



NEWSLETTER

Spring 1993

Number 17

A Step Forwards in Fore Wood

It seems extraordinary, but until this January the bloomery in Fore Wood, Crowhurst, had found its way into the literature as a Roman bloomery, without a shred of evidence having been found to support this. On the strength of a throw-away remark by Ernest Straker that it was "an extensive bloomery of Roman type" it was always assumed to be so. When the Group made its first attempt to put a date to the site last year, the slag looked Roman, and foray-hardened members of the Field Group will assure you that Roman slag does look different. However, despite the best endeavours of scientists to invent a method of dating slag, appearance is not an accepted criterion yet!

It is a substantial site; not in the Beauport Park or Chitcombe league, but quite extensive, nevertheless, and the abundant slag and Roman "look" boded well (Roman sites are reckoned to yield pottery more readily than those of other periods). So imagine the dismay when two trenches yielded nothing. The honour of the Group was at stake; no obviously Roman site was going to keep its secret from the Group...and live!

Another foray was decided upon. A decent number turned up, but again it was clear that the site was not going to give up her secrets without a struggle. Two trenches, about 50 yards apart, were started. The southern trench soon began to show signs of burnt clay and possible hidden structures. After a long lunchtime of deliberation, it was decided to abandon it in case damage would be done, and concentrate efforts on the trench to the north. Here was a hole of radically different character; a trenchant trench, densely unforgiving. Throughout the afternoon teams of tiring labourers pick-axed and shovelled down through

unremitting slag. Hopes raised by thin *sherd-shaped fragments*, initially, hope-clingingly, identified as pottery, were dashed as the slag's sinister ability to assume subtle forms was realised again and again. The discovery of what appeared to be part of an unworked bloom, together with associated pieces of ore, lifted hearts, but as the light began to fail, and the trench dropped below three feet, hope was failing also.

Backfilling began, back-breakingly, soul-despairingly. As the leaf mould was replaced, and bags were gathered up, yet another sherd-resembling sliver caught the eye, saved from the pit in a moment of hope. Regarded disdainfully, roughly treated, it broke...easily. There it was; the piece that a day's work had concentrated on finding, had almost been missed. But what date was it? East Sussex ware; late Iron Age or early Romano-British. Roman, of course. Told you so, they chorused!

The Field Group

In some respects the field group is the heart of WIRG. Forays by the field group were the main method by which Straker's work was updated, and forays continue each winter into iron related topics. Foraying is always good fun, and usually educational. I hope that the following articles will encourage other members of WIRG to join in.

About the Field Group

Who can belong? Any member of WIRG - there is no extra subscription. Visitors are welcome within reason.

Who decides what we do? The main committee of WIRG discusses the last year's work and makes proposals for the coming year. Members of the Field Group meet annually in September to consider the proposals, put forward their own ideas, and decide on the coming year's programme.

How is Field Group programme organised?

The Field Group Secretary (currently Dot Meades) makes a list which includes all the dates and venues and names of foray leaders, for the coming season; she sends two copies to each member of the Field Group. They tick the forays they would like to attend, return one copy and keep the other for reference. A few days before each foray she sends further details to each member who has ticked that foray.

What responsibilities does the foray leader have? The leader obtains permission from the owner/occupier(s) of the land over which we wish to foray and thanks them afterwards. (This is very seldom refused.) He/she then sends foray details to the Field Group secretary. These include names and grid references of the site, where to meet and park, plus brief notes about the purpose of the visit. If the approach to the site is difficult to find, the leader may post a WIRG notice at a strategic point.

Will I have to lead a foray? Not unless you wish to do so, although help is always welcomed, particularly if you know the local landowner and can obtain permission.

At what time and how often do we meet? About once a month, during the winter, usually on a Saturday at 11.00 am but occasionally on a Sunday. Depending on what needs to be done and to some extent on the weather, we make use of the hours of daylight, so most people take a packed lunch and work on into the afternoon.

What happens to the results of our work? They are published in the WIRG Bulletin.

If you are interested in joining the Field Group, please contact Mrs D M Meades, WIRG Field Group Secretary, Brackenside, Normansland, Fairwarp, Uckfield, TN22 3BS. Tel. 0825 712367.

Two Forays from the 1992 Season

Brian Herbert gives an outline of two typical field group forays

MATFIELD

The purpose of this foray to Badsell Park Farm (TQ651434), Matfield in Kent, was to

follow-up the local field names of "Cinder Field" (TQ648429) and "Cinderhill Wood" (TQ648425); these were assumed to apply to a local blast-furnace or bloomery site.

There are records of four possible bays to the south of the farm, one of which cannot be found and another which has been destroyed.

Unfortunately, very little evidence of ironworkings could be found in the area, despite a long day searching in the wood, and around a river valley.

The one sign of ironworking came at a site first noted by Straker called "Matfield Furnace?" (TQ644426). Here he discovered some sand which was analysed as moulding sand (for a blast furnace). Even after some 60 years this sand may still be found, although it has consolidated into a sandstone. Unfortunately, no furnace slag could be found. So, like Straker, we could come to no conclusion.



Brian briefs his small but well trained team.

LONDON-LEWES ROMAN ROAD

At the end of the 1990-91 season of forays, about half a mile of the London-Lewes Roman Road was investigated to the north of the county boundary, see WIRG Bulletin No12, 1992, and from which this article continues. This year a further mile of Road was investigated, continuing on towards Edenbridge.

The Road continues on a straight course, roughly northwards, after coming out of Birchenwood, and aims towards Ludwells Farm. It passes to the east of the farmhouse and probably passes through the barn; on

most of this route there were signs of bloomery slag. However, from the barn up to the ridge and down into the next deep gill, there was no sign of slag. The north bank of the gill is quite precipitous, and with the absence of any slag, indicates that a bridge would have been required to span the gap.

Beyond the gill and up to Beeches Farm a slight agger could be imagined, and there were again traces of slag. Beyond the farm the field was in barley, preventing serious searching, however, some possible mine pits could be seen towards the top of the hill.

On the hill-top, slag was again found between the modern road and the bungalow door, but not beyond, probably due to disturbances.

Beyond the bungalow is Cobhambury Wood. Here it was very difficult to follow a straight course and it is proposed to return for a further quick investigation. It was in the middle of the wood that a new bloomery site was discovered, quite close to some small bell pits. Unfortunately no one had any idea of their position on the map and no landmarks were visible; yet another reason for a return visit!

On coming out of the wood into pasture land, The Road is probably visible again as slight ridge, although this depends from where it is viewed. There was no detectable slag at this point, although on continuing to the bottom of the field and into the stream, a considerable scatter of slag was found on the banks. This may constitute the road metalling or perhaps a bloomery furnace site.

Between the stream and Cobhambury House, there was no further sign of The Road, but on the return visit this will be re-viewed.

Cuckfield Park

An Ironmaster's House

Just to prove that WIRG is not all guns 'n slag Margaret Holt tells the story of one of the Weald's finer private mansions

Cuckfield was the centre of a very important area of the iron industry in

Sussex and Henry Bowyer was one of the outstanding ironmasters of the 16th Century.

Henry's father, John, worked a forge at Hartfield in the early years of the reign of Henry VIII and in 1514 supplied 'gunstones for great bambadys' to the King. When John died his widow Denise, a very spirited old lady, leased another forge in Hartfield called 'Parrock'; feuds and pitched battles were common at this period with great tension between rival workmen, usually concerning the supply of water which was essential for the forging of iron. The 'Proceedings of the Star Chamber' give a vivid account of such a battle between Denise and her workmen against another iron master, William Saunders, whom she said "did expel and avoid her, broke up her ponds and let out the water so that she should not use her forge, and did pluck up her bellows and by force carried them away".

She rallied her men and eighteen of them came armed with staves, butts, bows and arrows to make a counter attack of such ferocity that William complained to the Court that the men struck him on the head, put him in jeopardy of his life, and that Denise, with a staff in her hand, had struck the oxen over the muzzles and tried to turn them away until Saunders picked her up and carried her off in his arms. How disappointing that the outcome of the case was not recorded!

Henry Bowyer inherited the forges and furnaces from his mother and in 1575 decided to build himself a manor house at Cuckfield, just outside the village, in what had been the Great Park of William de Warenne who was created Lord of the Rape of Lewes by William I after the conquest. The situation is delightful and spectacular, the house set on rising ground with long views southward to the lakes below; a splendid avenue of redwood limes leads from the road to the diminutive brick built gatehouse of two stories, with four octagonal angle turrets lighted by bullseyes and round headed loops. One of the turrets contains an early 18th C clock and a lead cupola encloses the bell; the wooden dial has only one hand and faces the house.

The house was also built in brick but when the south wing was added in Victorian times the facade of the old building was covered in stucco to match the new work. The front is symmetrical with a central two storied porch, the windows have wooden mullions and transoms and in the roof are five dormer

windows with large cornices and gabled heads. As well as the Victorian wing the house was added to in the 17th and 18th centuries, on the north and west, now forming a small central courtyard and enclosing the tall extension, or 'vice', which contains the staircase. The staircase rises from the ground floor to the attics without diminution; it is of the 'open well' type with massive newels, moulded heads and pendants, turned balusters and a high, moulded hand rail.



Most of the ground-floor and first-floor rooms are panelled in oak of 16thC date and a magnificent Renaissance screen divides the Hall from the Morning Room; this has fluted shafts, Corinthian panels and high-relief carvings of beasts, allegorical figures, the Arms of Bowyer and Vaux together with a cartouche dated 1581. Elizabeth, Henry's wife, was the only daughter of Thomas Vaux, Controller to the Royal Household of Henry VIII, a man of great position and wealth. There are also many excellent examples of 16th and 17th century firebacks still in situ in the fireplaces, traditionally from the Bowyer ironworks.

The porch leads into the hall which has a superb Elizabethan plaster ceiling with a remarkable series of armorial bearings and insignia of the families connected with the house and Manor, together with the Royal Arms of Elizabeth I as Henry Bowyer was in charge of her ironworks in Ashdown forest.

Henry died in 1589 and in his will he refers lovingly to his wife, making provision for her to continue to live in 'these landes were I have builded my new dwelling house in Cuckfield Park'. The estate then passed to his son, another Henry, who was knighted and, in 1600, became MP for the Rape of Bramber. In the late 17thC it devolved to a grand-daughter who decided to sell the estate and in 1693 it was bought by Charles

Sergison, Commissioner of the Navy and Clerk of the accounts, a post he held through three reigns, William III, Queen Anne and George I - a period of forty years. The Sergison family owned the estate and Manor House for nearly 300 years before it was purchased by its present owners.

Our New Toy

The group has recently bought a new resistivity meter. Despite the light hearted caption to this piece, the meter will allow the group greater scope in its investigations. Here Brian Herbert describes the theory and practice of resistance measurement.

A WIRG TRAINING SESSION FOR THE NEW RESISTIVITY METER

Due to the cancellation of the original foray to section a bloomery site, the opportunity was taken to train members on the operation of the "resistivity meter" recently purchased by WIRG. A suitable field was considered to be the possible Roman bloomery furnace site at Upper Stonehurst Farm, near Dormans Land, Surrey, TQ425411. This new resistivity meter replaces a very ancient one, made by Megger, where a crank handle was turned to generate the electricity to measure the soil's resistance, whereas the new meter operates from batteries.

RESISTANCE METER THEORY

It is unfortunate that this instrument is described by the highfalutin name of "resistivity meter" as it does not measure resistivity; its proper functional name is "resistance meter".

Resistance may be defined as, "how difficult it is for electricity to flow through a material", the soil in this case.

There is a limit to the smallness of a buried object that may be detected. For example, a post hole 3in in diameter is unlikely to be detected although a 12in diameter one might be, if there are no other resistance altering features nearby. Resistivity surveying is primarily about finding large man-made features. Not only does this save time by not having to dig outside an area of interest, it allows careful digging to be started before the buried structure is reached.

It may be visualised that to obtain this information it will be necessary to measure

the soil's resistance value over the whole field of interest, usually at 1m intervals.

FIELD WORK

The new resistivity meter has four probes for inserting into the ground; two are permanently placed outside the area to be measured whilst the other two are mounted on an insulated "zimmer frame", complete with digital display to indicate the soil's resistance.

Once measuring tapes have been placed over the site to be measured, and suitably marked at 1m intervals, say, the 6in long probes on the base of the zimmerframe are placed at the starting position. Next, the zimmerframeman (or should that be 'zimmerframeperson'?) treads on the zimmerframe to stab the probes into the soil.

The zimmerframeman then notes the soil resistance from the digital meter and verbally conveys this number to the zimmerframeman's scribe close by; all this within 5 seconds, with practice! The zimmerframe is then moved on 1m and the process repeated, at such a speed that a 20m by 20m square may be measured in a little over 30 minutes, again with practice!

During the practice day 5, 20m by 20m squares were measured, just over the ridge from the potential Roman bloomery site in the field. This represents some 2000 numbers which now have to be typed into the computer.

DATA MANIPULATION AND INTERPRETATION

The next operation is to imagine that the collected resistance numbers are within the range of, say, 1 to 100. This range is split up into 10 bands of, 1 to 10; 11 to 20; etc to 91 to 100, and each band give a different colour; much like a map having coloured altitude bands.

Each of the 100 resistance values may now be translated into one of only ten colours. This makes plotting the results much simpler and also the interpretation.

It is now necessary to crayon the appropriate colour/resistance values onto a piece of squared paper, the squares corresponding to the original measured squares on the field.

The theory behind this non-destructive method of "seeing" below the surface of the soil is that when a CONSISTENT or GEOMETRICALLY shaped difference in colour is found, it may represent a man-made feature. For example :-

1) An increase in soil resistance is measured when a non conducting object happens to lie between, or close to, the probes of the resistivity meter, ie the stone walls/foundations of a building; this would be indicated by a straight line. Another sign of a man-made feature would be two lines meeting at right-angles; possibly the corner of a building.

2) A decrease in resistance would be seen where water has settled in a previously dug area, ie a rubbish pit or ditch. This would show as an area or line of low resistance having a curved outline.

It is this interpretation of the final coloured plan that relies on long experience, and we hope that the professional archaeologists will be able to help us here.

In the modern world all this work can be carried out on the "COMPUTER", once the field work is completed: all, that is, except the human interpretation part. This is the next part of the operation and will be reported on in the 1993 WIRG Bulletin.

Thanks are given to Mr and Mrs Higgins for allowing WIRG to take over their fields at such short notice.

WIRG Winter Meeting

The middle of the 18th century saw not so much the last gaspings of a dying industry, but one in vigour for the last time. Opening an interesting insight into the closing phase of Wealden Iron, Jeremy Hodgkinson painted a colourful picture of the people and events that influenced the industry. Hugh Sawyer picks out the main points.

In the early years of the century, a general decline set in caused not least by a period of peace up to 1739 during the administration of Sir Robert Walpole, and a drifting of activities towards the Forest of Dean, West Midlands and Shropshire; this followed the boom years of the 1690's when wars continued to encourage gun founding, notably in Lamberhurst, Heathfield and

Pippingford. The period of stability was interrupted by the War of Austrian Succession, producing a demand for ordnance which, after a further period of peace between 1748 - 1756, continued when the Seven Years war started.

Between 1750 and 1770, some 14 furnaces were in operation, many being managed by well-known personalities. In the east of the region, Brede was in the charge of the Harrison Legas partnership; the Crowley family operated Ashburnham whilst in the north, Edward Raby had started up Warren and Gravetye Furnaces. Such sites were revived for economic reasons; the costs of establishing fresh sites - obtaining rights from landowners, construction of ponds and buildings, re-routing water - were prohibitive.

13 forges were also active at this time, notably Hawksden, Glaziers - and Burwash which reputedly had been in continuous use since the 15th century. Interestingly, not all forges were associated with furnaces; Maresfield had commercial links with a shop in Lewes and Abinger Forge supplied an Ironmongers in Guildford.

Transport was undertaken either overland - or across water which could sometimes be slow with the additional hazards at sea of enemy action and pressgangs. Transport in winter across land was not impossible, although Fuller had complained of the difficulty at Heathfield because of the clay.

The demand for charcoal, which at one time had been blamed for general decline, had most likely been met by good management of local woodland, without the need for going further afield for supplies. Although not a renewable resource, ore was in plentiful supply; Ashburnham was still mining locally within a mile of the site after 200 years.

The great strength of the Wealden Iron activity was its labour force numbering 1500, to the extent that Carron, when starting up in Scotland, sought workers from the Weald. Although a furnace might employ only five permanent workers, with just 3 at a forge, great reliance was placed on casual labour.

Ashburnham's capacity of 400 tons output a year illustrated the technological

advancement of the era. Lamberhurst furnace was 28 foot high but Northpark measured only 5 metres square. In addition, air furnaces had come into use, for example at Hamsell, whereby the fuel did not come into contact with iron.

Ironmasters operated in a number of capacities; as owner-occupiers, as lessees, as partners, as agents, as landlords and as merchants. Production, which had featured largely ordnance, was hit by a series of financial crises. As the decline continued, forges started searching for iron supplies to meet the prevailing needs for agricultural implements, decorative ware (firebacks), mill cases (for cornmills) and garden rollers.

Bankruptcies hit the Weald in particular and saw the fall of such personalities as Clutton in 1762, the Churchills in 1767 and Tapsell who, in 1765, appeared to have suffered catastrophically, being described later as 'having sunk into indigence'. His failure alone put nine sites out of use.

The process of decline was compounded by the advancement of technology, the advent of coke-smelting being a particular factor. Nevertheless, some sites continued to be occupied, showing a considerable resilience in the industry to which the quality of the labour force contributed in no small way.

Clues to the Past *Part 3*

Dot Meades continues her series on the Wealden iron industry.

The forge The product of the blast furnace was cast iron. It might take the form of finished goods, anything from guns to cooking pots, or it might simply be raw pig iron. Pig was of no use in its raw state; it was so brittle that it would shatter under a smith's hammer. Before smithing could take place, it had to be converted into malleable bar iron in a water-powered forge. When we speak of a forge in connection with Wealden iron, it is this type of conversion forge that we mean, not a village smithy.

A forge often served a number of furnaces, especially where the furnaces were using much of their production to produce finished cast iron goods. Where there was a good demand for bar iron furnaces concentrated more on pig iron for the forges than on

producing cast goods.

The forge site Unlike a blast furnace site, where only enough water was needed to drive one wheel, a conversion forge needed enough to drive three wheels, so forge sites tend to be found further downstream than furnace sites, to take advantage of a better water supply.

However, in a number of cases where there was sufficient water to serve both furnace and forge wheels, capital and transport costs could be saved by having them on the same site, sharing the same bay and weir. Extra openings in the bay were required for leats to take water from the pond to the wheels and tail-races were made to take away the used water.

A tiny illustration on a map of Langley's furnace and forge site shows a forge building (WIRG Bulletin 1988, p48). Two of its water-wheels, one behind the other, are shown on one side and a third and possibly a fourth, would have operated on the opposite side of the building. Three chimneys are shown on the diagram, which suggests there would have been three hearths, two fineries and one chafery. In the finery hearths, the pig was melted and the impurities (mainly carbon) which made it brittle were burnt out. The product of these hearths would be a raw, spongy bloom of malleable iron with inclusions of slag, similar to the product of an early bloomery but much larger. The large water-powered hammer would then be used in conjunction with the second hearth, the chafery, as the bloom was alternately heated and hammered until it became a bar of malleable (wrought) iron.

What you may see on a forge site Look for the usual earthworks; there may be a bay (dam) across a valley to contain a pond or, if the site is on a larger river, there may be no bay because a long leat was used to create a more controllable water supply. If there is a bay, it may be possible to see where the water was led through it onto the water-wheels. There might be signs of tailrace(s) which took the used water back to the river.

The two most likely things to find are a large amount of black charcoal impregnated soil and 'forge bottoms.' These are large, flattish lumps of rough, often rusty-looking slag. They are the residues of the finery hearth, which were obviously taken

out at quite frequent intervals. They abound on many forge sites and if you cannot see them they will certainly be there under the ground - a probe is useful here. They can sometimes be seen in the streambank. A small quantity of blast furnace slag found on a forge site does not necessarily mean that there was also a furnace there; it may have been washed downstream from a furnace or have come in on the carts with the pig iron.

Other chance finds have included a clutch of rusting nails; evidently there was sometimes some smithing on a forge site, which was only sensible considering the needs of an ironworks.

The Boring Mill

There is one other type of iron site which was undoubtedly needed in guncasting areas. This is the boring mill. Like the forge it sometimes existed separately from its furnace(s) and sometimes shared the same site. Separate ones may be difficult to identify on the ground for they may be on quite small tributary valleys, as at Mayfield, with little to show except a narrow bay. As they were used to drive a boring bar for reaming the hollow-cast guns of the time, only iron swarf was produced and this may not now be visible. However, we should be aware of the possibility if a small bay is found near to a furnace site.

Pen ponds Last but perhaps not least as far as ironmasters were concerned, there were pen ponds. Often these are now no longer ponds. Field evidence for them would be the presence of a bank, or in some cases a series of banks, across a flat-bottomed valley upstream from a water-powered site. Since water was the source of power, it was important to maintain the supply. To find them on foot can entail much walking but an interesting time can be had with a large-scale map, noticing right-hand bends in rivers accompanied by suitably shaped fields in valley bottoms. An excellent exercise on a cold wet day in front of a warm fire!

Especially to new Wirgers

Examine all humps and bumps in the ground with the eye of faith but remember that the site may have been altered, re-used or extensively damaged by levelling to facilitate modern agriculture.

No-one will mind if you remove a piece of slag

but pottery, or any other artifacts, can usually be dated, thus providing valuable information about the site. These should be given to an officer of WIRG, who will see that they are identified.

Some water-powered sites have dangerous, boggy patches which are not always apparent to the naked eye, so do not explore them on your own.

If a site is scheduled, it is illegal to dig or tamper with it in any way.

WIRG fieldwork depends on good relationships with owners and tenants of the land. We do not foray without permission. Follow the Country Code.

A word from the Treasurer

Once again the problem of bank charges is rearing its ugly head.

In spite of protests that we are a Registered Charity, Barclays insist that we are a "small business" and as such are subject to a charge of £6 per quarter together with 66p for every account transaction. This amounts to a charge of 10% on each standing order. In fact for the quarter from 1st June to 31st August last year a commission charge of £71.34 was made.

In view of this the Committee has decided to bank with Girobank who we understand will not make such charges.

This change, I am afraid, means that all standing orders will have to be altered accordingly, and as soon as details are received from Girobank, the revised forms will be sent to all members. (If things go to plan there will be a form with this newsletter. ed.)

WIRG A.G.M. 1993

This will take place at Fairwarp Village Hall on Saturday 31st July, meeting at 11 am. After the AGM, Mrs Meades will speak about Hendall in its Local Context. Lunch will be served, followed by a foray to Hendall furnace site and minepits nearby. Members and their friends will be welcome. Members will receive more detailed notices

later, and it will be necessary to book lunch in advance.

Finings

A PLEA from the editor. Please think of me when you are on your Summer hols. I'm sure that some of you will visit sites in other parts of Britain that could be of interest to us all. If it doesn't spoil your holiday too much take some notes and consider writing them up for the Winter newsletter. My address is: Granville Davies, 18 B, Chapman Way, Tunbridge Wells. Kent TN2 3EF, telephone 0892.541629.

THE COUNCIL FOR KENTISH ARCHAEOLOGY IS HOLDING a one day commemoration of the 1950th anniversary of the Roman invasion of Britain by Claudius. The event is on 29th May 1993, tickets and details from: CKA, 5 Harvest Bank Road, West Wickham, KENT BR4 9DL.

THE COMMITTEE is considering reprinting Cleere & Crossley. The reprint would be an A5 paperback and the present price guesstimate is £15. Jeremy would be interested to have reaction from other members of WIRG in order to gauge the possible sales of the book. If you have a comment please give him a call on 0342.713544 or write to him at 33 Burleigh Way, Crawley Down, West Sussex RH10 4UA.