perfunctory structures were now a serious challenge for the conservator as well as raising health and safety issues. Other industrial sites in North Wales had already been acquired over the years including a flannel mill, a water-powered saw mill, a corn mill and an aerial ropeway. However, the limited resources available to the Trust presented it with considerable difficulties in doing remedial work at remote locations.

The seminar illuminated the problems of research, recording and regeneration on industrial sites. In the current economic climate, regeneration frequently preceded the necessary research and recording for a proper understanding of these sites. This shortcoming can be remedied by both volunteers and professionals, and members of AIA were encouraged to continue the already valuable research and recording work they carry out but to ensure that their results are made available to those professionally engaged in regeneration schemes. The organisers are grateful to all those speakers who gave their time to participate in another valuable and informative seminar.

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# A summer conference in Montréal

*The 2003 annual Conference of the USA-based Society for Industrial Archeology was held in Montréal, Québec, Canada, on 29 May – 2 June. This article describes impressions of the Conference and the industrial archaeology of Montréal. The author was the only delegate from Britain.*

Roger N. Holden

The conference was accommodated in two hotels, with the Saturday paper sessions held in the nearby DeSève building of the Université de Québec à Montréal. The Thursday evening opening reception was held at L'École de Technologie Supérieure, an outpost of the University four stops away on the Métro. A commendable feature of the Conference was the way that the Métro was used for visiting sites where possible.

Some 80% of the 189 delegates were from the USA, the remainder from Canada except for one (the author) from the UK and one from Belgium. Those from the USA had a sharp reminder that they were in a foreign country at the Thursday opening reception when we were welcomed in French by the three persons representing the City of Montréal, the Province of Québec and the Federal Government of Canada, in the guise of Parks Canada. However, the following lecture by Joanne Burgess on the industrial development of Montréal was in English. This lecture admirably outlined the industrial development of the city and put into context much of what we were to see and hear about during the conference. Most of the papers on Saturday related to Montréal, and were given in French with simultaneous translation, although one of the parallel sessions constituted the 20th Annual Historic Bridge Symposium.

The 'Show & Tell' session, the equivalent of the AIA's Member's Contributions, occupied Friday evening. For those arriving early there were visits on Thursday afternoon, while visits occupied the full day on Friday and Sunday, with further visits on Monday for those staying on. The only disappointment was that, because of difficulties with insurance, our transport to the Canadian Railway Museum at Saint-Constant on Saturday evening, for dinner and a viewing of the Museum's large collection, was by bus and not special train as originally planned.

Apart from being an advantageous place for locating a settlement, Montréal owes its existence to transport reasons. The Lachine Rapids made it the highest point up the St. Lawrence navigable by ocean-going ships. Thus in the eighteenth century Montréal developed as a centre for the fur trade. In 1825 the Lachine Canal was opened which bypassed the Rapids and enabled navigation further up the St. Lawrence. This canal was enlarged twice in the next 60 years to continue accommodating the largest ships. However, the importance of the Lachine Canal goes beyond its value as a



*Silo No. 5, Port of Montréal: a major conservation problem seen on the 2003 SIA Conference*

*Photo: Roger N Holden*

transport route since it also supplied water power to industry located along its banks, thus transforming Montréal into Canada's major industrial city in the nineteenth century. Later, much of the industry adopted steam power as well, but usage of water for power continued until well into the twentieth century.

The coming of the railways enhanced Montréal's position as a transport centre. The Grand Trunk linked via southern Ontario to Chicago while the Canadian Pacific made its way right across Canada to Vancouver. These railways fed the port of Montréal and huge grain silos were constructed for the grain trade to Great Britain. Both the Canadian Pacific and Canadian National Railways made their headquarters in Montréal and the Canadian Pacific's huge Angus Shops were a major presence in the city.

However, in the last 50 years all has changed and Montréal is no longer an industrial centre. A major change came with the opening of the St. Lawrence Seaway in 1959 which made the Lachine Canal redundant and it closed to navigation in 1970. Most of the industries which lined its banks have now closed. Although the Canadian Pacific Railway still serves Montréal, its Angus Shops have gone and it has moved its headquarters west to Calgary. The grain trade has gone and while most of the silos have been demolished, the massive No.5 silo still stands; its historical and landscape significance are recognised but finding alternative uses for such a structure is difficult while the costs and difficulties of demolition are phenomenal.

The Lachine Canal has been more fortunate. Initially its value was seen as a recreational route



*Rivière-des-Prairies Hydro-Electric Generating Station, Laval, Québec*

*Photo: Roger N Holden*

and some work was done to enhance its role in this respect without taking adequate account of its historical significance. However, now under the care of Parks Canada, its historical significance is recognised and the restoration to navigation for small craft in 2002 has taken account of historical structures such as bridges. The Lachine Canal is now Montréal's equivalent of London Docklands or Salford Quays, a waterfront location for expensive residences and offices. There is much new building but some surviving historic structures have been, or are being, converted for these purposes, such as the Redpath Sugar Refinery, the Belding-Corticelli Silk Mill and the Merchant's Cotton Mill. The Lachine Canal formed a major theme of the conference, with two sessions on Saturday morning devoted to papers on its history and restoration while at other times visits to the canal and a boat trip were on offer.

Another theme of the Conference was water power. The water resources of Québec are such that many industries in the nineteenth century were driven by water turbines, while the potential for hydro-electric power generation was rapidly exploited. Today, the majority of electric power in Québec comes from hydro-electric power stations, some of which date back to the 1920s and 1930s and have been designated as historic sites. There were opportunities to visit the Beauharnois Power Station with installed capacity of 1672MW and the much smaller Rivière-des-Prairies Power Station with only 45MW. Also visited were the works of GE Hydro who manufacture turbines and generators for hydro-electric plant around the world. On a smaller scale one tour visited the Ulverton Woollen Mill, a small rural water-powered mill which has been restored as the major museum in Canada for the woollen industry, although the American-made machinery in the mill is not original to the site. With such an abundance of water power it is perhaps surprising that there were any windmills at all in this area, but there were. The Fleming tower windmill in LaSalle has been restored externally although no internal machinery remains, the interior simply being used as exhibition space.



Ulverton Woollen Mill, near Drummondville, Québec

Photo: Roger N Holden

Overall, the conference had similar ingredients to the AIA Conferences and the interests of industrial archaeologists, and the challenges facing them, are similar to those on this side of the Atlantic. But there is a greater interest in the Twentieth Century than there is in Britain – perhaps this is simply a reflection of what there is. Also, at least in Montréal, professional archaeologists have a great involvement with industrial archaeology. For example, between 1988 and 1992, archaeologists conducted a survey to prepare an inventory of Montréal's streets, covering public utilities such as sewers, gas and electricity. More recently they have investigated the William Collector Sewer, Montréal's oldest sewer which was taken out of use in the early 1990's. Along the Lachine Canal corridor archaeologists have been active in preparing inventories and have shown no qualms about excavating nineteenth and early twentieth century remains. The cynics might of course point

out that this is because they have nothing else, there were no Romans in Canada!

To the British, projects like the Lachine Canal appear to be 'top down' projects driven by Government-employed professionals on the European model without involvement from amateur enthusiast groups. Some of the talks given by the professionals were replete with 'in' phrases like 'sustainable development' and 'stakeholders' (which must be the same in French). But conversely, Québec is home to the only regional association in Canada, L'Association Québécoise pour le Patrimoine Industriel, which embraces amateur enthusiasts as well as professionals and was involved with the planning and running of the conference. Elsewhere in Canada it appears that the subject of industrial archaeology is represented solely by the scattered Canadian membership of the SIA.

Next year the SIA is back on home ground in Providence, Rhode Island, from 10-13 June 2004.

## News from Upper Cwmtwswg

Dear Mr Editor

So where were you? We got in six barrels of beer special for you, a nice bitter, a strong ale and a barrel of dark. The committee had to drink it all themselves – took us a whole evening. And the sandwiches . . . they're everywhere. Never mind, though, I'm putting the sandwiches in the fridge so they'll be handy if you come next year.

Here's hoping

*Jones the brush*

## TICCIH 2003: Russia

Following the last full conference of The International Committee for the Conservation of the Industrial Heritage (TICCIH) in the UK in 2000, TICCIH 2003 was held in Russia in July. As was the case with London, the registration and accommodation costs were prohibitively high for some, but over 100 delegates from all over the world were able to attend. The conference was based in two areas, commencing in Moscow, and then travelling by air to the Urals.

Miles Oglethorpe & Stephen Hughes

There is little doubt that many delegates, especially those from the west, had been intimidated by pages of guidebook warnings about the many hazards awaiting them in the former Soviet Union. In reality, the conference could not have been more different, and for most delegates, everything worked smoothly. For those who had braved scary internal flights with dismembered parts of Aeroflot ten years previously, the Ural Airlines flights to and from Ekaterinburg were a relief and a revelation, and the hospitality, particularly in Nizhny Tagil, was wonderful.

The conference commenced in Moscow with introductory sessions and an evening reception held on a boat cruising the Moscow River. Subsequent tours took in sites including an amazing parabolic steel transmitter tower, a museum of water supply, a mid-nineteenth century chocolate factory, a textile mill complex undergoing conversion, and a brewery. However, for many delegates, the highlight was a midnight tour of the Moscow Metro under the guidance of Dr Natalia Dushkina of The Moscow Institute of Architecture.

On arrival in Ekaterinburg (Russia's third city after Moscow and St Petersburg), delegates found themselves just inside Asia. The first night's accommodation was in Hotel Iset, built originally in 1933 to accommodate KGB officials, and a classic example of Soviet Constructionist architecture. There followed a full programme of papers and visits. These included the blast furnace at Polevskoy, museums in Ekaterinburg, and mines and quarries, some of which had replaced an entire Ural with a huge hole in the ground. Indeed, the immense mineral resources of the region soon became apparent, as did the wealth of its industrial heritage. A lot of information on the region is now available in English on the web ([www.usaaa.ru/Industrial\\_Urals/english/index.htm](http://www.usaaa.ru/Industrial_Urals/english/index.htm)).

On the way to Nizhny Tagil, the opportunity was taken to visit Neviansk, a metallurgical centre which owes its origins to the entrepreneurial Demidov family. Surviving remains include an extraordinary leaning tower incorporating an early eighteenth century wrought- and cast-iron structure. In Nizhny Tagil itself there were visits to the local preserved iron works, and trips to the surrounding area including Visim, and to Kushva, where the spectacular



TICCIH delegates in one of the outstanding stations of the Moscow Metro

Photo: Miles Oglethorpe

remains of the old ironworks have been successfully preserved.

In the final session of the conference, the TICCIH General Assembly approved the *TICCIH Charter for the Identification and Protection of the Industrial Heritage*, agreeing to refer to it as the 'Nizhny Tagil Charter', much to the delight of the Mayor. This will now be sent for ratification by ICOMOS prior to being presented for approval by UNESCO. In addition, a motion tabled by Sir Neil Cossons proposed that TICCIH writes to the Russian Ministry of Culture urging that the current level of statutory protection applied to the best Moscow Metro stations is upgraded to highest national level, and this was unanimously accepted. Finally, there was just time for Dr Maria Teresa Pontois to demonstrate a new DVD Rom, *Les "dinosaures" du patrimoine industriel: le gigantesque et l'encombrant, sont-ils réutilisables?*, produced by TICCIH with the assistance of the EU's Culture 2000 programme. The conference concluded with a surreal 'moonlight' reception in the Nizhny Tagil Metallurgical Works Museum.

The post-conference programme tour extended the time delegates could spend around the extraordinary number (some 200) of internationally significant early eighteenth-century metals works in the Urals which are some of the first in the world to be planned and built with multiple (roofed) blast-furnaces.

First was a stop at Suksun, which like Kizim, was yet another of the Russian grid-iron metals works settlements planned around a long water-power reservoir with still inhabited rows of workers' log-cabins. This was set among the surrounding unplanned villages of the earlier indigenous peoples who have long lived in clearings among the immense and endless forest. The coach coasted along the earth dam of the lake above the usual ruined group of nineteenth and twentieth century metals works buildings that had succeeded the original works. At this point we were informed that the works manager's house (latterly the metal works

museum) had recently burnt down and we would not be able to stop at this site – a sign of things to come.

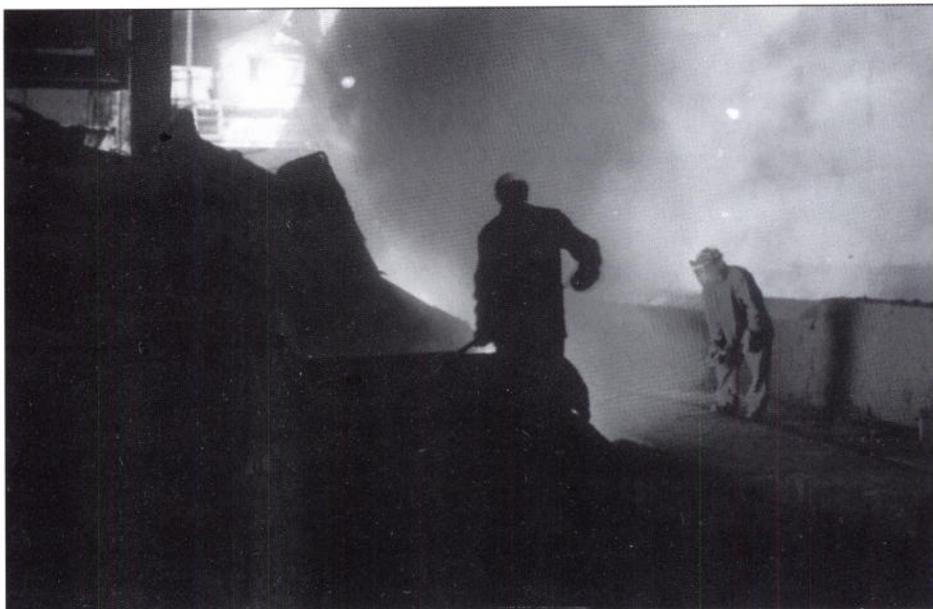
The journey continued to Kungur, a tea-trading town founded on a navigable river in 1663. Some of the several Orthodox Monasteries were being re-used as workshops but peeling brick-cladding revealed that some buildings were also large log-cabins as were the neighbouring two-storey houses of the former merchant community. One early twentieth-century log-cabin had been built with a wonderful Art Nouveau fascia. The brick-built cathedral was being restored: we saw no less than four newly and completely replicated Orthodox Cathedrals on the tour, one of 1824 (at Nevyansk) with a floor of cast-iron slabs and another which had blocked the exit from Red Square and the possibility of future militaristic parades.

Next day we visited Chusovoi Metals Works founded in 1879. Here was the remarkable survival of a large steelworks mill with the intense heat of flaring Bessemer Converters and operating open-hearth steel furnaces set among the gnome tableaux and cut lawns (the only ones we saw in Russia) of the annual works garden competition! A visit to the Chusovaya River Open-air Museum (a private enterprise) allowed a much-awaited opportunity to see inside some of the thousands of workers' log cabins that are still the standard accommodation in suburbs and villages. The town cores consist of Stalinist and later apartment blocks encircled with above-ground district heating pipes. The log cabins are approached through the ubiquitous potato and cabbage patches flanked by the huge firewood stacks to enable the inhabitants to survive the fierce seven-month winter. The living-quarters of the more rural log longhouses are entered through linked cow-houses. A door from the cow-house leads into a large summer living-room but the winter living-room beyond conveys the full harshness of conditions with a 'living-corridor' encircling the huge stove, flanked by bunk-beds for the children with the parents' bed actually

formed by the long flat roof of the stove. In front and plumbed into the stove sits the ubiquitous Samovar for preparing the much-needed cups of hot tea.

The last day was spent around the riverside city of Solikamsk, in whose hinterland lay one of the historic saltmaking centres of Russia. By the 1690s there were 249 saltworks here producing 70% of the Russian output and by the end of the nineteenth century Russia became one of the world's largest producers of food salt. This wealth allowed the construction of no less than 18 churches and cathedrals on the riverside and these presented a remarkable site with gaps left by the disappearance of the workers' log-cabins that had been replaced by one or two concrete apartment blocks. The sole secular building surviving was a seventeenth-century merchant's house with brick vaults and wrought-iron ties much like that of the remarkable English Merchants Court surviving in Moscow.

Nearby was one of the most remarkable industrial monuments we saw on the whole trip, and this Ust-Borovsky Saltworks (1878) had itself been nominated for the Russian tentative World Heritage List. Tall log-built towers stood over the salt brine wells with all their equipment intact and flanked by rows of pyramidally roofed log-built furnace chambers that held the remains of great iron furnace-pans. Unfortunately, on the riverbank lay the large profusely smouldering remains of one of the great riverside salt-warehouses, also of timber. A fire had been



Bessemer converter in action

Photo: Richard Williams

started deliberately, in three separate places, on the day before the TICCIH visit. Two enquiries had been received in recent months from entrepreneurs wishing to purchase part of the picturesque riverside works area for upmarket housing! Russia is a land in a state of considerable transition. TICCIH delegates were finally treated to a trip down the huge potassium saltmines nearby.

This was an immensely successful conference, and it is pleasing to be able to report that several more TICCIH conferences are in the pipeline, details of which will be published in future issues of IA News, and on the TICCIH website (<http://www.mnactec.com/ticcih/>). Also, in the light of the high cost of the last two conferences, attempts will be made to make future events more affordable.

## FIELDWORK AND RECORDING AWARDS 2003

The six entries for this year's awards were as diverse as usual, providing a challenge for the judges Keith Falconer (English Heritage), Amber Patrick (AIA) and Mike Nevell (University of Manchester Archaeology Unit), to whom the Association offers its thanks for their time and effort which makes this award possible.

The Main Award was given to *The Historical Archaeology of the Sheffield Cutlery and Tableware Industry 1750-1900* edited by James Symonds of ARCUS, University of Sheffield. The book contains an overview of the cutlery and tableware industries, previous literature printed on the subject and comparisons with other European cities, also known for their cutlery trades, such as Thiers (France) and Solingen (Germany). There follows a detailed description of the organization of the cutlery trades within Sheffield, the role of the Cutlers Company and the Unions, the processes of manufacture of knives, forks and spoons and a description of working practices. The final is dedicated to the buildings of the cutlery industry, looking at the town's development, the growth of the industry and the role of architects (or not!) in designing the buildings. There is also an analysis of what remains in the archaeological record of the industry, externally (windows in particular were characteristic) and internally (most of the articles used in the manufacture of cutlery have long since disappeared). Finally some attempt has

been made in assessing what the layout of a building can tell us about working practices; big buildings do not always mean an integrated firm. It is hoped that this volume will serve as an introduction to 'the historical archaeology of the Sheffield cutlery and tableware industry' and that future volumes will explore 'the above and below ground archaeology of Sheffield's industrial buildings'. (Copies of the book can be purchased by contacting Anna Badcock, ARCUS, Graduate School of Archaeology, Westcourt, 2 Mappin St, Sheffield S1 4DT a.badcock@sheffield.ac.uk at a cost of £17 plus £2 p&p).

The Initiative Award went to Bernard Champness and Mike Redfern for their survey of *Eva Brothers Crabtree Forge, Clayton*. The object of the survey was to 'record in detail the products, methods and works employed at the end of 2002'. The site is still at work producing small quantities of steel forgings, replacement steel wings and radiators for veteran and vintage vehicles such as Morgans and Bentleys. The report consists of risk assessment forms, a history of the family and firm of Eva Brothers Ltd as well as a description of the site. This is backed-up by 150 photographs of the site and processes employed as well as detailed drawings of the site and machinery. Reports on 'working sites' such as this will aid archaeologists in the future interpret remains of twentieth and early twenty-first century working practices.

The Student Award went to Katherine Levey for '*Learning from Ludlow*'. This undergraduate report focused on the Ludlow tent colony in Colorado, USA, and the excavation carried out by the University of Denver 1998-2001. The tent colony was established when miners were evicted from company-owned towns in 1913 after they went on strike. A massacre at the site in 1914 and the 10-day gun war which followed, known as the Colorado Coal Field War, left many men, women and children dead. It changed corporate policy throughout America towards unionism and 'created new methods of co-operation and communication with their workforces'. The report assessed the finds of the excavation. The fact that some of the tents had cellars and the organized disposal of rubbish point to the fact that the tents were not regarded as a temporary home. It also questions why we should excavate such sites and does historical archaeology actually reveal anything not covered in documents. 'The excavation at Ludlow have given researchers a new perspective on what is happening at this site. The manipulation of landscape and material culture has given insights into social relations between strikers and the company and also within the camp itself'. The report also asked who do we propose to share the information with. At Ludlow a public outreach has helped raise awareness about the site and 'become a form of memory for the archaeologists, local people, the

unionists and the wider group of working class people'.

Other entries received this year were from Philip Marini, one of last year's winners, for 'The Marlborough Oven'. This was an excellent report on a surviving but until now unrecorded 'communal' bread oven. The report gives details of the site, a description of the structure, the type of oven and baking techniques in a brick oven and how it is being conserved. Maps, drawings and photographs also add to the detailed nature of this report.

Derek Pierce, B Burton, N Beattie, and R Bragg of the South Trafford Archaeological Group submitted a report on *Barton Aerodrome*, the first purpose-built civilian airport in Britain. Dating from the 1930s it was built to serve the City of Manchester. After reading of a potential threat to the site in a local paper the group decided to record what remains, including the airport manager's house, hanger, control tower and

runways (grass laid over a cinder base and tested so that each square yard could hold a one-ton weight) dating from 1929-1936. Hanger 1, Buildings A, B and C, air-raid shelters and workshops date to the military occupation of 1937-1950 and two hangers, workshop, clubhouse, visitors centre and sheds date post 1960s. The report contains descriptions, plans, drawings and photographs of all the buildings and site.

The final entry from Liam Bowden (a third-year student) 'Power and Ideology and Leisure - the life of a potter' looked at how 'material expression of power was mediated by class relationships, creating a dominating and overpowering landscape' in the potteries of Stoke-on-Trent. He also looked at how, through leisure pursuits, the working classes could voice an opinion 'using recreation as a vital tool to fight oppression'. The report looked at the social history of the potteries, how the largest potteries

tried to control their workforce through housing, workplace organization and education, and what leisure activities were available to the working classes such as public houses, cock fighting, wakes, public baths and parks. He concludes that 'leisure both manifest and participates in the production and reinforcement of the social order, whilst providing the worker with a sense of history and identity, perhaps easing the pressures of industrial life'.

All the award winners attended the conference dinner and gave brief talks about their work at the annual conference in Cardiff. Entries for next years award should be submitted to the AIA Fieldwork and Recording Awards Officer, School of Archaeological Studies, University of Leicester, Leicester LE1 7RH by 1 MARCH 2004 (note change in date!!!).

Victoria Beauchamp  
Fieldwork and Recording Awards Officer

## AIA NEWS

### A new Secretary

Barry Hood has officially taken over as AIA Secretary from David Alderton. This was confirmed at the AGM in Cardiff. Many thanks for all your hard work over the years, David, but we are sure this isn't the last we see of you!! Miles Oglethorpe, who recently became the UK's TICCIH representative, has been co-opted to Council.

### New members

The AIA welcomes the following new members:

- Mr J. Ambler, Wisborough Green
- Mr P. Belford, Telford
- Mr & Mrs B. Champness, Altrincham
- Mr A. Davison, Sowerby Bridge
- Miss G.E. Edwards, Cardiff
- Dr R.A. Edwards, Wootton Bridge
- Mr A. Garwood, Saffron Walden
- Mr T. Hargreaves, Holmfirth
- Mr K. Harradine, Winsford
- Mr R. Hoy, Ipswich
- Mr R.N. Jopson, Reigate
- Dr & Mrs T.E.L. Langford, Lymington
- Mr P. Lovell, Melbourne, Australia
- Mr C. McGuinness, Dublin, Ireland
- Ms M. McMahon, Dublin, Ireland
- Mr P.D. Marini, Brighton
- Mr N. Marshall, Aberdeen
- Mr M. Oliver, Sittingbourne
- Ms K. Sather, Altrincham
- Miss S.C. Strachan, Buxton
- Mr K. Walsh, Kidderminster
- Mr I. Williams, Bridgend

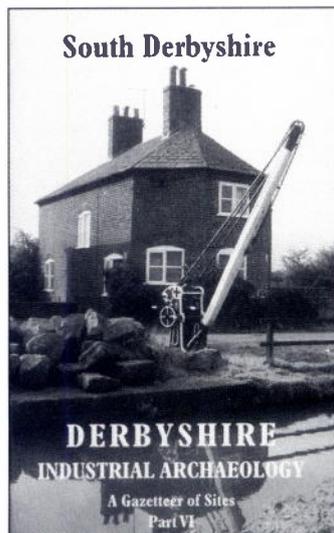
### AIA Publications Awards 2003

The first of the new AIA Publications Awards were announced at the Cardiff Conference on 7 September. The results for 2003 are:

**NEWSLETTERS** (two entries): Winner (£100) *WaterWords* (News from the Waterworks Museum, Hereford), Winter 2002/3.

**JOURNALS** (four entries): Winner (£100) *Journal of the Norfolk Industrial Archaeological Society*, 7/2, 2002.

**OCCASIONAL PUBLICATIONS:** Winner (£100) *A Gazetteer of Sites: Part VI, South Derbyshire*, 2002 (Derbyshire Archaeological Society).



For the three categories of award, a total of only nine entries were received from seven affiliated societies or organisations. The Awards scheme aims to encourage good practice in societies' publications and it is hoped that more entries will be submitted in the future if the competition is to continue.

For further information and application forms for the next Publications Awards and Essay Prize please contact AIA Liaison Officer, Department of Archaeology, University of Leicester LE1 7RH, e-mail: AIA@le.ac.uk

### Dorothea foils AIA 'experts' for charity

Geoff Wallis of Dorothea Restorations displayed an unusual object at the Cardiff conference. Delegates were requested to make a small donation and suggest its possible use. Publishable ideas recorded include a machine for cleaning potatoes, making ice-cream, candy-floss or illicit whisky. Alternatively, it may have been for grinding smoke, panning gold, coating chocolate peanuts or selecting lottery balls pre-Camelot. The most popular, and hence least likely suggestion, was for making Welsh dragon pâté. Rather less interestingly, it is rumoured actually to be a grain washer saved from a flour mill in the Portuguese Alentejo region before the building's

demolition. Many thanks to the generous delegates who made 'guesses' and donated £40 to the Bulgarian Partners Trust for their project to assist the poorest and most vulnerable in Sofia, Bulgaria.

### Visit the AIA website

Not everything gets reported in *IA News*, so please visit the AIA website for the latest information on conferences, etc. Sections include Abstracts and Subject Index of *Industrial Archaeology Review*, Conferences, Diary Dates, Awards and Prizes, Officers and Contacts, Affiliated Societies and Links. [www.industrial-archaeology.org.uk](http://www.industrial-archaeology.org.uk).



Conference delegates puzzle over a mystery object for charity  
Photo: Dorothea Restorations Ltd

## Enfield and the Lea Valley

The annual AIA Conference planned for August 2004 will be based at the University of Hertfordshire, Hatfield, and cover the County of Hertfordshire and the Lea Valley from its source north of Luton as far south as Three Mills, the tide mill in London. In London the Lea passes by the Borough of Enfield and as a foretaste here are a few bare facts about the industrial past of the area.

In 1816 George Lovell (1789-1854) storekeeper at the Royal Small Arms manufactory (RSAF), Enfield Lock, introduced a method of weapons inspection which paved the way for RSAF to become the first factory in Britain to achieve genuine mass production by means of interchangeable parts. The famous Lee-Enfield magazine rifle was designed by James Paris Lee (1831-1904) and manufactured at the RSAF. It was used by Allied forces throughout both World Wars.

In 1886 Joseph Swan (1828-1914) moved his factory from North East England and Edison and Swan opened their factory in Ponders End, starting Enfield's long association with the electrical industries. The work of Sir Joseph Swan on materials for filaments for the incandescent electric light led to the discovery of the first man-made fibre, which was called artificial silk.

The vacuum flask was invented by Sir James Dewar (1842-1923) at the factory and laboratories of the former Ediswan Company, Ponders End. In 1904 the electronic diode valve was invented by Professor Ambrose Fleming (1849-1945), also in Ponders End.

The opening of Brimsdown power station in 1906 providing cheap electricity boosted factory construction in the area. Enfield became one of the world's most important areas for technological innovation.

In 1912 Charles Belling (1884-1965) patented the idea of winding a resistive wire on a fireclay former to produce the infrared electric fire bar. His first business premises were in a small building behind the Hop Poles public house in Lancaster Road. The world's first wire television distribution system was developed by Belling and Lee, first at Queensway and later the Great Cambridge Road. Edgar Morton Lee (1902-72) formed Belling and Lee in

1922 and the firm was responsible for many innovations in electrical and electronic engineering.

The well-known 'M K' (or Multi Kontakt) system of electric plugs and sockets for domestic use was invented by Charles Arnold (1885-1969). He began his business, Barrett & Sons, in Park Road Edmonton. Pulse Code Modulation, an early form of digital communication was invented by Alec Reeves (1902-1971) who worked for Standard Telephones and Cables Ltd at Southgate. Thorn EMI Furguson based in Enfield and Harringey developed the first solid-state television receiver in 1967. They also introduced the Halogen Cooker, a method of 'cooking by light', in the 1980s.

Economic recession hit Enfield in the 1970s and '80s and thousands of engineering jobs were lost. Many firms with a proud heritage were forced to leave the Borough. However, new developments such as the Innova Business and Science Park, Enfield Lock, once again provide a haven for a new generation of innovative businesses.

If many of the above industrial achievements are too recent for some readers, mention might be made of the New River, a water supply conduit built to carry drinking water from springs in Hertfordshire to the City of London. First opened in 1613, this great work largely came into being through the promotional efforts of Sir Hugh Myddleton (1555-1631). He lived at Bush Hill House, the present site of Halliwick Gate, Cunard Close. Since Sir Hugh's time the New River has been repeatedly modified and improved and much of it remains to this day.

Other notables associated with Enfield are the computer pioneer Charles Babbage (1792-1871) who went to school in Baker Street, Enfield, and Sir Joseph Bazalgette (1819-1891) the civil engineer responsible for the main drainage of London, and other places. Bazalgette was born at Clay Hill, Enfield.

*Robert Carr*

### 'Prince Consort' in steam

On 1 September the Prince of Wales opened the steam valve to drive the beam engine 'Prince Consort' at

Crossness in South London for the first time since the 1950s. A similar ceremony took place when the original engine was started by a predecessor of the Prince in April 1865. Witnessing the spectacle were representatives of Thames Water (the owners of the site), English Heritage, the Heritage Lottery Fund and the Local Authority and many of the volunteers of the Crossness Engines Trust who had worked on the restoration of the engine and the site over the last 18 years. Three similar giant engines await attention at the Crossness Sewage Treatment Works. Further steaming days have yet to be fixed, but watch the website at [www.Crossness.org.uk](http://www.Crossness.org.uk), or ☎ 020 8311 3711 on a Sunday or Tuesday for details.

### David Lloyd Leisure receives Conservation Award

The 2003 Conservation Award of the Surrey Industrial History Group has been presented to David Lloyd Leisure for the restoration of the former Pumping Station and Electric Light Works at Horton, Epsom, and its conversion to form part of a David Lloyd Leisure Club. The Award was commemorated by the presentation of a plaque to Stewart Miller, Managing Director, David Lloyd Leisure, by Professor Alan Crocker, President of SIHG on Tuesday 22 July.

The Pumping Station and Electric Light Works was built in 1902 to supply water from an artesian well and electricity for lighting and power to the Horton Asylum, established on the Horton Manor estate at Epsom by the London County Council. The building originally housing the engines, generators and boilers has been converted into parts of the Leisure Club, notably the club room, dance studio and crèche. The external appearance has been restored as closely as possible to that of 1902. The pump-room machinery, well and water-tower survived virtually intact from 1902 and have been refurbished to form visual features of the site. The water-tower is a landmark, and the restored pump-room adds visual interest to the entrance lobby of the club. A new building at the rear of the site accommodates a swimming pool, squash courts and exercise-machine room. The restoration and

conversion work was carried out under the direction of the architect's department of Whitbread plc and executed by the main contractor, Dean and Bowes (Contracts) Ltd. The machinery of the pumps in the well was restored, and a motor drive added, by Dorothea Restorations Ltd.

The Horton Asylum, later known as the Horton Mental Hospital, was one of five mental hospitals established in Epsom from 1899 to 1924. At their peak these hospitals accommodated over 8,000 patients. Horton was finally closed in 1996 and has now been largely demolished to allow the construction of a housing estate, although some of the buildings will be converted into flats.

*Alan Thomas, Secretary Surrey Industrial History Group*

### SS Robin news

Further to the article on the *SS Robin* in *IA News 126*, good news is that HRH The Duke of Edinburgh has become an honorary member of the Robin Trust.

Guided visits to see over *SS Robin* at West India Quay, close to the Docklands Light Railway station, are now taking place. These tours are in association with the Lansbury Voices Trust. For information and booking ☎ 020 7538 0652 or visit: [www.lansburyvoices.org.uk/events.html](http://www.lansburyvoices.org.uk/events.html). For more about the ship visit [www.ssrobin.com](http://www.ssrobin.com).

*Robert Carr*

### Call for early railway papers

Papers are being called for the Early Railways Conference planned for 16-19 September 2004 at the National Railway Museum in York. This third international conference follows the successful conferences at Durham in 1998, and at Manchester in 2001 the papers from which are now in the final stages of publication. Researchers into the history of early railways (defined as being railways which were pre main-line in concept if not necessarily in date), who would like to present their findings in 2004, are invited to indicate their intention shortly to the Conference Editorial Panel. Authors are also requested to submit a 300-word synopsis of their paper for the panel's consideration by the end of 2003. Proposals for papers which may be on economic,

business and social history topics, as well as technical subjects, should be sent to: Michael R. Bailey, Ferroquin, 14 Winton Road, Bowdon, Altrincham, Cheshire, WA14 2PB, or e-mail m.r.bailey@talk21.com. For details of the conference contact: Early Railways Conference Office, National Railway Museum, Leeman Road, York YO26 4XJ, U.K, ☎: +44 (0)1904 621261, or e-mail: early.railways@nmsi.ac.uk .

### Stroud textile mills conference

A day conference on The Changing Stroudwater Textile Mills is to be held on Saturday 12 June 2004 at one of the finest of them, Ebley Mill, now the Council offices. It will start at 10 a.m.

Speakers will include: Anthony Burton whose book *Remains of a Revolution* drew attention to the importance of the area exactly 30 years ago. Professor Jennifer Tann's *Gloucestershire Woollen Mills* remains after nearly 40 years perhaps the most informative book on the subject. Mike Williams made the definitive study of Manchester mills for English Heritage and is now working on the mills of the South West.

Awareness of the significance of the mills in the Stroud area has increased in recent years. With the intended restoration of the canal these historic buildings are exposed to new pressures for development. This conference aims to improve the understanding of their history and so to inform the debate about their future.

Cost will be £20 including lunch and refreshments. The following day

various mills will be open for visiting with guides from the Stroudwater Textile Trust.

Contact for further information: Ian Mackintosh, 6 Castle Villas, Stroud, GL5 2HP, ☎ 01453 766273, imack@btopenworld.com.

### Charney Bassett Mill

Charney Bassett Mill, built in 1807, has been restored over the last 20 years by the Vale of White Horse Industrial Archaeology Group with the help of the Oxfordshire County Museum Service. Oxfordshire County Council has recently handed it over to the care of the Parish Council. Most of the internal machinery has survived and the last work will be to restore the flow of water. The mill is open on occasions during the year, notably on National Mills Weekend in May.

### The Cromford Canal

Although never a major waterway but of great historical interest, and passing through the beautiful Derwent Valley which is now a World Heritage Site, the Cromford Canal is arising from its slumbers. A new breed of navigators has arisen in recent years and a restoration scheme still only in its early stages, but which has already attracted much interest and over 600 supporters, is being put forward by the friends of the Cromford Canal with the support of the Local Authority and British Waterways.

The canal crossed the Amber valley at Bullbridge on an earth embankment, pierced by stone arches for the river and road. When around 1840 the Stephensons were construction the North Midland Railway they had to tunnel beneath

the canal without stopping the water traffic even for a day. Their Resident Engineer, Alexander McKenzie Ross, who was later in charge of the Conwy tubular bridge, had a sectional cast-iron trough made at the Butterley Works. This was floated down to Bullbridge in five sections. A dry dock was formed on a branch of the canal, and the sections joined into one 150-foot trough. This was floated over the area to be excavated for the railway, sunk into the clay bed of the canal, and the ends made watertight. All this was accomplished over a Sunday when there was no canal traffic. A handsome stone aqueduct was built to include the trough, which remained until demolition of part of the aqueduct some 40 years ago.

A tunnel about 3,000 yards long carried the canal under Butterley Hill, and a series of 14 locks led down to a junction with the Erewash Canal at Langley Mill. Mining subsidence affected the tunnel causing closure of the canal to through traffic in 1900, and it is now impassable though much remains in good condition and future restoration is practicable.

This is a bold and visionary project, but recent reopening of the Huddersfield Narrow Canal, with the 5,456-yards of Standedge Tunnel, shows what can be achieved even though it took 27 years.

For more details visit the website at [www.cromfordcanal.org.uk](http://www.cromfordcanal.org.uk). Included are photographs taken some years ago within the tunnel.

John Rapley

### Bricks and Water exhibition

An exhibition at the Kew Bridge Steam Museum opens from 26 November 2003 to 28 February 2004. It will look at the architecture of London's waterworks and pumping stations, from the sixteenth century to the present day, using contemporary drawings, paintings and photographs. The museum is open (except 20 December 2003 – 2 January 2004 inclusive) from 11am – 5pm every day, with engines static Monday to Friday, and engines in steam every weekend. Further information Lesley Bossine, museum director, ☎ 020 8568 4757.



## ENGINEERING EXCELLENCE

Restorers of steam and industrial artefacts for museums and private clients including the Museum in Docklands, London's Transport Museum and Stretham Old Engine.

Call Steve Bullman at Historic Steam Ltd, Kew Bridge Steam Museum, Green Dragon Lane, Middlesex, TW8 0EN. tel: 020 8568 4757 [www.historicsteam.ltd.uk](http://www.historicsteam.ltd.uk)

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For further details, contact the Editor.

## The skilled worker in society

John Hume's Rolt Memorial Lecture (*Industrial Archaeology Review*, XXV, No. 1, May 2003, 3-14) misses one vital aspect of Rolt's work – his interest in the role of, and the attitude to, the skilled worker within society. The division of British society between 'Arts' and 'Sciences' did not exist at the beginning of the Industrial Revolution, with uneducated but highly skilled people such as Arkwright or Stephenson obtaining leading positions within the country. By the Victorian era, universities were becoming more involved with technology, and this led to the decline in the role and status of the skilled, intelligent, but uneducated worker. The English language may also have helped create this division as there is no English word, such as the German 'Kunst', which takes in all man-made artefacts from plastic or machine tools to high art.

Until the growth of university and college-based learning in the 1960s, those from a working class background with a high level of intelligence would usually have undertaken an apprenticeship and become skilled workers. Rolt was himself such a skilled worker who had no 'higher' or 'further' education, though his family could not be called working class and Rolt served his time as a premium apprentice. During his training, Rolt would soon have discovered the high level of intelligence amongst his fellow skilled workers and their ability to improve and develop existing technologies. From the 1970s, J. R. Harris ('Skills, Coal and British Industry in the Eighteenth Century', *History*, 61, 1976, 167-182) drew our attention to the role of skilled workers in the transfer of technology from Britain to the continent, particularly to France and Prussia, in the late eighteenth and early nineteenth centuries. Those countries' failure to capitalise on this transfer of technology can perhaps be attributed to the poor social status of their skilled workers. The economic improvement of late nineteenth century Germany may have resulted from an improvement in the recognition of the role of skilled workers. Britain failed to recognise their value at that time – and subsequently. In Germany

today, skilled workers continue to have a high social standing, something sadly lacking in Britain.

Is this appreciation of the role of the skilled worker important for the industrial historian? In the eighteenth century, the status of the skilled worker in Britain was certainly greater than elsewhere in Europe, and the lack of guilds in the north of England allowed skilled workers to move between industries. It can be argued that this mobility was one of the major factors in the establishment of the industrial revolution in Britain, and it is certainly a factor worthy of greater recognition and research.

Rolt's writing in some aspects can be compared to Samuel Smiles and his advocacy of Self Help. Both were concerned to raise the status of the skilled worker, and this may be the most important aspect of Rolt's legacy to us. The importance of the skilled worker to the development of today's industrial society is something which requires both recognition and appreciation in Britain. Until educationalists and politicians realise the need for skilled workers to have a level of intelligence similar to that of graduates, little will be achieved in addressing Britain's current skill shortage adequately. To encourage training for a workforce with high-level practical skills, the historical importance and the social value of the skilled worker needs to be raised within society generally, and Rolt's works are among most important in addressing this problem.

*Mike Clarke  
41 Fountain Street  
Accrington BB5 0QR*

## TICCIH and the wider world of industrial archaeology

As an Honorary Vice President of the AIA, I am sorry that I was unable to attend your Annual Conference in Cardiff. As the General Secretary of TICCIH I spend much of my time outside the country promoting industrial archaeology in many parts of the world. It was therefore with particular interest that I read the article by Angus Buchanan in *Industrial Archaeology News* 126 on the birth of the AIA which so inextricably connected the AIA with international activities. This was

obviously reflected in the 2000 conference held in London and the regions, but I suspect that many AIA members are not really concerned about much outside their own patch. This is a great sadness to me as TICCIH held its 12th triennial conference in Moscow, Ekaterinburg and Nizhny Tagil recently with more than 75 foreign delegates and more than 50 local representatives, where we saw a huge amount of technology which disappeared in the UK perhaps 30 years ago. Not only was this interesting to us as delegates, but we also made a great impact on our Russian hosts by suggesting that some of the metalliferous sites which we saw in the Urals should be considered as a world heritage site, and our Honorary President for Life, Sir Neil Cossons, suggested that the Moscow underground should have the highest level of protection. Those of us who went on the post conference tour were delighted to be able to see a working Bessemer Converter, possibly the last one in the world, and to view the effects of the downfall of communism on the industrial landscape.

We are delighted that the AIA has now nominated Miles Oglethorpe international as the representative to TICCIH, and that he was elected by the General Assembly of as a Director of TICCIH. We have much to learn from our foreign contacts and in return we can help them to develop the science of industrial archaeology in their own countries, and I am delighted to tell you that at the General Assembly held in Nizhny Tagil the TICCIH Charter on Industrial Archaeology was adopted and will now go forward to ICOMOS for adoption as an international charter. Details from this Charter can be found on the TICCIH website ([www.mnactec.com/ticcih/charter.htm](http://www.mnactec.com/ticcih/charter.htm)), together with details of membership of TICCIH for those who wish to become individual members. In theory, all members of the AIA are members of TICCIH because they pay the National subscription, but many members may wish to receive the quarterly newsletter direct.

*Stuart B. Smith  
Secretary, TICCIH  
Chygarth, 5 Beacon Terrace,  
Camborne, Cornwall TR14 7BU*

## Corfu photographs and the value of recording

I would like to commend Colin Bowden for his excellent photographs of the Corfu factory (*IA News* 126). I can confirm that the mixing gear depicted is identical to that observed at Kardamyli (*IA News* 124). I am gratified that my lawn moweresque description of said mixing apparatus may have assisted Colin in his interpretation of this site. Methinks there must be more accurate terminology to describe this type of mixing gear? Any suggestions gratefully received. The architectural style, materials employed, and general condition of the structures may suggest that, like the Kardamyli plant, the Corfu factory probably dates from the early 1930s. I suspect that soap manufacture was an important twentieth-century industry throughout Greece – mainland and islands – and would welcome further information regarding this industry, its technology, and its surviving sites/archaeology.

Colin's photographs may provide the only record of an apparently mundane IA site that may now be lost. Such sites are inclined to disappear without warning or record. Thus, I would like to suggest that every member of the AIA load a camera and undertake a simple photographic survey of their local area. Such a survey would, without doubt, provide an invaluable record of oft overlooked small scale local commercial/social archaeological sites and structures – active, mothballed, or derelict. Whilst the resulting photographs would constitute a valuable resource in their own right (as photo features, or front cover illustrations for *IA News*?), a description and a little research could produce an interesting range of short articles. Remember: the most uninspiring 'wiggly tin' shed can sometimes disguise IA gold! 'Seek and ye shall find'!

*Paul H Vigor  
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**Wales**

In North-east Wales, conservation work is nearing completion on three scheduled mill sites at Greenfield Valley, Holywell, Flintshire. Work at the Meadow Mill site included consolidation of the remains of the former 1787 copper rolling and hammer mill, the c1868-74 Tin Plate works and the 1900-1929 Rubber Grinding works. Current works on the site of the former Lower Cotton Mill, known as Victoria Flour Mill by 1871, will mark the end of the project facilitated by the Heritage Lottery Fund, Cadw, Greenfield Valley Trust and Flintshire County Council.

In June 2003, contracted archaeological building recording was undertaken by Castlering Archaeology, on the site of a former mine building on land once occupied by Bwlch y Griolen Lead Mine. The building is one of two former mine buildings located c.1km south west of Penygarnedd on the south side of the B4391 Llanfyllin to Llangynog road in Montgomeryshire.

The small-scale mine appears to have been worked from the 1840s and actively revived in 1881, at which time the buildings were presumably constructed on a new dressing floor area. Despite the heavy investment in machinery and the construction of a tramroad and subsidiary features, the mine went out of use by 1882. The sturdy buildings still stand today. The former engine house and chimney are now a dwelling sited east of the building, which is due to be developed. This building appears to have been the crusher house, which included crushing rolls as recorded

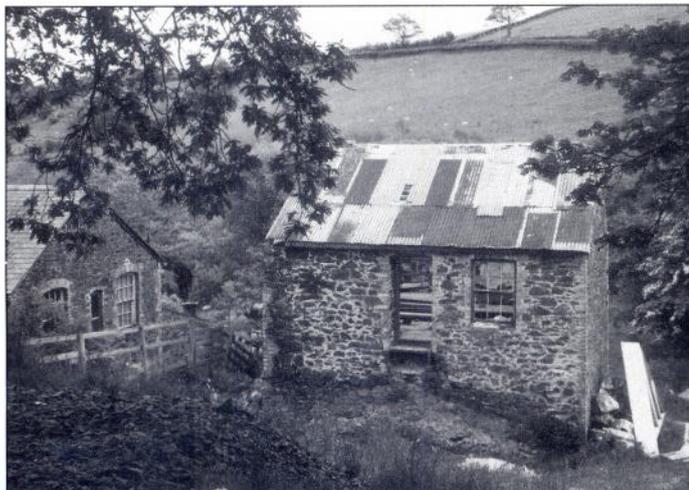
on the 1882 mine abandonment plan. The dressing floor area was presumably only in use for 12 months at the most.

Both buildings were used for agricultural purposes until the engine house was converted to a dwelling. No machinery survives and the former crusher house has been used until recently as an animal shelter. The building is constructed in random rubblestone and cut into the south-east facing slope, which enabled ore to be trammed from the base of the incline through the existent first floor door to be tipped into the crushing rolls.

The photograph shows the building in a poor state of repair. Ground has already been excavated from below the crusher house first floor door. The building has changed little externally since its construction and the recording work has ensured that a record has been made of the structure prior to any change of use.

The development of the Montgomery Canal Conservation Management Strategy, which is part-funded by the Heritage Lottery Fund, included an extensive assessment of the archaeology of both the canal and land adjacent to the canal. The waterway was constructed in stages between 1794 and 1821, primarily to carry and distribute lime for agricultural purposes from the Llanymynech Quarries.

The recent assessment comprised two elements, the Landscape Archaeology, which was undertaken by the Clwyd Powys Archaeological Trust, and the Built Heritage, which was undertaken by



*Bwlch y Griolen Lead Mine building with corrugated roof; the building on the left is the former engine house*  
 Photo: Castlering Archaeology

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Michael Heaton. In addition, an aerial photographic survey was also commissioned from the Clwyd Powys Archaeological Trust to provide oblique coverage of the major canal features, landscape and settlement.

The Strategy has been developed to take forward plans for the restoration of the canal along its entire surviving length from Frankton Locks in Shropshire to Freestone Locks just north of Newtown. The results from the two assessments will be integrated into the Management Strategy to ensure due consideration not only of the canal structures, but also the archaeology of a wider corridor.

In March 2003 Cambrian Archaeological Projects (CAP) carried out an archaeological watching brief on the proposed redevelopment site at Genwen Quarry, Bynea, Carmarthenshire. This work was required as part of a scheme for the regeneration of the disused quarry, which included the restoration of a ruined engine house, which is designated as a

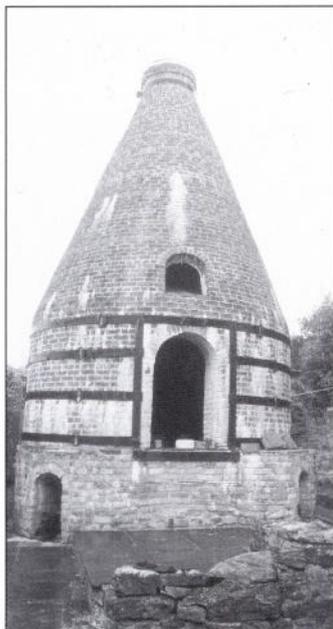
scheduled monument. During ground disturbances related to the uncovering of suspected mine shafts, several remains of former structures and features were examined that were associated with the operation of the colliery. These features were related to two brick vaults that may contain the mineshafts, a series of walls associated with either the railway or retaining walls associated with entry to the mineshafts. The blocked entrance to a mine/adit was also uncovered to the west of the engine house at a depth of some 4.6 m below present ground surface.

Coal mining at Genwen commenced around 1766 with the colliery founded by Londoner Chauncey Townsend. Coal production was inconsistent possibly due to Townsend's financial limits or concern for his other industrial enterprises. The colliery expanded under General Warde, who built the existing beam engine house in 1805-6 to house a 52-inch cylinder engine made by Boulton & Watt to drain mines in the vicinity.

The engine house was altered in 1837 when a larger engine was installed. However, it was to close between 1867 and 1898, the pit was later re-opened and continued in use until 1908, eventually closing in about 1925.

The quarry at Bynea was established around 1837 and although the date of its closure is uncertain, it is known that small-scale coal working from levels around the quarry occurred after the closure of Genwen Colliery. There is no evidence that these industries at Genwen directly stimulated the growth of the surrounding communities, however the site was consistently viewed as a leading hope to represent and spark the industrial advancement of Llanelli.

Genwen Engine House is a rare example of its type and has been modified over time in response to technological developments in steam engines. The building is enhanced by an extensive archive of relevant contemporary documents, allowing better understanding of the history of the site. Records made by Cadw and the RCAHMW reconstruct the operational engine house with the pump on the northern side of the building, with a winding shaft to the west and possible other structures in the area.



*The reconstructed kiln at the famous Nantgwr Pottery was one of the many sites visited by the AIA Cardiff Conference  
Photo: Steve Miles*

Other than these basic surveys, no archaeological research appears to have been carried out at the site.

Plans have been submitted for the conversion of New Radnor's 1875 railway station buildings which include a goods shed and the waiting room/ticket office with lean-to toilet. The station was the terminus for the

Kington to New Radnor branch of a line to Eardisley. The buildings are the subject of archaeological recording, prior to change of use.

Archaeological evaluation work was also undertaken on land off Heol Y Dwr at Hay on Wye to record the standing structural remains of the early town electricity generator. The generator dates to the 1920s and although all the internal machinery has been stripped out, the concrete bases for the generator and other machinery are still present, allowing the layout of the machinery to be defined.

South-east Wales saw the 2003 AIA Conference based in Cardiff, which is reported elsewhere in this issue.

*Pat Frost*

### North of England

South Cumbria with its local supply of iron ore and readily available supply of charcoal was in the eighteenth and nineteenth century an important iron smelting area. Traces of this industry still remain and the area is especially rich in early blast furnaces. The best preserved of these is Duddon furnace (SD 197 884), which was established in 1736 by the Cunsey and Backbarrow Companies. It was

here that cylinder bellows invented by Isaac Wilkinson saw their first application. This site is managed by the Lake District Planning Board and is open to the public.

The two other main furnace sites in south Lakeland have fared differently. Newlands furnace (SD 299799) has been Scheduled (see *IA News* 125, p14) and this site is still undergoing conservation by volunteers from the Cumbria Amenity Trust (CAT). They have successfully rebuilt both the blowing arch and the casting arch. A conservation plan for the site has recently been drawn up and further conservation of the buildings on the site will take place. One of the main areas for conservation is the loading barn through which the blast furnace was charged. The estimated cost of conserving this part of the furnace is £30,000. This site is not open to the public at present but access can be arranged via CAT.

However, the future for the Backbarrow Iron Works (SD 366 862) site still does not look very good. The Backbarrow Company, headed by William Rawlinson, built a blast furnace here in 1711. Charcoal was used as a fuel until 1920 when coke was introduced. The furnace stack was raised to 150 feet in 1870 with a brick extension and a horizontal steam engine was introduced to replace the water wheel powering the bellows. The furnace was later converted to a hot blast furnace and eventually stopped working in 1967. Since then the site has slowly deteriorated whilst numerous different schemes have been proposed. In January 2003 the future of the site looked secured with the approval of a planning application to build a variety of work/living units and conversion of some of the remaining buildings and conservation of the furnace and other structures. Unfortunately, during the summer the site has been offered for sale again without any development taking place. This site is on private property but can be viewed from the old A590 road through the village.

Staying in south Lakeland, another property belonging to the Lake District Planning Board has been opened to the public. This is Rusland Tannery (SD 342 888), a typical small country tannery and one of about 90 in south Lakeland. The pits etc. can still be seen and also on show is a hogsback stone

## REGIONAL CORRESPONDENTS

Please support your Regional Correspondent by sending relevant material which may be of interest to our readers.

### Region 1: SCOTLAND

Dr Miles Oglethorpe, Royal Commission on the Ancient and Historical Monuments of Scotland, John Sinclair House, 16 Bernard Terrace, Edinburgh EH8 9NX

### Region 2: IRELAND

Michael Coulter, Department of Environment, Historic Monuments and Buildings, 5-33 Hill Street, Belfast 1

### Region 3: NORTHERN ENGLAND

*Cumbria, Northumberland, Tyne and Wear, Durham and Cleveland*  
Graham Brooks, Coomara, Carleton, Carlisle, Cumbria CA4 0BU

### Region 4: YORKSHIRE AND HUMBERSIDE

*North, South and West Yorkshire and Humberside*  
Derek Bayliss, 30 Muskoka Avenue, Bents Green, Sheffield S11 7RL

### Region 5: NORTH WEST ENGLAND

*Lancashire, Merseyside, Greater Manchester and Cheshire*  
Kevin Wade, 82 Bishopgate Street, Liverpool L15 1AW

### Region 6: WALES

Pat Frost, Castlery Archaeology, 6 Castle Ring, Pontesbury Hill, Pontesbury, Shrewsbury, Shropshire SY5 0YA

### Region 7: WEST MIDLANDS

*Shropshire, Staffordshire, West Midlands, Warwickshire, Hereford and Worcester*

John Powell, Ironbridge Gorge Museum Trust, The Wharfage, Ironbridge, Telford, Shropshire TF8 7AW

### Region 8: EAST MIDLANDS

*Derbyshire, Nottinghamshire, Lincolnshire, Leicestershire and Northamptonshire*

David Lyne, 10 Somerville Road, Leicester LE3 2ET

### Region 9: EAST ANGLIA

*Cambridgeshire, Norfolk, Suffolk and Essex*  
David Alderton, 48 Quay Street, Halesworth, Suffolk IP19 8EY

### Region 10: GREATER LONDON

Dr R.J.M. Carr, 127 Queen's Drive, London N4 2BB

### Region 11: HOME COUNTIES

*Oxfordshire, Bedfordshire, Berkshire, Buckinghamshire and Hertfordshire*  
Phil Morris, 71 Van Diemens Road, Stanford in the Vale, Oxon, SN7 8HW

### Region 12: SOUTH EAST ENGLAND

*Hampshire and Isle of Wight, Surrey, Sussex and Kent*  
Chris Shepherd, Rose Cottage, 22 Ridgeway Hill Road, Farnham, Surrey GU9 8LS

### Region 13: WEST OF ENGLAND

*Somerset, Avon, Gloucestershire, Wiltshire and Dorset*  
Mike Bone, Sunnyside, Avon Close, Keynsham, Bristol BS18 1LQ

### Region 14: SOUTH WEST ENGLAND

*Devon and Cornwall*  
VACANT

which was used to stretch the hides whilst they were scraped.

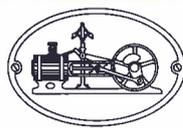
Alas Cumbria may be losing part of its rural industrial heritage. Boot corn mill in Eskdale (SD 176 013) dates to 1730 and a second wheel was added in 1750. The mill operated until the 1930s and one wheel continued to operate a dynamo until the 1950s. The property was bought by Cumbria County Council in the 1970s and was restored to a working mill and opened to the public. At the time it was considered as an outstanding conservation achievement. Unfortunately a recent review of the Council has suggested that the mill should be sold into the private sector and has been advertised for sale at the time of writing.

Moving over into the north Pennines, the North Pennine Heritage Trust has completed the restoration of the Hudgill bingsteads (receiving house). These were built in about 1826 by the Commissioners of the Greenwich Hospital for seaman in London, who had been given the estates of the Earl of

Derwentwater after 1715 Jacobite rebellion. Being owners of the mineral rights of Alston Moor they claimed a duty on all lead ore raised of between 1/5th and 1/7th. They built three collection centres including this one at Hudgill where the ore was stored before transport to their smelter at Langley. The Hudgill bingsteads collected ore from the surrounding mines, the largest of which was the Hudgill Burn Mine, which raised and dressed about 4,000 tons of lead per annum.

The Hudgill site consists of six bingsteads in an enclosure allowing the ore from each mine to be kept separate. Unusually three of these bingsteads are roofed and these were possibly used for fine-grained ore known as cuttings. A small building within the enclosure was probably a small office and the later addition of a small building outside the enclosure may have been a stable. This site is open to the public next to the road at NY 752 463.

Graham Brooks

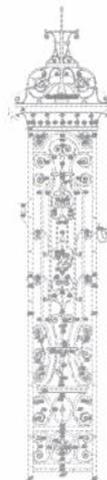


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## ANNOUNCING THE THREE FIELDWORK AND RECORDING AWARDS FOR 2004

The AIA Fieldwork Award scheme exists to encourage recording of the physical remains of the industrial period to high archaeological standards. The awards are open to both amateur and professional field workers, and have been operating successfully for over a decade.

Work submitted may already have been published or, if not, entrants may be encouraged to publish.

As well as the main award there is also the Initiative Award for innovative projects, e.g. those from local societies. To encourage the future industrial archaeologists, there is also a Student Category.

### THE CLOSING DATE FOR ENTRIES IS 1ST MARCH 2004

Successful Entries will be notified in July

The successful authors will be invited to attend the AIA annual conference in Hatfield to collect their award in August

Further details from:

Fieldwork and Recording Awards, AIA Liaison Officer, School of Archaeological Studies, The University, Leicester, LE1 7RH

**Local Society and other periodicals received**

Abstracts will appear in *Industrial Archaeology Review*.

- BIAGscope*, 58, Autumn 2003
- BW Monthly*, July, August & September 2003
- British & Irish Archaeological Bibliography*, 7/1, Spring 2003
- Dorset Industrial Archaeology Society Newsletter*, 6, May 2003
- Focus on Industrial Archaeology* (Hampshire Industrial Archaeology Society), 60, June 2003
- Friends of St. Aidan's BE1150 Dragline Newsletter*, 28, December 2002
- GLIAS Newsletter*, 207, August 2003
- Greenwich Industrial History*, 6/3, May 2003
- Hampshire Industrial Archaeology Society Journal*, 11, 2003
- Hampshire Mills Group Newsletter*, 61, Summer 2003
- Industrial Heritage*, 29/2, Summer 2003
- Lancashire History Quarterly*, 7/2, Summer 2003
- Manchester Region Industrial Archaeology Society Newsletter*, 104, August 2003
- The Mundling Stick* (Lion Salt Works Trust), 9/2, Summer 2003
- PIERS, Journal of the National Piers Society*, 68, Summer 2003
- SAVE Britain's Heritage Newsletter*, April 2003
- Scottish Industrial Heritage Society Bulletin*, 26, 27 & 28, April, July & September 2003
- Society for Industrial Archeology Journal (IA)* (USA), 28/1, 2002
- Somerset Industrial Archaeological Society Bulletin*, 93, August 2003
- Suffolk Industrial Archaeology Society Newsletter*, 82, August 2003
- Surrey Industrial History Group Newsletter*, 134 & 135, July & September 2003
- Sussex Industrial Archaeology Society Newsletter*, 117-119, January, April & July 2003
- Sussex Mills Group Newsletter*, 117-119, January, April & July 2003
- TICCIH Bulletin*, 20 & 21, Spring & Summer 2003
- WaterWords*, (news from Hereford Waterworks Museum), Spring 2003

- Wind and Water Mills* (Midland Wind and Water Mills Group), 22, 2003
- Yorkshire Archaeological Society, Industrial History Section Newsletter*, 57 & 58, Spring 2003
- Yorkshire History Quarterly*, 8/4, May 2003

**Books Received**

The following books have been received for review in *Industrial Archaeology Review*.

*Stothert & Pitt, Cranemakers to the World*, by Ken Andrews & Stuart Burroughs. Stroud: Tempus, 2003. 128 pp, 200+ illus. ISBN 0 7524 2794 6. £12.99.

When Stothert & Pitt announced the closure of its engineering works in 1989, 580 people lost their jobs and the city of Bath lost its single largest manufacturer which had employed 2000 in 1945. For over 200 years the heavy engineering and metalworking business had produced a wide variety of products from bedsteads to boilers and cement mixers to cranes. Fortunately, before the closure, the company's collection of negatives and prints were deposited at the Museum of Bath at Work and it is from this and other sources that the many illustrations in this book have been drawn.

*The Anatomy of Canals – Decline & Renewal*, by Anthony Burton & Derek Pratt. Stroud: Tempus, 2003. 159 pp, illus. ISBN 0 7524 2810 1. £16.99.

The final volume in *The Anatomy of Canals* series brings the story right up to date. Canal mania hit Britain in the 1790s; when it subsided canal construction still carried on under the growing threat of steam locomotive-hauled railways. Canal engineers rose to this challenge by building more direct routes, with deep cuttings and high embankments and boat lifts. Following closure of large sections of canal a new leisure cruising industry came. This volume looks at what has been achieved in restoration schemes and how the new compares with the old. The authors discuss schemes under way in various areas including the rejuvenation of the Birmingham canals and the restoration of the Forth-Clyde waterway connection in Scotland.

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Open daily except Sunday & Tuesday: 9am–5pm  
or visit our bookstall at many IA conferences

**OTHER BOOKS RECEIVED**

*The Wey Navigations, an Historical Guide*, by Alan R. Wardle. Sussex Industrial History Group, 2003. 155 pp, 46 illus. ISBN 0 9538122 2 7. £11.95.

This book is both a practical guide and a concise history of one of Britain's earliest man-made navigable waterways originally developed from the early works completed in 1653 by Sir Richard Weston of Sutton Place. Sites visible from the towpath are linked to many famous people and events. Historic maps and archive and recent photographs are used to illustrate the course of the canal.

*St. Pancras Station*, by Jack Simmons, revised and additional chapter by Robert Thorne. Chichester: Historical Publications, 2003. 184 pp, 65 illus. ISBN 0 948667 68 0. £15.95.

This book was first published in 1968 when the future of St. Pancras Station was in doubt. It combined architectural, social and railway history and provided a comprehensive biography of the station from the first designs to its subsequent use. Now the future of the station is secure and it is to be the new London terminus of the Channel Tunnel Rail Link. In this republication of the late Jack Simmon's classic work, the engineering and transport historian Robert Thorne has added to the original text and provided a new chapter to bring the story up to date.

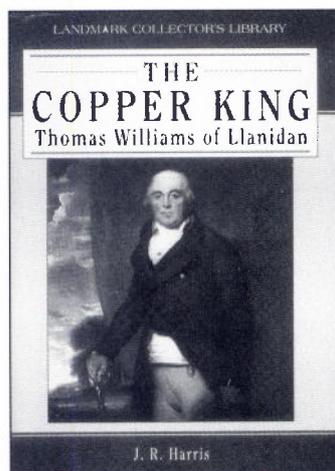
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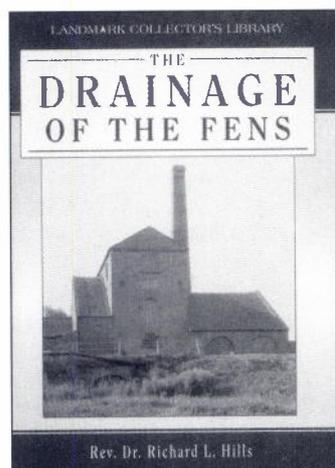
*The Copper King: Thomas Williams of Llanidan*, by J. R. Harris. Ashbourne: Landmark Publishing, 2nd edition, 2003. 192 pp, 10 illus. ISBN 1 84306 092 2. £19.95.

This second edition is largely unchanged since it was first published in 1964 and it remains the classic work on the subject. Thomas Williams (1737-1802) was a solicitor from North Wales who became a leading industrialist in the late eighteenth century, capturing the monopoly of the copper industry at a time when Britain was the world's largest producer of the metal. Despite fierce battles with other players in the field, notably the Cornish copper miners, this was achieved through his interests in the great opencast workings on Parys Mountain in Anglesey, and the establishment of a smelting, manufacturing and marketing empire. The book first traces the rise of the copper trade before the arrival of Williams on the scene. The growth and rapid dominance of Anglesey's 'Copper Mountain' led to a treaty with the Cornish Metal Co. in 1785. The book also examines Williams' business organisation and his relationship with Boulton & Watt and John Wilkinson. An appendix describes the workings of the Parys and Mona Mines on Anglesey.



*The Drainage of the Fens*, by Rev Dr Richard L. Hills. Ashbourne: Landmark Publishing, 2003. 205 pp, 135 illus. ISBN 1 84306 074 4. £19.95.

This is an essential book for anyone with an interest in the long and fascinating history of Fenland drainage. It is a revised edition, greatly enlarged with much new material, of the author's *Machines, Mills and Unaccountable Costly Necessities*, published in 1967. It traces the history of drainage from medieval times but especially in the eighteenth and nineteenth centuries. The text is enhanced by photographs such as windmills with their scoop wheels and steam pumping engines, together with many historical maps, plans and diagrams. Mention and comparison is made with Dutch developments, where the first steam drainage engine was a Newcomen engine installed near Rotterdam in 1776; inevitably, the famous Cruquius engine is included. The major Fenland steam engines are all described and an appendix summarises details of steam engines erected between 1817 and 1855. AIA members will recall that several pumping stations on the Fens were visited during the Cambridge Conference in 2001.



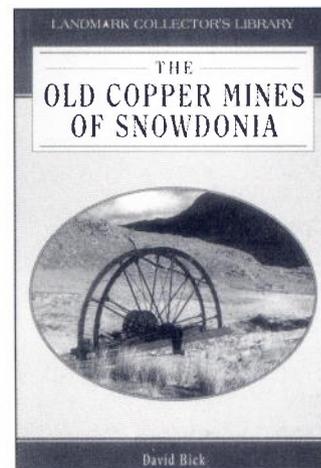
*Stationary Steam Engines of Great Britain: the National Photographic Collection, Vol. 7: the South & South West*, by George Watkins. Ashbourne: Landmark Publishing, 2003. 192 pp, 122 illus. ISBN 1 901522 88 1. £22.50.

The seventh volume in Landmark's portrayal of the late George Watkin's photographs, selected from the Watkins Collection in the National

Monuments Record, with a forward by Tony Woolrich. The images in this volume were taken between 1932 and 1973 and cover a wide range of industries. Somerset is well represented, including steam engines at Bath gas works, the Pump Room, paper mills, collieries, the traversing railway bridge at Bridgwater and the unusual drainage engines of the Somerset levels. Waterwheels are included too, at brass mills and the Claverton Pump. Wiltshire (1936-68) includes engines at Crofton, breweries, gas works, the Westbury ironworks blowing engines, and horizontal retorts at Swindon gas works. Breweries and pumping stations feature in Dorset and Hampshire. Surprisingly there are only three images from Devon and Cornwall, the latter because Watkins did not wish to duplicate a survey being undertaken by the Cornish Engines Preservation Trust.

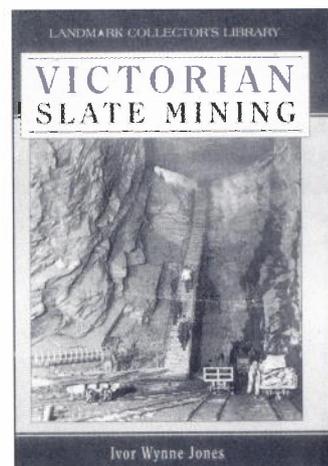
*The Old Copper Mines of Snowdonia*, by David Bick. Ashbourne: Landmark Publishing, 2003. 160 pp, 108 illus. ISBN 1 84306 075 2. £9.95.

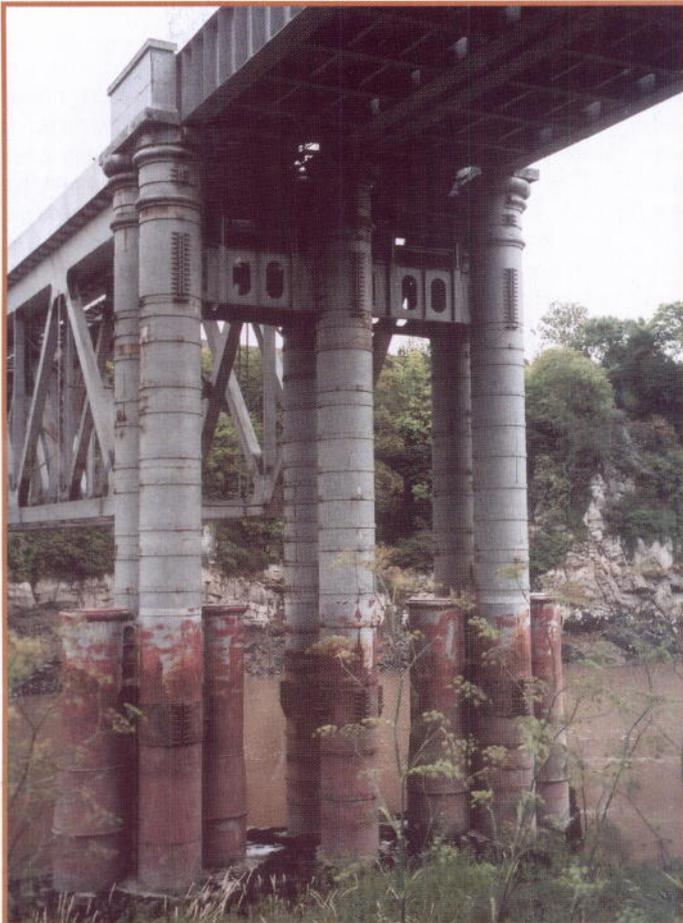
This is a complete re-vamp and major enlargement of a book first published in 1982. The text is well illustrated to a good standard, with photographs, drawings, plans and maps. Sections include Great Orme, with its exciting discovery of Bronze Age copper mines. Remote mining sites in the mountains include the Gilfach pumping and winding waterwheel, recently restored, and the two water-powered crushing mills and broken gear high up on the flanks of Lliwedd. The book deals with copper mines on and beneath Snowdon itself, particularly the Britannia Mine and its surface and underground workings. Mines are also described at Portmadog, Beddgelert, Nant Gwynant, Nant Ffrancon, Conwy and Ffestiniog, Nantlle Vale. There is a final chapter about D.C. Davies, FGS.



*Victorian Slate Mining*, by Ivor Wynne Jones. Ashbourne: Landmark Publishing, 2003. 142 pp, 138 illus. ISBN 1 84306 073 6. £15.95.

The text is based on unpublished diaries of J.E. Greaves and the 1893-94 investigations of the 'Departmental Committee upon the Slate Mines of Merionethshire', which reported to parliament in 1895 and gives a lively insight into the working methods and welfare of the slate mining communities around Blaenau Ffestiniog. The report discusses phthisis as a cause of premature death among the slate workers, while methods of preparing and drinking tea were also blamed for indigestion and other diseases. Diet, language and electrification of the industry (pioneered by the Greaves family) are also covered. There are chapters on the Llechwedd Slate Mines and their subsequent opening as a tourist attraction. The fine collection of historic photographs of mainly Llechwedd and Oakeley includes those taken in 1894 by the Cornish photographer J.C. Burrow for the parliamentary investigation. Dramatic underground scenes show the vast scale of the workings, while at the surface open quarries are seen riddled with exposed chambers of earlier underground workings. There are also slate mills with sawing tables and dressing machines, narrow gauge railways and rolling stock, inclines, rock drills, and the shipping wharves at Porthmadog.





Piers of I K Brunel's 1852 railway bridge across the Wye at Chepstow (see Conference pages)  
Photo: Helena Wright

**3-4 APRIL 2004**

**AIA IRONBRIDGE WEEKEND**  
at the Ironbridge Institute, Coalbrookdale, on the topic of Canals. Advance notice only. Full details will be included with the next mailing.

**12 JUNE 2004**  
**THE CHANGING**  
**STROUDWATER TEXTILE**  
**MILLS**

at Ebley Mill, Stroud, Gloucestershire, a day conference on the Changing Stroudwater Textile Mills. The conference aims to improve the understanding of the history of mills in the Stroud area and so inform the debate about their future. Contact for further information: Ian Mackintosh, 6 Castle Villas, Stroud, GL5 2HP, ☎ 01453 766273, imack@btopenworld.com

**13-19 AUGUST 2004**  
**AIA ANNUAL CONFERENCE:**  
**HERTFORDSHIRE & LEA**  
**VALLEY**

at the new de Havilland Campus of the University of Hertfordshire at Hatfield. Advance notice only.

**16-19 SEPTEMBER 2004**  
**THIRD INTERNATIONAL**  
**EARLY RAILWAYS**  
**CONFERENCE**

at the National Railway Museum, York. For details contact: Early Railways Conference Office, National Railway Museum, Leeman Road, York YO26 4XJ, ☎ 01904 621261.

*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.*

*A fuller diary can also be viewed at [www.industrial-archaeology.org.uk](http://www.industrial-archaeology.org.uk)*



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- 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 Liaison Officer, AIA Office, School of Archaeological Studies, University of Leicester, Leicester LE1 7RH. ☎ 0116 252 5337 Fax: 0116 252 5005.*

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



Chepstow Old Bridge across the Wye was made in 1816 at Bridgnorth Foundry and strengthened in 1889 (see Conference pages)  
Photo: Steve Dewhirst