

Three Very Different Wealden Iron Furnaces

by Alan Crocker

On 23 July I attended the AGM of the Wealden Iron Research Group (WIRG) at the Rural Life Centre (RLC), Tilford. These meetings are usually held in Sussex but this year the event came to Surrey, as the RLC has recently constructed a half-scale replica of a Wealden iron blast furnace and forge, complete with waterwheel, bellows and tilt hammer.

The meeting started at 1030 with coffee and biscuits and then the Director of the RLC, Chris Sheppard, a former Chairman of SIHG, talked about the formation of the museum, its activities and the enormous amount of work done by volunteers, known as 'Rustics'. A group of these, headed by Gerald Baker, has been responsible for raising funds for and constructing the replica furnace in a former pig sty on the museum site.

After lunch in the RLC Restaurant, Gerald operated the furnace for our party. There is no stream flowing through the museum site so the waterwheel, which is overshot and 6 feet in diameter, has to be turned by circulating water with an electrically powered pump. One end of its shaft operates paired bellows which force air into the base of the furnace through a hole known as a tuyere. The other end of the shaft operates a trip



hammer. The Rustics had lit a wood fire in the kiln but for several reasons it was not possible to demonstrate smelting and forging. This was partly because of safety regulations, partly because charcoal and iron ore are not yet available and partly because with a small-scale furnace the high temperatures required may not be attainable. However the demonstration was still impressive. For example, although the bellows were only directed towards the tuyere and not connected to it, each blast of air caused the fire to spurt out of the tapping hole. The aim, however, is to smelt iron at least once and to film the process so that all visitors can see what is involved.

During the meeting in the morning, members present were issued with their copies of *Wealden Iron*. This is the annual WIRG

(Continued on page 7)



Replica Wealden iron furnace and tilt hammers at the Rural Life Centre, Tilford; note the fire visible through the tapping hole. Photos by Glenys Crocker.

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Reports & Notices

Details of meetings are reported in good faith, but information may become out of date. Please check details before attending.

SIHG Visits, Details & Updates at www.sihg.org.uk



Peter Tarplee

In the occasion of his retirement from the Committee, Peter Tarplee has been appointed an Honorary Member in recognition of his long service and of his many activities in the Surrey Industrial History Group. First elected to the Committee in 1986, he served as Secretary from 1987 to 1999, after which he remained a co-opted member, from 2000 in the special appointment of Vice-President.

Peter was a very active member of the Publications sub-committee. He wrote the Industrial History guides for Elmbridge and Mole Valley, and a booklet on Abinger and the Royal Greenwich Observatory. He was a leading figure in the work of distribution and sales of the various publications of SIHG.

Alan Thomas

Editorial Note

Many thanks to all who have sent in contributions.

***Please send in reports or photos of holiday visits
or thoughts on local, national or international Industrial Archaeology
for the November 2011 SIHG Newsletter!***

Surrey Industrial History Group Officers

Chairman & SIHG Lectures Organiser: **Robert Bryson**, meetings@sihg.org.uk
Secretary: **Alan Thomas**, info@sihg.org.uk
Treasurer: **Anne Lea**, treasurer@sihg.org.uk
Membership Secretary: **Pam Taylor**, membership@sihg.org.uk
Newsletter Editor: **Jan Spencer**, news@sihg.org.uk

SIHG Newsletter No 183 September 2011

DIARY

The 36th series of SIHG Industrial Archaeology Lectures starts on 4 October 2011

alternate Tuesdays, 1930 - 2130, University of Surrey (Lecture Theatre F)
Enquiries to programme co-ordinator, Bob Bryson, meetings@sihg.org.uk. Maps at www.sihg.org.uk
Free parking is available in the evening on the main campus car park.
Single lectures at £5, payable on the night, are open to all.

The Autumn 2011 Thursday Morning Lecture Series at Leatherhead

starts on 22 September 2011.
Enquiries to Ken Tythacott, Ken.tythacott@btinternet.com,
or Geoff Roles, geoffrey@groles.wanadoo.co.uk.
This course is FULLY BOOKED; casual attendance is sadly not possible.

SIHG Half Term Visit

Thursday 27 October 2011

Watercress Line - *Tornado* Special Event

£20 (£15 for Leatherhead students);
pick-up at Leatherhead & Guildford.

Details from Geoff Roles geoffrey@groles.wanadoo.co.uk.

Claude Grahame-White letter from Gordon Knowles

I found Celia Gregory's article on Claude Grahame-White in the July issue of the Newsletter interesting. May I make two observations.

In paragraph three, *Farham* should be Farman. Henry Farman was a British flier who, finding little support in this country, went to France where he set up a successful business building aircraft to his own design. I have seen him referred to as *Henri*, as if he was a Frenchman, but he was definitely English.

Towards the end of her article Celia gives information about the listed building now forming part of the Hendon museum. It was almost lost for it formerly stood in that part of the old airfield that was the Police Training College and is now part of a university campus. Fortunately it was listed and so its future preserved. I remember making a visit some years ago now when we had difficulty in gaining access to it and to the early

control tower nearby. They were in a bad state but fortunately have survived. Both were then moved and re-erected as Celia describes. A significant part of the structure is its Belfast truss roof, giving, for its time, an unparalleled unsupported clear space. The Belfast truss roof is of wooden construction built into a geometrical shape not unlike the geodetic construction that Barnes Wallis years later used in the Vickers Wellington bomber. It was light yet strong. This distinctive roof shows up well in Celia's photograph of the Vickers Gunbus on the rear cover of the newsletter and contrasts well with the modern metal roof truss in the picture of the SE 5a.

Coincidentally in my report on IA News in the same edition I mention the remaining Belfast truss hangers at Duxford. Previously there were examples dating from 1917 at RAF Kenley; these, unfortunately, were demolished some years ago. □

SIHG Membership Renewal

The SIHG membership database has been merged with the recently established Surrey Archaeological Society database. Cheques payable to 'Surrey Archaeological Society' please, to Castle Arch, Guildford GU1 3SX
The membership form is available on our website, or please contact Pam Taylor (see p 2) for a printed form.

Recording Factory Closures

A good opportunity to record the history & to rescue traditional papers & machinery!
If you hear of a factory which is about to close, please report it to us; contacts on page 19.

Other IA Organisations

- Amberley Museum & Heritage Centre:** next to Amberley railway station, West Sussex, www.amberleymuseum.co.uk.
- Anne of Cleves House (Wealden Ironwork):** 52 Southover High St, Lewes, E Sussex, BN7 1JA; 01273 474610; anne@sussexpast.co.uk
- Association for Industrial Archaeology:** www.industrial-archaeology.org.
- Basingstoke Canal Authority:** 01252 370073.
- Brighton Circle (London, Brighton & South Coast Railway):** www.lbscr.demon.co.uk.
- Chatham Historic Dockyard:** Kent ME4 4TZ; www.chdt.org.uk.
- Chichester Canal Group:** contact Adge Roberts adgerobert@yahoo.co.uk.
- Cobham Bus Museum:** London Bus Preservation Trust, Redhill Road, Cobham, Surrey KT11 1EF; www.lbpt.org.
- Crofton Beam Engines :** Crofton Pumping Station, Crofton, Marlborough, Wilts, SN8 3DW; www.croftonbeamengines.org, 01672 870300.
- Crossness Pumping Station :** The Old Works, Belvedere Road, Abbey Wood, London SE2 9AQ; www.crossness.org.uk, 020 8311 3711.
- Croydon Airport Visitor Centre:** Aiport House, Purley Way Croydon CR0 0XZ; www.croydon-airport.org.uk.
- Croydon Natural History & Scientific Society:** meetings: Small Hall, United Reformed Church Hall, Addiscombe Grove, E Croydon.
- Cuffley Industrial Heritage Society:** Northaw Village Hall, 5 Northaw Road West, Northaw EN6 4NW; www.cihs.org.uk.
- Didcot Railway Centre:** Access via Didcot Parkway Station; www.didcotrailwaycentre.org.uk.
- Docklands History Group:** Museum in Docklands, No 1 Warehouse, West India Quay, Hertsmere Road, London, E14 4AL; www.docklandshistorygroup.org.uk.
- East London History Society :** Latimer Church Hall, Ernest Street, E1; www.eastlondonhistory.org.uk.
- Enfield Society:** Jubilee Hall, 2 Parsonage Lane, Enfield, EN2 0AJ; www.enfieldsociety.org.uk.
- Fetcham U3A:** <http://fetchamu3a.org.uk/home.htm>.
- Greenwich Industrial History Society:** Old Bakehouse, Age Exchange Centre, 11 Blackheath Village, SE3 (opposite Blackheath Station).
- Great Dorset Steam Fair:** South Down, Tarrant Hinton, nr Blandford, Dorset DT11 8HX; www.gdfs.co.uk.
- Greater London Industrial Archaeology Society:** Willoughby Theatre Charterhouse Square; 020 8692 8512,
- Guildford Museum:** Castle Arch, Guildford, Surrey GU1 3SX; museum@guildford.gov.uk.
- Guildhall Art Gallery,** Guildhall Yard (off Gresham Street), London EC2V 5AE.
- Hampshire Archaeology Society (HIAS):** Underhill Centre, St. John's Road, Hedge End, SO30 4AF.
- Hampshire Mills Group:** www.hampshirerolls.org.
- Henley Archaeological & Historical Group:** above Visitor Information Centre, Market Place. Colin Howard, colin.howard@onetel.net.
- Heritage Walks:** with Iain Wakefield, i.wakefield@tavak.co.uk.
- Heritage Open Days:** 1 Waterhouse Square, 138-142 Holborn, London EC1N 2ST; www.heritageopendays.org.uk.
- Honeywood Museum:** by Carshalton Ponds, Honeywood Walk, Carshalton, Surrey SM5 3NX; www.friendsofhoneywood.co.uk.
- Kempton Great Engines:** Feltham Hill Road, Hanworth, Middx TW13 6XH (off elevated section of A316); www.kemptonsteam.org.
- Kew Bridge Steam Museum:** Green Dragon Lane, Brentford, Middlesex TW8 0EN; www.kbsm.org.
- Kingston upon Thames Archaeological Society:** URC, Union St/Eden St, Kingston upon Thames; utas.archaeology@gmail.com.
- Lewisham Local History Society:** Lewisham Methodist Church SE13 6BT.
- London Canal Museum:** 12/13 New Wharf Road, N1 9RT; www.canalmuseum.org.uk.
- London Transport Museum, Acton Depot:** 2 Museum Way, 118 - 120 Gunnersbury Lane, London, W3 9BQ; 020 7565 7298.
- London Underground Railway Society;** Upper Room, All Souls Clubhouse, 141 Cleveland Street, London W1T 6QG; www.lurs.org.uk
- Lowfield Heath Windmill:** Russ Hill, Charlwood, RH6 0EL (TQ 234 407).
- National Trust:** www.nationaltrust.org.uk, 01483 561389.
- Newcomen Society London:** Fellows' Room, Science Museum, Exhibition Road, London SW7 2DD.
- Newcomen Society Portsmouth:** Room 0.27, Portland Building, University of Portsmouth, St James Street off Queen Street, Portsea.
- Open City London (Open House London):** www.open-city.org.uk.
- Peckham Society:** Goose Green Centre, St John's Church, Goose Green, East Dulwich Road, SE22, 1500, www.peckhamsociety.org.uk.
- Portsmouth Historic Dockyard:** www.historicdockyard.co.uk.
- Railway & Canal Historical Society:** The Rugby Tavern, Rugby Street, London WC1; www.rchs.org.uk
- Rotherhithe & Bermondsey Local History Group:** Time & Talents Centre, Old Mortuary, St Mary Church Street, Rotherhithe Village, SE16; www.kingstairs.com/rotherhithe.
- Royal Gunpowder Mills:** Waltham Abbey; www.royalgunpowdermills.com.
- Rural Life Centre,** Old Kiln Museum, Reeds Road, Tilford, Farnham, Surrey GU10 2DL.
- Shalford Mill (National Trust),** Shalford Guildford Surrey GU4 8BX.
- Shere, Gomshall & Peaslake Local History Society:** Shere Village Hall, Gomshall Lane, Shere GU5 9HE; www.sherehistorysociety.co.uk.
- Shirley Windmill:** Postmill Close, Shirley, Croydon CR0 5DY; visitor@croydowntowncentre.com.
- Southwark and Lambeth Archaeological Society:** Housing Co-op Hall, 106 The Cut SE1 8LN (almost opposite the Old Vic).
- SPAB Mills Section:** 37 Spital Square, London E1 6DY. millsinfo@spab.org.uk.
- Spelthorne Museum:** Elmsleigh Road, Staines TW18 4PN, (access through library), 01784 461804, www.spelthornemuseum.org.uk.
- STEAM - Museum of the Great Western Railway:** Kemble Drive, Swindon, SN2 2TA; www.steam-museum.org.uk
- Surrey & Hampshire Canal Society (The Basingstoke Canal):** Parish Pavilion, Station Road, Chobham; ww.basingstoke-canal.org.uk.
- Surrey History Centre:** 130 Goldsworth Road, Woking, Surrey, GU21 6ND, 01483 518737, shs@surreycc.gov.uk.
- Sussex Industrial Archaeology Society (SIAS):** www.sussexias.co.uk.
- Sussex Mills Group:** www.sussexmillsgroup.org.uk.
- Twyford Waterworks:** Hazeley Road, Twyford, Hampshire SO21 1QA; www.twyfordwaterworks.co.uk/.
- Wanborough Great Barn:** Wanborough, N of Hog's Back, Guildford GU3 2JR; 01483 444751, www.guildfordmuseum.co.uk.
- Watercress Line (Mid-Hants Rly):** Alresford Station, Alresford, Hants SO24 9JG or Alton Station, GU34 2PZ; www.watercressline.co.uk.
- Weald & Downland Open Air Museum, Singleton:** Chichester, West Sussex, PO18 0EU, 01243 811348.
- Wealden Iron Research Group:** Nutley Memorial Hall, Sussex, (North end of village, West side of A22).
- Westcott Local History Group:** Westcott Reading Room, Westcott near Dorking, Surrey RH4 3NP; info@westcotthistory.org.uk.
- Wey & Arun Canal Trust:** The Granary, Fritchfold Farm, Loxwood Billingshurst, West Sussex RH14 0RH; www.weyandarun.co.uk.
- Wings & Wheels at Dunsfold Park:** near Cranleigh, Surrey GU6 8TB; www.wingsandwheels.net.

Diary September 2011

- 22 Thu Surrey Industrial History Group: Leatherhead Course begins; * **FULLY BOOKED.**
 24 Sat - 25 Sun Rural Life Centre: Steam & Vintage Weekend

Diary October 2011

- 4 Tue Surrey Industrial History Group Lecture Course at Guildford First Lecture:
 The Changing Nature of Innovation - an Historical Overview by Dr John Russell, President Newcomen Society.
 9 Sun Rural Life Centre: Land Rover Day
 15 Sat Surrey Archaeological Society Conference: Industrial Archaeology -
 The Research Framework, see www.sihg.org.uk/meetings.htm.
 18 Tue Surrey Industrial History Group (SIHG) Lecture Course at Guildford
 Historic Buildings & Materials by Martin Higgins, Historic Buildings Officer.
 27 Thu SIHG Half Term Visit: The Watercress Line - *Tornado* Special Event see page 3.

Diary November 2011

- 1 Tue Surrey Industrial History Group Lecture Course at Guildford
 No Place Too Dangerous - Women & Children of the Cornish Mining Industries
 by Lynne Mayers, Researcher & Author.
 15 Tue Surrey Industrial History Group Lecture Course at Guildford
 Iron and Steam in the Vale of White Horse
 by Tony Hadland, former Administrator, Vale & Downland Museum, Wantage
 29 Tue Surrey Industrial History Group Lecture Course at Guildford
 The Life and Works of John Rennie by Peter Cross-Rudkin, ICE Panel for Historical Engineering Works

Diary December 2011

- 13 Tue Surrey Industrial History Group Lecture Course at Guildford
 Members' Talks - Please volunteer!

Bakery at Pompeii by Jan Spencer

While on holiday at the beginning of September, we had a hot but fascinating visit to Pompeii. The flourishing Roman city was buried in ash from the disastrous eruption of Vesuvius on 24 August* 79 AD. Daily life from almost 2,000 years ago has been preserved for us to wonder at.

Several bread producing businesses comprising warehouse, oven and mills can be observed.

This shop has three flour mills. The one shown here has been damaged, but the structure is visible. The lower, conical, stone is fixed while the upper stone is rotated by a man or a mule acting on a beam inserted in the rectangular hole. The moving stone has an hour-glass shaped hole. Grain is fed in at the top and the flour emerges around the bottom.

* This date is reported by Pliny the Younger, but some evidence suggests a date later in the year. ☐



Mill, bread oven and serving counter. Photo by Jan Spencer

Wylam's Other Railway Pioneers (part 1) by Bob Bryson

Most railway enthusiasts are familiar with the Rainhill trial of 1829 at which the directors of the Liverpool to Manchester railway sought to test the best railway locomotives of the time. The trial was famously won by Stephenson's Rocket and Robert Stephenson went on to become one of our most eminent engineers, of similar standing to Brunel and Telford beside whom Stephenson is buried in the nave of Westminster Abbey. Fewer people are aware that another railway pioneer, Timothy Hackworth, builder of one of the other locomotives to compete in the trials, who came from the same village as George Stephenson. While the cottage where George Stephenson lived is now a National Trust property one has to look to Shildon in County Durham to find a memorial to Timothy Hackworth. Like George Stephenson (1781-1848) Timothy Hackworth (1786-1850) was born in Wylam on the banks of the river Tyne near Newcastle. Originally a blacksmith, he became involved in locomotive production when he was recruited by Christopher Blackett (1751-1829) in 1808 to work at Wylam Colliery.

Also associated with Wylam is another pioneering railway engineer, William Hedley (1779-1843). Hedley was born in Newburn just a few miles away and went to school in Wylam. Hedley became a manager at Walbottle Colliery before he was twenty two. He afterwards held the same position at Wylam Colliery where Christopher Blackett had been interested in using locomotives for some time. The Blackett family had owned the mining interests in Wylam for much of the eighteenth century. Christopher Blackett assumed control of the business in 1801 and took a great interest in improving the efficiency of the horse-powered five mile wagonway by which the coal was moved to the offloading point on the River Tyne. In 1804 Blackett had employed Richard Trevithick to produce a locomotive that would replace the use of horse-drawn coal wagons.



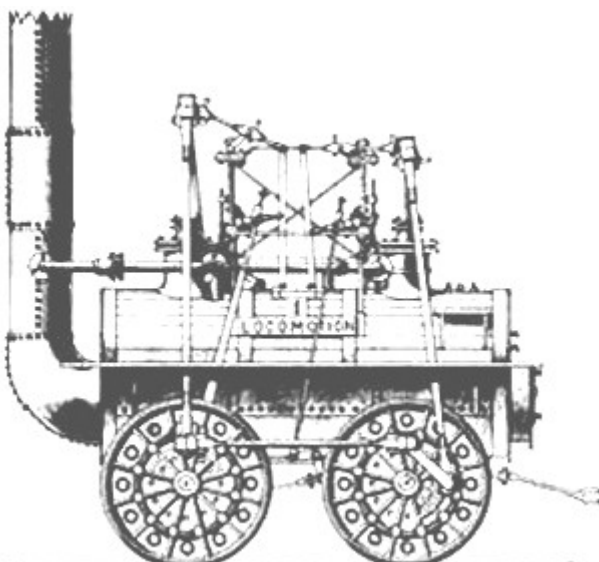
William Hedley's *Puffing Billy* 1813

But the weight of the engine was too much for the wooden wagonway. In 1808 he had the wooden rails replaced by an iron plate-way, after which the horses could haul two loaded chaldrons (wagons) rather than the single chaldron they could manage previously. Blackett encouraged William Hedley to experiment with steam traction, and over the period 1813 to 1816 horses were replaced by steam locomotives designed by Hedley. (Blackett remained in charge of Wylam Colliery until his death in 1829 and his descendants remained Squires of Wylam until as recently as 1971.)

Two talented craftsmen, Jonathan Forster, an enginewright, and Timothy Hackworth helped Hedley in his task. Hedley believed that if the wheels of the locomotive were coupled, the weight of a locomotive alone would provide sufficient adhesion to haul a train of loaded wagons. Hedley's theory was supported by his experiments and in 1813 he obtained a patent for his smooth rail system. Hedley now turned his attention to designing and making a reliable locomotive. He patented a design for one of the first locomotives, the *Puffing Billy* (his own nickname) which began to pull coal trucks from Wylam to the dockside at Lemington a distance of about five miles.

Originally carried on four wheels, the eight ton locomotives were too heavy for the plate rails, and so, to spread the weight, they were redesigned with eight wheels. Two of the locomotives produced by William Hedley, Jonathan Foster and Timothy Hackworth, were still working at Wylam Colliery in 1860. *Puffing Billy* and *Wylam Dilly*, much rebuilt, survive in preservation. In 1828 Hedley began renting the South Moor Colliery. While there he developed a steam-powered machine that improved the system of pumping water out of the mine. This steam-pump was soon used in collieries all over the North of England. William Hedley died at Burnhopeside Hall, near Durham, on 9 January 1843.

Timothy Hackworth was the son of John Hackworth, the foreman blacksmith at Wylam Colliery, and when he left school at 14 he began a seven year apprenticeship, finishing his indentures in 1807. He took over the duties



Stephenson's *Locomotion* 1825

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(Continued from page 6)

of his father, who had died three years earlier. He held the position for eight years, and it was during this spell that he helped Hedley built *Puffing Billy*. Then he moved to Walbottle Colliery and spent several months on secondment to Stephenson's Newcastle works. The works had been founded in 1824 to make the locomotives for the Stockton & Darlington line. George Stephenson knew of Hackworth's work on the *Puffing Billy* and recruited him as superintendent of locomotive engine production. Hackworth worked with George Stephenson on *Locomotion* and was on board when it

made its first public journey on 27 September 1825 at the opening of the Stockton and Darlington Railway. He was so well thought of that Stephenson offered Hackworth half of his own share in the company. Hackworth declined this offer, but within 12 months he agreed to become engine superintendent on the Stephenson-built Stockton and Darlington Railway at a salary of £150 a year, all found. He was provided with a small workshop at Shildon, near the terminus of the line, and built it up so that he could manufacture engines as well as repair them. □

Three Very Different Wealden Iron Furnaces by Alan Crocker

(Continued from page 1)

journal which this year has 64 A4 pages containing six articles. Two of these are on Witley Park furnace, SU 9275 3740, which was visited by members of the WIRG Field Group in February 2011. The first is by Jeremy Hodgkinson, President of WIRG, and provides a valuable reassessment of earlier surveys of the site but unfortunately gives an incorrect grid reference. One survey, carried out by the Haslemere Archaeological Group in 1980 is analysed in detail and their plan of the site, with many additions, is reproduced. Also, interpretations of the site by C F Tebbutt in 1977 are examined and different locations suggested for structures which have disappeared - including the furnace itself. These new interpretations have arisen because there are virtually no structural remains, only surface features.

The second article, by Bernard Worssam, is on the landscape of the furnace site and in particular explains why the bay or dam of the pond is unusually high. Until the Last Glaciation, which reached its peak some 20,000 years ago, the stream was a head-water of the River Wey. However, it was then captured by the River Arun at what is now Dunsfold Common. As the Arun at this point was considerably lower than the Wey the capture caused the valley in Witley Park to be deepened so that a deep pond could be constructed for the furnace. Incidentally the former flood plane of the Wey has provided an ideal site for Dunsfold Aerodrome.

Again at the Tilford WIRG meeting I discussed with Jeremy Hodgkinson a furnace in West Sussex which



Two views of the waterwheel and bellows.
Photos by Glenys Crocker.

plays a major role in a Tudor detective novel which I was reading at the time. This was *Heartstone*, a 'number one best seller' by C J Sansom, who has a PhD in history and practised as a solicitor in Sussex before becoming a full-time writer. *Heartstone* is the fifth novel he has written featuring Matthew Shardlake, a hunchbacked sleuth, and they are all packed with authoritative details of life during the reign of Henry VIII. At least I thought so until I read this book, which involves a journey from London to Portsmouth. Shardlake stops overnight at Cobham, and then at Godalming, said to be very close to the North Downs and Hampshire respectively, neither of which is correct. Later he visits the fictitious town of Rolfswood in West Sussex, perhaps just north of Emsworth, where he investigates a fire which had destroyed an iron furnace in 1526. He interviews a former employee at the furnace who tells him that loads of coke were delivered to the works. Now I had thought that Abram Darby of Coalbrookdale was responsible for introducing coke rather than charcoal for firing blast furnaces and that was in the early 18th century. Jeremy said that others might have used coke a little earlier but that Sansom had clearly got his facts wrong. Still the book (637 pages) makes an excellent read and I recommend it. □



Industrial Archaeology News No 158 Autumn 2011 by Gordon Knowles

The spring Association Industrial Archaeology visit to Sweden is described by Richard Hartree. I can do no better than quote his summary "This was a truly remarkable trip. It included three UNESCO World Heritage Sites; two hard-rock mines both with histories of several centuries; two 'Lancashire' hearths - which were the basis of Sweden's leading position as a supplier of quality steels; and a completely preserved baroque theatre! All this was within 200km, west and north, of Stockholm."

Robert Carr reminisces on Motoring in Ireland, noting that the Irish Automobile Association was founded just over 100 years ago. He comments that one can still see signposts marked in kilometres, miles and Irish miles!

Chris Barney writes on Cockatoo Island on the south shore of Sydney Harbour, Australia. It is one of the finest anchorages in the world and was where the first settlers from England landed in 1738. It was first a prison and then, for 150 years, a naval shipyard. It is now open to the public and extensive remains of the dockyard can be seen. The yard once employed 3,500 people and over its lifetime built, docked or slipped over 1,200 ships.

There are reports on two seminars/workshops. The first was to prepare a response by the Heritage Alliance to the Heritage Lottery Fund Strategic Plan. The AIA is part of this alliance of some 90 different organisations and their combined response can be read at www.theheritagealliance.org.uk. The second report, by John Porter, is of a seminar held at Kew Bridge Steam Museum in May when the future of Stationary Steam Museums was debated. This showed that 'burdens become lightened if they are shared' something the movement has failed to do so far. To remedy this a meeting will be convened early next year when positive proposals can be tabled.

There is an article by Tim Mickleburgh on the National Piers Society, which was launched in 1979. It publishes a newsletter and organises an annual AGM weekend, invariably held at a resort with a pier, sometimes abroad. The 2010 meeting was held in Belgium. Most of its

work is behind the scenes, supporting lottery bids and publicising individual piers. The pier at Weston-super-Mare has been chosen as the Pier of the Year 2011.

The AIA continues to comment on endangered sites; recent examples are Bracebridge Pumping Station in Worksop and Clipstone Colliery, both in Nottinghamshire. At the other end of the scale was a complete cider mill and press near Monmouth.

A meeting on 23 March was held to consider the interim version of the National Heritage Protection Plan. An Advisory Board of some 20 members of the stakeholders is being set up to give advice and feedback.

A new £2 million Challenge Fund will be managed by the Architectural Heritage Fund to specifically support Grade I and II* listed buildings at risk. The funding comes equally from the Andrew Lloyd Webber Foundation and English Heritage. Local Building Preservation Trusts who are currently unable to complete a rescue, and could benefit, include the West Midlands Historic Buildings Trust who want to save the Foster, Rastrick & Co. Foundry in Stourbridge and the Coker Rope & Sail Trust trying to save Dawe's Twine Works in West Coker, Somerset.

In the south the De Witt lime kilns project at Amberley in Sussex has been finally completed and was opened by HRH Prince Michael of Kent on 4 May. The 18 kilns date from 1904-5 but by 1910 all but two were blocked up or changed to traditional English kilns as the Belgian design had failed. These were in use until the 1960s when the site was abandoned. When the Museum was opened in 1979 they were designated a Scheduled Ancient Monument and emergency work was undertaken. In 2007 £391,000 was awarded from the Heritage Lottery Fund to restore and interpret the kilns. Additional funding of £18,000 came from the Museum Friends, the County and District Councils and work in kind by volunteer labour contributed £15,900.

Our own Alan Thomas contributes notes on several south east developments. These can be read over the page. □

Recent Accessions to Surrey History Centre, Woking, Relating to Industrial History and Archaeology *from Di Stiff, Surrey Heritage*

- Z/572 - Copy plan of Merton Abbey station (Tooting, Merton & Wimbledon Railway), 1867
- CC1194 - Surrey County Council Planning Department: agricultural data, including reports, brochures, parish returns and landscape survey, 1974-1985
- 8812 - Photograph albums of views of Surrey buildings and ancient monuments, c. 1950s
- 8811 - Woking Borough Council planning registers, 1960s-1970s
- 8789 - Woking Borough Council building control plans, 1949-1981
- 8807 - Local history research material for Shackleford compiled by Ann Laver, 2011
- 4232 - Additional material from the Wealden Buildings Study Group papers relating to properties in Plaistow Street, Lingfield, 2010
- 7143 - Additional material relating to the GQ Parachute Co, Ltd of Woking, including interior and exterior photographs of the construction of factory in Portugal Road & the completed building, 1938 □

Industrial Archaeology in South East England, 2010-11 by Alan Thomas

The **London Bus Museum**, founded in 1966, was established in 1972 in a building at Cobham which was formerly a WWII out-station of the Vickers works at Brooklands. The collection consists of some 35 buses, mostly from London Transport with some service vehicles and a few privately-owned buses. There is also a collection of London Transport items such as bus-stop signs and memorabilia.

The museum is in process of moving to a purpose-built building, entitled Cobham Hall, at the Brooklands Museum. The exhibits have all been moved from the old site and the new building was opened on 1 August 2011. In addition to exhibition space it also contains workshop facilities for the continued restoration and servicing of the vehicles.

No additional entrance fees beyond those payable for entrance to the Brooklands Museum will be required. Further information about the museum may be found on the web site of the London Bus Preservation Trust at www.lbpt.org.

Reigate Heath Windmill is the only one in the country which is also a church. Services are held during the summer. Reigate and Banstead Borough Council carried out restoration work in the summer of 2010, including fitting a new tailpost, various repairs and retarring of the exterior.

The **Wey and Arun Canal Trust** has received from the Waterways Trust its Community Award for 2011 in respect of the completion of the Loxwood Canal Crossing project. The canal was prevented from providing clear passage under Loxwood High Street by the construction of a low bridge, and the project involved cutting the canal lower and building new locks to take it down and up to the old levels, as well as the replacement of the bridge. Funding for the project was raised from donors entirely by the Trust. The Devil's Hole Lock at the northern end has also now been restored.

Work is proceeding at the northern end of the canal with the eventual objective of opening it southwards, which will involve cutting a new channel over much of the route past the village of Bramley. The National Trust has granted a 99 year lease of Gun's Mouth Island, at the junction between the canal and the River Wey (Godalming Navigation), to facilitate the clearing of vegetation and the creation of a new channel. Work on other sections of the canal continues with the assistance of enthusiastic volunteers.

Shoreham Airport, the oldest licensed airfield in the UK, celebrated its 100th anniversary in 2010. After numerous changes in the types and duties of the aircraft using it, it is now a general aviation airfield for private and business flying. The terminal building, constructed in 1934 in art deco style, is Grade II* listed.

An example of how it is possible to change the mind of the authorities on conservation matters is the refurbishment of the **swing bridge at Southease over the River Ouse** - a relatively modest structure, which the Environment Agency assessed as needing replacement. Members of the Sussex Industrial Archaeology Society inspected it and, disagreeing, persuaded English Heritage to list the structure, and it was given Grade II status. The EA were therefore obliged to proceed with restoration, and the bridge was reopened in November 2010. It is not at present capable of swinging, but replacement of the great spur wheel means that it could be made fully functional in the future should funds become available.

An aspect of railway closure that may seem bizarre is the

running of occasional trains, perhaps once a week, over lines that are no longer used for services, so as to avoid the expense of operating the legal closing procedures and, possibly, public obloquy. Such a '**ghost train**' apparently runs from **Newhaven Marine**, a station which is officially closed because the platform canopy is said to be unsafe - although cars park under it.

The Sussex IAS has for many years been concerned with refurbishment, operation and display of the **waterwheel-operated beam pump at Coultershaw**. It is now intended to install a water turbine, using an archimedean screw, in the old wheel-pit of the adjacent former corn mill, to generate electricity. This is being partly funded by the landowners, the Leconfield Estates, which will receive the income from the sale of the electricity to the grid, estimated at £15,600 annually. Other funding has come from the Coultershaw Trust and the South Downs Joint Committee. The site is expected to be operational in September 2011.

The **Calshot Spit Light Vessel** was moved in November 2010 from Ocean Village in Southampton to a temporary home in Southampton's Eastern Docks. It will form an exhibit in the museum for ships and aircraft, *Aeronautica*, based at the Trafalgar Dry Dock, which will replace the *Solent Sky Museum*. It is expected to open in 2015. The *Aeronautica* project was launched by the Southampton Heritage Foundation on 14 June 2010.

A workshop building has been erected near the Trafalgar Dock to house the three trams which have been stored by Southampton council for a number of years. The building is shared with the Dunkirk Little Ships Restoration Trust, and the hull of the former RN pinnace *Dorian* was moved in on 6 May 2011.

Progress is being made in applying for Heritage Lottery Fund help for the **restoration of the SS *Nomadic***, which was the tender stationed at Cherbourg for the use of passengers to and from that port travelling on the White Star liners, including *Titanic*. It is proposed also to restore the Hamilton Dry Dock at Belfast, where *Titanic* was fitted out, in time to mark the centenary of the sinking in 2012.

The New Forest National Park Authority and Wessex Archaeology have carried out a 'dig' at the former **Pennington salt works near Lymington**, in advance of a planning application to convert the remaining Grade II buildings into office and storage space. Remains of the sea-salt boiling houses have been found.

The 2011 excursion programme of the **SS *Shieldhall*** has had to be cancelled because of the discovery of serious corrosion in the hull under the engines, and a six-figure sum has to be found for repairs. It is intended that she will eventually be part of the plans for the *Aeronautica* museum.

A new hull is being constructed at Bristol for the paddle steamer ***Medway Queen***, which will be moved to a new base, with workshops and a visitor centre, at Gillingham. Refitting of the hull will be carried out by apprentices from Mid Kent College with four full-time instructors. Numerous missing items are being sought.

Gravesend canal basin, including two locks and a swing-bridge, on the Thames and Medway Canal has been listed Grade II. The Thames and Medway Canal Association has long-term plans to reopen a 700 yard stretch of canal from the basin, to make more than 3 miles of navigation accessible from the Thames. □