



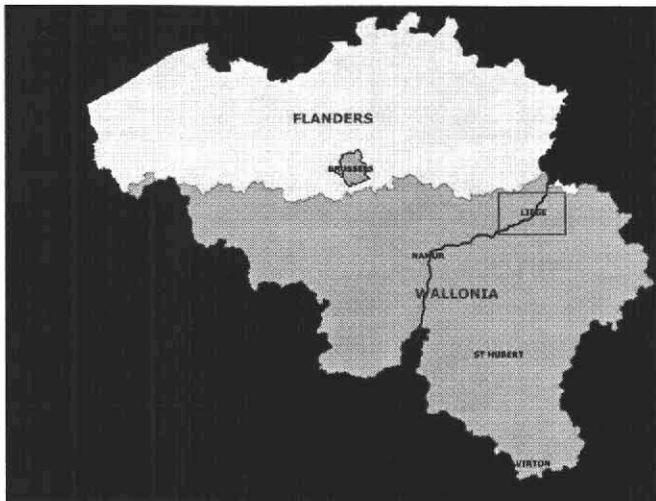
NEWSLETTER NO 43 SPRING 2006

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WINTER MEETING AND TALK ON VISIT TO BELGIUM IRONWORKS' REMAINS

The Winter Meeting was well attended. It was good to see so many members and exchange news and information about current activities. There was an interesting talk by Jeremy Hodgkinson and Tim Smith about a visit which a few WIRG members made to the Walloon area of Belgium, (see map below) illustrated with some excellent slides, a few of which are reproduced here.

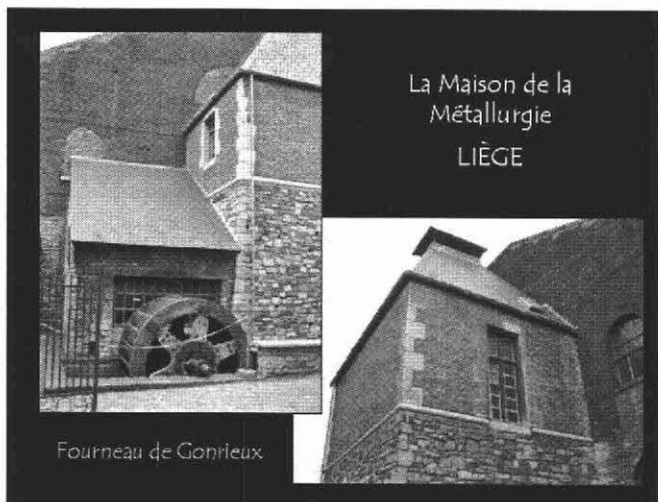


Generally speaking, Jeremy dealt with the history and Tim with the more technical aspects of the Group's expedition to Wallonia, the French-speaking part of Belgium. They went directly to Liege, which there is an Iron Museum whose main exhibit is a rebuilding of a local blast furnace. However, the talk started with the iron sites further west at Thon and Gesves around Namur. The area is hilly and wooded and many of the earliest ironworks were sited in the Namur area, having been erected by the Count of Namur. The Count was no doubt influenced by his sister, the queen of Sweden in which country blast furnaces were already established. The River Meuse is the main waterway of Belgium and many mills were sited on its tributaries; some existed in the 14th c. thus pre-dating those of the Weald by a century.

Records show that an ironworks existed at Jausse les Ferrons in 1407. Henri le Feron, from Jausse, and Pierre le Fondeur, from Franchimont, took the process to the Pays de Bray in 1451, setting up at Le Becquet, near Beauvais, and thence, eventually, the process came to the Weald in the 1490s. Thus the process came from Sweden to the Namur area, and thence to the Pays de Bray and the Weald.

Tim showed some excellent slides of the reconstructed blast furnace and finery-forge in the Liege Museum of Metallurgy. The blast furnace there is reconstructed in the museum, having been originally located at Gonrieux, where it worked from 1693 to the late 19th c. Features shown were the casting arch and the bellows which blow into a spark arrester box – this probably also evened out the air flow; only the top board of each of the two pairs of bellows moves, being alternately depressed by trips on a shaft driven by a water wheel and raised by a counterweight attached to the top board by a chain. The finery hearth shows an arch for insertion of the sow of iron which was

some 10' long. There is also a water-powered, belly-helve hammer with a spring pressing down on the shaft to increase the force of its blows. The Museum also has what is thought to be the oldest sheet Rolling Mill surviving. Dated 1819 it was water-powered. (Slitting mills were known some time before this.)

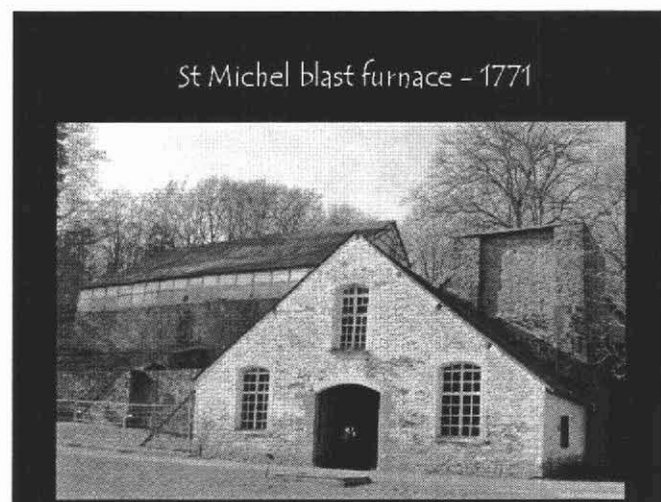


Liege Museum of Metallurgy

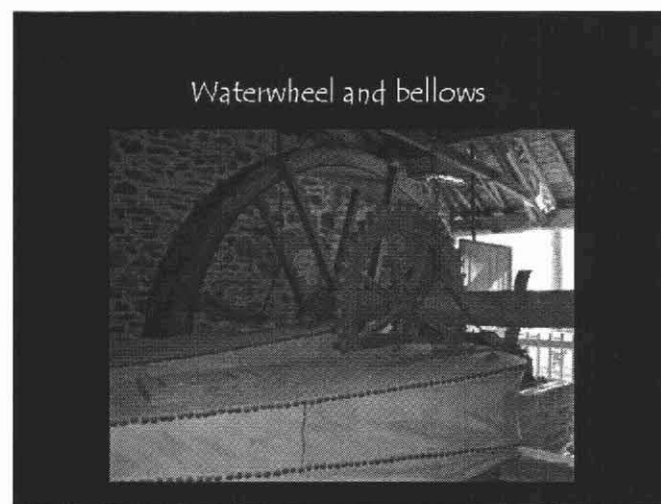
Moving south to St Hubert the furnace is shown on a 1777 map as the Fourneau St Hubert but by 1880 it had been renamed Fourneau St Michel. The site is now part of a rural life park, with the furnace, museum, charcoal house and water system, plus a more modern fishing pond. The furnace was established by the Abbot Dom Nicolas Spirlet (landowner at that time) to use the copious timber that grew on the land. Unfortunately it was not very successful and it also encountered difficulties in casting cannon for the American War of Independence. In 1795 the Abbot was driven out as a result of the French revolution.

However, there is now plenty for the visitor to see. The bellows have been restored with their spark arrestor box, backshot water wheel and drive mechanism, which employs an intermediate shaft that carries the trips to depress the bellows. The charcoal store, burnt down in 1774 and again in 1777 has been magnificently rebuilt (charcoal needs to be stored in small discreet quantities to avoid spontaneous combustion). Nowadays the building is used to demonstrate local woodcraft. The finery, a typical Walloon forge with two

chimneys no longer contains any evidence of the hearths but the now blocked arch through which the sows were passed is clearly evident. The forge pond has the stream feeding it passing along one side of the pond (rather than through it) and a leet on the opposite side which carried water to ore-crushing machinery.



Blast Furnace at St Michel



Water wheel and bellows at St Michel

The Group also visited the Musee Gaumais at Virton, which covers a range of subjects including the iron industry. An interesting feature is the collection of 200 firebacks, although sadly there is very little documentation to go with them. Jeremy noted that, compared with those from the Weald, the size of these Belgian firebacks is striking. They

are all about 1m square and show that as time passed they developed in artistic skill and style.



Square firebacks

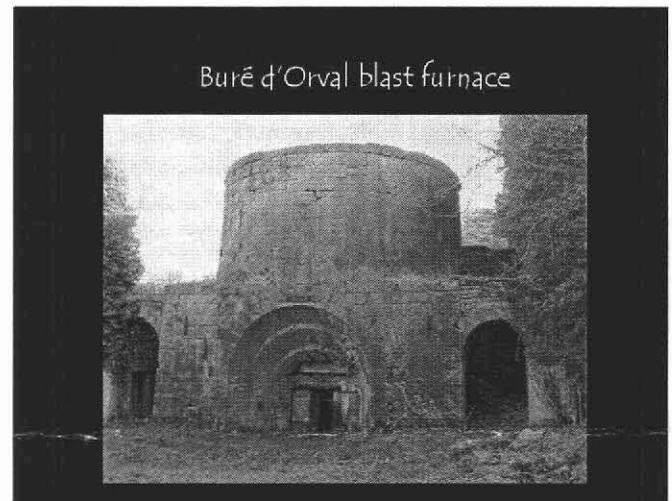
Moreover a comparison shows that in 1538, those cast in this area are more complicated than those of the same date cast in the Weald. A very early one dated 1445 was cast at Vaux, the first site to be described as a finery.

The apocryphal story of Susannah and The Elders is a favourite theme. Patterns were carved wooden boards, nailed together. Manufacture there continued longer than in the Weald, with an example in the traditional style dating from as late as 1850, probably because the area continued to be able to supply logs for large open fires.



Top Left: a double fireback

A particularly interesting fireback shown in Liege was a compound 1+1, two cast together, side by side in one mould to make one very large back – (a few examples can also be found in this country). Stove plates with a rebated edge in the Dutch style are also found in the area, as also French firebacks, whose themes are often heraldic. In the museum at the Fourneau St Hubert, St Hubert himself, the blacksmith and farrier, St Eloi, patron saint of blacksmiths and Napoleon mounted on his horse also appear on firebacks. There is also an interesting display of cast iron stoves.



Furnace at Bure d'Oval

Crossing the border into France, at Bure d'Oval the group visited a 19th c blast furnace site. Blowing cylinders from the late 18th century were noted, together with the four arches of the blast furnace. There is much glossy, hard slag. Two km downstream is an older site, possibly 16th c. with a dry pond and much bloomery slag but little else – rather like a Wealden site. Nearby, the Fourneau du Dorlon is a round furnace in a site dating from the 17th to 19th c.

Another interesting site was at Cons-la Grandville where only the blast furnace of 1863 survives, illustrating the transformation from the older square furnaces to the later free standing shaft.

Altogether a very interesting trip which illustrated the development of ironworks in that part of Belgium and throws up some interesting questions about the sequence of development in other areas.

FORAY REPORTS

5/11/05 A dating dig in Hendall Wood, Buxted, Sussex

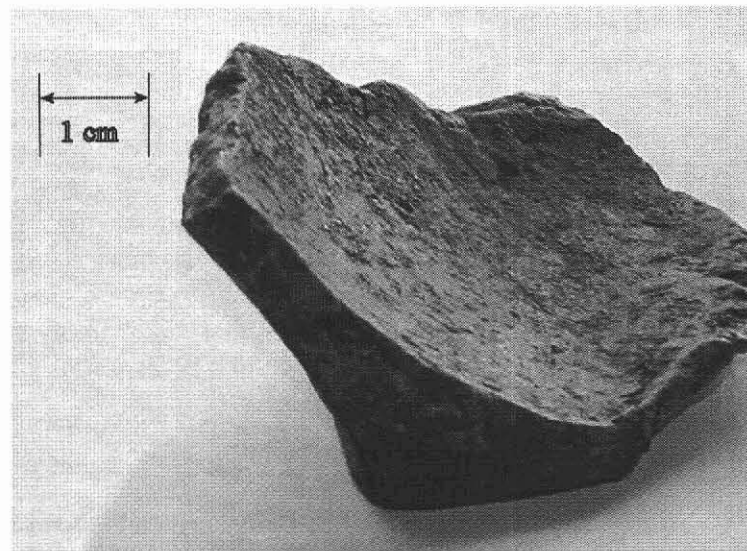
The owner of Hendall Wood, Buxted, Sussex, TQ477248, Mr & Mrs D Ferns, invited WIRG to date two bloomery furnace sites recently found there. However, when marking out the dig area, another site was found close by. The south part of the wood, on the hilltop, is much reduced in size compared to the 1880 map, but fortunately, all the iron-working sites are on the north side and beside the east-west stream and on the line of a geological fault where the Ashdown Sand is to the north and Wadhurst Clay to the south. There are several deep pits in the woodland, some small ones as well as many charcoal plateaux; these latter may be associated with Hendall blast furnace to the N-W. Half way up Hendall Wood is the E-W boundary with the Tunbridge Wells Sand. Basically, the geology did not look promising for iron ore, although not written in stone, even so, no pieces of iron ore could be found near the pits.

The "west" bloomery site, dug at TQ47682498 on the LH bank, produced a well-preserved, base-rim piece of pottery that was found well down in the slag, see diagram. This has been identified as East Sussex Ware (very common and used before and during the Roman occupation, and so cannot be closely dated) but has been dated to the Roman period around the 1st to 3rd century, whilst another, smaller piece of pottery found is from the same period. There was a very small amount of slag with wrinkles, proving that slag has been tapped, but also many rod-shaped pieces up to 5cm long and varying in diameter between 5 and 15mm. No explanation has been forthcoming as to what causes these cylinders of slag to form. As everyone seems to be a different diameter, could it be molten slag running into holes made in the ground by sticks?

The most interesting find was what seems to be the collapsed structure of a shaft bloomery furnace. This was found towards the bottom of the slope down to the stream, whereas one would have expected it to be towards the top of the slope. Only one piece was lifted for inspection, and then replaced and covered-up again.

The "waters meet" bloomery site, dug at TQ47722502 on the NE corner bank of two streams, was also dated to the Roman period by a similar small piece of pottery. No tapped slag

(with wrinkles) was found on this site, only vertical runs that had remained within the furnace. This difference between the two sites seems strange since they are only 40m apart.



A small plateau area, abutting and to the N-E, may be related to the site but was not investigated.

The "east" bloomery site was dug at TQ47982503 towards the top of the 3m high RH bank. There was minimal slag down the bank, most being where the actual furnace was assumed to be located; unfortunately, no pottery was found. Just above the furnace a few pieces of roasted ore and a great many fines were found 300mm from the surface, but very few pieces of slag. Although not fully investigated, it may be the remains of a roasted ore store, however, the ground here did not show any charcoal fines. When the smelting group roast their ore there is always a large amount of charcoal left (from the wood fuelled fire) and it would be very tedious to remove it all.

One of the nearby pits must be a mine pit; the best contender is near the "east" bloomery at about TQ48032492. This is the only black-water-filled pit and it shows signs of overburden having being piled-up nearby, with a particularly level area on top of one of the mounds.

We expect to organise another visit to Hendall Wood during the 2006-7 season, to date the final site, search out new ones and, perhaps, investigate the potential mine pit.

Brian Herbert

3/12/05 A foray to Buxted, Sussex, to visit the Queenstock (Iron plat) blast furnace locality

Recent documentary research concerning the Queenstock blast furnace¹ suggests that this was the earliest blast furnace in England, ~1490, rather than 1496 Newbridge Furnace on Ashdown Forest. It is on the River Uck, north of Buxted, Sussex, and since Straker's time has been called Iron Plat; a local field name. An interesting possibility is that the iron railings¹ on the medieval bridge over the Medway at Rochester were made at Queenstock blast furnace; however, it seems likely that the cast iron produced, would have been converted to wrought iron and the railings then forged. Unfortunately, the bridge no longer exists although there is a picture of it in Rochester. The stream above the furnace pond has been straightened in recent years, this may be seen by referring to the ~1880 map².

An earlier, summer foray with David Willcocks, to the Queenstock furnace area showed promise of some new finds although undergrowth covered the points of interest. Unfortunately, the December foray disproved most of these imagined finds. Also, the river Uck was too deep to study some unusual slag in the stream at TQ50212457. There are many ~200mm diameter, ~30mm thick, pieces of slag which show signs of having been molten. However, when these are removed from the water they crack-up and disintegrate after being dry for a few months. Even so, because they are detectable with the metal detector they are likely to be man-produced. This anomaly will have to be investigated again when the stream is low again, i.e. the summer.

A pit at TQ50022468, at the top of the Wadhurst Clay might be mine pit but could not be proved. It did have a large piece of sandstone towards the top of the pit but this could be the bottom level of the covering of Tunbridge Wells Sand.

A visit was made to Minepit Wood, centred on TQ50122427, which is situated towards the bottom of the Tunbridge Wells Sand and would have been a convenient source of iron ore for the Queenstock blast furnace. Although a smallish pit now, the ground looks to have been turned-over for a large area. Although there is a "hollow way" between the pit and the railway this may be an artefact produced when the railway was built.

1) The Lordship of Canterbury, Iron-founding at Buxted, and the Continental Antecedents of Cannon-founding in the Weald; B Awty, C Whittick, Pam Combes; SxAC, Vol.140, 2002; pp71-81.

2) <http://www.old-maps.co.uk/>

BH

7/1/06 Another foray to Blackham, Sussex

This was intended to be a digging foray to search for pottery on the final bloomery furnace site that WIRG has discovered in Blackham, Sussex. Unfortunately it was called off due to blizzard-like conditions in East Grinstead; whereupon the weather improved! Nevertheless, two people turned up, so it was decided to carry on with the dig.

The bloomery site to be dug was at TQ48073946, and an area was soon open up...to reveal bloomery slag buried in a very clean soil; it is impossible to smelt iron without a considerable amount charcoal dust being scattered around. It was eventually decided that this was probably a dump of slag used to make-up a long-disused trackway which, with the eye of hindsight, we could now convince ourselves existed. After an hour or so, we gave in, no pottery having been found, and even if it had, it might have been introduced to the slag when it was carried to this location at an unknown time in the past. This did not stop us digging another test pit some 4m away, but with the same conclusion. So, the above potential bloomery furnace site will now be removed from the records.

As the remainder of the afternoon was now free, we decided to walk a little way south to Cullinghurst Wood, TQ478392, an area full of minepits located towards the bottom of the Wadhurst Clay. As we had already searched the area for smelting sites, it was a surprise when the metal detector found "something" as we approached the mine-pit area. This turned out to be roasted ore fines that lead us to a pile of roasted ore on one side of the modern? track and a very small bloomery furnace site on the other side at TQ48073937. A test pit was dug into this small heap of slag but, again, no pottery was found. This site was located beside a miniscule ditch leading to the main stream, whilst, the other direction lead to a mine pit some 30m in diameter, however, its present size indicates that its potential as a source of iron ore far exceeded that smelted on this new site. This is the

second bloomery site found this season which has roasted ore/fines found adjacent to the furnace, see the Hendall Wood dig, above.

A new magnetic detector:

A new "detector" has recently been developed as a result of an anomaly shown-up by the standard metal detector we use. It is well known that roasted ore can be easily detected with a metal detector, but how best to differentiate between the two materials when neither is visible? Answer..by placing a very powerful, ferrite magnet in a plastic bag and then sliding this over the ground. The magnet will pick-up the roasted ore fines causing the anomaly and, to date, they seem to be about 0.5 to 2mm in diameter. The plastic bag is somewhat cosmetic, but to anyone who has tried remove iron filings from a magnet, absolutely vital. Roasted ore fines must abound on all sites, but presumably it gets mixed in with the slag and so cannot be differentiated. This new detector has been used to good effect at Little Furnace Wood, Roman bloomery site in Mayfield; a recent discovery by WIRG that is now being excavated.

Returning to the foray:

Still having time on our hands we searched more of the area around the mine pits; there might yet be more bloomery sites, but all we found with the metal detector was a 15m long anomaly along the high bank of the infant stream, at approximately TQ48073926. The new magnetic detector produced roasted ore fines all along this bank and is probably the first time that these have been found in conjunction with mine pits. No reasonable explanation can account for this find, however....could roasted ore have been processed nearby, and then carried by pack horse to where it was being smelted, be it blast furnace or bloomery? The detected fines could have leaked from the bags of roasted ore! A return foray will be on the agenda for the 2006-7 season.

BH

4/2/06 The first to the Rotherfield area

One of our members, Kevin Isted, has recently been researching members of the Isted family, which he believes may have lived in the vicinity of the old Yewtree Farm, Mayfield, Sussex in the 13th century. There is some circumstantial documentary evidence contained in the Customals of Mayfield c1285 that

Isteds may have been engaged in iron working to some extent at that time - a connection with someone called Faber (an occupational surname from faber, the Latin word for a smith) a name common in Mayfield and Wadhurst at the time; and the Isteds being one of only three families in Mayfield who had some land recorded as coppice. As the foray group, who are walking a strip of Sussex, north from Heathfield to Mark Cross, will eventually reach a farm of that name; it was decided to jump to this new location; it's not often that we can combine documentary research with fieldwalking. Unfortunately, it was the wrong Yewtree Farm! The one that I had located on the map should have been to the east of Mayfield village, and to make matters worse, the one we were visiting is in Rotherfield.

The foray started at Stile House Farm, TQ58303018, where there is a thin layer of Wadhurst Clay over a large area, so providing a potentially reliable source of iron ore. This may be visualised by the many pits shown on maps of the area; but pits seem only (sometimes) to be shown on maps where they are ponds as well. Iron ore and Cyrena limestone were found at only one pit, TQ 58133060, but as the location of three other pits were geologically similar, TQ58133041 & 2 pits at TQ58073080, these were assumed to be the same. Another, dry pit, at TQ57873052, was completely different, being very approximately 100m in diameter and with an almost flat bottom. Ref¹ gives accounts of much marl (a limey clay) being dug in Rotherfield and used to improve the sandy soils. So, as it did not seem to look like a mine pit it was assumed to be a marl pit: unfortunately, nobody there knew how to identify this material as it has not been used for 100s of years. *

The first bloomery site was found at TQ57683053, 5m up on a stream's RH bank; this is a similar location to the Roman bloomery site recently found in Mayfield although the new one is much closer to the stream. The slag was wrinkly and "looked" Roman, but this was only an educated guess.

A second site at TQ57663049 and just downstream, is of dubious provenance due to it being on a bed of sandstone; it may well be slag that has been washed down from above. If we can get permission to dig these sites for pottery, the provenance of the second site should become clear.

This stream was then followed down to Bletchinglye Farm, now just a hamlet, but around 1880 was called just "Blatchinglye". The large Wealden House here was clearly important and may well have marled its

land from the "assumed" marl pit noted above. We are always coming across pits that are far too deep to have been dug just for iron ore, and there is never any sign of all the spoil that would have been dug out if it was just used as a source of iron ore. It maybe that the deep pits are marl pits, owned by the big estates and used over many centuries, with perhaps a bonus of iron ore found at the bottom level.

Ref² gives a bloomery site at TQ576309, as this is only to 6 figures and is in a large field, it was ignored for the time being.

For the return journey we walked up another stream at TQ57323014. Here, pieces of bloomery slag were found for some 300m upstream, but no concentration of slag....until at TQ57582993, 6m up on the stream's LH bank, a very small site was discovered; and without a metal detector it would still be undiscovered! But the slag went up the stream just the same. Eventually, at TQ57693003 there were signs of slag on the bank, but as the light was failing, this part of the story will have to wait until the April foray.

1) "Rotherfield" The story of some Wealden Manors; C Pulein; ? 1928.

2) The Iron Industry of the Weald; Cleere & Crossley; Merton Priory Press, 1995; ISBN 898937-04-4. [O.O.P]

Brian Herbert & Kevin Isted

* Ernest Straker *Wealden Iron*, refers to information from C Pulein, *Rotherfield* as follows:

"In the Rotherfield Court Rolls of the early part of the 17th century there are mentions of licences to dig marl and for selling the mine (ore) found. In some cases no fewer than 1,200 or 1,000 loads were dug in a year. This explains the very large pits so frequent in the Weald, usually now wooded, with large and deep ponds in them. They sometimes bear the name of "Minepi,t" but more often are nameless."

DMM

CORRESPONDENCE

Coppicing and Bloomeries

After viewing a TV programme in which Brian Herbert and our WIRG bloomery featured, Kevin Isted wrote to Brian as follows:

"...the thing that, surprisingly, caught my eye was the bit about coppicing. I had, of course, known about coppicing, but I had never really thought about it specifically in connection with iron-working. I, therefore, wondered whether it might be significant that the de Istedes were one of only three families listed in the Customals of Mayfield c1285 who were recorded as having any 'coppice'. In the case of the de Istedes, 2 acres. I suspect there may well have been much more coppice amongst the land retained by the Archbishop, but this isn't recorded.

Incidentally, there was much more coppice recorded for many more landholders in the Customals for Wadhurst c1285. Indeed, on the 300 acre estate of the Abbot of Robertsbridge 50 acres were given over to coppice.

Of course, coppicing was and still is done for a wide range of purposes, but it might be significant in the context of a possible medieval cottage iron industry."

Brian kindly circulated this email and, as a result, I wrote to Kevin asking if I might publish his communication. I wondered whether it would be possible to tie in remains of bloomery activity with the areas where coppicing was taking place. Kevin wrote back as follows:

Kevin agreed to publication and added, "I can give you a little more information which might be of help to someone who knows the Mayfield/Wadhurst areas to locate the sites of these ancient coppices. However, I think they may have more to go on in Wadhurst than in Mayfield.

Mayfield

Emma de Istede had 2 acres of coppice. It is not known exactly where the de Istede land was, although the farmstead must have been adjacent to the village. Although I have not been able to prove it, I have a theory that it was the old Yew Tree Farm, in Mayfield (not

the one in Rotherfield, which was subject to a recent WIRG foray), as the name Isted is thought to mean 'a place where yew trees grow'. The place names in Sussex and Kent beginning with a single syllable 'I' pronounced as a long 'I' sound (i.e. as in site) e.g. Ifield, Iden, Iford, Iwade etc all relate to yew trees. You may also wish to be aware that a Gilbert Faber, neif (serf) rented 2 1/2 acres of de Istede land. I suspect that as he was a serf he may well have worked for the de Istedes. As his name was Faber I assume he was a smith as faber is the Latin name for a smith, and the Custumals c1285 were written in Latin. A William le Cupere also rented 2 1/2 acres of de Istede land. I had assumed that his name probably meant William the Cooper. However, cupere could be from the Old French cuper, meaning cutter. If the latter is correct, he could have been someone engaged in forestry, if not coppicing in particular. I can't prove it, but it seems probable that the de Istedes (also alternatively spelt de Ystede) of Mayfield c1285 were ancestors of Richard and Joan Isted, Ironmasters of Mayfield in the Tudor period. It is, therefore, tempting to speculate that the Isteds may have been engaged in ironworking to some extent back to c1285 and possibly beyond.

William le Frye (William the Free) had 2 acres of coppice. It is not known exactly where this land was, but again it appears to have been adjacent to the village.

Goda de Stanleygh had 13 acres of coppice. The de Stanleyghs were neifs (serfs who held land from the Archbishop for which they paid money rent and performed work services), unlike the de Istedes and le Fryes who were free men and women. Their land was located in what is described as a hamlet called Stanleygh from which they took their name. I don't know, but I suppose it is possible that this name might still survive, perhaps in the name of a local farm. If not, it might still be possible to track this back in old records or

field names. Incidentally, the name Stanleygh, means stony meadow in Old English.

Wadhurst

The Abbott of Robertsbridge had 50 acres of coppice. I assume that it would be fairly easy to trace this land, which I suspect was held by the Abbey until the Reformation.

All the other coppice in Wadhurst appears to have been on neif land, as follows, some of which might be identifiable in surviving place-names:

- 10 acres at South Cornerley
- 2 acres at Steddyngglegh
- 9 acres at Pelle
- 10 acres at Crouherst
- 6 acres at the Half-Virgate of Bayringg
- 9 acres at Arlyegh
- 25 acres at Alerdynden
- 5½ acres at Muleshale
- 4 acres at Rysden
- 2 acres at Bercl
- 5 acres at Stanlaghregg
- 26 acres at Betesfeud
- 5½ acres at Leneslye
- 14 acres at Mapletreherst

All the above information is from the Mayfield and Wadhurst sections of the Custumals of the Archbishop of Canterbury's estates in Sussex c1285 (ESRO - Reference SRS Vol 57). There are other sections to this document that I don't have covering: Grenhurst (I don't know where this is), Framfield and Uckfield, which might reveal further relevant information. I also understand that there is a similar document from this period covering the Archbishop's estates in Kent, a copy of which is held at the Canterbury Cathedral Archives."

A further piece of information was subsequently passed on by Kevin:

"I came across a map of the Wadhurst area yesterday. Although it wasn't a very good map, I made a quick cross check between it

and the c1285 names where coppices were recorded. Two names appeared that seem promising:

Pell, which I assume may have been the c1285 Pelle where 9 acres of coppice were recorded

Reisden, which I assume may have been the c1285 Rysden, where 4 acres of coppice were recorded."

Many thanks, Kevin. This information could set off our field group on an interesting new study, where possible linking the practice of coppicing with iron production. Incidentally, Grenhurst has been located to the High Hurstwood/Buxted area.

WIRG members did a small excavation there some years ago and pottery from the site has recently been dated to 12th – 18th c. I must admit that I did not notice any reference to coppicing at Grenhurst in SRS Vol 57 but I will look again. The excavation was started after a WIRG foray located what appears to have been a bloomery slag path there.

Dot

An SOS from Professor Henry Cleere

"My sole remaining copy of the second edition of Cleere and Crossley has gone missing; it is, of course, now out of print and an Amazon search has not produced anything....there is a sad gap in my bookshelves.

Would it be possible for you to include a note in the next WIRG bulletin, telling of my plight and asking members to let me know if they come across a copy anywhere, for which I shall be delighted to pay a market price!....."

If you have or know of a copy of the book, (The Iron Industry of the Weald by Henry Cleere and David Crossley, 2nd edition, published 1995 by Merton Priory Press Ltd.) please contact with Professor Henry Cleere, Acres Rise, Ticehurst, Wadhurst, TN5 7DD
Tel. 01580 200752, or a member of the WIRG committee (see Contact Information at the end of this newsletter.)

Please help if you can. Our group owes a great debt to Henry and to David Crossley for all the work they put in to produce this 'WIRG book' and for donating the royalties from it that have enabled us to continue our research.

Mrs Jean Shelley writes with some interesting information that, although collected in 1843, may well be analagous to what was happening in earlier times.

"Some while ago, on looking at the Census I said to a friend Mary Day from Capel, "what did all those Ag labs do in the winter?" She replied with the enclosed!

Although 300 years earlier I guess the answer to Jonathan Prus's question in the last W Iron Bulletin, page 34, is to some extent the same in reverse – they assisted with the production of the harvest in one way or another.

From British Parliamentary Papers: Report on Agriculture 1843. Irish University Press : Mr Vaughan on the Counties of Kent, Surrey, and Sussex p 196-7

Mr Richard Weller is examined, and deposes on oath as follows:- I am a wood-hoop dealer and farmer, living at Sprat's farm, Capels, in Surrey. I supply the East and West India docks, the London Docks, and St Katherine's Docks, with hoops for casks and tea-chests. I think that one-third of the face of the country, from Dorking, in Surrey, to Cuckfield, in Sussex, to the east, and from Guildford to Petworth to the west, is covered with woodland. From the beginning of November until the 25th of March labour is employed in the wood-land in cutting wood-hoops and cord-wood to make charcoal. On the poor cold lands of this country little is done in the winter by the labourer in the cultivation of corn, and I think that as many as two-thirds of the agricultural labourers transfer their labour in the winter months to the wood-cutting. No occupation of any kind is given to women in the woods; but it appears from my books that

for every two men engaged in their labour three boys are similarly employed. Some lads begin their work about seven years old; eight is the common age; and the kind of work is continued through life. Those who begin at an early age either assist their parents, or are hired by older workmen. There are two kinds of work. – wood-cutting and hoop-shaving. At the wood-cutting boys are hired at the rate of 3s. a week at nine years old; 4s. a week at 12; at about 15 they begin to work for themselves, or at least, if they still work under the superintendence of an older labourer, they earn the whole worth of the work, and at this time of life they can earn about 7s. in the week. At all ages the workmen cut as long as they can see. Hoop-shaving requires more skill than wood-cutting, and meets with higher pay; the wood-cutter, upon an average, may make 11s. in the week; the hoop-shaver earns about 13s. or 14s. in the same time. When they work young, they commonly begin the employment with their father. It has been usual, when they set their hands to the occupation at a later age, to pay a premium to an old workman of from 15s to 25s., in order that they may be taught the art. A youth of 14 is so guided from two or three years, but during the whole time he earns the whole produce of his labour. A boy of nine years old at hoop-shaving may make 4s.6d in the week; at 12 years old, he may earn 5s.6d; at 14, 8s. Boys of 10 or 11 years old are during the winter months of considerable assistance to their families. Boys are seldom at school during the winter months; if they go at all, it is during the summer. There is a school for boys as well as girls in this parish (Capel): both schools are kept by the same schoolmistress, who is paid partly by a salary, partly by a penny, which is contributed by every scholar for the week. The girls are, I think, upon the whole, better informed than boys in matters taught at school, and I think that this is right: the boys are withdrawn earlier for labour. The families in this parish are, on the whole, well off; the cottages, generally speaking, are neatly kept. The greatest poverty and the worst moral habits are to be found amongst

the young men who have no families. There are very many women about here who follow the trade of prostitutes. The beer-shops are much frequented by the young men. A cottage of four rooms is rented hereabouts at about £5 per annum.

I reckon that 80 acres of corn-land in their country will furnish constant employment throughout the whole year to two men and two boys, and that the same number of wood-land acres will give constant work during the six winter months to six men and six boys, for such is the number required to work up 10 acres of wood-land, and the underwood is usually cut at eight years' growth.

Richard Weller.

FORTHCOMING EVENTS:

WIRG Field Group –

Forays a reminder of the last two forays this season: Saturday 1st April 2006: fieldwalking near Mayfield. Leader: Brian Herbert and indoor foray at Brackenside, Normansland, Fairwarp (Dot and Tony Meades)– please bring ideas for discussion, finds ,photos/slides, videos, relevant to WIRG.

WIRG Excavation – Stop Press

Excavations at Little Furnace Wood, Mayfield, will resume on 25/26 March and 29/30 April. Please pass the word around. All welcome, regardless of experience. Details from Jeremy Hodgkinson.

WIRG Summer Meeting

Ashburnham & Penshurst Village Hall, 22nd July; afternoon visit to Ashburnham Furnace.

Historical Metallurgy Society meetings:

HMS AGM in London on 10th June 2006. The afternoon visit will be to the Whitechapel Bell Foundry and the AGM will be held nearby.

HMS conference for 2006 will be in the Forest of Dean on 15-17 September with the usual lectures and visits. Arrangements to be finalised.

BUMA-VI, 2006 15th to 20th Sept 2006, Beijing, China – general theme of this conference will be Metallurgy and Civilization. Conference language to be English.

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REVIEW

Charles Dawson's cast-iron statuette: the authentication of iron antiquities and possible coal-smelting of iron in Roman Britain

published in *Historical Metallurgy* Vol.39 Pt 1 for 2005.

This article by Paul Craddock and Janet Lang, both expert metallurgists, describes a scientific examination of Charles Dawson's little iron statuette and another small figure found in 1976 at the Roman iron-smelting site at Beauport Park, Sussex and speculates as to whether or not the Dawson find is a fraud. It reviews previous work and conclusions on the latter question. Both statuettes were shown to be of coal- or coke-smelted grey cast iron, although the constituents of the iron were different. There is a wide-ranging discussion of the difficulties of analysing and of dating iron that does not contain evidence of smelting with fossil fuels.

The question of fraud is complicated by the knowledge that other examples of grey cast iron have been reported from several Romano-British sites. Indeed a small piece of grey cast iron was found at Wilderspool at a site where both coal and slag containing sulphur was found, which strongly suggests some experimentation with coal-fuelled smelting. It used to be generally thought that bloomery smelting cannot produce cast iron but this is not the case. Indeed, in China, from early times cast iron was the main product of the bloomery process. A further question therefore arises as to whether the Romans were experimenting with using coal as a fuel in bloomery iron-smelting.

The authors go thoroughly into the history of Dawson's figure and the various analyses and conclusions of experts, as well as their own work on the statues. This latter will be of great interest to metallurgists but I am not qualified to comment on it. Both statuettes were found to be of grey cast iron but with different constituents. The surface appearances of the two statuettes markedly differ as to colour and the amount of corrosion present. Dawson's statuette appears to have been treated

with potassium dichromate. This chemical was used to age the appearance of other fraudulent artefacts produced by him. The authors do not report that they tested for this.

The not unexpected conclusion of this latest attempt to establish whether or not Dawson's figure is a fraud is that they believe that it is. On the question of deliberate Roman experiments in using coal to smelt iron, the jury is still out.

As with most archaeological investigations, no sooner has one conclusion been arrived at, than it raises another question. What I should like to know, if we accept the Dawson figure as cast iron, is who in modern times would take the trouble to cast two such small figures that can never have been of any great value? If the one offered by Dawson was manufactured either by himself or a collaborator, who made the other one and why was it abandoned at Beauport Park? Remember the chemical content of the grey cast iron in each statuette is somewhat different so they were presumably from separate castings.

DMM

NEWS FROM ELSEWHERE

FOREST OF DEAN IRON ORE

In the *Telegraph Weekend*, 3/12/05, there was an article on the "Scowles", the iron ore pits found in the Forest of Dean. These pits, some 5 to 6m deep and interlinking for many tens of metres, abound in an arc around the central coalfield^{1,2}.

There is no significant iron ore mined nowadays and there are only two or three coal seams (along adits) that are now being worked by private owners. The iron ore is found in the Crease Limestone, and the Romans "produced" the scowles as they dug out the "brush ore" where it came to the surface. However, there are many caves in the area where the ore was won in more modern times.

Well! that has been the scowles' story for 2000 years, but it now appears that there is no evidence to prove this, according to some geologists. A

similar situation exists in the Weald where many iron ore pits must be Roman, but cannot be proved. There is one difference in the Weald in that there are no known (old) underground mine workings, as there are in the Forest of Dean.

Investigations are taking place in Lydney Park, where Sir Mortimer Wheeler excavated a Roman temple and iron ore mine (underground) in 1929. Even J R R Tolkien helped with the excavation and contributed to the report and this might have inspired the Middle Earth kingdom described in his novels.

Because the scowles are an "aggregates resource area" they are at risk from quarrying, and so they are being surveyed; just in case. Not that this will convey anything to future generations; the scowles must be visited and walked around, to be appreciated, even if they do turn out to be natural.

The Devils Chapel at Bream, quite close to Lydney park and Puzzle Wood, south of Coleford, are good examples to visit, whilst Clearwell Caves, yet further south of Coleford, is a "modern" mine and museum. There is also a brass effigy of a 15th C. miner in Newland church.

- 1) Geology Explained in the Forest of Dean and the Wye Valley; William Dreghorn; Davis and Charles, 1968.
- 2) Nicholls's Forest of Dean & Iron Making in the Olden Times; H G Nicholls, (1858); Reprinted, David and Charles, 1966.

BH

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EDITOR'S NOTE

Many thanks to our contributors and reminder that contributions for the Autumn newsletter should reach me by **1st October**. For the benefit of new members, I should like to say that our more academic publication is the WIRG Bulletin, which comes out in time for the AGM (July) and carries the main research on Wealden Iron. The Newsletter has a wider and rather less rigorous approach, linking 'iron' with allied studies where these may be relevant and delivering current news. It is my firm belief that comparative studies can help us to assess our own work more competently and sometimes to consider new approaches to what we do. So please let me have your thoughts and iron-related findings, whether Wealden or from other places.

DMM