A Middle Bronze-Age Burnt Mound at Sonning Eye Quarry, Caversham

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SUMMARY

Excavation at Sonning Eye Quarry revealed a burnt mound, which two radiocarbon dates of 1621–1498 and 1416–1266 cal BC showed to be of middle Bronze-Age date. As so often with such sites, few closely datable features or artefacts accompanied the mound. A pollen sequence and lithostratigraphic analysis of a column sample from a palaeochannel record a slow process of environmental change and suggest that the area was frequently flooded (as it still is), and may have been a marsh, or when dry, grazing land. Other evidence was very sparse.

INTRODUCTION

An archaeological recording action was carried out by TVAS at Sonning Eye Quarry, Playhatch Road, Caversham, Oxfordshire (NGR SU 7460 7640; Fig. 1) in advance of mineral extraction. The majority of the site occupied low-lying ground subject to flooding, and extensive tracts of alluvium were present, along with a large, deep peat- and alluvium-filled river palaeochannel.

Location, Topography and Geology

The site (Fig. 2) is on the north bank of the River Thames, opposite Sonning village. This location is on the floodplain at a height of 36 metres OD. The ground rises up slightly to the west. The underlying geology is mapped as alluvium with a thin band of loam to the east.[1] The geology observed was predominantly alluvium, to a depth of 4 metres in the palaeochannel towards the north of the area and 3.5 metres at the southern edge, with peat deposits also to the north and west, suggesting that much of the site lay within a Holocene river channel. Palynological assessment shows transition phases in the alluvium suggesting that the freshwater conditions in the channel underwent various changes leading to the deposition of progressively more terrestrial sediments. This analysis suggests that the area once formed part of a river bed, or prehistoric marshland with small islands of higher ground that would have been seasonally dry.

Archaeological Background

Several notable prehistoric sites are located in the vicinity of Sonning. On the south side of the river there is a Neolithic ceremonial complex comprising a cursus, mortuary enclosure and possibly oval barrows.[2] Recent geophysical survey has extended knowledge of the cursus,

[1] *British Geological Survey*, 1:50,000, Sheet 268, Drift Edition (1947).

[2] T. Gates, *The Thames Valley, An Archaeological Survey of the River Gravels,* Berkshire Archaeological Committee Publication, 1 (1975); C.F. Slade, 'A Late Neolithic Enclosure at Sonning, Berkshire', *Berkshire Archaeological Journal*, 61 (1964), pp. 4–19.

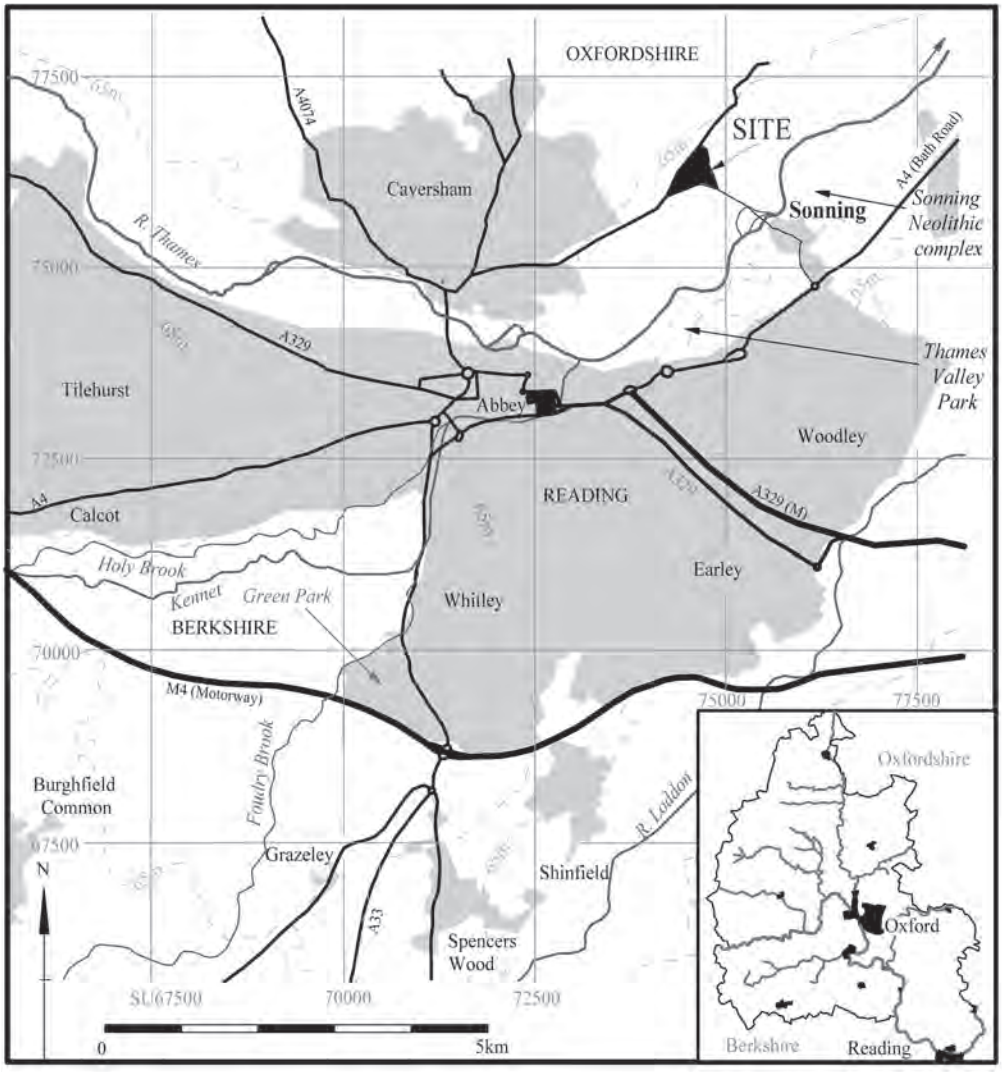

Fig. 1. Site location in relation to Caversham and Reading, with nearby sites mentioned in text

establishing its west end and thus its full dimensions (205 metres long, 35 metres wide), and added evidence for a previously unsuspected rectilinear enclosure and other features.[3] Several levelled round barrows (ring ditches) of Bronze-Age date are also present nearby, as is a Roman enclosure. Adjoining the Sonning Eye Quarry site to the south-east is another ring ditch cemetery.[4] To the east is a possible Neolithic causewayed enclosure.[5] Extensive excavation at Thames Valley Park to the south-west revealed a Beaker burial and an Iron-Age enclosure.[6]

[3] T. Dawson, 'Straighthanger Field, Sonning, Berkshire: A Geophysical Survey (Magnetic)', unpublished TVAS report, 12/6 (2012).
[4] Gates, *The Thames Valley*.
[5] This had been discounted but has latterly been re-assessed: A. Oswald et al., *The Creation of Monuments: Neolithic Causewayed Enclosures in the British Isles* (2001), p. 154.
[6] I. Barnes et al., *Excavations at Thames Valley Park, Reading, Berkshire, 1986–88* (1997).

Fig. 2. Areas of site investigated

In 2004, evaluation of the Sonning Eye site recorded deposits of undated flint nodules, human remains and timbers preserved by waterlogging, and a few stray finds of prehistoric pottery and struck flint.[7] The area where human remains were recorded was not within the eventual extraction area and so was not re-examined.

DISCUSSION

Excavation in advance of mineral extraction at Sonning Eye Quarry led to the discovery of a burnt mound, which two radiocarbon dates placed in the middle Bronze Age. Besides the burnt mound, few features were present on the site and those for the most part undated. Artefacts were also scarce: only twenty-one sherds of pottery were recovered, mostly unstratified, although the Bronze Age, Iron Age and Roman period were all represented. The few flint finds range in date from the Mesolithic to the Bronze Age. Other finds include a fragment of shale bracelet probably dating from the later Iron Age or the Roman period.

A pollen sequence and lithostratigraphic analysis of a column sample from a palaeochannel in Area A recorded a slow process of environmental change and suggest that the area was frequently flooded, and may have been marsh, or in drier periods grazing land.

The main feature of interest was the burnt mound, a feature that is infrequently recorded in the archaeological literature for southern England (though increasingly so in recent years),

[7] A. Ford, 'Sonning Eye Quarry, Northern Extension, Caversham, Oxfordshire', unpublished OA report, SOCOE 02 (2004).

and more common in the highland zones of Britain and Ireland.[8] From Oxfordshire the only previously recorded examples seem to be at Yarnton.[9] Typically located close to water, burnt mounds generally comprise a crescentic mound of burnt stone surrounding a trough.[10] They are predominantly a Bronze-Age phenomenon but Neolithic and Iron-Age examples are recorded. Some Irish examples have very extended chronologies from the Neolithic through to the late Bronze Age, as at Cahiralla Beg.[11] The interpretation of burnt mounds is that their primary purpose was for the heating of water but it is not known what this water was used for. The general opinion is that it was used for cooking though other theories include bathing, brewing and dyeing.[12] The similarity of southern English examples with their more numerous and well-studied counterparts in Ireland and the highland zones of Britain is frequently only general. Some defining features of the upland mounds are absent from mounds in this region. Although described as 'mounds', many lowland mounds survive only as spreads of burnt stone, levelled by later ploughing, so that some are more like in-filled hollows than mounds, at least as they survive today.

The Sonning site does not conform to the 'model' type of burnt mound, neither being crescentic nor surrounding a trough (though it is possible that a trough may exist in the unexcavated area). However, its characteristics are broadly similar to others in the middle Thames region, several of which have been radiocarbon dated. A large levelled mound at Green Park, Reading (Fig. 1) was dated by association with late Bronze-Age pottery and sealed a pit with a radiocarbon date of 1220–860 cal BC.[13] Further west, in the Kennet valley, are three more sites. At Anslow's Cottages a small mound was associated with a late Bronze-Age date of 840–410 cal BC.[14] Another small mound at Turnpike School, Newbury produced a late Bronze-Age radiocarbon date of 996–807 cal BC,[15] while the mound at Dunston Park, Thatcham produced a date of 1380–900 cal BC.[16]

To the south-east of the Sonning site, the mound at Barkham Square, Wokingham has two radiocarbon determinations of 1375–895 and 820–510 cal BC, indicating a lengthy use,[17] as seen here, and Jennetts Park, Bracknell produced dates of 1630–1450 and 1420–1260 cal BC.[18] At Little Marlow in the Thames valley to the east, three burnt mounds (one with a trough) and five burnt flint patches were excavated.[19] Radiocarbon dating of these three sites produced dates of 2475–2140, 2140–1920 and 1745–1385 cal BC, again indicating a very long span of use from the late Neolithic through to the middle Bronze Age.

[8] V. Buckley (ed.), *Burnt Offerings: International Contributions to Burnt Mound Archaeology* (1990).

[9] M. Ehrenberg, 'Some Aspects of the Distribution of Burnt Mounds', in M.A. Hodder and L.H. Barfield (eds.), *Burnt Mounds and Hot Stone Technology* (1991) pp. 41–58; G. Hey, 'Yarnton Cassington Evaluation', *SMidlA*, 24 (1994), p. 51; P. Topping, *Introduction to Heritage Assets: Burnt Mounds* (2011).

[10] F. Raymond, *Monument Protection Programme Single Monument Class Description: Burnt Mounds* (1987).

[11] N. Bermingham et al., *Beneath the Banner, Archaeology of the M18 Ennis Bypass and N85 Western Relief Road, County Clare* (2012), pp. 31–5.

[12] D. O'Drisceoil, 'Burnt Mounds: Cooking or Bathing?', *Antiquity*, 62 (1988), pp. 671–80; L.H. Barfield, 'Hot Stones, Hot Food or Hot Baths?',in M.A. Hodder and L.H. Barfield (eds.), *Burnt Mounds and Hot Stone Technology* (1991), pp. 59–68; Bermingham et al., *Beneath the Banner*, p. 35.

[13] A. Brossler et al., *Green Park (Reading Business Park), Phase 2* Excavations 1995 – Neolithic and Bronze Age Sites (2004), p. 39 and appendix 1.

[14] C.A. Butterworth and S.J. Lobb (eds.), *Excavations in the Burghfield Area, Berkshire* (1992).

[15] J. Pine, 'A Late Bronze Age Burnt Mound and Other Prehistoric Features, and Roman Occupation at Turnpike School, Gaywood Drive, Newbury', in S. Preston (ed.), *Archaeological Investigations along the Line of Ermin Street, in West Berkshire, 1992–2008* (2010), pp. 1–17, table 1.1.

[16] A. Fitzpatrick, 'Early Iron Age Ironworking and the 18th Century House and Park at Dunston Park, Thatcham, Berkshire: Archaeological Observations 1993–9', *Berkshire Archaeological Journal*, 80 (2011), p. 99.

[17] L. Torrance and S. Ford, 'A Late Bronze Age Burnt Mound at Barkham Square, Wokingham, 1992', in S. Preston (ed.), *Prehistoric, Roman and Saxon Sites in Eastern Berkshire* (2003), p. 93.

[18] A. Simmonds et al., *Archaeology in the Park: Excavations at Jennett's Park, Bracknell, Berkshire* (2009), p. 13.

[19] A. Richmond et al., 'Excavations of a Prehistoric Stream-Side Site at Little Marlow, Buckinghamshire', *Records of Buckinghamshire*, 46 (2006), pp. 65–101.

Another feature related to burnt mounds commonly encountered in Ireland is the burnt spread: a small patch of burnt flint without any other features.[20] There is a single example at Sonning (spread 205) and five at Little Marlow.[21]

The dating of the Sonning Eye burnt mound to the middle Bronze Age (it seals a pit of 1621–1498 cal BC and its lower layer produced a date of 1416–1266 cal BC) adds another component to the settlement record for this period, when occupation sites are infrequently recorded.

EXCAVATION RESULTS

Staging of the work divided the site into three areas (Fig. 2: A, B, C). Area C contained nothing of interest. Due to the practicalities of removal of the waterlogged alluvial levels, the areas were excavated in strips and therefore not all open at once. The very thin topsoil was removed mechanically to reveal the surface of the alluvium, which was the level at which archaeological features were observed in Area A. Certain and possible archaeological deposits were then hand cleaned and excavated. A small number of unstratified finds was also recorded (Fig. 2). Bulk soil samples were taken to recover organic remains. Once the features at this level had been dealt with, the machine was brought back across the alluvium which was removed with a toothed bucket. This excavation was observed at all times, but no archaeological feature was recorded within or beneath the alluvial deposits in Areas A or C. In Area B, however, all the significant features were below the top layer of alluvial clay, and in places also below a peaty layer.

AREA A

The Palaeochannel

A palaeochannel (1) aligned north-west to south-east was revealed at the eastern part of the site, the base of which was around 33.0 m OD. It was at least 50 m wide, rising gently to the west onto a sand ridge or island approximately 140 m wide at around 34.0 m OD in the centre and dropping to 33.5 m OD further to the west (Fig. 2). The channel cut though the natural gravel and was filled with a series of layers. A typical sequence comprised a brown silty clay (51) up to 0.27 m thick, above a grey blue clay (52) up to 0.58 m thick; beneath this was a brown organic-rich (peaty) silty clay (53) up to 0.40 m thick; this overlay a black organic-rich (peaty) silty clay (54) up to 0.44 m thick and finally beneath this was the natural gravel (55). The thickness of these strata varied reflecting the depth of the palaeochannel.

No features were cut into any of the alluvial layers, nor were artefacts observed within them. A column sample was taken though the palaeochannel in the south-east corner of Area A (Fig. 2; Table 5).

On the slightly higher ground to the west were a gully, three pits, three post holes and numerous tree holes, of which 59 were partially examined. None of these contained dateable artefacts (a few tree-throws contained the odd piece of burnt flint, and scraps of unidentified animal bone) and they are not discussed further.

AREA B

In the north of this area, the alluvium reached a depth of 4 m and comprised several phases of accumulation. At the southern end the alluvium was consistently 3 m deep and again

[20] Bermingham et al., *Beneath the Banner*, p. 35.
[21] Richmond et al., 'Excavations at Little Marlow'.

Fig. 3. Surface of burnt mound after initial stripping; scales 2 metres, 1 metre

comprised several deposits. In areas where the underlying gravel was approximately 2 m higher, only modern features were observed, uniformly visible upon removal of the topsoil and cutting the uppermost layer of alluvium. An undated wooden stake and part of a branch were recovered from waterlogged contexts (no useful information derived from these and they need not be very old) and there were also surface scatters of artefacts at this level (Fig. 2). Once the top level of alluvium was stripped away, however, Area B did reveal archaeological features.

The Burnt Mound (Figs. 3–7)

On the west side of the site was a dense spread of fire-cracked flint considered to be the remains of a burnt mound. It was buried by a thin silty clay topsoil and a dark grey silty clay alluvium up to 0.1 m thick (Fig. 5) and at the north end it was also below a layer of peat. Its full extent was not uncovered as it was located partly within an ecological stand-off zone which would not be extracted. The mound comprised a very slight domed area no more than 0.16 m high, 22 m long and at least 11 m wide as exposed. Auguring outside the area of excavation at 1 m intervals for a distance of 5 m suggests that the mound continues at least that far to the west.

The mound was divided into eight segments of roughly 4 m width to produce one long (north–south) section, three full cross-sections (west–east) and one partial (Fig. 4). Five of these slots (A–E) were dug by hand and the remaining three (F, G and H) were machine excavated. There was no evidence for a trough.

The mound was broadly composed of burnt stone and charcoal in a dark orange/brown silty clay matrix. In places these were separated by silty clay deposits without burnt flint, to suggest significant breaks in the formation of the mound (either the formation of soil or alluvium differentiating these layers), so the layers presumably reflect episodic use of the site and mound formation (Fig. 5), presumably over a long period. The mound sat atop another alluvial silt layer, in places sealing features below.

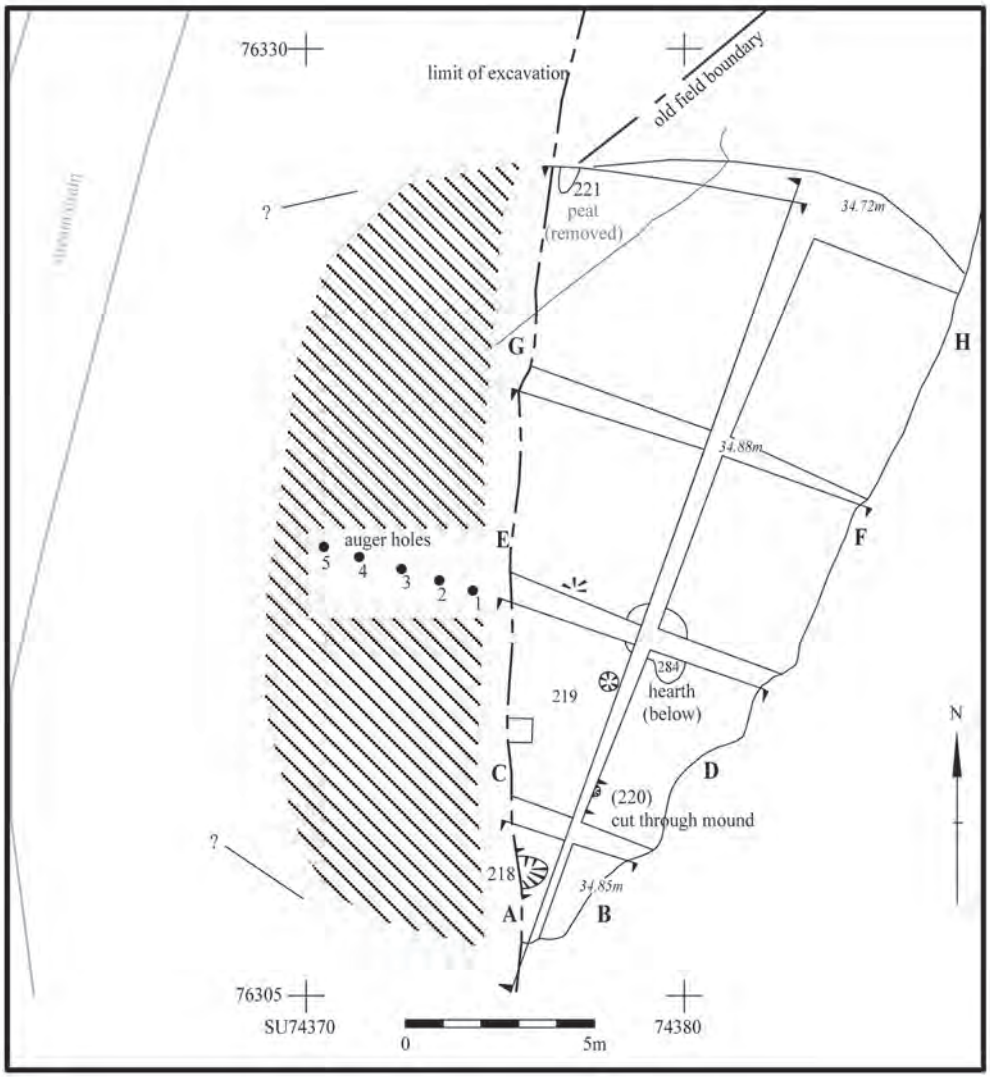

Fig. 4. Plan of burnt mound

Pre-Mound Features

Towards the centre of the area excavated was an oval patch of burning (284) with fragments of burnt flint which was up 2 m across but only 0.02 m deep (Fig. 6). This hearth lay beneath layer 280, the base of the mound. It is possible that it may be one of the first areas used for heating and burning the flint.

To the south-west was pit 218 (Fig. 7). This pit was 0.6 m across and 0.16 m deep with three fills (or more likely, a single fill and two deposits of mound material over the top which have slumped into it). The lower fill (273) was a dark brown-grey silty clay with burnt flint similar in composition to the main mound material. It was overlain by a brown silty clay (274) with little burnt flint which partially filled the feature and extended slightly beyond it. The feature was still partially open until the upper portion finally infilled with main mound material (275). No artefacts were recovered from the pit. However, two radiocarbon dates

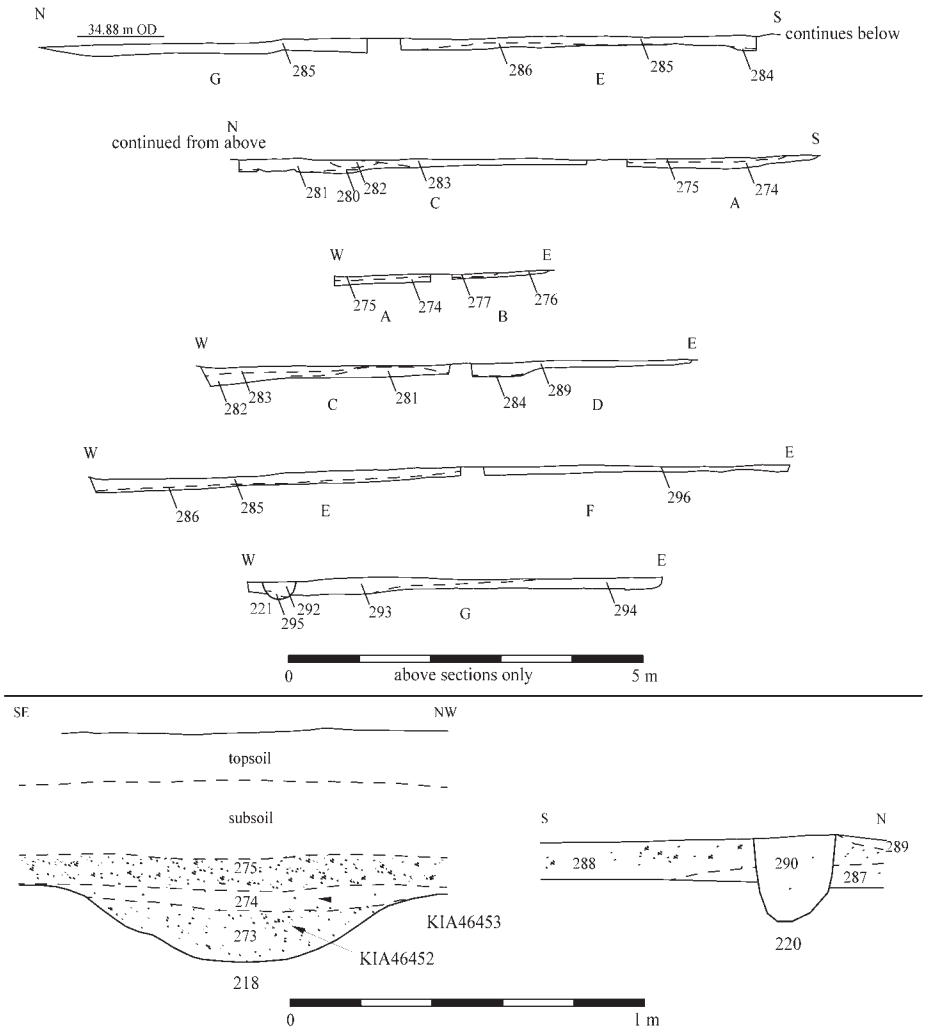

Fig. 5. Method of excavation of burnt mound, looking north-east; scales 2 metres, 1 metre. Hearth 284 visible partly under baulk towards centre.

were obtained on charcoal from within it: a result of 1621–1498 cal BC (KIA46452) from layer 273 and cal BC 1416–1266 from layer 274, indicating the beginning of the accumulation of mound material.

Pit 219 in slot C was 0.47 m in diameter, 0.11 m deep, with a bowl-shaped profile containing a dark grey-black clay fill (279) and burnt clay. No dating evidence was recovered except that it was below burnt mound layer 280 and cut into alluvial silt 278.

The Mound (Figs. 3 and 5)

The burnt mound comprised at least three layers of burnt flint. The earliest layers (280, 274, 276, and probably 294) were located in segments A, B, C, D and perhaps G, comprising loose dark grey clay with frequent burnt flint inclusions. This first deposit was capped in slot C by a thin layer of firm mottled mid grey-yellow clay (281) and in slot D by dark grey-brown silty clay (287), possibly flood deposits. A sherd of flint-tempered pottery and four struck

Fig. 6. Sections across mound and through pit 218.

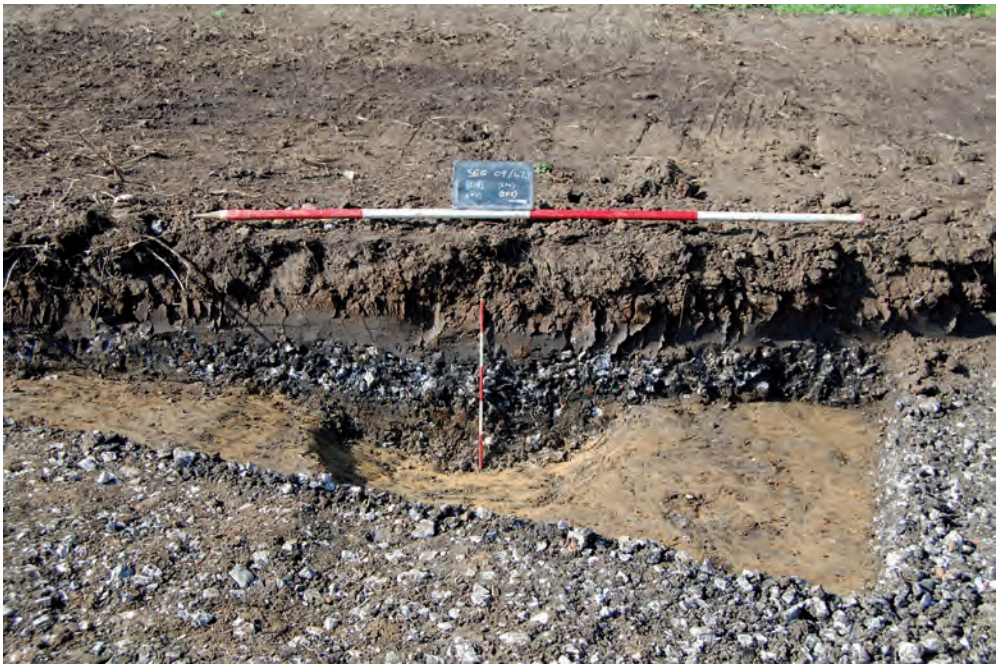

Fig. 7. Pit 218, looking west; horizontal scale 1 metre, vertical 0.5 metre.

flints were recovered from layer 287. Two sherds of flint-tempered pottery and two struck flints came from layer 281. A radiocarbon date was obtained on charcoal from layer 274 of 1416–1266 cal BC (KIA46453). Above 281 was another layer of burnt flint (282), again comprising a firm, dark grey-brown silty clay with regular inclusions of 5–40 mm angular burnt flint. Above this layer came another alluvial clay deposit, of yellow-grey silty clay (286, 288).

The final layer of the mound (275 = 277 = 283 = 285 = 289 = 294 = 296), was a homogeneous deposit of loose, dark brown-grey silty clay with frequent 5–40 mm angular burnt flint, across the whole mound. A single sherd of Bronze-Age/Iron-Age pottery was recovered from layer 277 with a flint flake and a possible knife from layer 283, and a narrow flake and two fragments of mammal bone from layer 285. Segments F, G and H have only this single layer whereas segments A and B have two burnt flint layers, and it is not clear if the lower one is the first or second layer, but the upper one is homogeneous across the entire mound. Segment E had two burnt flint layers and two clay deposits, and only segments C and D had all three flint layers. In effect it is possible that early phases consisted of smaller discrete spreads and only the top layer is a single 'mound'.

The radiocarbon dates from two successive stratigraphic episodes have provided an indication of the time over which this monument might have formed. The pit below the mound (218), which was still partially open to receive early mound material, dating to 1621–1498 cal BC, is significantly earlier than layer 274 (1416–1266 cal BC), suggesting that at least 80 years separate two of the formation episodes and this gap could perhaps be in excess of 300 years. However, in order to obtain any absolute (radiocarbon) dates, it is often necessary, as here, to use undifferentiated wood charcoal with uncertainty as to the age of the wood prior to its combustion. There need not, therefore, be any great separation in time between the two episodes. Nevertheless, the monument is firmly of middle Bronze-Age date. The single late Bronze-Age pottery sherd from the top layer could suggest this third phase extends the chronology but it could just as easily have been pressed into the mound from above after it had gone out of use. Three flint-tempered sherds from middle layers (281, 287) identified as possibly middle Iron Age (Lyne, below) potentially represent problems (extending the use of the mound this long is not impossible, but very improbable), but the simplest solution is that they are in fact Bronze Age.

Burnt Flint Patch 205

A patch of burnt flint (205) lay 24 m to the east of the burnt mound (Fig. 2). It was 2.30 m in diameter, but only 0.05 m in depth. It contained a single fill of dark brown/grey silty clay with very frequent burnt flint inclusions (258). A 40 litre sample contained wood charcoal but no dating evidence was recovered.

POST-MOUND FEATURES

Posthole 220 was 0.25 m in diameter, 0.22 m deep with a dark brown/grey silty clay fill (290). No dating evidence was recovered except that it cut mound layer 288. Ditch 122 was aligned north–south but was discontinuous. It was 1.05–0.5 m wide and 0.7–0.2 m in depth, with a flat base. It yielded no finds and cannot be dated but it cut through the alluvium that sealed the mound. Gully 221 at the northern end of the mound was modern.

POTTERY by MALCOLM LYNE

The twenty-one sherds (293 g) of pottery from the site have a wide date range, from late Bronze-Age to Roman (Table 1), but were largely unstratified. The earliest piece is an abraded late Bronze-Age fragment from the burnt mound top layer (277). Layers 281 and 287 produced

Table 1. Catalogue of pottery

Cut	Context	Fabric	Form	Date range	No. sherds	Wt (g)	Comments
	Find spot 1	LIA3	Jar	1 BC–AD43	5	37	Fresh; from top peat layer
	Find spot 3	R1	Girth-cordoned jar	AD150–250	10	65	Fresh; 1 jar
	Find spot 4	LIA1	Necked jar	25BC–AD43	1	132	Fresh
	Find spot 4	LIA2	Jar	AD30–60	1	17	Fresh
Burnt Mound Sec C	281	MIA1	?Saucepan-pot	300–50BC?	2	36	
Burnt Mound Sec D	287	MIA1	Jar	300–50BC?	1	4	Fresh
Burnt Mound Sec B	277	LBA1		1500–600BC	1	2	Abraded

two and one fresh sherds respectively that are possibly of Iron-Age date. The late Iron Age is represented by seven unstratified sherds (Fig. 2), comprising a large fresh fragment from a necked-jar in 'Belgic' grog-tempered ware (25 BC–AD 43), five sherds in crumbly underfired sandy fabric fired black (*c.*AD 1–43) and one in a calcined-flint and quartz-sand tempered Silchester ware variant (*c.*AD 30–60). Roman pottery comprises ten unstratified fragments all from a greyware girth-cordoned jar of *c.*AD 150–250 date, probably from the Colne valley kilns near Gerrards Cross.

Fabrics

Late Bronze Age. LBA1. Handmade lumpy oxidized fabric with profuse ill-sorted 0.30 to 3.00 mm calcined-flint filler protruding through the walls of the vessel.

?Middle Iron Age. MIA1. Handmade black fabric with profuse 0.30 to 1.00 mm calcined-flint filler.

Late Iron Age. LIA1. Handmade dirty buff grey fabric fired polished black externally with profuse grog filler and occasional <2.00 mm calcined-flint inclusions.

LIA2. Handmade lumpy black with profuse ill-sorted <3.00 mm protruding calcined-flint and <0.10 mm quartz sand filler.

LIA3. Handmade underfired black fabric with profuse <0.50 mm multi-coloured quartz sand filler and angular <1.00 mm calcined-flint.

Roman. R1. Very fine wheel-turned grey fabric fired smooth grey-black with profuse <0.10 mm quartz-sand, a few much larger grains of the same material and occasional grog filler. A Colne valley kilns product.

STRUCK FLINT by STEVE FORD

The ten struck flints recovered are listed in Table 2. The pieces appear to have been made from the local gravel flint, and are in good condition but some are slightly iron stained. The blade is likely to be of Mesolithic date, whereas the other pieces are less chronologically distinctive and could range from Mesolithic to Bronze Age. The pieces associated with the burnt mound could be contemporary with the formation of the structure. The single piece

Table 2. Catalogue of struck flint

Location	Catalogue
Find spot 7	Broken flake
281	Intact flake; broken flake
283	Intact flake; knife?
285	Intact narrow flake
287	2 Intact flakes, 2 broken flakes

with shallow retouch along one edge is possibly a knife with a natural cortical back forming the other edge.

SHALE BRACELET by SUSAN PORTER

This unstratified piece (Fig. 2) is a small hoop of polished shale, with an internal diameter of 25 mm and an overall diameter of 45 mm. This size suggests a practical purpose rather than a piece of jewellery and so perhaps it may have functioned as a spindle whorl or belt fastener. The smooth surface suggests that it may have been made on a lathe which in turn suggests a date from the late Iron Age onwards.

FIRED CLAY by DANIELLE MILBANK

Fired clay fragments with a total weight of 202 g were recovered from six layers, all but one associated with the burnt mound. The majority of the fragments were very small, but consistent in terms of fabric, which was an evenly fired mid to dark red fired clay with occasional small (<1 mm) rounded quartz sand inclusions. There are no visible straw marks or other moulded characteristics. The exception is a piece from pit 219 (deposit 272) which was softer, paler (orange), with more frequent inclusions. None of the fragments can be identified to form.

RADIOCARBON DATING

Two samples of charcoal from pit 218 beneath the burnt mound were submitted to the University of Kiel for radiocarbon dating. Details of methodology are in the archive; in summary the results are considered reliable. Calibrated dates were calculated using CALIB rev 5.01.[22] The results are given in Table 3 and are quoted at 2-sigma range. They indicate that pit 218 was filling in the sixteenth century cal BC and layer 273 formed across its top probably around a century later.

COLUMN SAMPLE FROM PALAEOCHANNEL BY KAREN WICKS

Palynological and lithostratigraphic assessment was undertaken on a sedimentary sequence (Column 1) formed within the palaeochannel in Area A (Fig. 2). Details of methodologies are in the site archive. The pollen assessment complements a detailed long vegetation history from the late Devensian period to the present day reconstructed from pollen evidence preserved in

[22] Data set: IntCal04: P.J. Reimer et al., 'IntCal04 Terrestrial Radiocarbon Age Calibration, 0–26cal kyr BP', *Radiocarbon*, 46:3 (2004), pp. 1029–58.

Table 3. Radiocarbon dates (2-sigma range)

KIA46452	**Pit 218 (fill or layer 273)**	**Corrected pMC**	$\delta^{13}C$(‰)	**calibrated age**	**Probability**
Charcoal, alkali residue, 1.8 mg C		66.47 ± 0.21	–24.25 ± 0.13		
Radiocarbon Age	BP3281 ± 26			cal BC 1621–1498	95.4%
KIA46453	Burnt mound layer 274				
Charcoal, alkali residue, 1.1 mg C		68.20 ± 0.27	–24.87 ± 0.14		
Radiocarbon Age	BP3075 ± 32			cal BC 1416–1266	95.4%

a palaeochannel at Thames Valley Park on the opposite bank of the Thames to Sonning Eye Quarry.[23]

Lithostratigraphy (Table 4)[24]

The column contained 1.79 m of stratified sediments. At the base of the column from 1.79–1.73 m sub-rounded flint pebbles and gravels representing drift geology were overlain by black, organic-rich silty clay with sub-rounded flint granules and pebbles from 1.73–0.89 m. Well-preserved ligneous stems, charcoal and fragments of shell inclusions constitute <5%. The organic-rich silty clay is likely to represent a shift in freshwater environmental conditions within the channel leading to the deposition of progressively more terrestrial sediments. Several alternative processes operating at both a local and regional scale may account for the change in local depositional regime. Local processes such as a lateral shift in the course of the channel away from the site and/or rapid sedimentation to above the level of periodic inundation may be implicated, while regional processes such as a fall in relative sea level or a regressive stage in the rate of relative sea-level rise are possible causes for environmental change.

A very gradual transition to very dark grey clays and silts from 0.89–0.31 m marks a change to deposition of fine-grained particles, which are likely to have formed at the margins of slow moving waters in the channel. A very gradual transition (>20mm) at 0.31 m marks a change in colour and texture to dark yellowish brown silty clay with shelly fragments (*c.*2%) perhaps deposited in slightly more energetic waters indicating a continuity in fluvial environmental conditions. A change in lithology is marked by a sharp transition at 0.04 m to silty sand perhaps indicative of an upsurge in alluvial sedimentation in increasingly agitated waters. Local environmental processes driving these changes perhaps include the lateral migration of the river channel towards the site. Regional-scale processes such as a rise in relative sea level or a transgressive stage in the rate of relative sea-level rise may have resulted in the deposition of coarser particles in deeper, more energetic waters.

[23] D.M. Keith-Lucas, 'Pollen', in I. Barnes et al., *Excavations at Thames Valley Park, Reading, 1986–88*, Wessex Archaeology Report, 14 (1997), pp. 99–106.

[24] Physical properties, humification and composition are described following the modifications by Aaby and Berglund of the Troels-Smith description system: B. Aaby and B.E. Berglund, 'Characterization of Peat and Lake Deposits', in B.E. Berglund (ed.), *Handbook of Holocene Palaeoecology and Palaeohydrology* (1986), pp. 231–46; J. Troels-Smith, 'Characterisation of Unconsolidated Sediments', *Danmarks Geologiske Undersogelse Arborg*, Series IV 3 (10) (1955).

Table 4. Lithostratigraphic description of Column 1

Depth (m)	Geological unit	Texture	Sediment description
1.79 to 1.73	Drift geology	Sands and gravels	10YR 4/3 (brown) Gg(maj.)2, Gg(min.)1, Ga1; strf 1; elas 0; sicc 4; very diffuse (10 mm) contact with
1.73 to 0.89	Terrestrial sediment	Organic-rich silty clay	10YR 2/1 (black), As2, Ag1, Sh1, Dg+, [part test (moll.)+] [anth+]; strf 2; elas 1; sicc 2/3; very diffuse (> 20 mm) contact with
0.89 to 0.31	Alluvium	Clay	10YR 3/1 (very dark grey) As3, Ag1, [part test (moll.)+]; strf 1; elas 0; sicc 2/3; very diffuse (> 10 mm) contact with
0.31 to 0.04	Alluvium	Silty clay	10YR 4/4 (dark yellowish brown) As3, Ag1, [part test (moll.)+]; strf 1; elas 0; sicc 2/3; sharp (1 mm) contact with
0.04 to 0.00	Alluvium	Sandy clay	10YR 4/3 (brown) As2, Ga2, [part test (moll.)+], Dh+; strf 1; elas 0; sicc 2/3

Palynological Assessment

Two samples of organic-rich silty clay taken at 1.57 m and 1.00 m depths were assessed for pollen, along with one sample of alluvium at 0.12 m (Table 5). Pollen concentrations were low. Predominantly open conditions are indicated by the frequencies of herbaceous taxa throughout the sequence. The presence of pollen from plants favouring disturbed ground such as plantains, docks and members of the daisy family indicates cultivated fields surrounding the site or perhaps unstable floodplain habitats created by intermittent fluvial action. Frequencies of arboreal taxa are low perhaps indicating a regional pollen rain component or that woodland was located some distance from the channel possibly colonizing the floodplain edge. Principal woodland taxa around the site include pine, oak and elm, with hazel and birch perhaps forming more open scrub woodland at the periphery. Ferns may have formed a significant component of woodland understorey, while alder trees may have formed a component of woodland on the valley floor in wetter areas. Increasing fluvial influence is indicated by the occurrence of members of the goosefoot family in the alluvium.

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Bulk soil samples were taken from twenty contexts. The only seed identified was an indeterminate cereal grain. Charcoal fragments were present in low quantities, and were mainly unidentifiable. Twelve samples produced identifiable charcoal (Table 6) and even in

Table 5. Pollen assessment

Depth (m)	Sedimentary unit	Pollen taxa: scientific name	Pollen taxa: common name	No. grains	Preservation	Microcharcoal
1.57–1.54	Organic-rich silty clay	*Betula*	Birch	2	Poor/moderate	Present
		Alnus	Alder	3		
		Corylus avellana-type	Hazel	2		
		Poaceae	Grasses	3		
		Polypodium	Polypody	1		
		Sphagnum	Moss	1		
		Lycopodium clavatum	Club Moss 'spike'	3		
			Degraded	7		
1.00–3.99	Organic-rich silty clay	*Betula*	Birch	1	Moderate	Present
		Pinus	Pine	2		
		Alnus	Alder	1		
		Quercus	Oak	2		
		Ulmus	Elm	1		
		Corylus avellana-type	Hazel	8		
		Poaceae	Grasses	10		
		Lactuceae	Dandelions	1		
		Asteraceae	Daisies	2		
		Plantago lanceolata	Plantain	1		
		Rumex	Dock	1		
		Rosaceae	Roses	1		
		Pteropsida (monolete undiff.)	Ferns	2		
		Polypodium	Polypody	3		
		Pteridium	Bracken	7		
		Lycopodium clavatum	Club Moss 'spike'	16		
			Degraded	53		
0.12–0.11	Alluvium	*Pinus*	Pine	5	Poor	Present
		Corylus avellana-type	Hazel	1		
		Poaceae	Grasses	7		
		Cyperaceae	Cyperaceae	7		
		Chenopodiaceae	Goosefoots	1		
		Lactuceae	Dandelions	13		
		Urtica dioica				
		Pteropsida (monolete undiff.)	Common Nettle	4		
		Pteridium	Ferns	3		
		Lycopodium clavatum	Bracken	1		
			Club Moss 'spike'	28		
			Degraded	69		

Table 6. Charcoal

Numbers are identified charcoal fragment for each sample or % where more than 100 present

	Sample	51	54	55	56	58	59	60	61	62	63	64	67
	Cut	205	218				219						
	Deposit	258	273	274	275	277	279	280	281	282	283	284	289
	Feature type	Burnt mound	Pit	Burnt mound	Burnt mound	Burnt mound	Pit	Burnt mound	Redeposited natural	Burnt mound	Burnt mound	Burnt mound	Burnt mound
	No fragments	100+	50+	78	36	50+	51	21	50+	29	100+	100+	18
	Max size (mm)	21	14	31	22	14	31	14	20	30	28	14	19
Name	**Vernacular**												
Corylus avellana	Hazel	–	–	1	–	–	–	–	–	–	7	–	–
Salix / Populus	Willow / Poplar	43	19	22	11	13	22	4	2	21	45	–	6
Quercus	Oak	–	8	24	–	2	8	–	13	–	–	34	–
	Indeterminate	57	23	31	25	35	21	17	35	8	48	66	12

these, unidentified charcoal dominates. Willow/poplar is the most numerous of the identified charcoal in eleven samples, with oak in six samples and hazel in just two. Willow and poplar burn quickly at relatively high temperatures, making them good to use as kindling. Hazel is a good fuel wood and widely available within oak woodlands, particularly on the fringes of cleared areas. Oak would have made a fire suitable for most purposes, as well as being a commonly used structural wood that may have had subsequent use as fuel.

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