Wealden Iron

Second Series
No.7 1987

Bulletin of the
Wealden Iron
Research Group

WEALDEN IRON RESEARCH GROUP

Bulletin No 7. Second Series

1987

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Field Notes

compiled by J S Hodgkinson

Owlsbury Farm, Rotherfield, Sussex

February – March 1986

The field group trenched the bloomery at TQ 529277 as part of a project to discover if sites in close relation to each other were contemporary. Six sherds of Romano-British native ware were discovered.

A bloomery at Broomfield Kent

April 1986

Invited by Mr John Paine, a WIRG member, the field group visited the site of a previously unknown bloomery in Kingswood (TQ 840513). Two concentrations of tap slag, one notable for burnt clay and furnace lining, were examined in a scatter of slag which extended over an area of paddock, 130m by 30m. The bloomery is on Lower Greensand and lies about three miles from Lenham where the bases of two Roman shaft furnaces have been excavated. This is another of an increasing number of bloomery sites discovered on the Lower Greensand in Kent, forming a group somewhat apart from the rest of the Wealden sites.

Minepits at West Hoathly Brickworks, Sharpthorne, Sussex

Bernard Worssam and Giles Swift

Introduction

Minepits, to judge from contemporary references and from the evidence of place-names, were a principal means of obtaining ore for the Wealden iron industry. Few contemporary records give much idea of the dimensions of these pits, however, and Straker[1] could only quote a statement by Topley[2] that the pits were about 1.8m in diameter at the top, rarely more than 6m deep, and widened downwards. It is not known on what evidence Topley based his statement, but pits of this type, as much as 15m deep and widened out to 6m across at the bottom, were certainly dug in the early nineteenth century for Purbeck Beds limestone, near Mountfield, by men who described them to Topley's Geological Survey colleagues. In the western part of the Weald, it has been deduced[3] from the mapping of tracts of worked ground, together with some sparse confirmatory evidence from sections, that minepits were shafts with diameter of 2m to 3.5m, and with depth, depending on distance from outcrop, between 6m and 12m. Minepitted ground in the central part of the Weald is similar in its surface appearance to that in the west, covered with saucer-shaped hollows where the filling of pits has compacted, but has likewise hitherto produced little direct evidence for the form of the minepits. The sections in the West Hoathly Brickworks quarry that are described in this paper are therefore of special importance in that they have revealed clearly the form and dimensions of a series of Wealden minepits, as well as the iron-ore

seams to which the pits were dug.

The sections have been under observation by the writers since an initial visit to the quarry, in company with the late Mr C.F. Tebbutt, in 1983. A preliminary account[4] gave radiocarbon dates of two samples of wood recovered from the filling of minepits.

The dating was carried out by Teledyne Isotopes, Westwood, New Jersey, U.S.A. One sample, No. I–13,517, from a tree trunk, was dated to AD1120 ±75, the other, No. I–13,006, from a roughly shaped, morticed timber, to AD1220 ±80.

Geology

The West Hoathly Brickworks quarry, at Grid Ref. TQ 375329, lies about 1km ENE of West Hoathly village. The clays dug for brickmaking are from the basal part of the Wadhurst Clay formation. The silty nature of these clays ensures minimal shrinkage during firing, and so renders them particularly suitable for the brickmaking process.

The geology of the area is shown on six-inch (1:10,560) Geological Survey Sheet TQ 33SE, surveyed in 1960-62 by R.W. Gallois, and included in one-inch/1:50,000 Sheet 302 (Horsham), published 1972. The site is also included in the Cuckfield-West Hoathly 1:25,000 Geological Special Sheet, published 1975.

Descriptive notes[5] on the last-mentioned sheet record the quarry as displaying, in 1961, a 25ft (7.6m) Wadhurst Clay section comprising siltstones passing up into soft mudstones. Exposures in the floor of the quarry at that time exposed the junction between the Wadhurst

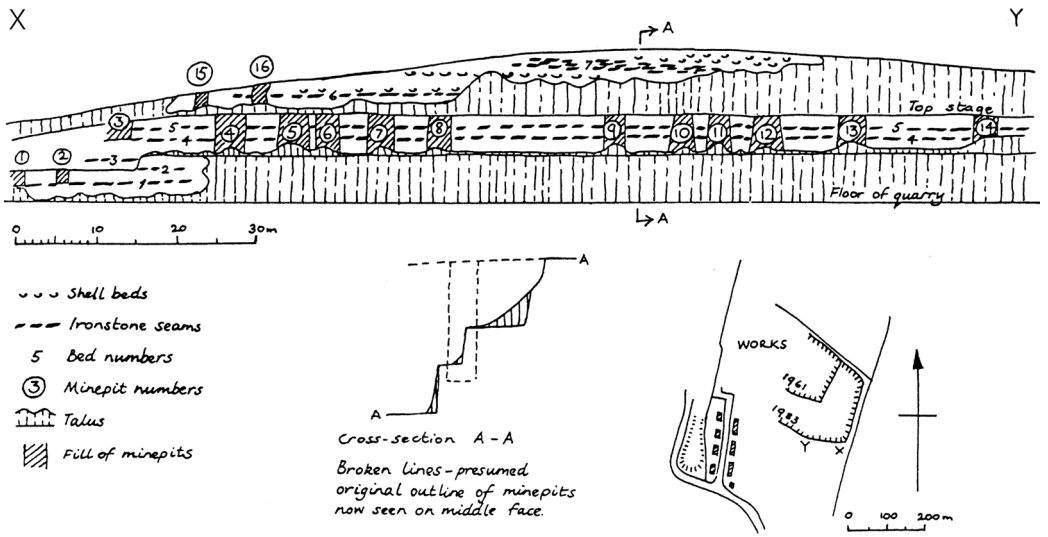

Fig. 1: West Hoathly Brickworks – scale drawing of south face in 1983.

Clay and sandstone at the top of the underlying Ashdown Beds, marked by a line of ripples containing tiny quartz pebbles. Within the Wadhurst Clay a thin but conspicuous carbonaceous band was composed almost entirely of crushed carbonised plant fragments, largely aerial stems of the horse-tail, *Equisitites* and the siltstones just below this were riddled with rootlet traces. At 1.8m above the carbonaceous band the 'basal ironstone bed' of the Wadhurst Clay was to be seen, as a line of nodules and tabular lenses of clay ironstone. There were surface indications of 'bell-pits' in a wood (Grinstead Wood) just to the south of the quarry.

By 1983 both the east and south faces of the quarry had advanced some 10m from their 1961 positions (see Fig. 1, location map). The south face had almost reached the southern edge of the wood, and had attained some 20m in height at its highest point. Fig. 1 includes a roughly true-scale sketch of the eastern, higher, half of this face, to show the beds and sections through filled-in minepits that were exposed. The western half was largely obscured by talus. The floor of the quarry was a near-plane surface, dipping at 10 to 2° SSW, and probably a bedding plane at, or a metre or two above, the top of the Ashdown Beds. The south face was being worked in three stages, the bottom one with a face some 6m high, the middle one with a 5m high face set back about 3m from the bottom face, and the top one with a face extending up to 9m or so at its highest and set back some 10m from the middle face (see Fig. 2). Much of the top face was covered by talus, and a veneer of talus also obscured the bottom face except at its eastern end. However, enough exposure remained to enable a succession of beds extending from the quarry floor to the highest point of the quarry to be pieced together. This is shown diagrammatically in Fig. 3.

Geologically, the section shows a gradual passage upwards, with some alternation, from siltstone, through silty mudstone with

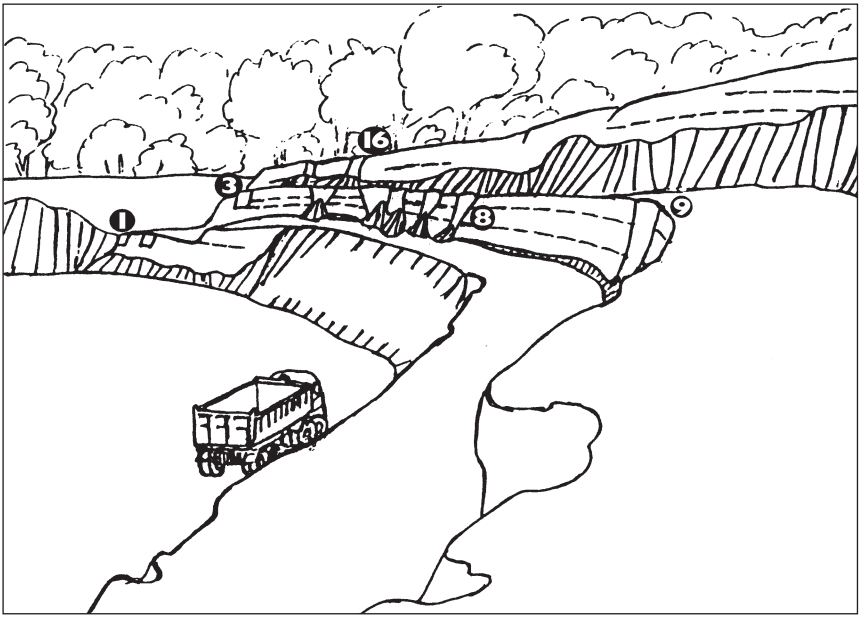

Fig. 2: The south face of the brickworks viewed looking east from near the site of minepit No. 13. Numbers are those of minepits. Drawn from a photograph.

ironstone bands, to less silty or non-silty clays with thin layers composed of closely-packed bivalve (*Neomiodon*) shells, the whole betokening a gradual increase in depth of water during deposition. Although some ironstone bands were continuous along much of the face, the bands typically consisted of separate lenses or nodules of ironstone aligned along a particular bedding plane. The shelly layers also tended to be lenticular; some were cemented to form thin (10mm or so) limestone seams, and one or two near the base of the succession had a sideritic (ironstone) cement in places.

In Fig. 3 the ironstone bands are numbered in upward order, but this numbering should be understood as applying only to the section

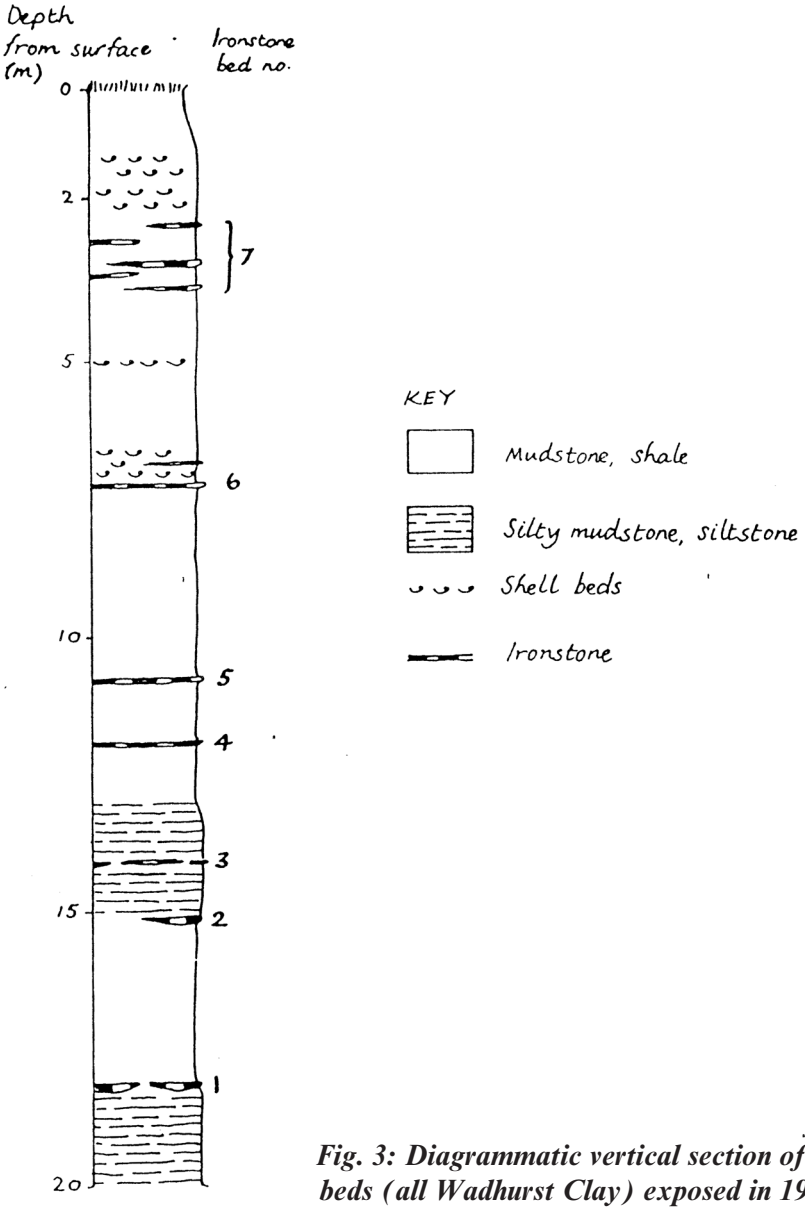

Fig. 3: Diagrammatic vertical section of the beds (all Wadhurst Clay) exposed in 1983.

as seen in 1983. By 1986 each stage of the south face had advanced a few more metres, and although a very similar succession was exposed no one bed could be confidently identified as one that had been seen in 1983. The lower part of this succession and that in the north of the quarry, first recorded in 1961, cannot be matched in detail either, despite a broad similarity.

In 1986 the northern-most face of the quarry still showed the distinctive thin (2mm) carbonaceous band noted in 1961 by Dr Gallois. It was about 3.5m above the quarry floor and hence 4m or so above the top of the Ashdown Beds. The 'basal ironstone bed' of 1961 would then be expected some 5.5m above the Ashdown Beds. This suggests correlation with ironstone bed 2 of the 1983 section, which implies in turn that the lowest ironstone (bed 1) of the 1983 section is not represented in the north of the quarry, at least not as a band with recognisable continuity.

With the proviso, therefore, that individual beds cannot be relied on to persist over long distances, it may be useful at least to list the thicknesses of the ironstone layers seen in 1983, for this allows estimation of the quantities of ore raised from the minepits. From below upwards the beds were No.1, seen as tabular lenses at the east end of the face, up to 150mm thick; No.2, exposed for a short distance only, 150mm; No.3, lenticular ironstone, up to 30mm; No.4, a continuous band as far as could be seen, 50 to 60mm; No.5, 50 to 60mm thick and forming a continuous bed in the central part of the face, but in lenticles of about 900m diameter near the east end of the face; No.6, weathered ironstone, 30mm to 40mm thick; and No.7, a 1.2m bed of laminated mudstone, weathered orange-brown, with impersistent layers of clay ironstone 20mm to 30mm thick at approximately 0.3m intervals vertically, some passing laterally into lenses up to 100mm thick, and with one thicker layer of silty clay ironstone up to 100mm thick occurring about 0.45m above the base

of the bed, the average thickness of ironstone in the bed being about 60mm to 80mm.

Little difference in lithology was noted between one bed and another, practically all being of fine-grained light grey clay ironstone. Although perhaps not the most continuously developed, the lowest beds in the sequence, Nos.1 and 2, are the thickest, in this at least confirming current ideas on Wadhurst Clay stratigraphy.

Some difficulty in assessing the amount of ironstone that might have been recoverable as ore is caused by the weathering that affects the beds down to about 6m below the ground surface. At depth the Wadhurst Clay has a dark grey colour, but in the weathered zone the clay is pale grey to yellowish grey, and ironstone is oxidised to limonite, an orange-brown material that initially develops as a surface crust but which later extends to the centre of nodules or of joint-blocks. Where weathering is most extreme, close to the surface, the limonitised ironstone becomes broken up and would have been hard to separate from the weathered clay. As the weathered zone follows the slope of the ground it affects lower beds near the eastern end of the face more than near the middle. The weathering is brought about by oxygenated water from the surface percolating through cracks and fissures. Over a distance of a metre or two in the eastern part of the face the base of the zone was sharp where it coincided with an ironstone bed, which had evidently formed a barrier to water movement.

The minepits – form and physical features

In Fig.1 the filled-in minepits are numbered arbitrarily from east to west along each stage of the quarry's south face. The pits had sharply-cut walls, and were filled with a breccia of closely packed angular fragments of clay, shale and siltstone. They were unevenly spaced along the line of section, two of them (5 and 6) being only 1m

apart. Owing to the set-back of successive stages, no one pit could be traced continuously from the surface to its bottom. Those in the middle part of the middle face all looked as though they extended at least to the floor of that stage, and so reached at least 12m from the surface. They may have gone as much as 13.5m from the surface, for although the bottom face was much obscured there were indications in places of pits going down to about 1.5m below its top, to about the level of Bed 2, though no further. These indications took the form of patches of loose strata accompanied by seepages that were hard to explain unless derived from water that had collected in the loose fill at the bottom of pits. The absence of pits towards the middle part of the top face may have been due to this being beyond the southern limit of the dug ground.

Some pits near the eastern end of the face had a width in section of only 2m, but for most pits this width was between 3 and 4m. Subsequent to cutting the middle face, the relatively soft filling of each of the pits had partially collapsed forward to form a small talus cone on the flat shelf at the foot of the face, giving the face as a whole, viewed lengthways (Fig.2) a scalloped appearance. No one pit had wholly lost its filling, but their curved walls gave the impression that the pits had originally been circular in plan, with a diameter, corresponding to the greatest width in section, of 4m or so.

Pits Nos. 2 and 3 had clearly-exposed flat bottoms, from which an ironstone seam, respectively Nos. 1 and 4, had been cleared away prior to back-filling. There was no undercutting at the bottom corners of these pits. Some other pits, notably Nos.10 and 12, showed some suggestion of downward flaring-out to a cone-like shape, but this may have been a false impression resulting from the face itself sloping slightly forward from top to bottom. No.7 definitely had vertical walls.

The fill near the bottom of some pits included lumps of yellow

and brown weathered clay, while Nos. 15 and 16 were conspicuous for their fill of dark grey clay, contrasting with the pale yellow-grey colour of the surface clays through which they were dug. Back-filling of worked-out pits first with near-surface and then with deeper-seated clays from later-dug nearby pits seems an obvious method of working, but it is interesting to have it confirmed from these exposures. The fill of a pit exposed on the top face in 1986 included a section through a cone of detritus about 1m high, with later-tipped clay draped over it, but such stratification as there was in the fill of most pits was a sub-horizontal layering. There was no indication that filling-in had been other than a rapid process, taking place soon after pits had been abandoned. Subsequent gradual compaction, such as would have given the depressions occurring at ground surface, appeared to be evidenced by slight curving upwards towards the pit walls of the layering of the fill in some of the pits. Less expectedly, vertical compaction seemed to have been accompanied by a tendency to inward movement of the pit walls, indicated perhaps by the slight arching of the strata in the pillar between pits 11 and 12 (see Fig.l) and more certainly by the common occurrence of short near-vertical fissures, up to about 10mm wide, in the strata close to the walls of pits. This development of fissures, presumably concentric in plan, was particularly well marked in unweathered strata of the middle part of the middle face. Nearer the surface one would expect the effect to be masked by the softening and cracking following alternate wetting and drying of clays. Flowage affecting equally the near-surface weathered clay, and the softened dark grey clay breccia of a pit infill, was indicated by the somewhat sinuous outline, in section, of the walls of pit No.16, as if the shape of the infilled pit had been distorted by hill-creep.

A further feature of infilled pits has already been mentioned. This is the likelihood that groundwater would tend to collect in the deeper

ones, since however long its period of compaction, the fill would tend to be more porous than undisturbed strata. Even during a dry period in the summer of 1983 it was noted that some wet patches 3m or so across persisted on the shelf at the foot of the middle face. They may have been sections across minepits, while other pits a little further forward would have given the seepages noted near the top of the bottom face.

Archaeological Considerations

The tree trunk which gave a date of AD1120 ± 75 was embedded in the fill of pit No.8. The trunk was of 450mm diameter and was lying on its side at right angles to the face, with its broken-off end about midway in the pit. It was about 1.2m above the bottom of the middle face and so about 10m below ground level. Its wood was dark brown to black, soft and friable. The clay infill of the pit had an overall buff colour, which was altered to dark grey in a reduction 'halo' 20mm to 50mm wide surrounding and in contact with the trunk. There could be no doubt, therefore, that the trunk was *in-situ* in the fill.

The shaped timber dated to AD1220 ± 80 was, as previously explained,[4] the longer of two pieces recovered from the fill of a minepit at about 2m below ground level, and so on the top face. These pieces were retrieved before the quarry was measured up, and so cannot be more exactly localised. Each was approximately 150mm square, and they were 1.75m and 1m long respectively. The longer had a mortice cut at either end, while the shorter one had been broken but had a mortice at the sound end. They may have formed part of some sort of winding gear. In addition, we have been informed by the works manager that at some time previous to our first visit the face had exposed a timber of circular cross-section, like a tree trunk, fully 12m long, standing vertically and reaching almost to the surface. This, too, must have been in the infill of a minepit.

From the thicknesses of the ironstone beds it can be deduced that the deeper pits, say Nos. 9 to 12, would have produced a total thickness of about 200mm to 300mm of ironstone if they had gone down to bed 3, and possibly 300mm to 400mm if they went down to a bed 2 that averaged 100mm thick. A total thickness of 250mm to 350mm of ore would correspond to between 2.5cu.m. and 3.4cu.m. for a pit of 3.5m diameter, or 3cu.m to 4.4cu.m. for a pit 4m in diameter. These amounts are much more than would be yielded by the 75mm (3 inches) thickness per pit, assumed for the purposes of calculation,[3] which might just have supported the 16th-18th century western Weald iron industry, and are comparable with those that Fuller in his 18th century iron workings[1] expected to get from his Heathfield minepits.

Along the middle face in Fig.1 approximately 35% to 40% of the ground has been dug. This is only a chance cross-section and perhaps near the southern limit of minepitting, so it is not known how typical it is of the spacing of pits in Grinstead Wood. Even so, the impression given is one of a mining industry pursued with thoroughness. In view of this, and of the potential yield from a mining technique as advanced, so far as is known, as anything in the Weald in the 18th century, the 12th to 13th century dates of the timber from the minepits are surprising. As well as the minor puzzle of why the morticed timbers should be so much younger than the unshaped tree trunk, when one would have expected the reverse, the more important question remains to be solved, that of what bloomeries the ore may have served, in a period that has generally provided very little evidence of iron industry activity.

In this connection a site that might bear further investigation is Blackland Farm, lying approximately 1km NE of the brickworks at TQ 381336, for the name is one that is commonly associated with ironworking sites in the Weald. The West Hoathly Brickworks pits

are now the earliest dated Wealden minepits. Could it be that the practice of digging these deep pits was introduced by the Normans, rather as, so much later in the Middle Ages, the blast furnace technique also came over from northern France?

Acknowledgements

We are indebted to Messrs Ibstock Brick Hudsons Ltd. and to Mr N. Wickham, their works manager, for permission to visit the West Hoathly Brickworks quarry on a number of occasions, and to publish this account; and to the Sussex Archaeological Society for two Margary Research Fund grants to cover the cost of radiocarbon dating. The help and encouragement of Fred Tebbutt is remembered with gratitude.

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The Eighteenth Century Revival of Howbourne Forge, Buxted

Pam Combes

In view of the overall decline in the number of Wealden forges operating in the eighteenth century, the revival of Howbourne Forge from 1756 to 1785 is an apparent anomaly.

The reason for this revival is difficult to interpret. John Whitfield, a Lewes grocer and wine merchant living at Wellingham in Ringmer, purchased the manor of Howbourne in 1746. In January 1756 Whitfield sold Howbourne to John Penvold of London, gentleman, and John Smallman, a gardener, also from London.[1] In June that same year the forge was recorded for the first time in the land-tax records. The tenant was Edward Gorringe and the forge was occupied by Christopher Cripps.[2]

Among papers deposited with East Sussex Record Office by Sussex Archaeological Society is the following brief description of Howbourne Manor. It is, unfortunately, undated, but the hand-writing and water-mark are consistent with a mid-eighteenth century date.

> *A particular of the manor farm and lands called Howbourne and of the Iron forge and lands belonging thereto and of a farm called Little Buxtead in the parish of Buxtead and Mayfield in the county of Sussex.*
>
> | | |
> |---|---|
> | *The farms and lands let at the yearly rent of* | *£90. 0. 0* |
> | *Eighteen acres of woodland always in the landlords occupation at 4s 6d. per acre* | *£4. 1. 0* |

A new forge and house for the forgeman and a house to hold iron and coals by the year (built with stone)	*£25. 0. 0*
Twelve acres of land flowed for the forge well stocked with fish	*£5. 0. 0*
	£124. 1. 0

The manor and quit rents with the casualties of the manor the growth of underwood and several hundred of young oaks fit for repairs to be valued.

The above premises in exceeding good order and repair with a large new built stable with stalls granaries and a little malt house with an oast to dry hops.[3]

It seems probable that either Whitfield or Smallman re-developed the forge as a speculative venture and that the surviving description was for the information of prospective tenants.

Both men could have benefited from the re-development of the forge, not only from the rent they could expect to obtain for the premises, but also from the sale or use of the products. Of the two, Smallman seems more likely to have had an interest in the products of the forge. As a gardener, wrought iron and iron tools would have been part of his stock-in-trade. Evidence from Chingley Forge suggests that edge-tools were being produced there in the latter days of its operation in the early eighteenth century.[4]

In the early working days of the re-established forge there would have been additional supplies of pig iron for processing, despite the decline of the iron industry throughout the Weald. The Seven Years War (1756-1763) saw the final major revival in the fortunes of the Wealden iron industry. In the early days of a gun-casting campaign it was customary to make pigs or other small castings

until the furnace was worked up to its full capacity and the iron was of best quality for gun casting. The forge at Howbourne could have benefited from this practice, and enjoyed adequate supplies of pig iron for conversion into bar iron during the early days of its revival. Howbourne Forge was not associated with a particular furnace and there is evidence that scrap iron was used at other Wealden forges during the eighteenth century. It is possible that it used scrap iron from local sources to supplement supplies of newly-cast pig iron.[5]

What little is recorded of the re-opened forge suggests that it was initially successful. Christopher Cripps remained as tenant until 1761, paying 17s.6d. land tax. In 1762 Mr Clutton or Mr Norden was paying the increased sum of £3.4s.0d, but whether this increase was because additional land had been acquired or because the business value of the premises had increased is impossible to determine.

The later tax records for the forge show a number of changes of tenant, suggesting a decline in trade. Fawlkner Bristow leased the forge in 1765 and Mr Saxby or Edward Raby in 1767. The following year Mr Saxby and Mr Pengree were recorded at the forge and by 1771 the tax assessment was reduced. Saxby, a Londoner, had purchased another portion of the Howbourne land in 1767, and from 1780, when a change in the method of recording the tax assessments makes it possible to identify the owner of the land, he is recorded as the owner of Howbourne and the forge. From 1772 onwards he is recorded as sole occupier of the forge, suggesting that from then he was unable to find a new tenant. The property remained in his own hands and it is probable that from that time the forge was no longer operating. In 1782 the forge was listed as part of Howbourne farm and by 1785 was not recorded in the land tax assessments.[6]

The brief second life of Howbourne Forge was at an end.

I would like to thank Christopher Whittick and Colin Brent for their help and advice. All opinions are, however, my own.

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Drew Barantyn

Ruth Bird

Drew Barantyn or Barrington – a document of 1565 shows indisputably that the family used both forms of their name[1] was the eldest son[2] of Sir Wiliam Barantyn and Joan Lewknor, elder daughter and heiress of Sir Roger Lewknor, among whose lands were the manors of Horsted Keynes Broadhurst and Danehill (his father's first Court of these manors was held on 12th June 34 Henry VIII)[3] – manors which were to include both Horsted Keynes Furnace and Freshfield Forge.

Drew did not, however, inherit all his grandfather's lands, as the validity of his father's marriage had been challenged by Lewknor's second wife and her daughters on the grounds that on the death of Drew's mother's previous and second husband, she had taken a vow of chastity. Henry VIII, appealed to by the parties, had set up a Commission which had declared the marriage to Sir William Barantyn void and Drew illegitimate. This declaration was ratified in 1544 and a good portion of the lands was allotted to Drew's mother's sister and her family. This arrangement Drew attempted to upset, thirty years later, by petitioning Elizabeth, hoping to get possession of all the lands. His mother's sister counter-petitioned the Queen who replied the Settlement of 1544 must stand, because too many people's interests were involved.[4]

Was Drew attempting to get capital to run and develop the Horsted Keynes Furnace and the Forge at Freshfield? As late as October 1565, when he sold lands and the Horsted Keynes-Broadhurst Manors to the Michelbournes, he had reserved Freshfield Hammer to himself;[5] but in 1574 he sells jointly to Nicholas Lewknor and

Richard Michelbourne "the … rent … issuing or going out of certeine mylles in horsted keines called Freshfield mills."[6]

His decision in this year may also have been affected by the fact that his wife, alive and pregnant in 1565, had died in 1574.[7] Further, he was suspected of recusancy[8] – no business asset in the 1570s.

There is evidence that he did not leave Sussex before 1585[8] but when he died, intestate and poor, in February 1587/8 he is described[9] as 'Drew Barentine esquire, late of Holdeaby in Northamptonshire;' the administration of his goods was given to William Charleton, yeoman, of St. Andrew Holborn, his chief creditor.

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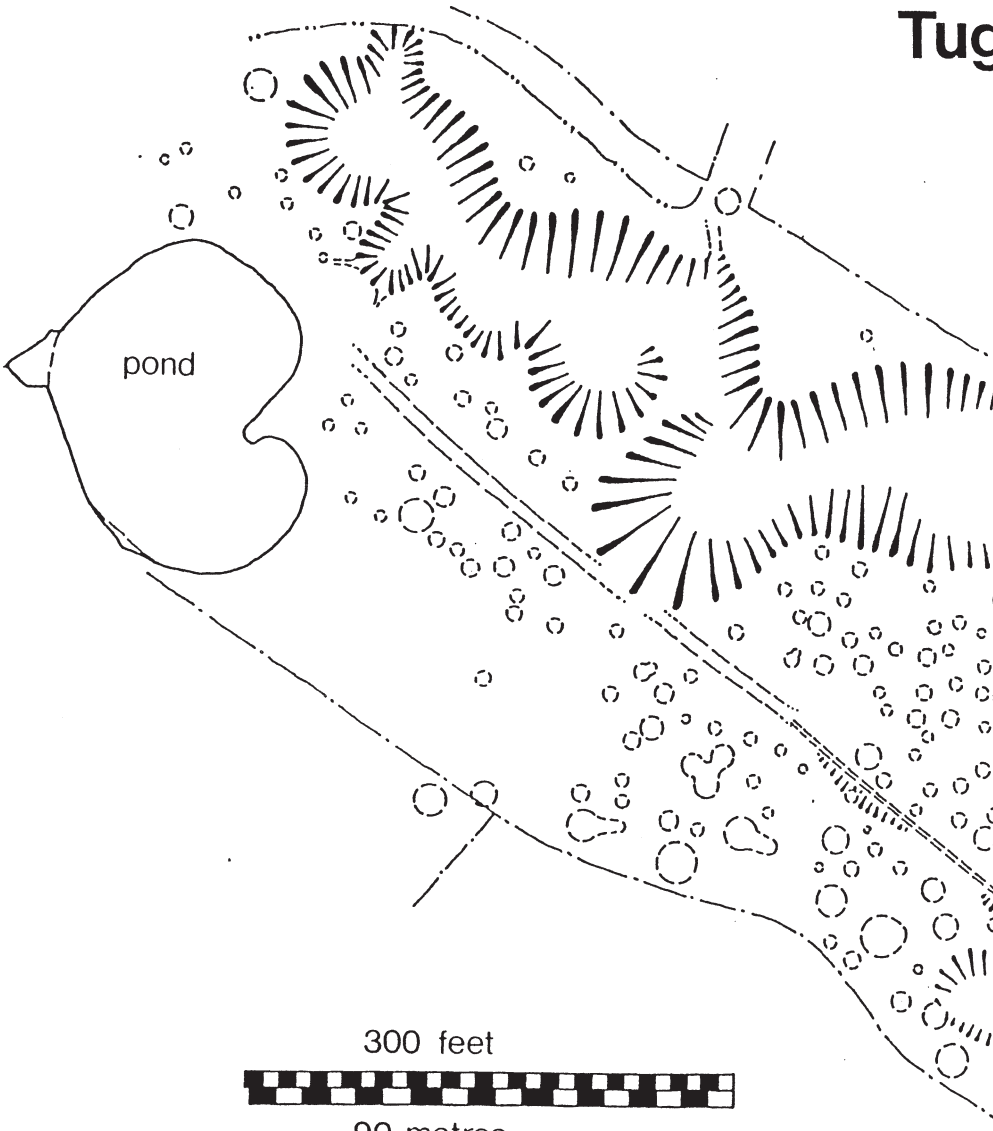
❖

Tugmore Shaw, Hartfield (TQ 459372)

Giles Swift

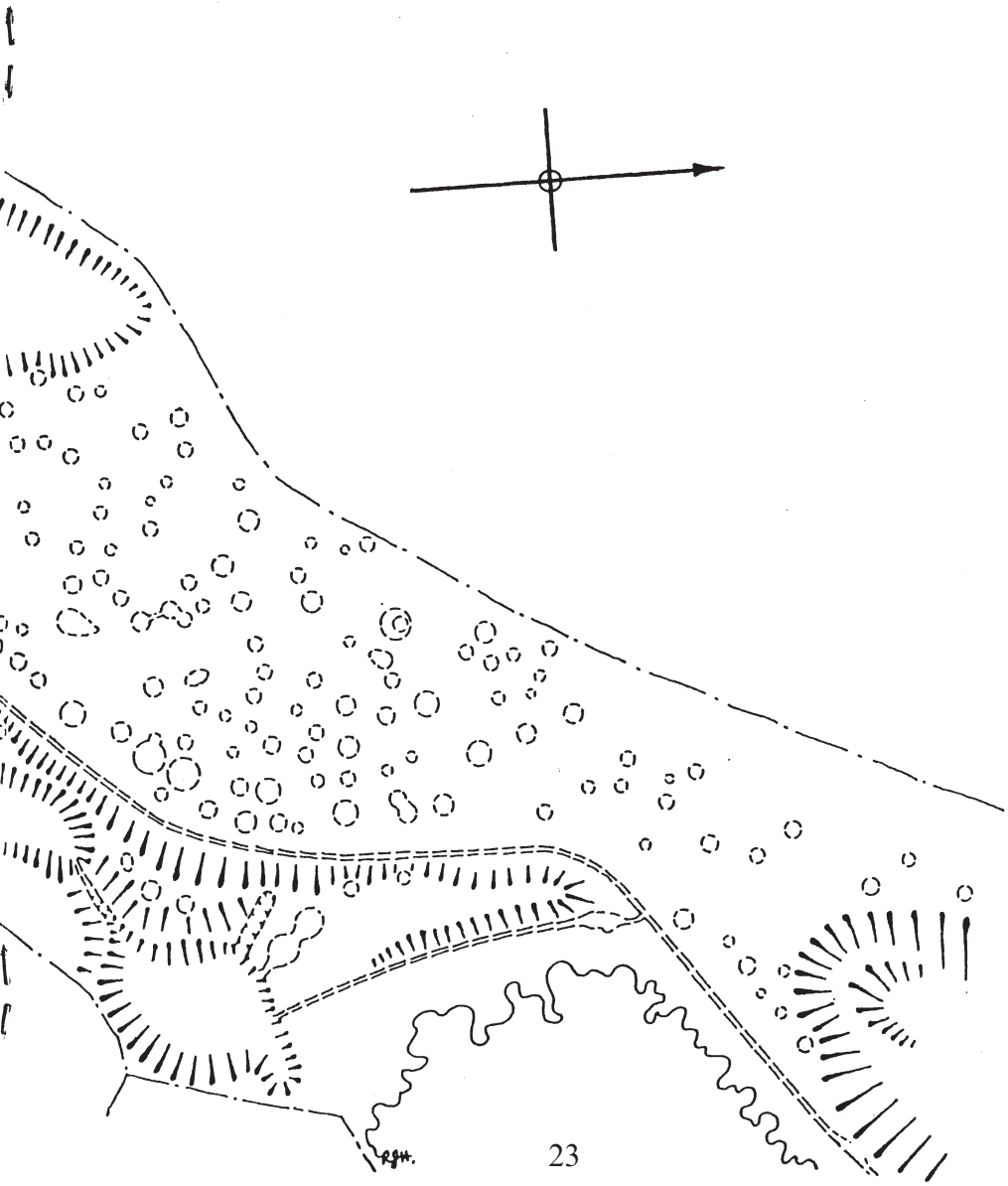
The survey of this wood by R.G. Houghton, A.R.I.B.A. has been previously described.[1] Particularly noted were the path made up with blast-furnace slag, which appeared to be contemporary with, or earlier than, the minepits; and the open-cast workings, which were suggested as possible sources of ore for the Roman iron working site



surveyed 1981–2

gmore Shaw, Hartfield, Sx.

TQ 459372



at Great Cansiron.

Recent fieldwork has helped to substantiate these conclusions. Straker[2] speculated that the large 'ravine', known as The Dell, lying close to the bloomery at Crowhurst Park, might be the source of ore for that site. Similarly, Cleere[3] noted the open-cast workings close to Bardown and the absence of the smaller minepits which had always been associated with ironworking. Lately, the substantial excavations in the vicinity of Footlands have been noted.[4] Again, there was no evidence of other means of ore extraction. What is beginning to seem evident is that, for major Roman ironworking sites at least, large bodies of the substrata were removed to extract the ore. This poses the problem of how the overburden was disposed of, as little evidence of spoil heaps at the open-cast sites has been found so far. The one exception to this is at Bardown where the overburden from the pits was used to build a causeway across to the smelting site lying on the opposite side of a small valley.

Whilst the relationship of the small minepits in Tugmore Shaw to the slag-metalled track seems to indicate that the majority of the pits date from the blast-furnace era, it should be noted that pits at Sharpthorne, on the surface identical to those at Tugmore, have been shown to date from as early as the eleventh century.[5]

References

1. WIRG, *Wealden Iron*, 2nd series **2** (1982), 19-20
2. Straker, E. & Lucas, B.H, 'A Romano-British Bloomery in East Sussex', *Sussex Archaeological Collections* **79** (1938), 224
3. Cleere, H.F. The Romano-British Industrial Site at Bardown, Wadhurst. *Sussex Archaeological Society Occasional Paper 1* (1970), 13
4. See below p.25. 'Footlands Ironworking Site'.
5. WIRG, *Wealden Iron*, 2nd series **6** (1986), 54

Footlands Ironworking Site, Sedlescombe

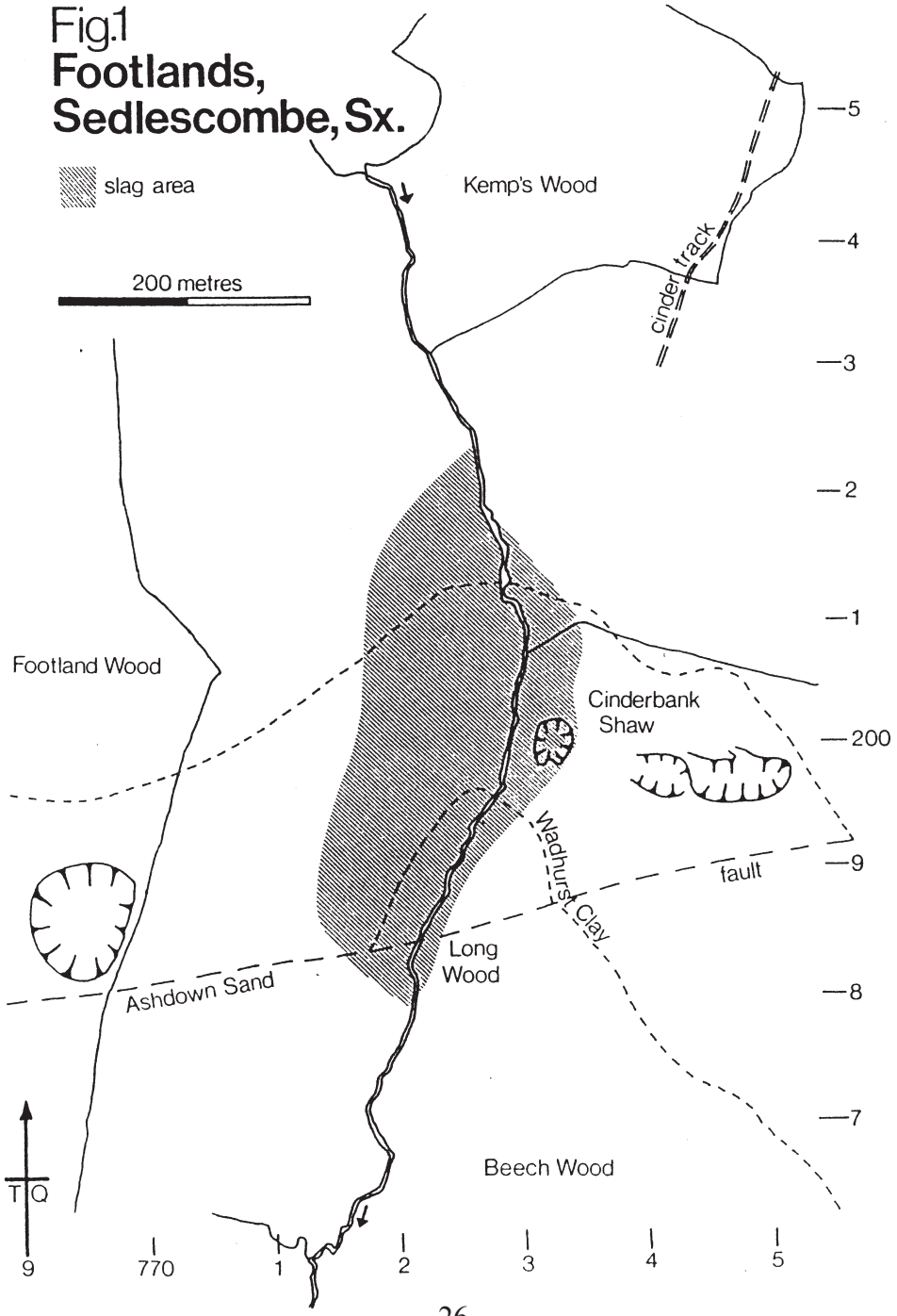
J.S. Hodgkinson

This site has attracted considerable attention since it was discovered in 1924 (Straker 1931, 327-8). Despite the interest which has been shown by groups and individuals, of which there is ample evidence in the small, filled-in excavations to be seen in the field to the south of Kemp's Wood, a lamentably small proportion has been recorded. The Field Group first visited the site in 1975 (Crossley, 1976) and on two occasions in 1985.

Footlands lies near the head of the Durhamford valley and extends for about 400m from north to south on both sides of a stream, and for about 100m to the west and about 50m to the east (Fig.1). It is centered on TQ 773200. The site occupies the western edge of Long Wood. It is understood that considerable quantities of slag to the west of the stream have been removed, but the former extent of the bed can be traced by using a metal detector.

Straker noted the abundance of early pottery, dating from the late Iron Age to the fourth century, and surface finds of both Roman and late Celtic wares are common, particularly around TQ 7730 2010 and TQ 7723 1990. The Sussex Archaeological Society promoted an excavation of part of the site in 1925, but this has never been published and records of the excavation, which are believed to have been kept by Mr. J.E. Ray, of Hastings, are not thought to have survived his death (J. Mainwaring Baines, pers. comm.). Chown (1947) reported on pottery found at Footlands during the Second World War (Lucey 1978, 24). The pottery was described as of the Iron Age and was sent

Fig.1
Footlands, Sedlescombe, Sx.



to A.W.G. Lowther at Farnham for expert identification, though no report was published. Following Mr. Lowther's death, the pottery was returned to the Sussex Archaeological Society, with whom it remains. It has recently been examined by Green (1980) who has postulated that the distinctive 'eyebrow ware' much in evidence at Footlands is characteristic of East Sussex handmade pottery both before and following the Roman conquest.

In 1951 the Battle & District Historical Society reported finding pottery at TQ 772202 (Lemmon, 1951) and, in 1965 the Robertsbridge & District Archaeological Society reported finding several pieces of pottery, including Samian ware, in the bank of the stream, though the map reference given (TQ 772119) seems erroneous (Martin 1965).

Evidence of the sources of ore for the site have not been noted before. Geologically, the site lies on a cap of Wadhurst Clay which rests on Ashdown Sand. The southern edge of the site is marked by a fault line, which is easily recognised on the ground by the appearance of bedded sandstone in the stream. There is no evidence of the shallow saucer-shaped depressions which are a feature of so much Wealden woodland. At three locations, however, there are deep quarries from which it seems likely that ore was extracted. The largest, in Cinderbank Shaw, is centered on TQ 7747 1998 and is an excavation some 15m deep and 30m wide. It is surrounded by an ancient hedge-bank, clearly designed to exclude livestock. There are distinct access points on two different levels, leading downhill towards the smelting area. Close to the smelting area and centered on TQ 7731 2000 is a smaller, shallower quarry, approximately 3m deep and 20m across. Slag was scattered all over the floor of this feature, suggesting that it was used early on in the life of the ironworks, possibly prior to Roman involvement. The third quarry is on the other side of the valley, in Footland Wood (TQ 7694 1988), and is about 10m deep and 50m wide.

Each of these quarries is dug into the lower levels of the Wadhurst Clay, where the most consistent source of iron ore is to be found. The sources of ore observed at Footlands would appear to confirm the belief that the Romans and, it would seem likely, the Celts extracted ore by open-cast methods.

The area around Footlands is one of considerable importance for our understanding of the Roman exploitation of iron in the Weald. Pottery from both Footlands and Crowhurst Park (Straker & Lucas, 1938, 229-32) indicates working in the pre-Roman first century AD, suggesting an expansion of the native industry which has yet to be adequately explained. There is every likelihood that the late Iron-Age works at Footlands and Crowhurst Park formed the nucleus around which the Romans were to build their coastal group of sites with the addition of Beauport Park, Oaklands Park and Chitcombe. Detsicas (1938, 7-8) places the site in the canton of the Cantiaci but, whether the pre-Roman operations at Footlands were linked to that tribe or, as Cleere (1974, 174-5) has suggested, to the *collegium fabrorum* at Chichester, communications, both inland and seaward, were of great importance and tribal trackways and subsequent imperial thoroughfares must be considered with this site (Fig.2).

The village of Sedlescombe lies along a Roman road (Margary 1965, 227-9) which is followed by the modern road northwards through the village to a point just north of the parish church where it veers sharply to the east. At this point a branch road has been traced, by the Battle & District Historical Society, in a north-westerly direction from the A229, through Alder Shaw to Beech Wood and the Footlands site (Lemmon 1951). There is a noticeable *agger* running north east from the site across the field south of Kemp's Wood, and thence through the eastern edge of the wood. It crosses the field to join the main route by Compasses Cottages and thence in the general direction of Cripp's Corner.

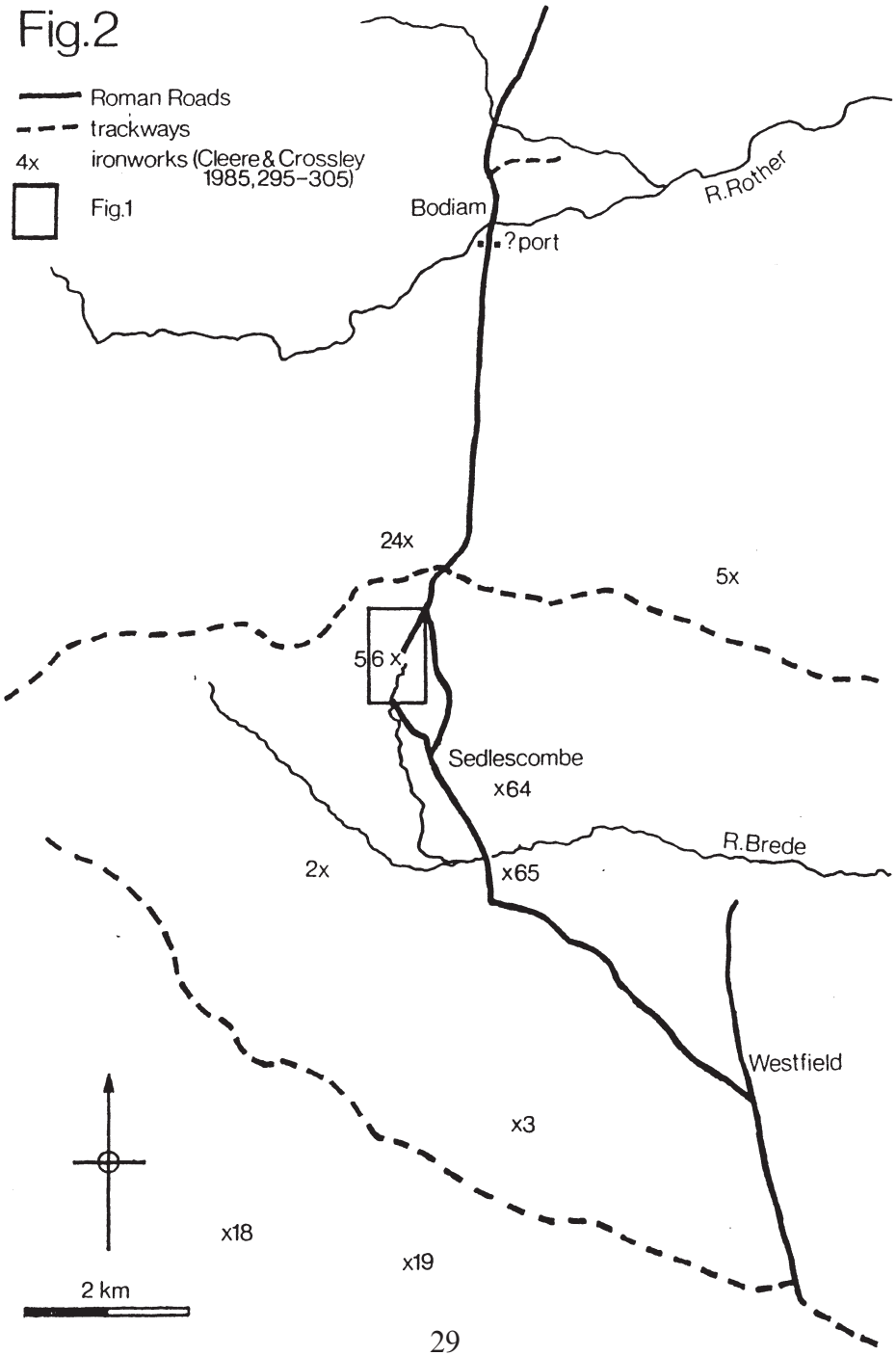


Fig.2
Roman Roads
trackways
4x ironworks (Cleere & Crossley 1985, 295–305)
Fig.1
Bodiam
?port
R. Rother
24x
5x
5/6 x
Sedlescombe
x64
R. Brede
2x
x65
Westfield
x3
x18
x19
2 km

Margary cites the high ground as the controlling factor in the location of the road but the way in which the road through Sedlescombe appears to join the alignment from the Footlands site, both to the north and to the south, rather than the other way round, suggests that, initially, the Romans built the road through the ironworking site, diverting it later.

Just to the south east of Sedlescombe Bridge (TQ 785176) lies the site of the large Roman ironworks at Oaklands Park, where there is some suggestion of a settlement, and the likelihood of a port facility for the River Brede, similar to that identified at Bodiam on the River Rother (Lemmon & Hill, 1966).

North west of Cripp's Corner, in Badland Wood, at TQ 773215, about 1300m north of the Footlands site, a small bloomery has been excavated (Jones, 1980). It is of the developed-bowl type encountered at Pippingford, Cow Park and Smythford, all of which date from the earliest period of the Roman occupation. Two sherds of East Sussex ware, found in the slag heap, date this site to within the first or second century AD.

On the two recent visits by the Field Group, pottery was discovered at the two locations mentioned above. Pottery from the first visit, found at TQ 7723 1990 and at a number of locations north of that point, was examined by Sue Hamilton. Thirteen sherds of grog-tempered, East Sussex ware were identified, including part of the rim of a storage jar, and a sherd with well-defined 'eyebrow' decoration similar to that illustrated in Mrs. Chown's article. Also identified were a further piece of grog-tempered ware of finer texture than the East Sussex ware, and two probable Roman sherds, one with quartz and mica inclusions. All were dated to the late Iron Age and early Roman periods.

The pottery from the second visit, found at TQ 7730 2010, has been examined by David Rudling who has identified three sherds of

probable East Sussex ware, of the first or second century AD, three pieces of Samian ware and a miscellaneous sherd of sandy, oxidised ware which, by its association with the other examples, was probably of Roman date. Of the East Sussex ware, one was a body sherd from a carinated jar or bowl with a burnished surface and incised lattice decoration. Of the Samian ware, one was identified as a base sherd of a bowl or platter. (Drag. 18/31).

Also at TQ 7730 2010 was found a partially-preserved leather sandal, protruding from the stream bank. This artifact is, at the time of writing, undergoing conservation at the Ancient Monuments Laboratory in London.

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The Impact on the Weald of Boring Cannon from the Solid

Douglas Braid

A number of reasons for the demise of the Wealden cannon-founding industry have been formulated in the past, but the most obvious is the fact that the Board of Ordnance ordered a letter to be written, June 7, 1774 asking all their suppliers "whether they will engage to provide guns bored out of the solid at the same rate in case the Board should prefer those kind of guns to them for which they are already contracted".

The Wealden gunfounders were already in difficulties, because those founders nearer to the coal fields were able to ensure a constant flow of water to the wheels powering their blast bellows and boring mills. They recycled the water, using Newcomen engines to pump from the tail pool to an upper pool for use again, thus avoiding the problems of the Wealden summer water shortages. Had Wealden founders attempted to use Newcomen engines thus, difficulties would have arisen from the problems of transporting coal on land.

They would have needed to continue using charcoal for smelting because coal from the north east contained too much sulphur to have been suitable for smelting iron ore. There was an additional problem: even if they had adequate power available, they would have required twice as much charcoal for a full year's production compared with the relatively short period of working then possible with limited water supplies. This would have required doubling the area of land coppiced for charcoal wood. The cost of charcoal, in silviculture, burning, transport and handling was much higher than

for the equivalent amount of calorific value from using coking coal.

With the rapid growth of the iron smelting industry elsewhere, following the use of coke and power from recycled water, foundries had capacity to take on new work or could build another furnace close to the first without the Wealden problems over charcoal supplies or iron ore. The new founders were developing tramways to transport materials over more favourable terrain than in the Weald, soon to be followed by canals. These were the men who saw that the rapidly expanding demand for guns might give them an opportunity to compete with the Weald, although neither the Quakers nor some cautious founders cared to enter this market.

When the Board of Ordnance demanded that the guns should be bored from the solid, the whole problem of the energy resources in the Weald was thrown into sharp relief. Not only were periods of semi-drought a serious problem but there was a basic shortage of adequate water at the best of times. Wealden furnaces were small because they did not have sufficient water to work more powerful wheels, compared with those in midland and northern areas, even before the use of recycled water. The amount of power needed to remove the solid metal, instead of reaming a cast bore, was possibly the last straw, for calculations indicate that some boring mills were using more power than was available for the whole operation of casting and machining in the Weald.

Iron Ore Extraction – An Eighteenth Century Example

J.S. Hodgkinson

The following letter was discovered while examining some papers at East Sussex Record Office and is published here for the brief insight it gives into the attitude of landowners towards those seeking to extract iron ore from farmland in the mid-eighteenth century.[1]

The letter, one of a small bundle of correspondence mainly devoted to rent arrears, was written by William Clutton, himself a former ironmaster, in his capacity as steward of the manor of Horsted Keynes Broadhurst. It is not stated to whom it was written but it is assumed, by its tone, to be addressed to William Pearce Esq., the lord of the manor, Clutton's employer. Nor is it stated who it is that is seeking to dig for iron. Gravetye Furnace, which Clutton had once worked,[2] was the nearest furnace to be working, or about to work, at the time of the letter[3] and Raby & Co., who also worked The Warren Furnace, were soon to be recorded as casting guns at Gravetye,[4] so it is probably to them that the letter refers.

The letter bears no postage markings and is therefore likely to have been the steward's own copy retained for his records.

The text of the letter is as follows:

> *Sir*
>
> *In answer to yours of the 15th Inst. I think it likely that there is a great deal of Mine in Broadhurst farm & if you agree to let them dig it will be necessicary to take care that they fill the holes up in a proper maner for which purpose you may if you think proper have an Article but as it will be necessicary on that & many other accounts frequently to see how they go on I will under take to*

acquaint you with it if they do not do it properly The constant price is one shilling pr. Load & I would have you by all means insist on being paid for every hundred Load as soon as that quantity is carryed away & I think it is better to let them go on without any article telling them they shall be turned off whenever they do not do as they ought but if you chuse to have an Article before they begin I will write one & send by post tho: I never signed one nor have any such thing by me if I had would have sent it you

I am Sir

Your most Obedient Hbl:

servt.

Cuckfield Jany. 19th

1767

Wm. Clutton

There are minepits to the south-west of Broadhurst, in Oaken Wood (TQ 383296) and Pain's Wood TQ 378292), and others have been ploughed out in fields to the south east of the latter as well as to the south of Ass Wood (TQ 389299)[5].

Notes and References

1. East Sussex Record Office GLY 1096
2. WIRG, *Wealden Iron,* 2nd series **2** (1982), 33-4
3. I have discounted Millplace Furnace as there is, I believe, insufficient evidence to conclude that it was active in this period. Firstly, Robert Knight's Carrier's Accounts misleadingly imply that Ralph Clutton & Durrant were a separate gunfounding concern, casting at Millplace, when they were in fact the assignees of William Clutton's bankruptcy and had taken over Gravetye Furnace (see above, note 2). Secondly, the furnace is not mentioned in

Weales's list of 1787 (WIRG, *Wealden Iron*, 1st series **XVI** (1979), 11-14). And finally, as the Millplace Farm lies close to the site of Cravetye Furnace, its appearance in Robert Knight's Accounts (the sole evidence for the existence of the furnace in the 18th century) could be explained by it having been used as a storage yard for Gravetye.

4. WIRG, *Wealden Iron,* 1st series **XIV** (1978), 20
5. R.Clarke, Esq., pers. comm.

Index to the Gazetteer of Water-powered Sites in *The Iron Industry of the Weald* (Leicester 1985)

compiled by David Combes

The index contains only the names of those persons having a direct interest in a site and for which there is some documentary evidence. Names of persons whose connection is purely circumstantial have been omitted.

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