New light on the West End post-medieval iron working site, western Weald

by LAURENCE DRAPER

Introduction

Iron was produced in the Weald in the Iron Age, but the industry ceased at the end of the Roman period. It was re-started just before AD 1500 using continental technology, and for most of the next three centuries was a major industry. Ernest Straker's valuable reference book on the subject was published at his own expense in 1931; it remained the definitive work until 1985 when the Wealden Iron Research Group (founded in 1967) published a totally new version (Cleere & Crossley 1985).

Although many sites are known, and much documentary material is available, there must still be new sites awaiting discovery, and there are other known sites whose dates and usages are obsure.

West End is a hamlet about 3km ENE of Haslemere, about 1.5km downstream from the important 17th century cannon casting complex of Imbhams.

Although the West End site has long been known, Straker accorded it only three and a half lines of text, and Cleere & Crossley precious little more, the actual location of the furnace was a mystery until recently, and a small bay less than a kilometre up a tributary seems to have gone unreported.

Site descriptions

Main Bay, West End (SU 939 344)

In December 1982 the single-track road bridge over the stream, and about 10m below the bay, was removed because of its structural failure (fig 1). This exposed sections through the road embankments, and on the south side revealed an area of burnt clay about 3m across by up to 1m in depth. It appears that this was the site of the furnace.

The exposed clay contained highly burnt 5cm × 10cm × 22cm bricks. To each side, and about 5m apart, roughly hewn sandstone blocks were in place, appearing to be the remains of two walls. They did not show any signs of burning. The burnt clay (fig 2) extended thinly in a gently sloping layer about 8m on the upstream side and 4m on the downstream side of the centre of the main mass of burnt clay. Above the burnt clay layer was a yellow clay layer, then a 10cm layer of iron slag followed by another clay layer, a mixed fill layer and a topping of modern tarmac. The modern surface is about 1m above the top of the burnt clay layer.

A curved, but level topped, loading embankment approaches from the south-east; it stops about 6m from the burnt clay but is heading towards it. It is composed of clay, soil and sub-soil, and does not appear to contain slag. A relatively modern lime kiln has been built into it using more recent 7cm thick bricks.

Some years ago when the stream was very low, Mr Clare Robinson, owner of part of the West End site, observed the end of a heavy timber, about 35cm square, protruding from the stream bed between the bay and the bridge. He subsequently spoke to a local octagenarian who remembered his father describing how he saw heavy old timbers being hauled out of the stream between the bay and the bridge – perhaps about a century earlier.

The foreman of the recent bridge builders reported that he had disturbed very little in the way of foundations or stone blocks, but some old timbers had been removed and are now buried under material also removed from the site. No further damage has been done to the remains, but the new bridge has now obscured the furnace site; the bay and the loading embankment have not been affected.

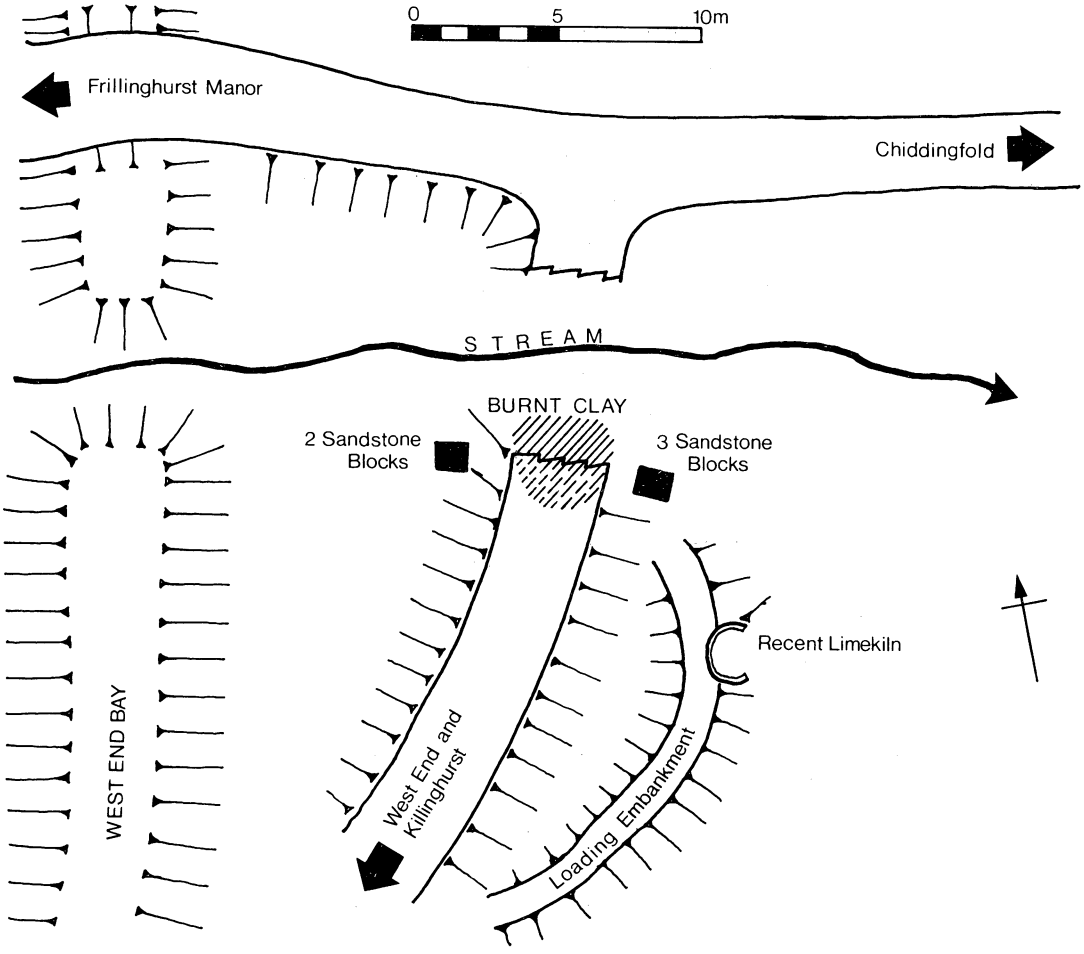

Fig 1. Sketch map of the West End site

Subsidiary Bay, Frillinghurst Wood (SU 933 342)

About 0.75km upstream and on a tributary (not feeding into the Imbhams complex) is another bay of about 6m in height (fig 3). It is 45m along its crest across the valley and 22m wide at its base along the stream. There are two outflow channels, one at each end of the bay. The northern one is the more pronounced and enters the stream about 10m below the lower extremity of the bay. Instead of taking the most direct route to the stream, it is carefully diverted by an embankment to keep away from what is now the only level ground below the bay. However, this level platform is within the apparent boundaries of the bay itself, so may have been a result of the flood when the bay burst.

This bay is located in a narrow valley in the middle of Frillinghurst Wood; the narrow valley is of largely unmanaged scrub woodland. The bay itself has failed in a similar way to that of West End. Large amounts of clay were used in its construction.

Embedded in the bay near water level are many pieces of old timber. One badly eroded trunk at the upstream end of the bay now forms a small weir over which the water tumbles, and is at least 2m in length by 20cm in diameter, each end being embedded in the bay, probably in its original position. Nearby are two 25cm square timbers protruding nearly vertically from the stream bed. At various other positions near stream level through the bay are horizontal or

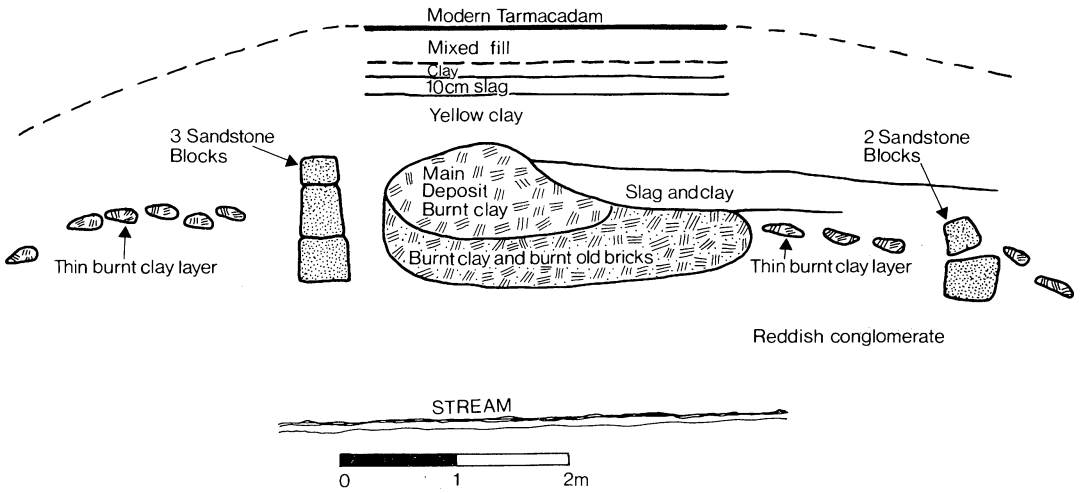

Fig 2. West End: schematic vertical section looking south through south bank: (a) 10cm layer of slag is presumed old road surface; (b) the full extent of the thin burnt clay layer is 12m (see text); (c) natural subsoil is a reddish conglomerate

sloping round sectioned timbers of about 8–15cm diameter; there are also embedded and loose pieces which could have been used as planking.

Downstream, and in the water, two baulks of timber of 40cm across and at least 30cm deep appear to have fallen. The larger is 6m in length, and its three visible sides have been sawn, but one edge is rounded with the stumps of branches still protruding, showing that the tree from which it was made was not quite large enough. The shorter, 4m long, timber has a 40cm × 20cm mortise hole in it, and the longer one has smaller mortises. There is no evidence of slag in the stream below the bay.

This bay is less than 1km across country from Imbhams' upper pond. Straker made no mention of it; its existence was first noted by Aldsworth in 1966 (Surrey County Council Sites and Monuments Record, Antiquity No 1570) while he was working for the Ordnance Survey, but he did not fully measure, describe or interpret it. The site is very difficult of access because of the denseness of the scrub and brambles; it is owned by the Forestry Commission.

Interpretations

West End

When the West End bay was in use, the track would probably have crossed the stream, using the bay as its bridge. After the bay failed (after the demise of the ironworking there, or possibly even the cause of it) the easiest way to overcome this mishap would have been to build another bridge just below the bay; the ideal location would have been at the site of the derelict furnace as it was higher than its surroundings on the south bank. A corresponding ramp would have been easy to build on the north bank, to give access to the new bridge, using the easily obtained supply of roughly-hewn sandstone blocks, and probably the brick liners from the unwanted furnace. The southern approach road would then have been taken past the old bay and curved down to the new bridge; adjacent materials would have been used to build up this road, including a topping of slag to form the 10cm thick road surface. It is possible that some of the furnace outer wall blocks were left *in situ*, and that some of these are the ones exposed by the removal of the bridge. Certainly, they are astride the burnt clay and about the right distance apart. Alternatively, they could be furnace wall blocks re-used to make bridge abutments. Subsequently,

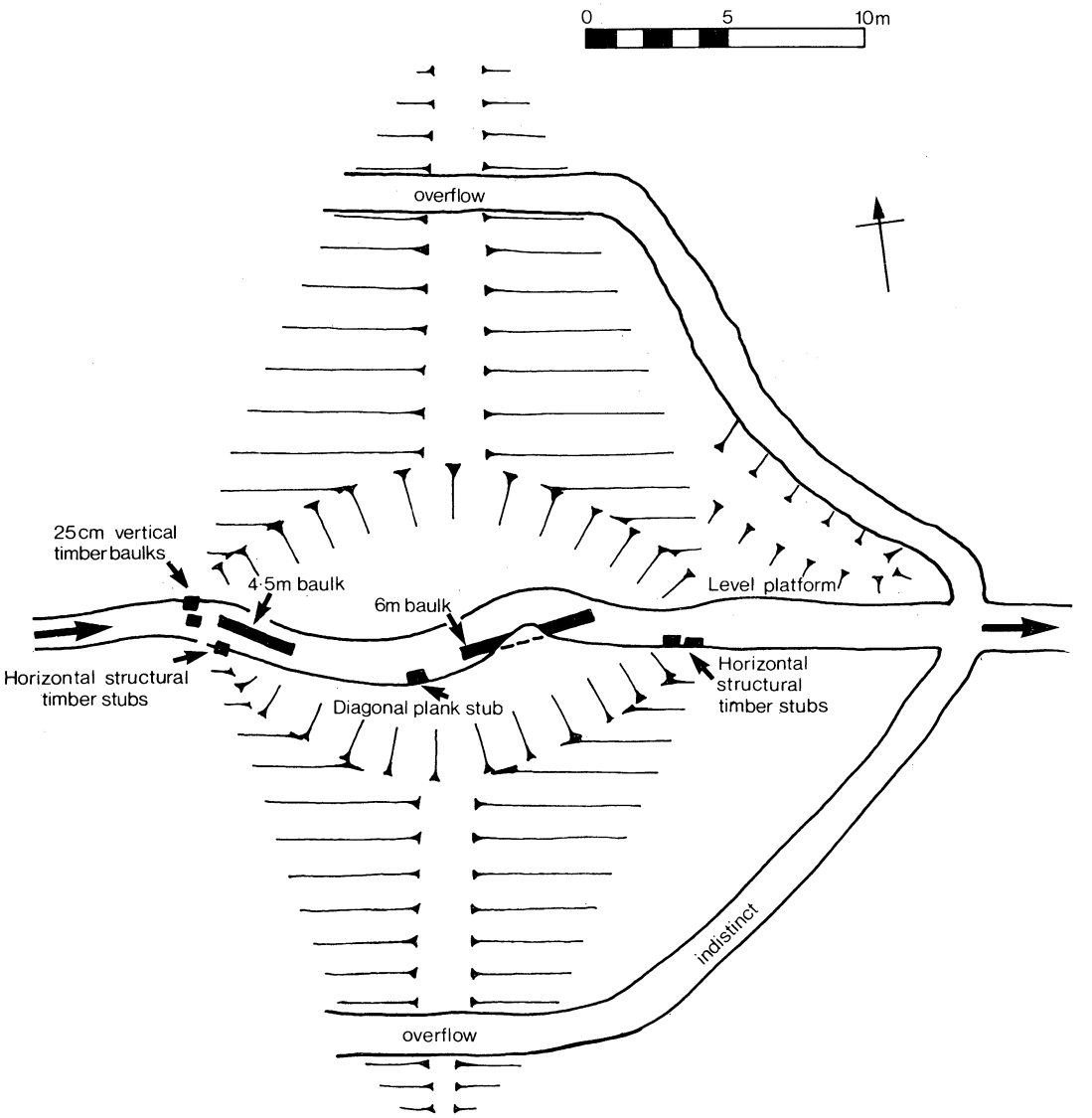

Fig 3. Plan of the subsidiary bay in Frillinghurst Wood

the road was further improved, and the bridge probably rebuilt, with a higher surface level about 60cm above the first road surface.

The alignment of the loading embankment, apparently heading towards the burnt clay but now stopping about 6m from it, is strong additional evidence for the location of the furnace. It would probably have ended much nearer to the furnace originally, but would have been an easy source of fill for the bridge builders.

Frillinghurst

This upper bay, in a narrower valley than that of West End, appears to have been a pen pond for the main West End facility, as there is no evidence of slag nearby. The heavy timbers may have

been the site of the sluice gate system. Considering the height, it must have held a useful volume of water.

The diversion of the northern outflow around what is now the only level area below the dam might imply that this platform had some use, although just what is not now obvious. It might have been part of the sluice–gate control gear, but it seems rather large for that; it could have been created when the bay failed.

The existence of this additional source of water, available only to the West End furnace, might be interpreted as indicating that, in its time, West End was a major facility in its own right and not necessarily a subsidiary of Imbhams. The absence of the West End site from the 1574 lists and subsequent records (Straker 1931, 53–68) may indicate that it preceded Imbhams, but if this is so it is difficult to understand why it does not receive even a passing reference in the Imbhams records. If it was subsequent to Imbhams, surely there would have been records about it. This site is an unresolved puzzle, but the existence of its own pen pond does seem to enhance the status of the West End furnace.

ACKNOWLEDGEMENTS

I am indebted to Mr Clare Robinson, founder and Chairman of the Chiddingfold Historical Society, for suggesting that someone look at the site of the bridge repairs, and for mentioning the existence of, and taking me to, the site of the upper earthworks. I am also indebted to Mr Jeremy Hodgkinson, Chairman, and Mr Reg Houghton, Treasure, of the Wealden Iron Research Group for abandoning their Christmas festivities to rush over and confirm the interpretation of the evidence suggesting that the burnt clay did constitute a furnace site; also for pointing out the loading embankment, evidence for which even Straker had missed. The help of the Haslemere Group in measuring the Frillinghurst Wood site is much appreciated, as are the efforts of Dr W R Trotter in attempting to locate references to the site in the Woods Collection in Godalming Library; sadly, the latter search was unsuccessful.

REFERENCES

Straker, E, 1931 *Wealden iron* (Republished at least twice, for example by David & Charles, 1969)
Cleere, H & Crossley D, 1985 *The Iron industry of the Weald*