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BADSELL PARK FARM, MATFIELD, KENT
AN ARCHAEOLOGICAL SURVEY
BY THE RCHME
MARCH TO APRIL 1993

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Introduction

At the request of John Williams, the Kent County Archaeologist, an archaeological survey was undertaken by the RCHME at Badsell Park Farm (TQ 648430) near Matfield in Kent, on the borders of Brenchley and Pembury parishes, in advance of the proposed flooding of part of an alleged iron working complex. Several features associated with water powered machinery were planned at 1:1000 scale.

Topography, Geology and Land Use

The main features of the site are contained within the valleys formed at the confluence of two north-easterly flowing streams. The valley bottoms lie between 35 m and 39 m above OD and are deeply silted. The steep valley sides, typical of Wealden topography, are Upper Wadhurst Clay, in which significant siderite deposits, usually veins, can occur. To the east and west the valley sides rise more gently to over 100 m above OD; here Tunbridge Wells Sands overlie the clay (British Geological Survey 1971). The streams provide a reliable flow but the western stream is now augmented by the outflow from a water treatment works north of the site at TQ 6437 4265.

Field boundaries have not changed significantly since 1795 (OS 1 inch First Edition, published 1801, surveyed 1795-6), apart from the removal in recent years of the fence dividing Cinderfield to the south-west from Pond Field to the north-east (OS 1 inch First Edition, published 1801, OS 25 inch First Edition, published 1885 and OS 1:2500 published 1963). The meadow in the western valley, which was named Upper Slip Field and awarded as 'meadow' in the 1838 tithe apportionment (Kent CRO (a) 1838), is boggy and liable to flooding, and has probably never been ploughed. The eastern valley is now largely covered in deciduous woodland (Cinderhill Wood), part of which has been coppiced since at least 1838. Other areas of land awarded as coppice in 1838, including the wooded upper stretch of the western valley, have now reverted and contain only isolated coppice stools. Orchards, pasture and arable crops have all been cultivated in the surrounding fields but they are now 'set aside'. Both of the dams or 'bays' surveyed in detail by the RCHME have become overgrown with scrub, mainly comprising hazel, hawthorn and blackthorn and including alder close to the streams. The 'Lower Bay' supported similar vegetation in 1885 (OS 25 inch First Edition, published 1885).

Previous Archaeological Investigations

The site was first recorded in 1931 by Straker in his gazetteer of iron working sites (Straker 1931, 281). He identified a single bay, probably the 'Upper Bay' (see description below) and a mass of sand and iron oxide which he considered to be spent casting sand. In the absence of slag, charcoal and precise documentary references, particularly in the virtually comprehensive list of iron working sites compiled in 1574 (PRO State Papers 1574), Straker tentatively concluded that the site may have been an adjunct to the well-known foundry of John Browne at Horsmonden (See NAR TQ 64 SE 4) which reached prominence in the first half of the 17th-century.

In 1963 the site was surveyed at 1 : 2500 by the OS Archaeology Division, which had not previously depicted the earthworks (OS 1:2500 published 1963). This survey defined the extent of the site but not its full detail or character.

In 1985 a more comprehensive gazetteer than Straker's was compiled by Cleere and Crossley using information provided by the Wealden Iron Research Group (WIRG). They were sceptical for the same reasons as Straker, but recorded the approximate dimensions of four bays of which three, including Straker's, were interpreted as supply ponds for the larger 'Lower Bay'. The place names Cinderhill Wood and Cinder Field were thought to refer to a possible Medieval or earlier bloomery site elsewhere and the main features were uncertainly identified as the Brownes' brass foundry (Cleere & Crossley 1985, 243).

In 1992, WIRG carried out more detailed field work including an extensive sub-surface survey using a metal detector dedicated to locating iron-working slag. This survey found Straker's 'casting sand' buried under leaf mould adjacent to the 'Upper Bay', but only a single piece of slag of dubious origin at the edge of the Cinderfield c. 50 m south of the 'Mid Bay' (Herbert 1993, 11-14 and WIRG archives). The name 'Cinderhill Cottage' shown on the 25 inch First Edition, published in 1885, at TQ 6536 4244 was thought to support the location of the possible bloomery further to the east. In the light of fresh documentary evidence on John Browne's brass foundries (Herefordshire CRO 1660), which did not contain any reference to the site, it was concluded that the earthworks at Badsell Park Farm were unlikely to have been connected with any form of metal working (Herbert 1993, 11-14).

Description and Interpretation

(See plan for letters used in the text. The names used to distinguish between the bays correspond to the WIRG archives.)

The 'Lower Bay' and 'Mid Bay' both aligned north-west to south-east, were surveyed in detail. The 'Upper Bay' and 'East Bay', although not included in the plan (see OS 1:2500 published 1963) were investigated briefly.

TQ 6485 4303 The 'Lower Bay' (a)

The largest bay (a) is unusual in spanning the confluence of the two valleys. Originally c. 120 m long, it is now broken in three places, but a prominent, well-preserved stretch runs for 90 m between the two streams. This section is a fairly straight bank 2.4 m high, 1.3 m to 4.0 m wide across the top, and c. 13 m to 21 m wide across the base. Another eroded fragment, the original north-western end (b), survives to a maximum height of 0.4 m and is separated from the main section by a breach, 25 m wide, through which pass the western stream and the present track which was first recorded in 1868-9 (OS 25 inch First Edition, published 1885). This breach was widened to its present proportions c. 1970 to improve access for large farm machinery (Pers comm Mrs C Preston). The existing eastern end of the bay curves slightly to the south before the eastern stream cuts through but there is now no trace of the original eastern end on the valley side beyond the stream.

At (c) the bay is cut by the second breach which is 7.1 m wide and 0.7 m deep. The third breach (d), 19 m east of the second, was recut to improve drainage in 1986, to a depth of 4.0 m and a width of 11.2 m (Pers comm Mrs C Preston).

All the visible exposures of the bay suggest that it is constructed entirely of Wadhurst Clay, probably in a single episode and without internal structures.

East of the track are ramps of rubble and soil deposited against the sides of the bay in recent times; they project 3.7 m to the south and 7.0 m to the north, but erosion to the top of the bay is negligible.

A leat (e), 5.8 m to 7.8 m wide and 0.7 m deep, runs along the northern edge of the bay for 45 m before diverging eastward to join the stream 18 m downstream from the bay. At its western end it is buried by the northern rubble ramp and towards the centre it is joined by two channels, 4.3 m wide and 9.5 m wide respectively, running from breaches (c) and (d) in the bay. Between the eastern end of the bay, the leat and the stream is a level area (f), possibly a building platform. Although the present course of the stream has eroded the eastern side of this platform, the original area may have

measured c. 20 m east to west by 14 m. A mound of clay on the platform and another on the opposite bank of the stream, measuring 5.9 m by 3.2 m and 4.6 m by 2.8 m respectively, probably result from recent activity.

In the area immediately behind the bay, called Pond Field in 1838 (Kent CRO (a) 1838), is a patch of ground measuring approximately 70 m by 50 m which was extremely boggy until it was infilled, with up to 1.5 m of soil, in 1986 (Pers comm Mrs C Preston). This area may have given the farm the name "Boghole" in 1801 (OS 1 inch First Edition, published 1801) or "Bog's Hole" in 1885 (OS 25 inch First Edition, published 1885). The material for both infilling this area and improving the track came from an excavation c. 50 m by 30 m, for the present pond, situated 30 m to the west. This work also destroyed a pair of parallel ditches, set between 10 m and 20 m apart, which ran across the base of the valley (see below).

TQ 6470 6493. The 'Mid Bay' (g)

Originally c. 52 m long, this bay crosses the western valley 170 m upstream from the 'Lower Bay'. It is a bank, generally poorly preserved, with the exception of the eastern end, which projects some 15 m from the valley side, and survives to a height of 1.7 m; it is 11.2m and 2.1 m wide across the base and top respectively. At (h) a narrow, steep-sided channel, measuring 0.6 m wide at its base, is possibly an original breach eroded by later water movement. Heights recorded during the survey demonstrated that this bay would have been drowned by the head of water behind the larger 'Lower Bay' (a) downstream, suggesting perhaps that the levelling of the western section of the 'Mid Bay' was contemporary with a later phase of construction which included the 'Lower Bay'.

Downstream from the bay, a silted leat, 16.8 m long, 3.4 m wide and 0.3 m deep runs parallel to the bay separated by a berm 3.1 m wide. The eastern end of this leat feeds into a boggy area which may be the site of a wheel-pit downstream of the breach (h). Above the bay a heavily silted channel, 0.1 m deep, running parallel along the southern edge of the bay is possibly caused by natural drainage. However, both channels are visible on an aerial photograph of 1947 as faint but regular cropmarks, comparable to those destroyed by the modern pond (RAF 1947). A third pair of parallel channels crossing the valley bottom is also discernable upstream at the present edge of the wood. It is possible that all these channels represent attempts to drain the valley bottom or to manage the boggy field as a water meadow.

Approximately 25 m north from the bay, a spur (i) projects obliquely for 20 m downstream from the eastern side of the valley. At its southern end it measures 11.5-m wide and 0.7 m high, diminishing to 6.8 m wide and 0.3 m high at its northern end. This barrier probably directed the flow of water into a steep sided leat (j), possibly a tail-race c. 25 m long and 2.8 m wide, which runs obliquely across the valley bottom to the course of the present stream. The well-defined form of this feature suggests that its sides may have been masonry or timber lined. It is equally clear on an aerial photograph of 1947 and was not recut as part of the 1986 drainage works (RAF 1947). Towards the southern end of the leat and adjacent to the tip of the spur on its west, an ovoid mound (k), 15.2m north to south by 10.8 m and 0.4 m high, is possibly an eroded building platform.

Beyond the projecting spur (i), a watercourse (l), 3.8 m to 7.0 m wide and 0.4 m deep meanders for 35 m along the middle of the valley bottom. Its variable profile and course suggest a natural origin, either as a stream channel pre-dating the bay or an overflow subsequent to the site's abandonment. A second channel, 3.8 m wide and 0.2m deep, which curves some 18 m south-west from the breach (h) and another stretch of similar dimensions, which is partially buried by modern dumping upstream from the bay, are probably also natural watercourses. All appear as broad dark cropmarks on the 1947 aerial photograph (RAF 1947).

Modern dumping has taken place in two main areas, the first on the eastern side of the valley south-west of the modern pond where a dump of spoil and rubble with maximum dimensions of c. 25 m north to south by 15 m and 0.8 m high obscures the natural scarp. The second lies upstream of bay (g) where a large dump of soil and agricultural refuse extends in a 25 m wide strip for 105 m along the eastern side of the valley. This deposit reaches a maximum height of 3.6 m and obscures the natural valley side, only a short stretch of which is preserved in the overgrown hedge-line. The regularity of the surviving valley side immediately upstream from the bay would suggest it to have been modified, either to obtain clay for the construction of the bay or by water action subsequent to the flooding of the pond.

On the valley side above the eastern end of the bay (g) are two features of unknown function. The first is an irregular platform 14 m north to south by 5 m wide which is cut into the natural scarp. A modern temporary structure occupies its northern end but it is possible that there was an earlier building. The spur (i) has functioned as a track in the recent past and may originally have provided access between the platform and the valley bottom. Alternatively, the irregular nature of the base and sides of the

platform might suggest an origin as a quarry for the construction of the bay. An irregular scarp to the north-east of the platform, between 0.4 m and 1.1 m high may be a dump of spoil from the valley side, but this is uncertain.

TQ 6450 4270 The 'Upper Bay'

Originally c. 100 m long, the 'Upper Bay' is a bank up to 2.6 m high averaging 6.0 m wide across the top and c. 13 m to 18 m wide across the base, traversing the western valley north-west to south-east. This is probably the bay recorded by Straker in 1931 (Straker 1931, 281). The breadth of the top of the bay suggests that it may have been used as a road and the stream flows through a central breach 6 m deep and between 4 m and 12 m wide. The north-western end of the bay has been modified slightly by the outflow from a water treatment works at TQ 6437 4265, but the features there are comparable to those at the south-eastern end of the 'Mid Bay' (g). A spur, between 1.8 m and 1.5 m high and with widths of 1.4 m and 7.2 m across the top and bottom respectively, projects 13 m north east obliquely into the valley bottom. To its west an original channel distorted by the modern outfall is directed by the spur into a leat some 12 m long, 1.9 m wide and 0.3 m deep, irregularly embanked on its eastern side to a maximum height of 0.5 m and width of 3.8 m. This feature, although possibly a tail-race, stops some 10 metres short of the present stream course but effectively returns the water from the outfall to the stream, and may therefore be of entirely modern construction.

A possible building platform 20 m north-east to south-west by 9.5 m is terraced into the valley side immediately north-west of the western end of the bay; this may be the site of a mill building with a wheel in the same position as the modern outflow.

Starting 2.5 m downstream of the eastern end of the bay, an eroded bank on average 3.8 m wide and 0.5 m high extends some 35 m to the north-east at right angles to the bay, creating a boggy channel 7.5 m wide along the base of the eastern valley side. This feature may have been a spillway.

To the south-east of the eastern end of the bay, a water-filled sub-rectangular depression, measuring some 30 m north to south by 20 m and at least 2.5 m deep, is probably a quarry for the clay used in constructing the bay. A second adjacent depression measures some 10 m north to south by 8 m by 1.3 m deep. The WIRG located a small quantity of Straker's 'casting-sand' under leaf mould 1.5 m west of the stream and some 3 m downstream of the bay, but this could not be located by the RCHME (Herbert 1993, 11-14). It appears that the size of the deposit was exaggerated

by Straker, and that its condition has deteriorated so much that it cannot certainly be identified as casting sand.

TQ 6463 4245 The 'East Bay'

This bay is in poor condition. Since depiction by the OS in 1963 (OS 1:25000 published 1963), the field boundary at this point has been moved east to the edge of the stream, and the western end of the bay has been completely ploughed out (OS 1:2500 published 1963). Beyond the stream, the remains of the south-eastern end of the bay are presently so densely overgrown that measurement is impractical. The OS depiction of the bay as a whole gives approximate dimensions of 75 m long and widths of 4 m and 14 m across the top and bottom respectively. In addition to the breach through which the stream now passes, a second breach some 9 m wide was located 23 m from the north-western end.

Miscellaneous Features

At TQ 6456 4247 a quarry hollow on the valley side recorded by the WIRG in 1992 has recently been extensively recut to hold a fishing pond (Herbert 1993, 11-14). A further five probable and three possible quarry hollows have been identified along the northern side of the valley (Pers comm Mr S J Sommerville). These lie at TQ 6455 4300, TQ 6457 4311, TQ 6462 4313, TQ 6467 4327, TQ 6470 4332, TQ 6482 4345, TQ 6487 4356 and TQ 6490 4359, and vary between 15 m and 25 m in diameter and between 0.5 and 2m in depth. In Cinderhill Wood at approximately TQ 6495 4275 the RCHME located two previously unrecorded sub-rectangular quarry hollows, the larger measuring 35 m by 16 m and between 0.5 m and 2.5 m deep and the smaller 18 m by 12 m and between 2 m and 3 m deep. Adjacent to the latter on its south-western side, a distinct mound measuring 20 m by 12 m and 3.0 m high was augured but did not appear to be an iron ore stockpile nor was there any evidence for ore extraction in the vicinity. Furthermore, in the course of both the RCHME survey and the WIRG visit, the beds of both streams were examined for evidence of iron-working slag, but none was found; the concentration of quarry hollows is suggestive of industrial extraction but cannot be linked directly with the bays on present evidence. Although marl pits are widely found in the Wadhurst clay deposits, such a large concentration would be unusual.

Most of the coppice stools, which were noted frequently in Cinderhill Wood and occasionally in the wooded upper stretch of the western valley, appear to have last been harvested 60 to 70 years ago, though these woods were awarded as coppice in 1838 (Kent CRO (a) 1838). The main species is oak with some birch and occasional beech, chestnut and ash.

Interpretation

The interpretation of the site as a whole is problematic, given that the almost total absence of ore and slag appears to demonstrate conclusively that its function had nothing to do with iron working. The condition of the 'East Bay' makes it impossible to comment on in more detail. The 'Upper Bay', which was singled out by Straker, most closely resembles other known iron-working sites with its possible spillway, indications of the site of a mill building and the scant evidence of metallurgical waste. Such complexity argues that it was more than a supply pond. The 'Mid Bay' (g) is markedly less ambitious in its construction but cannot have acted as a supply pond and is likely to represent an earlier phase of activity in the valley. Although there is some evidence for a building and the use of water power, its precise nature remains speculative. The same must apply to the massive 'Lower Bay' (a).

Manorial fishponds of comparable size and location are known, for example at Paulerspury in Northamptonshire (RCHME 1982, 114-6 and NAR SP 74 NW 37), but the absence of a directly associated manorial complex or references to fishponds in the records of surrounding manors does not lend any support to this view. It is possible that 'Boghole' is a corruption or a rationalisation of the name Bockingfold, which exists in various forms as early as 1232 (Wallenberg 1934, 307 and Glover 1976, 23), land which was held as part of the manor of Chatham by Hamo de Crêvequer from 1260-63. The precise boundaries of this holding are unknown, but it certainly included Cinderhill Wood and Five Wents to its south-east. The 'fold' or 'field' element of the name is argued by Witney to refer to a Roman or earlier clearance in the forest, and to be associated with early bloomery sites, supporting the WIRG argument that the iron working place names are not connected with the bays (Witney 1976, 18-21, 237).

Clearly the bays, leats and adjacent building platforms are strongly suggestive of water powered machinery for which there is a limited number of other interpretations. Corn milling seems unlikely given the number and scale of the earthworks. The only local example was Herring's Mills some 0.5 kms to the south-west at TQ 6213 4208,

where a small water-powered corn mill is documented between 1732 and 1812 (Kent CRO (b)) and possibly as early as 1668 (Kent CRO (c)) but was disused by 1885 (OS 25 inch First Edition, published 1885). There is no evidence for it ever having occupied a much larger site.

Very little research or fieldwork has been devoted to the Kentish broadcloth industry, which grew from the mid 16th-century to reach importance in the first three decades of the 17th-century but declined over the first half of the 18th-century. Though a major employer, production was mostly small scale with the exception of the fulling process, which gave the cloth its distinctive fine texture and appearance. Entrepreneurs were responsible for the water-powered fulling mills and for the subsequent dying, marketing and distribution of the cloth. Significantly, not only did the broadcloth industry use water power but also charcoal for heating dying vats, and marl as a cleansing agent instead of fullers earth (Tarbutt 1874, xci - civ and Pile 1967, 6). This could explain the concentration of marl pits and the presence of coppiced woods in the Badsell Park Farm area. The fulling mill at Ardingly in Sussex, the only excavated example of this type and period, reused an earlier forge bay and the excavators pointed out both that the earthworks of the two phases were indistinguishable on the surface and that the distinctive remains of the fulling mill were very insubstantial. The re-used bay was 70 m to 80 m long and a single water wheel was used to power a wooden hammer which beat fullers earth into the broadcloth. The T- shaped mill building measured 7.0 m by 9.0 m and is thought to have comprised a wooden superstructure resting on a masonry foundation (Bedwin 1976, 34 - 64).

There is no specific documentary reference to fulling mills in the Matfield area but the town of Cranbrook, some 9 miles away from Badsell Park Farm, was regarded as the centre of the industry. A bill in the Lords in 1593 "for the mayntenance of cloathinge with the parish of Cranbrooke ..... and within 8 miles of the same parish" declared that "the trade of making and dying cloth, has, for a long time, employed the poor people within twenty miles of Cranbrooke and the greatest number of inhabitants thereabouts have lived thereupon" (PRO State Papers 1637, 290). In the absence of specific evidence and more extensive fieldwork on similar sites, no firm conclusion can be drawn, but it is possible that the earthworks surveyed by RCHME are in fact connected with the post-medieval fulling industry.

Method

The earthworks were surveyed using a Wild TC 1610 electronic theodolite with integral distance measurement. Data were captured on a Wild GRM 10 Rec module and plotted via computer on a Calcomp 3024 plotter. Further details were supplied with Fibron tapes using normal graphical methods.

The site archive has been deposited in the National Archaeological Record in Southampton, TQ 64 SW 8.

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CAMBRIDGE	KENT	1:1000	TOTAL STATION	TQ 64 SW
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