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BRONZE AGE FEATURES, INCLUDING A BURNT MOUND, AT DEALS GATEWAY (FORMER DEPTFORD PUMPING STATION), DEPTFORD

STEPHEN HAMMOND

with contributions by
Siân Anthony, Lucy Cramp, Steve Ford and Frances Raymond

Excavations during the redevelopment of the former Deptford Pumping Station revealed traces of Bronze Age activity on a raised gravel island found sealed below alluvium, which in turn had been covered by made ground. Features included a deposit of cremated bone and a burnt flint mound. Radiocarbon dating obtained from charcoal within the cremation deposit was calibrated to 1210-995 BC, and charcoal taken from the burnt flint mound to 1685-1520 BC, suggesting periodic use of the site within the middle and later Bronze Age. A large expanse of peat surrounded the gravel island and a series of radiocarbon dates taken from a column sample through the total depth of the peat, coupled with pollen analysis, show that the water course surrounding the island did not begin to fill in until well after the Bronze Age, probably not until the Roman period.

An archaeological investigation was carried out by Thames Valley Archaeological Services on the site of the former Deptford Pumping Station, Deals Gateway, Deptford (TQ 37525 76800) (**Fig. 1**). The investigation was commissioned by Mr Steve Trenwith and funded by St James Group Ltd. The site comprises an irregular plot of land south of Deptford Bridge on the boundary between Lewisham and Greenwich, on the eastern bank of the Ravensbourne River which flows northwards to join the Thames at Deptford Creek. The site lies on the Thames floodplain with alluvium overlying gravel and peat, at a height of approximately 5m AOD.

The archaeological potential of the site was highlighted by a desk-based assessment (Lowe 1999) and confirmed by a field evaluation (Wallis 2003; see below). The fieldwork was supervised by the author, with the assistance of Sean Wallis and Andrew Taylor, between March and June 2004. The archive is currently held by Thames Valley Archaeological

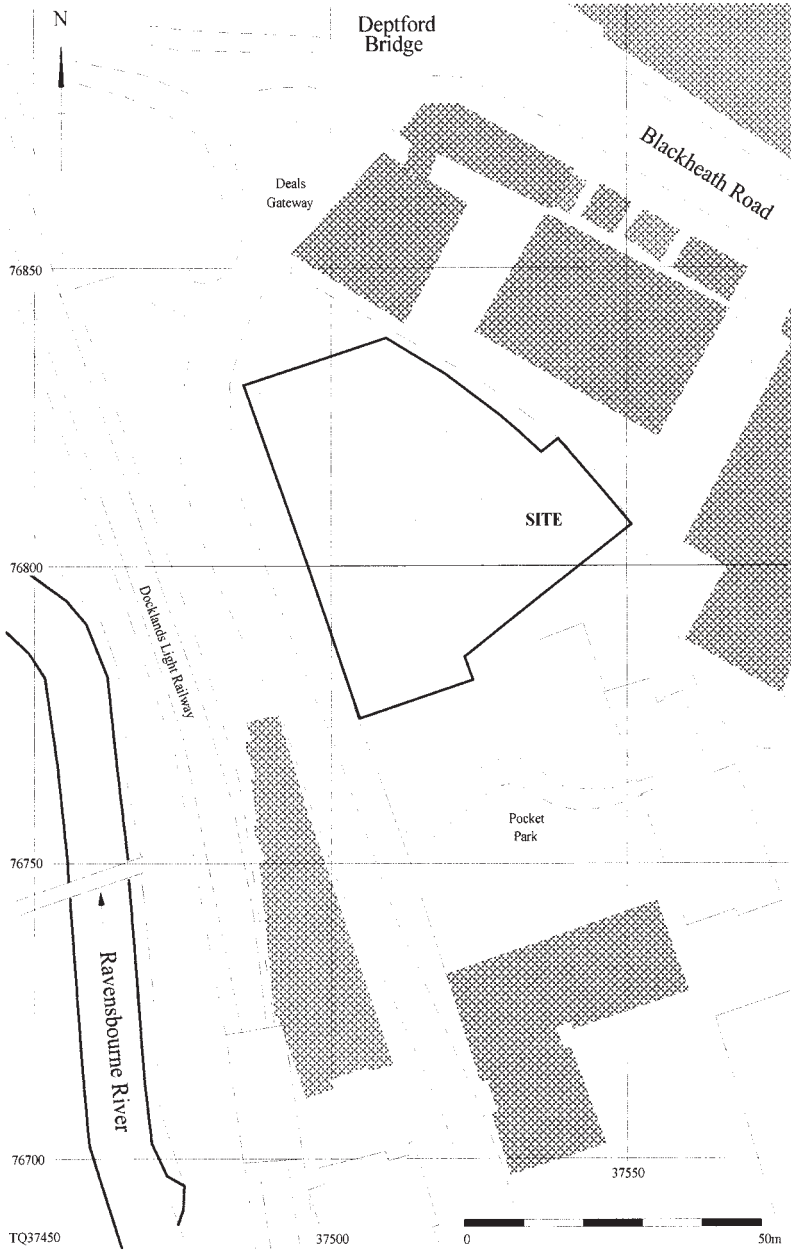

Fig. 1 Location of site.

Services Ltd and will be deposited with the Museum of London in due course. The site code is DPS03.

Archaeological background (after Lowe 1999)

The east bank of the Ravensbourne river has provided a quantity of prehistoric finds including Mesolithic tools and two Bronze Age bronze axes. Archaeological investigations to the north have revealed an Iron Age pit containing a flint artefact and a fragment of quernstone. The area has produced a number of Roman finds, including a cremation burial to the south and the remains of a possible Roman building on Deptford High Street. Saxon activity is represented by two inhumations to the west of the Ravensbourne. Medieval features include a fourteenth-century water mill, located to the north of the site at Deptford Creek and a tile-built oven, remains of a fourteenth- to fifteenth-century wall and several pits to the west. Deptford Bridge, which crosses the Ravensbourne to the north of the site, was initially recorded as a wooden bridge from AD 1345-6 before being rebuilt in stone by 1570. A hermitage was built to the east of the bridge during the late medieval period. During the post-medieval period the area saw development including seventeenth-century terraced housing to the north-west, and the Deptford water works.

The presence of alluvium and peat has led to good survival of deposits with preservation of organic remains, such as the complex of Bronze Age wooden structures at Atlas Wharf, on the south-west tip of the Isle of Dogs (MoLAS 2000, 99). Recent excavation at Express Wharf on the west side of the Isle of Dogs (site WYO01, see Fig. 1) revealed both earlier prehistoric finds (flint and pottery) and Roman occupation (Anthony and Ford 2004). One feature of the increasingly wet environment in the Neolithic, and more especially in the Bronze Age, is the construction of wooden trackways to link higher, drier settled areas (gravel islands) with marshy areas between (Meddens 1996). A Neolithic trackway is recorded from Silvertown to the east (Crockett *et al*. 2002).

Four evaluation trenches were excavated by TVAS on the site in 2003 (**Fig. 2**). Trench 4 contained a deposit of burnt flint and a prehistoric flint flake lying within alluvium overlying gravel. The deposits were deeply buried beneath modern made ground at approximately 1.6m AOD. This deposit of burnt flint and charcoal was thought to represent the remains of a distinctive monument type known as a 'burnt mound'. Because of the depth of the buried deposits discovered, it was not possible fully to investigate the feature exposed during the evaluation because of the sheer scale of digging required to allow safe access. It was considered prudent to wait until the excavation phase to examine the known archaeology further. A bulk sample was taken from part of the burnt flint deposit removed during its exposure.

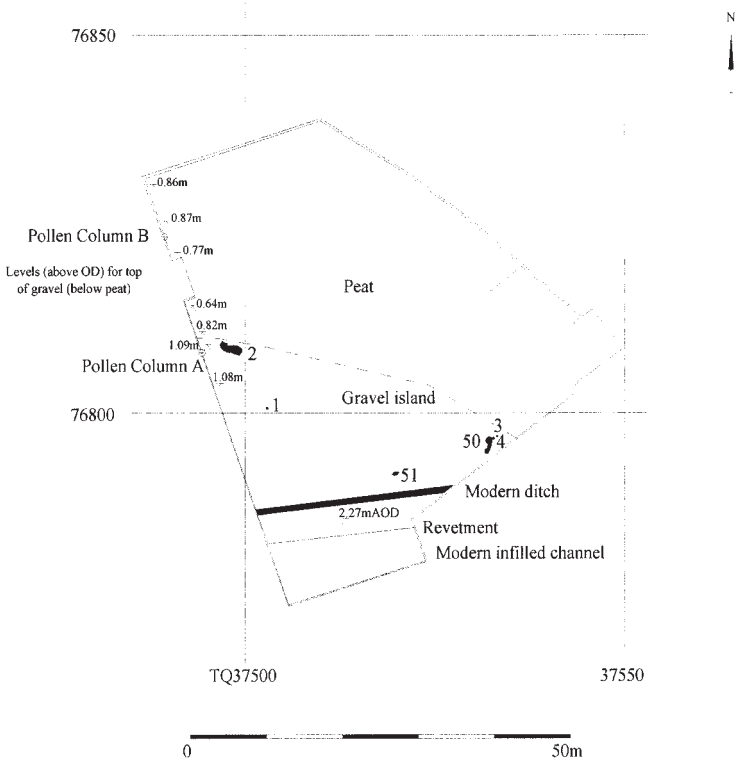

Fig. 2 Plan of features excavated.

The Excavation

The excavation covered the whole extent of the new basement (Fig. 2). Made ground was removed by a 360° mechanical excavator fitted with a toothed bucket to expose the uppermost surface of the alluvial or peat deposits. On and below this level, a toothless bucket was employed to take the rest of the stratigraphy down in spits to 0.20m into the first geological gravel horizon, under close archaeological supervision across the entire site.

Seven soil samples were taken during the course of the excavation, one for cremation material and the others for charred plant remains. Two column samples were taken for environmental evidence, one through a peat channel deposit [57] (column B) and the other through a clay/gravel

deposit [56] (column A). The peat channel deposit sample (column B) was analysed in detail but radiocarbon dates obtained subsequently showed that the material dated did not represent a chronological accumulation as expected but was thoroughly jumbled. The results of this analysis are held in the archive but it is not felt useful to detail them here. Given this, column A was not analysed.

Results

From the excavation it became apparent that the site originally formed a small area of raised ground surrounded by lower, wetter areas which had subsequently been infilled with a thick organic deposit. Two broad phases of activity were identified: Bronze Age and late post-medieval (not reported here).

The natural geology on the site consisted of a gravel 'island' below a buried alluvium at the south at 1.10m AOD, dipping into a peat-filled channel. The surface of the gravel dipped rapidly from the 1m contour to 0.64m within the space of a 5m horizontal distance, and thence rose back gradually at around 0.04m per 2m towards the north-west of the site, eventually gaining 0.90m AOD (**Fig. 3**). Six features were found with a broad Bronze Age date range, lying on or cutting through the gravel island. Samples of charcoal from the cremation burial [1] and burnt flint mound [50] were radiocarbon dated and show that the phasing can be sub-divided within this period with the burnt flint mound dating to the middle Bronze Age and cremation burial to the later Bronze Age.

Close together towards the east side of the site were two postholes and a burnt flint mound. Posthole 2 was 0.17m in diameter and 0.17m deep containing a dark grey/black silty clay fill [54] with frequent charcoal flecking and moderate burnt flint inclusions. Posthole 4 was more oval in plan, 0.36m long and 0.24m wide with a pointed base and a fill [55] similar to that in posthole 2. Its shape in plan could be evidence that the post was removed.

Close to the west of posthole 4 was the burnt flint mound [50]. This feature was 2.00m long and at least 0.84m wide consisting of a dark grey/black charcoal/silt/clay deposit 0.14m thick with moderate burnt flint inclusions and included one struck flint. A radiocarbon date from this feature gives it a most probable calibrated date in the middle Bronze Age (1640-1522 BC; see **Table 1**).

West of feature 50 was smaller burnt flint mound [51] measuring 0.82 x 0.30m and 0.05m thick with a similar fill to 50 but not so densely packed with burnt flint. No struck flint was recovered from this deposit.

Cremation deposit [1] was 0.32m in diameter and 0.12m deep, located near the western boundary of the site. Its fill consisted of blackish/grey clay/silt and pyre debris [52] and was sampled in spits. A radiocarbon

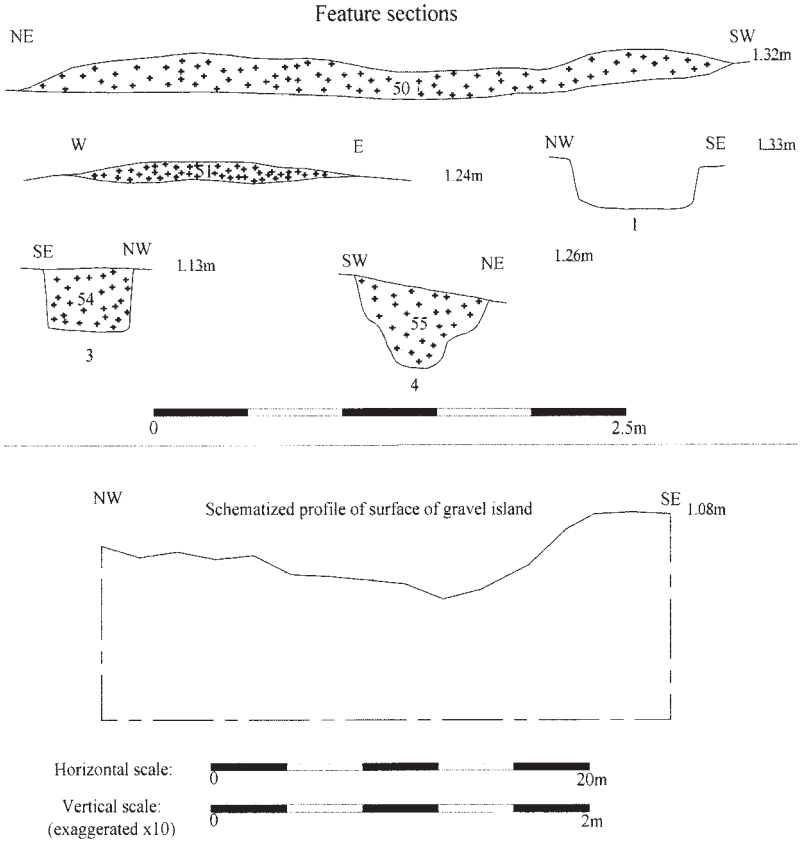

Fig. 3 Sections.

date from charcoal from the feature dated it to the later Bronze Age (most probable calibration 1132-998 BC; see Table 1).

Feature 2, located furthest north-west on the edge of the gravel island [56] was kidney-shaped in plan, 2.90m long and 0.32m deep with irregular sides and a dark grey/black silty clay fill [53] with frequent burnt flint and moderate charcoal inclusions. The shape suggests it was a burnt-out tree bole or the re-use of one to dump previously used flint. No other finds came from this feature. Nothing suggests it was, for example, a pyre site.

TABLE 1. RADIOCARBON DATING AND CALIBRATION

KIA26417	Charcoal, from context 52, spit 5 (0.08-0.10m) of cremation deposit 1.		
Radiocarbon Age	BP2898 ± 27		
Calibrated Ages	cal BC 1105, 1050	Years cal BC	Probability
	One Sigma Range: (Probability 68.3 %)	1126–1037	62.2 %
		1031–1022	6.1 %
	Two Sigma Range: (Probability 95.4 %)	1210–1199	1.9 %
		1192–1176	4.8 %
		1169–1140	5.7 %
		1132–998	83.0 %
KIA26310	Charcoal from burnt flint mound 50. Sample depth 0–0.10m		
Radiocarbon Age:	BP3316 ± 25		
Calibrated Age:	cal BC 1604	Years cal BC	Probability
	One Sigma Range: (Probability 68.3 %)	1677–1673	2.0 %
		1622–1598	20.5 %
		1590–1576	10.2 %
		1572–1527	35.5 %
	Two Sigma Range: (Probability 95.4 %)	1682–1668	6.7 %
		1660–1649	4.8 %
		1640–1522	84.0 %
KIA26309	Column B from peat (57) (0.01- 0.02m)		
Radiocarbon Age:	BP1913 ± 25		
Calibrated Age:	cal AD 81	Years cal AD	Probability
	One Sigma Range: (Probability 68.3 %)	70–92	29.4 %
		97–126	38.9 %
	Two Sigma Range: (Probability 95.4 %)	25–43	5.7 %
		47–133	87.8 %
		160–170	1.0 %
		200–207	1.0 %

TABLE 1 (cont.). RADIOCARBON DATING AND CALIBRATION

KIA26306	Column B from peat (57) (0.20-0.21m)		
Radiocarbon Age:	BP2423 ± 31		
Calibrated Ages:	cal BC 480, 469, 446, 444, 412	Years cal BC	Probability
	One Sigma Range: (Probability 68.3 %)	741–724	6.1 %
		538–530	3.4 %
		522–406	58.7 %
	Two Sigma Range: (Probability 95.4 %)	760–681	22.9 %
		666–637	3.8 %
		590–579	1.0 %
		548–401	67.7 %
KIA26307	Column B from peat (57) (0.35-0.36m)		
Radiocarbon Age:	BP2062 ± 19		
Calibrated Age:	cal BC 51	Years cal BC	Probability
	One Sigma Range: (Probability 68.3 %)	105–103	1.4 %
		95–41	63.5 %
		7–3	3.4 %
	Two Sigma Range: (Probability 95.4 %)	161–131	9.5 %
		118–38	76.3 %
		31–20	3.8 %
		11–1	5.7 %
KIA26308	Column B from peat (57) (0.76-0.77m)		
Radiocarbon Age:	BP1383 ± 22		
Calibrated Age:	cal AD 657	Years cal AD	Probability
	One Sigma Range:	643–664	68.3 %
	Two Sigma Range: (Probability 95.4 %)	619–631	5.7 %
		637–685	89.7 %

FINDS

Pottery *by Frances Raymond*

Thirty-seven pieces of prehistoric flint tempered pottery (16g) of probable middle to late Bronze Age date were recovered from the site. The high

sherd count is a reflection of the occurrence of numerous tiny ceramic fragments in the sieved fractions from two postholes (3 and 4). In each case these almost certainly represent the fractured remains of a single sherd. None are of sufficient size to be suitable for a detailed fabric description, but enough survives to demonstrate that the pottery from the postholes was tempered with common to very common coarse burnt flint (up to 7mm). Wares of this type are a dominant element of middle to late Bronze Age assemblages from sites in the middle and lower Thames Valley.

A single sherd (4g) from the ancient ground surface, is from a thin-walled vessel (4mm thick) made from a much sandier fabric. This contains moderate quantities of burnt flint (up to 2.5mm) and very common fine to medium grained angular quartz sand (0.12 to 0.5mm). Fabrics of this type can occur in both Neolithic and middle to late Bronze Age deposits and in isolation cannot be phased with absolute confidence. In this instance, the radiocarbon dates suggest that a middle to late Bronze Age date is more likely.

Struck flint *by Steve Ford*

The one piece of struck flint from the deposit of burnt flint [50] is not closely datable but probably belongs within the Neolithic to Bronze Age period. Three spalls (pieces smaller than 20 x 20mm) were recovered from a sieved sample of posthole 3. These are small waste fragments from manufacture.

Cremated bone *by Siân Anthony*

One context was considered on excavation to be a cremation burial; a small pit [1, with fill 52] 0.12m deep that contained only 171g of cremated human bone. The pit was excavated in spits of 0.02m, each sample was wet sieved and the bone sorted into fractions consisting of pieces over and under 10mm (**Table 2**). Large quantities of charcoal and small amounts of burnt flint were recovered with the bone. No pyre goods or grave goods were present. Both size fractions were sorted for identifiable material; however, the small and fragmented nature of the samples prohibited identification to element or body area. The deposit represents only a moderate amount of redeposited pyre debris and gives little information on the individual buried on the site. One small fragment was identified as a pedal phalange shaft and twelve pieces were cranial. The majority of the other fragments could only be identified as limb bone shaft fragments. No assessment of the individual's age or sex could be attempted although the size of the phalange does suggest a skeletally mature individual.

The upper levels contained less bone than the centre spit. This suggests that the majority of deposition lay there, so bone loss from later disturbance

TABLE 2. HUMAN BONE FROM CREMATION DEPOSIT 52

Spit	Weight (g)	Max frag (mm)	Weight of <10mm (total)	Weight of <5mm
1	8	11	<1 (3)	7
2	22	11	4 (14)	18
3	40	34	6 (14)	34
4	38	19	8 (23)	30
5	55	20	13 (39)	42
6	8	18	<1 (3)	7
Total	171	-	33g (19%)	138g (81%)

may be minimal. The bone appears in good condition with little chalkiness but trabecular bone is not well represented suggesting that bone may have been lost through environmental conditions. The extreme fragmentation of the bone suggests some disturbance and breakage possibly before excavation.

The majority of the bone was white suggesting good oxidization but there were pieces of bone with grey and black colours particularly well represented in spit 4. The cremation of the individual may not have been thoroughly tended to produce full oxidization of the smaller fragments of bone. The fragmentation of the bone is also extreme, only 19 per cent of the bone measures over 10mm in size, the maximum (post-excavation) fragment size is only 34mm and this is exceptionally large in comparison to the other fragments. The overall weight of the sample is also extremely low. The weight of bone expected in a cremation burial of an average adult ranges from 1001.5 to 2422.5g with an average of 1625.9g (McKinley 1993) from complete collection of the remains. Cremation of a juvenile or infant and incomplete collection could give smaller weights though here the weights are much less suggesting that this deposit is incomplete.

The large amounts of debris including burnt flint and charcoal, and the condition of the bone itself, indicate that the deposit as a whole represents pyre remains rather than cremation burial. It is likely that larger fragments of bone had been selectively collected and disposed of elsewhere.

Radiocarbon Dating

Six samples from the excavation were submitted to the University of Kiel for radiocarbon dating (Table 1). This included a sample of charcoal from the cremation deposit [52], one from the burnt flint mound [50] and four samples taken from column sample B, through peat deposit

[57] surrounding the gravel island. Details of the methodology are in the archive, all the results are considered reliable. 'Calibrated age' is given according to CALIB rev 4.3 (Stuiver *et al*. 1998).

In summary the most probable results showed the deposit of cremation/pyre material dated 1132-998 cal BC, and the burnt mound dated 1640-1522 cal BC. The column sample dates were wildly mixed, indicating movement of material around in the peat either as it accumulated, or after deposition, but this formation as a whole seems to be Iron Age, Roman and later. There is no reason to suspect the radiocarbon determinations, so the 'sequence' through the column sample must be regarded as unreliable and the pollen sample has had to be discounted. The second column sample taken was not analysed in the light of this disappointing result.

Charcoal *by Lucy Cramp*

Samples were taken from six deposits for environmental analysis; and in the case of the pyre debris deposit, although it was not sampled primarily for environmental remains, samples were taken from six successive spits within a single deposit. The sediment was washed over a 0.25mm mesh and the flots retained for inspection. In addition, charcoal was handpicked from samples 1 and 6. Two samples did not contain any significant material. All fragments large enough for reliable identification were identified under low- (up to x40) and high-power (up to x400) magnification (**Table 3**).

The burnt flint mound (sample 1) contained mixed charcoal of maple (*Acer* sp.), hazel (*Corylus* sp.) and the Pomoideae family (hawthorn, apple etc.). This indicates the indiscriminate use of fuel deriving from well-established scrub or woodland scrub.

The samples (5 and 6) from two postholes near the burnt flint mound also contained moderate amounts of charcoal, dominated by alder (*Alnus* sp.), a shrub which prefers damper or riverside conditions. Both samples also contained frequent fragments of maple charcoal which grows in woods or well-established scrub. In addition, sample 5 contained a significant amount of hazel charcoal (*Corylus* sp.), whilst sample 6 included fragments of oak (*Quercus* sp.) and the Pomoideae family. These samples therefore indicate the exploitation of mixed scrub that perhaps was growing under oak woodland; and alder which may have been growing on wetter ground in a wood or alongside the nearby watercourse.

The late Bronze Age pyre debris deposit contained abundant and very fragmented charcoal, in similar relative proportions, throughout the depth of the deposit, with the exception of the deepest spit (0.10-0.12 m) which contained very little identifiable charcoal. These samples were predominantly composed of alder charcoal, with a lower frequency of oak. Purging buckthorn (*Rhamnus catharticus*) and hawthorn-type charcoal

TABLE 3. CHARCOAL

Sample		*1*	*3*					*4*	*5*	*6*
Cut		-	1	1	1	1	1	2	3	4
Fill		50	52	52	52	52	52	53	54	55
Type		Burnt flint mound	Cremation burial					Pit/tree bole	Post hole	Post hole
Spit (metres)			0.00-0.02	0.02-0.04	0.04-0.06	0.06-0.08	0.08-0.10			
Vol. (litres)		10	4	4	4	4	4	60	10	10
Quercus sp.	Oak		++	+	+	++	+	+		+
Alnus sp.	Alder		++	+++	+++	++	+++	+++	+++	++
Corylus sp.	Hazel	++							++	
Alnus or *Corylus* sp.	Alder or hazel								+	
Rhamnus catharticus	Purging buckthorn			+		+				
Pomoideae	Hawthorn, apple etc.	++					+			+
Acer sp.	Maple	++							++	+++

+ present ++ some +++ much

(Pomoideae), plants which exist as scrub or woodland undergrowth, were also recovered. The charcoal overall indicates the use of mixed fuel for the pyre with a preference for alder, but which did not exclude oak and other shrubs likely to have been growing nearby. Maple is entirely absent, which suggests that it may have been less easily available by this time, or deliberately excluded from selection.

Sample 4, from tree bole 2, contained a moderate abundance of hazel charcoal, with oak also represented.

Overall, the charcoal recovered from these Bronze Age features indicates the seemingly arbitrary use of scrub and oak wood, along with alder which may have also been growing amongst woodland or perhaps nearer to the watercourse.

Summary

The results of this small excavation are noteworthy for several reasons – the nature of Bronze Age occupation, the nature of settlement and environment in the lower Thames Valley and limited further evidence for late Bronze Age burial practice. There were few finds of any sort, but a chronology has been established using absolute dating methods.

The earliest activity on the site dates from the middle Bronze Age followed by activity from the late Bronze Age with no further land use creating subsoil features until recent times. Prehistoric activity recorded in the vicinity of the site is relatively sparse, amounting to just two Bronze Age axes from the Ravensbourne river. No occupation sites have been found nearby. The discovery of this Bronze Age activity therefore is an important step in understanding this period within the area. Burnt flint mounds are often associated with stone- or wood-lined troughs which can contain settlement debris or, as is the case here, can simply consist just of mounds of burnt stone and charcoal which usually contain few, if any, artefacts. Finds from burnt mound sites are rare, therefore the presence of a struck flint within deposit 50 carries (marginally) increased significance.

Burnt mounds are a monument type which has been, until recently, relatively infrequently recorded in the literature for prehistoric southern Britain, and with an uneven countrywide distribution (Ehrenberg 1991, fig. 1). They are, at the most generic level of description, simple dumps of fire-cracked flint or stone and are being increasingly recognized in southern Britain mostly as a consequence of development-led investigations over the last 15 years or so (cf., Beamish and Ripper 2000). They are more frequently encountered in the highland zone of Britain and Ireland where they have been well studied and characterized (Buckley 1990) and some southern British monuments seem to be closely comparable to the highland zone types (Pasmore and Pallister 1967; Shennan 1999). There

are numerous theories on the function(s) of these deposits, including their use as saunas (Barfield and Hodder 1989) or for fulling (Jeffery 1991), but it is likely that one main use is for the efficient cooking of large amounts of meat by boiling, hot stones being used to heat the water (O'Drisceoil 1988; Barber 1990, 101).

Many examples with which the site here draws comparison seem to differ from the classic highland zone types, which typically comprise a substantial crescentic mound surrounding a trough and sited very close to water. For Scottish sites, Barber (1990, 98) has recognized variation in the context of burnt stone deposition with burnt mounds proper (*fulachta fiadh*) at one extreme and occupation sites at the other. The site here comprises an elongated dump only 4 x 1m in extent and no more than 0.2m thick, and located close to water. No structural remains other than two postholes were observed in the excavation. Conspicuously absent are any features that might have functioned as a trough. In this respect it is broadly comparable to sites found in the Thames and Kennet Valleys as at Turnpike School, Newbury (Pine forthcoming); Anslows Cottages, Burghfield (Butterworth and Lobb 1992, 90); Green Park, Reading, (Brossler *et al*. 2004, 39-41); Barkham Square, Wokingham (Torrance and Ford 2003); and Greywell Road, Hatch, Basingstoke (Oram 2006). (For another Kentish example, see Parfitt 2006.)

Burnt mounds are a predominantly late Bronze Age phenomenon. The few English radiocarbon dates available to the overview of Brindley and Lanting (1990, fig. 25) confirmed this perspective, while more recently acquired dates from Turnpike School, Newbury (996-807 cal BC: Pine forthcoming) and Barkham Square, near Wokingham (two dates centred on 900 cal BC: Torrance and Ford 2003) are in agreement. The sites at Anslows Cottages, Burghfield (Butterworth and Lobb 1992, 90), Green Park, Reading (Brossler *et al*. 2004, 39–41) and Harbridge, Hampshire (Shennan 1999, 177) are dated by association with late Bronze Age pottery. Recent reports continue to document sites with late Bronze Age dates from sites further afield such as in the Midlands (Leah and Young 2002; Beamish and Ripper 2000).

The single radiocarbon date for Deptford of 1640-1522 BC places the site firmly in the middle Bronze Age. This date is somewhat earlier than the conventional dating discussed above but is not regarded as unreliable, nor need it be considered exceptional. A burnt mound excavated in 1988 at Phoenix Wharf in Bermondsey, London is closely comparable, at 1690-1490 BC (BM 2766: Bowsher 1991; Sidell *et al*. 2002, 28); a site at Bestwall Quarry, Dorset is firmly associated with middle Bronze Age pottery (Ladle and Woodward 2003). Sites further afield as at Feltwell Anchor, Norfolk, where the associated pottery is Beaker (Bates and Wiltshire 1992) and at Willington, Staffs., where the associated material is late Neolithic (Beamish and Ripper 2000) indicate an even longer tradition.

Analysis of the cremation deposit [1] suggests a token burial and the fill of the feature is likely to represent the collection of pyre debris rather than a methodical collection of the burnt bone following cremation. It may indeed be what was left behind after selective disposal of larger bone fragments elsewhere. This appears to be typical for the Bronze Age, as the entire cremated remains were rarely, if ever, collected for burial (McKinley 1997, 130).

No pyre site was observed in the excavation. Although pyre sites have been found close to Bronze Age cremation cemeteries, the chosen location of the burial on a gravel island might have made such a process impractical, depending on the ease of access to the site, however the raw materials appear to have been readily available in the local environment. Bronze Age pyres sites tend to have been constructed on the ground surface (McKinley 1997, 132). Experimental case studies have shown that heat effects of surface pyres were seen to penetrate no more than 0.10m below the ground surface, leaving ephemeral traces of its existence easily eradicated by soil erosion or other damage (McKinley 1997, 134). It is also worth noting that pyre sites were often cleared soon after use so that little evidence would remain *in situ* to identify the feature. However, it is still conceivable that any pyre might lie beyond the limits of the excavation to the west of the site in an area unaffected by the building work. No sign of settlement nearby was found either, though given the small area examined, and its location on perhaps a tiny island, and the ephemeral nature of most Bronze Age settlement remains, this need not be surprising. What may be more surprising is the late date for this deposit, well into the late Bronze Age, when settlements are better represented than burials, especially cremations. Even allowing for the use of old timber (which seems unlikely) cannot push the date very far back.

The radiocarbon dating of peat column B proved this 'sequence' unreliable with a jumbled, unchronological series of dates being recorded from the respective sub samples. This could be due to the peat itself being mixed around for a variety of reasons including animal or water movement, or contamination from roots within the sample. Nonetheless, from these results it is at least clear that the channel did not begin to fill up until well after the Bronze Age. The pollen evidence itself suggests peat formation spanned a period from the middle or late Roman period until the beginnings of industrial development in the area. The site would have been hay meadow or water meadow, species rich with no predominant flora.

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