



# NEWSLETTER

Number 27 Spring 1998

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## WINTER MEETING

The 1997 Winter meeting of WIRG held on 31 January 1998 at East Court Mansion, East Grinstead, took a different format from previous events. Instead of being devoted to a single topic presented by a guest speaker, this year three Members each provided a 20 minute talk on different aspects of iron production.

Jeremy Hodgkinson spoke on the Tudeley Ironworks Accounts, the subject of a site visit following the summer meeting, Brian Herbert spoke of the activities at WIRG's experimental bloomery furnace in a vividly illustrated talk and Tim Smith told us about Rockley Furnace. The talks are summarized below. A fuller account of Tim's visit to Rockley and Wortley Top Forge appears under the heading "News from Elsewhere".

### Tim Smith - Rockley Furnace

The construction of Rockley blast furnace is typical of the blast furnaces which would have operated in the Weald in the 16-17 centuries. It is well worth visiting when travelling north as it is just a 10 minute drive from J36 of the M1.

Built around 1700, the furnace ruin stands some 5.6m high with a clearly defined casting arch and blowing arch on adjacent walls. Intriguingly, a third wall has been penetrated at a later date, probably to add a second tuyere either for conversion of the charcoal fired furnace to coke firing or to increase the amount of metal held by the furnace following the construction of a casting pit. This pit, although similar in design to a Wealden cannon pit, was more likely used to cast cylinders for export to the Caribbean where they were used to crush sugar cane.

In 1717, the furnace is recorded as producing 400t iron, and the last reference to the furnace in use was 1742. It is suggested that the furnace may have been reopened and fired with coke for a short period in the early 1800s as part of the war effort against Napoleon. No documentary evidence of this has been found and local legend that the guns for HMS Victory were cast there has been proved false.

Also in the vicinity and worthy of a visit is Wortley Top Forge, Originally a pig iron finery built between 1602-25, but later to come to specialise in the manufacture of railway axels. In 1787, it was one of the earliest forges to adopt

Cort's puddling process. The present building mainly dates from 1713 and contains two water driven helve hammers (sadly not working) and a collection of 'modern', machinery.

Also nearby to Rockley, at Elsecar, is the only remaining Newcomen Atmospheric engine on its original site. Built in 1795, the engine drained water from the 'Barnsley coal seam' until 1923 when it was mothballed, fending off an offer from Henry Ford to buy the engine and ship it to America. In 1928 it was brought back into service when the electric pumps were flooded. It worked occasionally for demonstrations up until 1953 when it suffered a failure which has never been rectified. But the engine still proudly stands and can be visited by appointment through the Elsecar Heritage Centre.

### Jeremy Hodgkinson - The Tudeley Accounts

Members had already become familiar with the ironworks that had been operated in Southfrith chase, near Tonbridge, at last year's AGM, when Sidney Simmons had described the historical background to the accounts. They had also visited some of the possible sites where the works could have been located. The accounts themselves were the subject of the short talk at the Winter Meeting. Dating from the middle of the fourteenth century, they cover two periods, before and immediately following the Black Death, when the ironworks were taken in hand by the estate.

Our knowledge of iron working in the Middle Ages is, at best, patchy, and the Tudeley accounts provide us with the only details of the operation of a bloomery in the period. From them we learn of the ore, or orstone, the charcoal, and the number of blooms produced. There are the payments to the workers, which included their drink money 'according to the custom of the country'. There are also references to the equipment of the works, and to the repairs and rebuilding that were carried out. Attention was drawn to the dramatic increase in costs following the devastation of the plague, when charges for raw materials, labour, and the price asked for the blooms, increased in the order of 100%. The publication, more than eighty years ago, of Michael Giuseppi's paper, in which he appended a transcription of the original Latin text, has kept these accounts away from all but the most serious student. A new translation, to be available in the near future, will be of great interest.

## Brian Herbert - Experimental Smelting

Brian Herbert said that he was speaking on behalf of all the bloomery smelting team members; smelting takes place, during the summer, on Ashdown Forest.

He paid tribute to the Roger Adams who spent several years trying different smelting experiments, and whose site is now being re-used.

The 7 metals of antiquity, which include wrought iron and meteoric iron were discussed,

The iron ore used in these experiments was obtained from Sharpthorne Brickworks, West Hoathly, although another source at Cliffend, near Fairlight, Sussex, has recently been found. A local charcoal-burner, Mr Billings of Forest Row, supplies (and delivers) the charcoal for smelting. However, wood is still required for roasting the ore and pre-heating the furnace and this is available nearby. A simple technique for roasting the ore has been worked out and it can now be completed in one burn.

Once the furnace has been pre-heated, charges consisting of equal weights of roasted ore and charcoal, are tipped into the top of the furnace at intervals of about 30 minutes. Two pairs of hand bellows are used to supply air (oxygen) necessary to obtain the 1200 C temperature. The bellows, in

fact, pump-up a small gasometer, so that the constant air-flow may be measured on a home-made flow-meter; the air-flow-rate from bellows being almost impossible to measure.

After some 6 to 8 hours the smelting is stopped and the furnace sealed-up until the next weekend. Then, after the "potential bloom" has been detached from the side of the furnace, it is lifted out with long tongs. To date, after 5 smelts, no metal has been produced; hence the term "potential bloom", but the team are forever hopeful.

They have experimented with smithing one "potential bloom" in a re-heating hearth (string hearth), which has shown up a problem: it was not possible to heat-up all the bloom with one (or even two) tuyere. It is possible that the bloom may have been broken-open and the metal removed; this would seem more sensible than re-heating both the slag and metal just to consolidate the iron. Brian Herbert

**Comment:** Another method, used in experiments by Peter Crew and his team in Wales is to smith the bloom whilst it is still hot from smelting, thus saving time and fuel. To date, the WIRG team have not found it possible to do this. If there is a smith amongst our members who would volunteer to take over whilst the bloom is still hot his help would be gratefully received. However, having said all this, we know that reheating is possible because iron was made by this method by Roger Adams. Dot Meades



1. Left to right: Constant air flow reservoir, experimental shaft furnace, bellows.

## FORAY REPORTS

### Heathfield

Only one foray has been made to the new bloomery search area, again near Heathfield. A diminished team of 3 members searched along two streams to the east of the Heathfield mast. At TQ57552184 some lumps of bloomery slag were noticed in the stream; on further investigation it was realised that the bed of the stream was solid slag, however, no slag could be found on the stream banks.

Nothing further was discovered along this stream, and so we trekked eastward over-land to the head of the next one. A bloomery site was known to exist down-stream and this was soon found at TQ57632174, it was as large as the other bloomery sites we have discovered locally, suggesting another Roman site. Unfortunately, a firebreak has been put through the site, but there is still plenty of slag left. At this point it was realised that the first site was just up the hill and down to the previous stream; no more than 100 yards. The slag was not continuous between the sites although some slag was probed on the hill-top; at best the slag in the stream might just be a Roman Road! With our limited resources it was decided to re-visit the first site and carry out a dating-dig next season. BH

### The Domesday Ironworks

Two forays have now been made to locate the Domesday Ferraria at Forest row. The area is geologically interesting in that the Medway valley is Ashdown Sand, the north slope of the valley is Wadhurst Clay with Lower Tunbridge Wells Sand on the top.

The first foray, in November 1996, discovered many minepits on the north side of the Medway valley. At Minepit Wood, TQ43403575, there is a very large pit along with some smaller pits. These seem not to have been back-filled as they are still 4 to 6 feet deep. Across a small valley there is a large pit in Spanden Wood, 42953580; at a similar height. A large amount of well-scattered bloomery slag was found in Barn Field, TQ43083535: a field having a high lynchet to the north, suggesting that it has been ploughed for many years.

The second foray in February '98 investigated two streams in the area, one finishing at the water pumping station and the next stream to the east. Apart from the odd piece of slag, nothing of substance was discovered. One piece of slag at TQ43583549 was probably washed down stream, but we could not find its source. More scattered slag was found in a field at TQ43503540.

An interesting field name "Hammer Grove", south of "Minepit Wood" yielded nothing of interest, as expected (there being no water for power). It is interesting to speculate that if this field name has been carried down for 600 to 800 years, say, it suggests that the iron ore may have been broken-up by the miners, in this very field. Brian Herbert

### Waldron - 10th January 1998

The finding of a small bloomery site in Longreach Shaw, near Foxhunt Green, was nothing remarkable. It was just one of over 500 now known to the Group. What made it more intriguing was the discovery of a sherd of hand-made, late-Iron Age or early-Romano-British pottery in the bed of the stream next to it - not in itself sufficient to date the site, but enough to suggest that dating it might be feasible. A goodly number of members turned out, and a morning's digging began with two trenches set about 15 yards apart. There was no tap slag to speak of, but several lumps with tell-tale marks of wooden wattles. There was also a distinct layering of the slag heap. The more southerly trench yielded two sherds of pottery, but it was unlike the sherd that had already been found, and it would take some time before a suitable expert could be confronted with them for a formal identification. The eventual verdict was that they were of the same period as the earlier piece, but that at least one of them was in a rather anachronistic style, suggesting an earlier, as opposed to a later, date. JSH

## WIRG NEWS

### THE DUNN MANUSCRIPTS

The Dunn archive is an important collection of title deeds, accounts and estate papers relating, among others, to the Roberts, Alfrey, Peckham and Farnden families, and has, for many years been on loan to the East Sussex Record Office. Of particular interest to researchers into the Wealden iron industry are the various agreements and accounts relating to the ironworks at Brede, Beckley and Socknersh, and in particular, their operation by the Farndens and by Thomas Western in the 17th century. The decision, therefore, by the owners, to withdraw the archive from loan, prompted an appeal by the record office for contributions towards the cost of microfilming the complete archive so that it may continue to be available to researchers. The WIRG committee considered that it was within the remit of the group to make a donation towards this appeal, and have therefore made available £500, in the firm belief that by doing so they are helping to promote research into the iron industry. JSH

## PUBLICATIONS AND REVIEWS

### Early Ironworking in Europe - archaeology and experiment

Copies of the volume of Abstracts of the 56 contributions to the international conference held at Snowdonia National Park Study Centre are available for £10, including postage. Order forms, and details of other archaeometallurgical publications from Susan Crew, Plas Tan y Bwlch, Maentwrog, Blaenau, Ffestiniog, Gwynedd LL41 3YU (01 766 590 324; FAX 590 274).

**Donald B Wagner,**

**The Traditional Chinese Iron industry and its  
Modern Fate**

Foreword by Peter Nolan. Published 1997 by the Nordic Institute of Asian Studies (Copenhagen) and Curzon Press Ltd (London) 128pp Hardback £35.00. ISBN 0-7007-0951-7 Obtainable from Nordic Institute of Asian Studies, Leifsgade 33, 2300, Copenhagen S, Denmark. Fax: +45 3296 2530 e-mail: books@nias.ku.dk

**D Crossley,**

**The Bewl Valley Ironworks, Kent, c 1300-1730**

David Crossley describes his excavation of Chingley furnace and forges and includes a report by Dr Ronald Tylecote on the metallographic examination of some of the tools found. It was published in 1975 by the Royal Archaeological Institute and is still available at the bargain price of £2.00 (postage in Britain included) from the Institute's Assistant Secretary, Miss Winifred Phillips, c/o Society of Antiquaries, Burlington House, Piccadilly, London W1V 0HS.

The Book House, Ravenstonedale, Nr Kirkby Stephen, Cumbria CA17 4NQ Tel: 015396 23634 has produced a new catalogue (No 129) with sections on Mines and Mining and on Metals and Metallurgy.

**S Stevens,**

**"Excavations at the Old Post Office site, 15-17  
High Street, Crawley, West Sussex, Sussex"**  
Sussex Archaeological Collections, 135 (1997), 193-208

Descriptions of medieval finds from the historic High Street area of Crawley have been frequent in the last few years, although patterns of occupation and land use have been less easy to determine. Such is the case with the Old Post Office site, where what was uncovered consisted of the foundations of part of a building, together with a number of pits that had been used to dispose of the rubbish and waste of human habitation. Several of these pits also contained quantities of iron slag which, by the sealed nature of the pit contents and the accompanying pottery, could be dated to the 13th or 14th centuries.

No hearth remains or obvious working areas were found, suggesting that, as often has seemed the case in Crawley, slag had been brought from a working site nearby and deliberately dumped in existing pits, perhaps to dispose of it or possibly to provide a form of hard core. Occupation of at least part of the site is known from the early-16th century, and the foundations could tentatively be associated with that period, but excavation has confirmed the majority of the site as probably being peripheral to human occupation for at least three centuries before that. JSH

## NEW RESEARCH

Mrs Anne Dalton has replied to a request at the Winter meeting for information about members' own research, Anne has recently had to give up her membership of the field group after many years of valuable work; she is now devoting herself equally enthusiastically to research into families connected with the iron industry. She writes:

"You may care to put a bit in the Newsletter about my research into the people commemorated by iron floor slabs in St. Dunstan's Church [Mayfield] (R Willett's inventory in WIRG Bulletin No 8 of a988, p.25)

Early in 1997 I was invited to join the Church Recorders' Group of Wealden Decorative and Fine Arts Society which was about to 'record' the contents of our Parish Church. I joined the "Memorials" section and was given the 2 Baker infants, Thomas Sands d.1668, and the 3 Houghton slabs and the Houghtons' wall memorial to cope with.

Thomas Sands resulted in me resurrecting previous notes I had made about Hawksden Forge and the draft article I have sent you separately [Ed: this will be published in the WIRG Bulletin] Research on Thomas Houghton, his wife, Walsingham and their son John, has been most rewarding as I have transcribed the wills of TH and WH and found out a lot about TH, a well known East Sussex lawyer from the papers in ESRO. Apart from describing, minutely, the memorials, we have also to give, if we can, a brief history of the article and of the family concerned."

## FOOD FOR THOUGHT

### **The Inception of the Blast Furnace Process in Britain**

This article originally appeared in HMS Newsletter 36, Summer 1997. Dr Paul Craddock has kindly given his permission for it to be reprinted here, together with some new references:

"The article on the first documented blast furnace in Britain in HMS News No.34 has reminded the author of some other less direct, but much earlier evidence for the blast furnace process in England.

One of the chief chemical defining factors of the blast furnace process was the use of higher temperatures and much more reducing conditions such that the iron silicates which form the bulk of the iron in the slags of the bloomery process were reduced to metal. Thus a separate flux, typically calcium from limestone, had to be added as a slag former. As the bloomery slags contain about 50% of iron, and were produced in quantity they represented a good source of iron, and as such were collected and resmelted in

the early blast furnaces. This is copiously documented for the 16th to 18th centuries. However in the Forest of Dean, the Royal Estate was levying charges on a regular basis for charcoal, ore and cinders (i.e. slags) from the mid 13th century, continuing on a regular basis thereafter as documented in the recently published volume *Victoria County History*, devoted to the Forest of Dean (Gloucester V, 1996, P. 339-40 etc.)

Cyril Hart had previously noted some of these documents and had speculated as long ago as 1953 in *The Free Miners* (p.158) that the cinders could have been intended for resmelting. In his later book *The Industrial History of Dean* (1971, p.3-4) he raised the question again, and elicited the opinion of no less an authority than R.F. Tylecote. He, although noting that 'some of the iron in the very high iron-containing Roman slags could in fact be recovered, basically prevaricated, speaking of making the slags more fluid, decreasing the temperature gradient, etc. None of these could explain what now appears to have been a regular and apparently large scale reuse of the slags, except for the recovery of iron, which was certainly why they were reused in later centuries.

Tylecote's problem in 1971 was that the idea of the blast furnace process operating in the 13th century AD was inconceivable. However work in Europe over the past 25 years has shown that the blast furnace process is much earlier than previously thought.

The blast furnace process dating from the 12th and 13th century was revealed at Vinarhyttan and at Lapphyttan in Sweden (Serning et al 1982, Magnusson 1985) in the 1970s. More recent work in Germany has shown that the process was in use even earlier. Excavations at Metzingen etc. in the Schwabish-Alps of southern Germany (Yalcin e Lychatz 1995. Yalcin and Hauptmann 1995) show that the fully fledged blast furnace process was in operation from the 11th century AD, and with an evolution from the bloomery process stretching back several centuries earlier than that (Gassman et al 1995). From the 13th century the process is now attested from the Markland, in present day Westphalia (Knau and Sonneck 1994).

Thus if the process was in use through Germany and Scandinavia by the 13th century AD, there is no intrinsic reason why it should not have been used in Britain as well. The documented reprocessing of bloomery slags should be seen as strong evidence of this. The cast iron so produced would have been fined to make an inferior wrought iron by analogy with early Chinese and later European practise (Craddock 1995). Thus it is likely that both bloomery and cast iron-finery iron may have been produced side by side in the medieval period. The process would have taken place in furnaces which may not have been vastly dissimilar from each other for several centuries. The surviving evidence would be in the composition of the slags.

Jeremy Hodgkinson in his own note has the qualifying statement that this was the first documented blast furnace in England, which is, of course, perfectly correct - at present!

References:

Craddock, P.T., 1995 Iron and Steel in ancient China: origins and technical change, *Antiquity* 68 261.pp.886-90

Gassman, G., Yalcin, U. and Hauptmann, H., 1995 Fruhmittelalterliche Eisenprodukyion in Kippenheim, Subaden: Ein "missing link" zwischen Rennverfahren und Rohleisentechnologie, *Metalla* 2 2.pp.43052.

Knau, H.L. and Sonneck, M., 1994 Rennfeuer, Massenhutte, Hammerwerk..., in *La sidergie ancienne de l'Est de la France dans son contexte europeen*, ed. M. Mangin, Les Belles Lettres, Paris. pp.121-130.

Magnusson, G., 1985 Lapphyttan - an example of medieval iron production, in *Medieval Iron in Society* eds. E. Hook and R. Palsson. Jernkontoret and Riksantikvarineambet. Stockholm. pp.22-57.

Serning, I., Hagfeldt, H. and Kresten, P., 1982 Vinarhyttan, Jernkontorets Berghistoriska Utskott 21.

Yalcin, U. and Hauptmann, A., 1995 Zur Archaometallurgie des Eisens auf der Schabischen Alb, *Forschungen und Berichte zur Vor- und Fruhgeschichte in Baden-Wurtemberg*.

Yalcin, U. and Lychatz. B., 1995 Fruh- und hochmittelalterliche Eisungewinnung im Vorland der mittleren Schwabischen Alb: Naturwissenschaftlich-technologische Aspekte zur Rekonstruktion der Eisenverhuttung, *Metalla* 2 2. pp.53-61.

**LETTERS FROM MEMBERS**

It was good to hear from Charles Blick, who often writes to say how much he enjoys our newsletter. Charles, now retired, has had a distinguished career in metallurgy, as well as being a prominent member of HMS.

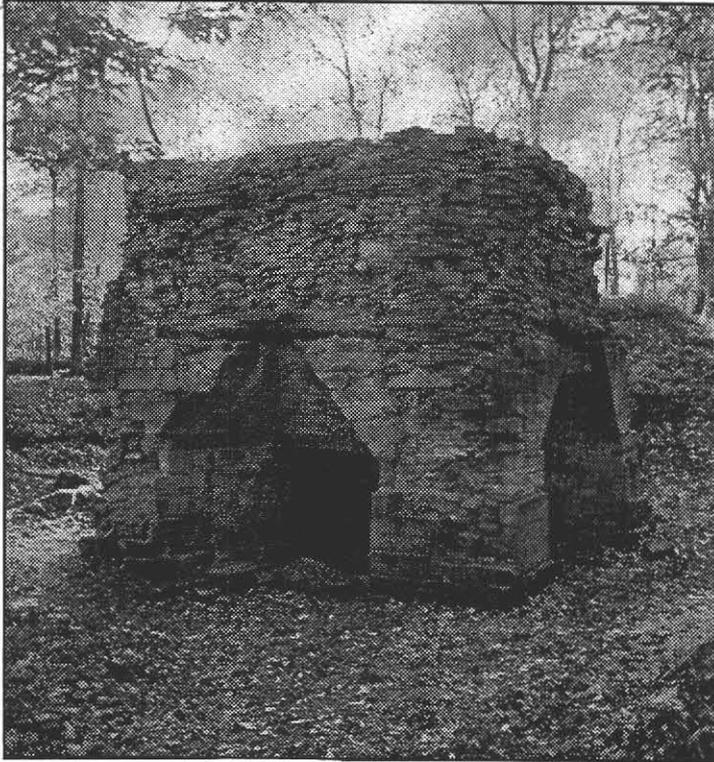
He writes as follows:

"Just a line to say I have received and am very much enjoying your Winter newsletter. Thank you very much indeed. WIRG is maximising on all the industrial historical and archaeological wealth in its area, with a wonderful set of dedicated operators!!" He notes the fascination of Tudeley and is pleased that the Ivor Bohn's Swedish blast furnace monograph, which he says is "very readable", has been republished. He notes that the centenary of Henry Bessemer's death in 1898 is being marked by a big Steel Conference in Sheffield, 17-19 June 1998. Thank you, Charles for all your help and encouragement to WIRG over many years. DMM

## NEWS FROM ELSEWHERE/VISITS BY WIRG MEMBERS

### A 17C South Yorkshire blast furnace and an 18C forge

By Tim Smith



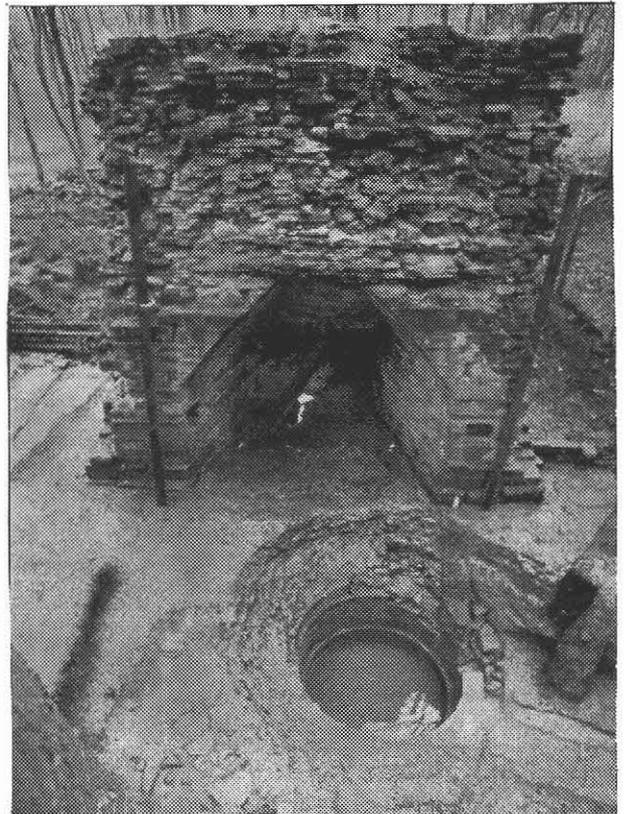
2. The remains of Rockley Blast Furnace today. Pic courtesy D Crossley.

Rockley blast furnace, some 20m north of Sheffield and just a 10 minute drive from junction 36 of the M1 motorway, is one of Britain's best preserved 17th Century blast furnaces standing some 5.6m in height - the angle of the surviving charging ramp suggesting an original height of 7-8m.

The furnace is believed to date from about 1700. While some put it at the earlier figure of 1652, an extensive search of documentation and field work by the Sheffield University industrial archaeologist, David Crossley, point to this date being that of a nearby earlier furnace no longer standing.

The present remains consist of a stone tower, once faced with ashlar blocks, in which a casting arch and a blowing arch are built into adjacent walls (see plan). Intriguingly, a third, less well defined, arch has been cut into the wall opposite the casting arch. It is speculated that this entry, which contains a cill some 0.5m above ground level, was added at a later date to introduce a second tuyere either to enable the capacity of the furnace to hold molten metal to be

increased following the construction of a later casting pit, or possibly as an adaption to the furnace to convert it from charcoal to coke firing, the latter requiring an 80% increase in the amount of air supplied. Another interesting feature of the furnace is the square section of the stack, although the shape of the hearth may have been circular but no remains survive of this.

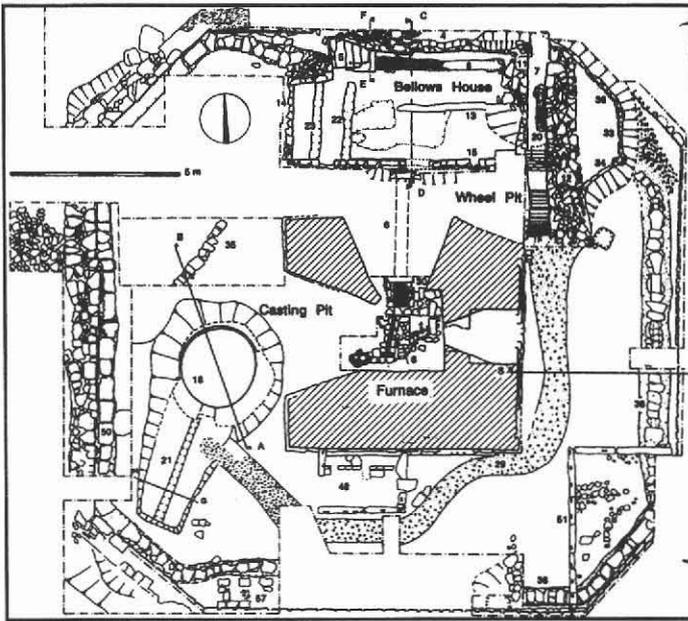


3. Rockley blast furnace, South Yorkshire, during excavation showing view into casting arch and the casting pit. (courtesy D Crossley)

The furnace was built for charcoal firing and in 1717 is recorded as producing 400t annually. Confusion has arisen regarding the origins of the furnace due to the existence of an earlier furnace to the west built by Lionel Copley in 1652 which passed into the ownership of Dennis Heyford in 1675. Records from 1704 indicate that by then there were two furnaces at Rockley, the later being referred to as the 'Low Furnace' and the earlier as 'Furnace Hill'. The surviving remains are of the later furnace built by John Spencer in partnership with Stanthorpe, these entries being recorded in

the records of the Staveley ironworks, a company which survives today as part of Stanton plc.

Records indicate that the furnace was working, fired with charcoal, until at least 1742, sometime after which it was closed. The proposition is that it was reopened and fired with coke in the late 18th century, a conversion which would have required a switch from blowing with bellows to using a cylinder blowing engine to supply the greater quantity of air needed. This proposition is perfectly feasible, coke had been used in Coalbrookdale, Shropshire, since 1709 following the work of Abraham Derby, and numerous furnaces had been converted to using coke rather than expensive charcoal in the intervening years.



4. Plan view of Rockley blast furnace showing octagonal construction of enclosure (Pic courtesy D Crossley)

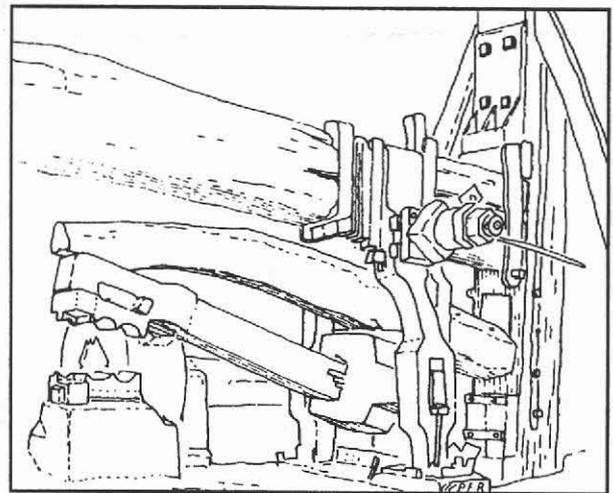
Excavations by David Crossley discovered a scatter of coke in the upper layers in the vicinity of the site but found no evidence of slag typical of coke firing practice. The only iron found was a pig which on analysis showed a sulphur content of 0.17% - indicative of coke firing - but this was located in the rubble filling of the wheel pit and may have come from some other source. There was also no evidence of enlargement of the furnace, a practice normally carried out when converting to coke operation. If the furnace was reopened at the end of the century for use with coke, it seems its period of operation was very short as no mention of its output has been found in contemporary records.

Today, the furnace remains stand in woodland and are preserved through the ownership of the South Yorkshire Trades Historical Trust. For sample hunters, it should be noted that the excavations have been covered with a layer of modern steelmaking slag for protection.

Close by is another significant ruin, that of a Newcomen engine house built in 1817 standing alongside the now capped shaft of a coal and iron mine, the local iron ore being associated with the clay between the coal measures.

Also in the locality, some three miles to the south west near Stocksbridge, is an 18th century forge complete with two water driven helve hammers. Known as Wortley Top Forge, this is the survivor of two forges in Wortley originally built between 1602 and 1625 to convert pig iron to wrought iron in open forges. The surviving forge dates from 1713 when it was used for the conversion of pig iron to wrought iron. In 1787 it was one of the first forges to be converted to the puddling process developed by Henry Cort in 1784. A bar rolling mill was also added at this time. By 1800, the forge was producing 300-400t of wrought iron a year. With the coming of the railways in the early 1840s, the forge concentrated on the production of railway axles made by forging together bundles of wrought iron bar.

In 1907, the forge closed and is now under the care of the South Yorkshire Trades Historical Trust who have largely renovated the building and are in the process of preserving the original equipment as well as displaying a collection of industrial machinery. (There is also a working miniature steam railway in the grounds to give rides to the children while the serious business of examining the forge by the 'grown ups' takes place).



5. Sketch of one of two helve hammers at Wortley Top Forge, South Yorkshire

#### Getting There

Rockley furnace (OS grid Ref SE338021) can be located from exit 36 of the M1 motorway. Follow the A61 north for about a quarter of a mile then turn left at the obelisk in Birdwell and continue north parallel to the motorway, pass under the motorway bridge and the furnace and engine house are about 100 metres on the right, each accessible by a separate footpath. The site is open for viewing at any time.

Wortley Forge (OS Grid Ref 295999) is located in the village of Wortley, north east of Stocksbridge. From Rockley, continue along the road 4.5m to Thurgoland; cross the A629 towards Wortley. The forge is on a bend in the road about 1m after crossing the A629. The interior of the forge is normally open on Sundays from 11am to 5pm; February to November inclusive. Check times with Derek Balis on (0)1142 230 7693

For those still with time to spare, the Elsecar Heritage Centre south of Barnsley is worth visiting. Exit J36 of the M1 motorway again, but this time turn right towards Hoyland and follow the signs.

#### Further Reading

The Blast Furnace at Rockley, South Yorkshire by David Crossley. The Archaeological Journal, Vol 152 1995 p381-421.

Top Forge Wortley MP Johnson and P Worrall, South Yorkshire Trades Historical Trust Ltd.

### SITE WATCH

Just a reminder to keep an eye on your local sites when out walking and to report any new finds of slag to any member of the committee, so that these can be followed up by the field group.

**MANY THANKS** to all our contributors, without whom there would be no newsletter. To members who have not, so far, written anything for the newsletter, please let me know of any news, activities, visits, and comments in connection with the iron industry that might be suitable for inclusion. Letters and photographs of relevant items all help to make the newsletter varied and interesting. DMM

### LIST OF FORTHCOMING EVENTS

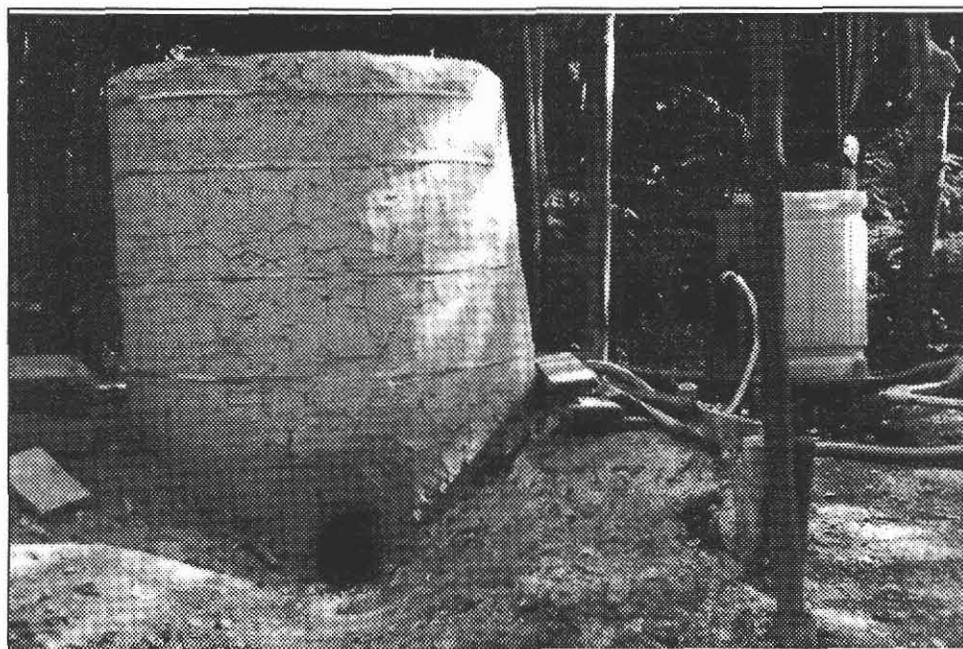
**16th May 1998** Historical Metallurgy Society Spring Meeting (including the AGM) at Bradford University

**17-19 June** The centenary of Henry Bessemer's death in 1898 is being marked by a big Steel Conference in Sheffield

**11th to 13th September** HMS Annual Conference at Plas Tan y Bwlch at the Snowdonia National Park Study Centre. The programme will include a variety of talks and visits relating to recent work in Wales - Great Orme prehistoric copper mine, Medieval bloomeries, Roman gold mining and processing at Dolaucothi, 19th century gold mine and assaying plant at Cefn Coch. Further information from Susan Crew, Plas Tan y Bwlch, Maentwrog, Blaenau, Ffestiniog, Gwynedd LL41 3YU (01 766 590 324; FAX 590 274)

**3rd October 1998:** CBA South-east Conference on Industrial Archology, at the Angel Centre, Tonbridge

**24th October 1998:** Kent Archaeological Society Fieldwork Conference - Roman Kent and Beyond at Christ's College, Canterbury. Speakers include David Rudling, Dave Perkins (on the KAS Training excavation at Abbey Farm, Minster, N Thanet), Dr Michael Still, etc.



Experimental shaft furnace