REPORTS

Excavation of Late-Neolithic Pits, an Early Bronze-Age Ring Ditch and an Early Iron-Age Pit Alignment at Church Farm, Thame

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SUMMARY

Seven areas were excavated at Church Farm, Thame, the largest centred on a substantial ring ditch. Besides the ring ditch, the main excavation identified six, possibly eight, late-Neolithic Grooved Ware pits, which produced three radiocarbon dates between 3115 and 2901 cal BC (one of these associated with a vessel in the Durrington Walls sub-style); a large diameter early Bronze-Age ring ditch with a radiocarbon date of 1981–1771 cal BC; and a pit alignment possibly dating from the early Iron Age. The radiocarbon dates for the Grooved Ware are earlier than expected; that associated with the Durrington Walls type vessel is believed to be the first for this sub-style. The smaller excavation areas contained gullies of possible Roman and post-medieval date and a post-medieval track. Significant assemblages of pottery, struck flint and animal bone are discussed, as well as two exceptional copper alloy spearheads.

INTRODUCTION

Planning permission from South Oxfordshire District Council for a community football club at Church Farm (SP 7090 0690) was subject to a condition requiring archaeological work in advance of the development. The overall development area covered *c*.8 hectares of grassland which was to be cut down to provide level playing fields. The site is located on the gravel terrace of the River Thame, 1 km north of Thame and 15 km east of Oxford (Fig. 1). The underlying geology consists of First River Terrace deposits (clayey gravel) and a band of Kimmeridge Clay (in fact sand).[1] The southern part of the site lies at a height of *c*.69 m OD and the land slopes down to *c*.63 m OD towards the river in the north.

ARCHAEOLOGICAL BACKGROUND AND EVALUATION

The site was known to contain a ring ditch, originally identified from aerial photography and presumed to be a levelled Bronze-Age round barrow.[2] The presence of the ring ditch, of

[1] Geological Survey Map of England and Wales, 1:50,000 (solid and drift), sheet 237 (1994 edn).
[2] HER, PRN 11853.

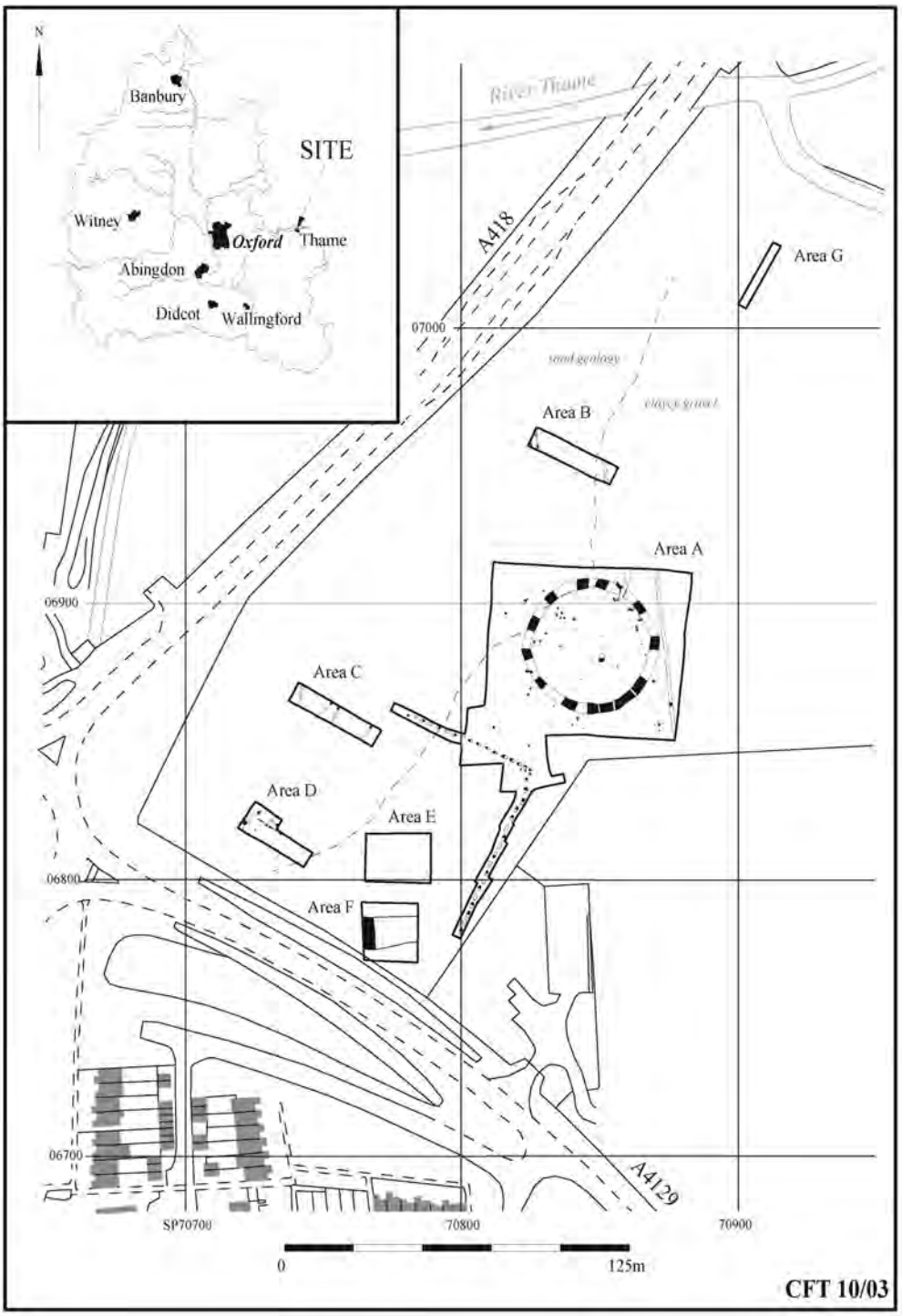

Fig. 1. Location of site and excavation areas.

unusually large diameter, was confirmed during an initial archaeological evaluation by geophysical survey and trenching, although it was not quite in the location indicated by the air photo evidence.[3] The geophysical survey highlighted several other substantial anomalies, including what were thought to be linear features of probable early/middle Iron-Age and late Iron-Age/early Roman dates, and a possible river palaeochannel. However, other than the ring ditch and a post-medieval track, all the anomalies identified by the geophysical survey within the excavation area were later shown to be of geological origin.

DISCUSSION

The excavation at Church Farm examined the full extent of the ring ditch, which proved to be of early Bronze-Age date (Fig. 2). The dating was provided by radiocarbon determination as well as pottery and metalwork finds. Late-Neolithic pits and an unusual Iron-Age pit alignment, which were not detected in the evaluation, provided unexpected but significant additions to the information recovered about this site. The excavation also uncovered boundary features which may possibly be of Roman date. These features may be associated with deposits encountered during the preliminary geophysical survey and evaluation trenching beyond the eastern margins of the excavation site.

The earliest features encountered on the site were six, possibly eight, late-Neolithic pits. Three of these pits have been radiocarbon dated to the start of the third millennium BC with contemporaneity shown by conjoining pottery sherds found in separate pits as well as the very tight clustering of the radiocarbon determinations. The seventh pit was assigned to this phase on the basis of its struck flint component only and the eighth on the grounds that stratigraphically it cannot be later and it is unlikely to be much earlier.

As for the earlier Neolithic and early Bronze Age, sites unambiguously representing domestic use in the later Neolithic are rarely discovered, presumably due to their ephemeral nature.[4] It is possible that the features here do represent late-Neolithic occupation: the contents of four of the pits could represent domestic activity, but three pits contained large assemblages with placed contents containing elaborately decorated pottery and a decorated ceramic slab, and showing cross-fits between pits (see Raymond, below), suggesting ritual/ceremonial activity.[5] Yet the placed deposits also contain everyday material such as by-products of flint knapping and charred food plants (both gathered fruit and cultivated cereals). As the pottery has clearly been placed, the other finds are unlikely to have entered the pits accidentally although they appear more likely to derive from domestic waste. It is possible, therefore, that while the deposition of much of the material results from ceremonial activity, the material itself derived from a nearby focus of domestic occupation and the act of pit digging or filling was more important than the nature or origins of much of the material incorporated.[6]

It is believed that Grooved Ware pottery originated in the north of England and the style

[3] A. Johnson, 'Land at Church Farm, Thame, Oxfordshire, Magnetometer (Gradiometer) Survey', unpublished Oxford Archaeotechnics report, no. 3151107 (2007); idem, 'Land at Church Farm, Thame, Oxfordshire, Magnetometer (Gradiometer) Survey', unpublished Oxford Archaeotechnics report, no. 3201109 (2009); G. Williams, 'Archaeological Evaluation of Land at Church Farm, Thame', unpublished John Moore Heritage Services report, no. 1856 (2007).

[4] A. Whittle, 'Moving On and Moving Around: Neolithic Settlement Mobility', in P. Toping (ed.), *Neolithic Landscapes* (Oxford, 1997), pp. 15–22; J. Thomas, *Understanding the Neolithic*, 2nd edn (London, 1999).

[5] Thomas, *Understanding the Neolithic.*

[6] Cf. D. Garrow et al., *Excavations at Kilverston, Norfolk: An Episodic Landscape History*, East Anglian Archaeology, 113 (2006) pp. 81–3; G. Hey and M. Robinson, 'Neolithic Communities in the Thames Valley. The Creation of New Worlds', in A. Morigi et al., *The Thames through Time: The Archaeology of the Gravel Terraces of the Upper and Middle Thames: Early Prehistory to 1500 BC*, Thames Valley Landscapes Monograph, 32 (2011), pp. 241–5.

subsequently spread across the country.[7] It has been suggested that the decorative patterns, sometimes similar to passage grave art, especially that of Ireland and Scotland, are a symbolic representation of this former art form.[8] These vessels are often associated with large ritual monuments as well as monuments of an earlier period. Here the ring ditch is certainly later but it is interesting to note that it has the same focus as the Neolithic pits. This may indicate that the place was already a sacred site with known ritual connections by the early Bronze Age.

Grooved Ware pits are often found to contain substantial quantities of pig bone,[9] which is a species that usually ranks third behind cattle and sheep in domestic faunal assemblages. The bone recovered from these pits is predominantly pig, albeit the quantity is small. This can be seen as reflecting the ritual nature of these features, assuming that the pig bones have been deposited after feasting and placed in the pits along with the pottery. The plant remains recovered are entirely typical of Grooved Ware pits and indicate a mix of cereal crops and collected fruits.[10] The flint assemblages from the pits are typical of the Neolithic. Unlike many sites in eastern England, which appear to show a deliberate selection of finished implements that have been deposited,[11] most of the pieces identified are just flakes and a small proportion is clearly just knapping debris. The flint used for these implements is certainly not the natural flint found on the site and is probably from the nearby chalk downs, which provide a much more suitable raw material.

Late-Neolithic pits, while not especially common in themselves, are probably the most common feature of that period and at a broad level of analysis do give an indication of the distribution of later Neolithic settlement in the region. A number of examples have been observed across Oxfordshire,[12] mainly on the low-lying river gravel terraces rather than higher ground such as the chalklands of the Berkshire Downs. None have been previously recorded in the Thame valley east of its confluence with the Thames at Dorchester. The radiocarbon date from pit 2 is believed to be the first directly associated with the Durrington Walls sub-style of this pottery.[13] All three dates, which have a maximum range of 3115–2901 cal. BC (or, if they are assumed to be contemporary, 3096–2915 cal. BC), are also slightly earlier than the date normally assigned to Grooved Ware pits in the region (2900–2500/2400 cal. BC).[14]

Bronze-Age activity on the site can be attributed to the earlier part of this period, when the ring ditch appears to have been first dug. This feature went out of use by the middle Bronze Age, as shown by the presence of two bronze spearheads deliberately placed within its uppermost fill. Ring ditches are the dominant type of monument in the earlier part of the Bronze Age and the feature on this site is a particularly large example, with a *c.*42 m internal diameter and *c.*47 m external diameter. It consisted of a complete circular ring with no evidence of a causewayed entrance. This type of monument is found across the country and there are many examples in Oxfordshire, notably those identified at Barrow Hills, Radley (formerly Berks.), where at least 25 barrows of Neolithic and Bronze-Age date are spread over a distance of *c.*1 km.[15] The largest of these measured *c.*40 m in internal diameter, comparable to the Thame example.

[7] R.J. Bradley, *The Social Foundations of Prehistoric Britain* (London, 1984).

[8] A. Barclay and C. Halpin, *Excavations at Barrow Hills, Radley, Oxfordshire, Volume 1: The Neolithic and Bronze Age Monument Complex* (Oxford, 1998).

[9] Bradley, *Social Foundations of Prehistoric Britain.*

[10] Cf. M. Jones, 'Carbonized Cereals from Grooved Ware Contexts', *Proceedings of the Prehistoric Society*, 46 (1980), pp. 61–3.

[11] R. Cleal, 'The Later Neolithic in Eastern England', in R. Bradley and J. Gardiner (eds.), *Neolithic Studies*, BAR, 133 (1984), pp. 135–58.

[12] H. Case, 'The Mesolithic and Neolithic in the Oxford Region, in G. Briggs et al. (eds.), *The Archaeology of the Oxford Region* (Oxford, 1986), pp. 18–37 and map 3; Thomas, *Understanding the Neolithic*, fig. 8.2.

[13] A. Barclay and P. Bradley, 'Meaningful Materials: Procurement, Production and Exchange', in Morigi et al. *Thames through Time*, p. 459.

[14] P. Garwood et al., 'Ritual, Ceremony and Cosmology' in Morigi et al., *Thames through Time*, p. 377.

[15] Barclay and Halpin, *Excavations at Barrow Hills, Radley.*

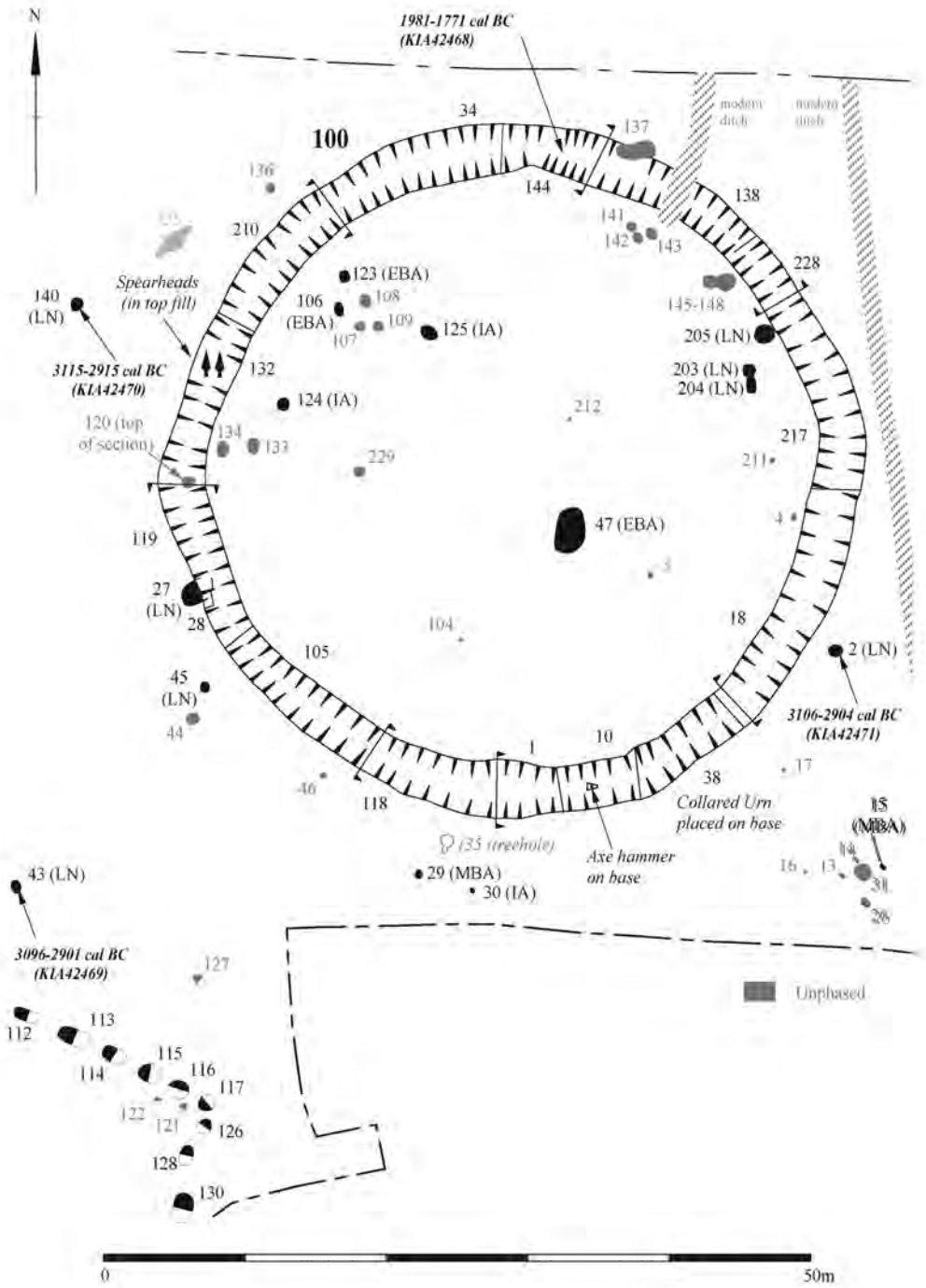

Fig. 2. Plan of ring ditch.

There are also comparisons to be drawn with elements of the monument complex at Dorchester-on-Thames, which comprises an enclosure, cursus, double-ditched henge, pit circles and ring ditches.[16] The ring ditches there, while not of the same size as the Thame example, are nevertheless important since their relative proximity along the River Thame presents a possible link between the two sites. However, these other Oxfordshire examples, as well as those at Standlake, Stanton Harcourt, Foxley Farm in Eynsham, Cassington and North Stoke, are all extensive monument complexes with cemeteries including both inhumations and cremations. The cemeteries may be indicative of family groupings with burials continued over many years. By contrast, the Thame site appears to have lacked other earthwork features and there is little evidence of burials.

This type of monument would have been a visually impressive site on the terrace edge, just at the point where it dips towards the river valley floor. Although the slope is gentle, the ring ditch and bank would certainly have been noticeable in the otherwise flat landscape, dominating the junction of the Thame and its un-named tributary. Behind the site (as seen from the river) the terrace is quite broad, and even more gently sloping, before the valley sides begin to rise again to the south and east. The ring ditch may have acted as a fixed point in the landscape for a population with a mobile settlement pattern as at Barrow Hills and on Salisbury Plain where barrows appear to have been used to mark places in the landscape.[17]

The size of this monument was initially thought to suggest that the ring ditch might have contained the burial of an individual of some status. However, with the exception of a single small cremation deposit (not even certainly human) on the outside of the ring ditch to the south-east, no primary or satellite burials were located anywhere within the ditch itself or the interior area. As the entire ring ditch and the central baulks were removed after all hand digging was complete, we can be confident that no burial or grave goods were missed. It is possible that the off-centre pit (47) may have been a cenotaph - an empty grave due to the body being unable to be buried, for instance having been lost well away from home. An alternative possibility is that the large pit predates the ring ditch (though it contained a small amount of Beaker pottery) and if it contained, for example, a large post, it could be the reason for the ditch being sited at this location, because it was an already established ritual site. This interpretation might also be strengthened by the presence and possible landscape influence of the Grooved Ware pits. On balance, it seems most likely that the absence of burial is genuine and can be accounted for simply by the site's geographical location. Outside Wessex, early Bronze-Age barrow burials accompanied by exotic or numerous grave goods are rare and this site may be the norm as opposed to the exception.[18]

The ring ditch was initially interpreted as a possibly hengiform feature, due to its size and the infilling of the lower parts of the ditch arising from the outside, suggesting an external bank. However, the absence of any entranceway through the ditch points towards this being a large barrow with either a bell-disc or disc barrow form. The external bank seems to have eroded away or been slighted back into the ditch, which had become more or less fully infilled by the end of the middle Bronze Age as indicated by the presence of the two placed spearheads, though enough of the monument must have been visible for this action to have taken place. It also seems that a part of the ditch, or perhaps an internal mound, must still have been visible in the landscape into the Iron Age to permit the pit alignment both to be aligned directly on the centre of the ring ditch and to take its right-angled turn to avoid this location.

Pit alignments are thought to be boundary features, dug either to minimize the amount of labour involved in their construction (compared to a ditch), or to allow free movement across

[16] A. Whittle et al., 'Excavations in the Neolithic and Bronze Age Complex at Dorchester-on-Thames, Oxfordshire 1947–1952 and 1981', *Proceedings of the Prehistoric Society*, 58 (1992), pp. 143–201.
[17] Barclay and Halpin, *Excavations at Barrow Hills, Radley.*
[18] Ibid.

the boundary for people and stock while still defining territorial rights.[19] They are usually considered to be of later Bronze-Age and/or Iron-Age date, though some are earlier or later (even early Roman); the common difficulty in dating them is also the case here. They are encountered routinely if not frequently on the gravel terraces of the upper Thames and into the Midlands.[20] However, what is most unusual is the presence of a ninety-degree turn, which does not appear to have any parallels in the Oxfordshire region.[21] It was considered that this feature represents an enclosure though as the north-western element terminates, such an enclosure would be partial ('L' shaped) at most; it is possibly cutting off a loop in the river. Excavation areas E and F would have lain within this postulated enclosure but did not reveal any contemporary features. Its function therefore remains enigmatic.

The final activity on the site was both poorly dated and ephemeral in nature. Several of the features appear to be of Roman date and may reflect Roman land boundaries relating to a settlement site located by the initial evaluation trenching further to the east. Alternatively, if these boundaries are post-medieval (the few scraps of Roman pottery being residual) the presence of the pottery at least indicates the manuring of Roman farmland. It was perhaps in Roman times that any ring ditch mound was finally ploughed away. The other boundaries relate to post-medieval and modern land use in the area.

EXCAVATION RESULTS

The excavation aimed to record the archaeological features before their destruction and answer a series of questions about the site, primarily about the nature of the ring ditch and its influence on the later landscape. An area around the ring ditch was the main focus of the investigation (Area A, eventually extending to some 2,500 sq m) with six smaller areas (B–G) totalling 1,730 sq m, designed to investigate geophysical anomalies (Fig. 1, above).

Area A

Late-Neolithic pits (Figs. 2 and 3). Six pits (2, 27, 43, 140, 204 and 205) were found to be of late-Neolithic date and so were fully excavated in spits, with 100% of their fills sampled and sieved in order to maximize the recovery of pottery, worked flints and environmental data. A seventh pit (45) is possibly of similar date but contained no pottery and an eighth pit (203) was stratigraphically earlier than pit 204. Pit 2 was 1.12 m long, 0.96 m wide and 0.84 m deep. It contained substantial amounts (131 sherds) of Grooved Ware pottery and of struck flint (105 pieces). This pit contained two fills (56 and 57) both of which showed deliberate placement of pottery as opposed to the material merely having been dumped into the pit as rubbish (Fig. 4). A large amount of animal bone was also recovered from pit 2, including cattle, sheep/goat and pig, which is often associated with Grooved Ware pits. Of note was a pin made from a pig fibula. Willow (*Salix*) charcoal from layer 56 produced a radiocarbon date of 3106–2904 cal BC (KIA42471).

Pit 27 was 0.65 m wide and 0.18 m deep. It contained seven pieces of Grooved Ware pottery, 46 pieces of animal bone, four flint flakes and a serrated flake and two pieces of burnt flint.

Pit 43 (south-west of the ring ditch) had a diameter of 1.00 m and was 0.45 m deep. It contained three fills (163, 250 and 251) with fill 163 containing 65 sherds of Grooved Ware pottery and 100 pieces of struck flint. Fill 250 contained 42 sherds of pottery, nine struck flints and four pieces of burnt flint. Fill 251 contained seven sherds of pottery and five pieces of struck flint. Animal bone was also recovered, but the majority of this was small undiagnostic pieces along with dog and pig teeth and another worked bone

[19] B. Cunliffe, *Iron Age Communities in Britain* (London, 1975).

[20] K. Powell et al., *Evolution of a Farming Community in the Upper Thames Valley: Excavation of a Prehistoric, Roman and Post-Roman Landscape at Cotswold Community, Gloucestershire and Wiltshire, Vol. 1* (Oxford, 2010), p. 49; S. Ford and K. Taylor, 'Iron Age and Roman Settlements, with Prehistoric and Saxon Features, at Fenny Lock, Milton Keynes, Buckinghamshire', *Records of Buckinghamshire*, 41 (2001), pp. 79–123; J. Pollard, 'Iron Age Riverside Pit Alignments at St Ives, Cambridgeshire', *Proceedings of the Prehistoric Society*, 62 (1996), pp. 93–115; G. Lambrick, 'Dividing up the Countryside', in G. Lambrick with M. Robinson, *The Thames through Time: The Archaeology of the Gravel Terraces of the Upper and Middle Thames. The Thames Valley in Later Prehistory: 1500 BC–AD 50*, Thames Valley Landscapes Monograph, 29 (2009), pp. 53–90.

[21] Personal communication from Paul Smith.

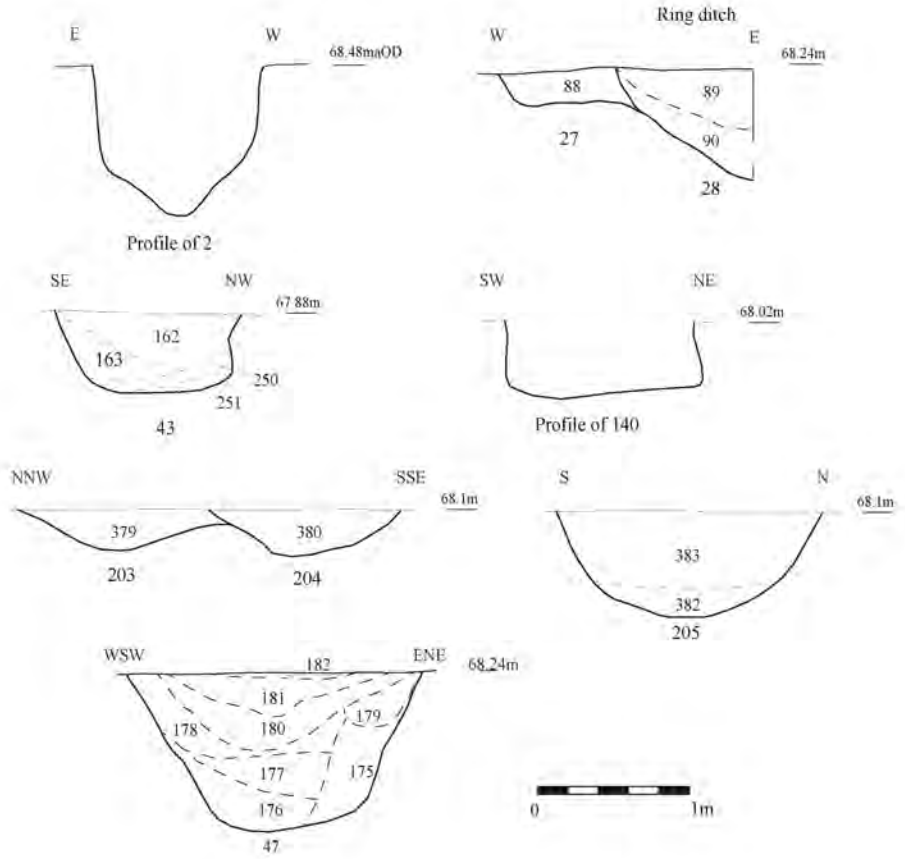

Fig. 3. Sections of Neolithic pits and early Bronze-Age pit 47.

pin. As with pit 2, there was evidence of deliberate placement of pottery. A hazelnut shell from fill 163 produced a radiocarbon date of 3096–2901 cal BC (KIA42469), virtually identical to the date from pit 2.

Pit 45 was not dated by pottery but may belong to the late-Neolithic phase of activity on the site. It contained nine struck flints including a small flaked flint axe. This pit was 0.70 m in diameter and 0.20 m deep.

Pit 140 measured 0.50 m in diameter and 0.39 m deep. It contained two fills, 364 and 365. Fill 364 produced 32 pieces of Grooved Ware pottery and 31 pieces of struck flint. Fill 365 produced 18 pieces of pottery, 27 pieces of struck flint, two bone fragments and a cattle tooth. Again there was deliberate placement of items within the pit. A hazelnut shell from layer 364 gave a radiocarbon date of 3115–2915 cal BC (KIA42470), suggesting a date contemporary with the pits noted above. The soil samples from this pit included large numbers of hazelnut shell and charred remains of crab apples, with smaller amounts of other charred plant remains.

Pit 204 cut pit 203. Pit 203 was 1.00 m wide and 0.20 m deep. It contained just one piece of animal bone. Pit 204 measured 1.00 m wide and 0.25 m deep and contained four sherds of Grooved Ware pottery. While 203 is undated it is certainly stratigraphically earlier than 204, but it could be considered to be broadly contemporary with other Neolithic features.

Pit 205 was 1.40 m in diameter and 0.55 m deep. It contained 53 pieces of Neolithic pottery, a flint scraper and 42 pieces of animal bone, all from its secondary fill (382).

The ring ditch (Figs. 2, 5 and 6). Area A concentrated on the ring ditch. This was dug in four separate quadrants initially leaving a cross-shaped central baulk in order to maintain complete sections across the

Fig. 4. Grooved Ware pit 2, with placed deposit in base; horizontal scale 0.3 m, vertical 0.5 m.

monument, with particular attention paid to the presence of any mound material. Machining of the overburden took place under close supervision to search for the presence of remaining mound material, but none was present. Hand digging was initially directed towards the south-east quadrant, as this has been found to be the favoured location for secondary urnfield burials.[22]

A total of fifteen slots (1, 10, 18, 28, 34, 38, 105, 118, 119, 132, 138, 144, 210, 217 and 228) were dug across the ring ditch, representing a sample of almost 50 per cent, four of them (1, 10, 18 and 38) in the south-east quadrant (Fig. 2, above). Slots 28, 132, 138 and 210 were aceramic. No evidence of burials within the ditch or urnfields cut into its fill was observed. The ditch measured between 2.60 m and 4.30 m wide, most often between 3.00 m and 3.50 m, and was between 0.80 m and 1.25 m deep around its circumference. The base of the ditch was much narrower, at between 0.32–0.90 m, with an average width of between 0.70–0.80 m. In many of the sections dug across the ring ditch, a markedly stepped edge was evident (Figs. 5, 6). This was evident in four places internally, five places externally and one slot had a step in both sides. Three slots did not show this profile, but that can be accounted for by a change in the geology from flinty clay to a sandier matrix much more prone to collapse. This may be evidence of a method of ingress and egress from the ditch while it was under construction. There was no indication that these steps represent successive recuts of the ring ditch, nor was the base scalloped, as is sometimes seen where a ditch represents the joining up of discrete pits. The slight irregularity in plan can probably also better be accounted for as resulting from the unstable underlying geology rather than that the ditch was originally segmented and later joined up.

The ditch itself measured 42 m in diameter from its internal edges, or up to 50 m externally, a particularly large size for a ring ditch, though not unprecedented: several of those in Oxford, known from cropmarks in the University Parks and recently excavated at the Radcliffe Infirmary site,[23] for example, are also 40–50 m across.

[22] A. Woodward, *British Barrows: A Matter of Life and Death* (Stroud, 2000), p. 43.

[23] T. Braybrooke, 'Oxford University: Radcliffe Observatory Quarter, Radcliffe Infirmary Site, Oxford, Post-Excavation Assessment', Museum of London Archaeology report, OX-RAD07 (2011).

The majority of the excavated sections showed evidence of tip lines, with fill coming in from the outer edge of the ditch, suggesting the weathering of an outer bank. The absence of these tip lines originating from within the ring ditch would suggest that if there was an internal mound, then it was set well back from the ditch, leaving a wide berm, as with a disc barrow.[24]

Although the details of the fill sequence varied considerably around the ditch, two basic patterns were observable. In the area where the ditch was cut through clayey gravel natural (most of the circumference), fills represented slumping from the outer edge, with a stabilization episode about halfway up. Section 18 provides a fairly representative illustration. A clean orange sandy clay deposit (80) along the south face of the ditch (in this slot only) could conceivably have been a deliberate facing material but if so it was very limited in extent and it is more likely to represent a local collapse of the side more or less immediately on excavation. A very thin sandy clay deposit (81) that probably represents trample on the base from the digging process was fairly consistently present around the circuit. In a few places there was a single silting episode on top of this, but this was patchy (for example, section 118, 261). Above this were two (82, 83) or in places three (as here, 84) deposits, consistently clearly coming from the outer edge, composed of variations on gravelly silty clay or gravelly sandy clay, which combined to fill the ditch about halfway up. These appear to be the bank either eroding away or even being deliberately slighted; if it was the latter, why this is not apparent around the whole circumference is less clear. It may have stabilised at this level as the fill above (85, cf. 368, 470 and 266) sometimes extended the full width, and settled closer to horizontally, although it varied in composition from a very gravelly sandy clay (85) to a sandy silt with far fewer flint inclusions. The top fill was more uniformly a sandy silt with few inclusions, and usually the only fill that extended the full width. It would appear that the bottom half of the fill sequence represents fairly rapid accumulation, as the ditch sides first settled to a rest angle, then the bank collapsed or was slighted; the two upper layers probably resulted from much slower processes. In places, other thin layers or lenses intruded between these final two deposits.

In the north-west quadrant, where the underlying geology was sand, the fill sequence was simpler, presumably because the sides of the ditch, originally quite steep, collapsed almost immediately into a smooth rounded profile (illustrated by section 210). The layers were as follows: 393, grey-green clay sand with a few flints, similar to the 'trample' layer elsewhere; 392, dark reddish brown clay sand with moderate flint, probably equivalent to the slumping deposits round the rest of the circuit, although more evenly distributed; 391, greenish-yellow clean sand; 390, orange brown sandy clay with a few flints. These all appear to represent natural filling processes, with a stabilization episode between 391 and top fill 390.

Any evidence of an internal mound has long since been ploughed away, if one ever existed. The presence of an outer bank would point towards this feature in fact being a disc barrow or possibly a henge monument, with the absence of an entranceway into the monument favouring the disc barrow. The excavation of the ditch would have generated in the order of 340 cubic metres of spoil. If there ever had been a central mound, occupying say 36 m of the 42 m available internal diameter (to leave the broad berm posited above) it could only be about 0.35 m high, so assuming that the spoil from the ditch was all that was used to create both an external bank and an internal mound, the latter must have been much smaller than the entire interior, as with a disc barrow.

Pottery was recovered from the majority of the slots excavated, although the overall total is modest (Table 1). The greatest concentration of pottery was in the south-east quadrant (slots 1, 10, 18, 38), where 110 of the 184 sherds were found.

The slots showed a series of fills throughout the ring ditch, ranging from three to seven but mostly between four and five

Table 1. Pottery quantification from the ring ditch, by slot and fill

Cut	Fill	No. sherds
1	53	4
1	54	17
1	55	6
10	64	11
18	81	9
18	85	11
18	86	12
34	352	1
38	153	2
38	156	38
105	191	1
105	193	13
118	259	9
119	265	1
144	366	5
217	455	5
217	456	16
228	467	2
228	468	19
228	472	2

[24] P. Ashbee, *The Bronze Age Round Barrow in Britain* (London, 1960), fig. 3.

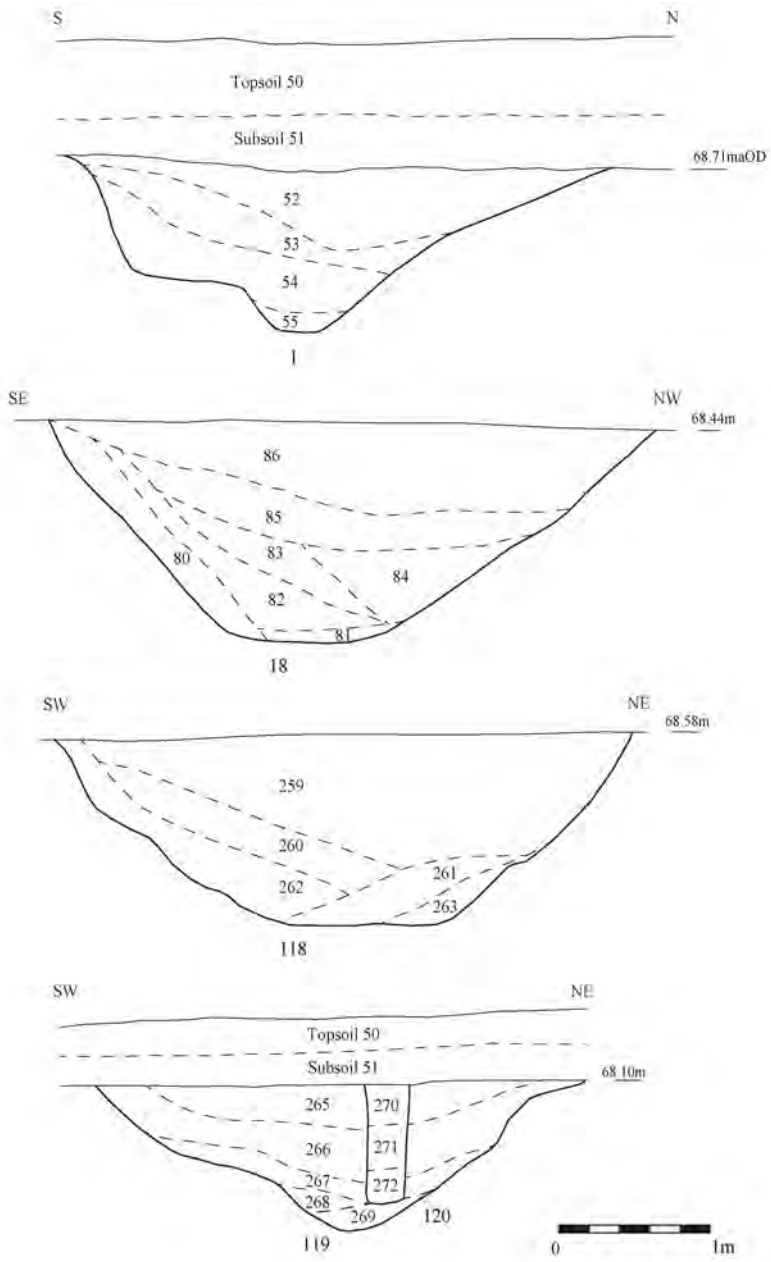

Fig. 5. Ring ditch sections (1).

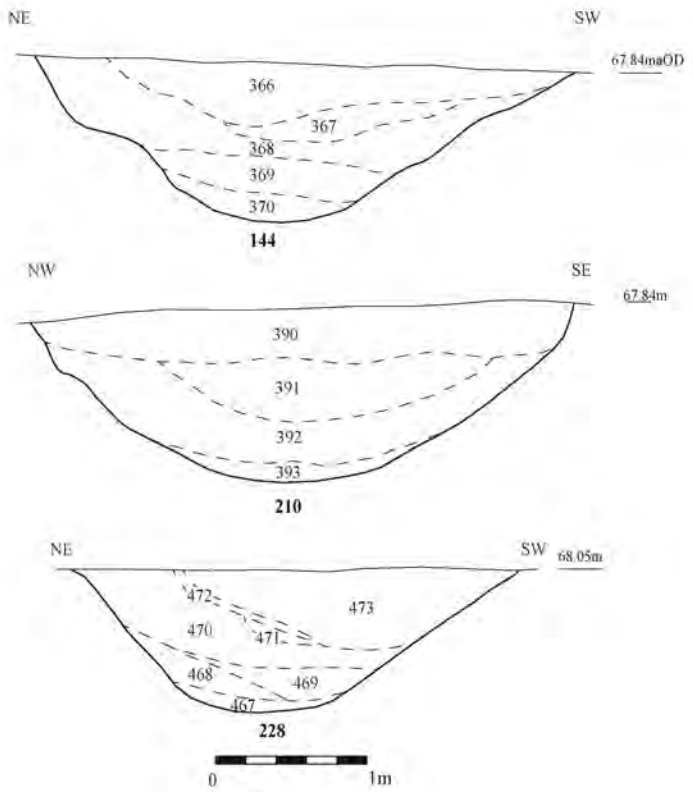

Fig. 6. Ring ditch sections (2).

fills (Figs. 5, 6). The fills appear to show an initial slumping along the external edge and base, presumably from the external bank beginning to collapse back into the ditch as well as from some natural infilling and from trampling while the ditch was under construction. Backfilling was evident above the natural collapse and silting layers with then a natural silting of the ditch evident along the entire circumference of the monument. The placing of the spearheads in the topmost fill of the ditch (slot 132) would suggest that some evidence of the ring ditch was still visible in the landscape and may represent a ritual closure. Slot 1 (Fig. 5) is typical of the majority of the ring ditch and shows four fills slumping in from the outer edge of the ditch. Exceptions can be found in the north-west quadrant, slots 34, 132 and 210. Tip lines were not evident from the outer edge here and it appeared that a uniform filling up of the ditch had occurred in this area. This may be due to a distinct change in the geology of the site from a clayey limestone gravel to a much softer sand, which would have resulted in a much more unstable matrix prone to collapse and slumping on both sides of the ring ditch. Also of note was slot 119 (Fig. 5). This showed evidence of a post hole (120) cut into the top fill of the ditch, and almost to its entire depth. However, no dating evidence was recovered from this so it is unclear whether this feature is contemporary with the final back filling of the ring ditch or a much later intrusion. No other evidence of post holes was observed anywhere else within the fill of the ditch.

Slots 10 and 38, in the south-east quadrant, both contained placed deposits on the base. The base of slot 10 contained a stone axe hammer. The primary fill of slot 38 (Fig. 7) contained 38 pieces of a collared urn. On the north-west side of the ditch, the top fill of slot 132 (396) contained two very well preserved bronze spearheads dating to the later part of the middle Bronze Age (around 1400–1200 BC). These had been deliberately placed in the top of the ditch, possibly marking a final closure. They were surrounded by darker soil deposits possibly suggesting that they had originally been placed in bags.

Animal bone was recovered from the entire circumference of the ring ditch. Species included cattle,

Fig. 7. Ring ditch section 38 looking south-west; horizontal scale 2 m, vertical 1 m.

pig, sheep/goat, and some unusual finds of red and roe deer, crane, dog, badger and aurochs bones. A sample of bone (pig jaw) from the base of slot 144 (370) was dated by radiocarbon determination to 1981–1771 cal BC (KIA42468) with a 91.9% probability.

The ditch was found to cut pit 27 (Fig. 3), as discussed above, and it was itself cut by no later feature except a very shallow modern linear feature (139).

After all hand-dug interventions were complete (shown on Fig. 1), the remainder of the ring ditch was fully excavated using a JCB-type machine fitted with a toothless ditching bucket. This permitted the recovery of a small quantity of further pottery and faunal material but no other deposits or finds of significance.

The ring ditch interior. Of particular note in the area enclosed by the ring ditch was a large pit (47) that was situated slightly off centre in the south-east quadrant. This measured 2.05 m in diameter and was 1.15 m deep. It contained eight separate fills (175, 176, 177, 178, 179, 180, 181 and 182). Fill 176 contained six sherds of late-Neolithic/early Bronze-Age pottery and fill 182 (a thin lens of material at the top) contained a single piece of late-Neolithic/early Bronze-Age pottery. It is possible that this pit represents the position of a large post that would have stood in the approximate centre of the ring ditch. Alternatively, the absence of a central burial may be accounted for if this pit were a cenotaph burial where the body could not be buried. The presence of the pottery makes it likely that the pit is a feature contemporary with the creation of the ring ditch.

Pits 106–109 and 123 appeared to form a small group. Pit 106 was 0.86 m wide and 0.26 m deep. It contained a single sherd of late-Neolithic/early Bronze-Age pottery and 13 pieces of animal bone from its top fill (194). Pit 123 was a similar size and contained two sherds of late-Neolithic/early Bronze-Age pottery and 12 fragments of bone, mostly pig. Pit 107 was 0.75 m wide and 0.48 m deep. It contained 32 pieces of animal bone. Pit 109 was 0.75 m wide and 0.38 m deep. It contained 15 pieces of animal bone from its secondary fill. This grouping could be seen as a possible structural feature within the ring ditch.

It is unclear what significance should be attached to the distribution of the internal features. They were

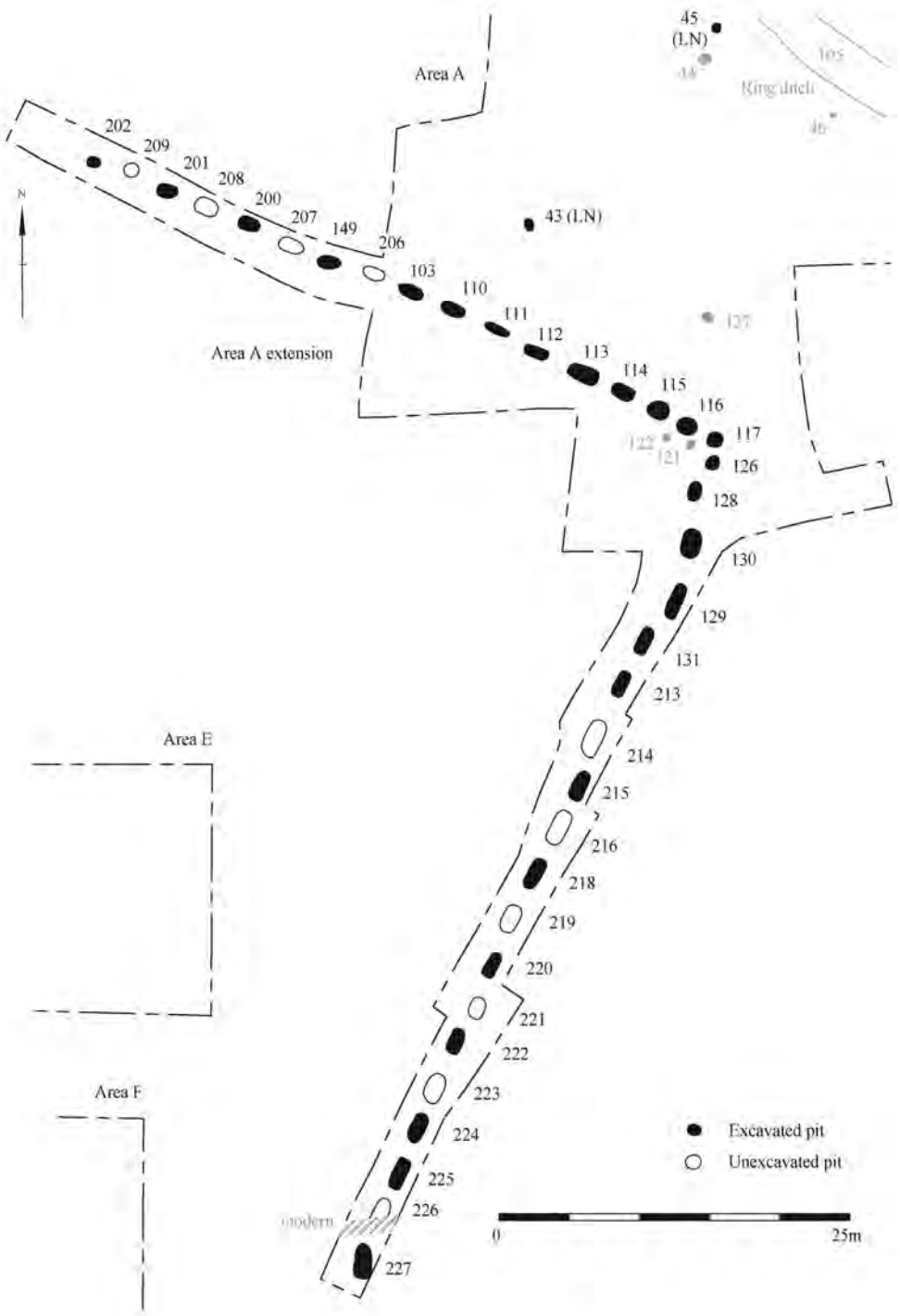

Fig. 8. Plan of pit alignment.

nearly all in the northern half of the enclosed area, and, with the important exception of pit 47, around the edge, where a berm might be. The implication seems to be that their locations were avoiding an internal mound.

The pit alignment (Fig. 8). The presence of a Neolithic pit (43) in what was originally the south-west corner of the trench, led to a decision to extend the excavation in that direction, at which point a previously unsuspected pit alignment was identified, and the excavation area was extended further to trace it (Figs. 1 and 8). The alignment consisted of 36 pits (103, 110–17, 126, 128–31, 149, 200–2, 206–9, 213–16 and 218–27). Of these, 206–9, 214, 216, 219, 221, 223 and 226 were not excavated. The others were initially half-sectioned then fully excavated, with soil samples taken from sixteen of them to enhance recovery of finds and environmental data. The only finds from the samples were three broken flint flakes, one broken blade and three tiny fragments (2 g) of animal bone. No environmental evidence was produced by the sieving programme from the pit alignment.

The alignment had a pronounced ninety-degree turn from a south-south-west to north-north-east direction to a west-north-west to east-south-east line as it approached the ring ditch. The alignment on its south-south-west to north-north-east trajectory seems to be aimed directly at the centre of the ring ditch. The north-western end of the alignment appeared to come to a halt and despite extending Area C as well to attempt to trace it, no return southwards was evident. The southern end of the alignment was traced as far as possible but it probably continued beyond the site boundary. Re-examination of the geophysical plot offers no hint of the existence of this feature or any assistance in projecting a continuation of it.

The pits of the alignment were rather more rectangular or elongated oval than round, and generally around 2 m long by 1 m wide with depths averaging 0.5 m. Their shape suggests they were not intended to support posts but to exist as pits, but they seem to be larger and deeper than is often the case for pit alignments. There is more than a passing resemblance to a segmented ditch, but the latter tend to be much less regular. All but one had single fills of soft brown or grey brown silty sand or sandy clay with few inclusions (occasional flints). Only pit 128 had two fills; it is possible this was actually cut into a pre-existing feature (Fig. 9).

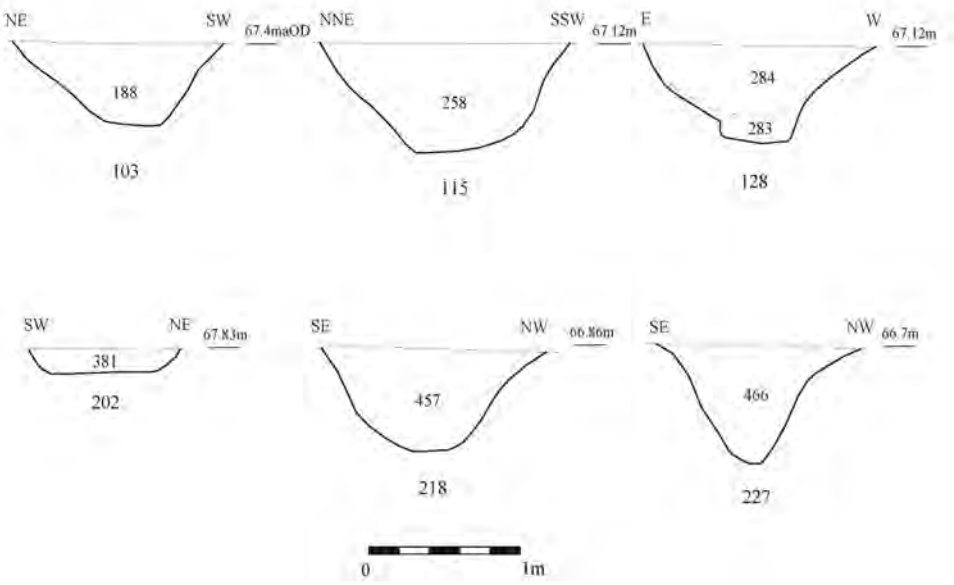

Fig. 9. Selected sections of pits in the alignment.

Finds were uniformly few, as seems generally to be the case for pit alignments. Pit 103 contained a single piece of struck flint (a blade), and broken flint flakes came from pits 117, 218 and 222. Pit 114 contained two pieces of animal bone. Pits 128, 200 and 218 each contained a single sherd of early to middle Iron-Age pottery, pit 213 contained two sherds of early to middle Iron-Age pottery, pits 110 and 117 each contained a single sherd of middle to late Bronze-Age pottery and pit 113 had one sherd of each period. The nine sherds of pottery from 36 pits cannot be thought of as providing anything like a secure chronology, but an early to middle Iron-Age date for the alignment as a whole seems most likely.

Other features. Other features in Area A, not related to the pit alignment nor obviously associated with the ring ditch, included a small cluster of features, comprising post holes 13, 14, 15, 16, 26 and pit 31, which may form a structure, potentially a small roundhouse with a diameter of *c.*5 m, though the plan is far from convincing. Of these, post hole 15 contained three pieces of late Bronze-Age pottery; post hole 26 contained burnt bone and was initially thought to be a cremation deposit and therefore was dug in 0.02 m spits. It was 0.40 m wide and 0.14 m deep. All of the cremated material was recovered (amounting to just 46 g) but none of it was certainly human. Pit 31 was 1.60 m in length, 0.98 m wide and 0.31 m deep. It contained just one piece of fired clay.

Pit 29 contained one sherd of middle/late Bronze-Age pottery. Post hole 30 contained three sherds of early to middle Iron-Age pottery. Pit 44 contained only a few scraps of animal bone. Pit 45 contained 30 pieces of animal bone from its top fill (165) and from its lower fill (166) 16 pieces of animal bone, including cattle, pig and a partial jaw bone of a young beaver. One piece of burnt flint was also recovered. Features 145, 146, 147 and 148 were a series of inter-cutting pits; the only finds they produced were a few animal bones and, from pit 147, a flint scraper.

Post holes 4, 5, 13, 14, 16, 17, 46, 104, 211 and 212, and pits 35, 124, 133–7 and 229 were all excavated but did not produce any finds.

Areas B, C, D and E (Fig. 1)

These areas were all opened to examine linear geophysical anomalies. Four linear features (39–42), were identified in Area B, one of which was a continuation of a very shallow modern feature (139) cut across the northern part of the ring ditch. All of these features appeared to be post-medieval or modern. They do not correspond to the geophysical anomalies, which may instead reflect where the geology changes from sand to clay.

Four gullies (6–9) were identified in Area C. Again none corresponded to the geophysical anomaly which here too most likely represents a change in the geology. Gully 9 contained modern china and tile and was not investigated further. Gully 7 contained post-medieval tile. Gully 6 was 0.70 m wide and 0.36 m deep and contained a single sherd of very abraded Roman pottery, which probably provides only a most general *terminus post quem*. Gully 8 was 0.52 m wide and 0.30 m deep. It contained four abraded sherds of Roman pottery. As gullies 6 and 8 lay nearly parallel to one another, some 16 m apart, it is possible they do represent Roman land use, but the dating evidence is slim. No archaeological deposits were identified in Area E.

The geophysical anomaly in Area D was a continuation of that targeted in Area C and again appeared to represent a geological change. However, the trench also contained four linear features and five post holes. Gully 11 contained eight pieces of fired clay and gully 12 contained four pieces of very abraded Roman pottery (weighing less than 1 g per sherd). Its north-eastern terminus (102) was 0.85 m wide and 0.42 m deep but contained only a single piece of unidentified animal bone. No stratigraphic relationship could be established between gullies 11 and 12. The remaining gullies and all of the post holes contained no dating evidence. It is possible that the post holes represent a Roman fence line associated with gully 12.

Area F (Fig. 1)

Another geophysical anomaly was detected in this area, in a visible hollow in the field, and it appeared to be a trackway aligned east–west. Due to the size of this feature a slot was machine-dug against the western edge of the area. This revealed not one but a series of intercutting linear features (32, 33, 36 and 37), possibly evidence of a continuous use of the trackway, which evidently did not extend as far as 15 m further east, since it was not apparent in the area of the pit alignment. The only finds from these features, 18 pieces of brick and tile, point to a post-medieval date.

Area G (Fig. 1)

A geophysical anomaly in this area, initially thought to be a palaeochannel, was caused by a dump of compacted gravel and modern rubbish, probably a redundant farm track.

PREHISTORIC POTTERY by FRANCES RAYMOND

The prehistoric pottery assemblage comprises 579 sherds of Neolithic to middle Iron-Age pottery, weighing 3,933 g (Table 2). The most significant component is the fragmented remains of a series of Grooved Ware vessels deposited in six pits in the late fourth to early third millennium BC (359 sherds, 1778 g). A few residual Grooved Ware sherds came from the ring ditch (11 sherds, 35 g). The majority of diagnostic pieces are typical of the Clacton sub-style, with only one vessel displaying Durrington Walls affinities.

A small group of later third to earlier second millennium BC pottery from the ring ditch and nearby pits (78 sherds, 968 g) incorporates fragments of Style 2 or 3 Beakers,[25] either with narrow banded decoration or horizontal cordons. Food Urns are also represented, including part of a late style Collared Urn from the primary silts of the burial monument.[26]

The middle to late Bronze-Age pottery (117 sherds, 1063 g) is in similarly fragmented condition and is largely derived from the ring ditch. Virtually all of the diagnostic forms, including a Globular Urn from the lower secondary silts, are typical of the middle Bronze Age and it is probable that the majority of sherds are of this date. However, the presence of fragments from late Bronze-Age vessels and the continued use of some of the flint-tempered wares into this period prevents the more precise phasing of many of the featureless wall fragments. The few remaining sherds are principally of late-prehistoric character (13 sherds, 88 g). Two are from a middle Iron-Age vessel, and the rest are in fabrics which could have been produced at any time between the earliest and middle Iron Age.

The prehistoric pottery has been recorded by context following the guidelines of the Prehistoric Ceramics Research Group.[27] Details of fabric, form, decoration, surface treatment and colour, wall thickness, fragmentation and condition have been entered on a database and are available in the archive. Each of the wares is identified by a unique alpha-numeric code based on the initial letters of its non-plastic inclusions. The sherds were sorted into fabric groups with the aid of a binocular microscope at x20 magnification, while the descriptions were prepared using this and a higher magnification of x40.

The Grooved Ware

Character and deposition. The Grooved Ware from each of the six pits in the vicinity of the later ring ditch (pits 2, 27, 43, 140, 204 and 205) shares a number of similarities which point to a close affinity between the assemblages. The late fourth to early third millennium BC dates from three of these features (2, 43 and 140) suggest that this is partly the product of chronology. Refitting sherds from pits 2 and 43 demonstrate unequivocally that at least two of the assemblages were deposited as part of a single event.

Where it is possible to reconstruct profiles the evidence indicates open forms with a strong horizontal decorative emphasis typical of the Clacton sub-style (Figs. 10–12, nos. 3–28). The only exception is a tub-shaped vessel deposited in both pits 2 and 43, with vertical panels indicating Durrington Walls affinities (Fig. 11, nos. 1–2). Regardless of their orientation all of the motifs are impressed and are composed of grooved lines, stab marks or a combination of the two, and apart from a few sandy sherds most of the Grooved Ware is shell-tempered.

But despite these similarities there are contrasts in the character of the deposits, including striking differences in the proportion of pottery from the pits. Pits 2, 43 and 140 produced relatively large assemblages, while pits 27, 204 and 205 incorporated comparatively little ceramic material, a pattern which can be attributed with confidence to preferential selection, as for example, the deposition of relatively large slabs of pottery in pits 2 and 43, accompanied in the latter case by most of a cup. Intriguingly these same two pits produced refitting sherds from the Durrington Walls vessel: a slab from pit 2 and a few small sherds from pit 43. The nature of the ceramics and the evidence for the practices which led to their deposition are best elucidated by looking in more detail at each of these assemblages.

Pit 2 (Fig. 10, nos. 1–7). There are 131 sherds of Grooved Ware from pit 2 (883g) associated with a date of 3106–2904 cal BC (KIA42471, Appendix 7). Where they survive, the exterior surfaces are in various colours ranging from light red and reddish yellow through light brown and light reddish brown to dark reddish grey, pinkish grey and dark grey. The majority of sherds are from the lower fill, 57 (128 sherds, 871 g) and are in fresh condition (86%, 110 sherds). The pottery is derived from at least three vessels, the

[25] H.J. Case, 'Beakers: Deconstruction and After', *Proceedings of the Prehistoric Society*, 59 (1993), pp. 241–68.

[26] C. Burgess, '"Urnes of no Small variety", Collared Urns Reviewed', *Proceedings of the Prehistoric Society*, 52 (1986), pp. 339–51.

[27] *The Study of Later Prehistoric Pottery: General Policies and Guidelines for Analysis and Publication*, Prehistoric Ceramics Research Group Occasional Papers, 1 and 2 (Oxford, 1997).

Table 2. Pottery summary by fabric and period

Fabric	Date	No.	Wt (g)	Vessel Type
indet	?EN	1	1	
S/1	LN	10	15	GW – miniature/cup
sh/1	LN	55	93	GW
sh/2	LN	57	173	GW, including Clacton Style
V/1	LN	241	1504	GW, including Clacton Style, including open miniature vessel and some with Durrington Walls affinities
VS/1	LN	7	28	GW
F/1	LN–EBA	2	15	Beaker
G/1	LN–EBA	7	18	
GglS/1	LN–EBA	4	11	Beaker
GS/1	LN–EBA	13	71	?Beaker
GS/2	LN–EBA	5	15	Beaker
GS/4	LN–EBA	1	2	
S/4	LN–EBA	2	6	Beaker
FGS/1	EBA	2	54	Biconical or slack biconical urn
G/1	EBA	40	664	Collared Urn, food urn
GS/3	EBA	2	112	
sh/3	EBA–MBA	2	30	Biconical or slack biconical urn
F/2	MBA	23	218	Globular Urn
FS/6	MBA	1	146	Bucket Urn
FS/7	MBA	7	181	Straight sided urn
GV/1	MBA	10	114	
sh/4	MBA	1	13	
V/2	MBA	21	75	Tub shaped vessel
F/2	MBA–LBA	1	5	
FglS/1	MBA–LBA	2	26	
FS/3	MBA–LBA	23	94	
FS/4	MBA–LBA	11	48	Small tub shaped vessel
FS/5	MBA–LBA	11	17	
FS/6	MBA–LBA	1	23	
indet	MBA–LBA	1	1	
FS/3	LBA	1	39	
FS/4	LBA	1	31	
S/3	EIA	1	12	
FMS/1	EIA–MIA	2	30	
FS/1	EIA–MIA	4	15	
S/3	EIA–MIA	4	13	
FS/8	MIA	2	18	

EN: Early Neolithic
LN: Later Neolithic
EBA: Early Bronze Age
MBA: Middle Bronze Age
LBA: Late Bronze Age
EIA: Earliest Iron Age
MIA: Middle Iron Age
GW Grooved Ware

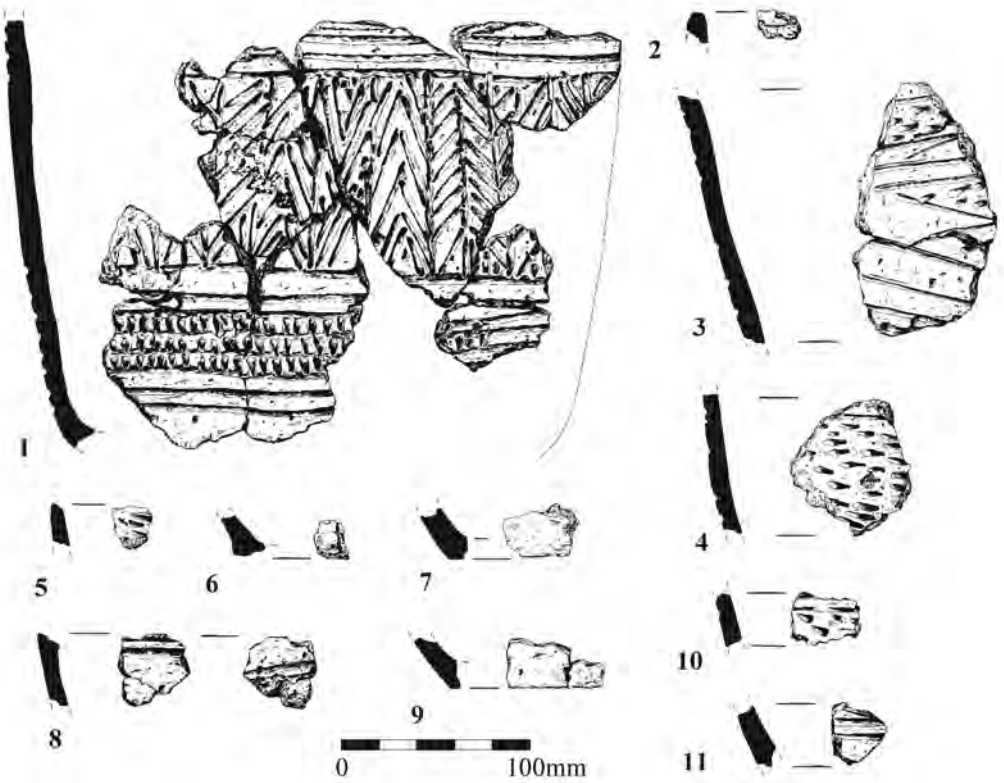

Fig. 10. Grooved Ware pottery from pits 2 (1–7) and 27 (8–11).

most complete of which has a tub-shaped profile, a dark reddish grey to reddish yellow exterior (5YR4/2 and 6/6) and is represented by joining fragments forming a large slab (Fig. 10, no. 1; 13 sherds, 455 g). A tiny, simple and rounded rim fragment may be from this same vessel (Fig. 10, no. 2), as are three sherds from the upper fill of pit 43, including two which refit with the slab (not illustrated). The decoration is arranged in three broad zones, the vertical decoration flanked by horizontally oriented bands. The vertical panels filled with opposed lines and chevrons are typical of the Durrington Walls sub-style, as is the profile. There are indications that the ladder pattern on the lower part of the vessel may not have continued around its entire circumference. Similar cuneiform impressions occur within motifs on sherds from three of the other pits, including either lozenges, chevrons or triangles (pits 27, 43 and 140; Fig. 11, nos. 10, 14–15; and Fig. 12, no. 24); the diagonal sweep of the grooves on the right hand side of the illustration is reminiscent of those on the Clacton pottery from this and the other pits.

Converging diagonal lines of this type, partly defining horizontal lozenges infilled with oval stabbed impressions, embellish two light brown refitting sherds (Fig. 10, no. 3). These marks recur in a horizontal band on a similarly coloured wall fragment and on the very dark grey exterior of a small bevelled rim (Fig. 10, nos. 4–5). There are an additional eight decorated sherds (weighing 111 g) carrying fragments of the same motifs including the apex of a lozenge (not illustrated). It is just possible that these and the illustrated pieces (weighing 112 g) are derived from a single vessel.

This must remain uncertain as much of the pottery from pit 2 is made from an identical leached shelly ware (V/1; 59% by count (77 sherds), but 90% by weight (796 g), which is also represented in the five other pits. In addition to the material described above there are 50 small sherds in the same fabric (116 g) including one of two base fragments (Fig. 10, no. 6) and 17 wall sherds decorated with up to three parallel grooved lines (not illustrated). The remainder of the assemblage in this ware is composed of tiny undecorated fragments (31 sherds, 20 g; <2 cm across). The presence of at least one other vessel is indicated by a contrasting fabric confined to the lower fill of pit 2 (57), which is also represented in the upper part of pit 43 (163) and includes a finer grade of surviving shell (sh/1). The rest of the Grooved

Ware from pit 2 is in this ware, but it is not possible to determine whether all of the sherds are from a single vessel (41% by count, 54 sherds; 10% by weight, 87 g). The material includes one base fragment (Fig. 10, no. 7), eleven wall sherds decorated with up to three parallel grooved lines (not illustrated) and 42 split undecorated pieces.

There are two anomalous fragments of pottery from pit 2. One split and heavily abraded piece (1 g) from fill 57 is in an indeterminate flint-tempered ware that might be of earlier Neolithic date. The second wall sherd is from the upper fill (56) and is made from a sandy fabric of probable late-prehistoric origin (FS/1 and intrusive).

Pit 27 (Fig. 10, nos. 8–11). There are only seven small sherds of fresh to lightly abraded Grooved Ware from a single deposit (88) in pit 27 (73 g), which are derived from at least two different vessels both with open profiles (Fig. 9, nos. 8–9). A small black rim is decorated internally with a horizontal line on its bevel and externally with diagonal grooves (Fig. 10, no. 8). This is in the same leached shelly ware as a brown wall fragment embellished with four parallel grooved lines (V/1; not illustrated). The rest of the sherds from the pit are made from a contrasting slightly finer ware with surviving shell and are possibly part of a single vessel (sh/2; 5 sherds, 54 g). The illustrated base and two wall fragments are pinkish grey and plain (Fig. 10, no. 9), while one of the remaining two brown and very dark grey decorated wall sherds (Fig. 10, nos. 10–11) carries part of a motif filled with cuneiform impressions (Fig. 10, no. 10), recalling similar marks on vessels from pits 2, 43 and 140 (Fig. 10, no. 1; Fig. 11, nos. 14–15, 22, 24). Other shared attributes include the fabrics: one ubiquitous to all of the pits (V/1) and the other represented in pit 205 (sh/2).

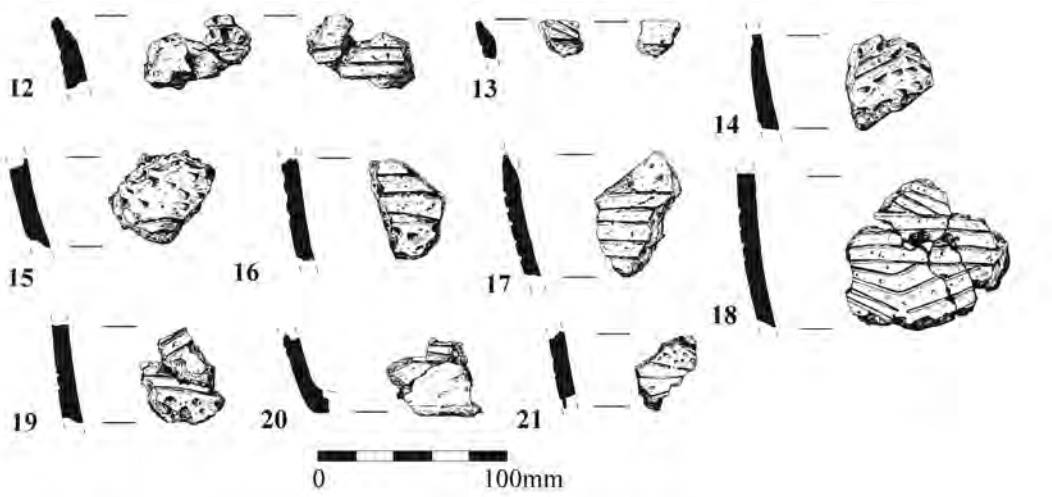

Fig. 11. Grooved Ware pottery from pits 140 (12–19) and 205 (20–1).

Pit 140 (Fig. 11, nos. 12–19). The larger assemblage from pit 140 (50 sherds, 208 g) is made exclusively from the same coarse shelly ware represented in the other pits (V/1) and is derived from at least two or possibly three vessels. The lower fill (365) produced 18 fresh to lightly abraded sherds (91 g) with light brown to pink exteriors, associated with a radiocarbon date of 3115–2915 cal BC (KIA42470, Table 6). The ceramics include three small rim fragments from two open vessels with internal decoration on their bevels (Fig. 11, nos. 12–13). One has a single horizontal groove above a sub-square to oval impression (Fig. 11, no. 12), while the other carries short diagonal lines (Fig. 11, no. 13). The narrow grooves decorating the exterior of both vessels are repeated on three of the larger wall sherds (Fig. 11, nos. 14–15, 17); in two instances (14, 15) bordering zones filled with cuneiform impressions, one of which (14) may be a lozenge, chevron or triangle. These recall similarly filled zones and motifs on sherds from cuts 27 and 43 (Fig. 10, no. 10; and Fig. 11, no. 24). The presence of a third vessel might be indicated by the markedly broader grooves used to partly define an area filled with oval impressions on the only other illustrated sherd from the lower fill (Fig. 11, no. 16). This deposit additionally produced four small fragments of pottery decorated with up to two parallel lines (1–2 cm across; weighing 7 g; not illustrated) and six split wall sherds (6 g).

There are 32 fragments (117 g) of Grooved Ware from the upper fill (364), which apart from three dark grey examples are in the same colour range as those from fill 365. The greater proportion of the group is fresh to lightly abraded (59% by count, 19 sherds; and 93% by weight, 109 g) and these include all but one of the decorated pieces. The moderately abraded condition of the remaining material (13 sherds, 9 g) almost certainly reflects damage during processing rather than weathering prior to deposition or subsequent disturbance, since it is exclusively derived from a sieved sample. Fill 364 produced the largest of the decorated sherds (39 g) from the pit on which interlocking lines have been used to define chevrons (Fig. 11, no. 18), as on wall fragments from pit 43 (Fig. 12, nos. 26–7). Similar chevrons or triangles are coupled with a zone filled with oval impressions on a second wall sherd (Fig. 11, no. 19). Twelve additional wall fragments (57 g) are embellished with up to three parallel or converging grooves (not illustrated); while the rest of the pottery from the upper fill comprises 18 tiny undecorated sherds weighing 9 g (<2 cm across).

Pit 204. There are only four sherds (14 g) of lightly abraded Grooved Ware from a single horizon in pit 204 (fill 380) made from the same coarse shelly ware found in all of the pits (V/1). Two wall fragments are decorated with two parallel lines (not illustrated) and the other two are plain.

Pit 205 (Fig. 11, nos. 20–1). A larger and highly fragmented group of 53 sherds (120 g) came from at least two vessels from fill 382 in pit 205. Virtually all of the sherds (52 sherds, weighing 119 g) are in the same shelly ware (sh/2) as the pottery from pit 27 and are probably part of a single vessel with a light brown exterior. The illustrated pieces are decorated with horizontal and sweeping diagonal lines used to define horizontal lozenges or triangles filled with oval impressions (Fig. 11, nos. 20–1). The occurrence of similar motifs on vessels from pits 2, 43 and 140 (Fig. 10, no. 3; Fig. 11, nos. 14, 19; Fig. 12, no. 24), points to a close affiliation with the ceramics from these early Grooved Ware deposits. Other fresh sherds in the same fabric include seven with parts of the more complete motif on illustrated sherd 21, and 43 undecorated pieces likely to be mostly from the base and lower walls (weighing 57 g). The presence of a second vessel is indicated by a single lightly abraded split fragment made from the coarse shelly ware found in all of the grooved ware pits (V/1; weighing 1 g).

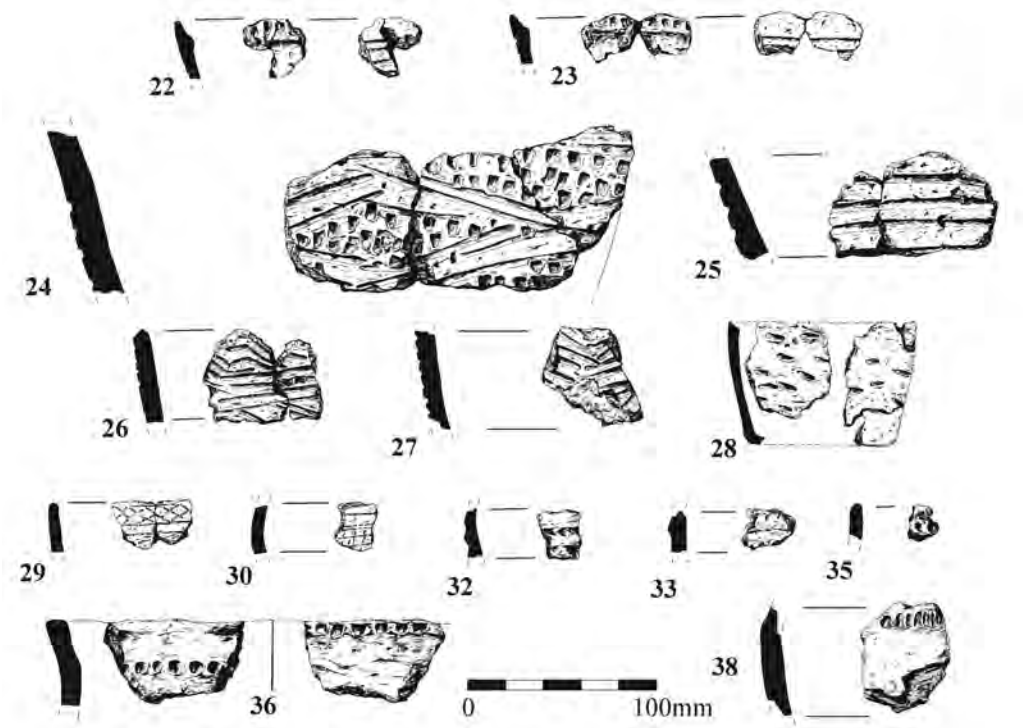

Fig. 12. Grooved Ware pottery from pit 43 (22–8) and pottery from ring ditch 100 (29–38).

Pit 43 (Fig. 12, nos. 22–8). The 114 sherds (480 g) from pit 43 come from three fills, 163, 250 and 251, and are associated with a radiocarbon date of 3096–2901 cal BC (KIA42469, Table 6). The material is mainly in fresh to lightly abraded condition and represents the remains of at least six vessels including the one with Durrington Walls affinities from pit 2 (Fig. 10, no. 1). Most of the pottery (94%, 107 sherds, weighing 466 g), including all of the illustrated pieces, is made from the coarse shelly ware (V/1) found in all of the Grooved Ware pits. The two other fabrics from the pit include one with finer surviving shell (sh/1), which was also represented in pit 2, and a sandy ware (S/1) also used for the fragmented fired clay from this and three of the other pits (2, 27 and 140). The exteriors of the sherds vary in colour from black, dark grey and dark reddish grey, through reddish brown, brown and light brown to pink.

The seven sherds (10 g) from fill 251 include five wall fragments (weighing 6 g; not illustrated) decorated with grooved lines, and two refitting rims from an open vessel, with a row of cuneiform impressions on the bevel and parallel horizontal lines on the exterior (Fig. 12, no. 22). These are likely to be derived from the same vessel as four rim sherds from the overlying deposit (fill 250; Fig. 12, no. 23).

In total, fill 250 produced 42 tiny fragments of pottery (weighing 45 g; <3 cm across), of which 15 are decorated (21 g) and 27 are plain (24 g). The decorated pieces include the four rims mentioned above (Fig. 12, no. 23), two simple and rounded rims with up to two parallel diagonal grooves on the exterior (not illustrated) and nine wall fragments mostly with up to two parallel lines, but with one example carrying the apex of a lozenge or triangle (not illustrated).

The bulk of the Grooved Ware is from fill 163 (65 sherds, weighing 425 g), which produced sherds from the Durrington Walls vessel in pit 2 (Fig. 10, no. 1), a relatively large slab of pottery, fragmented material and part of a cup. There are three small decorated sherds from the Durrington Walls vessel (weighing 20 g; 3 cm across; not illustrated): one joining the vertically panelled motif on the left hand side of the slab; one refitting onto the gap in the horizontal ladder pattern; and the third from this same zone. The large slab (weighing 174 g; Fig. 12, no. 24) placed in fill 163 is from an open form decorated with interlocking horizontal lozenges filled with cuneiform impressions. Two refitting sherds (48 g; Fig. 12, no. 25) embellished with parallel lines, and one with part of a lozenge (6 g; not illustrated) may be from the same vessel. The filled lozenges are broadly similar to the motifs represented in pits 2 and 140 (Fig. 10, no. 3; Fig. 11, nos. 14–16). A thinner walled vessel decorated with interlocking grooved lozenges and/or chevrons is represented by two illustrated sherds (42 g; Fig. 12, nos. 26–7) and five smaller fragments (15 g; not illustrated), again sharing the same design as an example from pit 140 (Fig. 12, no. 18). The cup has an open profile and is decorated with staggered oval impressions, which are very faint in places (Fig. 12, no. 28). It was incomplete when placed in the pit as only 37% of the rim and 67% of the base is present. The cup is fractured into 23 pieces (weighing 77 g), with an additional seven tiny fragments (6 g) that might be from this same vessel. Five of the 16 remaining sherds in the same fabric (V/1) from fill 163 are decorated with up to three parallel grooves (not illustrated).

The few undecorated fragments in the contrasting shelly or sandy ware from fill 163 denote the presence of at least two other vessels (one sherd, 6 g, in sh/1; and five sherds, 5 g, in S/1). The sandy sherds include a simple, rounded and upright rim from a cup with a diameter of approximately 8 cm (2 g; not illustrated).

Residual sherds from the ring ditch. Most of the residual Grooved Ware came from cut 1 on the southern side of the ring ditch (9 sherds, weighing 33 g), with only two sherds (2 g) from cut 144 to the north. In contrast to the material from the pits, the pottery is made entirely from sandy fabrics. Seven of the sherds (28 g) from the primary and secondary silts of cut 1 (fills 53 and 55) are in a ware (VS/1) that additionally incorporates sparse shell and rare limestone. Five are decorated with single grooves (not illustrated) and two are plain. The other split wall sherds from the secondary fill of cut 1 and the tertiary silts of cut 144 are in the same sandy fabric used for the cup from pit 43 (not illustrated) and the fired clay from pits 2, 27, 43 and 140.

Fabric descriptions. All five of the fabrics are soft and friable with evenly distributed inclusions. The site is located on clays of the Ancholme Group which includes local outcrops of both the Ampthill and Kimmeridge Clay.[28] The Kimmeridge Clay is poorly exposed in the Thame valley, being mostly buried below hill wash, drift and head deposits, while the normally abundant fossils are rare in local outcrops due to weathering. By contrast, oyster beds are recorded in exposures of Ampthill Clay and it is possible that these are the source of the shell in most of the Grooved Ware fabrics. The use of marine shell is also a possibility, as for Clacton sub-style sherds from the chalk plaque pit on King Barrow Ridge near Stonehenge.[29]

[28] A. Horton et al., *Geology of the Country around Thame* (Keyworth, 1995).

[29] R.M.J. Cleal and M.J. Allen, 'Investigation of Tree-Damaged Barrows on King Barrow Ridge and Luxenborough Plantation, Amesbury', *Wiltshire Archaeology and Natural History Magazine*, 87 (1994), p. 69.

S/1 (10 sherds, weighing 15 g from pit 43 and cuts 1 and 144 of the ring ditch): a fine fabric with abundant sub-rounded quartz sand (0.1–0.5 mm) and rare well rounded glauconite (0.1–0.5 mm).

sh/1 (55 sherds, 93 g from pits 2 and 43; Fig. 10, no. 7): a medium-grade ware incorporating very common shell (0.1–4 mm).

sh/2 (57 sherds, 173 g from pits 27 and 205; Fig. 10, nos. 9–11; Fig. 11, nos. 20–1): a coarse fabric with very common shell (0.1–6 mm).

V/1 (241 sherds, 1504 g from pits 2, 27, 43, 140, 204 and 205; Fig. 10, nos. 1–6, 8; Fig. 11, nos. 12–19; and Fig. 12, nos. 22–8): a coarse ware characterized by very common voids with a shape typical of shell (0.1–8 mm).

VS/1 (7 sherds, 28 g from cut 1 of the ring ditch): a medium-grade fabric with very common rounded quartz sand (0.2–0.5 mm) and sparse voids (0.1–4 mm), some of which are characteristic of shell. A fossil source seems likely as there is one fragment of surviving limestone.

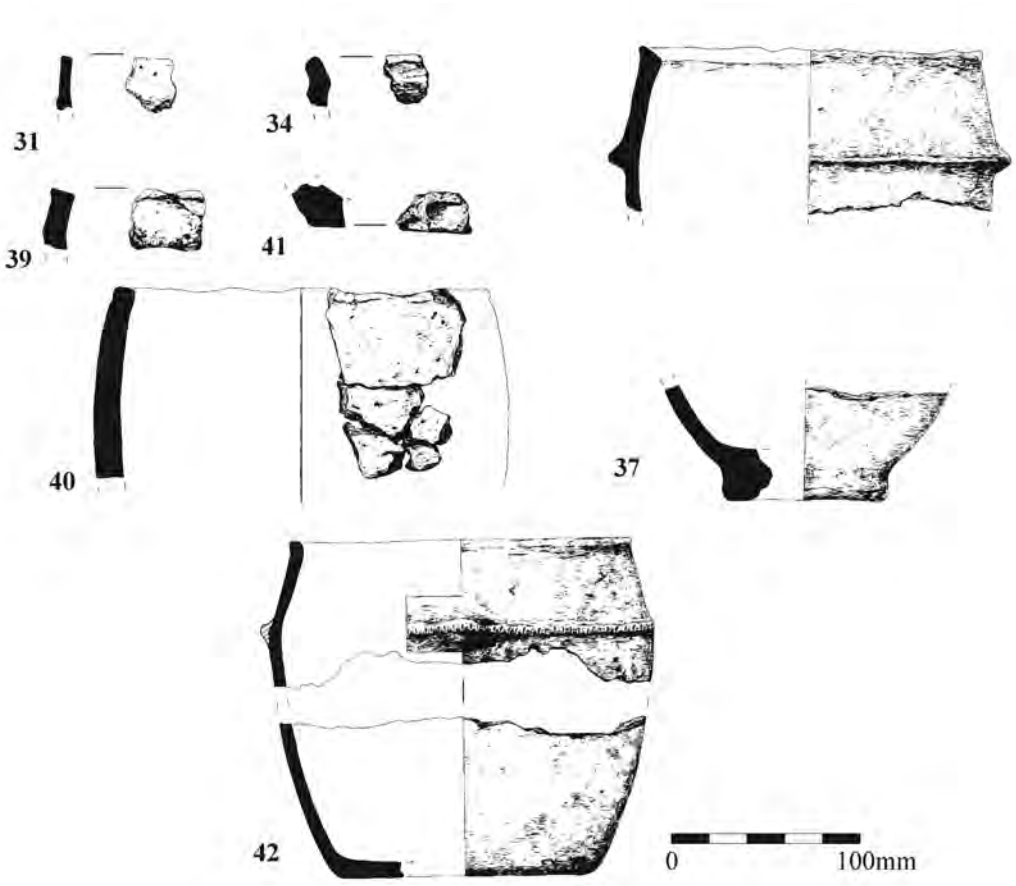

Fig. 13. Pottery from pits within the ring ditch.

Late-Neolithic to Early Bronze-Age Pottery: Character and Deposition

Apart from a few sandy or flint-tempered Beaker fragments (4 sherds, 21 g), all of the late-Neolithic to early Bronze-Age sherds are in various grog-tempered fabrics (74 sherds, 947 g). These include relatively fine wares characteristic of those used for Beakers (27 sherds, 120 g) and the coarser Food Urn fabrics (51 sherds, 848 g). The limited stylistic evidence confirms the presence of at least six Beakers and five Food Urns, which are derived principally from the ring ditch (86%, 67 sherds, weighing 936 g). Most of the finer pottery is from the southern part of the circuit (15 sherds, 88 g; from cuts 1, 18, 38 and 105)

with a smaller proportion from the northern arc (5 sherds, 14 g; from cuts 34, 144 and 228). This pattern is repeated with the coarse Food Urn sherds, which concentrate on the south side of the ring ditch (39 sherds, 690 g, from cuts 1 and 38), with only a few fragments from sections on the northern and eastern side (five sherds, 210 g, from cuts 144 and 217).

The distribution is skewed by multiple fragments from a late style Collared Urn in the primary silts of cut 38 (fill 156; 38 sherds, 614 g; Fig. 12, no. 38). These are in fresh condition and include refitting fragments representing 44% of the rim and collar together with a large sherd forming 30% of the vessel's base. Equivalent horizons in cuts 1 and 228 produced another sherd in the same coarse fabric used for the Collared Urn (6g) and three Beaker wall fragments (9g). The rest of the late-Neolithic to early Bronze-Age pottery from the ring ditch was associated with middle Bronze-Age or later pottery and is clearly residual (25 sherds, 307 g; Fig. 12, nos. 29–30, 32–3, 35–6, 38).

A few fragments (10 sherds, 30 g) of contemporary fresh to lightly abraded pottery came from three of the pits (47, 106 and 123) inside the ring ditch. The diagnostic pieces are derived from two vessels with horizontal cordons: a Beaker sherd from pit 106 (Fig. 13, no. 31); and seven fragments from a Beaker or small Food Urn from pit 47 (Fig. 13, no. 34). The only other comparable pottery from the site is a single residual undecorated Beaker wall sherd from pit 113 in the pit alignment.

Form and decoration. The assemblage includes ten decorated Beaker sherds (55 g) derived from at least five vessels, but there is virtually no evidence for their profiles. Narrow banded motifs and those composed of rectangular toothed comb impressions typical of Style 2 and 3 Beakers are confined to the material from the ring ditch. Two of the vessels are represented by sherds decorated with similar narrow lattice-filled bands. These are comb impressed on the refitting illustrated rim fragments, which have a reddish yellow exterior and are made from a flint-tempered fabric (F/1)(Fig. 12, no. 29). A similarly decorated dark reddish grey sherd from the primary silts is in a grog-tempered ware (GS/2), but the lattice pattern is indistinct and it is not clear whether it is comb impressed or incised (not illustrated). Rectangular comb impressions occur on two other sherds in the same fabric (GS/2): in narrow bands infilled with short diagonal impressions on a residual fragment with a light red exterior (Fig. 12, no. 30), and in indistinct chevrons or a herringbone motif on a reddish brown piece from the primary silts (not illustrated). Similar impressions arranged in six parallel lines also embellish a residual reddish brown sherd in a sandy ware (S/4) (not illustrated), while a single line on a residual brown fragment in the same fabric is too eroded to determine whether it is comb impressed or incised (not illustrated).

Horizontal cordons occur on three Beaker sherds: one with a dark grey exterior in a glauconitic sandy ware with grog tempering (GglS/1) is from pit 106 (Fig. 13, no. 31), and two are from later horizons in ring ditch cut 1 (Fig. 12, nos. 32–3). One has a brown and one has a red exterior; both are in the same sandy grog-tempered ware (GS/1) and carry rows of similar short diagonal impressions.

Horizontal cordons occur on two other vessels that might also be Beakers, but could be Food Urns. The first is represented by seven light brown and black fragments (18g) from cut 47 including a rim (Fig. 13, no. 34). The form and the coarse grog-tempered fabric (G/1) are consistent both with the Food Urn series and 'domestic' Beakers, but unfortunately too little of the profile survives to allow a distinction to be made with any degree of confidence. The second cordoned vessel is represented by a single dark grey sherd from the primary silts of the ring ditch in the same glauconitic fabric (not illustrated; GglS/1) as the similarly decorated Beaker rim from pit 106 (Fig. 13, no. 31).

A residual dark brown rim from the ring ditch embellished with a fingernail row is made from a relatively fine sandy fabric (GS/4) most typical of the wares used for Beakers (Fig. 13, no. 36), but with so little of the profile surviving its derivation from a small Food Urn cannot be ruled out. Two black wall fragments from the tertiary fill of the ring ditch carry similar fingernail rows and are in a fabric used for some of the decorated Beaker sherds (not illustrated; GS/1).

Early Bronze-Age forms include a reddish yellow rim from the tertiary silts of the ring ditch likely to be derived from a Food Urn (possibly a Biconical Urn) with a fingertip row on its outer lip repeated on the internal bevel (Fig. 12, no. 36). This is made from the same coarse grog-tempered ware (G/1) as the Collared Urn from the primary silts, which has a reddish brown to light reddish brown exterior (Fig. 13, no. 37). The urn has a peaked collar and biconical profile typical of the 'late' group as defined by Burgess.[30] A Biconical Urn shoulder from the tertiary silts on the eastern side of the ring ditch (cut 217) is decorated with a fingernail row and is made from a sandy grog-tempered ware (Fig. 12, no. 38; FGS/1). The illustrated sherd is in fresh condition with a brown to dark grey exterior and is associated with a wall fragment in the same fabric. The only other featured sherd likely to be derived from a Food Urn is a horizontally mounted oval lug from the tertiary silts with a brown exterior, in a coarse but sandy grog-tempered fabric (not illustrated; GS/3).

[30] Burgess, '"Urnes of no Small Variety"'.

Fabric descriptions. With the exception of one flint-tempered and one exclusively sandy ware, all of the late-Neolithic to early Bronze-Age pottery is grog-tempered. Five of the six fine wares, the medium grade fabric and one of the two coarse wares are sandy and all are soft with evenly distributed inclusions. The visible non-plastics in the various fabrics occur in deposits within a 5-km radius of the site. This includes the glauconite in one of the wares which is present in the Gault Clay and Upper Greensand outcrops to the south of Thame, in the upper part of the Kimmeridge Clay and in exposures of the Portland Formation to the north-east of Church Farm.[31] The origin of the flint in two of the fabrics is uncertain, but even if it is from the chalk the nearest source is only some 10 km to the south and south-east of the site.

F/1 (2 sherds, weighing 15 g; Fig. 12, no. 29): a fine fabric tempered with common flint (0.2–2.5 mm).
FGS/1 (2 sherds, 54 g; Fig. 12, no. 38): a medium-grade ware incorporating sparse flint (0.2–2 mm), rare well-rounded glauconite (0.1–0.6 mm), common grog (0.2–3 mm) and very common rounded quartz sand (0.1–0.6 mm).
G/1 (47 sherds, 682 g; Fig. 12, no. 36; Fig. 11, nos. 34, 37): a coarse ware tempered with common grog (0.2–5 mm) and rare burnt flint (up to 3mm).
GglS/1 (4 sherds, 11 g; Fig. 13, no. 31): a fine ware incorporating common grog (0.2–2 mm), moderate well-rounded glauconite (<0.06–0.3 mm) and sparse rounded quartz sand (0.1–0.3 mm).
GS/1 (13 sherds, 71 g; Fig. 12, nos. 32–3): a medium-grade ware with common grog (0.2–3 mm) and moderate rounded quartz sand (0.1–1.2 mm).
GS/2 (5 sherds, 15 g; Fig. 12, no. 30): a fine fabric containing common grog (0.2–1.5 mm) and moderate rounded quartz sand (0.3–2 mm).
GS/3 (2 sherds, 112 g): a coarse ware including common grog (0.2–7 mm) and moderate rounded quartz sand (0.2–0.8 mm).
GS/4 (1 sherd, 2 g; Fig. 12, no. 35): a fine fabric with sparse grog (0.2–1.5 mm) and common rounded quartz sand (0.2–0.8 mm).
S/4 (2 sherds, 6 g): a fine ware incorporating very common rounded quartz sand (0.1–1 mm) and rare limestone (up to 1.2 mm).

Fig. 14. Middle/late Bronze-Age pottery.

Middle to Late Bronze-Age Pottery: Character and Deposition

Most of the later Bronze-Age pottery is from the southern (cuts 1, 10, 18, 105, 118: 71 sherds, weighing 389 g) or north-eastern segments (cuts 144, 217, 228: 38 sherds, 618 g) of the ring ditch. In addition a few wall fragments came from two features to the south of the monument (four sherds, 20 g, from post hole 15 and pit 29) and two from the Iron-Age pit alignment (two sherds, 28 g, from pits 110 and 117).

The majority of later diagnostic sherds from the ring ditch are of middle Bronze-Age date (Fig. 13, nos. 40–2; Fig. 14, nos. 43–4) and it is probable that the bulk of the pottery was produced during this period (60 sherds, 740 g, from at least seven vessels). There are three exceptions: one rim that might be of early Bronze-Age date (Fig. 13, no. 39), and two base fragments with dense flint grits on their exteriors. This grit is highly characteristic of the late Bronze Age, although the evidence does suggest that it was a

[31] Horton et al., *Geology of the Country around Thame.*

technological tradition which may have developed somewhat earlier. Unfortunately there is no indication of the profile of either of the vessels with this type of surface treatment, while an associated rim is from a form which could be of middle or late Bronze-Age origin (Fig. 14, no. 45). The potential presence of late Bronze-Age pottery made from similar fabrics to the middle Bronze-Age forms also raises uncertainties over the phasing of some of the featureless wall fragments (45 sherds, 177 g, from at least four vessels), which like the rim can only be assigned to a time frame encompassing both periods.

One of the flint-gritted base sherds was found in the lower secondary silts and if it is of late Bronze-Age date it demonstrates that all of the middle Bronze-Age pottery from the ring ditch is residual. Even if this is the case the largely fresh to lightly abraded condition of the pottery would suggest its derivation from adjacent in situ contexts.

Form and decoration. The ring ditch produced featured sherds from one early or middle Bronze-Age and six middle Bronze-Age vessels. A small moderately abraded rim which could be derived equally from an early Bronze-Age biconical urn or a middle Bronze-Age slack biconical vessel is potentially the earliest (Fig. 13, no. 39). The light brown shelly fabric (sh/3) is closely related to similar wares used for middle Bronze-Age vessels (Fig. 13, nos. 40–1; GV/1 and V/2). The rim is from the lower secondary silts in cut 1 (54), in an equivalent horizon to a middle Bronze-Age Globular Urn (Fig. 13, no. 42) and residual late-Neolithic to early Bronze-Age pottery. The Globular Urn from cut 228 is represented by refitting and other fresh fragments comprising 15% of its rim and 20% of its base and lower walls (Fig. 13, no. 42; 18 sherds weighing 208 g). The vessel is embellished with a cordon decorated with a fingernail row, which continues across a horizontally mounted oval lug likely to have been one of three or four. The urn is made from a medium-grade flint-tempered ware (F/2) and the exterior has been smoothed so that most of the inclusions are covered. An undecorated horizontal cordon from cut 217 denotes the presence of at least one other vessel in the same fabric (not illustrated).

Four urns from the tertiary silts of the ring ditch are represented by rims. Several sherds from an ovoid vessel include 11% of the rim and a small base fragment with a deeply impressed thumbed or fingertip row on the lower walls (Fig. 13, nos. 40–1; 10 sherds, 114 g). The surface varies in colour from yellowish red and reddish yellow to dark grey, while the predominantly shelly fabric additionally incorporates sparse grog (GV/1). Approximately 12% of the rim of a Bucket Urn with a partly surviving applied cordon (Fig. 14, no. 43) is from the same cut (228) as the Globular Urn (Fig. 13, no. 42). This has a light brown to dark grey exterior and is made from a flint-tempered ware (FS/6). Six fragments in a similar fabric (FS/7) from the eastern side of the ring ditch include 10% of the rim of an urn with a partly smoothed light brown to pinkish grey exterior (Fig. 14, no. 44; from slot 217). The presence of at least one other middle Bronze-Age vessel is denoted by two simple and flattened rim tops and an applied oval lug made from a shelly fabric (not illustrated; V/2).

The last of the illustrated residual sherds may be part of a middle Bronze-Age accessory vessel, but could equally be an ovoid form of late Bronze-Age date (Fig. 14, no. 45). Both the rim and a densely flint gritted base from the same horizon (deposit 259 in cut 118) are made from an identical flint-tempered ware (FS/4), although they are not necessarily part of a single vessel.

Fabric descriptions. Seven of the eleven middle to late Bronze-Age fabrics are tempered with common to very common flint, while the other four incorporate shell. Most of the flint-tempered wares are sandy in character, while one additionally contains notable quantities of glauconite. All of the visible non-plastic inclusions are represented in geological deposits within a 5–10 km radius of the site. The shell is most likely to be derived from a local Jurassic deposit, while the character of one of the wares may indicate the use of Kimmeridge Clay (sh/4). The sparse shell in this fabric is consistent with the observed rarity of fossils in exposures of this formation in the Thame valley, while the water worn black stones may be lydite which is a characteristic component of the Kimmeridge Clay at Thame.[32] All of the fabrics have evenly distributed inclusions and only one represented by 9% of the sherds is fine (11 sherds 17 g). Just over half of the sherds are made from medium grade fabrics (59%, 68 sherds, 616 g), while the rest are in coarse wares (32%, 37 sherds, weighing 429 g).

F/2 (24 sherds, weighing 223 g; Fig. 13, no. 42): a soft, medium-grade fabric tempered with very common flint (0.2–3 mm).

FglS/1 (two wall sherds, 26 g): a hard, medium-grade ware containing common flint (0.2–4 mm), moderate well-rounded glauconite (0.06–0.2 mm) and abundant sub-angular quartz sand (up to 0.125 mm).

[32] Ibid.

FS/3 (24 wall and base sherds, 133 g): a soft, coarse fabric incorporating common flint (0.5–5 mm) and common rounded quartz sand (0.1–0.5 mm).
FS/4 (12 sherds, 79 g; Fig. 14, no. 45): a soft, medium-grade ware with common flint (0.2–3 mm), rare mica (<0.06 mm) and common rounded quartz sand (0.1–0.5 mm).
FS/5 (11 wall sherds, 17 g): a hard, fine fabric with moderate flint (0.2–2 mm), rare glauconite (0.3–0.5 mm), rare mica (<0.06 mm) and abundant angular quartz sand (up to 0.125 mm).
FS/6 (two sherds, 169 g; Fig. 14, no. 43): a hard ware including common flint (0.2–5 mm), rare mica (<0.06 mm) and abundant angular to rounded quartz sand (0.06–0.8 mm).
FS/7 (seven sherds, 181 g; Fig. 14, no. 44): a soft, medium-grade fabric incorporating very common flint (0.2–4 mm) and abundant angular quartz sand (up to 0.125 mm).
GV/1 (10 sherds, 114 g; Fig. 13, nos. 40–1): a soft coarse ware with sparse grog (0.1–9 mm) and very common voids characteristic of shell (0.1–8 mm).
sh/3 (two sherds, 30 g; Fig. 13, no. 39): a soft medium-grade fabric with very common shell (0.1–4 mm)
sh/4 (one wall sherd, 13 g): a soft coarse fabric with rare flint (up to 5 mm), sparse shell (0.1–7 mm) and sparse pieces of water worn well-rounded black stone that might be lydite (up to 3.5 mm).
V/2 (21 sherds, 77 g): a soft medium-grade ware with very common voids characteristic of shell (0.1–3 mm).

Earliest to Middle Iron-Age Pottery: Character and Deposition Thirteen wall and base fragments (weighing 88 g) from various discrete features and the surface of the ring ditch are most likely to be of late-prehistoric origin. This is somewhat tentative as there is no evidence of vessel form. The only three sherds with chronologically diagnostic attributes are from the surface of the ring ditch. One is a base fragment in a sandy ware with dense oolitic limestone grits on its exterior (S/3). Although the material is different this recalls the comparable application of abundant flint to vessel bases, pointing to a late Bronze-Age or earliest Iron-Age date. Given the sandy fabric, production towards the end of this range is most probable. The other two refitting wall sherds from the ring ditch are decorated with two broad shallow tooled lines and are almost certainly from a middle Iron-Age vessel (not illustrated). This has a very dark grey burnished exterior and is made from a fine sandy fabric (FS/8).

The other ten sherds are either in the same ware as the earliest Iron-Age base (S/3) or are made from similar predominantly sandy fabrics (FMS/1 and FS/1). This would suggest a most likely production date during a time frame spanning the earliest Iron Age to the middle Iron Age. The sherds are from post hole (30) to the south of the ring ditch, the upper fill of Grooved Ware pit 2, and five pits in the alignment (113, 128, 200, 213 and 218).

Fabric descriptions. As with earlier periods, all of the non-plastic inclusions are represented in geological deposits within a 5–10 km radius of the site. The only potentially non-local sherd is the base with ooliths on its exterior. These do occur in limonitic sandstone in Lower Greensand outcrops on the southern outskirts of Thame,[33] but the absence of limonite from the base would suggest that it is an unlikely source. The ooliths are most probably derived from outcrops of the Great Oolite Group, which at their nearest are 20 km to the north-west of the site.

FMS/1 (two sherds, weighing 30 g): a hard, medium-grade fabric with sparse flint (0.2–4 mm), sparse mica (<0.06 mm) and very common sub-angular quartz sand (<0.06–0.2 mm).
FS/1 (four sherds, 16 g): a soft, fine fabric with sparse flint (0.2–1 mm), rare mica (<0.06 mm) and abundant sub-angular quartz sand (up to 0.2 mm).
FS/8 (two sherds, 18 g): a hard, unoxidized, fine fabric with sparse flint (0.2–1 mm) and common rounded quartz sand (0.1–0.3 mm).
S/3 (five sherds, 25 g): a soft, fine fabric with very common rounded quartz sand (0.3–0.6 mm).

Discussion

Grooved Ware: chronology and affinities. The late fourth to early third millennium BC dates for the deposits in pits 2, 43 and 140 place the assemblages at the beginning of the Grooved Ware tradition, consistent with the proposed chronology for the emergence of this ceramic style between 3100 and 3000/2900 cal BC.[34]

[33] Ibid.
[34] A. Brindley, 'Sequence and Dating in the Grooved Ware Tradition', in R. Cleal and A. MacSween (eds.), *Grooved Ware in Britain and Ireland*, Neolithic Studies Group Seminar Paper, 3 (1999), pp. 133–44; P. Garwood, 'Grooved Ware in Southern Britain: Chronology and Interpretation', ibid. pp. 145–76.

Using high value dates, Garwood argues for a more refined origin in southern Britain no earlier than 3000/2900 cal BC,[35] a range which may also apply to the Church Farm pottery. The character of the decoration is congruent with the compositions typical of the earliest of the ceramic horizons identified by Brindley.[36] While the chronology potentially places the assemblages before the emergence of the Woodlands sub-style in southern Britain and an apparently distinctive upper Thames regional group combining Woodlands and Clacton influences.[37]

The vertical panels on the vessel from pits 2 and 43 (Fig. 10, no. 1) are a defining attribute of Durrington Walls Grooved Ware,[38] just as the sole use of incision may be characteristic of this sub-style at an early date.[39] Opposed line filling of panels has a widespread occurrence and in the upper Thames region the broad design structure is echoed on a vessel from Thrupp,[40] and Pit A, Vicarage Field, Stanton Harcourt, which also has a zone embellished with a horizontal ladder pattern.[41] This motif has been singled out as an external decorative feature of the Woodlands sub-style,[42] but in Oxfordshire it apparently had a wider application. That this occurred at Church Farm before the suggested emergence of Woodlands ceramics in the region might indicate that the more restricted use of ladder pattern is a later development.[43] A similar crossover with Clacton decorative schemes is indicated by the chevrons and opposed lines within the panels, which recall the running chevrons on a Clacton vessel from Corporation Farm.[44]

The shelly fabric of the Church Farm vessel stands out when compared with the Oxfordshire and Gloucestershire assemblages, where grog tempering is predominant in Durrington Walls Grooved Ware.[45] In this particular instance the fabric is identical or very similar to that used for the Clacton sub-style, a trait which might be due to the early date of the Church Farm pottery. It is certainly conceivable that the preference for using grog as a tempering in Durrington Walls vessels is one which developed in the upper Thames area as time progressed. Equally, the choice of fabric at Church Farm could reflect the geographical position of the site on the margins of the region, giving rise to a different local ceramic tradition. Although grog-tempered Durrington Walls vessels are represented in Buckinghamshire, as at Stacey Bushes,[46] indications of alternative preferences amongst communities to the north-east are provided, for example, by the wares used for sherds in this sub-style from Pit 4 at Puddlehill near Dunstable, which are characterized by sand, shell or a mixture of the two.[47]

The rest of the more diagnostic vessel fragments from the pits have Clacton affinities. Where there is sufficient evidence the profiles are open and the motifs are arranged horizontally. Internal decoration is simple in design and confined to rim bevels (Fig. 10, nos. 5, 8; Fig. 9, nos. 12, 13; Fig. 12, nos. 22–3). The filled lozenges (Fig. 10, no. 3; Fig. 11, no. 14; Fig. 12, no. 24), interlocking chevrons (Fig. 11, no. 18; Fig. 12, nos. 26–7) and the staggered oval impressions on the cup (Fig. 12, no. 28) are typical of the sub-style.[48] All three design elements occur on Clacton vessels from Pit 6 at Puddlehill.[49] Similar filled triangles and lozenges are represented at Dorchester-on-Thames,[50] while interlocking chevrons occur on sherds with Clacton affinities from Roughground Farm, Lechlade.[51]

The sandy fabric used for the cup from pit 43 (not illustrated) although unusual, has regional

[35] Garwood, 'Grooved Ware in Southern Britain', p. 152.
[36] Brindley, 'Sequence and Dating in the Grooved Ware Tradition', pp. 138–41 (horizons 1 and 2).
[37] Garwood, 'Grooved Ware in Southern Britain', p. 157; A. Barclay, 'Grooved Ware from the Upper Thames Region', in Cleal and MacSween, *Grooved Ware*, p. 10.
[38] G. Wainwright and I. Longworth, *Durrington Walls Excavations 1966–1968* (London, 1971), pp. 240–2.
[39] Garwood, 'Grooved Ware in Southern Britain', pp. 157–9.
[40] Barclay, 'Grooved Ware from the Upper Thames Region', fig. 2.2.13.
[41] N. Thomas, 'Excavations at Vicarage Field, Stanton Harcourt, 1951', *Oxoniensia*, 20 (1955), fig. 5.1.
[42] Wainwright and Longworth, *Durrington Walls*, p. 239.
[43] Garwood, 'Grooved Ware in Southern Britain', p. 157.
[44] Barclay, 'Grooved Ware from the Upper Thames Region', fig. 2.2.1.
[45] Ibid. p. 12.
[46] H.S. Green and S. Sofranoff, 'A Neolithic Settlement at Stacey Bushes, Milton Keynes', *Records of Buckinghamshire,* 27 (1985), p. 32 and fig. 10.14 (fabric Q).
[47] C.L. Matthews, *Occupation Sites on a Chiltern Ridge: Excavations at Puddlehill and Sites near Dunstable, Bedfordshire. Part I: Neolithic, Bronze Age and Early Iron Age*, BAR, 29 (1976), pp. 4–5.
[48] Wainwright and Longworth, *Durrington Walls*, pp. 236–8.
[49] Matthews, *Occupation Sites on a Chiltern Ridge,* figs. 3.1, 3.3 and 3.4; I.F. Smith, 'Pottery Discussion', ibid. p. 9.
[50] R.J.C. Atkinson et al., 'Excavations at Dorchester, Oxon.', *Archaeological Newsletter,* 4 (1951), plate X. 49 and 50.
[51] T. Darvill, 'Pottery', in T. Allen et al., *Excavations at Roughground Farm, Lechlade, Gloucestershire: A Prehistoric and Roman Landscape* (Oxford, 1993), fig. 8.2.

precedents within Grooved Ware assemblages. It recalls two thin-walled vessels of uncertain sub-style in a similar ware from Pit 3196 at Barrow Hills, Radley and some of the fabrics used for the Durrington Walls sherds from Pit 4 at Puddlehill.[52] Further afield similarly low frequencies of sandy wares occur in Wessex,[53] where they have both Durrington Walls and Woodlands associations.[54] At Church Farm the proportions may be slightly higher than at the other sites if some of the fired clay from the pits is indeed partly derived from vessel bases (see below).

Deposition. The deposition of Grooved Ware in clustered or paired pits is typical of the upper Thames area,[55] of the earliest assemblages in southern Britain, which are restricted to pits,[56] and of many mainland sites.[57] The radiocarbon dates indicate the deposition of Grooved Ware in pits 2, 43 and 140 within a relatively tight time frame. Whether this also applies to the sherds from the other three pits (27, 204 and 205) is uncertain, although the similarity of the motifs and fabrics from two of these (pit 27, Fig. 10, nos. 8–11; pit 205, Fig. 11, nos. 20–1) would suggest a close affinity with the dated assemblages. The larger dated groups were present in more than one layer in each of the features, an occurrence not uncommon in Grooved Ware pits.[58] It is not clear whether the ceramics in successive horizons were deposited during a single event or on more than one occasion. All that can be said with certainty is that refitting sherds indicate that the lower fill of pit 2 and the upper layer in pit 43 are synchronous horizons. Yet these deposits are different in character suggesting that they may have been intended as the culmination and expression of different phases of a ceremonial sequence.

The group from pit 2 (Fig. 10, nos. 1–7) is dominated by the Durrington Walls slab (Fig. 10, no. 7) and that from pit 43 by sherds with Clacton affiliated decorative motifs (Fig. 12, nos. 22–8). Two of the three fragments from the Durrington Walls vessel in this horizon refit on fresh breaks and provide samples from opposing parts of the distinctive vertically panelled decoration and the ladder pattern motif. The assemblage from the upper fill of pit 43 is additionally distinctive in having fragments from twice the number of vessels as in any of the other Grooved Ware pits. These range in size from a thick-walled open bowl to the decorated cup (Fig. 12, nos. 24, 28), which is the only vessel from the site with a full profile represented by refitting sherds, but even here approximately 60% of the rim and 30% of the base are missing.

In contrast to the other two pits, pit 140 only produced pottery with Clacton affinities, which was distributed in two horizons in similar quantities. A close affiliation with the ceramics from pits 2 and 43 is indicated both by the dates and by the deposition of sherds with similar motifs (Fig. 11, nos. 12–19).

The association between the Durrington Walls vessel and others with Clacton affinities in pits 2 and 43 is of singular character in a region where the occurrence of more than one sub-style in the same deposit is highly unusual,[59] although such combinations are recorded in other areas.[60] This may be the product of a change in the articulation of symbolic meaning through time, with the maintenance of such distinctions simply not being appropriate in the earliest of the Grooved Ware horizons. Other factors such as the particular significance of the Church Farm landscape and the ways in which ceramics were being used locally and thus imbued with meaning may also have come into play.

Although it is not necessarily the case that all Grooved Ware was being arranged and selected for deposition,[61] this does appear to have been a dominant practice in the upper Thames valley and beyond.[62]

[52] R. Cleal, 'Prehistoric Pottery', in Barclay and Halpin, *Excavations at Barrow Hills, Radley*, p. 200 and fig. 4.32, P34 and P36; Matthews, *Occupation Sites on a Chiltern Ridge,* pp. 4–5; Smith, ibid. p. 10.

[53] R. Cleal, 'Prehistoric Pottery', in Barclay and Halpin, *Excavations at Barrow Hills, Radley,* p. 200.

[54] R.M.J. Cleal, 'Pottery fabrics in Wessex in the Fourth to Second Millennia BC', in I. Kinnes and G. Varndell (eds.), *'Unbaked Urns of Rudely Shape' Essays on British and Irish Pottery for Ian Longworth* (Oxford, 1995), fig. 16.2 and table 16.1; J.F.S. Stone, 'Some Grooved Ware Pottery from the Woodhenge Area', *Proceedings of the Prehistoric Society*, 15 (1949), pp. 123–4 and fig. 1.

[55] Barclay, 'Grooved Ware from the Upper Thames Region', pp. 14 and 20.

[56] Garwood, 'Grooved Ware in Southern Britain', p. 157.

[57] J. Thomas, 'The Return of the Rinyo-Clacton Folk? The Cultural Significance of the Grooved Ware Complex in Later Neolithic Britain', *Cambridge Archaeological Journal,* 20 (2010) p. 2.

[58] Barclay and Halpin, *Excavations at Barrow Hills, Radley*, pp. 279–80, 319–20; Barclay, 'Grooved Ware from the Upper Thames Region', p. 14.

[59] Barclay, 'Grooved Ware from the Upper Thames Region', p. 14.

[60] Thomas, 'Return of the Rinyo-Clacton Folk?' pp. 2–4.

[61] Cf. D. Garrow, 'Placing Pits: Landscape Occupation and Depositional Practice during the Neolithic in East Anglia', *Proceedings of the Prehistoric Society*, 73 (2007), pp. 1–24.

[62] Barclay, 'Grooved Ware from the Upper Thames Region', pp. 14–15; Thomas, 'Return of the Rinyo-Clacton Folk?'

At Church Farm the occurrence of refitting sherds from the Durrington Walls slab in two pits some 60m apart is perhaps the most startling evidence, but this is supported by other patterns suggesting that the ceramic fragments were chosen and placed. In all of the pits the sherds were laid horizontally, while small and fragmented rims from the larger vessels were confined to the lower horizons in an inversion of vessel orientation. This arrangement was maintained even where the bulk of the pottery was in the overlying layer (as in pit 43). By contrast, the rims from the two cups appear to have been treated differently possibly because of contrasting symbolic associations, being confined to the uppermost of the ceramic deposits within pit 43. Again with the exception of one of the cups (Fig. 12, no. 28), all of the bases represent around 5% or less of vessel circumferences. A similar degree of fragmentation is exhibited by the rim sherds, but in contrast the bases occurred in both of the pit 2 horizons and in the top fill of pit 43.

Whatever their meaning, some of the ceramic deposits appear lavish in terms of the number and range of vessels represented. As Thomas has argued, Grooved Ware may have been one of the means of highlighting the importance of everyday relationships and transactions.[63] The character of the Church Farm deposits suggests that they were marking important occasions in community life and were establishing a connection between those people and a particular place in the landscape.

Beaker and later pottery: chronology, affinities and deposition. The similarity of the pottery from the dated and undated Grooved Ware pits points to deposition within a comparable time frame. If this was the case, it would indicate a break in activity at the site reminiscent of the discontinuities identified at Barrow Hills, Radley and Dorchester-on-Thames.[64] The Beaker sherds may pre-date the construction of the ring ditch and could originally have been deposited on the ground surface or in pits, as was the case with at least one small rim fragment (Fig. 13, no. 31). They are so fragmented that there is no indication of their place in Needham's sequence of classification and it is only possible to assign them to the broad currency of Beakers *c.*2500–1700 cal BC.[65] This chronological framework raises the possibility that deposition may have recommenced on the site before the construction of the burial monument at the beginning of the second millennium BC.

The association between Grooved Ware and round barrows is one which is repeated on a number of Oxfordshire sites and indeed more widely in other parts of the country.[66] This is thought to signal the importance of particular places and certainly at Church Farm it suggests the commemoration of a long-established historical connection.

The somewhat limited evidence points to affinities with other Beaker groups from Oxfordshire, where there are suggestions of a regional style.[67] Cordons (as on Figs. 12–13, nos. 31–3) occur, for example, on low-carinated forms from Radley and Sutton Courtenay,[68] and on a weak-carinated Beaker from South Parks Road, Oxford.[69] Vessels with fingernail and fingertip decoration are fairly common in the area. Other examples with fingernail rows close to the rim (similar to Fig. 12, no. 35) include an 'S'-profiled Style 2 beaker from Burial II at Linch Hill Corner and a low-carinated form from Cassington I.[70]

If the typo-chronology proposed by Burgess for Collared Urns is correct,[71] then the late style vessel (Fig. 13, no. 37) is likely to have been deposited in the primary silts of the ring ditch towards the end of the time span indicated by the radiocarbon date (1979–1863 cal BC). A significant proportion of early to late style Collared Urns from various parts of the country are undecorated.[72] Regional examples include

[63] Thomas, 'Return of the Rinyo-Clacton Folk?', pp. 7–11.

[64] Barclay and Halpin, *Excavations at Barrow Hills, Radley*, p. 275; P. Garwood, 'Radiocarbon Dating and the Chronology of the Monument Complex', in ibid. pp. 296–7.

[65] S. Needham, 'Transforming Beaker Culture in North-West Europe; Processes of Fusion and Fission', *Proceedings of the Prehistoric Society*, 71 (2005), pp. 171–217; I. Kinnes et al., 'Radiocarbon Dating of the British Beakers: The British Museum Programme', *Scottish Archaeological Review,* 8 (1991), pp. 35–68.

[66] Barclay, 'Grooved Ware from the Upper Thames Region', pp. 16, 19; R. Cleal, 'Introduction: The What, Where, When and Why of Grooved Ware', in Cleal and MacSween, *Grooved Ware*, p. 6.

[67] Case, 'Beakers: Deconstruction and After', p. 257.

[68] Needham, 'Transforming Beaker Culture in North-West Europe', fig. 5.1; D.L. Clarke, *The Beaker Pottery of Great Britain and Ireland* (Cambridge, 1970), p. 81 (E34).

[69] C. Boston et al., 'Excavation of a Bronze Age Barrow at the Proposed Centre for Gene Function, South Parks Road, Oxford', *Oxoniensia*, 68 (2003), fig. 5.

[70] A. Barclay, 'A Review of Neolithic and Bronze Age Sites in the Devil's Quoits Area', in A. Barclay et al., *Excavations at the Devil's Quoits, Stanton Harcourt, Oxfordshire, 1972–3 and 1988* (Oxford, 1995), fig. 53 C; Clarke, *Beaker Pottery of Great Britain and Ireland,* p. 120, n. 718.

[71] Burgess, '"Urnes of no Small Variety"'.

[72] For example, I.H. Longworth, *Collared Urns of the Bronze Age in Great Britain and Ireland* (Cambridge, 1984), plates 42e, 43a–c, 160–1 and 223–43.

an early style vessel from Standlake,[73] an unusual bevelled form from Abingdon,[74] a miniature from North Stoke,[75] and a second miniature with a similar bipartite profile to the Church Farm vessel from Broughton Barn Quarry, Milton Keynes.[76]

The food urns (Fig. 12, nos. 36–8) potentially overlap with the currency of the late style Collared Urn (Fig. 13, no. 37), but are so incomplete that it is difficult to place them within the suggested developmental sequence.[77] One of the sherds has no close parallels in the published assemblages of the region (Fig. 12, no. 36), while the fingernail-decorated carinated shoulder (Fig. 12, no. 36) and the horizontally mounted oval lug (not illustrated) recall similar features on Biconical Urns from City Farm and Radley.[78]

Though much if not all of the middle Bronze-Age pottery from the ring ditch is residual, it does demonstrate deposition on or close to the barrow during this period. The chronology of the represented types is insufficiently tight to determine whether this process was continuous or not. The early Bronze-Age focus on the southern side of the burial monument was repeated during the middle Bronze Age, when there additionally appears to have been an increased emphasis on the north-eastern quadrant.

The mixture of shelly and flint-tempered wares used for the middle Bronze-Age vessels is typical of the upper Thames area as are most of the forms, although the thumbed or fingertip decoration around the base of one of the urns is unusual (Fig. 13, no. 41). The flattened in-turned rim (Fig. 13, no. 39) might be from an early Bronze-Age biconical vessel, but the form equally recalls that on a Bucket Urn from the Devil's Quoits.[79] The slightly biconical upper profile shared by four of the vessels (Fig. 13, no. 40; Fig. 14, nos. 43–5) is a feature of the regional middle Bronze-Age ceramic repertoire.[80] It is exhibited by urns from Shorncote Quarry,[81] Wantage,[82] and Long Wittenham.[83] There are few regional parallels for the Globular Urn (Fig. 13, no. 42), but this is largely because most of the vessels from the area are very fragmented, as at Barrow Hills, Radley.[84] One of the few more complete examples from Wantage also had imperforate oval lugs at the shoulder,[85] as did a second Globular Urn from the same site (not illustrated).

ROMAN AND LATER POTTERY by MALCOLM LYNE

Just nine sherds of later pottery were recovered: four tiny, very abraded sherds of coarse Oxfordshire oxidized ware from gully 12 in Area D (Roman but undateable within the period); four very small, abraded sherds of Oxfordshire red colour-coat beaker (third to fourth century) from gully 8 in Area C; and a single tiny sherd of what appears to be Cistercian ware, probably from a jug (late fifteenth to sixteenth century) from gully 6 in Area C.

STRUCK FLINT by STEVE FORD

A moderate collection of 443 struck flints was recovered from the site as a whole (summarised in Table 3). Grooved Ware pits 2, 43 and 140 accounted for 77% of the collection. The collection is largely of late-Neolithic date, but possibly includes some Bronze-Age material. A patinated microburin recovered from

[73] Ibid. plate 44a.
[74] Ibid. plate 242b.
[75] Ibid. plate 246m.
[76] A. Chapman, 'Bronze Age Burial and Late Iron Age and Roman Settlement at Broughton Barn Quarry, Milton Keynes, Buckinghamshire', *Records of Buckinghamshire*, 49, (2009), fig. 17, vessel 1.
[77] D.J. Tomalin, 'Armorican Vases à Anse and Their Occurrence in Southern Britain', *Proceedings of the Prehistoric Society*, 54 (1988), pp. 203–21.
[78] H. Case et al., 'Excavations at City Farm, Hanborough, Oxon.', *Oxoniensia*, 29–30 (1964–5), fig. 31.6/1; E.T. Leeds, 'Round Barrows and Ring Ditches in Berkshire and Oxfordshire', *Oxoniensia*, 1 (1936), plate II.
[79] A. Gledhill and A. Barclay, 'Pottery', in Barclay et al., *Excavations at the Devil's Quoits*, fig. 31.1.
[80] A. Woodward, 'Bronze Age Pottery', in C. Parry, 'Excavations near Birdlip, Cowley, Gloucestershire, 1987–8', *Transactions of the Bristol and Gloucestershire Archaeological Society,* 116 (1999), pp. 66–7.
[81] A. Barclay et al., 'Excavation of Neolithic and Bronze Age Ring-Ditches, Shorncote Quarry, Somerford Keynes, Gloucestershire', *Transactions of the Bristol and Gloucestershire Archaeological Society,* 113 (1995), figs. 11.3 and 11.9.
[82] F. Raymond, 'The Early and Middle Bronze Age Pottery', in J. Lewis, 'St Mary's School, Wantage, Oxfordshire: Post-Excavation Assessment', unpublished TVAS report, 07/70 (2010), fig. 17: 1.
[83] Case et al., 'Excavations at City Farm, Hanborough', fig. 28.4.
[84] R. Cleal, 'Prehistoric Pottery', in Barclay and Halpin, *Excavations at Barrow Hills, Radley,* p. 209.
[85] Raymond, 'The Early and Middle Bronze Age Pottery', in Lewis, 'St Mary's School, Wantage', fig. 10: 4.

Grooved Ware pit 2 may be of Mesolithic date, but little more can be said about it. The vast majority of the flint work is in very good condition, reflecting its recovery from undisturbed stratified contexts. Only three patinated flints were recovered. Five struck flints had been burnt. Several flakes seem to have utilization damage, possibly including deliberate retouch.

The material is mostly made on grey and black flint with numerous cherty inclusions, and where cortex is present it is thick and rough to the touch, indicating a source obtained direct from the chalk which outcrops 6 km to the south-east at Chinnor (and 7 km to the upper chalk). This preference is all the more noticeable as gravel flint is present locally. One or two pieces do have a thinner, smoother, lightly iron-stained cortex, indicating that they were made from the local gravel, but these are rare.

Table 3. Struck flint: summary by type

			Grooved Ware pits				
	Site total	**Total**	**Pit 2**	**Pit 43**	**Pit 140**	**Ring ditch**	**Other**
Intact flakes/blades	160	121	50	52	19	27	12
Broken flakes/blades	159	122	38	61	23	22	15
Spalls	58	51	1	42	8	6	1
Cores	8	3	1	2	-	4	1
Core fragments	2	1	-	-	1	1	-
Scrapers	30	24	10	9	5	4	2
Denticulate scraper	1	1	-	1	-	-	-
Awls	1	1	-	1	-	-	-
Retouched flakes	4	4	2	2	-	-	-
Invasive or miscellaneous retouch	4	4	-	4	-	-	-
Microburin	1	1	-	-	1	-	-
Polished axe flake	1	1	-	1	-	-	-
End polished axe	1	-	-	-	-	-	1
Knife	1	-	-	-	-	1	-
Serrated flakes or blades	9	6	3	2	1	2	1
Oblique arrowheads	3	2	1	1	-	1?	
Total	**443**	**342**	**106**	**178**	**58**	**68**	**33**

The Ring Ditch

Despite the digging of such a large ditch, which generated a large volume of flinty gravel, and with substantial excavation of the circuit, the number of flints recovered was surprisingly few. The excavation of ring ditches and earlier prehistoric monuments sometimes provided a quarry source for flint, for example at North Stoke,[86] but this was not the case here at Thame. The flint collection recovered from the ring ditch is neither voluminous nor a quarry dominated assemblage.[87] The ring ditch silted up within the middle Bronze Age, a period when the range of types and volume of flint usage was in decline and produced no positive chronological markers,[88] and it is possible that much of the flintwork recovered from the ditch is residual and reflects the late-Neolithic use of the site. Indeed the character of the ring ditch flintwork is not dissimilar to that from the stratified Grooved Ware pits on the site and is also from a non-local chalk source.

[86] S. Ford, 'The Excavation of a Ring Ditch at North Stoke, Oxfordshire', *Oxoniensia,* 49 (1984), pp. 1–7.
[87] S. Ford, 'Chronological and Functional Aspects of Flint Assemblages', in A.G. Brown and M.R. Edmonds (eds.), *Lithic Analysis and Later British Prehistory: Some Problems and Approaches,* BAR, 162 (1987), p. 68.
[88] S. Ford et al., 'Flint Working in the Metal Age', *Oxford Journal of Archaeology*, 3 (1984), pp. 157–73.

Other Features

Struck flints were recovered in small numbers from various other features on the site, several of them residual finds. Pit 27 contained four flakes and a scraper and pit 205 just a single scraper. Pit 45 did not contain any pottery as dating evidence but is noteworthy since the 18 struck flints (comprising 13 flakes, a core and 3 scrapers) included a small end-polished flint axe (Fig. 15, no. 1).

Analysis of Grooved Ware Pits 2, 43 and 140

Two analyses, metrical and functional, have been carried out on these three pits, since they provide a sufficiently large sample to allow metrical comparison with other assemblages (Table 4). Both the radiocarbon dating and the presence of conjoining pottery from different pits adds weight to the suggestion that these features are contemporary and can be considered as in effect a single depositional phase. The pits have also been compared individually with each other. The purpose of the following analysis is to characterize the nature of the lithic assemblages both to define the chronological attributes and to determine the broad range of flint-using activities that may have taken place. Attributes examined include typology, metrical analysis and functional analysis.

Table 4. Struck Flint: summary of metrical data for the Grooved Ware pits

A) Intact flakes

Length: breadth ratio:	*2.5 or more*	*2 to 2.5*	*1 to 2*	*1 or less*	*Total*
	9	10	80	22	121
	7.4	8.3	66.1	18.2	%
Functional analysis:	*Waste*	*Cutting*	*Awls*	*Other*	*Total*
	27	69	7	18	121
	22.3	57	5.8	14.9	%
Thickness:	*Mean*	*Std Dev*			
	7.8mm	4			
Remaining cortex:	*<1/3*	*>1/3<2/3*	*>2/3*	*Total*	
	103	11	7	121	
	85.1	9.1	5.8	%	

B) Broken flakes

	Broken blade	*Possible broken blade*	*Broken flake*		*Total*
	8	6	108		122
	6.6	4.9	88.5		%
Functional analysis:	*Waste*	*Cutting*	*Awls*	*Other*	*Total*
	42	46	2	32	122
	34.4	37.8	1.6	26.2	%
Remaining cortex:	*<1/3*	*>1/3<2/3*	*>2/3*	*Total*	
	101	8	13	122	
	82.8	6.6	10.6	%	

Combined figures of intact and broken flakes: 243

Total broken blades, possible broken blades and intact flakes with L:B ratio>=2:1: 33 or 13.6%

Functional analysis:	*Waste*	*Cutting*	*Awls*	*Other*	*Total*
	69	115	9	50	243
%	28.4	47.3	3.7	20.6	
Remaining cortex:	*under 1/3*	*1/3 to 2/3*	*2/3 or more*	*Total*	
	204	19	20	242	
%	84.0	7.8	8.2		

Retouched pieces. The retouched component comprised 44 pieces typical of a later Neolithic assemblage and dominated, as always, by scrapers (24). The retouched component accounts for 15% of the assemblage (flakes, cores and implements) which is a high proportion for a Neolithic assemblage.[89] Noteworthy objects are a flake from a polished flint axe and two oblique arrowheads, though the assemblage overall is not dominated by exotic items.

Cores. Just three cores and a core fragment were recovered from two of the pits. These cores had been used for producing flakes.

Spalls. Some 51 spalls, that is pieces less than 20 mm x 20 mm across, were recovered from the three pits along with a few small chips (micro-debitage) recovered by sieving. The number of spalls is modest and lower than would be expected if the assemblages represented a typical range of knapping by-products.

Metrical analysis. A total of 243 flakes were recovered, which is a sufficient sample size to merit metrical analysis. The 121 intact flakes were measured following the method of Saville and the 122 broken flakes after Ford.[90] These figures can be compared with the summarised data from other stratified assemblages.[91]

Length:breadth ratio. The metrical data are presented in Table 4. For the intact flakes, some 15.7% of the flakes exceeded a length:breadth ratio of 2:1. When these figures are combined with the data for the broken flakes the blade-like component represents 13.6% of the total. In terms of chronology, this figure lies on the border between assemblages of early and later Neolithic date, which corresponds well with the radiocarbon dates. Few of the pieces in the assemblage are markedly blade-like, yet it is clear that this assemblage is longer and thinner than is typical of Bronze-Age assemblages.

Cortex remaining. The proportion of flakes retaining more than 2/3 of the original cortex is low – 8.2% of both broken and intact flakes. For later periods this figure would be typical of settlement associated activity.[92]

Functional analysis. An assessment of the functional capability of the assemblage was carried out.[93] Unlike microwear study, this assessment was not intended to detail what specific pieces were used for and what activities took place but is a measure of the overall origin of the assemblage. Waste flakes comprised 28.4% of the assemblage, which is much more typical of settlement-associated assemblages than of quarry assemblages. The predominance of flakes suitable for use in cutting activities is noteworthy, suggesting selection of material for use, perhaps even with a task-specific objective in mind.

Refits. Two flakes from pit 43 refitted. Although a thorough search was made, there were no refits between features.

Comparisons between the three pits. In terms of their metrical component, the three pits all have broadly the same characteristics as the combined totals presented in Table 4. The main differences, in particular between the two larger assemblages in pits 2 and 43, are that pit 43 has a greater range of retouched pieces and that it also has a much large number of spalls. The significance, if any, of these differences is unclear.

Discussion

The analysis of this lithic assemblage has provided two findings which help in understanding the use of the site. Firstly, in terms of chronology, the metrical analysis has produced results entirely typical of assemblages of late-Neolithic date, consistent with the radiocarbon dating. The examination of the material has also shown that despite the presence of some knapping waste within the pits, the assemblages are dominated by a use function, indicated by the well-made unretouched flakes and the high proportion of retouched material. Secondly, despite the presence of poor but usable flint sources on the site itself, the vast majority of the flint seems to have been imported to the site from a chalk source several kilometres away.

[89] Cf. E. Healey and R. Robertson-Mackay, 'The Lithic Industries from Staines Causewayed Enclosure and their Relationship to Other Earlier Neolithic Industries in Southern Britain', *Lithics*, 4 (1983), pp. 1–27.

[90] A. Saville, 'On the Measurement of Struck Flakes and Flake Tools', *Lithics*, 1 (1980), pp. 16–20; Ford, 'Chronological and Functional Aspects of Flint Assemblages'.

[91] Ford, 'Chronological and Functional Aspects of Flint Assemblages'.

[92] Ibid. table 5.

[93] Ford, 'Chronological and Functional Aspects of Flint Assemblages'.

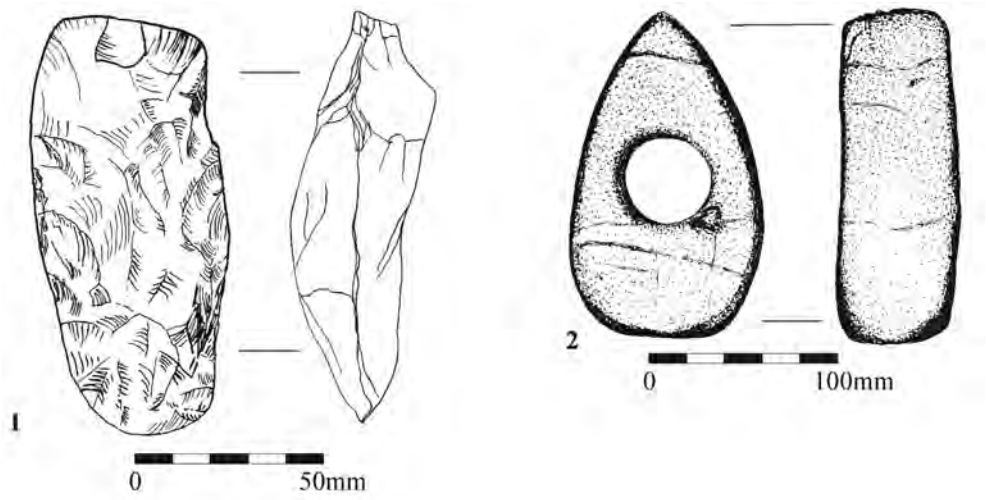

Fig. 15. Stone finds (axe hammer and polished flint axe).

AXE HAMMER by DAVID WILLIAMS

A complete large, heavy, polished and perforated stone axe-hammer was recovered from the base of the ring ditch (slot 10). A radiocarbon date places the formation of this primary context in slot 10 within the range 1979–1772 cal BC. The axe-hammer (Fig. 15, no. 2) is a greyish orangey-brown colour and looks to have been formed by pecking, though much of it is still smooth, suggesting original polishing. The butt is flat and shows signs of wear, as does the point. The perforation is circular and of an even diameter all the way through. The axe is in good condition, with dimensions as follows: total length 176 mm; maximum breath 114 mm; depth at hole 70 mm; hole diameter 45 mm; distance from butt to centre hole 85 mm; weight 2.30 kg.

Typologically, the axe-hammer belongs to Roe's Class II Type.[94] The period of production of axe-hammers in general seems to have been during the early and middle Bronze Age.[95] In view of the completeness of the Church Farm example, the stone was not sampled for thin sectioning and study under the petrological microscope. Macroscopically, the rock may be termed a coarse-grained ultrabasic igneous rock. An examination under a stereo-microscope (x20) showed that it is composed of frequent sub-rounded to rounded grains of olivine, some of them enclosed with serpentine, small laths of plagioclase feldspar, some pyroxene and iron ore.

It is clear that by no means all of the stone axe factories also produced axe-hammers. Roe lists eight known axe-hammer producers, of which only three have a particularly wide distribution.[96] A comparison with the Church Farm axe-hammer suggests that Groups I (uralitized gabbro), XIII (spotted dolerite), XIV (camptonite), XV (micaceous sub-greywacke), XIX (greywacke) and XXIII (pyroxene granodiorite to quartz dolerite) can be ruled out on mineralogical grounds.[97] Group XVIII is a quartz dolerite with a source in the Whin Sill, Northumberland but can also be dismissed due to the lack of visible quartz in the Church Farm example. The last of the groups mentioned by Roe is Group XII, a picrite from Cwm-mawr on the Welsh Border.[98] Recent excavations at the site have shown that the fresh rock has a strong

[94] F.E.S. Roe, 'Typology of Stone Implements with Shaftholes', in T.H.McK. Clough and W.A. Cummins (eds.), *Stone Axe Studies*, CBA Research Report, 23 (1979), fig. 8.

[95] Smith, 'Pottery Discussion', in Matthews, *Occupation Sites on a Chiltern Ridge,* p. 14; W.A. Cummins, 'Petrology of Stone Axes and Tools', in D.R.C. Kempe and A.P. Harvey (eds.), *The Petrology of Archaeological Artefacts* (Oxford, 1983), pp. 171–226.

[96] Roe, 'Typology of Stone Implements', fig. 6.

[97] Clough and Cummins, *Stone Axe Studies*, p. 127.

[98] Roe, 'Typology of Stone Implements', fig. 6.

blue-green colour, which weathers to a dull orange-brown.[99] The dominant minerals that make up this rock are olivine, plagioclase feldspar, augite and iron ore.[100] The composition of this rock would appear to be similar to the Church Farm example. At some future stage this could be confirmed by petrological or geochemical analysis.[101] This particular axe factory only seems to have produced axe-hammers and battle axes, the majority of which are found, in some numbers, in the west Midlands and Wales.[102] There are a number of outliers though, reaching south into the Thames valley, Devon and Hampshire.[103]

SPEARHEADS by ROBIN TAYLOR

Two bronze spearheads came from top fill 292 in ring ditch section 132. One is an extremely fine side-looped spearhead (Fig. 16, no. 1). There is little patination on the surface, which bears many lengthwise striations, from tip to base, and shows a high degree of polish. There is a flattened casting rib from the base of the blade down each side of the socket, passing through the slightly flattened stops. There is some edge damage, with notches broken away, and the tip is blunt. It is a dark, olive-green colour with a slight trace of shiny bronze along the midrib on one side. The midrib is angular and pronounced. The blade is remarkably thin at less than 1 mm thick; the metal is barely 1 mm thick at the socket. There is some brown material in the loops. There are some possible hammer dents on the face of the base of the socket. The head weighs about 70 g, and it measures 179 mm in length, 15 mm across the socket mouth and 28 mm across the midpoint of the blade.

The other spearhead (Fig. 16, no. 2) is a small and supremely well-made side-looped spearhead. The midrib is sharply pronounced and tapers from socket to pointed tip. There is a faint trace of a casting rib along the sides of the socket and through the loops; the loops are rounded with a small hole pierced through. The surface is dark green in colour with no trace of heavy corrosion or patination, although one blade edge is extensively broken and fractured. There are lengthwise striations on the finely polished blade, becoming more pronounced alongside the midrib. There are striations in several directions on the socket. The blade is very thin and almost flat from edge to midrib; the thickness of metal at the socket is under 1 mm. It is about 22 g in weight, 135 mm long, 13 mm across the mouth of the socket, and 22 mm across the width of the blade.

Discussion

The side-looped spearhead is a well-known type of the later part of the middle Bronze Age. Ehrenberg illustrates examples from Burghfield, Eton, and Standlake.[104] These show the variations in blade size, the angular midrib and the small loops which are either lozenge shaped or string loops; the fine loops may have been ineffective for securing the shaft to the spearhead and thus used for some other purpose.[105] Rowlands describes two groups or types, based on the midrib section,[106] shape of the loops and blade shape, although there is often little distinction between the features present, and there is no difference in distribution between the two groups.[107]

[99] www.cpat.org.uk/projects/longer/cwmmawr/cwmmawr.htm.

[100] F.W. Shotton et al., 'A New Centre for Stone Axe Dispersal on the Welsh Border', *Proceedings of the Prehistoric Society*, 17 (1951), pp. 159–67.

[101] Cummins, 'Petrology'; O. Williams-Thorpe et al., 'Non-Destructive Geochemical and Magnetic Characterization of Group XVIII Dolerite Stone Axes and Shaft-Hole Implements from England', *Journal of Archaeological Science*, 30 (2003), pp. 1237–67.

[102] Shotton et al., 'A New Centre for Stone Axe Dispersal'; Roe, 'Typology of Stone Implements', fig. 6; C.H. Holder, 'The Petrological Identification of Stone Implements from Wales', in T.H.McK. Clough and W.A. Cummins (eds.), *Stone Axe Studies, Volume 2: The Petrology of Prehistoric Stone Implements from the British Isles*, CBA Research Report, 67 (1988), pp. 133–6; F.W. Shotton, 'The Petrological Identification of Stone Implements from the West Midlands: Third Report', in ibid. pp. 49–51.

[103] Roe, 'Typology of Stone Implements', fig. 6; J.F.S. Stone and F.S. Wallis, 'Third Report of the Sub-Committee of the South-Western Group of Museums and Art Galleries on the Petrological Identification of Stone Axes', *Proceedings of the Prehistoric Society*, 17 (1951), p. 127.

[104] M.R. Ehrenberg, *Bronze Age Spearheads from Berkshire, Buckinghamshire and Oxfordshire*, BAR 34 (1977), figs. 4, 27; 5, 57; 9, 108 and 10, 58.

[105] Ehrenberg, *Bronze Age Spearheads*, p. 7.

[106] M.J. Rowlands, *The Production and Distribution of Metalwork in the Middle Bronze Age in Southern Britain*, BAR, 31 (1976), p. 52.

[107] B. O'Connor, *Cross-Channel Relations in the Later Bronze Age*, BAR IS, 91 (1980), p. 64.

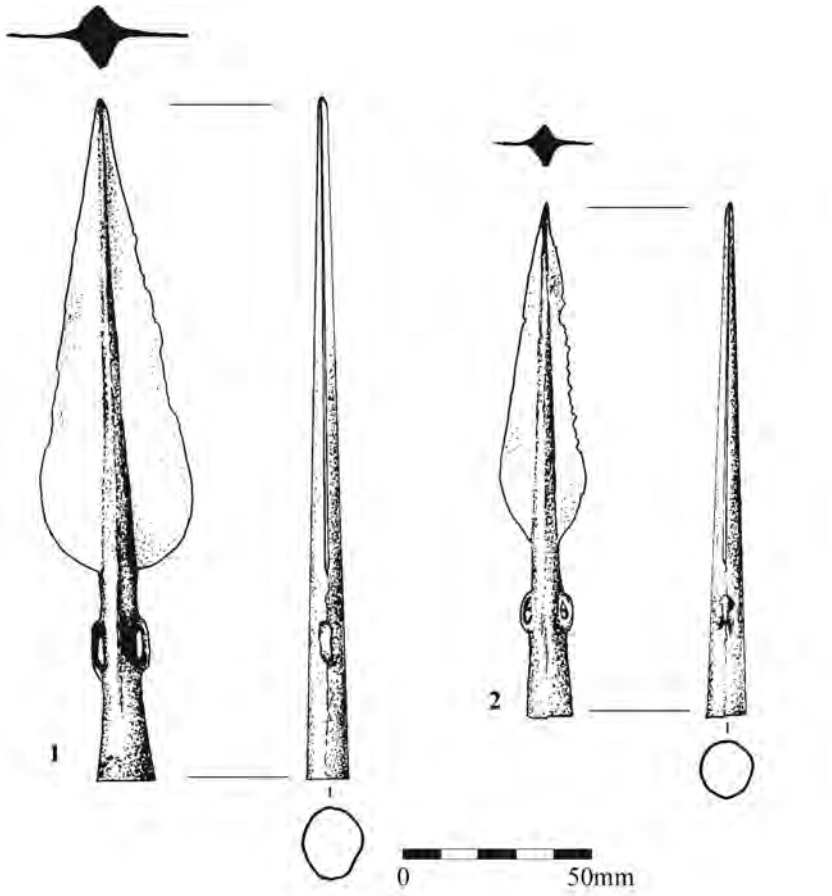

Fig. 16. Copper alloy spearheads.

The distribution of these objects is concentrated in and around the Thames valley, with smaller centres in East Anglia and Wessex.[108] Associations for similar examples place them in the late middle Bronze Age or MBA2, dating to 1400–1200 BC.[109] The question remains whether such fine spearheads made primarily for display, retaining that special character at deposition? These examples are relatively undamaged and show little signs of use, retaining their highly polished finish. However, the evidence of the skeleton from Tormarton (Glos.) shows that this type of spearhead was apparently used to deadly effect with the blade points of two examples embedded in the bones.[110]

FIRED CLAY by FRANCES RAYMOND

Five of the Grooved Ware pits produced fired clay fragments (Table 5) made from soft sandy fabrics (S/1 and FS/2). This is mostly in the ware S/1 (286 pieces, weighing 759 g) also used for pottery from pit 43, and has been fired in the same manner as the pottery. A few pieces from pit 43 (10 fragments, 98 g) are

[108] O'Connor, *Cross-Channel Relations*, p. 64; C.N. Moore and M. Rowlands, *Bronze Age Metalwork in Salisbury Museum* (Salisbury 1972), p. 19.
[109] Rowlands, *Production and Distribution of Metalwork*, pp. 54–5; R.J. Taylor, *Hoards of the Bronze Age in Southern Britain,* BAR, 228 (1993), p. 23.
[110] Moore and Rowlands, *Bronze Age Metalwork in Salisbury Museum*, p. 19.

made from a coarser fabric incorporating rare limestone (up to 7 mm), sparse flint (0.2–7 mm) and abundant sub-rounded quartz sand (0.2–1 mm). The rest, from pits 27 and 140, are rolled fragments in wares lacking visible inclusions.

A significant proportion of the fired clay from pits 2, 27, 43 and 140 is composed of pieces with one flat and one removed surface. The few larger fragments (up to 50 mm across) include one from pit 2 which is 26 mm thick; four from pit 27 with thicknesses of 14–17 mm; and one from pit 140 that is 17 mm thick.

Table 5. Fired clay from the Grooved Ware pits

Cut	Deposit	No.	%	Wt. (g)	%
2	57	30	10	138	16
27	88	9	3	103	12
43	163	35	12	165	19
43	250	98	32	151	18
43	251	10	3	15	2
140	364	97	32	125	14
140	365	20	7	157	18
205	382	3	1	10	1
Totals		**302**		**864**	

It is conceivable that some of this material is derived from pottery vessels. If this is the case, all but one of the larger fragments must be from bases, since there is no indication of curvature. The thickness of the piece from pit 2 is only just outside the range of the heaviest Grooved Ware bases from Durrington Walls.[111] It is equally possible, however, that at least some of the fired clay is part of something else. Hints of this are provided by two fragments: one from pit 27 with a gently curving surface, and one from pit 140 with surviving surfaces on either side of a right angle, which is slightly concave instead of having the typical convex curvature of a base. In combination, the shape of the larger fired clay fragments would be consistent with thick slabs. Although lacking a ceramic precedent this recalls the sandstone plaque from Rothley (Leics.),[112] or the chalk plaques accompanying sherds of the Clacton sub-style in a pit on King Barrow Ridge near Stonehenge,[113] and from the midden outside the east entrance of Durrington Walls.[114] Unfortunately the material is too fragmented to allow for a more certain reconstruction, so whether it is derived from slabs or vessel bases must remain unresolved. Although not common, similar pieces are known from two Grooved Ware pits at Barrow Hills, Radley.[115]

RADIOCARBON DATING

Four samples were submitted to the University of Kiel for radiocarbon dating. The samples were hazelnut shells from pits 43 and 140, charcoal from pit 2 and animal bone from the base of ring ditch slot 144. Calibrated age was calculated using OxCal4.1.7.[116] The results are presented in Table 6. Details of methodology and confidence ratings are in the archive. In summary, all the results are considered reliable, although the bone had a relatively low collagen content and produced only a moderate confidence level.

[111] Wainwright and Longworth, *Durrington Walls*, fig. 34, P35.

[112] L. Cooper and L. Hunt, 'An Engraved Neolithic Plaque with Grooved Ware Associations', *Past*, 50 (2005), pp. 14–15.

[113] P. Harding, 'The Chalk Plaque Pit', *Proceedings of the Prehistoric Society*, 54 (1988), pp. 320–6.

[114] M. Parker Pearson et al., *The Stonehenge Riverside Project Summary Interim Report 2005* (Sheffield, 2005), p. 6.

[115] Barclay and Halpin, *Excavations at Barrow Hills, Radley*, pp. 74, 82.

[116] C. Bronk Ramsey, *OxCal version 4.1.7, Web Interface Build No. 61* (Oxford, 2010), with data from P.J. Reimer et al., 'IntCal09 and Marine09 Radiocarbon Age Calibration Curves, 0–50,000 Years Cal BP', *Radiocarbon*, 51(4) (2009), pp. 1111–50.

Table 6. Radiocarbon dating

Calibrated age from OxCal4.1.7.

KIA42469	Pit 43; fill 163; Hazelnut shell		Corrected pMC	58.02 ± 0.28
Fraction	Charcoal, Alkali residue, 4.8mg C		Radiocarbon Age	BP4372 ± 39
		Probability	Conventional Age	4370 ± 40 BP
Calibrated date:	**cal BC 3096–2901**	**95.4%**	$\delta^{13}C$(‰)	-24.96 ± 0.08
KIA42470	Pit 140; fill 364; Hazelnut shell		Corrected pMC	57.77 ± 0.25
Fraction	Charcoal, Alkali residue, 5.1mg C		Radiocarbon Age	BP4408 ± 35
Calibrated date	cal BC 3321–3272	4.3%	Conventional Age	4410 ± 35 BP
	cal BC 3266–3236	5.5%	$\delta^{13}C$(‰)	-25.41 ± 0.17
	cal BC 3171–3162	0.7%		
	cal BC 3115–2915	**84.9%**		
KIA42471	Pit 2, fill 56; Salix charcoal		Corrected pMC	57.90 ± 0.30
Fraction	Charcoal, Alkali residue, 4.6mg C		Radiocarbon Age	BP4390 ± 42
Calibrated date	cal BC 3310–3296	0.8%	Conventional Age	4390 ± 40 BP
	cal BC 3284–3274	0.5%	$\delta^{13}C$(‰)	-26.09 ± 0.11
	cal BC 3265–3240	3.1%		
	cal BC 3106–2904	**91.0%**		
KIA42468	Ring ditch 144; fill 370; bone		Corrected pMC	64.24 ± 0.26
Fraction	Bone, Collagen, 3.9 mg C		Radiocarbon Age	BP3555 ± 33
Calibrated date:	cal BC 2016–1996	3.5%	Conventional Age	3555 ± 35 BP
	cal BC 1981–1771	**91.9%**	$\delta^{13}C$(‰)	-21.52 ± 0.12

The results from the three pits are very close in date, with pit 43 dated 3096–2901 cal BC (probability 95.4%), pit 140 dated 3115–2915 cal BC (84.9%) and pit 2 dated 3106–2904 cal BC (91.0%). These dates overlap throughout the period 3096 to 2915 cal BC, the early part of the late Neolithic. The bottom fill of the ring ditch, which probably formed more or less immediately after it was dug, dates (most probably) to 1981–1771 cal BC but could fall within a wider range of 2016–1771 cal BC; either range is within the early Bronze Age, as expected.

BURNT BONE by CERI FALYS

A small assemblage of 129 g of highly fragmented burnt bone was recovered from nine contexts (details in archive). Identification was impossible for most pieces; only two pig teeth were positively identified. One piece, from post hole 26 (87), was just possibly human.

ANIMAL BONE by SHEILA HAMILTON-DYER

Just over 12 kg of animal bone was recovered from the excavations, the vast majority from the ring ditch and pits in Area A (Table 7). Just four bones were recovered from the pit alignment, and a single bone from a gully in Area D; these last few fragments are not discussed further. Identifications were made using the author's modern comparative collections; details of methodology are held in archive, along with metrical and other data not presented in the text. Recently broken fragments were joined where possible and counted as single bones.

Table 7. Animal bone: summary by phase

Phase	**undated**			**late Neolithic pits**			**BA Ring ditch**			**LN/EBA pits**			**IA pits**	**Total**		
taxon	*Total*	*%*	*% 2*	*Total*	*%*	*% 2*	*Total*	*%*	*% 2*	*Total*	*%*	*% 2*	*Total*	*Total*	*%*	*%2*
horse	-	-		-	-		1	0.4		-	-		-	1	0.2	
cattle	4	7.4	30.8	10	4.2	18.5	75	33.0	73.5	13	30.2	81.3	-	102	18.0	55.1
sheep / goat	1	1.9	7.7	1	0.4	1.9	20	8.8	19.6	-	-	-	-	22	3.9	11.9
pig	8	14.8	61.5	43	17.9	79.6	7	3.1	6.9	3	7.0	18.8	-	61	10.7	33.0
red deer	3	5.6		-	-		13	5.7		-	-		-	16	2.8	
roe	-	-		-	-		2	0.9		-	-		-	2	0.4	
aurochs	-	-		-	-		1	0.4		5	11.6		-	6	1.1	
cattle-size	5	9.3		16	6.7		52	22.9		5	11.6		-	78	13.7	
s/g/p	4	7.4		16	6.7		17	7.5		7	16.3		-	44	7.7	
indet. mammal	27	50.0		152	63.3		8	3.5		10	23.3		4	201	35.4	
dog	-	-		1	0.4		8	3.5		-	-		-	9	1.6	
badger	-	-		-	-		15	6.6		-	-		-	15	2.6	
pine marten	1	1.9		-	-		-	-		-	-		-	1	0.2	
beaver	1	1.9		-	-		-	-		-	-		-	1	0.2	
small mammal	-	-		1	0.4		4	1.8		-	-		-	5	0.9	
crane	-	-		-	-		1	0.4		-	-		-	1	0.2	
small passerine	-	-		-	-		1	0.4		-	-		-	1	0.2	
shark ?fossil	-	-		-	-		2	0.9		-	-		-	2	0.4	
Total	**54**			**240**			**227**			**43**			**4**	**568**		

s/g/p: sheep/goat or pig sized

%2: as % of cattle, sheep/goat and pig

Ring Ditch

Animal bone, totalling 227 specimens, was recovered from all but one (210) of the hand-dug slots through the ring ditch. At least nine taxa are represented, including both domestic and wild species (Table 7). Two small shark teeth have the appearance of fossil material and are not discussed.

Domestic animals are represented by bones of cattle, sheep, goat, pig, horse and dog. Cattle bones are the most numerous, with 75 individual specimens, and occur in all slots except 132 and 138. The bones include elements from all parts of the body but are mostly from the legs. Sheep/goat are the next most frequent bones and include one positively identified as goat (horncore) and two as sheep. With only 20 specimens it is inappropriate for detailed analysis but it can be noted that good meat bones are present as well as those from head and feet. Pig bones are even less frequent than those of sheep/goat but are similarly distributed anatomically.

Slot 217 produced the most diverse group, with five taxa identified. In addition to bones of domestic cattle, pig and sheep/goat there are several of red deer. These are meat bones rather than antler. Remains of red deer occur in eight of the slots and roe is present in a further two. Slot 217 also contained part of a crane tibiotarsus; this and one belonging to a small passerine from slot 1 are the only bird bones from the site.

Three of the slots contained dog bones, and indirect evidence of their presence, in the form of gnawing, was present in most slots. The dog remains from slot 10 are of a pup already quite large but the remains from slot 34 are quite different. These are an incomplete metatarsus and tibia of an extremely small dog. The bones were compared with fox but are smaller and not of the same shape. Although not measurable they were compared with recent specimens and appeared to be from an animal of about 25 cm at the shoulder but as they are incomplete they could have been from a slightly taller animal.

Badger bones were present in slots 119 and 228. In the case of slot 119 the seven bones are of a young cub less than half grown. The single bone from 228 is from an adult. Horse is represented only by a single toe.

Of particular interest is the distal part of a bovine humerus in slot 34. This has been identified as aurochs based on its size, which is much greater than any of the other cattle bones. Further specimens were recovered from pit 205 (see below).

Late Neolithic

Pit 2 contained the largest number of bones (157 specimens), but many are small undiagnostic pieces. Of the identified fragments 24 are of pig and 15 of these are loose teeth, many from very young animals. One hind leg bone is from a neonate. A fibula from a more mature, but still juvenile, animal has clearly been shaped; it has no hole but is of the type commonly referred to as a pig fibula pin. Other bones include cattle teeth, scapula, radius and cattle-sized ribs and a sheep/goat tibia fragment.

In pit 43 there is a dog lower canine, two pig teeth and the broken tip of a worked bone 'pin'. Pit 140 contained a cattle tooth fragment. A total of 32 individual specimens were recovered from pit 27 at the edge of the ring ditch. These include a cattle tooth and some cattle-sized ribs but most of the remains are of pig, with elements of the foreleg, hind leg and head. A mandible fragment with a canine tooth socket suggests that at least one of these remains is of a male.

A total of 18 specimens were recovered from pit 205, close to the inner edge of the ring ditch. One of these is a fragment of pig tibia; the others are from bovids. Five of these are extremely large bones and are all of similar colour and texture. These have been recorded as aurochs and include parts of a pelvis, tibia, humerus, scapula and a metapodial fragment. The pelvis and metapodial are sufficiently large to be probably from bulls. A further six fragmentary bones have been recorded as cattle but are also large enough to be in the overlap zone between male domestic cattle and female aurochs.

Late Neolithic/Early Bronze Age

Pit 123 contained a fragment of pig radius and immature pig-sized rib and tibia fragments. Nearby pits 106, 107 and 109 contained few bones. Cattle was present in 106 and 107, pig was also present in 107. Pit 109 contained a red deer antler beam (in many pieces) with traces of charring.

Presumed Neolithic/Bronze Age

Pit 44 contained a pig foot bone and a fragmentary portion of red deer antler. Pit 45 contained much more bone, a total of 44 individual specimens. There is a cattle skull fragment and tooth, a sheep/goat axis vertebra and several pig and pig-sized bones, probably the remains of a single very young piglet. Also present is a partial mandible of an immature beaver, which still contains the large incisor tooth. There are no visible signs of butchery on this or any of the bones, but the surfaces are often no longer intact and any such marks may have been lost. Just two identifiable bones were recovered from intercutting pits 145–7: a loose cattle lower molar and a pine marten metatarsal.

Discussion

The assemblage is relatively small (568 specimens), and more than half of the bones are undiagnostic. Much of the material is fragile, broken and eroded, but despite this at least 15 species can be identified, including wild as well as domestic taxa. Small mammal bones (mice and voles for example) and the sparrow-sized passerine are assumed to be incidental remains from animals and birds living at the site, but all the others are presumed to have been the disposed remains of directly exploited animals. The bones of the domestic ungulates are the most frequent with cattle in first place and pig second. In several of the pits pig appears to be more frequent than any other taxon but this is partly due to the presence of loose teeth and other bones of probably only a few animals. It is typical, however, to find pig more common in Neolithic deposits than in Bronze-Age ones. Similarly the ring ditch deposits contain several sheep/goat bones whereas the Neolithic and unphased pits contain only two (Table 7).

A further difference between the ring ditch and the other features is the amount of gnawing and, especially, burning. Gnawed bones are more common from the ring ditch (recorded on 17% of bones from the ditch), where several dog remains were also found. Burning is virtually absent from the ring ditch (just one bone) but occurs in several of the pits. Both charring and calcination are present and this burning is mainly seen on teeth and small undiagnostic bone fragments. Definite butchery marks were very few, at least in part because the bone surfaces are often not intact. Some of the pieces of cattle and cattle-sized bones were suggestive of the fragmentation caused by smashing of marrow bones but as this was not certain they were excluded from the counts.

Distribution across the site of the different taxa does not appear to have any pattern, nor is there any apparent association between species. The slots excavated through the ring ditch offer the largest total number of specimens, but even here most of the fills contained less than ten identified bones and often only one or two. In all features the main meat supply would have been from domesticates, mainly cattle and pig. The other domesticates are less frequent but present in several loci. There is an unusually wide variety of wild taxa although the wild resources are represented mainly by the finds of red and roe deer in the ring ditch. These include several meat bones as well as antler, indicating the hunting of these animals and not just the collection of shed antlers. The unphased pits also contain red deer, but in this case only antler. There is no direct evidence on any of the antlers for use as picks but they are often used for this purpose and may be modified by charring.[117] It is possible the fragmentary remains in pit 109 indicate this modification.

One of these pits also contained aurochs bones. These very large ancestors of domestic cattle have been found at many Neolithic and some Bronze-Age sites in Britain.[118] In Oxfordshire there is a previous record of one from Thame, but undated.[119] A metapodial dated to the late Neolithic was found in a Grooved-ware pit at Sparsholt.[120] Isotopic evidence indicates that these animals came from more forested and wetter areas than the domestic cattle found at the same sites.[121] Although their dry bones may have been collected for ritual purposes, it seems probable that the bones here came from hunted animals. The crane, represented by a single bone, seems likely to be the product of hunting in marshy areas, as does the beaver from an unphased (presumed Neolithic) pit. Pine marten, as the name suggests, is found in coniferous woods but also in other wooded habitats. The remains of a pelt or the dressing of one is assumed to be the reason for this find of a foot bone.

Badger bones can be difficult to interpret, as badgers make extensive underground workings and may die within them, but have also been used for meat, fat and hair in the past. Without butchery or other indications of deliberate use, it is often assumed that they are intrusive. The excavators did not observe any evidence of recent badger activity nor of old workings and therefore the finds here could be of hunted animals.

The two bones of a miniature dog from ring ditch slot 34 are unusually small for this period. Skeletons of pet dogs from later periods can be found as intrusive burials but again there was no evidence of this and the find is therefore of some importance. Two very small dog skulls were reported by Pitt-Rivers in 1887 from Wor Barrow in Dorset but, with no other finds of this size reported from pre-Roman excavations in Britain, Harcourt was uncertain how securely dated these finds were.[122]

[117] D. Serjeantson and J. Gardiner, 'Red Deer Antler Implements and Ox Scapula Shovels', in R.M.J. Cleal et al., *Stonehenge in its Landscape: Twentieth-Century Excavations* (London, 1995), pp. 414–30.

[118] D. Yalden, *The History of British Mammals* (London, 1999).

[119] Ibid.

[120] S. Hamilton-Dyer, 'The Animal Bones', in L. Howell and T. Durden, 'A Grooved Ware Pit on the Seven Barrows All Weather Gallop, Sparsholt, Oxfordshire', *Oxoniensia*, 49 (1996), pp. 21–5.

[121] A.H. Lynch et al., 'Where the Wild Things Are: Aurochs and Cattle in England', *Antiquity*, 82 (2008), pp. 1025–39.

[122] R.A. Harcourt, 'The Dog in Prehistoric and Early Historic Britain', *Journal of Archaeological Science,* 1 (1974), pp. 151–76.

The faunal assemblage from this site is not large but has several unusual aspects. Firstly, there is a wide variety of taxa that includes several wild species. Most of the remains appear to be of disarticulated individual bones but there are some partial skeletons. There is no clear placement or grouping of the remains but this is difficult to assess from the few bones recovered. In comparison with the time-span of the site, the animal bones recovered must represent a mere handful of the animals used over that period. Of the hand-excavated ring ditch slots, only slot 210 produced no animal bone. All the bone assemblages appear to be a mixture of domestic food waste along with other material, such as dog and badger. The bones of the animals used for food were not stripped and buried immediately but were available to dogs before final disposal. Even so, the ditch infilling could include ritual elements including feasting and deliberate placement. The pits have similarly mixed content but clearly involve different activities, as indicated by the burnt bone and the slight differences in taxa representation. Dating of at least some of these features indicates an earlier, Neolithic, phase of activity that may also have had some ritual component. In comparison with large Neolithic ritual sites such as Durrington Walls,[123] there is a larger wild component and less pig, although more than in the Bronze-Age features.

ENVIRONMENTAL EVIDENCE by ROZ MCKENNA

Bulk soil samples of between 1 and 30 litres were taken from 57 sealed contexts to provide information on the past environment of the area. Full details of methodology and the contents of all samples are in the archive. Charcoal identification was made using the wood identification guides of Schweingruber and Hather.[124] Fifty-one samples appeared to contain charcoal but preservation was generally poor and only sixteen samples included definitely identifiable charcoal; only ten contained other carbonized plant remains. All are from Area A, except one sample from Area D, and they range in date from the Neolithic to the Iron Age. Table 8 shows the results of the charcoal assessment. The numbers represent all identifiable fragments; where more than 100 fragments were present, the count is based on a random sample of 100 fragments.

Oak (*Quercus*) is by far the most abundant species, with a significant amount of hazel (*Corylus*) and salix/poplar (*Salix* / *Populus*) also being recorded; just a single context contained ash (*Fraxinus*) charcoal. It is possible that these were the preferred fuel woods obtained from a local environment containing a broader choice of species. Bark was present on some of the charcoal fragments, indicating that the material is more likely to have been firewood than burnt structural timber.

Where charred remains other than charcoal were present they were also generally very poorly preserved, and lacked most identifying characteristics. The most commonly recorded charred macrofossil was hazelnut shell fragments, which were present in all of the sub-samples from Neolithic pits 43 and 140 (Table 9). Remains of other edible fruits were also found in Neolithic pits 43 (dwarf cherry) and 140 (crab apple). It is worth noting that the remains of such gathered fruits were only found in Neolithic pits which also contained placed deposits of pottery, so this fruit may indicate a particular depositional practice. The remains from pit 140 are particularly interesting. Ten of the eleven sub-samples contained plant macrofossils, and, together with remains of hazelnut shell fragments, there were numerous remains of crab apples. There were seeds, fruit fragments and stalks present, all in significant numbers. It may indicate a single deposit of food waste.

Cereals were present in very small amounts in five samples, but again most lacked identifying characteristics. Wheat, oat and barley were represented, although, from what could be identified, mainly as single occurrences. An indirect indicator of cereals being used on the site is the remains of arable weeds. These weeds are generally only found in arable fields, and are doubtless incorporated into domestic occupation samples with crop remains. The remains of *Fallopia convolvulus, Chenopodium/ Atriplex* and *Rumex* may also fall in this group.

Pits 43 and 140 apart, the limited archaeobotanical evidence was very similar across the various features and periods. Overall, the low numbers of grains, chaff and weed seeds in the majority of the samples indicates the accidental burning of cleaned grain and its subsequent disposal, or the use of material cut from cultivated ground as fuel. The hazelnut shell fragments present in the samples were

[123] U. Albarella and D. Serjeantson, 'A Passion for Pork: Meat Consumption at the British Late Neolithic Site of Durrington Walls', in P. Miracle and N. Milner (eds.), *Consuming Passions and Patterns of Consumption* (Cambridge, 2002), pp. 33–49.

[124] F.H. Schweingruber, *Microscopic Wood Anatomy* (Birmensdorf, 1978); J.G. Hather, *The Identification of Northern European Woods: A Guide for Archaeologists and Conservators* (London, 2000).

Table 8. Environmental remains – charcoal (number of fragments).

Neolithic	*Sample*	6	7	19	24	25	25	25	25	25	
	Feature	2	2	45	43	43					
	Context	56	57	166	163	250					
	Feature type	Pit	Pit	Pit	Pit			Pit			
	Spit					1	2	3	4	5	
	No. frags	21	1000+	200+	1000+	100+	100+	50+	100+	100+	
	Max size (mm)	11	18	14	34	16	16	18	14	16	
Name											
Fraxinus excelsior	Ash	-	-	-	-	-	7	-	-	-	
Corylus avellana	Hazel	-	-	-	-	-	-	-	-	-	
Quercus	Oak	14	100	100	88	56	29	21	100	100	
Salix / Populus	Salix / Poplar	7	-	-	12	33	17	29	-	-	
	Indet.	-	-	-	-	11	47	-	-	-	

Neolithic	*Sample*	36	36	36	36	36	36	36	36	36	36	36
	Feature	140										
	Context	364										
	Feature type						Pit					
	Spit	1	2	3	4	5	6	7	8	9	10	11
	No. frags											
	Max size (mm)											
Name												
Fraxinus excelsior	Ash	-	-	-	-	-	-	-	-	-	-	-
Corylus avellana	Hazel	-	-	-	-	-	-	-	-	-	-	-
Quercus	Oak	100	67	79	88	50	86	51	29	100	50	100
Salix / Populus	Salix / Poplar	-	33	21	12	-	-	-	-	-	-	-
	Indet.	-	-	-	-	-	14	-	-	-	-	-

Bronze Age	*Sample*	5	20	21	22	37	51	12	18	29	11
	Feature	10	105	105	105	34	228	27	47	123	26
	Context	64	190	191	192	264	467	88	182	276	87
	Feature type			ring ditch				Pit	Pit	Pit	?Crem
	No. frags	7	37	29	14	100+	35	56	50+	200+	500+
	Max size (mm)	12	10	11	5	8	7	17	16	23	12
Name											
Fraxinus excelsior	Ash	-	-	-	-	-	-	-	-	-	-
Corylus avellana	Hazel	7	37	9	5	-	-	42	-	35	-
Quercus	Oak	-	-	16	-	100	24	-	32	-	100
Salix / Populus	Salix / Poplar	-	-	4	9	-	-	14	11	-	-
	Indet.	-	-	-	-	-	11	-	7	65	-

? Crem: possible cremation

Table 9. Charred plant macrofossils other than charcoal

A. Neolithic pits

	Sample	7	24	25	36
	Feature	2	43	43	140
	Context	57	163	250	364
Name					
Corylus avellana (shell fgts.)	Hazelnut shell	-	6	14	279
Malus sylvestris (L.) Mill. (seeds)	Crab apple (seeds)	-	-	-	102
Malus sylvestris (L.) Mill. (fruit)	Crab apple (fruit)	-	-	-	29
Malus sylvestris (L.) Mill. (stalk)	Crab apple (stalk)	-	-	-	2
Prunus cerasus L.	Dwarf cherry	-	3	-	-
Ranunculus RANUNCULUS	Buttercups	-	-	-	1
Fallopia convolvulus	Black bindweed	-	-	-	1
Chenopodium spp./ *Atriplex* spp.	Goosefoot/Orache	2	-	-	24
Veronica spp.	Speedwells	-	-	-	10
Avena sativa	Oat	-	-	-	1
Hordeum spp. (ch.)	Barley	2	-	-	-
Triticum spp.	Wheat	-	-	-	1
Indeterminate cereal		6	-	-	-
Indeterminate nut shell		-	-	-	1

B. Bronze-Age ring ditch and pits

	Sample	4	14	23	18	11	48
	Feature	1	38	105	47	26	224
	Context	55	153	193	182	87	463
	Feature Type	Ditch	Ditch	Ditch	Pit	?Crem	Pit
Name							
Chenopodium spp./ *Atriplex* spp.	Goosefoot / Orache	-	1	2	2	-	1
Hordeum spp. (ch.)	Barley	1	-	-	-	-	-
Triticum spp. (ch.)	Wheat	-	-	-	-	1	-
Indeterminate cereal		-	2	1	1	-	1
Rumex spp.	Dock	-	-	1	-	-	-
POACEAE	Grass	-	-	1	-	-	-

? Crem: possible cremation

possibly the result of nuts being harvested from the oak/hazel woodland and their husks being added to fires as a method of waste deposition and added fuel.

It is likely that the samples all represent deposition of charred plant remains through intentional dumping as waste. The use of cereal processing waste as fuel is well attested,[125] probably thanks to the disposal of spent fuel.

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[125] G. Hillman, 'Reconstructing Crop Husbandry Practices from the Charred Remains of Crops', in R.J. Mercer (ed.), *Farming Practice in British Prehistory* (Edinburgh, 1981), pp. 123–62; G. Hillman, 'Traditional Husbandry and Processing of Archaic Cereals in Recent Times... Part 1: The Glume-Wheats', *Bulletin of Sumerian Agriculture,* 1 (1984), pp. 114–52.