Barcombe and Beddingham

ROMAN VILLAS FROM WEALDEN IRON?

By Ann Best

This paper puts forward the archaeological evidence to suggest that Barcombe and Beddingham Roman villas, and the Romano-British settlement at Upper Wellingham, were not only part of the immediate agricultural landscape, but also linked to the wider industrial landscape which had iron production at its core. It also explores how the economic results of an expanding iron industry could have provided the necessary wealth to support these Romanised houses and a substantial trading settlement in this rural location.

INTRODUCTION

LOCATION OF THE SITES

Barcombe and Beddingham villas and the settlement at Upper Wellingham are all situated in the Ouse Valley at, or close to, what would have been important transport junctions during the Roman period. Barcombe villa is situated on the Upper Greensand ridge on the west bank of the River Ouse (TQ 417142) (Fig. 1). It lies to the south of the east–west Roman road, The Greensand Way which provides access via Stane Street to the *civitas* capital of *Noviomagus Regnensium* (Chichester), and its junction with the north–south London to Lewes Roman road. The recently discovered settlement at Upper Wellingham (TQ 443144) lies on this north–south road on the eastern bank of the River Ouse. Recent magnetometer surveys by David Staveley for the Culver Archaeological Project (CAP) have produced strong evidence for an eastern road from this settlement continuing towards the Roman settlement at Arlington, and then on to Pevensey (Millum 2013, 53). The Roman villa at Beddingham (TQ 458074) is situated near a spring line on the Lower Chalk at the foot of the north scarp of the South Downs. It lies to the south of Glynde Reach, which joins the River Ouse a short distance to the west and is near the junction of the Roman roads from Pevensey and ford crossings at Glynde. Here traffic would have converged via routes across the Downs, from the port at Seaford and a crossing of the River Ouse at Newhaven, which brought traffic from the west of the river (Margary 1948, 153) (Fig. 1).

BACKGROUND

For two hundred years, from the time of the Roman occupation of Britain in AD 43, the Weald of Kent, Surrey and Sussex was the most productive iron-producing region in Britain. The raw material most commonly used for iron ore was clay ironstone or siderite mudstone, which occurs as nodules or layers interbedded with the clays, silts and fine-grained sandstones of the Wealden Beds. The main constituent of siderite mudstone is ferrous carbonate in the form of the mineral siderite, which contains up to 48% of iron by weight. The conditions under which clay ironstones form occur throughout the Wadhurst Clay, and more intermittently in the overlying Weald Clay (Worssam 1995, 10–13). The Geological Survey Memoir (Lake *et al.* 1987, 16–18), which includes borehole evidence, suggests that ironstone formation in the Wadhurst Clay would appear to be at a relatively high level in the area under consideration.

The earliest ironworkers would have found iron ore in natural exposures in the banks of streams, but during the Roman period it was obtained mainly by open-cast mining where the ore was dug from shallow quarries or from bowl-shaped pits. These quarry pits later became known as mine-pits, 'mine' being the local name for iron ore. The iron ore was smelted in sandy-clay furnaces called bloomeries, a name that derives from *blóma*, an old English word for the mass of iron that collects at the bottom of the furnace during the smelting process (Cleere and Crossley 1995, 31).

ARCHAEOLOGICAL AND LANDSCAPE EVIDENCE

FINDS OF IRONSTONE USED IN BUILDING CONSTRUCTION

The excavations in the late 1980s to the early 1990s at Beddingham Roman villa indicated that ironstone was used during the construction of several of the villa buildings, examples including

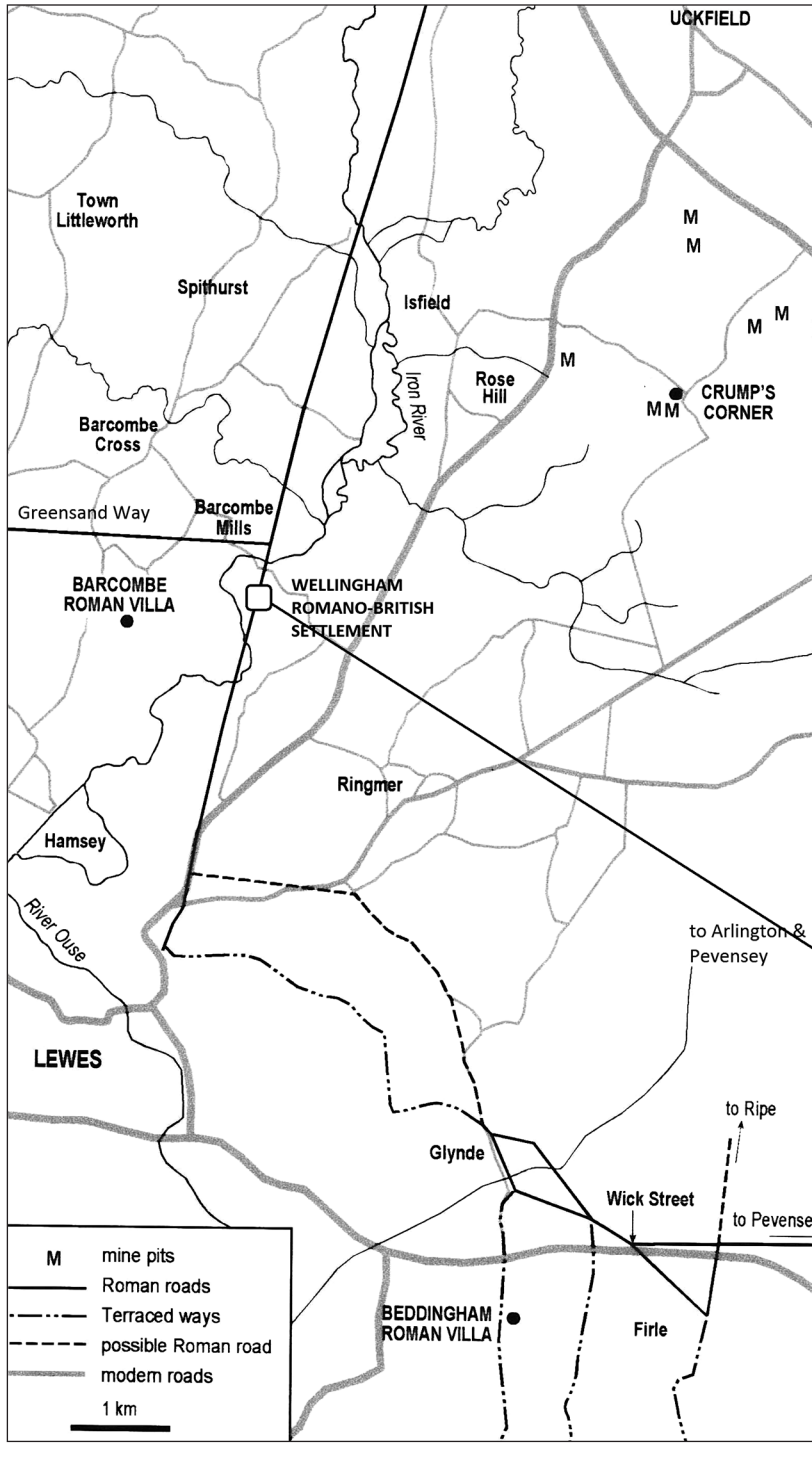

Fig. 1. Roman settlement sites, roads and mine-pits (after Susan Rowland).

Fig. 2. Ironstone found in the footings at Barcombe (Photo: Author).

its use as one of several materials in the footings of the shrine (Rudling 1998, Fig. 8), and to line the well (Rudling 2003a, Plate 7). Subsequently, during excavations at Barcombe Roman Villa in 2003, slabs of ironstone (Fig. 2) were found in the footings of an aisled building discovered to the south-east of the winged-corridor house. These slabs had been squared on two sides, and it was suggested by Luke Barber that they may have been intended for use as quoin stones in the construction of the villa, as had sometimes occurred at Beddingham, but, being found surplus to requirements, had been used as foundation material.

As much more durable building stone was available farther north in the Weald, the more friable ironstone was probably used for convenience because it could be sourced more locally. Ironstone has also been found during the recent excavations of the Roman bathhouse close to Barcombe villa, and at the newly discovered Romano-British settlement at Upper Wellingham.

Following these discoveries, research was carried out to find the nearest possible sources of the ironstone to these sites, and then to look for evidence of associated iron smelting.

SOURCES OF IRONSTONE WEST OF THE OUSE

Balneath Wood, Barcombe centred TQ 405175

Dr Bristow reported mine-pits on the Weald Clay at Balneath Wood (Worssam 1995, 21–2), though no written record appears to exist to indicate their exact position. The British Geological Survey map (BGS 1979) shows outcrops of clay ironstone in the Weald Clay just to the north of Balneath Wood at TQ 411183, and a Geological Survey Memoir (Lake *et al.* 1987, 91) confirms ironstone horizons in the Weald clay with associated large pits occurring near Town Littleworth (Fig. 4). Most of Balneath Wood was cleared for grazing in the 1980s, but there are still pits on the north side of the wooded track, Balneath Lane, which runs east–west to the north of what was once Balneath Wood (Fig. 3).

Fig. 3. A pit at TQ 411177 on the north side of Balneath Lane.

Dallas Lane, Agmonds Wood, Barcombe, centred TQ 435175

Lake *et al.* (1987, 91) also mentions bell pits, in association with ironstone horizons in the Weald clay, recorded at Dallas Lane (TQ 435173), a path running east–west through Agmond's Wood about half a kilometre to the west of the London–Lewes Roman road (Fig. 4). A thin hard layer like an ironstone bed in a sequence of clays would tend to resist erosion and produce a slight escarpment, and any mine-pits would be located on the flat ground at the base of the escarpment, where the ironstone has gone underground out of the reach of weathering (Bernard Worssam pers. comm.). This is the situation at the large

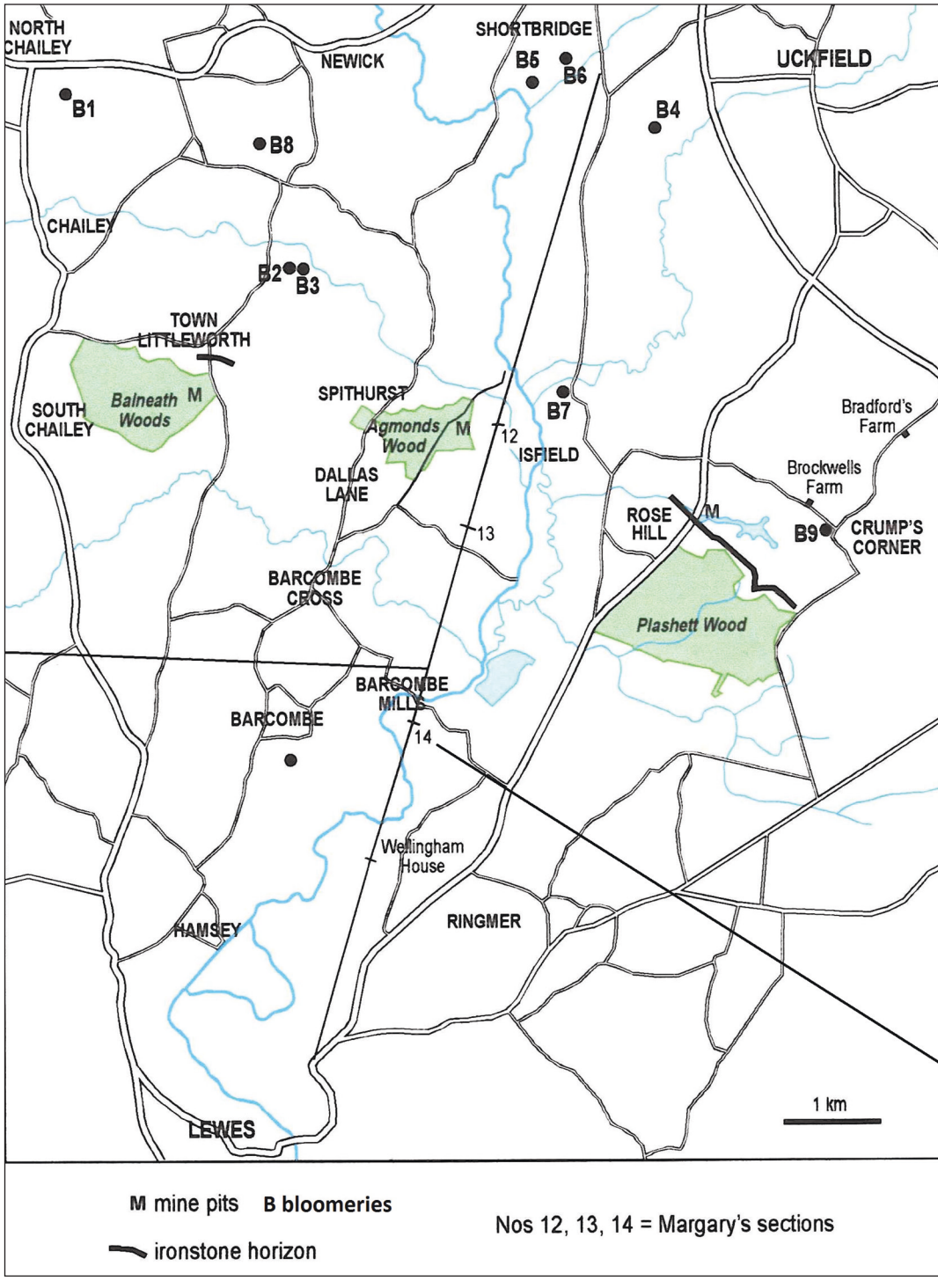

Fig. 4. Ironstone sources and bloomery sites (after Susan Rowland).

Fig. 5. Large pit at Dallas Lane in Agmond's Wood at TQ 434175.

Dallas Lane pits that can be seen to the north of the footpath, at the bottom of a steep slope (Fig. 5). On recent inspection, these pits are much altered because the landowner has been excavating with a bulldozer to make the pits more stable.

The Agmond's Wood pits would have been the nearest source of ironstone to Barcombe villa and the settlement at Upper Wellingham. The stone could have been readily transported via the London–Lewes Roman road, or by the river (Fig. 4), which could explain why this inferior building stone was used at these sites.

SOURCES OF IRONSTONE EAST OF THE OUSE

Outcrops of clay ironstone in the Weald Clay

Rose Hill

The geological survey map (BGS 1979) shows an outcrop of clay ironstone, which runs in a line from a point just to the north-west of Rose Hill along the north-east border of Plashett Wood and has a mine-pit dug into the slope of the ironstone escarpment at TQ 461164 (Figs 4 and 6).

Other ironstone horizons

Lake *et al.* (1987, 91) mentions that ironstone horizons in the Weald Clay with associated large pits occur near Whitesmith (TQ 528138) and Nash Street (TQ 550123), in the present-day parishes of Laughton and Chiddingly respectively.

Any or all of the three Weald Clay sites on the east side of the river could have been the source of the ironstone found in the construction of Beddingham villa. Stone from the source at Rose Hill could have been transported most easily, to Wellingham, Barcombe or Beddingham, by river, or alternatively via the southern end of the London–Lewes road and then by the series of roads and tracks over the Downs as described by Margary (1948, 153). Stone from Whitesmith and Nash Street could have been transported to Beddingham via a number of minor Roman roads in that area (Margary 1948, 185–193).

RECORDED BLOOMERY SITES

Evidence of bloomery sites should never be far from the sources of ironstone, as the ore was rarely transported over distances of more than 1km to bloomeries (Cleere and Crossley 1995, 34). Waste slag, the byproduct of the smelting process, was discarded in heaps, and today provides the best evidence for the existence of bloomery sites. On the west side of the River Ouse, about 1km to the north of the ironstone sources mentioned, bloomery sites are recorded in Chailey Parish at TQ 417190 and TQ 418191 (B2 and B3 in Fig. 4). Bloomeries have also been recorded further north, in North Chailey at TQ 394209 and in Newick at TQ 414205 (B1 and B8 in Fig. 4). On the east side of the river, bloomeries are recorded close to ironstone resources mentioned, at Isfield TQ 447179 and at Crump's Corner, Little Horsted TQ 475165 (B7 and B9 in figure 4). Bloomery sites are also recorded at Fletching, TQ 444209 and TQ 446214, and at Isfield, TQ 456205 (B5, B6 and B4 in Fig. 4).

Of these bloomeries only the site at Crump's Corner has been definitively dated to the Romano-British period, from pottery finds amongst the slag (Cleere and Crossley 1995, 299). Another site at Chailey TQ 394209 was tentatively attributed to the Roman era following excavation by Chris Butler (pers. comm.) in 2004. Only 25% of all the known bloomery sites have been dated, usually only approximately, to one or other of the main iron production periods (Roman and

medieval), the greatest number of these associated with the Roman occupation (Hodgkinson 2008, 27).

Fig. 6. Mine-pit near Rose Hill at TQ 461164.

MINE-PITS ON OUTCROPS OF WADHURST CLAY

On a visit to the bloomery site at Crump's Corner on Brockwells Farm, directions were obtained to other mine-pits about a kilometre to the north on Bradfords Farm (Fig 4), and similar pits were indicated on what is now the East Sussex Golf Course. The most notable of these, Boyes pits at TQ 483172 (Fig. 7) and Whitelocks Pits at TQ 488171, were recorded on Bradfords Farm, with another at Railands Wood, centred at TQ 470176, on the golf course (Fig.1).

All the pits are in outcrops of Wadhurst Clay on the BGS map. These outcrops are inliers brought up due to the east–west fault running just to the south of them. This fault is downthrown to the south, so more erosion has occurred on the upthrown side to the north, which has exposed the Wadhurst Clay. One cannot therefore be certain what levels of the Wadhurst Clay have been exposed (Pamela Fielding pers. comm.). The mine-pits on Wadhurst Clay are different in shape and form from those associated with ironstone horizons on the Weald Clay. On inspection, the mine-pits near Bradfords Farm were found to be similar in shape and form to those near the Roman iron-working site on Great Cansiron Farm near Forest Row. The Cansiron Lane pits are described in a Bulletin of the Wealden Research Group as U-sectioned, up to 8–10m deep, and of various widths and lengths between 25m and 200m, and are surrounded with medieval ditch-bank-hedges (Stapleton 1986, 56). The pits near Bradfords Farm are around the middle of this size range and, like those at Cansiron, are surrounded by ditch, bank and hedge. Stapleton suggests that the pits were in existence before the fields and hedges were established, and that the medieval ditch-bank-hedges kept livestock out of the pits, which were fenced in as timber-producing shaws. In the absence of evidence of post-medieval quarries and clay or marl pits from old estate maps, he suggested 'the Cansiron Lane pits must be Roman mine-pits since no-one else made large holes in the ground before the pits were enclosed in the medieval period'. The pits near Bradfords Farm are found in a similar situation, and I therefore suggest they too are Roman mine-pits.

FURTHER EVIDENCE OF IRON SMELTING IN THE OUSE VALLEY

In 1933 Ivan Margary surveyed the London to Lewes Roman road, which is sometimes referred to as 'The Iron Way', and observed that the most convenient local sources of material were used in its construction throughout its length. He observed that the waste products of iron manufacture had been used: mostly slag from the smelting process and debris from the forging hearths and the bottom of the furnaces. In his description of the road's metalling he refers to these waste products collectively as 'cinder'. Margary (1933, 42) observed that flint became more plentiful in the metalling as the Downs were approached, and gravel was used when obtainable, for example near the Ouse. He sectioned the road at intervals along its length and Sections 12 (TQ 440175), 13 (TQ 437166) and 14 (TQ 433146) were dug across the road where it passes through the area under consideration (Fig. 4). Each section revealed the road to be made of cinder combined with flint, or flint with gravel, and Margary was able to trace the route of the road between the sections from cinder scatters in the

Fig. 7. Boyes pits (TQ 483172).

fields. In Section 14 he records:

> Upon the edges of the cambered surface, particularly at the east side, was found a considerable quantity of Roman pottery, including Samian of mid second century date, and coarse wares of the first century, pointing to an early date, about 100AD, for the construction of the road (Margary 1933, 25–8).

This section of the road we now know lies within the newly discovered Romano-British settlement at Upper Wellingham (Millum, 2013, 53).

This evidence of cinder being used in the metalling of The Iron Way through this part of the Ouse Valley is firm evidence that at the time of construction of the road, about AD 100, there were iron-working sites nearby with sufficient waste products to be accessed conveniently by the road builders.

THE ECONOMIC CONSEQUENCES AND REWARDS

In a recent paper assessing the value of Roman iron, Lee Bray (2010, 182) examines the potential economic opportunities that became available to iron producers following the establishment of Roman rule in Britain. Following the Conquest in AD 43 there was a huge increase in the demand for iron all over the province, as iron became ubiquitous and the uses to which it was put extended. This increase in demand was a prerequisite for an increase in production. An increase in iron production also stimulated the production of a surplus which could be sold for cash to pay the taxes imposed on the British population after the conquest. Bray suggests that iron may have also been acceptable to the Roman authorities for payment of taxes in kind. There was little risk in this strategy, because of the stable political and economic conditions that Roman rule brought in its wake, and this expanded market for iron ensured a reliable return on the iron smelters' increased production.

The new economy of increased iron production would have required new marketplaces and centres of administration, and may have encouraged the development of the Romano-British settlement at Upper Wellingham, which was ideally situated at the intersection of major transport routes. All Roman iron-working sites lie within 3.5 km of a known major arterial road or one of the minor roads and ridgeways, and it is probable that the output from the sites was transported as iron blooms or 'semi-finished products' (Cleere and Crossley 1995, 60, 82). The London–Lewes road would have transported iron from some of the major production sites in the western part of the Weald (Hodgkinson 1999, 69). The geophysical evidence from the settlement at Upper Wellingham suggests that this road may actually have terminated at the settlement, which lies adjacent to a navigable reach of the Ouse and where indicators of trade such as lead steelyard weights and bronze writing styli have been found (Millum pers. comm.). Millum also suggests similarities between the earlier open phase of this settlement and that of Westhawk in Kent, where, following large open-area excavations, the economic emphasis was interpreted as based on agriculture and local market functions, plus some small-scale iron production. Whilst the production of iron at Westhawk was of a scale that suggested only local significance, it was speculated that another function of the settlement might have related to some administrative role in the iron

industry (Booth *et al.* 2008, xix). Given its pivotal location, could such a role also be suggested for the site at Upper Wellingham? Areas of the main settlement are scheduled to be excavated over the next few years, including the intersection of The Iron Way with the settlement, and we may hope that it will lead to the discovery of more precise evidence from which to determine the nature of any relationship of the site with the iron industry.

The only firm dating evidence of iron production in this area is from The Iron Way, which suggests that by *c.* AD100 there were sufficient and readily available iron-making waste products to metal the road. At Barcombe a simple rectangular masonry building had replaced roundhouses by *c.* AD150–200, and was in turn replaced by a winged-corridor villa in the early to mid third century (Rudling *et al.* 2010, 23–6). At Beddingham the winged-corridor villa developed from a simple rectangular building of five rooms which dates from the late first century AD (Rudling 1998, 53–4). This building in turn replaced a circular timber structure of two phases. Rudling (1998, 55) stresses the importance of the replacement during the mid-second century of the original settlement enclosure by a considerably larger version, and suggests that, where this happens at Sussex villa sites, it indicates an increase in prosperity. Although by the middle of the fourth century both the winged-corridor villas at Beddingham and Barcombe had gone out of use, some less intense occupation at both sites may have continued into the late fourth century. Thus the evidence for reduced activity at the villa sites coincided with reduced economic fortunes in the Weald, following the decline of the iron industry. This began in the east of the region between 220 AD and 240 AD with the closure of sites under the control of the *Classis Britannica*. However, in the west of the Weald, which lacks signs of military involvement/control, large private-enterprise ironworks such as Great Cansiron and Oldlands, which were served by The Iron Way, probably continued to operate well into the fourth century (Cleere and Crossley 1995, 61–2). Reasons for the decline of both the iron-working sites and the villas in the Ouse Valley may have included the threat (real or perceived) of Saxon and pirate raiding (Rudling 2003b, 124).

There is no dating evidence for the bloomeries mentioned above, nor any indication of how long they were in operation. Even if some were small and operated to supply local needs, such as replacement of tools, farm implements and iron fittings for the two villas, and perhaps other farming establishments in the Ouse Valley, they would still have been economic assets for the villa estates.

The Barcombe and Beddingham Roman villas were at the heart of farming estates on either side of the River Ouse, potentially using broad swathes of land from the lower slopes of the Downs to the woodlands of the High Weald. I suggest that the mine-pits and bloomery sites mentioned above could have been an integral part of these farming estates and, together with the opening up of new markets associated with the expanding iron industry, could have provided the landholders with sufficient disposable income to build Romanised houses in the northern winged-corridor style, and have encouraged the development of the substantial settlement at Upper Wellingham.

Acknowledgements

I would like to thank David Millum for his help and encouragement in preparing this paper, and Pamela Fielding, Sue Rowlands, Jeremy Hodgkinson, Bernard Worssam, Kim Clark, Ann Bacon and Rob Wallace for their assistance in various aspects of my research.

Author: Ann Best, 2 Middleton Common Cottages, Ditchling Common, Sussex. BN6 8SF.

REFERENCES

BGS. 1979. British Geological Survey 1:50,000 map, sheet **319** (Lewes).

Booth, P., Bingham, A.-M. and **Lawrence, S.** 2008. The Roman roadside settlement at Westhawk Farm, Ashford, Kent: Excavations 1998–9. Oxford: The Oxford Archaeological Unit Ltd.

Bray, L. 2010. 'Horrible, speculative, nasty, dangerous': assessing the value of Roman iron, *Britannia* **41,** 175–85.

Cleere, H. and **Crossley, D.** 1995. *The Iron Industry of the Weald* (2nd ed.). Cardiff: Merton Priory Press Ltd.

Hodgkinson, J. 1999. Romano-British iron production in the Sussex and Kent Weald: a review of the current data, *Historical Metallurgy* **33** (2), 68–72.

——2008. *The Wealden Iron Industry.* Stroud: The History Press.

Lake, R. D., Young, B., Wood, C. J. and **Mortimore, R. N.** 1987. Geology of the country around Lewes. *Memoir of the British Geological Survey, Sheet 319 (England and Wales).* London: HMSO.

Margary, I. D. 1933. A new Roman road to the coast. II. The road from Maresfield to Lewes, *Sussex Archaeological Collections* (herafter *SAC*) **74,** 18–43.
— — 1948. *Roman Ways in the Weald.* London: Phoenix House.
Millum, D. 2013. New evidence of a Romano-British settlement at Upper Wellingham, East Sussex, *SAC* **151,** 53–9.
Rudling, D. 1998. The development of Roman villas in Sussex, *SAC* **136**, 41–65.
— — 2003a. A tale of two villas: Beddingham and Barcombe, *Bulletin of the Association of Roman Archaeology* **15**, 10–15.
— — 2003b. Roman rural settlement in Sussex, continuity and change, in D. Rudling (ed.), *The Archaeology of Sussex to AD 2000*, Great Dunham: Heritage Marketing and Publications, 111–26.
Rudling, D., Butler, C. and **Wallace, R.** 2010. Barcombe Roman Villa, *British Archaeology* **111**, 22–7.
Stapleton, J. H. D. 1986. Roman mine pits, *Bulletin of the Wealden Iron Research Group,* second series No. **6**.
Worssam, B. 1995. The geology of Wealden iron, in H. Cleere and D. Crossley (eds), *The Iron Industry of the Weald* (2nd ed.). Cardiff: Merton Priory Press Ltd.