NEWSLETTER No 31 Spring 2000

Editor: Dot Meades, Brackenside, Normansland, Fairwarp, Uckfield, E Sussex. TN22 3BS. Tel: 01825 712367 Email: meades@freeuk.com

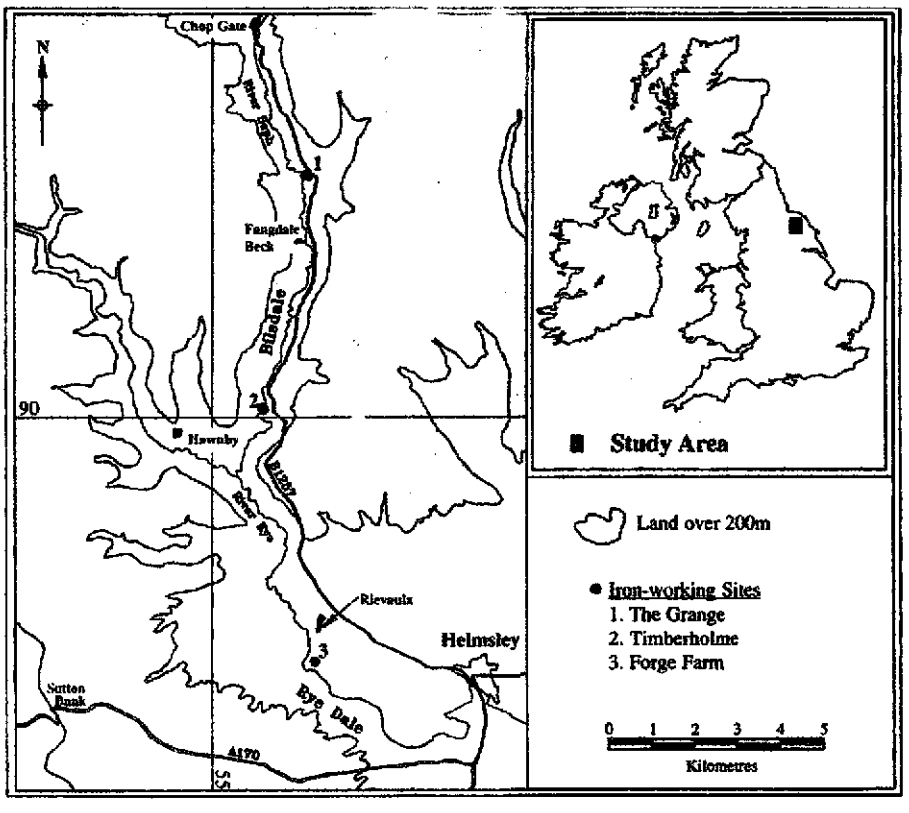
CONTENTS

WINTER MEETING

Our Winter Meeting held at Fairwarp Village Hall on the 6th February was very well attended. Dr Gerry McDonnell gave a most interesting talk, in which he traced the development of ironworks on lands controlled by Rievaulx Abbey.

He began with maps showing iron ore deposits in the Bilsdale hills to the north of the Abbey together with the ironworks associated with them. The earliest ironworks were bloomeries on the higher lands which, although there is no archaeological dating material, are suggested to have been early medieval. In 1145, Walter Espec Lord of the Manor of Helmsley, gave much of Bilsdale to the Cistercian Abbey at Rievaulx and about 1170 an ironsmith was operating north of Laskill. During the 12th century the Cistercian order started to establish granges, outlying settlements, and it is suggested that the known site at The Grange (Site 1) in Bilsdale might have been established to make iron for the Abbey. At this time, the Abbey derived a large amount of its income from the production of wool. This involved the annual clipping of thousands of sheep, so there was a need for considerable quantities of iron for clippers and for the production of tools to work and maintain the abbey lands and buildings.

The 12th century enlargement and reorganization of Rievaulx Abbey would have further increased the need for iron to make tools. It is thought that about this time, water powered hammers were introduced into the forging process. [There is a



possible parallel here with the situation at Chingley where a water-powered hammer is believed to have been used to process blooms smelted in the surrounding countryside at about this time.] As time went on, smelting took place nearer to Rievaulx in larger water-powered bloomeries. At the dissolution of Rievaulx Abbey in December 1538 there is a reference to two 'bloomsmiths' in operation at Laskill, the bloom being transported to a hammersmithy at Rievaulx. Fieldwork has identified Timberholme as the only possible known location of the Laskill operation. There are traces of a leat, a slag tip and an area of burnt soil.

In 1540 there was a substantial rebuilding of the bloomsmithy south of Rievaulx Abbey. (Site 3. Forge Farm.) The water supply was increased by strengthening and heightening the dam of the pond, so that the water was sufficient to serve a wheel for the bellows of two bloomhearths instead of one, and also a wheel for those of the stringhearth. A water-powered hammer was also installed. [At this time twenty plots of woodland were marked out, each large enough to supply wood for charcoal to keep the works going for a year, so that by rotation in felling a wood supply was secured for twenty years[1].]

By the time of the dissolution, the smelting and processing of iron had overtaken all the other activities of the Abbey. Only a few monks remained there. At this time, most of the buildings were rendered unusable; as they were at other Abbeys; the exception to this at Rievaulx was the Refectory, which even now can be seen to be in relatively good condition. Dr McDonnell suggested that the reason for this was that a new use had been found for the building - it had become a charcoal store.

Although the rebuilding of the bloomsmithy had much increased the amount of iron that could be made, production was not continuous. This problem was overcome in 1576-77 with the building of a blast furnace. [An account of 1577 mentions the building of a new casting house and a new finery, floodgate and store house[2]] In 1616 a new furnace was built at Rievaulx. However, in spite of the documentary evidence and extensive fieldwork, it is proving very difficult to pinpoint the location of the blast furnace. Near to the refectory cum charcoal store, there is a mound a metre high, which excavation has shown to consist of layers of clay, charcoal and ore fines, clearly an ore-roasting site. An extensive bed of blast furnace slag, rising behind a cottage shows that the furnace must have been nearby but so far the blast furnace foundations remain elusive.

Dr McDonnell's talk was particularly interesting for the light it threw on the use of technology in fieldwork. He and his collaborators in this extensive survey used the fluxgate gradiometer, resistivity and magnetic susceptibility to good effect. As members will know, WIRG owns a resistivity meter and your committee has been investigating the possibility of buying a gradiometer if sufficient funds can be raised to do so, to supplement our fieldwork.

Further reading: RW Vernon, G McDonnell and A Schmidt An integrated geophysical and analytical appraisal of early iron-working: three case studies The Journal of the Historical Metallurgy Society: Vol.32 No 2 1998 p67..

[1, 2],H R Schubert History of the British Iron and Steel Industry – many references, see index on p443 – don't miss App VII., and pp 221, 215.

DMM

GERALD BRODRIBB
1915-1999

Gerald Brodribb came to the iron industry relatively late in life, having been a schoolmaster and author of books on cricket. Joining WIRG in its early days, he led the Battle field group, and became particularly interested in the Roman ironworks in Beauport Park, near his home. Together with Henry Cleere, he excavated the bath house there, revealing one of the best-preserved small Roman buildings in Britain. The wealth of tiles of the *Classis Britannica* found there motivated Gerald to gain a doctorate from London University, and subsequent articles and a book became definitive statements on the subject. For the last 20 years he devoted considerable time to Beauport in the hope

that it could be consolidated and opened to the public; a wish yet to be fulfilled but worthy of the effort. It would be a fitting tribute were others to achieve what Gerald did not live to see. JSH

LILIAN FUNNELL
1910-2000

Lilian Funnell joined WIRG in about 1970, after she retired from teaching art at the Royal Masonic School, Rickmansworth. Her wide interests in 'things ancient' included long experience as a guide at Penshurst Place and also at Firle. As an artist, she particularly appreciated the work of the Bloomsbury Group at Charlton Farmhouse and the neighbouring Church. Lilian joined the field group in its early days, rarely missing a foray, and she was also a valued member of the committee for many years. We shall remember her with affection, as a helpful and enthusiastic WIRG member, who remained interested in our activities even after she was no longer able to play an active part.

DMM

FORAYS AND VISITS

Cinderfield, Ightham, Kent [TQ57955305

This site was visited by members of the committee on 23rd November 1999 at the request of Nicola R Bannister who was making an archaeological and historic landscape survey of the Ightham Mote Estate for the National Trust. Ernest Straker had recorded a very early bloomery site there and the Tithe Map of Ightham [1839] records Cinderfield Shaw, Cinderfield and Great Cinderfield. Synderfeld is also recorded there in a deed of 1552.

Unfortunately, in spite of the abundant field-name evidence and an extensive search, the group were unable to find more than a few pieces of widely scattered bloomery slag. It may be that the site is well beneath the surface, which would confirm Straker's impression that it was very early.

A full report of the visit will appear in the next Bulletin. DMM

Sharpthorne – January 2000

The first foray of the new year set out to answer a question that had been posed some years ago. For several years, a series of mine pits had been sectioned by brick-earth extraction at Sharpthorne brick pit, and a report on them appeared in the WIRG Bulletin back in 1987. It was noted then that samples of wood found in the fill of two of the pits had produced radio-carbon dates from the 12th and 13th centuries. The question this posed was, Where were the bloomeries that utilised the ore from the pits? Evidence of medieval iron working had already been discovered about a quarter of a mile to the south, behind Courtlands Farm, but the workings there were insufficient in size to account for the mine pits that had been sectioned. A small, undated bloomery site had been identified just south of the Sharpthorne-Forest Row road - again, too small to be of much consequence. Further to the east, down Grinstead Lane, towards East Grinstead, Blackland Farm bore a name that hinted at a 'ferruginous' origin, but field walking had failed to locate any sites. Conversations with John Mills, assistant county archaeologist for West Sussex, revealed that brickearth extraction was planned to extend into the woods adjoining the pits already worked. It was decided, therefore, to look in and around those woods.

Cookham Wood and Mare Pit Wood (formerly known as Cinder Wood) are contiguous and stretch from the road back to the edge of the brick pit. With a large turnout of members, swelled by several from the local historical group, and aided by some fine weather, the party fanned out across Cookham Wood and immediately began to encounter mine pits. Also, just inside the wood, close to the road was a large marl pit. Another, even larger example of such a pit was encountered in Mare Pit Wood, where the mine pits continued as well. Meanwhile, a group were walking the field to the east of the wood and discovered a concentration of bloomery slag in the plough soil. Several large pieces were found, including some fragments of hearth bottoms, presumably from forging or reheating. A further concentration was found on the eastern edge of the field, beside a stream. Running into

the wood, from further to the west is the course of an old trackway, leading to East Grinstead. Where this emerges from the end of the wood, close to the edge of the brick pit, is an area which has been cleared and fenced off. Towards the end of the day's activities, it was noticed that there was a concentration of bloomery slag close to the former line of the track, just a few yards from the edge of the pit. It was not possible to date any of the sites found on what had been a particularly well-attended, and ultimately fruitful foray, but it is quite likely that the three sites may prove to have a medieval origin and go some way towards answering the question about the purpose of the mine pits.

JSH

NEWS FROM ELSEWHERE

We are indebted to Brian Awty for the next two interesting items, which result from his research into documents from the Pays de Bray.

The forge of Ons-en-Bray

Misled by the statement of H Quignon that the *fonderie et ferronnerie des Létains* lay near the edge of the Bois de Soavre, at the confluence of the Avelon with a stream which descends from above Les Bonshommes, David Crossley and I looked for this ironworks in vain in 1980. Les Létains is not named on the IGN 1:25,000 map, but is in fact 1 km WSW of the point indicated by M Quignon and is well to the south of the Avelon.

Madam Arribet-Deroin has discovered a lease dated 1487 which suggests the site was within the seigneury of Lhuyère. The Bois de Lhuyère is the next woodland upstream from the Bois de Soavre. The farm of Lhuyère lies in open countryside two-thirds of the way from the bois de Soavre to the bois de Lhuyère and is about the same distance to the north of the Avelon as Les Létains lies south of it. No field work has yet been done, but the site must lie somewhere between the two places, perhaps now disturbed by the railway line which was probably built after the time of M Quignon's essay.

The 1487 lease envisaged the building of a *fonderye* and other buildings for the making of iron, including a *marteau à plaine forge*(!). It was granted to Jaquemin Hainques, forgemaster at Milly, and Pierre Maxence, forgemaster at Le Becquet. In a document of 1506 the works was described as the forge of Ons-en-Bray and the then forgemaster Gillequin Rochart was made to demolish 24 feet of the bay on the Lhuyère side. This resulted in the recovery of almost 12 hectares (over 28 acres) of land. Perhaps the loss of so great an extent of surface water was sufficient to cause the abandonment of the works.

Another inference from the 1487 lease is that Pierre Maxence and Pierre Le Fondeur, who in 1451 was one of the three Walloons who set up the Le Becquet works, were identical. Other hints that this was the case seem therefore to be confirmed.

The Mont-Louvet furnace

A lease of this furnace was discovered in the departmental archives of the Eure & Loire by Jean-Francois Belhosts and a photocopy and transcript of it has been kindly passed on by Danielle Arribet-Deroin.

The lease (ADEL, E2905) dated 15 October 1524 was from the Archbishop of Toulouse, on behalf of the duke of Longueville, lord of Gournay (his brother), to Marc Vyonne, merchant of Gournay, and conveyed the *vivier et fourneau a fondre fer de Montlouvet* to Vyonne for a term of six years commencing at Michaelmas 1526 at a rent of 274 livres of Paris payable half at Easter and half at Michaelmas, first payment at Easter 1527. No mineral was included in the lease, but the lessor undertook not to allow the building of any new furnace or *nouvelle fonte* within the lordship or allow anyone else to take mineral within it

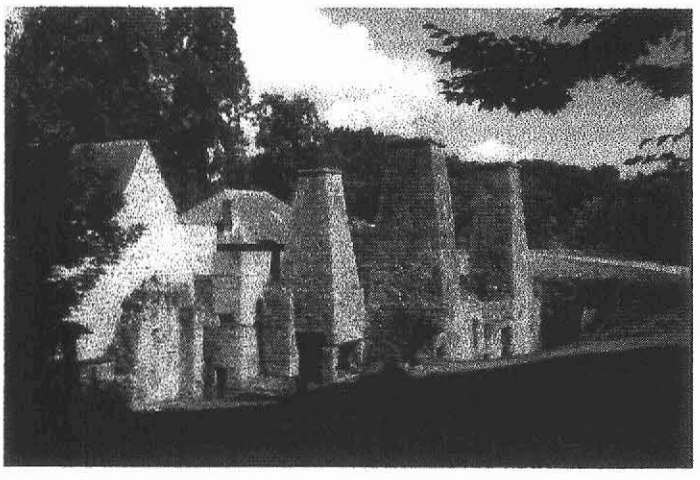
This lease shows that the idea that after around 1500 ironworking in the Pays de Bray was in steady decline must be revised. Indeed, because a 1495 survey of the lordship mentioned only a former mill at Mont-Louvet, it seems certain that the furnace had been built after that date.

B G Awty

Iron Sites in Southern Normandy

On the usual pretext of 'a few days away together' and the promise of some French cuisine, I was able to inveigle my wife into allowing me to visit a couple of interesting French iron-working sites last summer. The *bocage* areas of southern Normandy have supported an iron industry since the 15th century and many of them continued in use up to as little as a century or so ago. For this reason the remains of several of them are still quite complete. Perhaps the most complete is that of the Grand Forge in the village of Aube, in the department of Orne.

The forge was built in about the 1540s, and a blast furnace was built around the same period, although it does not seem to have continued in use for long into the next century. The forge, however, continued in use through until the 19th century when it was sold in 1850 and converted into a copper processing plant. The remarkable thing about the forge at Aube is that it is still largely intact. Containing all the features of a classic 'Walloon' forge, it has two finery hearths, a chafery hearth and a massive water-powered hammer; the hearths have their brick cowls and chimneys, their box bellows and their tools. Other features have been added during the building's working life, such as a small trip-hammer and an air furnace, both used for working up copper, and the hearths have undergone some modification to the same end. Outside, the pond is still in water and there is a range of buildings, including a foundry, connected with the forge's later use. Aube lies off the N26, west of l'Aigle, between Verneuil-sur-Avre and Argentan; the site is open to the public in the afternoons, between June and September, and is closed on Tuesdays.
About 25 miles south-west of Argentan, around the spa town of Bagnoles-de-l'Orne, lies the Forest of Andaines, and the map shows a liberal sprinkling of iron-associated names in the area. Among these are the Varenne Forges, west of the village of Champsecret. Here, in the grounds of a modest chateau are the remains of a forge which must have been very similar to the one at Aube. However, here it is a mere ruin with the forge building and its hearth chimneys open to the sky and the floor lying under up to a metre of silt



Les forges de Varenne – remains of 'Walloon' forge

Close by stand the remains of a blast furnace, 8.4m high, most of which is still intact and similarly silted up, and which still had its bridge house until as late as 1955.

Furnace at Les Forge de Varenne

Elsewhere there are two large ore or charcoal stores and some workers' dwellings. A chapel, dedicated to St. Eloi, and used by the ironworkers also survives, but some of the ancillary buildings have now gone

The works began operation in the 16th century and remained in use until 1866, one of the last to operate in the area. Unlike at Aube, the furnace at Varenne remained in use, and was rebuilt in 1668. In the 19th century various improvements were

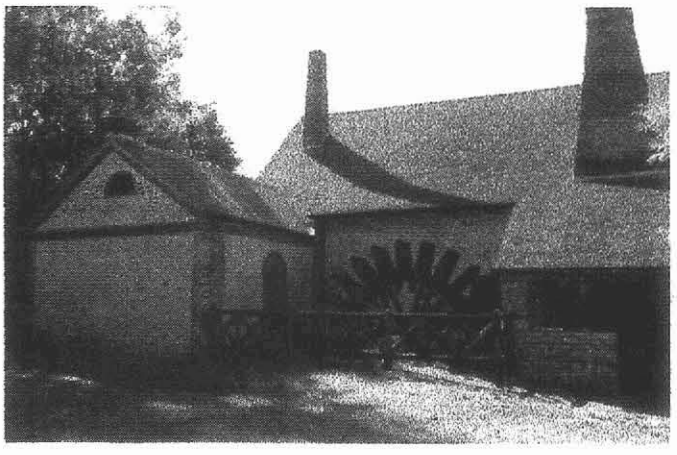
made to the works, including the addition of a puddling furnace and a common blowing system for both the forge and furnace. The wider use of coke-smelted iron spelled the demise of the Varenne Forges, and following closure the site became overgrown. When the estate came up for sale in 1987, the tools from the forge were put on display at Aube. The new owners, however, took steps to clear away the vegetation which had over-grown the works and open them to the public.

The Varenne Forges lie on a minor road west of the D21 between Domfront and la Ferriere-aux-Etangs; they are open to the public throughout the year; the chateau, which is a home for the handicapped, is not open. There are several other ironworks which can be seen in the Varenne area. Perhaps a WIRG continental foray might be arranged to the area, next year, if there is sufficient interest.

J S Hodgkinson

Aube Forge, Normandy

If you are thinking of paying a visit to Aube, you may like to read some further details which have been put together by Dr Tim Smith, based on a translation of the official guide book which JSH brought back with him:

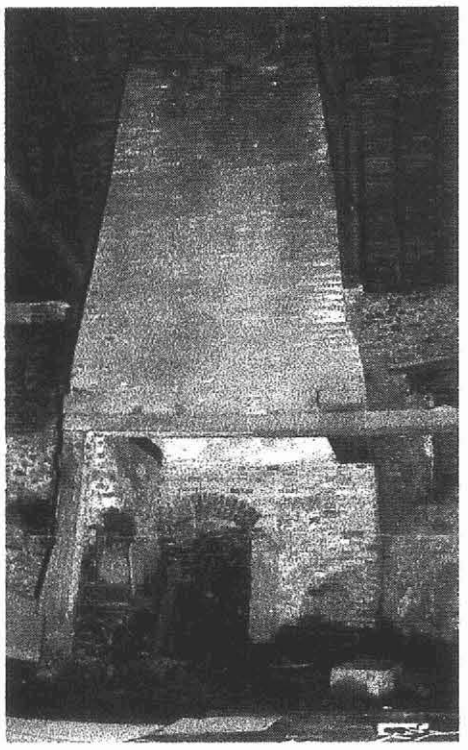


16th century Forge d'Aube in Normandy

Built in the 1540s by Charles de Courdemanche, the first record of its activities were in 1548 when the ironmaster is recorded as Jean Bunel. At that time, there is also reference to a blast furnace in the vicinity, and excavations in 1983-86 found blast furnace slag nearby. The absence in the records of a blast furnace in the second half of the 17th century suggests it was closed by then.

Aube forge has undergone extensive changes in its life, being converted to a copper foundry at one time, a wire drawing mill and an electrical factory.

It started life as a water driven forge with two refining (finery) furnaces and a reheating (chafery) furnace and a water driven helve hammer. The main building with its three chimneys - one for each hearth - is typical of that described in the 18th century by Diderot in L'Encyclopédie.

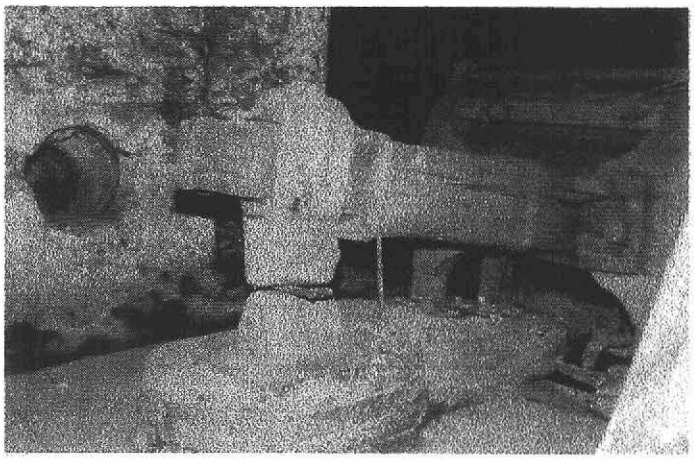


Surviving forge hearth and chimney

The two finery hearths, heated by charcoal, were fed with cast iron in the form of long 'sows', through a hole in the back wall of the hearth. The base of the hearth was lined with cast iron plates, and massive cast iron lintels - the front ones weighing 800kg - supported walls partly enclosing the hearth. Each hearth was equipped with a pair of bellows, blowing through a single tuyere.

The heated end of the sow ('gueuses') was worked into a 'pasty' mass known as a 'renard' or 'loop' as the carbon was removed, this raising its melting point. When ready, this lump was cut off and immediately consolidated under the hammer. As it cooled, it was reheated in the chafery hearth before being taken back to the hammer for further consolidation. This was repeated many times and the refined iron was gradually drawn out under the

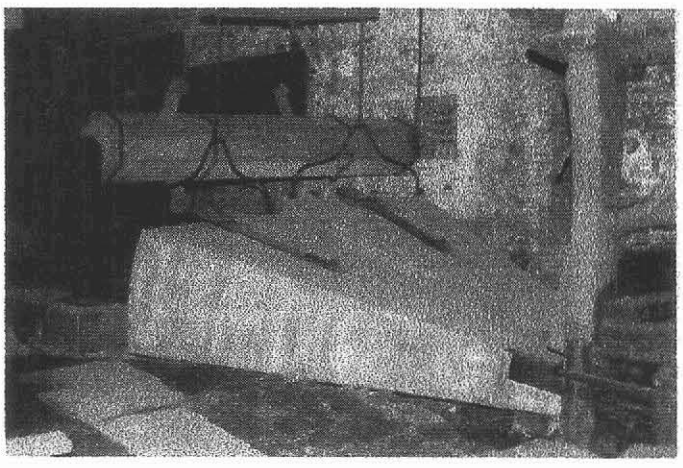
hammer into a bar. The chafery has been extensively altered over the years, being modified to house a copper blast furnace at one stage.



Surviving tail trip hammer

The hammer survives, although in modified form, the large wooden lobes of the cam having been replaced by cast iron in the 17th century. The frame of the hammer extends some 18m.

The forge was probably one of the first to be equipped with a slitting mill which was used to cut the forged bar into strips - formerly a very labour intensive task - this technology being introduced to the region in 1608. A 'cutting shop' is mentioned at Aube in 1635.



Wooden forge bellows from a contemporary forge

In 1850, the forge was bought by Pierre Jean Félix who used it for copper smelting, and the same year the cutting shop was bought by Louis Antoine Turquet who converted it into a wire drawing mill. By 1865, the forge was being used as a cast iron foundry.

Only one pair of bellows survived to this date, the others being replaced by blowing cylinders. An unusual Roots blower of US design was installed for one finery, and a steam driven cylinder replaced the last bellows in 1902. In 1915 the slitting shop was converted into an electrical factory and became part of the Compagnie générale d'Électricité until 1943 when it was taken over by the Tréfimétaux Group. This was the last working owner and they presented it to the local community in 1980 for preservation as a museum.

Much of the interior has been restored to its original condition with bellows reinstalled and a display of hand tools brought in from the Varenne forge at Champsecret.

Musée de la forge d'Aube, 61270 Aube, France
Tel (0)2 33 34 14 93 Fax (0)2 33 84 11 49

Open from June to September on Fridays, Saturdays, Sundays and Mondays from 2pm to 6pm and on Wednesdays and Thursdays from 3pm to 4pm. Groups are welcome by appointment all the year round.
Closed on Tuesdays.

At Aube one can also visit the Musée de la comtesse de Ségur1
3 rue de l'abbé Derry 61270 Aube Tel (0)2 33 24 60 09 Fax (0)2 33 84 11 49
Same opening times and days as for the forge museum, except on Wednesdays and Thursdays, open from 4pm to 5pm.

Also to be seen in the vicinity is the town of L'Aigle with its notable churches of Saint-Martin and Saint-Jean, the old château, the Mérouvel needle plant (Charles Mérouvel Street). At Lignerolles is a grocery museum and at Saint-Évroult-Notre-Dame-du-Bois there are the remains of an abbey and a

glassworks. The village of Saint-Ouen-sur-Iton has houses with twisted chimneys and at Saint-Sulpice-sur-Risle the church has murals, and there is also the Bohin pin plant. Soligny-la-Trappe offers the abbey of the Grande-Trappe, and at Villers-en-Ouche there is a château. TS

THE RECONSTRUCTION OF A WROUGHT IRON CANNON

A team from the Royal Armouries with Alex Hildred of the Mary Rose Trust have produced a replica 'port piece' based on an original which was recovered from the wreck of the Mary Rose, Henry VIII's flagship which sank near Portsmouth in 1545. This was a breech loading, stone shot firing iron gun, of a type which was in use on ships from the 15th to the beginning of the 17th century.

These guns were made of a series of longitutinal staves tightly held together by iron bands and hoops, heated and shrunk into place. The gun was built in order to assess its effectiveness and it was first fired in February 1998. Work has continued on it to eliminate areas of weakness.

It is on display at the Royal Armouries Museum of Artillery, Fort Nelson, Portsmouth, where we hope to see it on the WIRG AGM visit next July.

Visitors to Mont St Michel, Normandy, may have noticed a very large example near the entrance, with layers of much rusted iron bars and hoops. I wonder how they moved such a weighty gun up to that position, or was it put together in situ? DMM

PUBLICATIONS

David Padgham, 'Crowham Forge, Westfield', *HAARG Journal*, Hastings Area Archaeological Research Group, new series, 8, Dec. 1999, 10to15.

Crowham forge had a long history and, apart from damage caused to the pond bay some twenty years ago by the laying of a water pipeline, the site has not suffered re-use. David Padgham has drawn together the documentary history of this site from all the known sources. However, an important addition is his discovery of the route of a leat dug to supply the forge. The first reference to the leat dates from 1581 when, in an aside from a petition on the depredations to woodland caused by the iron industry in the Cinque Ports area, the mayor and jurats of Rye complained that water for Westfield forge was being diverted from the main stream of the River Brede. Using an 1820 estate map deposited in Hastings Museum, the author has been able to trace the entire route of the leat which runs from the point where it left the Brede, about 400m east of Sedlescombe Bridge, for a distance of about 2km along the contours, roughly parallel with the main river, to where it joined the forge stream. The author has also traced the ownership of the leat and has shown that, while it was separately owned when first dug, attempts were soon made to bring the whole course into common ownership with the forge or, failing that, to establish wayleaves where necessary.

The leat revealed in this article must now be added to the leat supplying water to Ashburnham furnace, and a shorter one diverting water to Sturt Hammer, Haslemere, as examples of the lengths to which ironmasters went to secure a reliable supply of water for their works. The question which all such discoveries begs is, how many other ironworks have similar arrangements?

JSH

DIARY

<u>13th May 2000</u> at 12 noon COUNCIL FOR BRITISH ARCHAEOLOGY SOUTHEAST SPRING MEETING at the Weald & Downland Open Air Museum Singleton, Sussex
***Short Talk and Tour of Recent Acquisitions by the Director Richard Harris* preceded by the business of the Annual General Meeting**
Please send nominations for Officers or Committee, with the written consent of the nominated person, to the Secretary, 8 Woodview Crescent, Hildenborough, Tonbridge, Kent TN11 9HD.
12.00 AGM & Reports
12.30 Lunch (Café on site or picnic)
13.30 Talk and Tour of some of the newest buildings by the director - Richard Harris (open to all)
16.00 Tea
The Museum is situated 5 miles north of Chichester, West Sussex on the A286. *Opening hours - 10.30 - 18.00. Further*

details and form for free entry to the site from Shiela Broomfield, tel: 01732 838 698 e-mail; s.broomfield@dial.pipex.com

Saturday 13th May 2000 The HISTORICAL METALLURGY SOCIETY AGM will be held at Saltford Brass Mill, Keynsham near Bristol.

June and July 2000 University College London Archaeology Field Courses: TIMBER FRAMED BUILDINGS Curse and also ARCHAEOLOGY TRAINING COURSES at Bignor Roman Villa. Details from http://www.archaeologyse.co.uk or send SAE (DL size) to Mrs S Maltby, UCL Field Archaeology Unit, 1 West Street, Ditchling, Hassocks, W Sussex BN6 8TS.

Archaeology by experiment:

31 July-4 August 10am-5pm ANCIENT CRAFTS AND TECHNOLOGY– Tristan Bareham & Christabel Shelley. Based at the IronAge Activity Centre, **Michelham Priory**, cover pottery, metal and wood working, textiles, building technologies and boat building. Course code 5899. Fee Full £140, Concession £60. SASoc members £135/55.To enrol see below.

19&20 August, 10am-5pm – PREHISTORIC POTTERY – Tristan Bareham & Christabel Shelley. A practical course giving hands on experience os pottery production in the prehistoric period. Firings will be carried out in open fires, turf covered clamps and a reconstruction single flue kiln. Course code 5999. Fee Full £60, Concession £20, SaSoc members £55/15. Venue **Michelham Priory**. To enrol see below

Saturday & Sunday 20th and 21st May 2000
IRON SMELTING IN THE WEALD *Two-Day School* - Jeremy Hodgkinson – The technology, history, geography and economics of Wealden iron. We examine iron smelting from a practical standpoint at a furnace on Ashdown Forest 10am - 5pm; site visits to Pippingford included.
Fee £65; Venue: **Nutley War Memorial Hall, Nutley, near Uckfield.**
To enrol for the above **Archaeology by experiment courses** : contact The Centre for continuing Education, University of Sussex, Falmer, Brighton, BN1 9RG. Telephone 01273 678527. E-mail cce@sussex.ac.uk

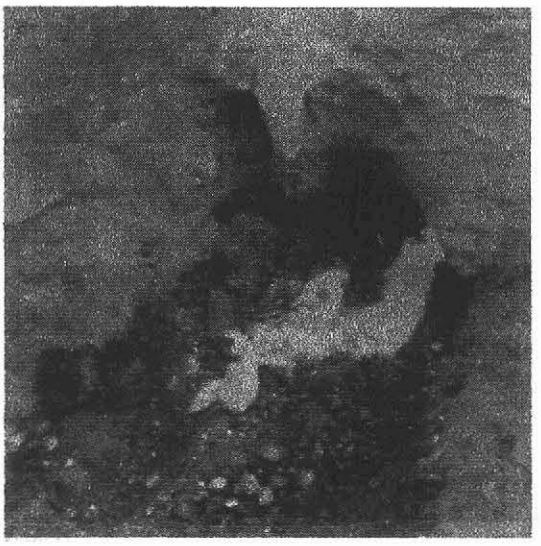
? September The Metallurgy Society Conference 2000 will be held at the Tank Museum in Bovington, Dorset at a weekend in September, probably the 23rd-24th – further details in HMS spring News.

20th May – 1st June HMS Study Tour to Mexico Details from Jamie Thorburn, Atalaya Tours Ltd. Ceinionfa, Capel Dewi, Aberstwyth, SY23 3hr; Phone/fax +44(0) 1970 828989.

22nd July 2000 WIRG AGM AND VISIT will be held at Fort Nelson, Fareham, Hampshire as already notified to members. Transport may be provided – details nearer the time.

EXPERIMENTAL IRON SMELTING

Activity this winter has centred on refurbishing the site with better fencing and shelter for the furnace the forging hearth and those who operate the bellows. Great care has to be taken to allow good ventilation because of the danger of inhaling toxic gas, which is vastly greater under cover



Slag run from bloomery smelting experiment October 1999

Imagine the colours: bright red glowing slag running over black and dark red charcoal. You always hope it will happen and sometimes it does! What is more, they made good iron, and not for the first time. Now the next stage begins - trying also to produce the kinds of slag we find on Roman and medieval sites. Thanks to Tim Smith for this photo and to the smelting team (p 10) for all their work..

Many thanks also to all our contributors for the interesting items they have produced. Please keep them coming.

To all our members, don't forget to keep an eye on your local sites. Let us know if there are any alterations. Even the enthusiastic WIRG Field Group cannot re-visit sites very often and we rely on our members to keep our records up to date.

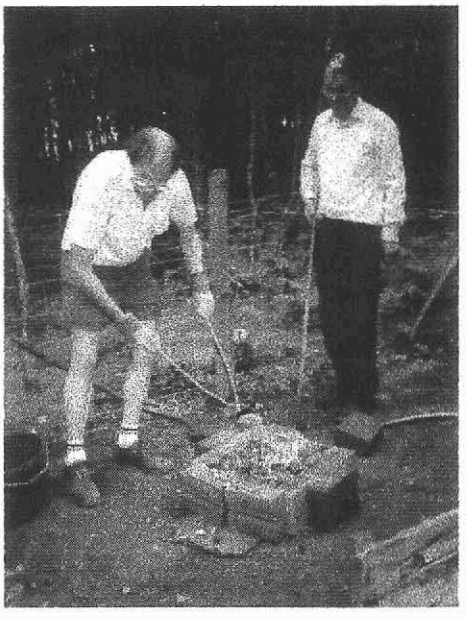
Dot Meades, Hon. Newsletter Editor

THE SMELTING TEAM
7th August 1999

Peter Goodall and Bill Whiting operating the bellows to the bloomery furnace.

Brian Herbert keeping up to date with the records.

Tony Meades and Tim Smith observing the furnace (or taking a well-earned rest!)



Tim and Brian removing the bloom from the forging hearth, where it has been reheated ready for hammering.

Tony and Tim forging the bloom

Our thanks to Margaret Tebbutt for these photographs