# Wealden Iron

First Series No 13
1978

Bulletin of the
Wealden Iron
Research Group

WEALDEN IRON RESEARCH GROUP

BULLETIN NO. 13

1978

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Published by the Wealden Iron Research Group in collaboration with the East Sussex County Council Planning Department.
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# Pippingford Cow Park Bloomery (TQ 452 309):

INTERIM REPORT C. F. TEBBUTT

Following a second report on Cow Park bloomery, Pippingford, in Bulletin 12 (1977) and the completion of its excavation, further details and possible conclusions have become apparent.

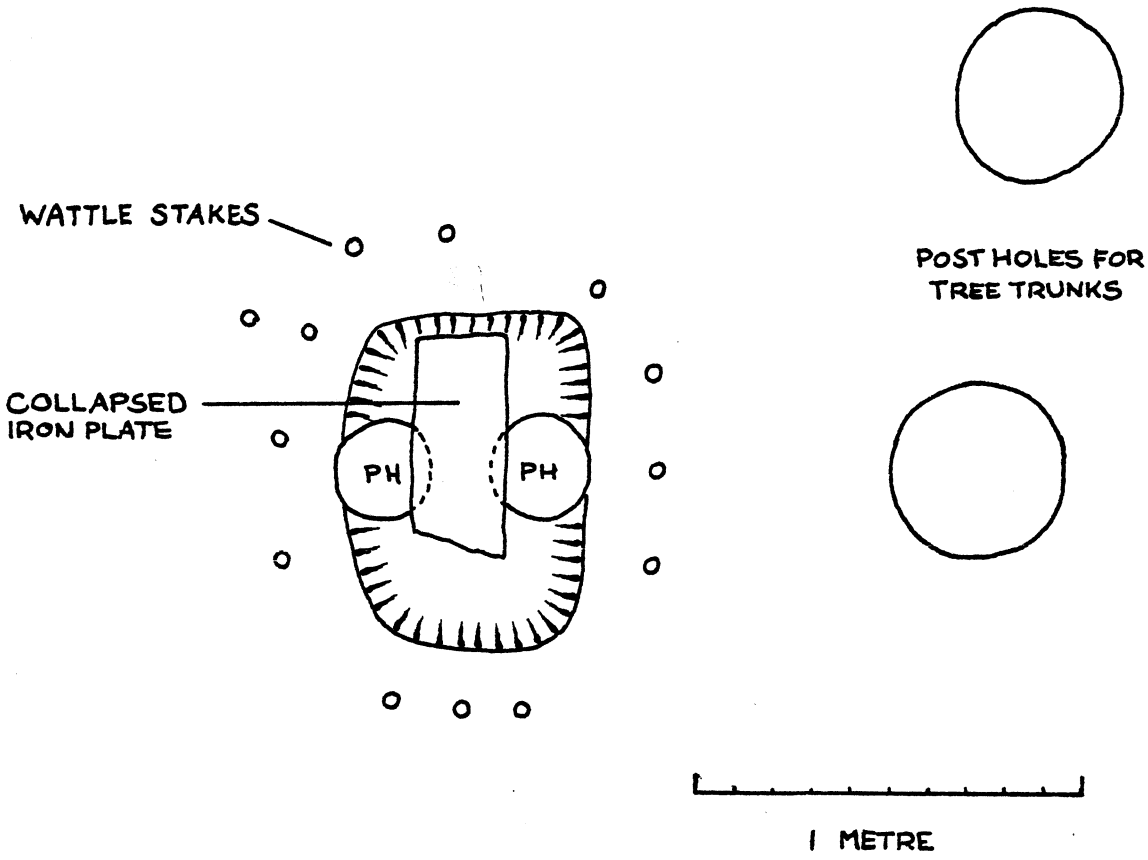
## The Furnaces (Fig.2)

Of the three furnaces, nos 1 and 3 are very much alike in size and probable function, being more or less circular with an overall circumference of approximately 1.20m. Each is built in an oval pit, the furnace occupying one end and the other end serving as a tapping pit. The pit has a rounded bottom and the base of each furnace follows the same curve and is brick hard from the effect of heat on the natural subsoil. The furnace walls are of clay built up against the sides and one end of the pit. In both these furnaces the fronts, facing the open pit end, are supported by two large roughly-shaped sandstone blocks butted together in the centre but with a slight aperture or crack separating them. Through these cracks liquid slag had leaked in the last firing. These apertures might possibly have been designed to take bellows draught when lighting the furnace. When found these furnaces were only about 50cm in depth, that is up to contemporary ground level. They were filled up to this level with solid cinder which could only be removed by hammer and cold chisel. In no I furnace there was no slag in the tapping pit, but with no 3 a layer of tap slag remained there.

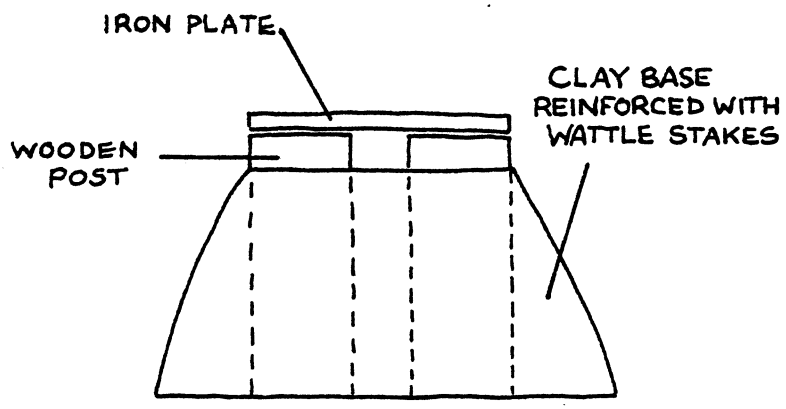
No 2 furnace was quite different from the other two. It was much larger, being 1.40m overall width, and was unique in having been clearly relined four times. Furthermore, while in the other two furnaces no sign of the above-ground superstructure remained, that from no 2 was found collapsed in large chunks in and over the top of the furnace. It could be seen that the clay walls above ground had been made from large sausage-like clay coils, afterwards plastered over to give a smooth surface to the inside. The contents were again different. Under the collapsed wall material they consisted almost entirely of charcoal.

Near each furnace was a hearth for reheating the blooms when they were withdrawn from the furnace. A number of reheatings and hammerings would have been necessary to force out cinder and other impurities from the pure iron. The hearths connected with nos 1 and 3 furnaces were similar, being elongated hollows in the subsoil. The one near no 2 furnace was small and circular, and originally had a low clay surrounding wall reinforced by small stakes.

# SKETCH PLAN OF ANVIL AREA




## POSSIBLE RECONSTRUCTION OF ANVIL




## SKETCH OF ROMAN BLACKSMITH

FROM GRAFFITO IN CATACOMB OF DOMITILLA, ROME

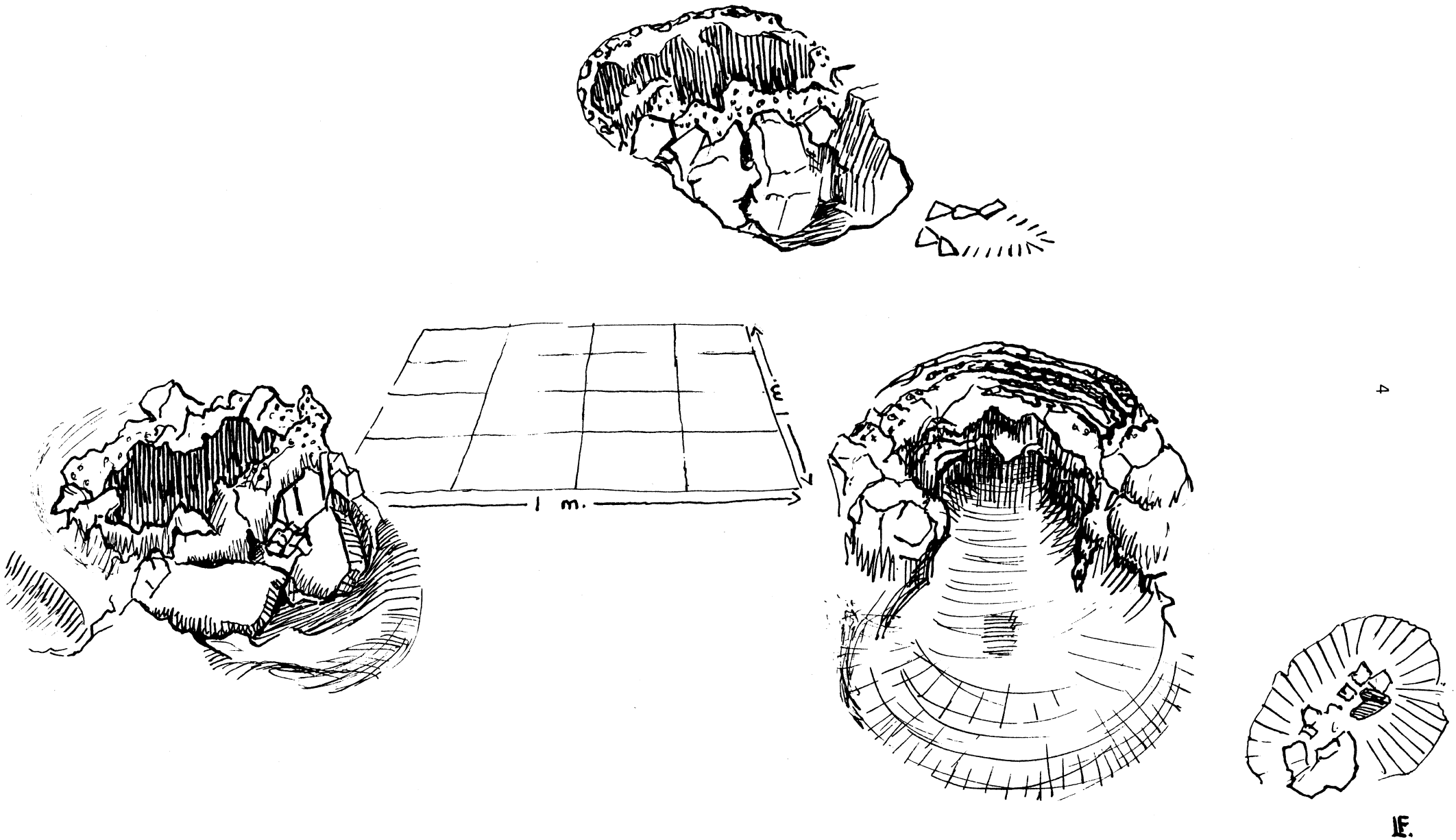



**Fig.2 Sketch of Pippingford Cowpark Furnaces**

## The Anvil Area

About 2m to the NW of no 1 furnace was the anvil area, easily identifiable by the spread of hammer scale. The site of the main anvil was deduced by finding two post holes, each about 22cm across and only 15cm apart, set in a shallow rectangular hollow (fig.1). Collapsed over these could be seen the 'ghost' of an iron plate approximately 60 x 23cm, and 4mm thick. It was really only a dark rusty stain but it was still faintly magnetic. Surrounding the hollow containing the post holes was an almost complete ring of stake holes which must once have held wooden stakes reinforcing a solid clay base for the tabular iron topped anvil. A short distance away were a further pair of somewhat larger post holes, that probably once held short tree trunks for auxiliary anvils without iron tops.

The width of the clay anvil base, strengthened by the reinforcing stakes, would probably have been about 1.50m, which would seem to place a man rather distant while working at the anvil. However the first hammer blows on red-hot blooms, direct from the furnace, would scatter hot cinder 41 in all directions and make it dangerous to stand too close. Long handled hammers and tongs would be needed to deal with them at a safe distance. Tabular anvils, apparently topped by iron slabs, appear on reliefs and graffiti in Roman Italy (fig.1).

## Discussion

It is fascinating to speculate why no 2 furnace was, when found, so different from the other two. I am convinced that it had originally been used as a smelting furnace, hence its numerous relinings, each slag coated. What then was its last use, apparently so different from the other two furnaces? As found, its interior was deep in charcoal and held no slag or cinder of any, sort, even in the tapping pit. Could it possibly have had a last use for cementation of soft bloomery iron to make it fit for use in edged tools?

A full discussion of the site and the implications deduced from the excavation will have to wait for the final publication, when all the specialist reports have been received. However, a few facts seem without doubt. Proximity to Garden Hill, where pottery sherds similar to those from Cow Park have been found, must mean a close link to that major site. The lack of signs of any but temporary structures on the working area

must mean that its working life was either short or seasonal. One may ask why this bleak windy hillside site was chosen. It has only one apparent advantage, the proximity of a good spring. The choice must therefore have been dictated by a nearby source of iron ore, so far not located.

I am grateful to Miss L. Funnell for her sketches of the furnaces and to my wife for those of the anvil.

## Reports on Fieldwork — C. F. Tebbutt

### Report of the Field Group 1977/78

The Committee decided to ask the Field Group to attempt the dating of a sample of the bloomery sites already discovered, as part of their fieldwork for the winter 1977/78. It was felt that the only practical way in which this could be done was to make cuttings through slag heaps as a check for datable pottery. The Field Group accepted this suggestion particularly as it is now of sufficient size to be divided on most foray days into diggers and field walkers.

The choice of slag heaps did not depend entirely on archaeological considerations, as many were found to be either under crops or among tree roots. However an attempt was made to sample as wide a selection as possible, such as those beside streams, on hillsides, on Ashdown Sand and on Wadhurst Clay. The results to date, given below, show that quite a high proportion do contain datable material and that the Romano-British sites greatly outnumber the Medieval.

As some of the pottery found proved to be of archaeological interest, apart from the dating evidence it provided, it was decided to illustrate it and I am grateful to my wife for undertaking this. Unless reported in the text to the contrary all pottery will eventually be deposited at the Museum of Sussex Archaeology, Barbican House, Lewes, and we found that most owners were very happy for this to be done. Fuller details of the excavations can be found in the Group's files.

**CRABTREE FARM, CROWBOROUGH**

Through the kindness of Dr P. Wallis we were able to sample two sites on open arable fields on his farm. The land is all on Ashdown Sand and was part of Ashdown Forest until 1696.

Site 1 TQ 4845 2983 Next to a well in the middle of the field was an area of black soil and a scatter of tap slag and cinder. A square 2 x 3m was dug where the slag appeared to be most dense, and taken down to subsoil at about 20cm. It passed through a layer of compacted furnace-

lining clay. At the edge of the trench, on the field surface, were found two sherds of black soapy hand-made Romano-British pottery of 'South Eastern B' type.

A further small concentration of slag occurs on the same field surface near the boundary hedge at TQ 4843 2990 and extends into the field on the N side of the road to the farm.

Site 2 TQ 4831 3021 On another arable field a concentrated slag scatter covered an area nearly 50m across. A trench 1m x 7.5m was dug approximately N-S across this scatter down to subsoil at 20cm. In this was found much slag, iron ore, furnace-lining material and charcoal but no datable artefacts. Similar finds covering a smaller area occur on the same field at TQ 4820 3020.

The finds remain with Dr Wallis.

**NEWNHAM PARK (CHILLIES FARM) (TQ 4935 2843)**

Through the Kindness of Mr Llewellen we were permitted to dig a trench 1m x 8m in one of his sown arable fields on Ashdown Sand at a place where a thick scatter of slag and cinder occurred on the surface. Undisturbed subsoil was reached at a depth of 40-50cm. Below the ploughing disturbance the section was of almost solid furnace debris containing much rather small but dense tap slag, clay furnace-lining material and green-glazed sandstone. An interesting find was a broken clay tuyere with a tube diameter of about 2.5cm, containing a core or plug of solid slag completely blocking it. Similar circular plugs of slag have been noted before but their origin was unknown. The only datable object found was a very small pottery sherd of undoubted prehistoric date and almost certainly 'South Eastern B' type.

While excavation was in progress a walking party explored the stream from TQ 497 289 to 509 274, finding bloomery slag at TQ 503 279.

**PIPING WOOD (TQ 5086 2775)**

This site on Ashdown Sand was difficult to dig, being situated on the slope of a steep stream bank in woodland. It was however important to date it, as the adjoining field to the NW had what looked like medieval house platform terraces, and on a previous visit a scatter of medieval pottery had been found when the adjoining field to the SE was lying fallow. Furthermore the name of the wood suggested an 'ingas' name of early origin.

To avoid tree roots two trenches were dug:-

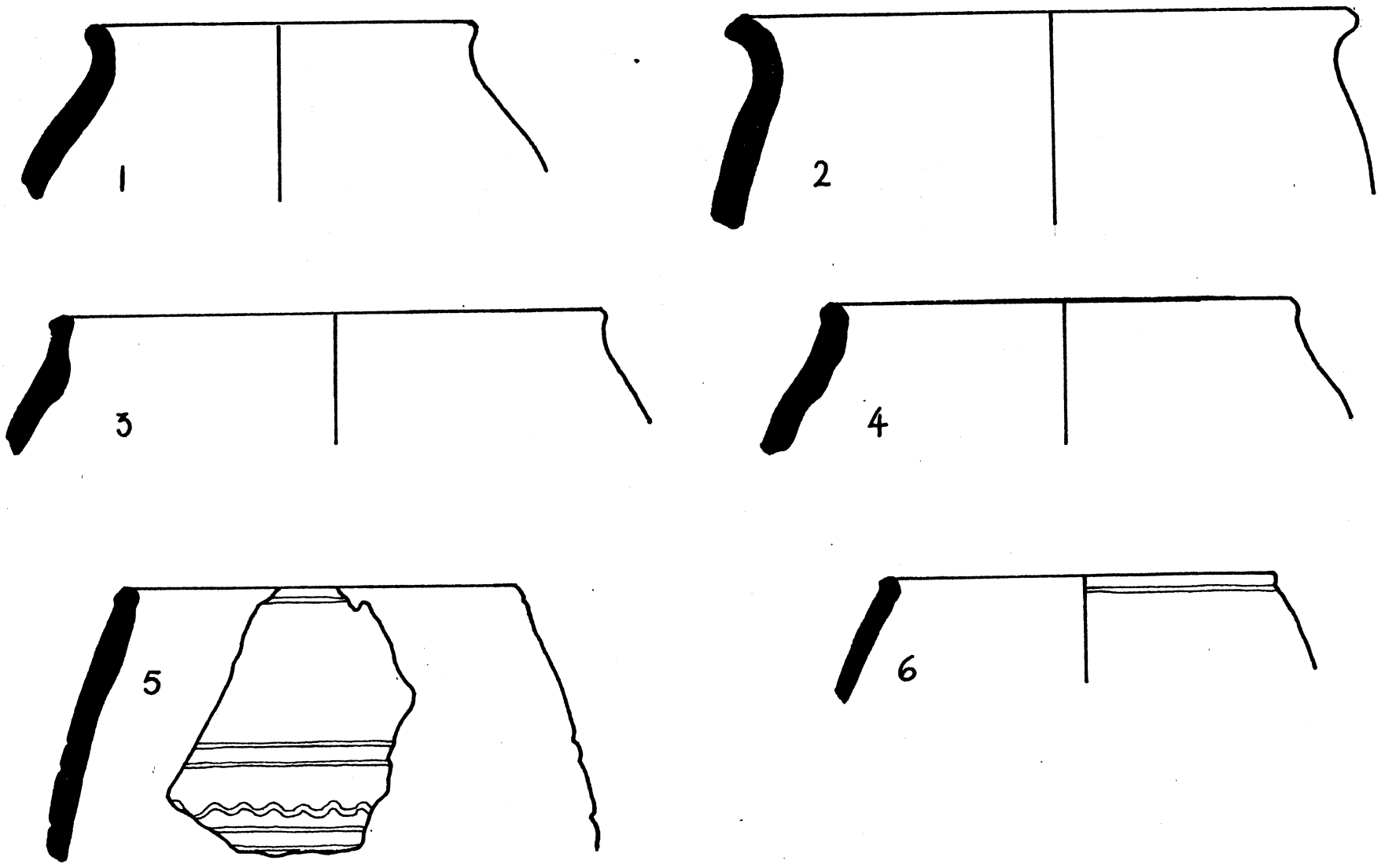



Fig. 3

Scale ½

1. 1m x 2.5m, at right angles to the stream. This contained slag, cinder and some roasted ore mixed with hill wash from the bank above. Furnace material went down to a depth of 60cm and among it was found a sherd of medieval pottery, probably late 15th-century in date.
2. 1m x 2m, parallel to the stream. This trench was dug to a depth of 60cm without reaching the bottom of the slag layer. At a depth of 40cm a sherd of late medieval pottery was found.
This site is at a junction where an ancient track going N from Brook House (TQ 512 270) divides. One half continues N towards Crowborough and the other NW to Sweethaws Farm. We were indebted to Lord Pearce, Sweethaws Farm, for permission to dig.

**LITTLE STREELE (TQ 5015 2130) At the junction of the Ashdown Sand and Wadhurst Clay.**

Here a trench 4m long was dug at right angles to the stream on its S side, about 16.20m W of the footpath stile and starting 1m back from the almost vertical fall into the stream bed. Below 50-60 cm of silt, slag was found going down a further 60cm to the water table. At this level, and 50cm from the N end of the trench, part of the base of a furnace was found forming a semicircle in the trench bottom. Over it was collapsed furnace walling, and it showed the usual colour variation from grey to pink. It measured 90cm in overall diameter. Unfortunately only one very small pottery sherd of indeterminate date was found. There were however several fragments of tuyere slag plugs, 18mm in diameter, as found at Newnham Park (above).

It was noted that here the present stream course was obviously artificial and had been dug above the lowest part of the valley on its N side, the channel being supported by a bank on its S side. The old stream can plainly be seen meandering in the valley bottom, and the work was obviously designed to drain the valley meadows. The artificial stream cuts through the bloomery slag heap.

Permission to dig was kindly given by Messrs. Pratt Eros., Hammonds Green Farm.

**FRANKHAM AREA, MARK CROSS**

Excavation at Stilehouse Wood, TQ 5846 3030.

This woodland site, originally discovered by Charles Cattell, has a stream rising in it, and bloomery slag scattered over about 1ha of its surface on both sides of the stream. It is at the junction of the Ashdown Sand and Wadhurst Clay. Two trenches covering 4m$^2$ were dug in slag at the E end of the wood, the bottom of the slag bed being reached at a depth of

about 25cm. Six sherds of prehistoric date were found, including three rim sherds (see fig.3: 1, 2). With the exception of one shard of wheel-turned pottery, all were of hand-made Romano-British 'South Eastern B' type. The wheel-turned sherd lay on a level beaten floor in the second trench.

Mr Padfield, Renhurst Farm, kindly gave us permission to dig, and retained one rim sherd.

In the Frankham area walking parties found the following bloomery sites, nearly all on streams cutting into the Wadhurst Clay:-

| | |
|---|---|
| TQ 5905 3230 | Slag on W side of stream spread over about 20m, with one pit, and extending to the edge of the field. |
| TQ 5895 3225 | Slag in stream bank on E side. |
| TQ 589 322 | Concentration of slag, including large pieces, in stream bed. |
| TQ 5870 3210 | Medium-size deposit of slag in W bank of stream. |
| TQ 5855 3200 | Small deposit of slag in W bank of stream. |
| TQ 5860 3195 | Slag scattered over 8m of W bank of stream. |
| TQ 5965 3210 | Extensive slag deposit on both banks of stream. Field to SE is named 'Cinder Field'. |
| TQ 5935 3155<br>TQ 5935 3150 | Extensive scatter of slag on pasture field was from stream. |
| TQ 598 321 | 'Carving Field'. This arable field has slag scattered over much of its surface with three concentrations on a line running approximately NW-SE down its centre. |
| TQ 597 319 | A small concentration in this arable field. |

**BOSMERE FARM, HADLOW DOWN (TQ 545 222)**

Here bloomery slag could be seen coming from the S side of the stream bank, behind which was a slight hollow which extended beyond the streamside shaw into the arable field beyond. By kind permission of Mr V.J. Barnard of Bosmere Farm a trench 1m x 3m was dug at right angles to the stream where the surface slag seemed thickest. Undisturbed subsoil was reached at about 32cm. Only at the stream end of the trench was an appreciable amount of slag found but amongst this was one body sherd of Romano-British pottery, almost certainly of 'South Eastern B' type. The site is on Ashdown Sand.

**FLAT FARM, HADLOW DOWN (TQ 552 220)**

This site on Ashdown Sand is a large one, slag being scattered along the NE side of the stream for nearly 100m. Where it appeared to be concentrated a trench 1m x 3.5m was dug at right angles to the stream to an

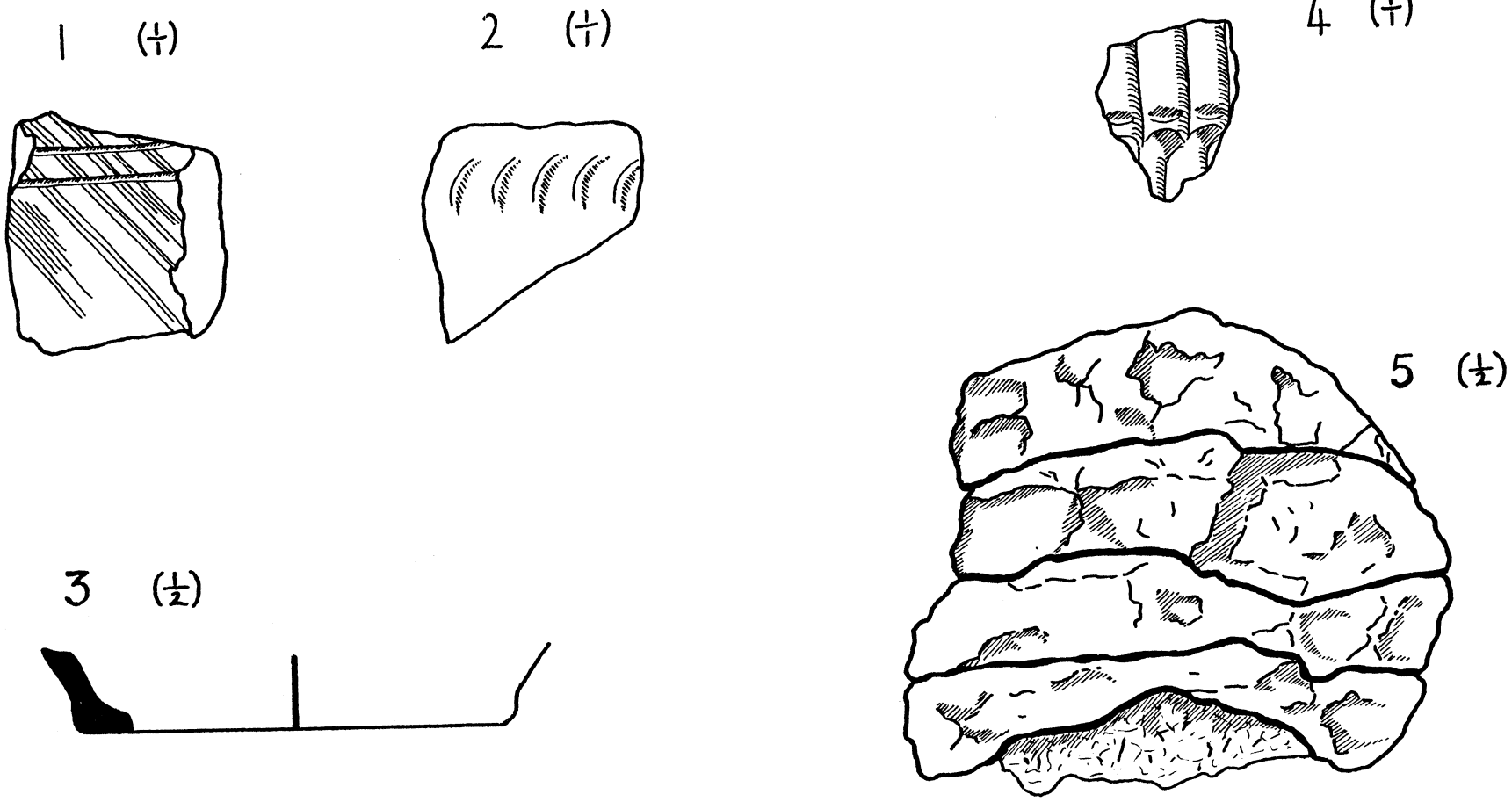



Fig. 4

average depth of 30cm, when subsoil was reached. At the NE end of the trench the water table was reached but at the SW end (next to the stream) a small section of hard level floor, consisting of burnt clay and slag, was found. Among the slag covering this floor was a small body shard of Romano-British pottery, almost certainly of 'South Eastern B' type.

We are greatly indebted to Mr Bitches of Flat Farm for permission to dig.

**OAKY WOOD, CROWBOROUGH (TQ 507 272)**

Here bloomery slag is scattered over a large area on both sides of the stream and on the arable field on the N side. There is much in the stream itself and in the bed of a small tributary coming in on the S. side. On the S. side also there has apparently been opencast mining where the fairly steep bank has been dug back about 25m over a face of about 20m. In the nearby Oxley Wood to the SE are large quarries and bellpits. The site is at the junction of the Wadhurst Clay and Ashdown Sand.

On the N side of the stream the bank was steep but a space between coppice stumps was found to dig a trench 2m x 1.5m. This was found to contain much cinder and slag. At a depth of 40cm at the higher end and 20cm at the lower end a levelled floor of hard clay was reached. This had been pierced by a pit near the W side of the trench, too near the edge to be explored. With the slag and cinder were several pieces of clay furnace lining, one piece showing its construction by the coil method (see fig.4: 5) and another with a probable tuyere hole. Just above the floor described above, and near the N end of the trench, were found 10 sherds of hand-made pottery of Romano-British 'South Eastern B' type. These included two rim sherds (see fig.3: 3, 4) and one with tap slag adhering to it. Another body sherd had deep-cut lattice decoration (see fig.4: 4).

We are much indebted to Mr Ralph Halt of Burnt Oak Farm, Crowborough, for permission to dig.

The walking party recorded the following:

TQ 519 528 Slag see in W bank of stream and adjacent field.

TQ 521 267 Slag seen in section of the bank about 1m above stream level.

TQ 527 274 A side stream with slag in it.

TQ 527 275 Slag found.

**SCOCUS BLOOMERY, HADLOW DOWN (TQ 5525 2312)**

At Scocus a strong perpetual spring has carved a deep gill almost from its source, and at the above reference is joined by a minor stream coming from the N. At the junction slag occurs on both sides of the side stream and has washed into the bed of the main stream. Among this is a very large piece, apparently approximately half of a furnace bottom, with a dished base. It must have come from a bloomery with an inside diameter of not less than 57cm. From the site an apparent hollow bridleway runs SE along the E side of the Scocus Wood to join a trackway to Scocus Farm, and the whole site is situated at the junction of the Ashdown Sand and Wadhurst Clay.

Two trenches were dug on the N bank, close to and W of the tributary stream. The first of 1m x 3m ran N to S and at its S end was 10.3m N of the centre of the stream. Below the top soil was found a mixture of soil, charcoal, slag and clay. It was clear from the debris and burnt material that there had been a furnace near at hand. Below this a levelled clay floor was found which continued almost to the N end of the trench where it ended in a vertical wall of natural clay which showed signs of burning. In the debris above the floor pottery sherds were found.

The second trench of 1m x 2m, was dug almost at the stream edge and here subsoil was reached at 30cm. It contained black soil and very small-sized slag lumps (as if sieved). In it were a number of pottery sherds (see fig.4: 1, 2, 3). All the pottery was of Romano-British 'South Eastern B' type, no 1 having diagonal apparently painted lines.

There is a further small concentration of slag in the stream bank about 80m down stream.

We were able to excavate by the kind permission of Mr E. Rostron, Scocus Farm.

**ERIDGE OLD PARK (TQ 577 343)**

Having learned that a large area in the N half of Eridge Old Park had been ploughed for reseeding, and with the kind permission of the Marquis of Abergavenny, a number of the Field Group members visited the area. Many black patches on the ploughed area proved to be the sites of bonfires, but a group of seven dark brown patches above the source of a spring were all found to be the sites of bloomeries. Five of these were spaced along a line about 70m long running SW from a small pond near the spring. A further large site was situated about 25m S of the pond. A shard of

hand-made Romano-British pottery was found on the surface here and although two trenches, each of 1m x 4m were dug across the site no further sherds were found. There was however much evidence of furnaces, such as pieces of clay furnace lining and roasted ore, in addition to the slag.
An eighth site was found about 300m N of the pond, at approximately TQ 5776 3452, and here another sherd of hand-made Romano-British pottery was found. A further visit to the site was made with Mr J.H. Money who showed us the area (TQ 573 340), now grassed over, of a Romano-British dwelling site from which he had recovered numerous pottery sherds some years ago (Sussex Arch.Coll vol.116 (forthcoming)). This is about 600m ESE of our bloomery site. Saxonbury Camp is 1.25km to the S.

**RENBY BLOOMERY, CROWBOROUGH (TQ 532 332)**
This bloomery site is on arable land about 50m NE of a small stream. Members of the Crowborough Field Society found slag, furnace lining and the usual furnace debris scattered on the field surface together with a number of pottery sherds. These included two that appear to come from wheel-made Gallo-Roman butt beakers (Fig.3: 5, 6). The pottery remains with the Society.

**FRESHFIELD FORGE (TQ 385 245)**
There are few visible remains today of the forge (Bulletin 8 (1975) p17) for which Straker gives 1574 as the earliest date. However, Miss R. Bird of Horsted Keynes has kindly shown me her copy of a MS in the Glynde Place Archives (E Sussex Record Office MS. no 2046) which refers indirectly to this forge in 1564. An Indenture between Drewe Barantin (or Barrington) and William and Agnes Bowyer leased to the latter described as a 'corne milne of wheate and maulte', for 700 years at £5 a year. One clause in the lease was that 'William and Agnes and their executors and administrators shall at all convenient tymes — suffer the water course of the said milne — to passe and runne to the place of the Iron Forge — where it now stands beneath the milne aforesaid'.

### Iron plate from Henley Lower Furnace (TQ 6015 3355).

In 1974 when the Field Group visited Henley Lower Furnace it was noticed that there was a disturbed area behind the bay at the south end. Here were signs of a wheel pit and nearby, on the surface, a 'bear' and a large and heavy iron plate.

It was felt that this should be preserved and Mr W.H. Gingell, occupier of the site, who was at that time clearing it, kindly offered the plate to WIRG and agreed to transport it to the main road. Subsequent efforts to remove it by Mrs E. Gibb's Land Rover were unsuccessful owing to its weight, and it lay on the roadside until 1977. It was then that Mr Gingell generously offered to take it to his own house at Earlye Farm, where it now lies beside his house door. It is still available should any museum offer it a permanent home.

### Sites discovered during construction of Mid-Sussex Water Co. pipeline (Clay Hill, Ringmer to Horsted Keynes)

1. TQ 395 258 Just SW of Northland Farm. Considerable quantities of bloomery tap slag, cinder and charcoal came from a pit or ditch. Also a few pieces of glazed furnace lining and roasted ore.
2. TQ 393 259 A short way N of the above there is slag and cinder in the stream bed.
3. TQ 407 241 Coleham. Here a scatter of bloomery tap slag was associated with six sherds of Roman Samian ware.

## Recent Meetings

### Annual General Meeting, 23 July 1977

The programme for the AGM provided the usual happy occasion, especially as the day was sunny and warm. In the afternoon two visits had been arranged and between 40 and 50 members attended.

At Sheffield Furnace we were warmly welcomed by the owner, Mr H.H.C. Ingram, a WIRG member. The site has one of the most beautiful of all wealden settings, with the pond still in water and fringed by woodland. The furnace, dating from the early 16th century, was first owned by the Dukes of Norfolk and later by the Sackvilles. Little remains visible from those days except part of the ironmaster's house and the vast slag heap behind it. Mr Ingram, has preserved the later corn mill almost exactly as it was when it closed in 1928, and this proved of great interest to members.

Sheffield Forge, originally run in conjunction with the furnace, was next visited. This proved a difficult site to interpret. The bay spans a portion of the main Ouse valley and there is plenty of forge slag visible. However, later river meanders may have obscured some features; as has the Bluebell Railway bridge.

The evening meeting was held at Anne of Cleves Museum, Lewes, and the following officers and committee were elected:-

| | | | |
|---|---|---|---|
| Chairman | C.F. Tebbutt | Treasurer | P. Combes |
| Vice-Chairman | A. Scott | Bulletin Editor | D.W. Crossley |
| Secretary | D.M. Meades | Committee Members | R. Adams, |
| | | | D.S. Butler, |
| | | | H.F. Cleere, |
| | | | L. Funnell |

(Later the following were co-opted by the committee: D. Abbott, O. Bedwin, D. Combes, J. Gibson-Hill, B.K. Herbert, P.J. Ovenden).

After the business meeting an address was given by Dr Colin Brent who described the historical background of the post-medieval iron industry. As an acknowledged expert on the 16th and 17th centuries in Sussex Dr Brent gave a comprehensive account of life in the Weald at that period and of how it differed from that of the coast and downland. In the Weald it was difficult for the small farmer to live by agriculture alone, and he was forced to turn his hand to a variety of trades to earn a living. Iron working provided a diversity of opportunities in charcoal burning, carting, wood cutting, and stone quarrying, besides actual work at the furnaces and forges. Wealden workers were traditionally well able to fulfil these needs, and the Poor Law accounts for wealden parishes in later centuries show how disastrous were the results of the decay of the industry.

## Winter Meeting 1978

The Winter Meeting was held on January 28th at Southover Grange, Lewes, and attracted the largest ever audience for a Group meeting. Dr Andrew Oddy of the British Museum Research Laboratories gave a talk entitled ‘The Conservation and Scientific Examination of Antiquities’. Dr Oddy explained and illustrated the many methods of hand and chemical treatment of objects, mainly metal, acquired for the national collections. From the most unpromising-looking objects, found in excavations from all over the Ancient World, revealing results were often obtained. The British Museum has been a pioneer in this work, attracting students from museums all over the world.

## Denization Returns and Lay Subsidy Rolls as Sources for French Ironworkers in the Weald

B. G. Awty

In their published form (Huguenot Society Publications vol. 8) the lists of sixteenth-century immigrants were broken down by William Page into alphabetical order. It can be deduced from Page's index that on the great Westminster Denization Roll of July 1544, the ironworkers were grouped together under the names of individual ironmasters. On the other hand, some ironworkers were listed independently of any master. More confusing still, some were listed by both procedures, resulting in duplication of entries. Since, in the case of ironworkers, actual occupation is quite rarely stated, further evidence is needed for the identification of those listed independently of a master. Probate records are often unhelpful for this purpose, but the Lay Subsidy Rolls of the period do contain lists of foreign residents. Whether they became denizens or not, these workers were taxed small sums of a penny, two, four, or eight pence, and seem to disappear from the rolls only when not in actual employment.

The Westminster roll of denizens yielded first of all a list of 29 workers under the names of five ironmasters: William Levett, clerk, John Baker, Eystred Widow, Nicholas ––field and Richard Wekes. A quick run through the index to Straker's Wealden Iron made it appear that the missing surname was probably that of Nicholas Eversfield. The Subsidy Rolls confirmed this and showed that the widow in question was Joan Isted.

Later in the roll came lists of workers in the King's works at Newbridge and at Parrock Forge. In each case it was difficult to decide how many of the names following these headings were to be regarded as belonging to the works. The names of Remy Tyller and Remy Morell should probably be added to the workers listed by Page as belonging to Newbridge, bringing the total to seven, and John Turke and John Jonnett seem to belong in the Parrock Forge list, bringing the total there to five, and to twelve the number of foreigners employed at these two works.

Still later comes a group of seventeen workers in the ironworks of Messrs Pelham, Lunsford, Wybarn, May and of John Barham. Here again Page was unsure where the list terminated. He attributed only two workers to John Barham, but the third name, that of John Gardambas, is the one that terminates this list.

Quite separate was a list of workers in Sir Robert Tyright's iron works. Page attributed only the name of Thomas Dewprone to Tyrwight, but it seems certain that John Carbonett, Nicholas Bartyn, Charles Poleyn and John Margoo should be added. The name of Sir Robert Tyrwhitt occurred later in the roll for two other denizens, but it is unclear whether these were ironworkers, though both had been in England for twelve years, the same length of time as Charles Poleyn.

A marginal note not made use of by Page states, "Sir William Sidney for six". Other evidence suggests that at least five of the men listed here were ironworkers, and so probably were all six. The six workers in the employ of the Duke of Norfolk are listed at separate points in the roll

In all, then, the roll enumerates fifteen different employers of works and these gave employment to 74 or 77 aliens. In addition the roll includes two finers, three colliers, two hammermakers (recte hammermen) and a number of joiners, some of whom may have been forge carpenters (e.g. Francis Gillet of Tonbridge).

The evidence of the Subsidy Rolls indicates that probably another fifty or sixty of the persons named in the Denization Rolls, but whose occupations are not stated, were in fact ironworkers. For instance, the Subsidy Roll for Pevensey Rape (1543) lists fourteen aliens in Danehill Horsted, all apparently employed by Sir William Barrentyne. Six at least of these are identifiable in the Denization Roll. In fact the various Subsidy Rolls list over four hundred aliens in the ironworking areas of the Weald during the period 1524-1570. If, as seems probable, the return for Danehill Horsted is representative, there may have been about three hundred immigrant ironworkers in the Weald in the 1540s, of whom about half became denizens.

A very interesting aspect of the Westminster Denization Roll is the fact that almost every denizen gave his length of residence in England a great many stated their age, and for about sixty we are fortunate enough to have a statement of the actual place of birth. A preliminary impression suggests that only a handful of workers were other than French in origin, and that of the French workers fully 90% came from the Pays de Bray. Bray stretches from eastern Normandy, in the hinterland of Dieppe, into the Beauvaisis as far as Auneuil, just south of Beauvais itself.

The earliest workers came to England around 1490 and the stream continued steadily, with particularly heavy immigration in 1514, from 1522 to 1525 (years of famine in Normandy) and in 1529 and 1530. The

latest arrival was a second Charles Pullen, who had been in England only two years in 1544. His place of birth was “Newvyll” (Neuville Ferrires) which had sent its first migrant, Rowland Mocumble, to Sussex in 1500 and was the place of origin of around 20% of the iron workers. Further investigation will show how far this sample, which of course ends in 1544, is fully representative.

Needless to say, Page’s work of transcription was impeccably done. There are some fairly obvious confusions and errors in the Denization Roll, but these were the fault of the sixteenth-century Exchequer clerks overwhelmed by over three thousand foreign names.

## The Wealden Iron Museum at Haxted Water Mill B. K. Herbert

The museum of Wealden Iron at Haxted Mill near Edenbridge, Kent (TQ 419 455), which was first mentioned in Bulletin 5, p.15, has now been open since 1973 for five successive seasons. The aim throughout has been to give an overall chronological view of the industry. As the majority of visitors to the mill do not follow archaeology, the layout has been made very basic and to this end the slide show added in 1975 has been a great success. However, it is nevertheless useful for the serious student, and many have spent an hour or more studying the exhibits.

When Mr Woodrow, the curator of Haxted Mill first suggested a Wealden Iron museum, there were not many pictures on the subject and so it was necessary to use photographs of Sticklepath Forge on the north edge of Dartmoor. Here, between 1814 and 1960, the Finch family produced agricultural tools and the photographs showed a pair of trip hammers, shears, and grinding wheel, all of which were water-powered by overshot waterwheels fed from an overhead launder.

The other exhibit set up for the first year was a case to show, with diagrams and articles, the history of the wealden iron industry. This includes charcoal burning and ore roasting as well as recent-geological information on iron ore in the Wadhurst Clay. To complement this, typical pieces of ore, charcoal, slag, wrought iron, and cast iron were judiciously placed to show what is likely to be found at an iron working site.

During the first year many enquiries were made about the actual location of wealden iron sites, and so a one-inch-scale map display panel of the Weald was constructed for 1974. Pins were placed on each

iron-working site recorded in Straker's book Wealden Iron (These are listed in Bulletin 1, p.13, complete with their modern map references). Appropriately shaped flags were attached to each pin denoting either a bloomery, blast furnace or forge and each was numbered so that by referring to a list nearby, its name and map reference could be noted. It had been hoped to add the 300 bloomery sites found by the WIRG Field Group to the map, but with such a density of discoveries in only four 10km squares, it is doubtful whether it will be possible to do so on a map of this scale.

At various times heaps of bloomery slag, blast furnace slag and forge bottoms, as well as iron ore have been added, so that visitors can actually pick up and feel and occasionally "knock off" the exhibits. This latter is of little consequence as there is plenty more available. The most impressive heap is on the Mill forecourt, where there are some large pieces of iron ore from Sharpthorne brickworks, one piece weighing about 150kg.

Examples of cast-iron railing from St. Pauls Cathedral must be mentioned; these were surplus to requirements, along with one of the enormous gates, weighing three-quarters of a ton. It is well known that this iron-work was cast at Lamberhurst Furnace, Kent, about 1714. They are therefore important, for the only other iron objects from the Weald commonly seen are cannon, grave slabs and firebacks.

During the winter of 1974-75 a slide show with taped commentary was developed. Although various commercial audio-visual systems existed there was nothing sophisticated enough, despite the price. The layout of the system was the main problem, because the projector and a coin box were wanted on the bin floor three storeys up in the mill. This entailed a long cable, coupling them to the control box and cassette tape recorder, which were required on the ground floor for easy access. The object of the coin box was to make the system self-financing, as the final cost would be about £300. The cassette tape lasted one hour on each side and this allowed a total of 12 nine-minute commentaries. Each commentary was interspersed with three different length tones, (which are muted for the audience), one for slide changes, another to turn off the tape recorder after each commentary and the third to ring an alarm to inform the Curator to turn over the cassette. The slide projector did not need to be touched, because the slide container was automatically made to return to the first slide

at the end of each commentary. This arrangement although not trouble-free, worked well for two years, during which time nearly 2000 people paid to see it. However, as there was room for up to 10 people to see it simultaneously, it would not be unreasonable to say that 10,000 people saw the show during the first two years.

It was during 1975 that Professor Hoskins visited Haxted Mill while working for the EC on his then forthcoming programmes “Landscapes of England”. After seeing the slide show the author and his family took him around the locality, showing him the local iron industry sites, most of which he used for the wealden programme, “Landscapes of Peace and War”. The BBC were generous in acknowledging WIRG at the end of the programme; they paid a £5 publication fee.

In 1977 it was decided to double the slide show, to allow visitors to choose between Wealden Iron and Water Mill presentations. The same slide projector was used but two new cassette recorders were bought, one for each commentary. This system worked well, despite an increase in the cost of viewing, each slide show from 5p to 10p. One drawback was that the majority of visitors chose Water Mills rather than Wealden Iron, in the ratio of 2.5 to 1. Thus roughly 1500 people saw Wealden iron and 3500 saw Water Mills.

The actual slide show follows the history of wealden iron using slides as near as possible to the commentary, occasionally with pictures copied from books. However, as time goes on and WIRG studies different subjects in depth, more slides become available. For example the recent bloomery furnace experiment, though not very successful at making iron, did produce a wealth of colour slides. Each year the commentary has been changed and new slides added, but as different visitors to the Mill see it each year, it is doubtful whether this is really necessary.

The author would like to thank the Wealden Iron Research Group for keeping the subject alive, and in return hopes that he and his family have been able to communicate its interest to the public at large. Finally, the author would also like to thank Mr and Mrs Woodrow for allowing us to use their Water Mill Museum for these exhibits.

Haxted Mill is open at weekends from Easter until the end of September — from 12 noon to 6 p.m. During August it is also open on Wednesdays. Admission is free to WIRG members showing their membership card.

## The Mayfield Cannon F. McCarthy

Straker, in his book Wealden Iron states that this cannon was cast by the Baker family in their furnace at Mayfield. Mayfield furnace was working in 1653 but had been discontinued before 1664.

The cannon was dug out of one of the cinder beds of the furnace in 1824, and was placed on top of the porch of the Palace, then in ruins. It presumably remained on top of the porch until 1863 when the Palace ruins were rebuilt by the Society of the Child Jesus as a Convent. Local knowledge has it that the gun remained almost completely buried in the grounds until recently.

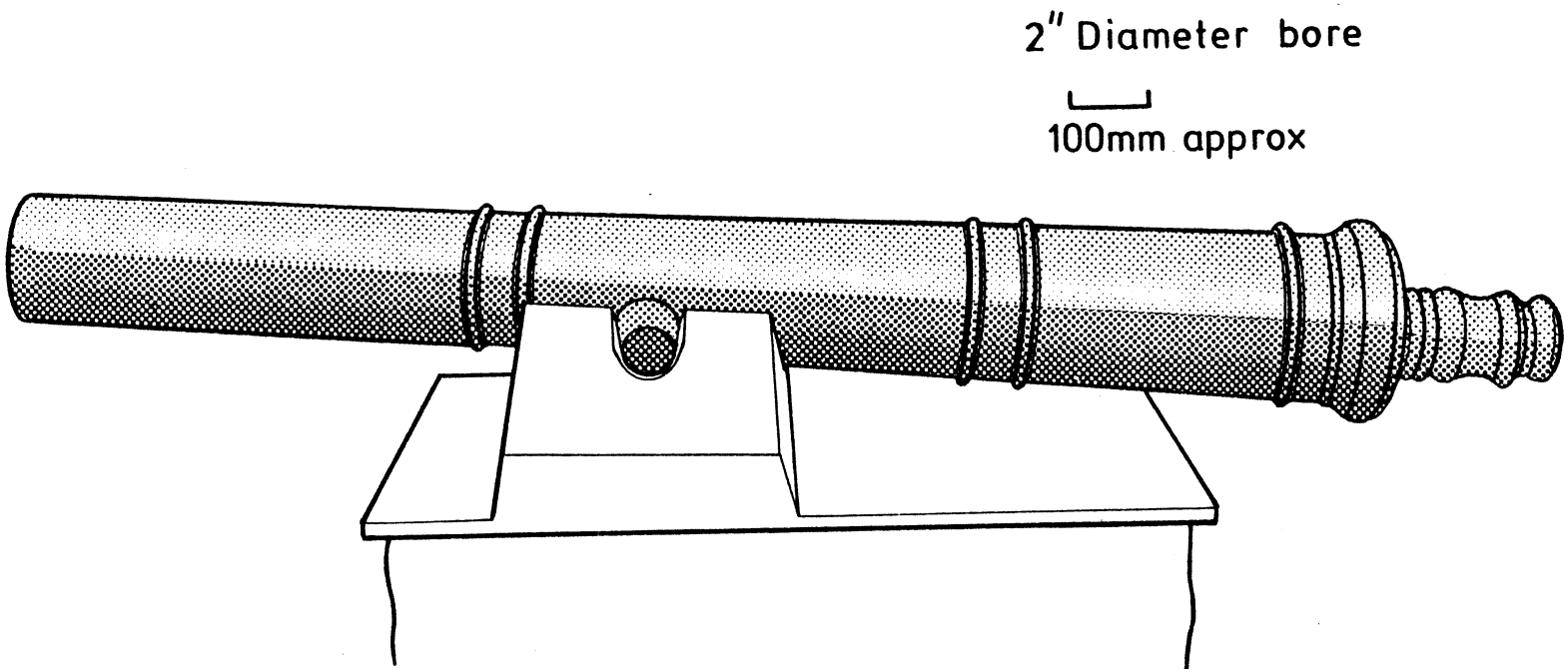
The Mayfield Local History Society decided in 1977 that as their Silver Jubilee contribution to the village they would re-furbish the cannon and mount it in the High Street. The Convent authorities kindly agreed to let the Society have the cannon on extended loan and mount it on Convent property in the High Street close by the imposing Gate House (TQ 5875 2700).

The cannon was removed by members of the Society, and was descaled and refurbished by the Chairman, who by coincidence happens to be the local gunsmith. A village firm of builders erected a mounting of local stone kindly given by Mr and Mrs Siggs of Gilhope Farm, Mayfield.

The cannon is obviously a reject casting, as part of the muzzle has broken off and a large blow-hole is apparent at this point. The Society sent photographs of the gun to the Keeper of Firearms at the Tower of London for identification and dating. Mr Howard Blackmore has replied that the form of the barrel indicates that the gun was made in the seventeenth century. However, the form of the cascobel (the knob at the breech end) is unique and of a style hitherto unrecorded. Mr Blackmore requested that the Tower authorities might keep the photographs for their archives.

The dating of the cannon by Mr Blackmore therefore tallies with the operating date of the Mayfield furnace.

The drawing of the cannon by Mrs M. Hawkins of East Grinstead is gratefully acknowledged.




**The Mayfield Cannon**

**Mounted in the High Street for**

**Silver Jubilee Year 1977**

# The Carrier's Accounts of Robert Knight  Jeremy Hodgkinson

## Part 1: Introduction

In Sussex Archaeological Collections 46 (1903), there was published an abridged transcript of these accounts. Their editor, W. Powell Breach, made his selection to illustrate one of the more routine aspects of the iron trade. Straker[1] made use of these accounts as did W. H. Hills in his History of East Grinstead[2], and it is to the former that we owe most for their interpretation.

One of the observations he makes concerns the coal which was brought to the furnace on the return trip from Woolwich. Straker dismisses this as being merely for the drying of moulds. But Malcolm, in his Compendium of Modern Husbandry,[3] states that coal was used experimentally by Rabys at Felbridge Water in their "extensive furnaces". In 1764 Mr Rose Fuller was writing to the Board of Ordnance[4] that he was unable to manufacture iron ordnance at £14 per ton, the price paid by the Board, using charcoal. By that time, according to Straker, Churchill and Co., the Midland iron founders, had tried using coal at Robertsbridge Furnace;[5] so there is a case for disbelieving Straker in this matter. Incidentally, the chaldron of coal that is regularly mentioned amounted to between 1 and 2 tons; also a hutch of mine approximates to 3 tons of iron ore.

The manufacture of shot is of interest as the Ordnance Board papers in the Public Record Office include requests from Raby and Eade and Wilton for old iron to be sent to their furnaces for re-use for this purpose.[6] Also there are records of the casting of iron trucks,[7] though this partially pre-dates the period of these accounts. One item, mentioned by Breach, was the appearance (on p.6) of a sketch of a gun. An examination of the drawing has not conveyed the same impression to the present author. It appears to be more of a "doodle" than an identifiable representation.

In the Ordnance papers, Raby's are mentioned frequently even before their earliest appearance in the accounts. Also mentioned are Eade and Wilton, but Clutton and Co. and Ralph Clutton and Durrant do not figure. One must assume that the latter were under contract to the other two. Clutton and Co. presumably folded when William Clutton, who owned Gravetye Furnace (as well as Buxted and Maresfield Forges), was declared bankrupt in 1762.[8] Ralph Clutton and Samuel

Durrant were co-assignees of the bankrupt's estate. The variety of names under which the iron founders operated is, at times, confusing but Raby's earlier partner, Masters, might well be the Masters who worked with Tidy at Maresfield Furnace in 1741.[9]

Henry Rivers, who is briefly mentioned in this transcript, appears to be a general trader as wheat and wood are also in his line of business. Indeed, a considerable proportion of the accounts is taken up with the carriage of timber and bark. The present transcript is complete as far as the iron industry is concerned, with the exception of business dealings with local blacksmiths as separate entities.

These accounts present a picture of the iron trade of the furnaces mentioned which is far from complete. The 181 guns, for instance, proved at Woolwich in 1761,[10] which were made by Rabys, are not even mentioned in the accounts. Many of those were 32 pounders, a type which does not figure in Knight's dealings with Raby. It is safe to assume that other carriers were employed as well.

For permission to make. this transcript, I am indebted to Mr P. de Rougemont, whose address has been lodged, with his permission, with the Secretary of the WIRG should other researchers wish to consult the original.

## Notes

1 E. Straker, Wealden Iron (1931), 159, 186, 214-7.
2 W. H. Hills, The History of East Grinstead (East Grinstead 1906), 144-6.
3 Malcolm, A Compendium of Modern Husbandry (London 1805), I, 41.
4 Public Record Office (PRO): WO 47:65, pp.56-7.
5 Straker, 316-7.
6 PRO: WO 47:59, pp.142. 245 47:60, pp.246-7.
7 Ibid. 47:75, p.25.
8 Brighton Reference Library: Sussex Weekly Advertiser, 13.12.1762.
9 Straker, 402.
10 PRO: WO 47: 57-9.

PART 2. THE TEXT OF THE ACCOUNTS WILL BE PRINTED IN BULLETIN NO 14.