EVIDENCE for a NEOLITHIC MIDDEN, LATER PREHISTORIC and ANGLO-SAXON SETTLEMENT

at the site of the new Ellington and Hereson School, Ramsgate

Jon Rady, Damien Boden and Tania Wilson

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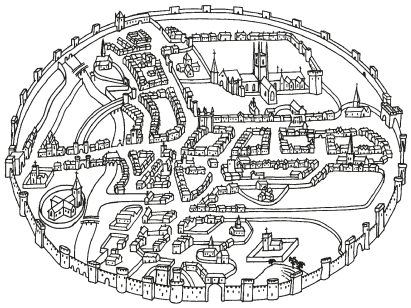
by
Jon Rady, Damien Boden and Tania Wilson

with
Luke Barber, Wendy J. Carruthers, Susan Jones,
Barbara McNee and Andrew Richardson



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1
Introduction

As part of an extensive programme of archaeological work at various school sites in Kent between 2004 and 2006, and following an initial evaluation undertaken early in 2005, Canterbury Archaeological Trust conducted large scale excavations at the site of a proposed new establishment, the Ellington and Hereson School, Ramsgate. The site was situated on the western side of Ramsgate (NGR 63770 16660 centred; Fig 1) within a pocket of arable farmland and playing fields mostly enclosed by residential development, but with undeveloped open land to the south, eventually bounded by the Ramsgate to Broadstairs railway.

The school development fell into four distinct zones (Fig 2). Area 1 covered a proposed widening of Newlands Lane eastward from Pysons Road to a new access road to the school (Area 2) which ran south from Newlands Lane to a new car park (Area 3). The school buildings were to be constructed south of this (Area 4). Cutting of trenches for

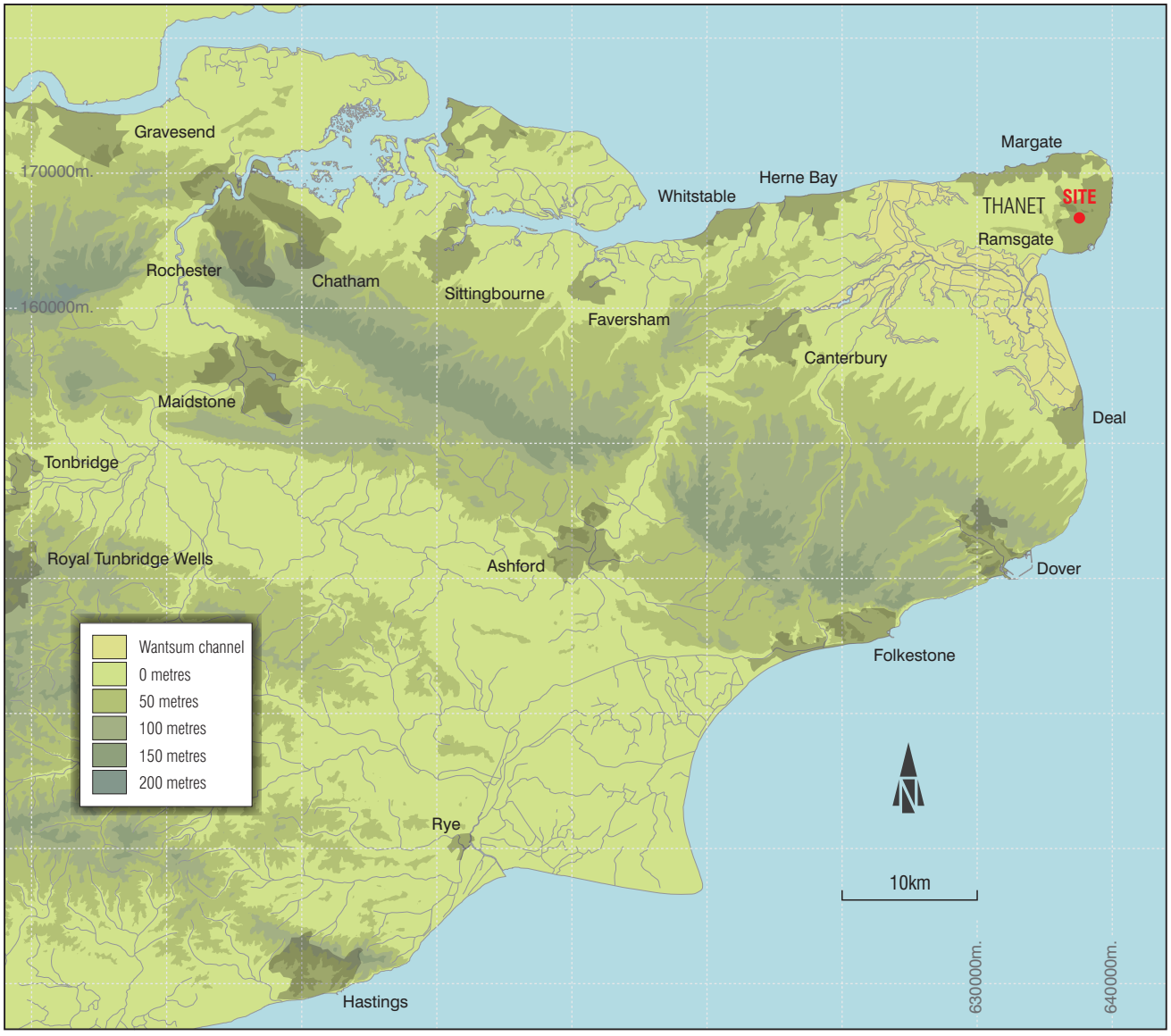


Fig 1. Location map (1:500,000).

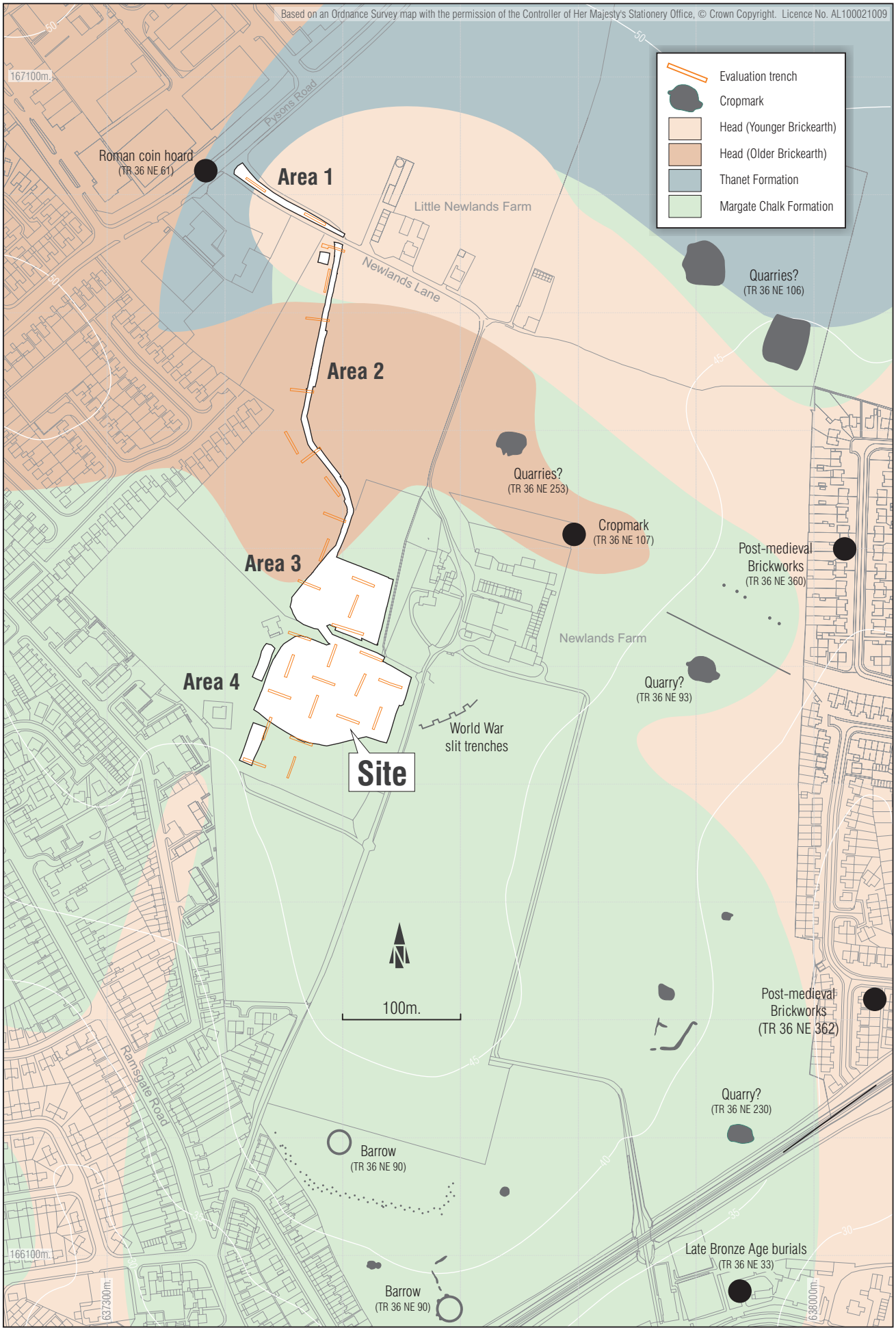


Fig 2. Site location and areas, showing geology, topography and known archaeological sites in the area.

Pl 1. Aerial view of the site looking north. Area 1 (and the north end of Area 2) is not shown.

services and the excavation of three large soak-away pits was also observed during a subsequent watching brief.

The topsoil strip, and removal of some underlying made ground deposits (possibly ancient ploughsoils of post-Roman date) revealed subsoil consistent with Head (overlying the Margate Chalk formation) in most of the northern area of the site. The Chalk exposed to the south was heavily fractured by periglacial activity and mostly covered with an expanse of variously composed sandy clays with angular flint inclusions probably derived from the nearby exposures of drift or Thanet Formation (Fig 2).

Pl 2. Topsoil strip at the western end of Area A1, looking east.

The site lay on a south facing spur with shallow dry valleys to both east and west, with the highest land at just over 50m OD slightly to the north-west towards Westwood. These dry valleys, which span outwards asymmetrically from Thanet's central high plateau were scoured out by meltwater in periglacial conditions (Gallois 1965, 66) with the two bordering the site trending south to south-eastward and converging with others at the sea by Ramsgate harbour, forming one of the gaps (or 'gates') in the cliffs. These 'gates' became the focus of the main towns in Thanet from later medieval or early post-medieval times (Willson 2003,

Pl 3. Cleaning up after stripping at the western end of Area 1, looking west

Pl 4. Northern end of Area A2 with machine stripping in background, looking south.

7). Thanet today has no watercourses of any significance although springs emerge at Ramsgate and Margate and inland ponds or dew ponds were a common feature of the recent past (Bennett et al 2008, 1). The areas of excavation were of a relatively flat aspect, between 48.7m OD at the north end near Pysons Road and 45.8m OD at the south end of the site, beyond which the spur continues for another few hundred metres then drops away more steeply towards the coast (Fig 2).

Four periods of activity can be determined: a Neolithic phase mostly indicated by a significant residual element in later features or deposits and a single feature of late Neolithic or early Bronze Age date; the main period of occupation from around the middle of the Bronze Age to the earlier part of the Iron Age; and an Anglo-Saxon phase comprising a single structure and a largely agricultural post-Anglo-Saxon phase. An area of about 16,000m^2 was examined and over 450 features investigated.

Since the excavations, proposals were advanced to construct another school in the zones on either side of Area 2 (The Foreland School). This has been preceded by a geophysical survey (ASDU 2013) in preparation for archaeological excavation of the areas, which was

conducted by Oxford Archaeology during 2014 (Simmonds 2015). The excavations have indicated that elements of a Bronze Age field system were overlain by a complex of conjoined enclosures and trackways dating to the earliest Iron Age. Although the settlement focus was primarily to the east of Area 2, some features exposed by the later work extended into Area 2, which has led to a reappraisal of interpretations of that area. Furthermore, since this part of the site has been more fully excavated, the results from Area 2 are only briefly described in this report.

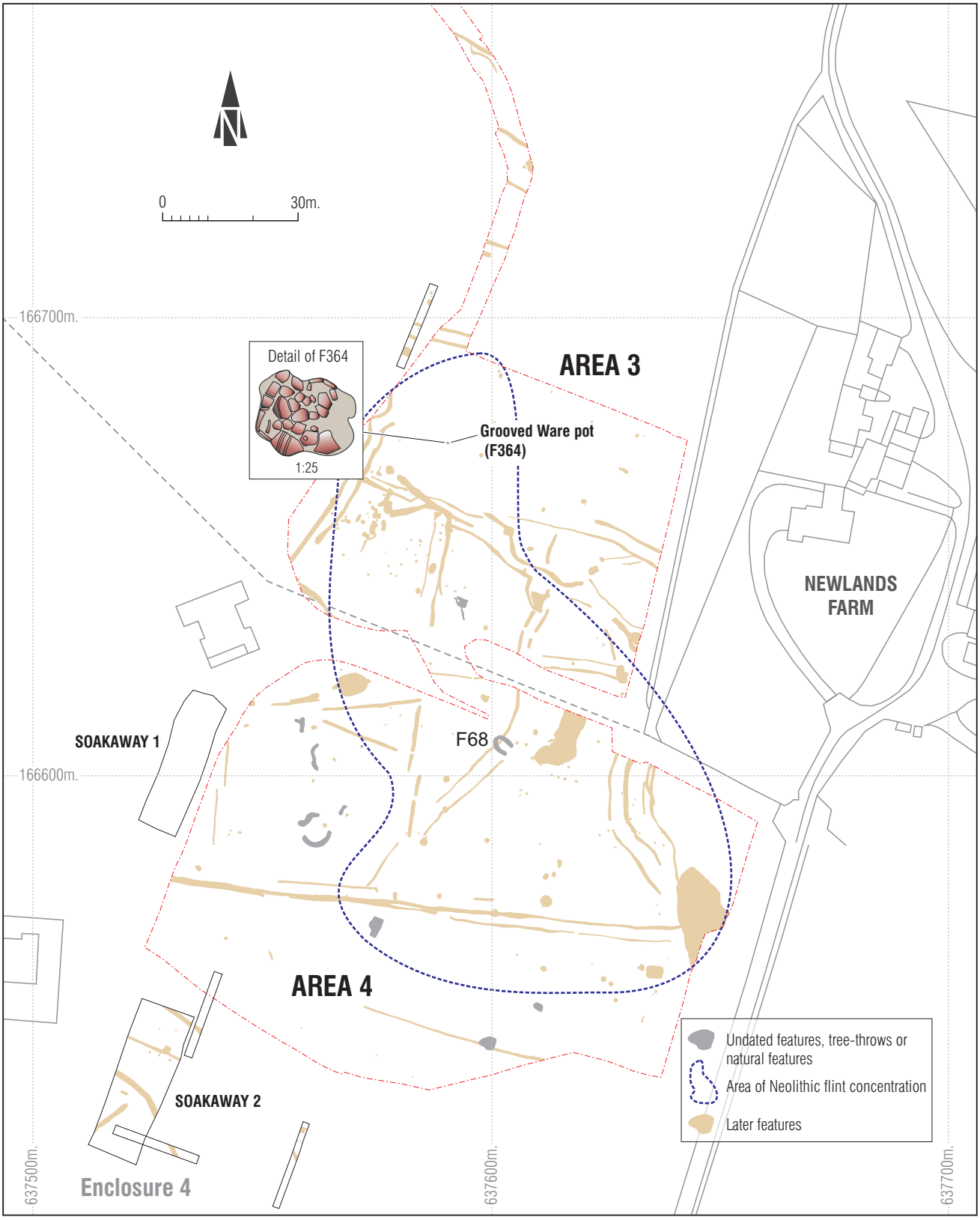


Fig 3. Undated features (tree-throws?) & possible Neolithic feature F68 in the southern part of the site (Areas 3 & 4) (1: 1250).

2
The excavation

Undated features (Fig 3)

Some of the recorded features are likely to have been of natural origin, such as tree throws. These were concentrated in the southern part of the site (Area 4) and were generally either amorphous, subrectangular or sausage-shaped cuts, about 2m long or across and no more than 0.5m deep, usually with completely sterile fills very similar to the natural subsoil. Most of these need no further description, but one (F68, located centrally near the north edge of Area 4) was a horseshoe-shaped arrangement with two rounded terminals on its south-eastern side and is less convincing as a tree-throw. Overall the feature had an east–west length of 4.35m and a width of 3.45m, with a gap between the terminals of *c* 1.3m, and was defined by a steep-sided, concave-profiled cut which was 0.80m wide and *c* 0.35m deep. The fill was sterile.

Neolithic evidence (Fig 3)

Only one feature (F364) that might be dated to the latter part of the Neolithic was identified: an extremely shallow scoop in the north-western quadrant of Area 3 (Fig 3). Only about 30–40mm deep, this heavily truncated cut contained a near complete, possibly Grooved Ware vessel of late Neolithic or early Bronze Age date, crushed flat onto the surface of the underlying subsoil.

Pl. 6. Grooved ware vessel within F364. Scale 100mm.

In addition to this rather insubstantial evidence, a considerable assemblage of residual struck flint was recovered from across the site, with the greatest density occurring around Areas 3 and 4 in a relatively restricted zone (see Fig 3). Part of the site-wide assemblage is

Pl 5. A selection of the worked flint from the site. Scale 100mm.

probably associated with middle to late Bronze Age activity (below), but the majority appears to be of late Neolithic date. A small number of potential early Neolithic flint artefacts (axes and an arrowhead) were also represented. The material was recovered from later features and from mechanically removed layers of overburden. However, a significant proportion (some 44 per cent or 1100 pieces) of the flint assemblage was recovered from six features that have been dated to the earliest Iron Age (below).

Later prehistoric features

The bulk of the recovered pottery assemblage and a considerable proportion of the worked flint came from later prehistoric features. Occupation appeared to be concentrated in the northern area of the site (Areas 1 and 2), but some significant evidence for activity was also present to the south (Area 3 and 4, see Fig 4). Fills of the features of this phase appear to be mostly derived from erosion of the surrounding subsoil or contemporary topsoil (being very similar and often uniform) and will not generally be detailed in this report.

The earliest features were probably a complex of droveways and fields in Areas 3 and 4, all defined by relatively shallow ditches with U-shaped profiles and mostly sterile fills. These were only very partially revealed (Fig 5) so that their sequence or how they related to other boundaries was often unclear.

Activity of the later prehistoric period in the northern part of the site appeared to be of a different nature and in part related to three substantial conjoined curvilinear ditched enclosures immediately to the east of Area 2 (ASDU 2013; Simmonds 2015).

Pl 7. A typical later prehistoric field ditch. Scale 0.5m.

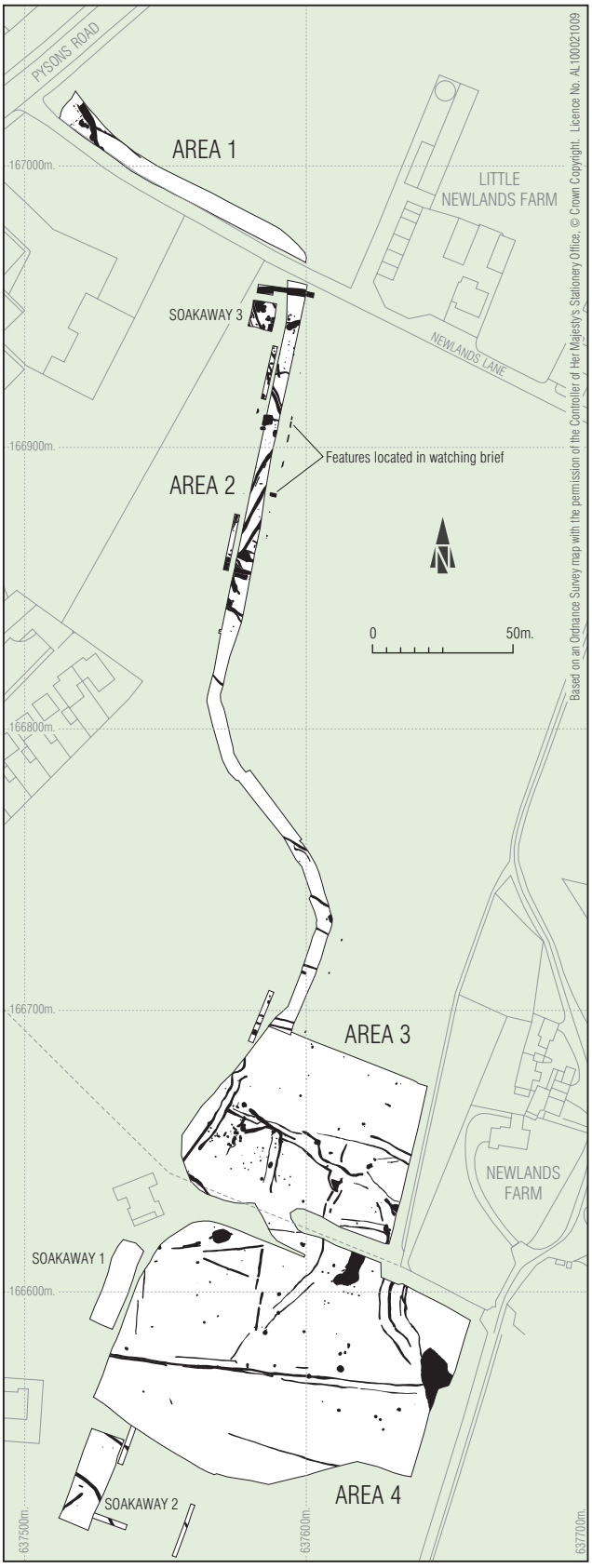


Fig 4. The later prehistoric features (1:2500).

Pl 8. The metalled hollow way F50 looking south. Scales 0.5m.

Droveways and a hollow way (Areas 3 and 4) (Fig 5)

The major route was a sinuously meandering arrangement of three parallel ditches (Droveway 1) extending on north-westerly course to the western side of Area 3. The ditches were between 0.4 and 1.1m wide and 0.3m deep at maximum and about 3m apart on average. Most droveways have just two ditches, 2m or more apart: the three alignments here may be a result of longevity of use, with recutting or re-establishment of a boundary, or even provision of a wider routeway.

The ditches of Droveway 1 were cut away at their southern end by a linear feature on the same alignment (F50; Fig 5). This consisted of a broad, shallow depression which extended into the excavation by 23.15m, was 11.62m wide and 0.70m deep at its southern end; the feature became shallower to the north where it was probably eroded away. A sequence of metallings within this feature suggested that a hollow way had formed by continued use.

Traces of a second droveway were recorded extending across Area 4 from the south on a north-easterly course, before possibly turning east to the eastern edge of Area 3. This crossed the line of Droveway 1, but the precise sequence of tracks or whether one superceded the other, could not be clearly demonstrated. Other possible double-ditched droveways (Droveways 3–5) were more fragmentary.

Each of the ditches defining these droveways is likely to been accompanied by a low adjacent bank formed from the upcast of ditch excavation and it had been suggested that these may have been surmounted by hedges (Yates 2007; Lewis *et al* 2010, 142–3). Although ditches might infill naturally over time, banks and hedges might last considerably longer.

Datable material from these features was sparse, but a small quantity of mid to later Bronze Age pottery was recovered with a relatively large assemblage from hollow way (F50), this suggesting that the tracks formed during the middle Bronze Age, if not earlier. The upper levels of the hollow way contained earliest Iron Age material, indicating that it survived in the landscape for a considerable period.

Enclosure 5 (Area 3)

A subsequent development in Areas 3 and 4 seems to have been the creation of a ditched enclosure (Enclosure 5; Fig. 5), formed within the network of droveways and perhaps within a pre-existing field system. This field system was represented specifically here by an east–west aligned series of evenly segmented ditches on its south side (G49, with a later continuous recut represented by F63 on the same line), all of which respected Droveway 1 or hollow way F50 (suggesting their later date).

The enclosure perhaps acted initially as a field or paddock. Only partially exposed, what can be reconstructed presents a trapezoidal plan, at least 90m by 50m in extent, defined by relatively straight but segmented and offset ditches. These were generally slight, less than 1m across and 0.5m deep with U-shaped profiles similar in most respects to the other field and droveway ditches in the area. There would appear to have been entrances at both exposed corners, possibly opening out onto associated droveways

although the segmented nature of the ditches, if not due to subsequent truncation, suggests numerous 'causeways' into the enclosed area.

Modifications to the north-east corner of the enclosure, represented by substantial recuttings of and extension to the ditch alignments, had the effect of cutting off the entrance in this position and may be related to later settlement in its north quarter evidenced by post-hole structures and pit complexes (Fig 5). Some of the ditches yielded small amounts of mid to late Bronze Age pottery.

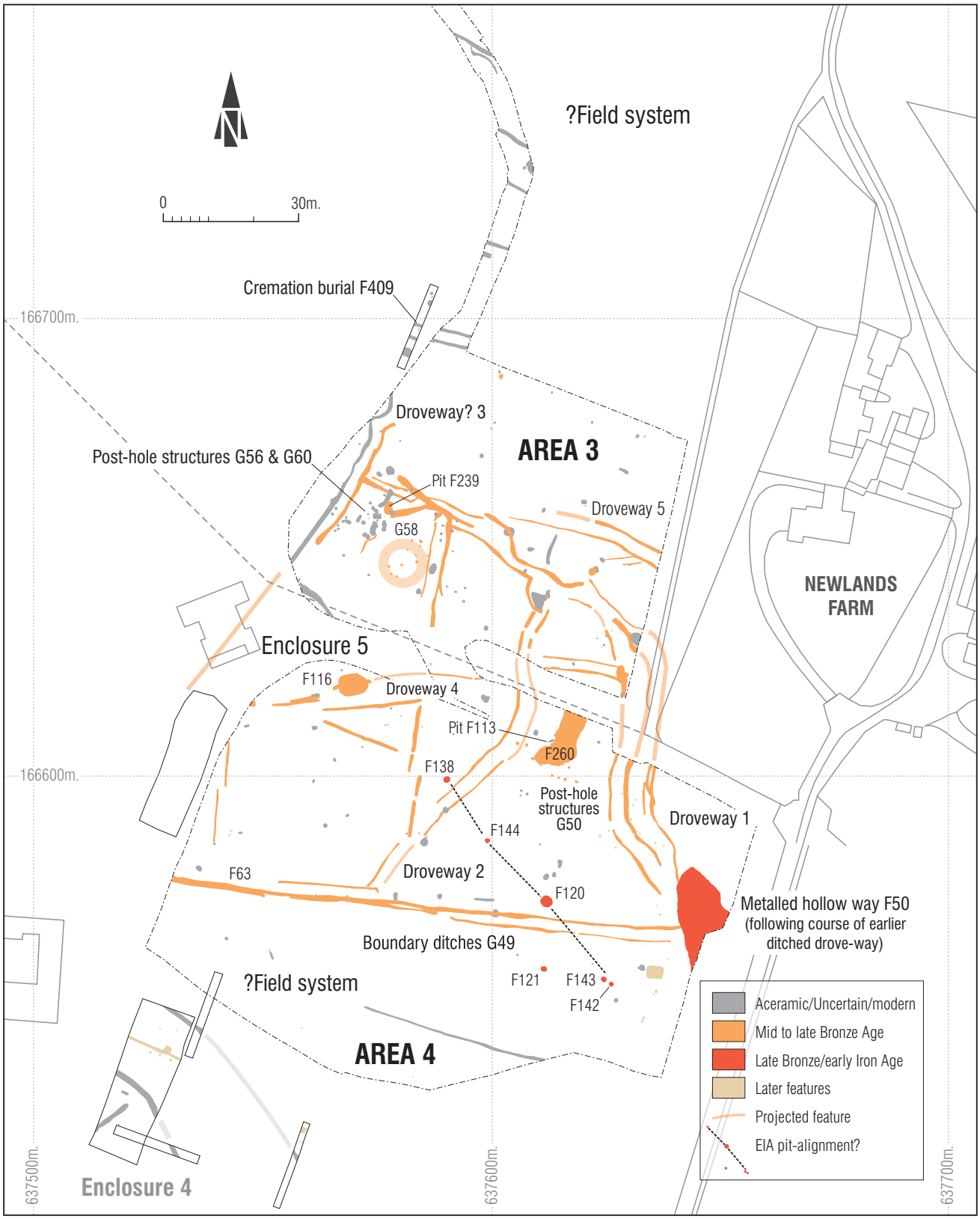


Fig 5. Areas 3 & 4. Later prehistoric features (1:1250).

Structural evidence within Enclosure 5

Two groups of post-holes (G56 and G60) almost certainly represent structures but are difficult to interpret, suggesting at the least, various overlapping settings of two- or four-post structures (commonly found within settlements of the mid to late Bronze Age) although some could also represent fences. None could be clearly dated.

A third structure cautiously proposed here is possible post-hole structure G58. This consisted of six post settings forming a circle about 6.3–6.6m in diameter with a seventh located near centrally and perhaps a further, smaller post-pit located slightly to the west of the main group. At least three other similar post-holes may be related as they formed a concentric arc (*c* 10.9m in diameter) a few metres to the north-east. Only a few very worn potsherds of mid to late Bronze Age date were recovered, but this was the best evidence for the presence of the characteristic domestic round-house, commonly seen on settlement sites of this period and the subsequent Iron Age.

Other features in Enclosure 5

Also in the northern part of the enclosure, were two complexes of shallow sometimes intercutting pits, generally about 2–3m long and 1.5–2m wide. Most could not be dated although a similar, if slightly larger pit (F239) did produce a few sherds of possible late Bronze Age date. A more significant feature consisted of a large pit F116, probably a quarry located in the central area of the enclosure and only partly excavated. This consisted of a subcircular concave-profiled cut which was 6.53m long, 4.95m wide and where excavated on its western side 0.40m deep. This contained a fill of mid greyish-brown, firm, sandy clay with rare, small to large flints and chalk fragments. This provided a more substantial assemblage of middle and mid to late Bronze Age potsherds. Recovered cereal processing waste consisted of chaff (most frequent at 65 per cent), with emmer chaff outnumbering spelt by about 3 to 1; a few weed seeds came from common weeds of cultivated and disturbed places similar to species found in Areas 1 and 2 (below).

Structures and other features outside Enclosure 5

To the east of the enclosure and perhaps of a later phase of occupation, a potential subrectangular post-built structure or structures (G50; Fig 5) was delineated by ten post-pits; two contained small amounts of late Bronze Age pottery. The posts may indicate a slightly bent structure or structures, about 3m wide and about 15m long. Apart from one that was smaller, most of the post-pits were of similar size and consisted of near circular steep-sided, concave-profiled cuts 0.5m in diameter on average and between 0.11 and 0.33m deep.

A scatter of isolated features situated mostly to the north and east of Enclosure 5 may mostly relate to this extended period of activity, but many could not be accurately dated. Only the more significant will be described here.

Near the northern edge of Area 4, two small and very shallow, intercutting pits (F113 and F114) were of this period. The later pit (F113) 0.28m in diameter and only 0.09m deep contained the remnants of a damaged *in situ* flint-tempered pottery vessel of mid-late Bronze Age date. This feature was initially interpreted as a cremation burial but no cremated material was evident in the associated fill. It is likely therefore to be a pit containing a ritual deposition, similar to the pot burials in Area 2.

Immediately adjacent to the east was a large irregular shaped feature (F260) which consisted of a fairly steep-sided cut, with an undulating base, which had a north–south length in excess of 9m and where excavated at its southern end a maximum width of 6.90m and a depth of 0.65m. Apart from some peripheral basal silt deposits derived from erosion of the edges, the base of the cut was overlain by a rough metalling of angular and sub-rounded flint pebbles within a light greyish, yellowish-brown, sandy clay matrix. This had a maximum thickness of 0.20m and was similar to the metalling encountered at the base of hollow way F50 although not as well defined or extensive. The bulk of the cut was filled by a uniform deposit of sandy clay silt with occasional, small to medium-sized, flints and flecks of charcoal. Considerable quantities of mid and mid to late Bronze Age pottery were recovered from this feature including sixty sherds of mid Bronze Age material from the upper fill. Considerable quantities of lithic material were also recovered, most probably residual. The feature was interpreted as a quarry.

Ditches and other features in Area 1

(Fig 6)

A large ditch 1.45m wide with a steep-sided, concave profile 0.51m deep (F20, Fig 6), was aligned approximately north-north-west/south-south-east across Area 1. The ditch was later recut on a larger scale (F2 and F18), leaving an entrance or causeway (2.4m wide) into the area on the west. At its northern terminal the recut (the largest ditch found on the excavations) possessed a steep, slightly convex-based V-shaped profile 2.06m wide and 1.40m deep. Pottery dated the ditches to the mid to late Bronze Age into the earliest Iron Age and included sherds of a shouldered large coarse jar (McNee, below). These large ditches may represent an enclosure mostly situated to the west of the area.

Environmental samples from the terminals contained the largest concentration of cereal processing waste from the entire site and gave an insight into the agricultural economy at this time (Carruthers, below). Chaff fragments and weed seeds were abundant and included Emmer (*Triticum dicoccum*) and spelt wheat (T *spelta*) as the predominant crop plants, Hulled barley (*Hordeum vulgare*), peas (cf *Pisum sativum*) and cultivated flax (*Linum usitatissimum*). The assemblage of weed remains, fat-hen (*Chenopodium album*), dock (*Rumex* sp) and brome grass (*Bromus* sect *Bromus*) being the dominant taxa, primarily indicate

Pl 9. Later prehistoric ditches in Area 1, looking south-west. Ditch F2 in foreground with section through ditch F20 to the rear. Scales 2m and 1m.

nutrient rich, probably cultivated soils although the presence of sheep's sorrel (*Rumex acetosella*) which occurs most frequently on poor, acidic, sandy soils is somewhat at variance with this.

Ditch F2 was cut by ditch F1, which to the west appeared to follow the line of the earlier feature (for about 5m), but to the east turned to a more easterly alignment, ending in a rounded terminal about 18m to the east of F2. The ditch had a generally steep-sided, concave-profile with a depth of between 0.20 and 0.25m. Its width varied quite considerably, measuring 0.6m wide towards its eastern end which increased to 1.35m towards its western end where it cut into the upper fills of ditch F2. These factors suggested it was cut not long after F2 had been backfilled, perhaps aligned with the residual depression of F2 to the west. The feature yielded pottery dating to the late Bronze/earliest Iron Age and part of a polished, coarse-grained diorite axehead, in two joining fragments, undoubtedly residual and of probable Neolithic origin (see stone report below).

Few other features, apart from a small cluster of very shallow pits and post-holes (F7–F17 and F19) were revealed in this area. Most were undated although a few sherds of late Bronze Age pottery were recovered from F9

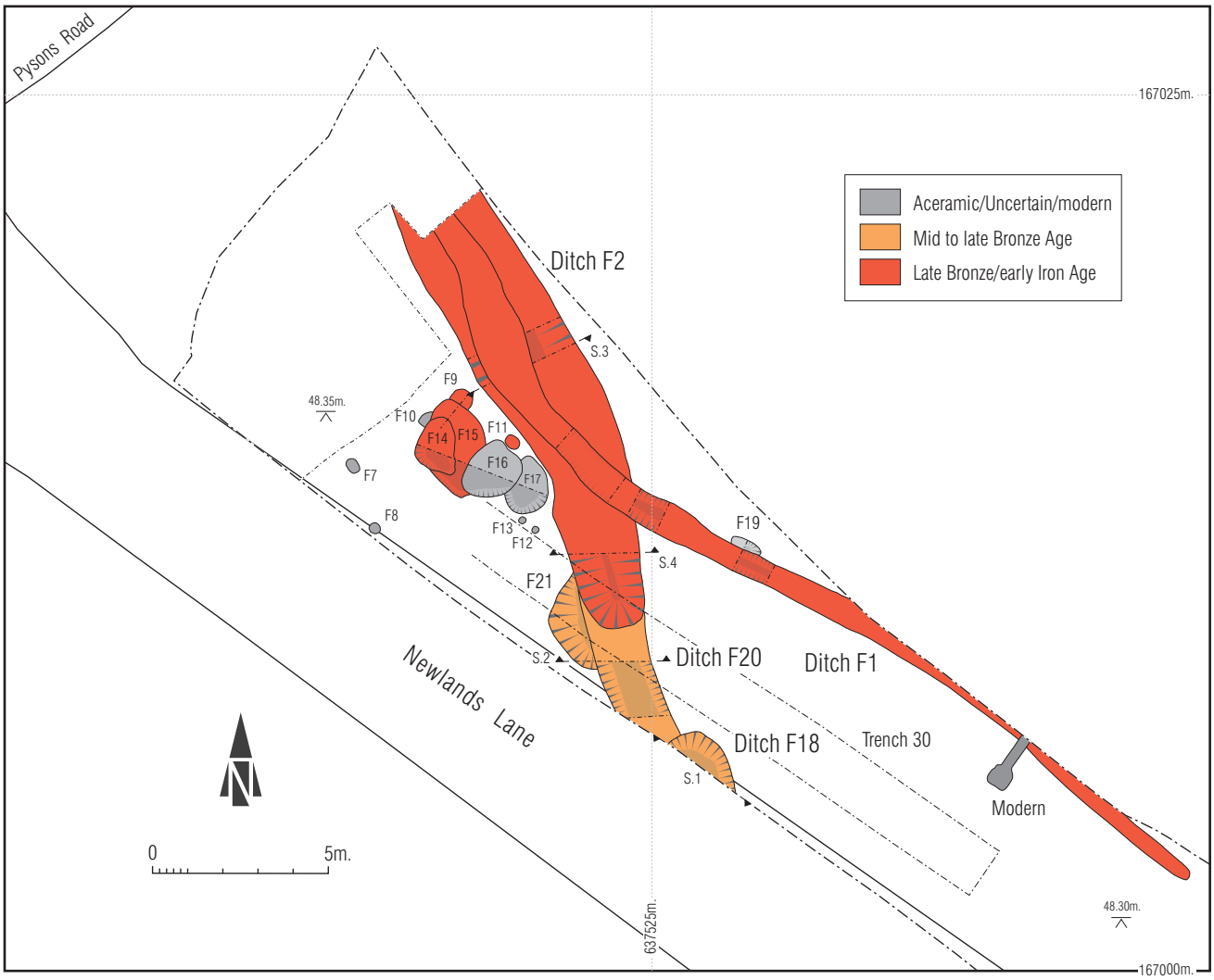


Fig 6. Mid to late Bronze Age to earliest Iron Age features in Area 1 (1:200).

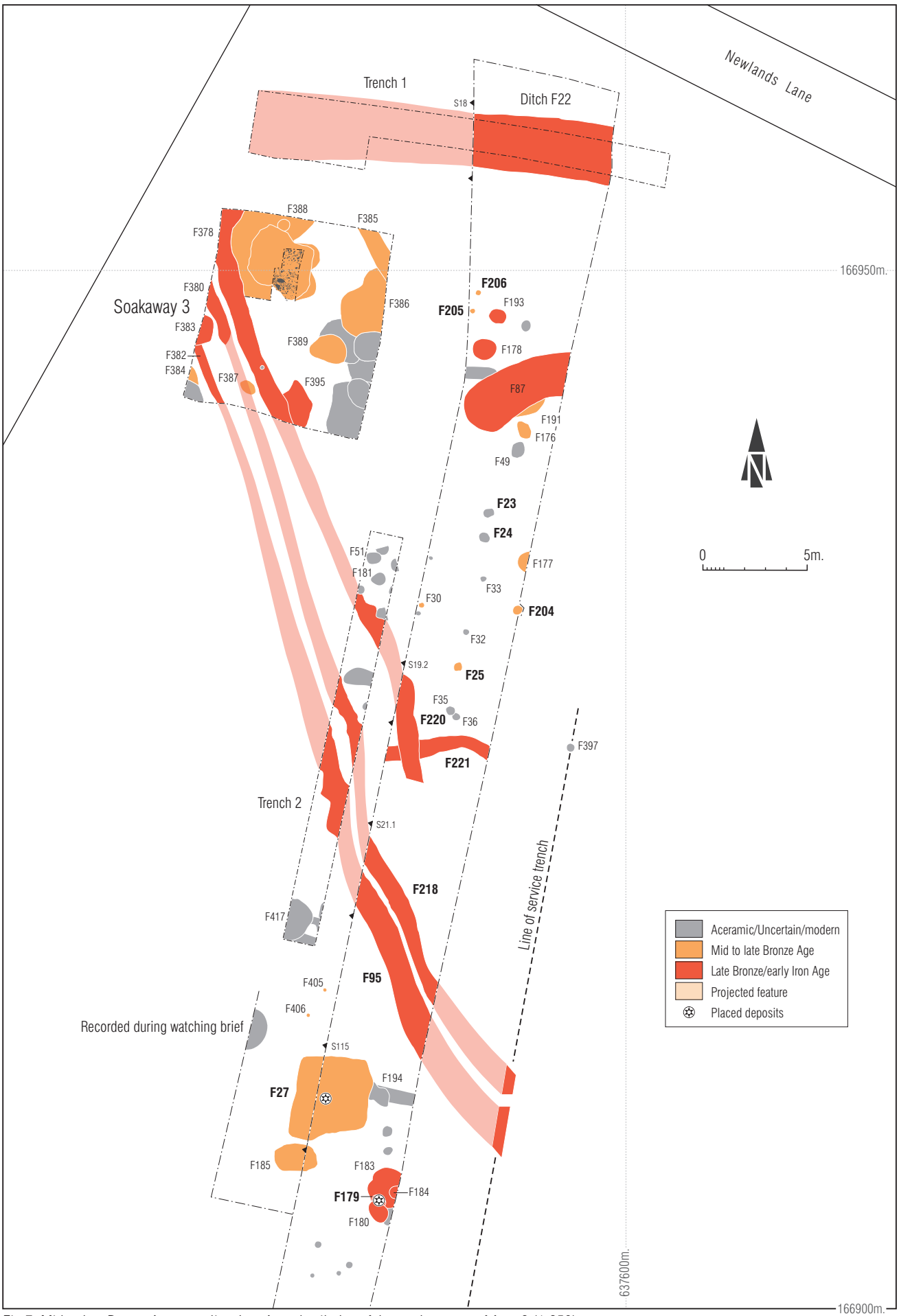


Fig 7. Mid to late Bronze Age to earliest Iron Age: detail plan of the northern part of Area 2 (1:250).

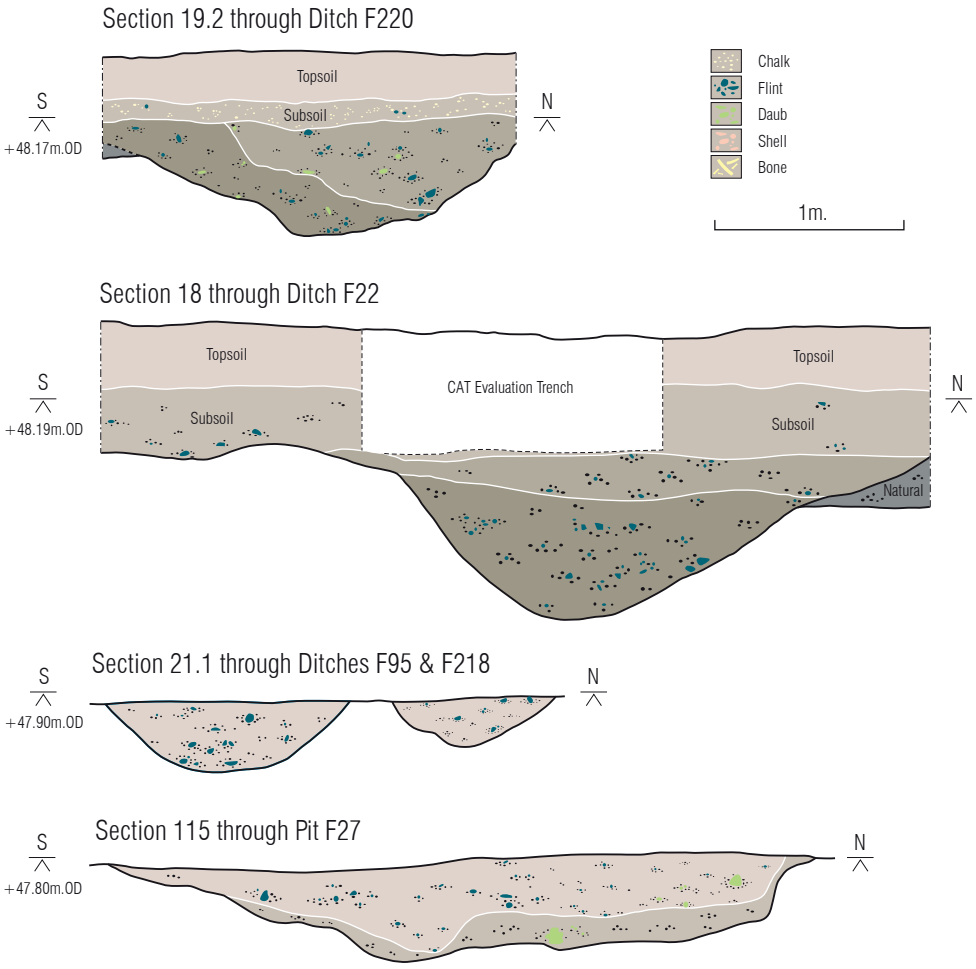


Fig 8. Feature sections (northern part of Area 2) (1:40).

and F11 and earliest Iron Age from F14 and F15. Feature F21 was probably a natural undulation in the subsoil or a tree-throw (both recorded on site in the vicinity) although it did contain some middle to late Bronze Age pottery.

Field system (Area 2)

In Area 2 the main concentration of activity appeared to be at the northern end of the area and was mostly of a similar or slightly later period to that in Area 1 (Figs 7 and 9). However, there were traces of earlier activity provided by fourteen generally insubstantial ditches, aligned roughly east-west, all of which appeared to pre-date the later Bronze Age/earliest Iron Age settlement evidence. Some at least probably formed part of a mid to later Bronze Age field system, but none could be dated. One of these (F212) (Figs 9 and 10) is equivalent to a ditch of the system recorded during the 2014 excavations, and another further south (F227) is on an identical alignment and spacing (see Fig 5).

Later ditches in Area 2 (Figs 7 and 9)

Apart from ditch F22 (below), later ditches were set in two groups of three parallel alignments a few metres apart, and were relatively slight and unremarkable, generally about 1m wide and shallow, mostly under 0.25m depth, with U-shaped profiles and yielding few artefacts although pottery of late Bronze/earliest Iron Age date was recovered from most, suggesting that all were roughly contemporary (Figs 7 and 9). The northern group (including F95, F218 and F220) (Figs 7and 8) was generally aligned north-west/south-east, with a slight suggestion of an eastward turn at the north end. These ditches align with multiple northern ditches of the Iron Age enclosure complex to the east (Simmonds 2014) and are obviously related.

A southern group (including F208, F222, F223 and F228) (Figs 9 and 10) was aligned north-east/south-west. These features probably represent a trackway or boundary, and the continuation north-eastwards of two of them (F222, F223) was observed in the northern part of the 2014 excavations. They did not appear in these excavations on the western side of Area 2. Also, nearby ditches F94 and F244 (and perhaps F210 which may represent an eroded area within a trackway if not a hollow way *per se*), aligned not far off east-west (Figs 9 and 10), can be equated with a significant trackway leading directly into the northern enclosure complex of the 2014 excavations.

At the extreme north end of Area 2, ditch F22 was more substantial than most of these ditches and also contained significantly more artefactual material (Figs 7 and 8). This

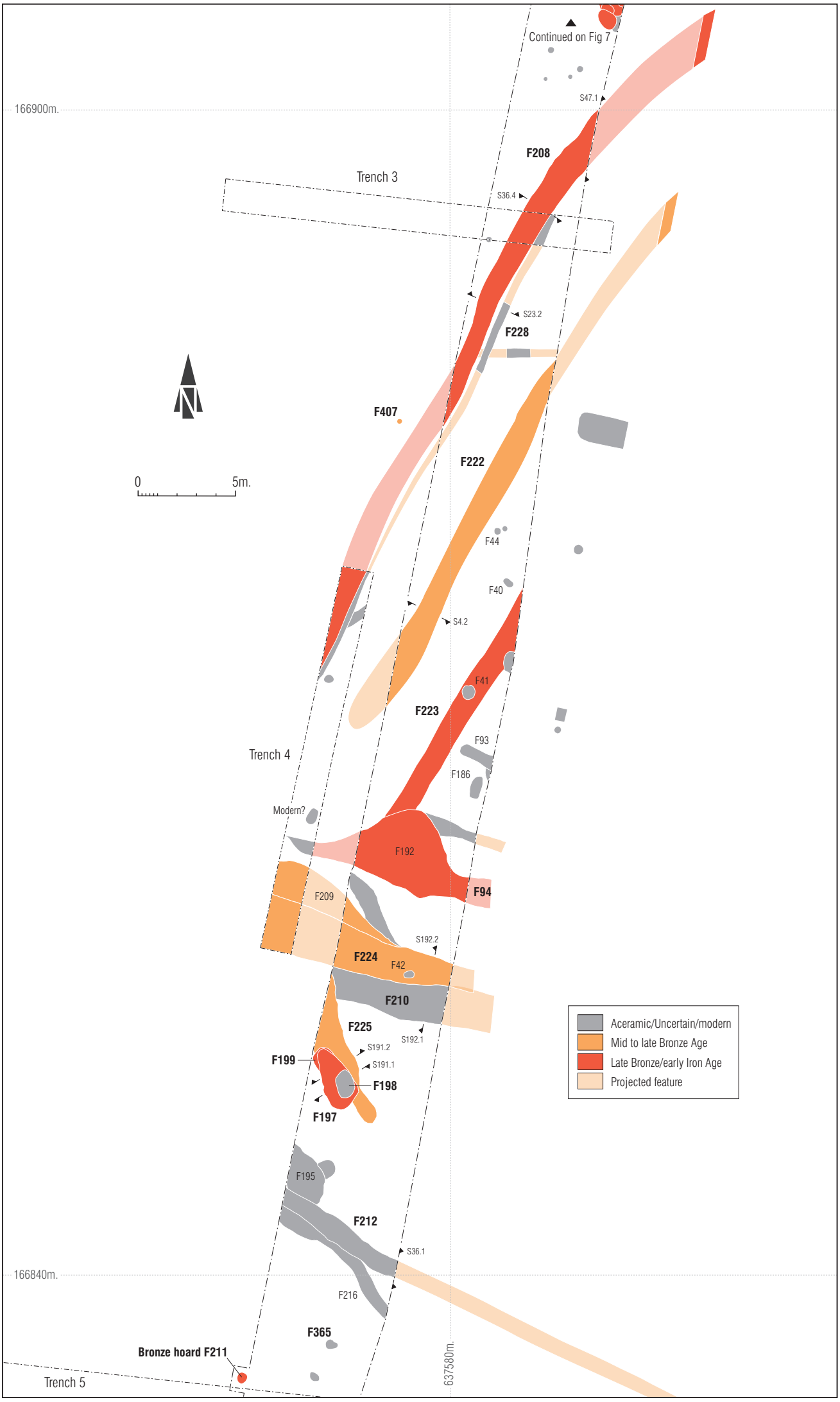


Fig 9. Mid to late Bronze Age to earliest Iron Age: detail plan of southern part of Area 2 (1:250).

large ditch, about 3m wide and 1m deep and of earliest Iron Age date, was aligned near east–west, an orientation dissimilar to most of the other ditches on the site. It may represent a more significant land boundary relating to the early Iron Age settlement focussed on the Forelands School site to the immediate south-east (Simmonds 2014).

Other features in Area 2

That these later ditches were related to or close by domestic settlement is suggested by the concentration of features near them. These included pits, possible metalled working hollows, fragmentary remains of post-hole structures, cremation burials and other ritual features. Only a few of the more significant of these features will be described here.

Pits

Most of the pits were relatively small, shallow or insubstantial, although there were a few much larger features, some of which may have represented clay quarries. Generally, they only produced small quantities of artefactual material (of similar date to the ditches) and environmental evidence (below). Some of the exceptions did provide persuasive examples of ritual depositions however. Apart from common and often distinctive depositions in ditch termini (such as marine shell concentrations), two examples may illustrate this.

Pit F179 (Fig 7) was otherwise unremarkable, only 1.13m long, 1.05m wide and 0.18m deep with a uniform fill, but on its base some late Bronze/earliest Iron Age decorated phase ware potsherds were associated with specific animal bones. Although quite worn, the sherds were larger than usual while the animal bones all consisted of large fragments of cattle. No long bones were present, the assemblage consisting entirely of trabecular flat bone fragments including skull, scapula and pelvis (Jones 2009). Animal bones, particularly skulls, have long been recognised as having a special significance when buried in certain situations (see for example Wilson 1999, *passim*), and the combination of both pottery and the bone of a particular type together, strongly suggest that this was almost certainly a placed or ritual deposit.

Just to the north (Fig 7) a much larger subrectangular pit (F27), was uncertainly interpreted but may have been a clay quarry. This was a quite sharply cut and steep-sided intrusion 4.10m long, 3.51m wide and 0.53m deep with an irregular base (Fig 8). Overlying a basal fill with frequent charcoal fragments and large fragments of copper alloy slag, was what appeared to be a small formal or 'placed' deposit of pot sherds, animal bone, lumps of burnt daub and fragments of sandstone. A rare well-preserved wolf's mandible within the bone assemblage supports the idea of 'ritual' deposition and it seems unlikely to be coincidence that animal bones from later fills were dominated by four

Pl 10. Possible ritually placed items of pottery and flat cattle bone fragments including skull, scapula and pelvis on the base of pit F179. Scale 100mm.

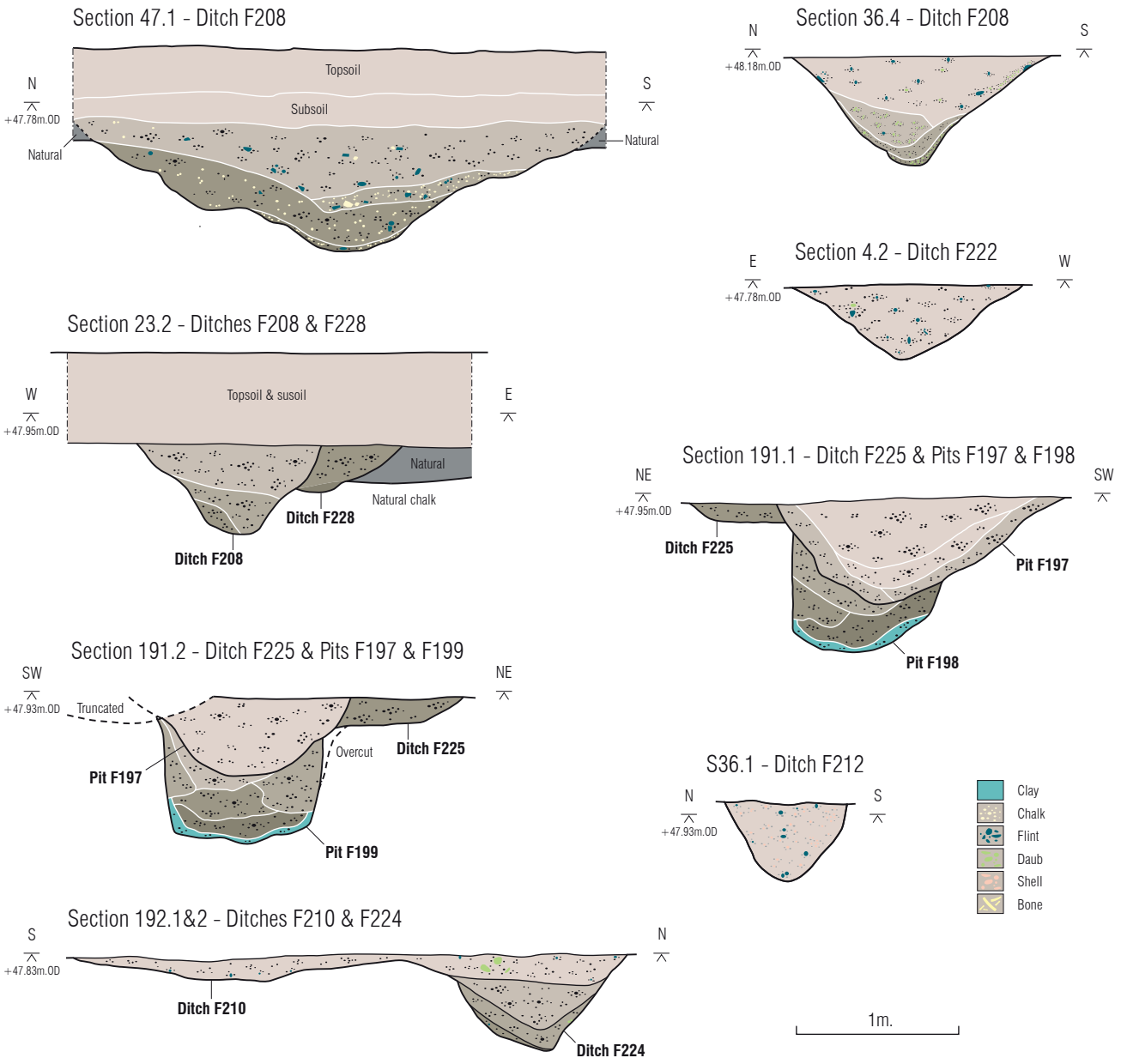


Fig 10. Feature sections (southern part of Area 2) (1:40).

mandibles of other species (Jones 2009). In the southern part of the site, noticeable examples of probable ritual deposition were not as common, (apart perhaps from some earliest Iron Age pits whose fills could be construed as 'closure' deposits demarking the end of the settlement; below).

A small group of pits (F197–9) in the central part of Area 2 was more distinctive than the majority (Figs 9 and 10). The earlier features (F198–9) were disturbed by the cutting of a later pit (F197) and were difficult to separate, but were seemingly subcircular in shape, about 1.0 to 1.6m in diameter with very steep or vertical sides and concave bases, 0.5–0.75m deep. The basal fill of F199 consisted of a near sterile layer of distinct orange brown clay which partially extended up the sides of the cut. Subsequent levels consisted of deposits rich in charcoal and burnt clay overlain by fills of very dark greyish-brown, clayey silt with much charcoal flecking and cultural material. The ceramic assemblage from the pits consisted of late Bronze Age sherds. Radiocarbon dating of a charred seed or nutshell from F199 provided a date of 827-781 cal BC at 2 sigma (UBA-13516; Radiocarbon Age 2624 +/- 25). The later pit (F197) yielded mid to late Bronze Age sherds and a few of late Bronze Age/earliest Iron Age date, as well as burnt clay and charcoal.

The pits also yielded similar assemblages of charred plant remains, with high concentrations of grain and chaff suggesting that they represented cereal processing waste from the de-husking of semi-cleaned emmer and spelt spikelets. Further, one different aspect of these assemblages was the dominance of spelt chaff over emmer compared with other samples from this period. As well as being the

Pl 11. Cremation burial F23 (Area 2). Scale 0.2m.

Pl 12. Excavation of feature F204 which contained the base of a late Bronze Age pot buried upright and a fragment of a copper alloy sword blade (just left of the brush).

only spelt-dominated features, these three pits produced the only assemblages containing traces of wetland plants (see Carruthers, below).

Cremation burials and related features

Five cremation burials were found in Area 2, two to the north (F23 and F24) (Fig 7) with three more isolated examples (F365, F407; Fig 9) and F409 (Fig 5) to the south. All of them were heavily truncated, the deepest (F23) just 0.24m. None were associated with pottery vessels, although there was a clearly defined edge to the mass of cremated bone within each suggesting that the cremated material had been buried in a bag or other perishable container. No bone survived in a complete enough state for detailed analysis (Dexter *et al* 2010). Cremation F24 yielded by far the largest quantity of bone (765g), less than 30–40 per cent of what might be expected from a full adult skeleton (McKinley 2000). No burials were found towards the southern part of the overall site although the single cremation F409 (Fig 5) just to the north of Area 3 might be part of a larger dispersed group.

Four features (F25 and F204-6) within 10m of F23 and F24 may be related to the cremations (Fig 7). These were small, subcircular, U-profiled pits containing the remains of *in situ* ceramic vessels. They were all considerably truncated (the deepest, F204, just 0.25m) with just the very base of the vessels surviving. The pottery was all of Bronze Age date but varied from a quite worn vessel of middle Bronze Age date (F25), to half a base and several body sherds of a late Bronze Age pot buried upright (F204). F204 also contained a short length of a late Bronze Age copper alloy sword blade broken at each end and another fragment of possible metalworking residue (Richardson, below). F205 and F206 also contained fragmentary late Bronze Age vessels, one probably buried upright but missing its base. There was no indication that any of these features were cremation burials, no trace of burnt bone being recorded either during excavation or within the samples. It is possible that cremation material may have been completely removed by truncation but this is considered unlikely.

The presence of the sword tip in F204 and the isolated pots themselves suggests that these were all deliberately placed items and that the features had some votive or ritual significance. Whether the cremation burials close by are part of the same ceremonial landscape, or even whether the features are roughly contemporary, is difficult to prove. The pot in F25 was earlier than the other vessels recovered, but it was very worn and was probably quite old when buried. Even so, it could be that this entire area was part of a long-lived site of ritual and sepulchral significance.

Bronze hoard

One of the most significant features (F211; Fig 9) was situated about 8m to the south of the ditch complex, less than 1m outside the edge of the stripped area. A bronze hoard had been located and disturbed by a metal-detectorist working without permission (see below). At least seventy-eight copper alloy objects and parts of a buried vessel, within which the metalwork appears to have been contained were removed but were later recovered. Subsequent archaeological investigation located the precise find spot and recovered a fragment of a socketed axehead and six pottery sherds. The surviving extent of the hoard pit

Pl 13. The hoard pit F211 looking west. Scale 1m. The central hollow indicates the position of the buried pottery vessel.

Pl 14. Part of the bronze hoard as recovered. Scale 100mm.

consisted of a near circular, steep-sided, broadly U-shaped cut, *c* 0.60m in diameter and *c* 0.20m deep. A developed soil covered this area, from which a stray fragment of axehead was recovered. From the description supplied by the detectorist and the remaining physical state of the feature, it seems likely that the pottery vessel, packed with the copper alloy metalwork, was originally buried upstanding within a pit wider than the vessel itself. The surviving remnants of this vessel, lacking its rim, base and shoulder, indicate that it was not complete when buried, and the depth of the remaining cut and the recovery of an additional fragment of metalwork from overlying subsoils, also suggests that the hoard had been truncated, probably by agricultural activity in antiquity.

The pottery vessel was highly burnished, perhaps to complement the appearance of the metalwork and is dated to *c* 800–600 BC (McNee, below). The metalwork, which included socketed axeheads, spearheads, sword blade fragments, ingots of copper or copper alloy and other copper alloy objects, contained some pieces from the Ewart Park phase of the late Bronze Age and was probably deposited at some time between 800 and 700 BC, or perhaps as late as 600 BC (Worrell *et al* below).

Radiocarbon dates

The overall date of the features in this area was confirmed by two radiocarbon dates. These were from charred seeds and nutshell from a large amorphously shaped quarry-like pit (F192, see Fig 7) which provided a date of 909-809 cal BC (UBA-13515; Radiocarbon Age 2711 $^{+}$/- 29 BP) and a smaller pit F199 (827-781 cal BC; UBA-13516; Radiocarbon Age 2624 $^{+}$/- 25BP), both at 95 per cent probability.

Earliest Iron Age (Area 4)

Pit alignment

The latest prehistoric occupation, dating to the very end of the Bronze Age and into the earliest Iron Age period (approximately 800–600 BC), was located in Area 4 and was represented by a group of perhaps six rubbish pits (F138, F144, F120, F121, F142, F143) to the south-east of Enclosure 5 (Fig 5). These features contained the assemblages of Neolithic flintwork referred to above.

The westernmost and most significant of these features was Pit F138 situated a few metres outside Enclosure 5. The pit was near circular, 1.62m long, 1.4m wide and 0.68m deep with very steep and undercut sides and a slightly concave base. It contained two fills, the lower of dark greyish-brown clay with common charcoal inclusions, which produced over 500 pieces of struck and worked flint including two polished flint axes, twelve scrapers, and other retouched implements or flakes all in a fresh, unpatinated condition (Wilson, below). The lighter coloured upper fill contained a similar range of flint although none showed retouching. A considerable assemblage of pottery (682 sherds), of variable date and condition was also recovered. The majority of the sherds derive from the early Neolithic and the early Iron Age and these were generally in good condition. Smaller and worn sherds are possibly late Bronze Age in date. Although no complete vessels were present, thirty-two rims in good condition mostly but not exclusively belonged to medium size burnished bowl forms. It is suggested that most of these belonged to different vessels, maybe as many as thirty (McNee, below). The varying dates and condition of

this domestic assemblage of pottery (see below) suggests that it derived from different sources and probably by different processes and it appears that freshly broken pots were mixed with pots which had fallen out of use or been buried for some time.

In addition, the largest and one of the more significant assemblages of animal bone from the site, including a bone awl crafted from a sheep or goat metapodial (Fig 20) was recovered from the primary layer. The assemblage consisted of two elements; a weathered and fragmentary group, and a group consisting mainly of pig, with very little weathering. It would seem probable that the bone in better condition was contemporary with the pit, while the fragmentary animal bone had certainly been subject to a different pattern of disposal and could potentially be earlier in date (unfortunately, a radiocarbon date determination was unsuccessful with the pig bone). It is notable that the pig bones from the feature formed over 70 per cent of the total assemblage of this species recovered from the entire site such was the general lack of preservation of this material (Jones, below).

Located *c* 14.65m to the south-east, pit F144 was of similar form and size to F138, 1.22m long, 1.10m wide and 0.52m deep. Again, two main fills were discerned, the basal fill of very dark greyish-brown, slightly sandy clayey silt with frequent small charcoal fragments; this deposit filled the entire base of the cut to a depth of *c* 0.36m. The upper fill consisted of mid yellowish-brown, soft clayey silt and much less charcoal. A large assemblage of struck flint was also present, mostly from the lower fill (over 300 pieces altogether), consisting in the main of flakes and blades. Similar pottery (over 200 sherds) was recovered, some likely to be from the same vessels as represented in pit F138. This would indicate that the pits were filled in at about the same time.

The four other pits in the group (F120, F121, F142, F143) were of a similar form and yielded similar but smaller assemblages of pottery and flintwork. The pottery was in some cases both early Neolithic and late Bronze/early Iron Age, but identification was more difficult, and some later Bronze Age material was also present (McNee, below).

The disposition of this group of pits suggests they formed a discrete group; all apart from F121 were spaced near equidistant (about 12.5m) in a north-west/south-easterly line. Pit alignments are a quite well-known phenomenon of both prehistoric and later periods, sometimes reflecting boundaries that can no longer be observed. Here, the alignment does not correspond with any of the nearby field boundaries, apart perhaps from that of Droveway 1 just to the north-east. It also cut across the major boundary G49 (Fig 5).

High concentrations of charred plant remains were recovered from pits F138 and F144. These assemblages included over 500 fragments of hazelnut and various fully processed cereals, primarily emmer (*Triticum dicoccum*) and Club wheat (*Triticum compactum Host*), the oldest cultivated wheat. Other plant remains included poorly preserved barley (*Hordeum sp*), some cultivated flax (*Linum usitatissimum*), and small quantities of various

Pl 15. Pit F138. Scale 1m.

weeds including henbane (*Hyoscyamus niger*), known to have had medicinal and hallucinatory uses in the past and probably highly symbolic (Carruthers, below). Radiocarbon dating of two Club wheat grains from different fills of F138 produced dates of 3750-3638 cal BC (UBA–13518; 4896 +/- 29 BP) and 3783-3656 cal BC (UBA-13517; 4948 +/- 30 BP), at 2 sigma. The similarity of these dates indicates that at least some of these plant remains are early Neolithic in origin and, furthermore, imply cultivation and food processing in the area at that time.

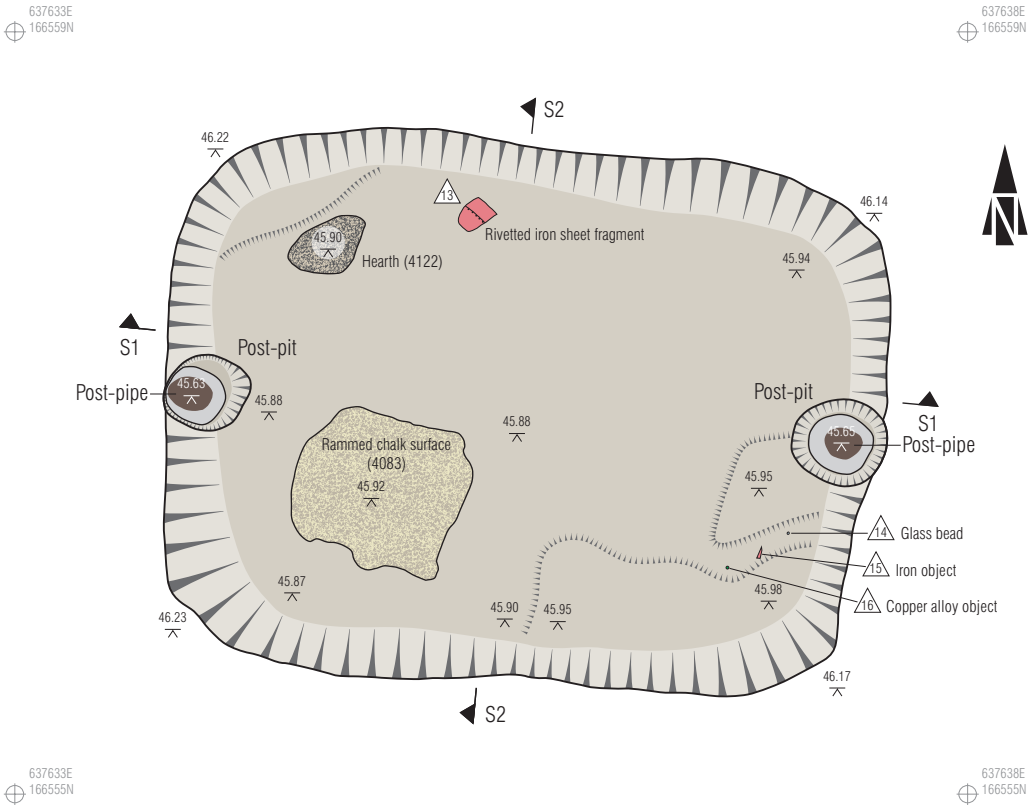
Considering the ceramic assemblage from these pits as a whole, the majority of the sherds derive from the early Neolithic and the earliest Iron Age. The Neolithic material was generally in very good condition with fine polished surfaces and fresh edges, mostly rather fragmented. All the sherds were from rims (generally quite small) or upper parts of the vessels, similar in this respect to many assemblages from earlier Neolithic pits (Thomas 1999, 68). Conversely, the later prehistoric material tended to be more abraded, the small and worn sherds possibly late Bronze Age decorated phase wares (although there was no actual decoration). The earliest Iron Age ceramics included some larger sherds but in varying stages of wear and tear (McNee, below).

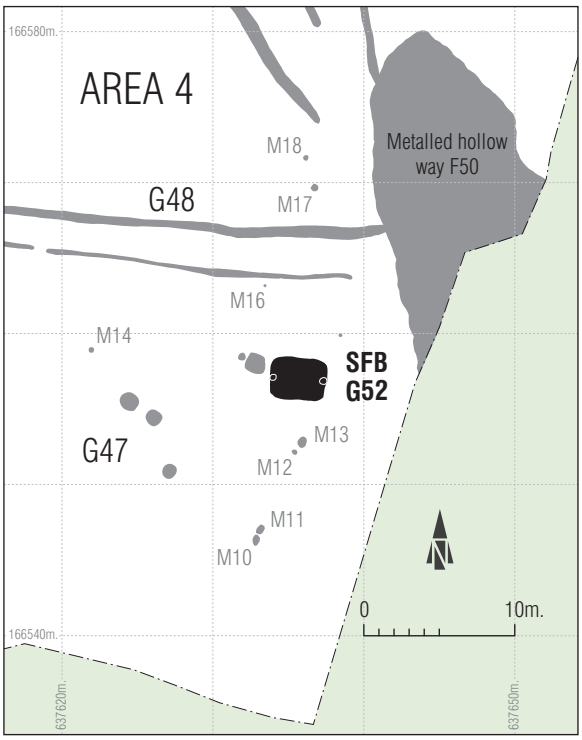
The earlier pottery although fragmented is represented by either a Neolithic Carinated or Plain Bowl tradition, but it is not possible to say which due to a lack of shoulder sherds. In terms of date, early Neolithic assemblages tend to have quite simple rims with squared, everted or rounded profiles, while later assemblages can contain rolled rims and other heavy types (Barclay and Edwards 2006). The Ellington examples include rolled rims, which do not appear to be decorated and so are probably later Plain Bowls. The vessels are similar to those recovered from the nearby site of the Chalk Hill causewayed enclosure where 'radiocarbon dates associated with early Neolithic Plain Bowls … are between 3710-3510 cal BC (Bayliss *et al* 2001, 374-5), and according to conventional chronologies these secondary Neolithic ceramics start to appear around 3800 BC (Gibson 2006). The radiocarbon dates from Chalk Hill are close to those recovered from pit F138 within the range 3783-3638 cal BC (above), which would tend to confirm this dating.

The Anglo-Saxon sunken-featured building and later deposits (Fig 11)

An isolated sunken-featured structure (G52) was located near the south-east corner of Area 4, 8m south of and parallel to an alignment of prehistoric ditches (G49). No other features of this period were positively identified. The structure, of characteristic subrectangular form with rounded corners, was 3.81m long and 2.87m wide at maximum (about average or

Pl 16. Anglo-Saxon sunken-featured building G52, looking north. Scales 1m and 0.5m.





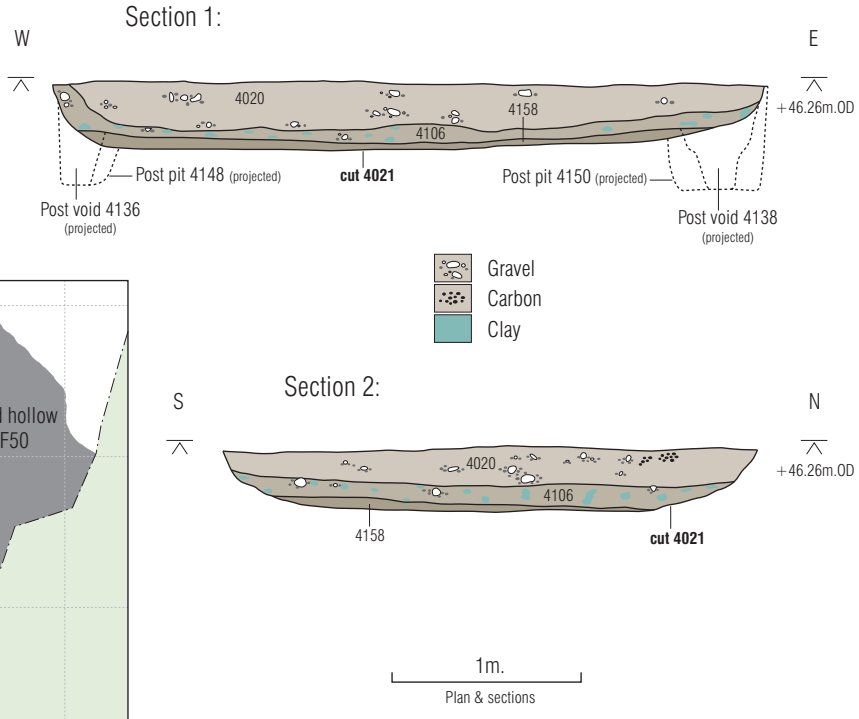


Fig 11. Sunken Floored Building G52 (1:40).

just under for this type of building; Hamerow 1993, 10, fig 6; Tipper 2004, 64). Aligned approximately east–west, it was of the two-post type, the most common form found in England and the Continent (Tipper 2004, 68). In profile the cut was steep, with slightly concave sides and a flattish base with a maximum depth of 0.36m. Two post-pits (F152 and F153) were located *c* 3.4m apart (centre to centre), cutting the edges and base on the longitudinal axis at each end, just within the lip of the main cut.

Post-pit F152 was located on the eastern side of the feature and consisted of a near circular, very steep-sided, flat-bottomed cut *c* 0.50m in diameter and 0.56m deep. This contained a deposit of mid greyish-brown, compacted clay with frequent small and medium-sized chalk and flint fragments which formed a packing around a post impression. This post-pipe or 'ghost' was located centrally and vertically within the post-pit cut and was near circular in plan with a diameter of 0.32m. The western post-pit F153 was a subcircular, steep, slightly concave sided, flat-bottomed cut 0.47m long, and 0.38m wide.

The base of the feature was covered by a deposit of mid brown, firm silty clay (context 4158; not illustrated) with common small charcoal fragments, occasional small flint pebbles and lenses of very light greyish-brown chalky clay. This possible trample deposit had a maximum thickness of 0.05m and sealed the post packing of the longitudinal post-pits. The south-western corner of this deposit was overlain by an irregular patch of compact dirty chalk (4083) about 0.90m by of 0.74m in extent and 0.04m thick at maximum. In the north-west corner of the feature an irregular patch of dark grey silty clay (4122) with frequent, small and medium-sized charcoal fragments, 0.41m long, 0.33m wide and 0.03m thick also overlay the basal deposit and appeared to represent residue from a fire although there was no evidence for *in situ* burning.

The bulk backfill of the feature comprised three individual sets of layers mostly mid brown, silty clays with frequent flint fragments and occasional inclusions of charcoal, daub, oyster shell and pottery

Apart from some heavily corroded and undiagnostic iron finds (FN 13 and FN 15), a cylinder bead of opaque mid-green glass (FN 14), a common type of Anglo-Saxon bead was found in the primary context. These beads mainly date to the sixth to seventh centuries (Guido 1999, 43–4), which broadly accords with the date of the ceramic assemblage which though not particularly diagnostic appeared to represent a relatively short period of occupation between the mid sixth and seventh centuries AD (Barber, below). A disc-headed fitting (FN 16) that was probably a rivet of possible Anglo-Saxon date was also recovered. Most of the finds from this feature however, derived from its bulk fills.

Some of these contexts produced small quantities of animal bone but the 'extremely abraded nature of the material suggests that it was residual from earlier periods' (Jones, below). Environmental remains (mostly from the bulk fills) were disappointingly sparse but included a single bread-type wheat grain, and 'a stinking chamomile (*Anthemis cotula*) seed. This is the first and only occurrence of stinking chamomile in the assemblages – a weed that typically first occurs on sites during the late Iron Age to Romano-British periods (Jones 1981) and is common in medieval assemblages' (Carruthers, below). Some, if not all of this material is likely to be intrusive however. The wheat grain for example provided a radiocarbon date of 1440-1617 cal AD at 2 sigma (UBA-13519; Radiocarbon Age 401 +/- 23), which is completely at variance with the other chronological and morphological evidence.

Later deposits

A significant depth (0.3–0.4m) of deposits sealing the archaeological horizon was probably derived from protracted agricultural activity post-dating the Anglo-Saxon period. Considerable assemblages of worked flint from these levels (particularly context 4001) undoubtedly derive from earlier features or deposits, attesting to considerable vertical attenuation of the original archaeological levels by ploughing. There was virtually no evidence for any subsequent settlement activity and the site was almost certainly used exclusively in an agricultural context during most of the medieval and post-medieval periods.

3
Finds and environmental reports

The finds and environmental reports presented here are edited versions of the full reports, which are retained in the archive. For the worked flint, full details of all individual features and contexts have not been detailed, just those described in the main text. Features mentioned in the pottery reports but not in the main text are shown with small annotations on the plans.

The worked flint

Tania Wilson MA AIFA

Introduction

The archaeological fieldwork at Ellington School Ramsgate produced an assemblage of 2,513 pieces of struck flint and 108 fragments (4.526kg) of burnt, unmodified flint. The assemblage was recovered from all areas (1-4) of the excavation; the distribution is shown in Table 1. Most of the assemblage (73 per cent) was recovered from Areas 3 and 4. However this figure might be slightly misleading, as these areas comprised a larger area of excavation than those of Areas 1 and 2. Despite this bias, greater quantities of burnt flint in Area 2 are notable.

The assemblage was recovered from some 117 features or deposits across the site, including ditches, pits and post-pits. The soil horizons encountered on the site also produced quantities of struck flint. The flintwork is generally in a good condition and, except for the material recovered from the soil horizons, has been subject to limited post-depositional disturbance.

The majority of the assemblage dates to the late Neolithic period. However, some flintwork associated with the middle to late Bronze Age activity on the site is also represented.

Methodology

The majority of the assemblage was hand-retrieved and bagged by context. A small quantity was also recovered from environmental samples (424 pieces, 17 per cent). All the artefacts have been quantified, categorised according to type and catalogued in detail. The catalogue is held with the site archive. Burnt, unmodified flint was quantified and weighed.

Each struck flint was individually examined. Analysis involved recording the degree of patination, breakage and raw material. Technological attributes; butt type, termination type, hammer-mode and the presence or absence of platform abrasion, were also noted. Unretouched flakes and blades were further categorised by their place in the reduction sequence. Complete pieces were weighed and measured, the method employed for the measurement of flakes follows Saville's recommendations (1980, 16).

Cores were categorised according to the number of platforms following Clark *et al* (1960, 216). Struck lumps describe fragments and nodules of flint where few flakes have been detached presumably as part of an assessment of suitability.

A limited refitting exercise was undertaken. The larger assemblages recovered from the pits and ditches were selected for examination. Attempts to find refits were made both within feature assemblages and between grouped feature assemblages.

Raw material

The site is situated on Upper Chalk which has patches of Head surviving at the north of the study area. Immediately to the north of the site lies a deposit of Thanet Beds. Flint nodules occurring within these deposits appear to be the principal source of raw material. The flint selected for use is highly variable; a black semi-translucent flint, grey semi-translucent and opaque types, and Bullhead flint (Shepherd 1972), are all represented. The relative proportions of flint types are presented in Table 2. All these types occur with cherty inclusions. In general, the cortex is buff- or grey-coloured, hard and weathered, a small number with grey-coloured cortex and 'chatter' marks are also represented. In

	Struck flint			Burnt, unmodified flint		
	Quantity	%	Weight (g)	Quantity	%	Weight (g)
Area 1	230	9.0	5073	14	13.0	695
Area 2	450	18.0	8919	71	66.0	3139
Areas 3 & 4	1826	72.5	24975	23	21.0	692
Unspecified area	7	0.5	474	0	0	0
Total	2513		39441	108		4526

Table 1. Distribution of flint by site.

	Area 1		Area 2		Areas 3 & 4	
	Quantity	%	Quantity	%	Quantity	%
Black flint	105	44	156	36	869	51
Bullhead flint	51	22	75	17	450	26
Grey, opaque flint	8	3	31	7	84	5
Grey, semi-translucent	74	31	171	40	316	18
Total	238		433		1719	

Table 2. Raw material.

addition, a number of pieces within the assemblage retain natural scars many of which are corticated. Hence it appears that surface-derived raw material was principally exploited. The only exception to this is two struck flints recovered from Area 1, which have a soft chalky cortex suggesting that the raw material was derived directly from the Chalk deposits.

The quality of the raw material is equally variable. Natural fractures are a common feature resulting in a number of pieces of irregular waste and numerous fragmentary cores. A few struck lumps are also represented suggesting that they were found to be unsatisfactory and subsequently discarded. Within the types of raw material represented further variability can be found. For example, some Bullhead flint has a high flaking quality whilst other pieces contain large numbers of inclusions causing erratic flaking.

The axes were probably manufactured elsewhere and brought to the site in a finished state. Hence a raw material source further afield is likely. This may also be the case for a small number of pieces made on a very high-quality black flint which include the scale-flaked knife and one of the scrapers. This black flint was only encountered in the deposit which produced the axes.

Condition

The condition of the assemblage as a whole is generally fresh and unpatinated. Slight patination was observed on a number of pieces as a marbled effect with blue veins running through the flint. A small quantity (49 pieces, 2 per cent) is patinated to a white or blue colour. In total, sixty-one (2 per cent) struck flints have been burnt.

Overall 36 per cent of the assemblage is incomplete. Edge damage is a common occurrence and the incidence of this increases within the assemblages recovered from the topsoil and the developed soil deposits.

Area 1

The flint assemblage was recovered from eight features or deposits, situated within Area 1. The composition of the assemblage is shown in Table 3. Two unstratified cores were also collected. Small assemblages of chronologically undiagnostic types were recovered from ditches F1 and F20, and pits F15 and F21.

Ditch F2

An assemblage of 169 struck flints and five pieces of burnt unmodified flint (175g) was recovered from several deposits within ditch F2. The primary fill (context 1042) produced a small group of fifteen pieces which include one fragmentary core and a struck lump. Subsequent deposits all produced flint in varying quantities. Larger groups were recovered from contexts 1033, 1034 and 1046 (49, 30 and 25 pieces respectively). The burnt flint was recovered from the uppermost deposits. A layer sealing the fills of the ditch (context 1056) produced a single flake.

The flint is in a fresh condition with the majority being unpatinated, and just nine pieces displaying slight patination. Seventy-five per cent of the flakes and blades (94 and 3 pieces respectively) are complete. Just under half of the assemblage (82 pieces) has edge damage generally in the form of very slight chipping.

Flakes form the majority of this assemblage (127 pieces), only four blades were recovered. A small amount of irregular waste (18 pieces) is also represented. Just over half of the flakes (69 pieces) retain some dorsal cortex, only seven of which are preparation flakes. Of the 116 flakes with intact striking platforms, the majority are plain (61), twenty-five are natural scars, twenty-three are cortical, five linear and two are dihedral. Platform abrasion is present on fifty-five pieces (47 per cent of intact flakes). Hard hammer percussion appears to have been used exclusively. One flake, from context 1046, has an area of crushing on the dorsal surface suggesting that this was detached from a flint hammerstone.

Thirteen cores and four struck lumps are represented within this assemblage. Most of the complete cores are multi-platform flake cores (eg Fig 12, 1 and 2), one single platform flake core is also represented. The average weight of the complete cores is 99g.

Two refitting flakes were recovered from the primary fill of this ditch. Additionally, two flakes recovered from context 1034 were almost certainly detached from the same nodule.

Only two retouched pieces were recovered from this ditch, a retouched flake (context 1034) and an end retouched scraper (context 1033, Fig 12, 3). Both have fairly limited areas of retouch.

Pit/Ditch terminal F18

A total of fifteen struck flints and three burnt pieces (116g) were recovered from this feature. Context 1002 produced one blade and a flake. The remainder of the assemblage, including one multi-platform flake core, two fragmentary cores and two struck lumps, was recovered from the uppermost fill (context 1000). The upper fill also produced the burnt flint.

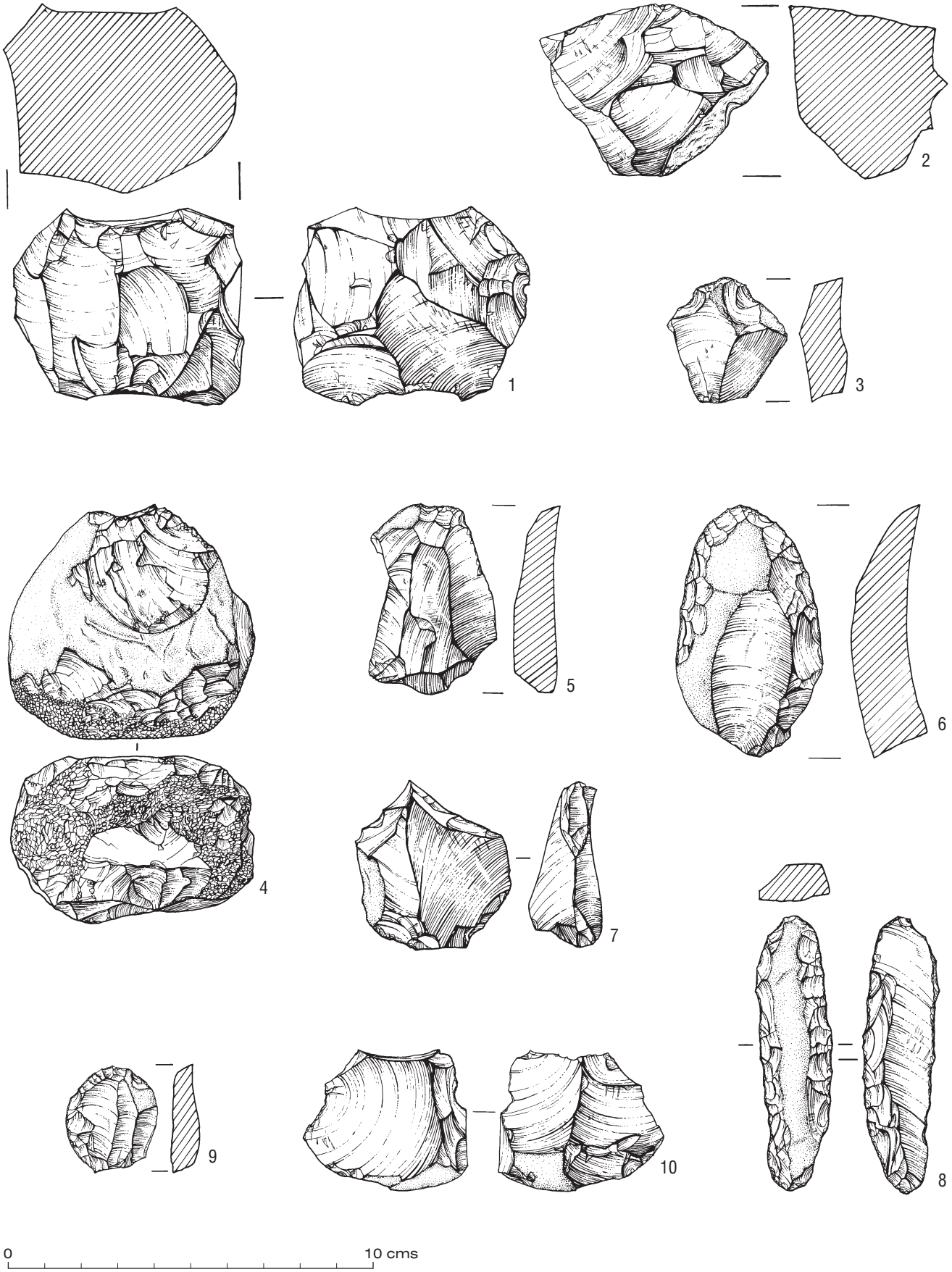


Fig 12. Flints, nos 1–10 (scale 2:3).

Overall the assemblage is in a fresh unpatinated condition, two flakes have been slightly burnt. Just two flakes are incomplete but slight edge damage is recorded on eleven pieces (73 per cent).

Area 2

The struck flint assemblage (Table 3) from Area 2 was recovered from fifty individual features or deposits. A small assemblage of unstratified flint was also retrieved, this group includes one multi-platform flake core, a complete hammerstone and an end retouched scraper. One unstratified fragment of burnt unmodified flint (50g) was also recovered.

Some thirty-eight ditches were examined in this area, of which twenty-two produced struck flint. The possible hollow way F210 produced just three flakes in total. In general, these groups comprise undiagnostic waste flakes.

Ditch F22

This ditch produced the largest feature assemblage from Area 2. The group, comprising 163 struck flints and 3 burnt fragments (51g), was recovered from eight individual deposits within the ditch.

Sixty-two pieces were recovered from the primary deposit (context 13). This group comprised mainly flakes but also included eight fragmentary cores, two struck lumps, two multi-platform flake cores, a complete hammerstone, a notched flake and a piercer. The upper fill (context 12) produced a further thirty-five pieces, including one flake detached from a hammerstone and an end retouched scraper. One flake recovered from context 12 and one from context 13 refitted.

In contrast, further excavation of the ditch recovered most of the struck flint from upper deposits. No retouched pieces were recovered from these deposits, but one additional multi-platform flake core and a struck lump were retrieved.

Overall the ditch assemblage is in a fresh unpatinated condition, twenty-nine pieces are slightly patinated and two pieces have a uniform blue-white patination. Seventy per cent (90 pieces) of flakes are complete. Just over half (84 pieces) have slight edge damage.

The majority of this assemblage (130 pieces) comprises flakes, eight of which have blade-like proportions, two bladelets were also recovered. A small amount of irregular waste (11 pieces) is also represented. Non-cortical flakes dominate this group (110 pieces), sixteen flakes retain some dorsal cortex and only four preparation flakes are represented. Of the 109 flakes with intact striking platforms, the majority are plain (60), twenty are natural, twenty-five are cortical, one linear and three are dihedral. Platform abrasion is present on forty-six pieces (42 per cent of intact flakes). Hard hammer percussion appears to have been used almost exclusively, but one blade-like flake may have been produced by soft hammer percussion.

In total fourteen cores and struck lumps are represented within this assemblage. Only three cores are complete, all of which are multi-platform flake cores. The average weight of the complete cores is 67g. Two hammerstones are also represented, the complete example (Fig 12, 4) measures 69 x 59 x 49mm and weighs 251g.

The retouched pieces comprise one natural lump with edge retouch, a piercer and one end retouched scraper. In each case none of these pieces are elaborately worked (eg Fig 12, 5).

Ditch F94

A small assemblage of twenty-two struck flints and one burnt unmodified piece (4g) was recovered from this ditch. The group consists entirely of knapping waste; flakes (17 pieces), blades (2 pieces) and irregular waste (2 pieces). One complete keeled flake core was also recovered. The flakes were recovered from the primary fill, the remainder of the assemblage from the upper fill.

The condition of this assemblage is mixed, two flakes and a piece of irregular waste have been burnt, twelve pieces have slight patination and the remainder are unpatinated. Seven pieces (32 per cent) have edge damage.

Six flakes and both blades retain some dorsal cortex, no preparation flakes are represented. Of the thirteen flakes with intact striking platforms, the majority are plain (7), three are natural and three are cortical. Platform abrasion is present on five pieces (38 per cent of intact flakes). Hard hammer percussion appears to have been used exclusively.

Ditch F208

Sixteen struck flakes and two pieces of burnt unmodified flint (80g) were recovered from this ditch. The primary fill produced just one flake, an intermediary fill produced a further four flakes and the remainder of this group, including the burnt flint, was recovered from the upper fills. Two refitting flakes were recovered from one context. Nine flakes have slight patination and the remainder are unpatinated. Eleven pieces have edge damage.

Ditch F220

A small assemblage of nine struck flints was recovered from this feature. Just one flake was recovered from the primary fill, the remainder from the upper fills. The group comprises seven flakes, a flaked flake and a burin (Fig 12, 7). The assemblage is in good condition, only one flake and the burin have a slight patina and there is no evidence of edge damage.

Ditch F223

The upper fill of this ditch produced a small assemblage of twelve struck flints and one burnt piece (35g). Eight flakes and one blade form the bulk of the group. In addition, a two-platform flake core was recovered. Two retouched pieces; a fabricator (Fig 12, 8) and a small end and side retouched scraper (Fig 12, 9) are also represented. The assemblage is

in a fresh unpatinated condition, just the blade and the core have a slight patina. Three pieces have slight edge damage.

Pit F27

A small assemblage of twenty-four struck flints and fifteen pieces of burnt unmodified flint (591g) were recovered from three deposits within this pit. The earliest deposit produced three flakes, two of which whilst not refitting were clearly produced from the same nodule. The remainder of the assemblage was recovered from the upper fill and included ten flakes and three pieces of irregular waste. Two complete multi-platform flake cores with an average weight of 89.5g were recovered, in addition to four fragmentary cores and one struck lump. One end retouched scraper was also retrieved.

Areas 3 and 4

The struck flint assemblage from Area 3 and 4 (Table 3) was recovered from some fifty-nine individual features or deposits. An assemblage of sixty-nine struck flints was unstratified and ten struck flint were recovered from the topsoil. This group is comprised mainly of debitage and includes five cores and a fragmentary hammerstone. The assemblage is almost certainly derived from underlying archaeological deposits and has been redistributed, probably as a result of farming activities. Edge damage evident on the majority of this group reflects this disturbance. Twenty-one of the thirty-one ditches identified in this area produced struck flint, the majority of which produced only very small assemblages often comprising of no more than ten pieces.

Ditch F63

An assemblage of forty struck flints was recovered from this ditch. This group comprises mainly debitage, including some fifteen blades, twenty-two flakes, one chip and one piece of irregular waste. One single platform core was also recovered (Fig 13, 14). Two of the blades and one flake have possible utilisation damage. The group is generally in a fresh unpatinated condition, one utilised blade is patinated and six pieces have a slight patina.

Hollow way F50

An assemblage of some fifty-three struck flints and three burnt unmodified pieces (149g) was recovered from the hollow way. The majority of the group comprised debitage comprising two blades, thirty-nine flakes and two pieces of irregular waste. Additionally, two fragmentary cores, one struck lump, a single platform flake core (Fig 13, 18) and a two-platform flake core were recovered. One fragmentary hammerstone and a flake detached from a hammerstone are also represented. A small group of retouched pieces include one notched flake, an end retouched scraper (Fig 13, 19) and a fragmentary leaf-shaped arrowhead (Fig 13, 20). The condition of this group is mixed, thirty-two pieces are unpatinated, sixteen are slightly patinated, four pieces including the scraper are patinated and one flake is slightly burnt.

Early Iron Age pits

Pit F138

Pit F138 produced a significant assemblage of some 653 struck pieces (Table 4). Additionally, two fragments of burnt unmodified flint were also recovered, weighing just 12g. The majority of this assemblage was recovered from the primary fill which produced 545 pieces. This group included two of the cores and all of the retouched pieces. The remainder, and the burnt flint, were recovered from the upper fill.

The overall condition of the pit assemblage varies little between the two deposits. The majority in each case is in a fresh unpatinated condition. The primary fill produced

	Area 1	Area 2	Areas 3 & 4	Unspecified area	Total
Blade	8	14	425	1	448
Chip	1	0	45	0	46
Flake	166	352	1171	3	1692
Irregular waste	25	24	48	1	98
Core / Struck lump	28	40	71	1	140
Hammerstone	0	4	7	0	11
Arrowhead	0	0	2	0	2
Axe	0	0	5	0	5
Bifacial implement	0	0	1	0	1
Burin	0	1	0	0	1
Denticulate	0	0	1	1	2
Fabricator	0	1	0	0	1
Knife	0	0	2	0	2
Notched blade / flake	0	2	6	0	8
Piercer / Borer	0	1	3	0	4
Retouched blade / flake	1	4	4	0	9
Scraper	1	7	34	0	42
Serrated blade / flake	0	0	1	0	1

Table 3. Assemblage composition per site.

fifteen patinated pieces (3 per cent), ninety-seven slightly patinated pieces (18 per cent) and twenty-seven struck pieces have been burnt (5 per cent). The upper fill produced one patinated piece (1 per cent), eleven slightly patinated (11 per cent) and two burnt struck pieces (2 per cent). Some 241 pieces recovered from the primary fill are incomplete and 107 pieces display slight edge damage (44 per cent and 20 per cent). The upper fill produced forty-five incomplete pieces and twenty-eight pieces with edge damage (42 per cent and 26 per cent).

Flakes and blades are equally well represented within this assemblage. Of the flakes, half (172 pieces) retain

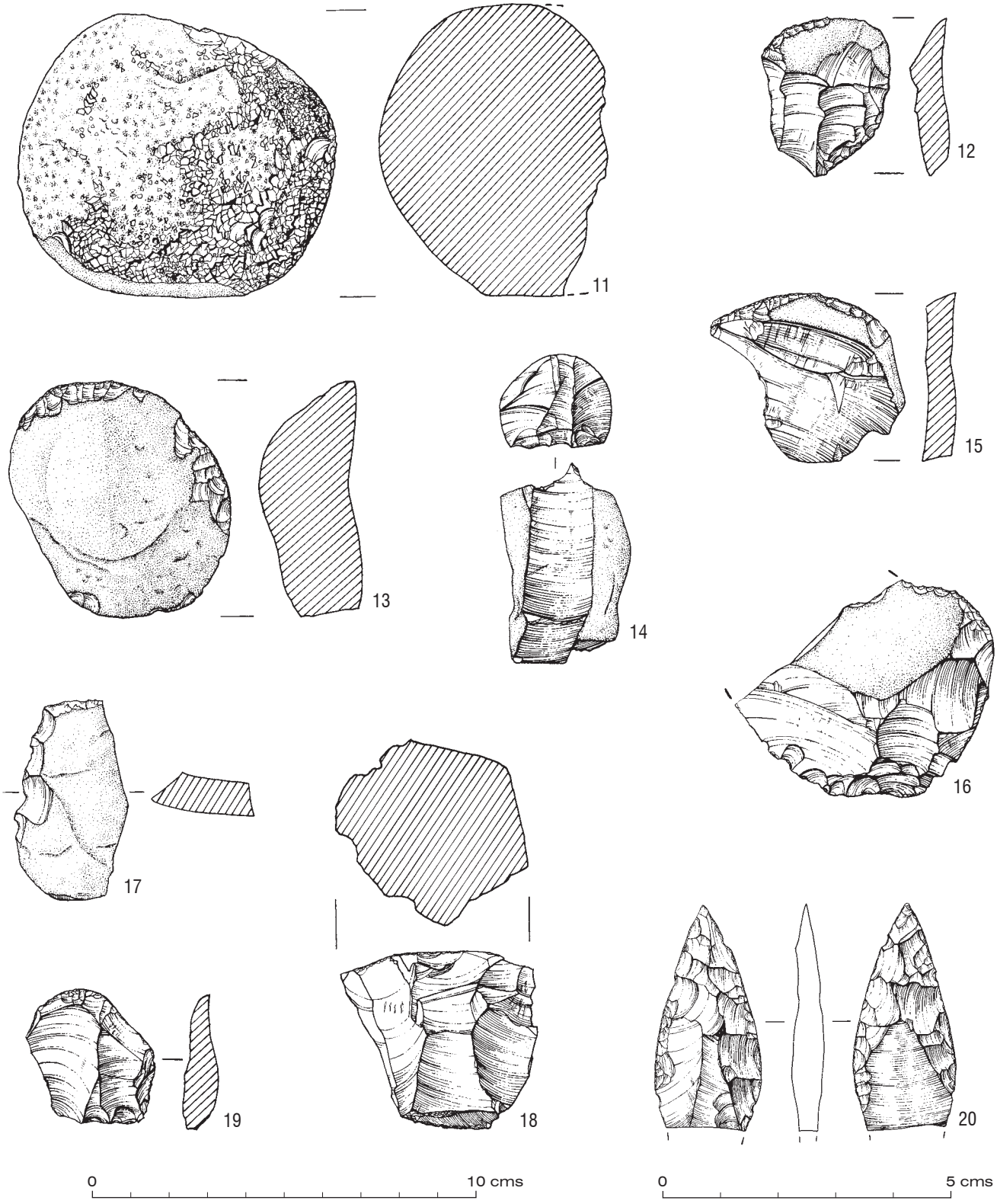


Fig 13. Flints, nos 11–19 (scale 2:3), no 20 (scale 1:1).

some dorsal cortex, only four of which are preparation flakes. Of the 273 flakes with intact striking platforms, the majority are plain (187), twenty-six are natural, twenty are cortical, nineteen are linear, sixteen are dihedral and five are faceted. Platform abrasion is present on 189 pieces (69 per cent of intact flakes). The attributes of the blade striking platforms are similar. One hundred and fifty-seven blades have intact platforms of which 122 are plain, seven are natural, seven are cortical, sixteen are linear, three are dihedral and two are faceted. Platform abrasion was observed on 128 blades (82 per cent of intact blades). With the exception of three flakes and three blades which may have been produced through the use of a soft hammer, hard hammer percussion appears to have been used almost exclusively. One flake recovered from the primary fill has an area of crushing on the dorsal surface suggesting that this was detached from a flint hammerstone.

Two fragmentary cores and a struck lump were recovered. Additionally, each deposit produced one complete keeled core (Fig 14, 22), weighing 39g and

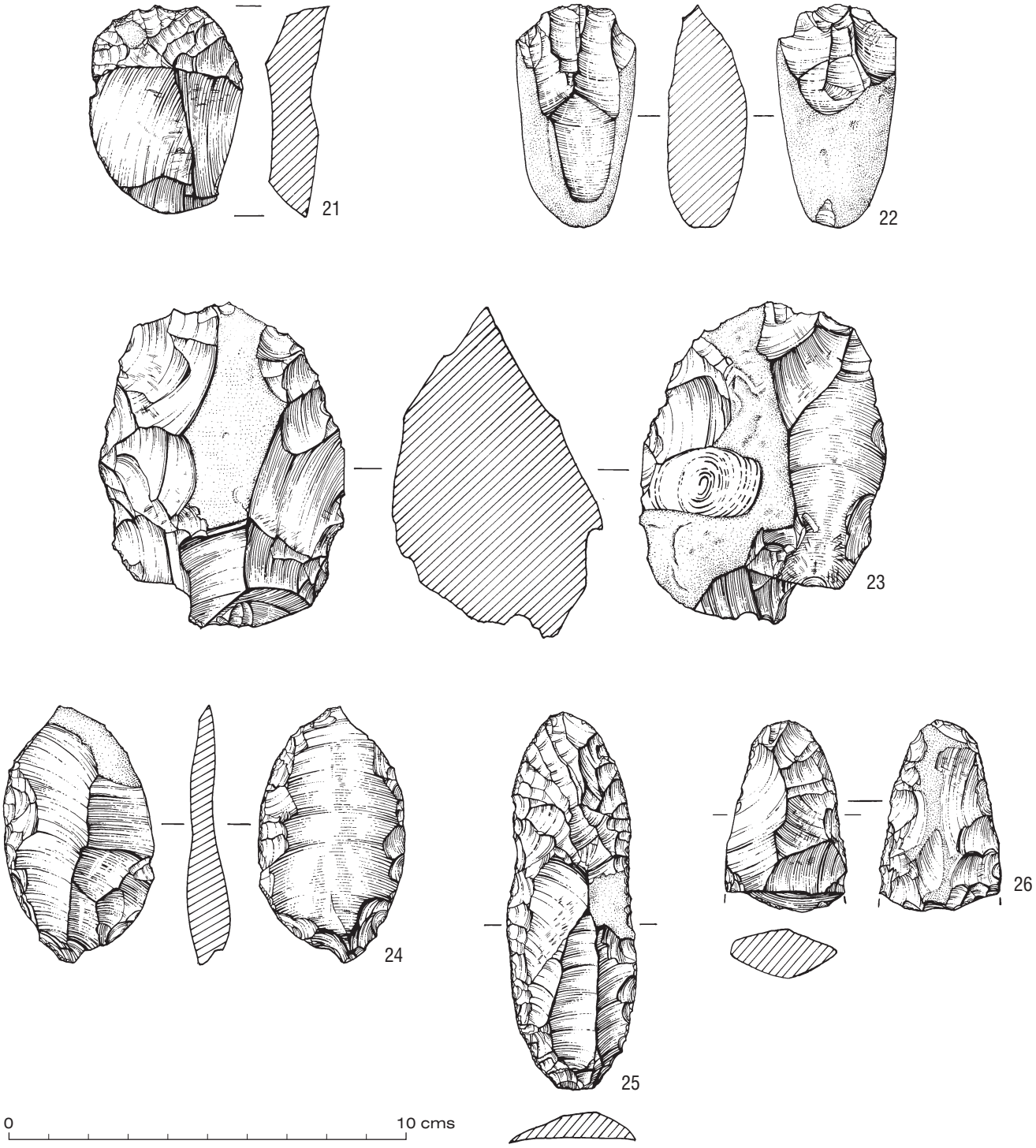


Fig 14. Flints, nos 21–26 (scale 2:3).

175g. Both were used for the production of flakes. Nine flakes with relict core edges suggest limited trimming of cores, no core rejuvenation flakes are represented.

A brief search for refits was made. Whilst the assemblage appears to have many pieces which could have been struck from the same nodule, no refits could be found.

An interesting assemblage of retouched pieces was recovered from the primary deposit, which includes an apparently unfinished leaf-shaped arrowhead (Fig

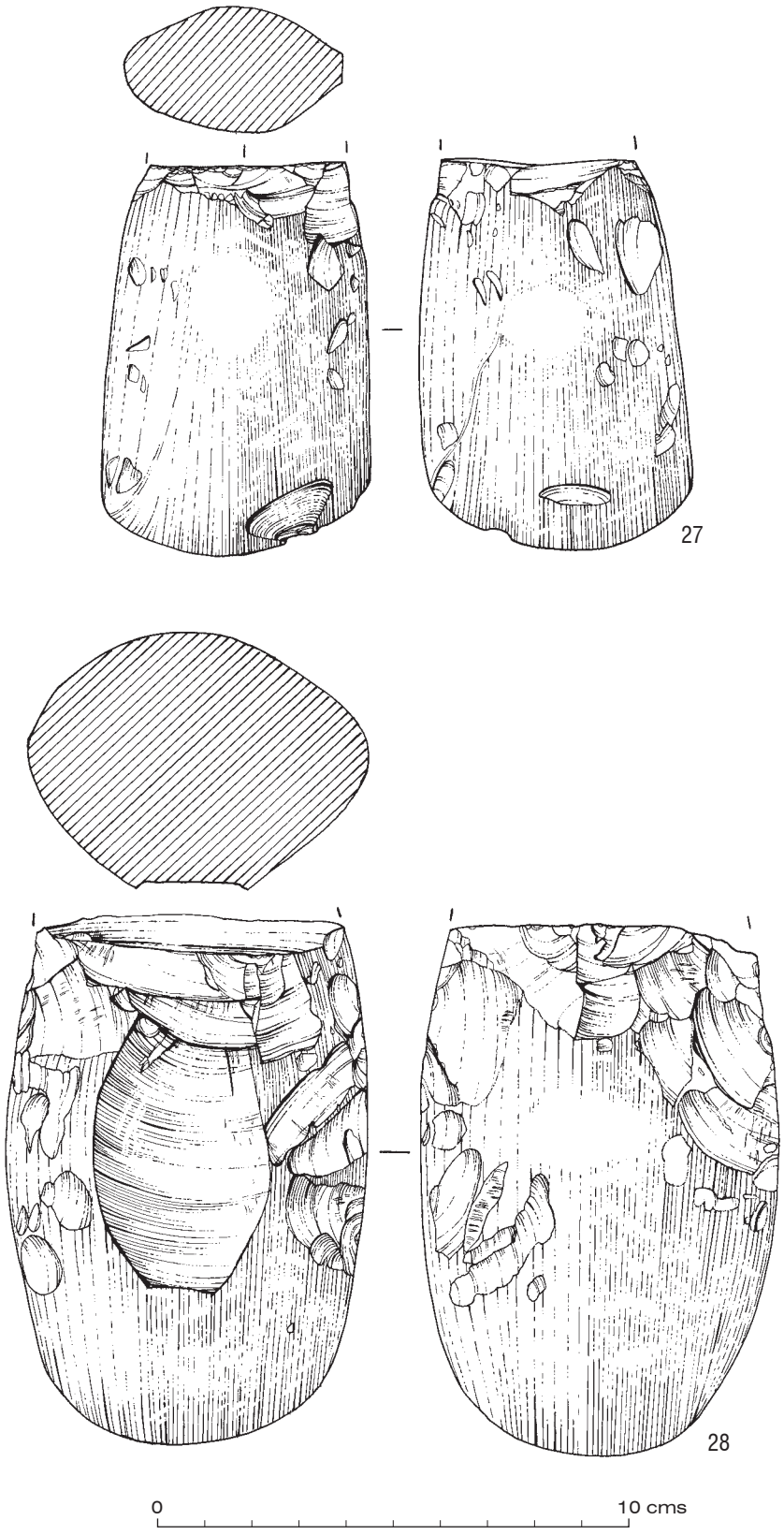


Fig 15. Flints, nos 27–28 (scale 2:3).

14, 24) and a complete scale-flaked knife (Fig 14, 25). Three incomplete ground and polished axes (Fig 14, 26 and Fig 15, 27 and 28) were retrieved along with two flakes which have been detached from similar objects. Two of the axe fragments were flaked, to a small degree, following breakage. The smaller axe fragments are of grey, opaque flint and are in a fresh unpatinated condition, they weigh 18g and 166g. The largest axe is of grey semi-translucent flint, is slightly patinated and retains a high polish, it weighs 483g. Neither of the axe flakes refit with the reworked axes and one is heavily patinated. Some nine scrapers were also collected from this deposit, three are end and side retouched and the remainder are retouched at the distal end only (Fig 16, 29–36). Two of the latter group are end-on-blade forms. In addition to the retouched pieces, some thirty-six blades and thirteen flakes have possible utilisation damage along one or both sides, occasionally associated with traces of gloss.

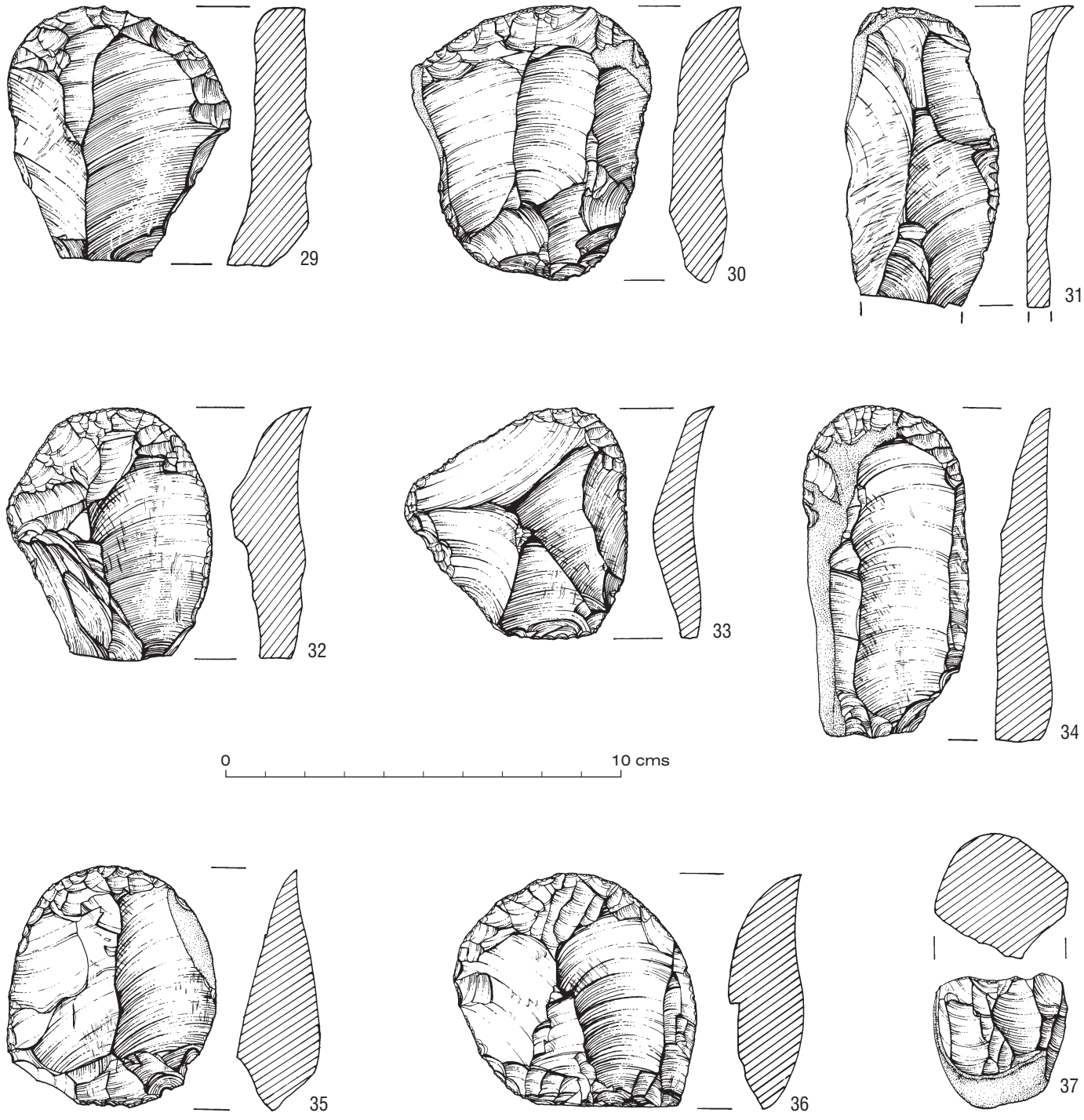


Fig 16. Flints, nos 29–37 (scale 2:3).

	context 4321	context 4322	Total
Blade	32	222	254
Chip	10	12	22
Flake	62	283	345
Irregular waste	1	8	9
Core / Struck lump	3	2	5
Arrowhead	0	1	1
Axe	0	5	5
Knife	0	1	1
Piercer / Borer	0	1	1
Retouched blade / flake	0	1	1
Scraper	0	9	9

Table 4. Pit 138 assemblage composition.

Pit F144

Pit F144 (Table 5) also produced a significant assemblage comprising some 303 struck flint, four pieces of burnt unmodified flint (28g) and six fragments of pot-boiler (18g). The majority of this assemblage was recovered from the primary fill which produced 275 pieces. This group included seventeen of the cores, an end retouched scraper, three pieces of burnt flint and the pot-boiler fragments.

Like pit F138 the overall condition of this pit assemblage varies little between the basal and upper deposits. The majority in each case is in a fresh unpatinated condition. The primary fill produced thirty-five slightly patinated pieces (13 per cent) and seven struck pieces have been burnt (2 per cent). The upper fill produced three slightly patinated pieces (11 per cent), the remainder are unpatinated. Some 113 pieces recovered from the primary fill are incomplete and fifty-three pieces display slight edge damage (41 per cent and 19 per cent). The upper fill produced thirteen incomplete pieces and seven pieces with edge damage (46 per cent and 25 per cent).

Flakes form the majority of the pit assemblage, but blades are also well represented. Of the flakes, just over half (94 pieces) retain some dorsal cortex, only four of which are preparation flakes. Of the 136 flakes with intact striking platforms, the majority are plain (83), nineteen are natural, six are cortical, twenty-two are linear, three are dihedral and three are faceted. Platform abrasion is present on 101 pieces (74 per cent of intact flakes). The attributes of the blade striking platforms are similar. Sixty-three blades have intact platforms, of which fifty-one are plain, one is natural, three are cortical, five are linear, two are dihedral and one is faceted. Platform abrasion was observed on fifty-one blades (81 per cent of intact blades). With the exception of two flakes which may have been produced through the use of a soft hammer, hard hammer percussion appears to have been used almost exclusively.

With the exception of one multi-platform flake core, which was recovered from the upper fill, the remainder of the core assemblage was recovered from the primary fill. This group includes six fragmentary cores and four struck lumps. A range of core types are represented among the complete cores; three single platform, three multi-platform and one keeled (Fig 16, 37 and Fig 17, 38 and 39). All of the cores were used for the production of flakes. The average weight of the complete cores is 67g. There is little evidence of core rejuvenation, only one flake and two blades have relict core edges.

As with pit F138, the assemblage looked suitable for refits, but none were found.

An end retouched scraper (Fig 17, 40) was recovered from the primary fill. This deposit also produced sixteen blades and seven flakes with possible utilisation damage along one or both sides, occasional pieces also have traces of gloss.

	context 4113	context 4114	Total
Blade	6	90	96
Chip	2	11	13
Flake	19	148	167
Irregular waste	0	8	8
Core / Struck lump	1	17	18
Scraper	0	1	1

Table 5. Pit 144 assemblage composition.

Pit F121

An assemblage of twenty-eight struck pieces and two burnt unmodified pieces (22g) was recovered from a single fill within pit F121. The group comprises four blades, twenty-three flakes and one end retouched scraper (Fig 17, 41).

The majority are in a fresh unpatinated condition with six pieces being only slightly patinated. Twelve pieces are incomplete, and nine pieces display slight edge damage (43 per cent and 32 per cent). Of the flakes, over half (14 pieces) retain some dorsal cortex, no preparation flakes are represented. Of the eighteen flakes with intact striking platforms, the majority are plain (15), one is natural, one is cortical, and one is faceted. Platform abrasion is present on thirteen pieces (72 per cent of intact flakes). Hard hammer percussion appears to have been used exclusively. Two blades and two flakes have possible utilisation damage.

Pit F143

Some thirty-nine struck flints were recovered from two deposits within pit F143. The primary fill produced four pieces comprising one blade, two flakes and one multi-platform flake core. The remainder of the assemblage was recovered from the upper fill. This group comprised fifteen blades, nineteen flakes and one keeled core (Fig 17, 42).

The condition of this group is mixed, twenty-three are in a fresh unpatinated condition, two pieces are patinated and fourteen pieces are slightly patinated. Sixteen pieces are incomplete, and fourteen pieces display slight edge damage (41 per cent and 36 per cent). Of the flakes, half (10 pieces) retain some dorsal cortex, no preparation flakes are represented. Of the eighteen flakes with intact striking platforms, the majority are plain and two are natural. Platform abrasion is present on fifteen pieces (83 per cent of

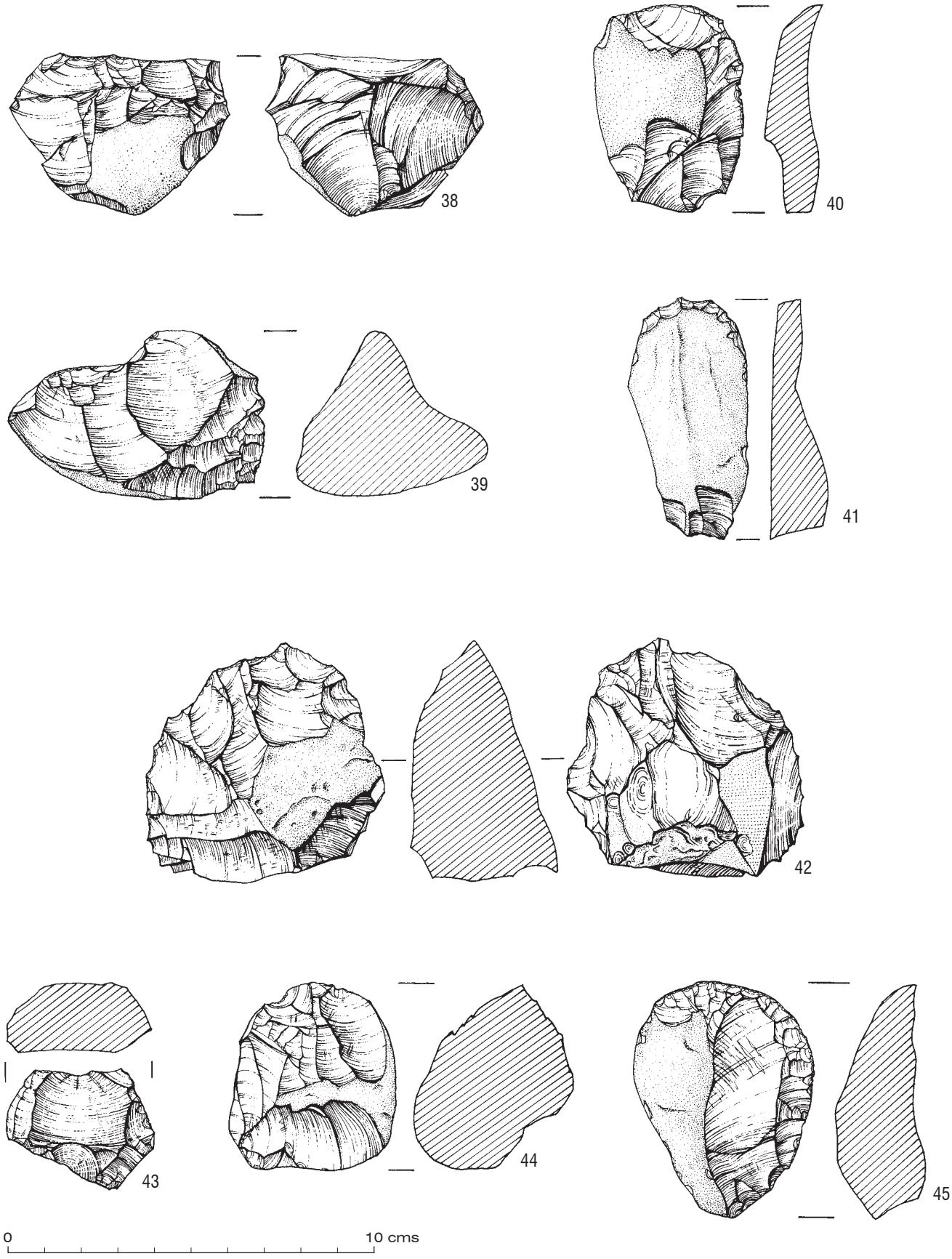


Fig 17. Flints, nos 38–45 (scale 2:3).

	context 172	context 173	context 4041	context 4306	context 4307	context 4308	context 4351	context 4395	Total
Blade	2	0	1	3	0	3	4	0	13
Flake	1	1	2	13	0	3	8	0	28
Irregular waste	0	0	0	1	0	2	2	0	5
Core/struck lump	0	0	0	1	0	4	1	0	6
Hammerstone	0	0	0	1	0	2	1	0	4
Bifacial implement	0	0	0	0	0	1	0	0	1
Scraper	0	0	0	2	1	0	1	1	5

Table 6. Quarry pit F260 assemblage composition.

intact flakes). Hard hammer percussion appears to have been used exclusively. Four blades and one flake have possible utilisation damage.

Pit F120

Some seventy-seven struck flints were recovered from the upper fill of pit F120. The group comprises thirteen blades, fifty-one flakes, five cores, four pieces of irregular waste and four retouched pieces.

The majority are in a fresh unpatinated condition with four pieces being only slightly patinated and three pieces being slightly burnt. Twenty-six pieces are incomplete, and twenty-one pieces display slight edge damage (34 per cent and 27 per cent). Of the flakes, just over one third (28 pieces) retain some dorsal cortex, including one preparation flake. Of the forty-three flakes with intact striking platforms, the majority are plain (31), four are natural, three are cortical, one is linear, two are dihedral and two are faceted. Platform abrasion is present on thirty pieces (70 per cent of intact flakes). Hard hammer percussion appears to have been used exclusively.

The core assemblage comprises one fragmentary core, one single platform core, two multi-platform cores and one keeled core (Fig 17, 43 and 44). The cores were used exclusively for flake production. The average weight of the complete cores is 42g.

The retouched component of this group comprises one edge retouched flake, alongside one end retouched and two end and side retouched scrapers (Fig 17, 45 and Fig 18, 46). Additionally, three blades and seven flakes have possible utilisation damage.

The smallest group of struck flint was recovered from pit F142, which produced four blades and fourteen flakes, one of which has utilisation damage.

Quarry pit F260

An assemblage of some sixty-two struck flint (Table 6) and three burnt unmodified pieces (194g) was recovered from this feature. The basal deposits produced a group of nineteen struck flints. The layer of metalling produced fifteen struck flints and two fragments of burnt flint (193g). The remainder of the assemblage was recovered from the uppermost fills.

The condition of the quarry pit assemblage varies little between the deposits, but an increase in breakage and edge damage within the assemblage recovered from the upper fills is worthy of note. Overall the majority of pieces within each deposit is in a fresh unpatinated condition. The basal fills produced two slightly patinated pieces (11 per cent). The metalling produced three slightly patinated (20 per cent) and one slightly burnt core (7 per cent). The upper fills produced one patinated piece (4 per cent) and five with slight patination (18 per cent). Some seven pieces recovered from the basal fills are incomplete and six pieces display slight edge damage (37 per cent and 32 per cent). The metalling produced three incomplete pieces and five pieces have slight edge damage (20 per cent and 33 per cent). The upper fills produced fourteen incomplete pieces and fourteen pieces with edge damage (50 per cent and 50 per cent).

Dorsal cortex was recorded on just over half (15 pieces) of the overall flake assemblage, only one of which is a preparation flake. Of the 22 flakes with intact striking platforms, the majority are plain (15), five are natural and two are cortical. Platform abrasion is present on eleven pieces (50 per cent of intact flakes). Hard hammer percussion appears to have been used exclusively.

One multi-platform flake core was recovered from the basal deposits. The metalling produced one fragmentary core, one single platform core (Fig 18, 47), a multi-platform core and a keeled core. The upper fills produced one further incomplete core. All of the cores were used for flake production. The average weight of the complete cores is 165g.

One complete hammerstone (Fig 18, 48) was recovered from the basal deposits. This piece measures 61 x 61 x 60mm and weighs 324g. A second complete example (Fig 18, 49) was recovered from the metalling, measuring 58 x 52 x 51mm and weighing 198g. The metalling deposit also produced a fragmentary hammerstone which had also been used as a flake core and one flake which has been detached from a hammerstone. A fragment of one further hammerstone was recovered from the upper fills.

The basal deposits produced a group of three scrapers, two of which are end and side retouched (Fig 18, 51 and 52), in addition to one utilised blade. One bifacially retouched piece (Fig 18, 53) was recovered from the metalling deposits. The upper deposits produced two end retouched scrapers (Fig 18, 54) and two fragmentary utilised blades, one of which has traces of gloss.

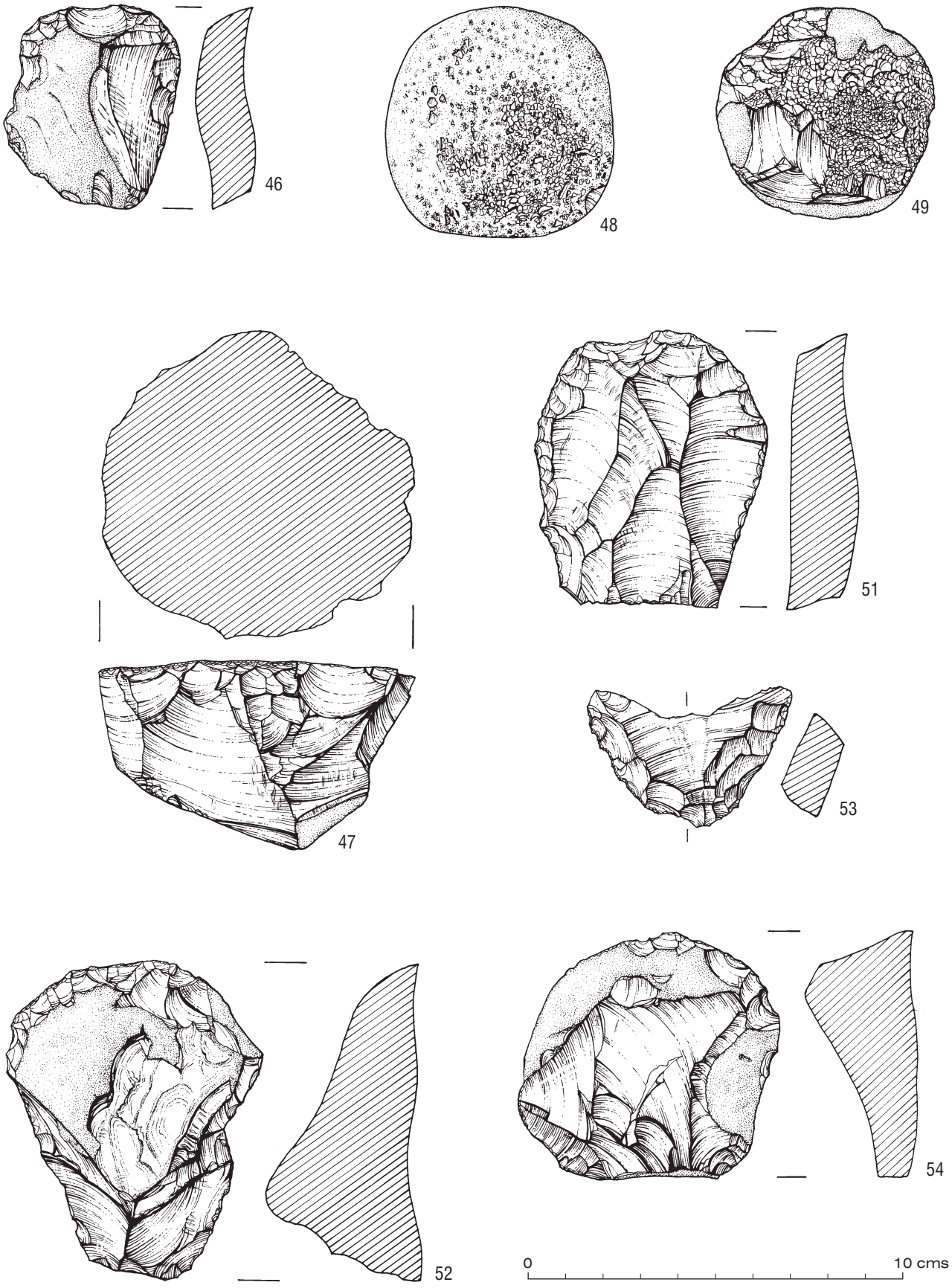


Fig 18. Flints, nos 46–54 (scale 2:3).

Discussion

Two phases of activity are represented within the flint assemblage recovered from Ellington School. The majority of the assemblage belongs to the earliest phase which dates to the late Neolithic. However, a small assemblage associated with the middle to late Bronze Age activity identified on the site, is also represented. The Neolithic assemblage probably extends across the entire site, but the focus of the activity appears to be towards the south within Areas 3 and 4. Flintwork of middle to late Bronze Age date was recovered from features within Areas 1 and 2. Area 2 also appears to be a focus of burnt unmodified flint which could be associated with the activity of this date.

The late Neolithic flintwork is characterised technologically by the significant assemblage of blade debitage and careful core preparation. The maintenance of cores through core trimming and rejuvenation is poorly represented. However, this is probably a reflection of the availability of raw material. The use of hard hammer percussion is evident throughout the assemblage, but soft hammer percussion is also represented. General characteristics of later Neolithic assemblages include preponderance towards multi-platform and keeled flake cores, larger more symmetrical scrapers and retouched forms such as scale-flaked knives, all of which are reflected in this assemblage. Despite being typologically earlier Neolithic forms, polished axe fragments and leaf-shaped arrowheads are known to continue into the later Neolithic.

The quantity of debitage, cores and hammerstones demonstrate that the locally available raw material was exploited in this area. However no *in situ* knapping deposits survive. In addition to flintworking, other activities were also taking place in this area during this period. A significant quantity of retouched and utilised pieces suggests wide-ranging tool use.

The assemblage was recovered from features dated to the middle and late Bronze/earliest Iron Age and, in most instances, is almost certainly residual. The condition of the assemblage, whilst being largely unpatinated and in a fresh condition, does have a small proportion with edge damage and a significant quantity are incomplete. This suggests that at least some of the assemblage was an *in situ* surface scatter prior to the Bronze Age activity and elements of this then became inadvertently incorporated into the fills of the later features.

Two pits within Area 4 may be an exception to this. In contrast to all of the features examined, pits F138 and F144 both produced sizable assemblages of struck flint. The flintwork from each pit appears to be a coherent group and characteristically of late Neolithic date. The two assemblages contrast only in their composition; pit F138 produced a significant group of retouched pieces, whilst pit F144 produced several cores and few retouched pieces. Pottery recovered from the pits date the features to the late Bronze Age to early Iron Age. Evidence suggests that formal deposition of pottery is represented within pit F138 and that both pits were filled in around the same time. The deposition of certain artefacts such as polished axes within later prehistoric specialised deposits is recorded elsewhere (see for example Cramp 2008, 24.30–31) and it is conceivable that the axes, and perhaps the scrapers and the knife, may have formed part of a deliberate deposition alongside the pottery. The curation of some of these objects prior to deposition is a possibility. It would seem unlikely however that there was curation of the debitage assemblage. Why significant quantities of debitage were incorporated within both pits is unclear, but as discussed below, much of the material may have derived from a disturbed midden of much earlier date.

In addition to these pits another pit, F120, also produced a sizable assemblage with some notable retouched pieces. The alignment and spacing of these pits may be of some significance.

Some Neolithic flintwork no doubt extends towards the north of the site within Areas 1 and 2. However the characteristics of the middle to late Bronze Age assemblage can be defined; fewer blades are represented, there is a higher incidence of irregular waste and hinge terminations, core preparation is minimal, and the retouched pieces are less elaborate with minimal retouch. Hard hammer percussion was used exclusively and some cores exhibit numerous mis-hits. These characteristics are comparable with those of other assemblages of this date (Young and Humphrey 1999).

Exploitation of the locally available raw material continues during this period, as the quantities of debitage and cores show. However, this industry is on a smaller scale than that of the Neolithic industry. A range of retouched forms suggest that activities other than flintworking were taking place within the area.

The Bronze Age assemblage is thinly distributed across a range of features, mainly ditches and pits. In most cases it is likely that the flintwork has become incidentally incorporated into the fills of features. It is likely that occasional pieces of residual Neolithic flintwork have also become incorporated in these features, the few patinated pieces recovered from areas 1 and 2 are almost certainly indicative of the inclusion of earlier material. *In situ* knapping deposits of Bronze Age date have not been located. However, some features, for example ditch F2, have small assemblages recovered from a sequence of deposits suggesting that knapping waste was being periodically dumped into the ditch. Furthermore, refitting flakes, and flakes clearly detached from the same nodule, recovered from some of these deposits support the notion that material produced during episodes of knapping was routinely cleaned up and disposed of.

The flintwork recovered from Ellington School represents two industries dating to the late Neolithic period and the middle to late Bronze Age. Both industries are characterised by the exploitation and working of the locally available raw material within the immediate vicinity and by the production and use of a range of tools reflecting wide-ranging activities. Redeposited Neolithic flintwork within later pits form a component of specialised deposits being made during the late Bronze Age/early Iron Age period.

The prehistoric pottery

Barbara McNee

Introduction

A total of 5,996 sherds weighing 34,965g and with a mean sherd weight of 5.8g was recovered during the fieldwork. The condition of the pottery is variable; many sherds are tiny and abraded and some are quite sizable and in very good condition. The assemblage ranged in date from the early Neolithic through to early Iron Age, with a particular focus on the late Bronze Age period. The material is derived from 213 contexts including pits, post-pits and ditches.

Fragments of a single vessel associated with the bronze hoard (F211) are discussed with the report on the hoard. An additional small assemblage of pottery was presented to the author for spot dating after the completion of this report (Appendix 1).

Methodology

The pottery was recorded using the methodology set out by the Prehistoric Ceramics Research Group (PCRG 1997). All sherds were assigned a fabric type after macroscopic examination and by using a binocular microscope (x10 power). The assemblage was divided into different fabric groups on the basis of the dominant inclusion types, and to a fabric type based on the variation within the group. Fabric codes were used based on the dominant inclusion or inclusions present (alpha code), followed by a numeric code, which denotes different fabrics within the group (for example, pottery made using different flint-tempered recipes is recorded as F/1; F/2 etc). Some fabrics contained more than one dominant inclusion; therefore, more than one alpha code is used.

Density charts (PCRG 1997, appendix 3) were used to standardise assessment of the quantity of inclusion present within the pottery fabric. All sherds were counted and weighed to the nearest whole gramme and given a unique pottery record number for ease of reference. Diagnostic sherds were additionally assigned to a form and decorative scheme; other characteristics noted include individual sherd thickness, surface treatment, levels of abrasion, and evidence of use-wear. Featured sherds were recorded onto individual featured sherd record sheets, and key sherds were selected for illustration. Parallel form types have been sought from within, and also outside the Kent area, using published and unpublished material. Microsoft Excel has been used to analyse and summarise the data.

Chronology

Ten ceramic phases have been identified (Table 7).[1] A number of sherds could not be identified due to their fragmented state, and these have been classified as indeterminate (or 'ind' within Appendix 2). The identification of pottery from Pit F138 is particularly difficult as this feature contains both Neolithic and early Iron Age material. The pottery is consistent with that of either an early Neolithic or an early Iron Age tradition, however early Neolithic pottery can also be very similar to early Iron Age pottery in terms of fabric, form and surface treatment. Therefore the dating of each individual sherd is somewhat tentative. Some sherds are more likely to be early Neolithic and belong to ceramic phase 1 and sherds which could be either early Neolithic or early Iron Age have been phased to ceramic phase 8 in Tables 7 and 8. The term late Bronze Age decorated phase or earliest Iron Age is somewhat lengthy and has been shortened to simply 'decorated phase' throughout the report.

1. Early Neolithic (4000–3700 BC)
2. Late Neolithic to early Bronze Age (approx 2800–2000 BC)
3. Middle Bronze Age (1600–1300 BC)
4. Middle to late Bronze Age transition (1300–1100 BC)
5. Late Bronze Age plain ware (1100–800 BC)
6. Late Bronze Age decorated phase or earliest Iron Age (800–600 BC)
7. Early Iron Age (600–400 BC)
8. Early Neolithic or early Iron Age
9. Late Iron Age
10. Roman
11. Anglo-Saxon

1 A few sherds of Anglo-Saxon pottery and a Roman base sherd were also included, but these have not been discussed in any detail (the main Anglo-Saxon assemblage is described by Barber below)

	count		weight (g)	
1: Early Neolithic	364	(6.1%)	1709	(4.9%)
2: Late Neolithic/early Bronze Age	153	(2.6%)	441	(1.3%)
3: Middle Bronze Age	250	(4.2%)	1345	(3.8%)
4: Middle to late Bronze Age transition	538	(9.0%)	4255	(12.2%)
5: Late Bronze Age plain ware tradition	2360	(39.4%)	13075	(37.4%)
6: Late Bronze Age decorated tradition or earliest Iron Age	1248	(20.8%)	7635	(21.8%)
7: Early Iron Age	542	(9.0%)	4451.5	(12.7%)
8: Early Neolithic or early Iron Age	237	(3.9%)	813	(2.3%)
9: Late Iron Age	71	(1.2%)	360	(1.0%)
10: Roman	3	(0.1%)	97	(0.3%)
11: Anglo-Saxon	88	(1.5%)	541	(1.5%)
Indeterminate	142	(2.4%)	242.5	(0.7%)
Total	5996		34965	

Table 7. Summary of pottery by sherd count and weight.

Taphonamy

Many of the contexts produced small quantities of pottery. Sixteen contexts produced large assemblages of pottery (over 100 sherds): (1056), (2000), (2017), (2033), (2038), (2063), (2128), (2136), (2223), (3020), (4003), (4112), (4114), (4192), (4321) and (4322).[2] In addition there are thirty-seven medium-sized assemblages (25–100 sherds).

	Sherd count and percentage	Sherd weight and percentage
1	1034 (17.2%)	2309.5 (6.6%)
2	1836 (30.6%)	8351.5 (23.9%)
3	2540 (42.4%)	18079 (51.7%)
4	65 (1.1%)	156 (0.4%)
5	500 (8.3%)	5494 (15.7%)
6	19 (0.3%)	561 (1.6%)

Table 8. Summary of sherd condition by count and weight. Codes as: 1 Surface treatments are completely worn, and all sherd edges are worn; 2 Surface treatments are worn but still identifiable, and all sherd edges are worn; 3 Surface treatments are worn but still identifiable; most of the sherd edges are worn but at least one edge may be less worn; 4 Surface treatments are is in reasonable condition; all sherd edges are worn; 5 Surface treatments are in reasonable condition, most of the sherd edges are worn but at least one sherd edge is less worn; 6 Surface treatments are in reasonable condition; sherd edges are generally fresh.

The condition of the pottery was assessed on a scale of 1 to 6 (see Table 8).

Table 8 shows that the majority of the pottery is quite worn, but surface treatments are still identifiable. The average sherd weight varies slightly between the ceramic phasing, but on the whole remains quite low (see Table 9). Pottery from the early Neolithic (ceramic phase 1) and the middle to late Bronze Age (ceramic phase 3) is in slightly better condition than the rest of the assemblage. It is interesting to note the variation in form size and condition between contexts and suggests that the deposition of the pottery was carried out in a variety of ways and arrived within their excavated contexts from different sources. This will be discussed in more detail later in the report.

Ceramic phase	Weight
1	4.7g
2	2.9g
3	5.4g
4	8g
5	5.5g
6	6.1g
7	8.2g

Table 9. Average sherd weight between ceramic phases.

2 (1056) was an ungrouped pot-spread overlying ditch F2; (2000) was a fill of ditch F22; (2017) was unstratified; (2033) was a pot in pit F206; (2038) was a pot in pit F205; (2063) was a fill of ditch F87; (2128) was a fill of ditch F94; (2136) was a fill of pit F191, (2223) was a fill of pit F192; (3020) was a pot in F364; (4003) was a pot in pit F113; (4112) was a pot spread in the top of hollow way F50; (4114) was a fill of pit F144; (4192) was a fill of pit F121; (4321) and (4322) were fills in pit F138

Fabric descriptions

Thirty-five fabric types were identified which can be placed in seven groups based on the principal inclusion types. The fabrics established include eighteen flint-tempered fabrics; four quartz sand fabrics; three organic fabrics; five grog fabrics; one flint and grog fabric and four grog and flint fabrics.

Flint group

Flint type F/1
A coarse fabric containing abundant (40 per cent) poorly sorted sub-angular flint up to 5mm in size. The clay matrix is silty and micaceous with traces of red iron ore; fracture is hackly; surface feels rough.

Flint type F/2
A coarse fabric containing abundant (40 per cent) quite well sorted sub-angular flint up to 3mm in size. The clay matrix is silty and micaceous with traces of red iron ore; fracture is hackly; surface feels rough.

Flint type F/3
A coarse fabric containing common (25 per cent) poorly sorted sub-angular flint up to 3mm in size. The clay matrix is micaceous and consists of silt to very fine quartz grains with traces of red iron ore; fracture is hackly; surface feels rough.

Flint type F/4
A fairly coarse fabric containing very common (30 per cent) fairly well sorted sub-angular flint average size 1mm. The clay matrix is silty; fracture is hackly; surface feels rough.

Flint type F/5
A medium fine fabric containing moderate (15 per cent) quite well sorted sub-angular flint average size 0.5mm. The clay matrix is silty and micaceous with traces of red iron ore; fracture is quite fine; surface feels smooth.

Flint type F/6
A medium coarse fabric containing moderate (15 per cent) poorly sorted sub-angular flint up to 1mm in size. The clay matrix is silty; fracture is fine; surface feels quite smooth.

Flint type F/7
A fine fabric with common (25 per cent) well sorted sub-angular flint 0.25mm in size. The clay matrix is silty and micaceous with sparse amounts of red iron ore and a few grains of glauconite. Fracture is fine; surface feels smooth.

Flint type F/8
A fine fabric containing abundant (40 per cent) well sorted flint 0.25mm in size. The clay matrix is silty; fracture is irregular; surface feels smooth.

Flint type F/9 (belongs to hoard pot and not included on Table 4)
A fairly coarse fabric containing common (25 per cent) poorly sorted sub-angular flint up to 2-3mm in size, with occasional pieces up to 6mm. The clay matrix is silty and contains a sparse amount of red iron ore; fracture is irregular; surface feels smooth.

Flint and quartz group (clay matrix contains sandy grains larger than silt-size)

Flint and quartz type FQ/1
A fairly coarse fabric containing common (25 per cent) poorly sorted sub-angular flint up to 1mm in size. The clay matrix is silty and micaceous and also contains common (25 per cent) well sorted fine quartz sand. Fracture is quite fine; surface feels quite fine.

Flint and quartz type FQ/2
A crumbly fabric containing very common (30 per cent) poorly sorted sub-angular flint up to 3mm in size. The clay matrix consists of fine to medium quartz sand. Fracture is irregular, surface feels rough.

Flint and quartz type FQ/3
This is a fine fabric and consists of abundant (>50 per cent) very well sorted very fine to fine rounded quartz sand, sparse grains of glauconite and moderate (10 per cent) poorly sorted sub-angular flint up to 2mm in size. Fracture is fine; surface feels smooth.

Flint and quartz type FQ/4
A fairly coarse fabric containing common (20 per cent) reasonably poorly sorted sub-angular flint up to 1mm in size. The clay matrix consists of very fine quartz sand, a few grains of glauconite and a sparse amount of red iron ore. The fresh fracture is irregular; surface feels rough.

Flint and quartz type FQ/5
A coarse fabric containing common (25 per cent) poorly sorted sub-angular flint up to 6mm in size. The clay matrix consists of very fine quartz sand and is micaceous with sparse amounts of red iron ore; fracture is hackly; surface feels rough.

Flint and quartz type FQ/6
A fairly fine fabric with common (25 per cent) quite well sorted sub-angular flint mostly 0.25mm in size, and some larger pieces of flint 0.75mm in size. The clay matrix is micaceous and consists of very fine sand with occasional larger grains 0.5mm in size. Fracture is fine; surface feels smooth.

Flint and quartz type FQ/7
A fairly coarse fabric containing common (20 per cent) poorly sorted sub-angular flint mostly 0.5mm in size but also contains larger pieces 4mm in size, and very rare pieces of grog. The clay matrix consists of very fine quartz sand and occasional larger grains 0.25mm in size. The fresh fracture is hackly; surface feels rough.

Flint and quartz type FQ/8
A coarse fabric containing common (25 per cent) poorly sorted sub-angular flint up to 5mm in size. The clay matrix consists of very fine to fine sand and moderate (10 per cent) rounded quartz 0.25mm in size. The fresh fracture is irregular; surface feels rough.

Flint and quartz type FQ/9
A fairly coarse fabric containing moderate (10 per cent) poorly sorted sub-angular flint up to 5mm in size. The clay matrix consists of very fine quartz sand and a small amount of very fine glauconite; fracture is irregular; surface feels rough.

Flint and grog group

Flint and grog type FG/1
A coarse fabric containing common (20 per cent) poorly sorted sub-angular flint up to 3mm in size and common (20 per cent) poorly sorted sub-angular grog up to 3mm in size. The clay matrix is silty and micaceous with traces of red iron ore; fracture is hackly; surface feels rough.

Grog and flint group

Grog and flint type GF/1
A fairly fine fabric containing common (25 per cent) sub-angular grog average size 1mm plus some smaller fragments 0.25mm in size and moderate (10 per cent) poorly sorted sub-angular flint up to 1mm in size. The clay matrix is silty and micaceous with traces of red iron ore; fracture is fine; surface feels smooth.

Grog and flint type GF/2
A soft and crumbly fabric containing very common (30 per cent) poorly sorted sub-angular grog up to 2mm in size, and common (20 per cent) poorly sorted sub-angular flint up to 3mm in size. The clay matrix is silty and micaceous; fracture is irregular; surface feels soapy.

Grog and flint type GF/3
A soft fabric containing moderate (15 per cent) poorly sorted grog up to 1mm in size, and moderate (10 per cent) poorly sorted sub-angular flint up to 1mm in size. The clay is micaceous and consists of very fine sand; fracture is fine; surface feels quite smooth and soapy.

Grog and flint type GF/4
A crumbly fabric containing very common (30 per cent) poorly sorted grog up to 1mm in size and moderate (10 per cent) poorly sorted sub-angular flint up to 1mm in size. The clay matrix is silty; fracture is irregular; surface feels rough and soapy.

Grog group

Grog type G/1
A fairly fine fabric containing very common (30 per cent) quite well sorted grog up to 1mm in size, and sparse (3 per

cent) flint. The clay matrix consists of very fine quartz sand; fracture is laminated; surface feels soapy.

Grog type G/2
A fairly fine fabric containing common (25 per cent) quite well sorted grog up to 0.5mm in size. The clay matrix consists of very fine quartz sand; fracture is laminated; surface feels soapy.

Grog type G/3
A fairly fine fabric containing abundant (40 per cent) well sorted orange and dark brown grog 0.5mm in size. The clay matrix is silty; fracture is quite fine, surface feels soapy.

Grog type G/4
A fairly fine fabric containing abundant (40 per cent) well sorted orange grog 0.25mm in size. The clay matrix consists of very fine sand with occasional larger grains 0.25mm in size, and very fine sand sized grains of glauconite. Fracture is fine, surface feels soapy.

Grog type G/5
A fairly fine fabric containing common (25 per cent) well sorted grog mostly 0.5mm in size, and sparse (7 per cent) poorly sorted flint mostly 0.25mm in size. The clay matrix is silty; fracture is fine; surface feels soapy.

Quartz sand group (dominated by quartz sand)

Quartz sand type QS/1
This is a fine fabric and consists of abundant (>50 per cent) very well sorted very fine rounded quartz sand. There are no other obvious inclusions other than a few strands of organic matter. Fracture is fine; surface feels smooth.

Quartz sand type QS/2
This is a fine fabric and consists of abundant (>50 per cent) very well sorted very fine rounded quartz sand, sparse grains of glauconite and sparse (7 per cent) well sorted sub-angular flint up to 0.5mm size. Fracture is fine; surface feels smooth.

Quartz sand type QS/3
The fabric contains abundant (40 per cent) well sorted rounded fine quartz sand. Fracture is quite fine, surface feels harsh.

Quartz sand type QS/4
A hard fabric containing abundant (50 per cent) well sorted rounded medium sand 0.25mm in size. Fracture is fine; surface feels rough.

Vegetable group

Vegetable Type V/1
A fairly soft fabric containing common (25 per cent) poorly sorted linear voids caused by impressions of burnt out organic material. The clay matrix consists of very fine sand; fracture is laminated; surface feels smooth.

Vegetable Type V/2
A soft fabric containing very common (30 per cent) moderately sorted linear and round voids; fracture is laminated; surface feels smooth.

Vegetable type V/3
A fairly soft fabric containing common (25 per cent) quite well sorted linear voids caused by impressions of burnt out organic material. The clay matrix is micaceous and consists of very fine sand. Fracture is smooth; surface feels rough.

Geologically the Ellington School pottery fabrics suggest reliance on locally available resources for ceramic production. This conclusion is based on the Dean Arnold ethnographic study of resource procurement and is based on existing accounts of ethnographic ceramic studies and also his own fieldwork observing the contemporary potters of Mexico. Arnold's studies revealed that the preferred territory of exploitation for both clay and temper is 1 kilometre or less, and the common range of exploitation ranges from 7 kilometres for clay, and 6–9 kilometres for temper (Arnold 1985, 54–5; Morris 1994a; 1994b).

The geology of the area around Ellington School comprises of Upper Chalk and Thanet Beds (Geological

Fabric	Sherd count	Percentage of assemblage by sherd count	Sherd weight (g)	Percentage of assemblage by sherd weight (g)
F/1	905	15.1	5363.5	15.3
F/2	336	5.6	2492	7.1
F/3	1060	17.7	6300.5	18
F/4	336	5.6	2477	7.1
F/5	578	9.6	2578	7.4
F/6	819	13.7	4315	12.3
F/7	21	0.4	224	0.6
F/8	6	0.1	31	0.1
FQ/1	3	0.1	42	0.1
FQ/2	1	0.0	8	0.02
FQ/3	467	7.8	2544	7.3
FQ/4	160	2.7	1350	3.9
FQ/5	263	4.4	1823	5.2
FQ/6	36	0.6	194	0.6
FQ/7	5	0.1	78.5	0.2
FQ/8	65	1.1	428	1.2
FQ/9	15	0.3	93	0.3
FG/1	43	0.7	569	1.6
GF/1	167	2.8	657	1.9
GF/2	153	2.6	441	1.3
GF/3	8	0.1	44	0.1
GF/4	11	0.2	52	0.1
G/1	49	0.8	345	1.0
G/2	6	0.1	26	0.1
G/3	3	0.1	13	0.03
G/4	5	0.1	30	0.1
G/5	2	0.03	60	0.2
QS/1	124	2.1	543	1.6
QS/2	132	2.2	948	2.7
QS/3	1	0.02	7	0.02
QS/4	2	0.03	31	0.1
V/1	89	1.5	547	1.6
V/2	3	0.1	87	0.2
V/3	5	0.1	12	0.03
Indeterminate	117	2.0	211.5	0.6

Table 10. Sherd count and weight according to fabric type.

Survey Sheet 274), and the drift geology consists of Head (Brickearth) (see above). Chalk would have provided flints, which when burnt and crushed provide suitable temper for pottery making. Brickearth has long been exploited for bricks and tiles in nearly every locality where it occurs in bulk (Osbourne White 1928, 78), and it is likely that it was also utilised for pottery making. Thanet Beds provide another likely clay source and are known to be glauconitic or ferruginous (Dines *et al* 1954, 74–80), and are also described as rich in silt (Osbourne White 1928, 76). The clays used by the Ellington potters vary from silty to consisting of medium sized quartz sand, and it is clear that a variety of clay sources were exploited for pottery making. Some of the fabrics are micaceous, and as the particles are very small it is likely that the mica is naturally occurring within the clay. Similarly, the quartz sand grains are rounded rather than angular, and this suggests a natural inclusion as opposed to a deliberately added temper.

Early Neolithic fabrics

Most of the early Neolithic pottery sherds have been made with flint and sandy fabrics. This type of fabric appears to be quite commonly used during the early Neolithic, and this practice has been observed on other Kentish sites, for example at Beechbrook Wood (Edwards 2006b), Saltwood Tunnel (Edwards 2006d), Ramsgate Harbour Approach Road (Gibson 2006) and Thanet Earth (McNee 2013). It is interesting to note that the potters seem to be deliberately choosing to utilise clay sources that are sandy rather than silty. Ethnographic observations demonstrate that clay selection and processing are not mere technical acts, but culturally defined processes within socially bounded communities (Gosselain and Livingstone Smith 2005, 44). The actual pattern of selection stems from a series of other considerations such as individual perceptions of places liable to yield clay, and religious beliefs (*ibid,* 40).

Late Neolithic to early Bronze Age fabrics

One fabric has been used to make later Neolithic pottery. Fabric type GF/2 has been used to make a possible grooved ware vessel and has not been used to make any other vessels at Ellington. Grooved ware pots are often tempered with shell (Cleal 1995, 192; Edwards 2006c), however it seems likely that the Ellington potters were exploiting local resources and consequently flint and grog may have been a more convenient temper to use. It is also possible that this pot is very late Neolithic or early Bronze Age, and it is during this period that groggy fabrics become popular. Similar grog- and flint-tempered fabrics have been used to make Beaker pottery at Thanet Earth (McNee 2013).

Middle Bronze Age fabrics

Only one fabric type has been used to make Deverel-Rimbury pottery (flint type F/1). This very coarse flinty fabric is commonly used to make Deverel-Rimbury pots at Ellington, and a large proportion of middle Bronze Age vessels on other sites in Kent have been made using this type of fabric.

Middle to late Bronze Age transition

There appears to be a transitionary stage from the middle to late Bronze Age, and it is tentatively suggested that this transitional period is characterised by the continued use of coarse fabrics but on vessels with thinner walls and new forms. Slightly finer fabrics are also introduced, some of which are used on middle Bronze Age forms. Six fabrics have been used to make middle to late Bronze Age vessels (F/1, F/2, F/3, F/6, FG/1 and GF/4). Fabric type F/1 remains very popular and is mainly used on vessels with thick walls as the large flint inclusions would provide support and help stop the pots from collapsing. Flint type F/1 has been used to make a bucket jar, and a possible ovoid jar. The rest of the fabrics used within this ceramic phase are slightly finer than flint type F/1, but still remain quite coarse, and tend to be used on vessels with slightly thinner walls. All fabrics have a silty clay matrix with the exception of fabric type F/3, which consists of silt to very fine sand, and would have derived from a different clay source.

A small number of sherds have been tempered with a mixture of both grog and flint (fabric types FG/1 and GF/4). The introduction of grog- and flint-tempered fabrics during the later stages of the middle Bronze Age is paralleled on other Kentish sites, for examples Shrubsoles Hill (Raymond 2003, 25), and Beechbrook Wood (Jones 2006a). Research has suggested that the use of grog temper may be regarded as more than a simple matter of technology and may symbolise the continuation of generations of vessels (see Brown 1995b, 127; Cleal 1995, 192). The evolution of vessel forms and fabrics during this period can be a reflection of changes within society, and the inclusion of old pots in new pots may serve to reinforce ancestral links within a changing society (Woodward 2002, 109). On a practical level, pottery made with fabric type GF/4 has been burnished, and the potter may have chosen to use a fabric, which was easier to burnish, rather than trying to burnish a pot with sharp flint inclusions protruding from it.

Late Bronze Age plain phase

The late Bronze Age heralds the proliferation of many different fabric types. Coarse flinty fabrics are still popular, but finer flint fabrics are also introduced, and these are commonly associated with finer pots, which have been burnished. Nine fabrics have clay matrices, which are sandy rather than silty. This appears to be a general trend. The significant increase in sandy fabrics during the late Bronze Age would have facilitated the production of more thin walled vessels and a greater range of table wares, therefore developing the possibilities of form variety in the sphere of food preparation, serving and consumption (Woodward 2002, 117). Organic fabric (V/3) occurs on just five small

sherds. It is possible that some pots were made on a bed of straw, or a mat, as there are organic impressions evident on the surface of the sherds. This has resulted from fairly wet clay either being pushed into the straw, or where the clay has been lying.

Late Bronze Age decorated phase or earliest Iron Age

Very coarse flinty fabrics (F/1) are not present during this phase, and it is the quartz sand fabrics that dominate, especially fabric type QS/2. Grog is still being incorporated into a small number of vessels, and the groggy fabrics utililised have sandy clay matrices (G/1; G/4; GF3).

Early Iron Age

Almost all the fabrics utilised during this phase have sandy clay matrices with the exception of fabric types F/3, F/5, F/6 and GF/1.

Summary

Flint-tempered fabrics (85 per cent) dominate the assemblage. This is followed by grog and flint fabrics (5.7 per cent). The remaining fabric groups occur in fairly small quantities. There appears to be a hiatus regarding the use of grog in between the early Bronze Age, and the latter stages of the middle Bronze Age. Grog is re-introduced during the middle to late Bronze Age transition in fabric type (FG/1), which is still a predominantly flinty fabric. Sandy clay matrices become increasingly popular throughout the late Bronze Age and into the early Iron Age, and although fabrics with silty clay matrices are still in use it is the fabrics containing very fine sized quartz grains that dominate. Organic fabric type (V/1) has been used in the Anglo-Saxon period only, and fabric QS/4 is not thought to be a prehistoric fabric but is possibly a late Iron Age/ early Roman type.

There is no obvious form to fabric correlations with the exception of form type R6. This is an early Neolithic form, although can occur in the early Iron Age. All of the bowls have been made with sandy clays and the most popular fabric type utilised is fabric type FQ/3. Ellington School is rich in geological deposits suitable for pottery making. The potters appear to be exploiting a variety of clay sources, which are local to the site itself. Certain clay sources may have been exploited over thousands of years but at certain times during prehistory they become less fashionable. Sandy clays are popular during the early Neolithic and from the late Bronze Age onwards. Silty clays are most commonly used during the middle Bronze Age.

Forms

A total of twenty-two form types, two base types and three shoulder types have been identified. The vessels in this assemblage can be divided into coarse wares and fine wares and both these sub-groups include jars and bowls. Very worn uneven rim sherds classify uncertain form types; these are difficult to identify due to problems obtaining the correct orientation of the rim.

Base forms

B1: Flat bottomed base with slightly flaring walls (Fig 19, 5)
B2: Foot ring base (Fig 21, 68)

Angled sherds

A1: rounded shoulder
A2: slight carinated shoulder
A3: Sharp carinated shoulder

Jar forms

R1: Straight sided vessel with a flat-topped rim (Fig 19, 7).
Parallels: Kemsley, Sittingbourne (McNee 2006a, fig 14/1; 15/8).
Willow Farm (McNee 2004, fig 14/1).

R2: Straight sided vessel with a flat-topped rim, similar to R1 but the upper part of the vessel curves inwards (Fig 19, 6).
Parallels: Nethercourt, Ramsgate (Macpherson-Grant 1992, 59, fig 4).
Westwood Cross (Couldrey 2004).

R3: Shouldered jar (uncertain shoulder), long neck gently curving outwards (Fig 19, 34).
Parallels: Ramsgate Harbour Approach Road (McNee 2006b, fig 3.27).
Westwood Cross (Couldrey 2004).
Mucking North Ring (Barrett and Bond 1988, fig 21.35).
Willow Farm (McNee 2004, fig 15/12).
Coldharbour Road (Barclay 1995, fig 10/10).

R7: Straight sided jar with a round topped rim (Fig 21, 56).
Parallels: Beechbrook Wood (Jones 2006a, fig no 10).

R15: High shouldered jar, short fairly upright rim (Fig 19, 16).
Parallels: Cobham Golf Course (McNee and Morris 2006, fig no 7).
Yapton, Sussex (Hamilton 1987, fig 6/18).

R16: Short necked shouldered jar with upright round topped rim (Fig 20, 42).
Parallels: Tollgate (Jones 2006b, fig nos 24 and 28).

R17: Short necked shouldered jar with everted round top rim (Fig 20, 39).
Parallels: Monkton Court Farm (Macpherson-Grant 1994, fig 16/96).
Ramsgate Harbour Approach Road (McNee 2006b, fig 3/31).

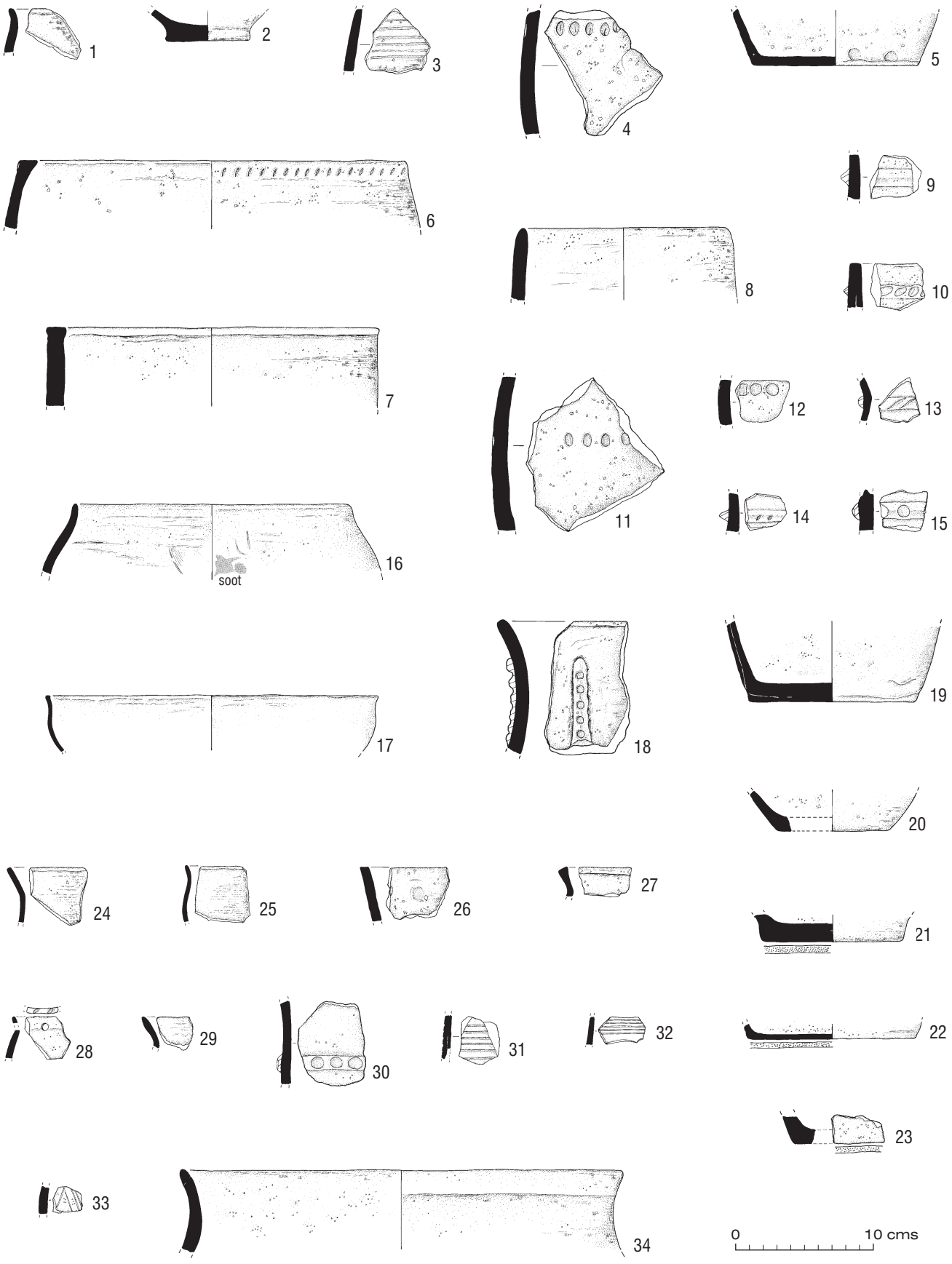


Fig 19. Prehistoric pottery, nos 1–34 (scale 1:4).

Iwade (Hamilton and Seager Thomas 2005, fig 33/8 and 33/9).

R18: Shouldered jar, short slightly flaring neck with externally sloping flat topped rim (Fig 19, 27).
Parallels: Monkton Court Farm (Macpherson-Grant 1994, fig 15/88).
Saltwood Tunnel (Jones 2006c, fig no 12).

R20: Ovoid jar with a round topped rim.
Parallels: Green Park, Reading Business Park, (Morris 2004, fig 4.9/21).
Ramsgate Harbour Approach Road (McNee 2006b, fig 7/62).
Westwood Cross (Couldrey 2004).

Bowl forms

R5: Short flat-topped rim with slight external bead joining an uncertain shoulder (Fig 21, 63).
Parallels: White Horse Stone (Morris 2006, fig no 41 and 71).
Barham Downs (Macpherson-Grant 1980, fig 5.16).
Ramsgate Harbour Approach Road (McNee 2006b, fig 7/60).
R11: Slightly open bowl, round topped rim (Fig 20, 41).
Parallels: Iwade (Hamilton and Seager Thomas 2005, fig 3/12).
Kemsley, Sittingbourne (McNee 2006a, fig 19/28).
Ramsgate Harbour Approach Road (McNee 2006b fig 2/12).

R14: Round shouldered bowl with round topped rim (Fig 19, 25).
Parallels: Kemsley (McNee 2006a, fig 22/50).
Willow Farm (McNee 2004, fig 15/13).
Runneymede Bridge (Longley 1980, fig 30/ 238, 241, 244).

R21: Everted round topped rim with internal bevel, short neck (Fig 20, 40).
Parallels: Iwade (Hamilton and Seager Thomas 2005, fig 35/10).

R22: Flared rim, longish neck, uncertain shoulder (Fig 20, 35).
Parallels: Monkton Court Farm (Macpherson-Grant 1995 fig 15/83).

Bowl or jar forms

R4: Flat topped rim, flaring neck, either a shouldered jar or an open bowl (Fig 19, 26).
Parallels: Iwade (Hamilton and Seager Thomas 2005, fig 33/6).

R12: Ovoid jar or slightly closed bowl (Fig 21, 55).
Parallels: Iwade (Hamilton and Seager Thomas 2005, fig 35/1).

R13: Round topped rim, possible open rounded bowl (Fig 20, 51).
Parallels: Ramsgate Harbour Approach Road (McNee 2006b fig 2/8).

Early prehistoric bowl forms: these are typical of early Neolithic wares, however form types R6 and R11 can also occur in the early Iron Age.

R6: Flaring round topped rim, long neck joining a slightly carinated shoulder, body slopes inwards (Fig 21, 59).
Parallels: North Shoebury Essex (Brown 1995a, fig 65.87).
Lofts Farm (Brown 1988, fig 16/55).
Stanstead Airport (Brown 2004, fig 36/63).
Holborough Quarry (McNee 2007a).

R8: Round topped rim with slight external bead, medium length neck sloping slightly inwards joining a carinated shoulder (Fig 21, 65).
Parallels: Beechbrook Wood (Edwards 2006b).

R9: Fairly upright medium length neck with a round topped rim joining a slight carinated shoulder (Fig 21, 67).
Parallels: Staines, Surrey (Robertson-Mackay 1987, fig 38/P1and P6 and fig 40/P46).
Creteway Down, Folkestone (Dunning 1966, fig 6/6).
Preston near Stourmouth, east Kent (Dunning 1966, fig 7).
Shoebury, Essex (Brown 1995a, fig 61/34).

R10: Flared rim with a fairly long neck and uncertain shoulder. The top of the rim is round, and the clay has pushed over the top edge to form a rough external bead (Fig 21, 58, 60 and 64).
Parallels: Thanet Earth (McNee 2013).
White Horse Stone (Morris 2006, fig no 98 and 109).
Barham Downs (Macpherson-Grant 1980, fig 4.6).

R19: Grooved Ware or Beaker? (Fig 19, 1). Everted round topped rim with internal bevel.

Ceramic Phase 1

The earliest ceramic phase at Ellington is represented by an early Neolithic bowl tradition. The vessels are very fragmented, but the surviving rims would suggest that the bowls belong to either a Neolithic Carinated or Plain Bowl tradition. It is not possible to say which due to a lack of shoulder sherds. In terms of date, early Neolithic assemblages tend to have quite simple rims with squared, everted or rounded profiles, while later assemblages can contain rolled rims and other heavy types (Barclay and Edwards 2006). The Ellington examples include rolled rims which do not appear to be decorated. The vessels are similar to those recovered from the nearby site of Ramsgate Harbour Approach Road. Radiocarbon dates associated with early Neolithic Plain Bowls from the site are between 3710-3630 cal BC and 3710-3510 BC (Bayliss *et al* 2011, 374–5), and according to conventional chronologies these secondary Neolithic ceramics start to appear around 3800 BC (Gibson 2006). Radiocarbon dates associated with a Carinated Bowl from White Horse Stone was estimated to fall between 3900-3750 cal BC (Barclay and Edwards 2006). An early Neolithic Carinated bowl recovered from Thanet

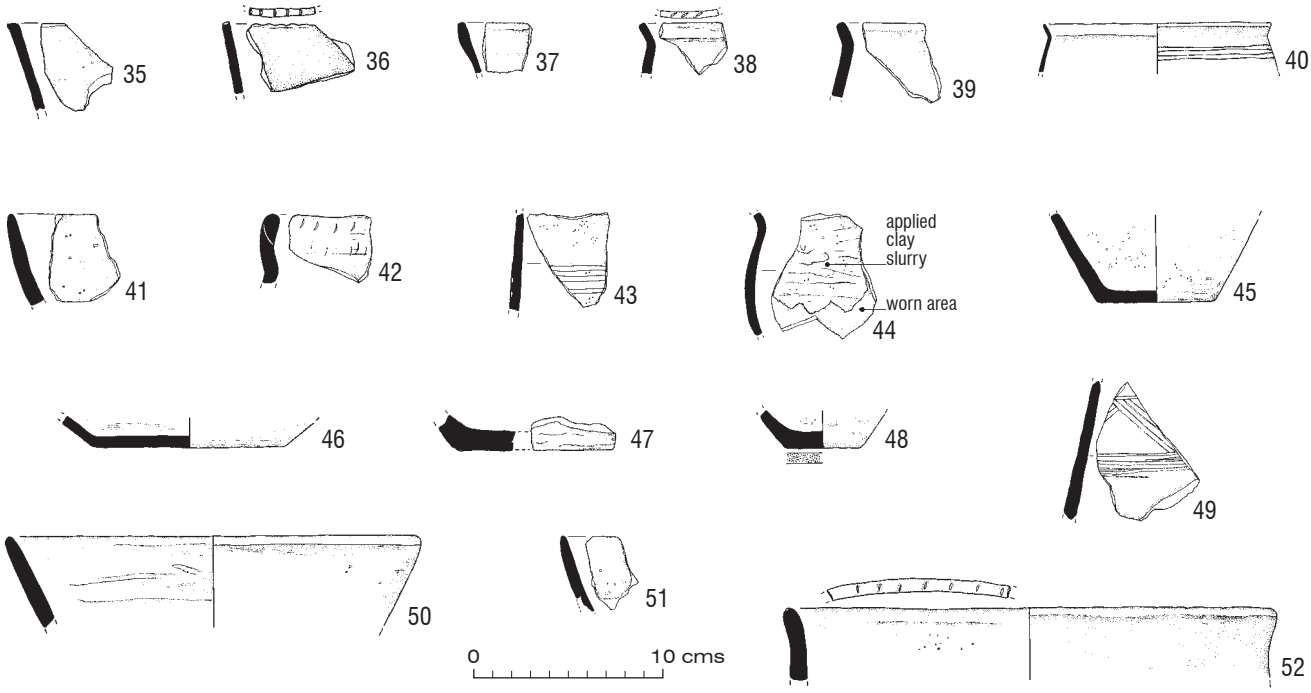


Fig 20. Prehistoric pottery, nos 35–52 (scale 1:4).

Earth also finds similarities with the Ellington School rolled rim sherds, and at Thanet a date range of between 3900 and 3700 is suggested (McNee 2013).

Ceramic Phase 2

The second ceramic phase at Ellington is represented by a possible grooved ware? pot, which is not easily paralleled (Fig 19, 1–3). Tiny fragments of the rim remain, but it is difficult to obtain an accurate orientation. The rim has a slight internal bevel and may be similar to a Durrington Walls style Grooved Ware vessel from Eyhorne Street (Edwards 2006a). The horizontal bands of decoration on the Ellington pot are also quite similar to another Grooved Ware example from Eyhorne Street. However, the rim form is very similar to two East Anglian style beaker pots recovered from Beechbrook Wood, which also have incised horizontal bands (Edwards 2006b). There is little doubt that Grooved Ware did not survive into the Bronze Age (Cleal 1984, 138). However, the earlier Bronze Age is conventionally seen as starting shortly before 2000 BC. Assuming the demise of Grooved Ware at about 2000 BC or a little earlier, and the arrival of Beakers at about 2400 BC, it is likely that there was a co-existence between Grooved Ware and Beaker ceramics (Gibson 2002, 92). This discussion does not answer the question as to where the Ellington pot can be described as Grooved Ware or Beaker, but it's similarity to both styles of pottery may suggest that this vessel is best described as belonging to a very late Neolithic form.

Ceramic Phases 3 and 4

The middle Bronze Age is represented by thick walled very coarse tempered body sherds, some of which have been decorated with finger impressions on the shoulder (Fig 19, 4). The assemblage also includes a base and several body sherds from a cremation urn recovered from feature (F25) (Fig 19, 5). Very few rim sherds survive from this period other than two much worn rim sherds, which probably belong to form type R1.

The later part of the middle Bronze Age is characterised by two large bucket jars (form types R1 and R2, Fig 19, 6 and 7), and an ovoid jar. Fingertip and fingernail decoration are present on some of the pots. Much of the pottery remains quite coarse and thick walled however there is a small increase in the use of slightly finer fabrics and the creation of pots with thinner walls. As a whole these pottery forms find general parallels with Deverel-Rimbury pottery from a wide range of sites, including Kemsley, Sittingbourne (McNee 2006a) and Westwood Cross (Couldrey 2004).

Ceramic Phase 5

The fourth ceramic phase at Ellington is characterized by vessels which are typical of the plain ware tradition of the late Bronze Age as classified by Barrett, who defined five vessel classes; coarse jars (Class1); fine jars (Class 11); coarse bowls (Class 111); fine bowls (Class IV) and cups (Barrett 1980, 302–3). These vessel types are present at Ellington with the possible exception of cups, although the presence of a tiny late Bronze Age base (Fig 20, 45) may suggest that this belonged to a cup. The assemblage is dominated by coarse jars (Class1), which are represented by form types R3 (Fig 19, 18); R15 (Fig 19, 16), and R18 (Fig 19, 27). Three rim sherds belonging to form type R4 may also belong to this category and these are all shouldered

jar forms. Two Class 11 fine jars are represented by form type R17 (Fig 20, 39) and form type R18.

Three bowl forms were identified and include two coarse (Class 111) bowls belonging to form type R13 and R22, and an example of a fine (Class 1V) bowl also belonging to form type R22 (Fig 19, 24). There are four further fine bowls (form type R14, Fig 19, 25). These examples represent two different bowl types, types R14 and R22 are shouldered bowls, and type R13 is a simple open bowl. All these form types are well represented on other Kentish sites, and also further afield on sites such as Runnymede (Longley 1980), and Yapton, Sussex where a ninth- or eighth-century BC date is suggested (Hamilton 1987, 62).

Ceramic Phases 6 and 7

The plain wares ceramic tradition is succeeded by a decorated tradition (Barrett 1980), although undecorated pots are still made in abundance. Five form types continue into the late Bronze Age decorated phase/earliest Iron Age (R3, R13, R15, R17 and R22), and suggest that some forms and fabrics are popular and can be very long lived. Jars and bowls, which can be coarse and fine, are still present. New forms are also introduced, and include form types (R11, R12, R16, R21 and R23). This suggests an increased popularity in creating new bowl forms, and this has been linked to the rise of a particular social activity, namely, feasting and drinking (Longley 1980, 73).

Form type R6 may be present in both the early Neolithic and the early Iron Age and is a carinated bowl type. The early Iron Age examples from Ellington are similar to early Iron Age carinated bowl forms from a number of sites such as Stansted Airport (Brown 2004, fig 36/63), where a seventh- to sixth-century date is suggested (Brown 2004, 41). The bowls are quite similar to the highly polished early to middle Iron Age carinated bowls that occur on sites such as Whitfield-Eastry by-pass Site 2 (Macpherson-Grant 1997, 68), and Downlands Walmer (McNee 2006c, fig 4/32). The Ellington bowls are generally coarser with slightly thicker walls, which may suggest that these bowls are a slightly earlier version, and that they commence at the end of the late Bronze Age decorated phase and gain in popularity in the early Iron Age.

To summarize, finely burnished early Neolithic open bowls represent the early ceramic phase at Ellington. A few sherds of late Neolithic Grooved Ware or early Bronze Age Beaker represents the next phase, followed by middle and middle to late Bronze Age ceramic vessels. These are characterised by thick walled straight sided, coarse tempered vessels. Vessels with straight walls are replaced in the late Bronze Age by a variety of shouldered jars and bowls, which can be both fine and coarse. Bowl forms increase in popularity during the earliest Iron Age and Iron Age phase, and it is during the early Iron Age phase that straight sided vessels are re-introduced (form type R7, Fig 21, 56). The characteristics of the pots would suggest that most of the pots were utilitarian, and made for household consumption, rather than trade and exchange, but it is also possible that pots were made for use during social activities on the site. The Ellington pots share some of the characteristics of pottery recovered from Ramsgate Harbour Approach Road (Gibson 2006; McNee 2006b). However, at Ramsgate, the assemblage is dominated by jar forms, and to a lesser extent bowl forms. This suggests that more fineware pots were produced at Ellington and possibly used as tablewares on the site.

Vessel size

Measurable rim diameters range in size from 14cm to 34cm (24 rims). However, the majority of the rims present are very small and cannot be measured accurately (76 rims). Considering the size of the assemblage you might expect there to be a greater number of rims and featured sherds in general, but these could be present in features not yet excavated. Base sizes ranged from 4cm to 12cm (12 base sherds), and a further 24 bases could not be measured. It is interesting to note that many of the measurable bases had a large percentage of the base remaining and might suggest deliberate deposition.

Vessel diameters of between 12 and 14cm tend to occur on burnished vessels, and these might have been used as individual eating or drinking vessels or containers. Two vessels have rim diameters of over 30cm (Figs 19, 34 and 21, 56), and these might have been used for storage or communal eating. Unfortunately, too few examples of the different form types are present to allow any correlation between form and vessel size, however most of the vessels can be described as medium in size (20-30cm), and suitable for a range of activities.

Surface treatments

Five basic types of surface treatments were identified, and these can be subdivided into a combination of surface treatments (see Table 11). 2946 sherds (49 per cent) display some form of surface treatment, and a further 17 sherds may have been either burnished or wiped but the pots are too worn to be certain of this. The rest of the assemblage displayed no evidence of surface treatments.

1. Wiping	230 (3.8%)
2. Application of clay slurry	216 (3.6%)
3. Clay slurry which has been smoothed or wiped	134 (2.2%)
4. Burnishing	831 (13.9%)
5. Burnished and wiped	38 (0.6%)
6. Clay slurry and burnishing	431 (7.2%)
7. Smoothed or very lightly burnished	140 (2.3%)
8. Smoothed on exterior, burnished on interior	105 (1.8%)
9. Basal flints	13 (0.2%)
10. Smoothing	797 (13.3%)
11. Finger wiping	2 (0.03%)
12. Rough wiping, almost rusticated	6 (0.1%)
13. Rusticated	3 (0.1%)

Table 11. Summary of surface treatments by count.

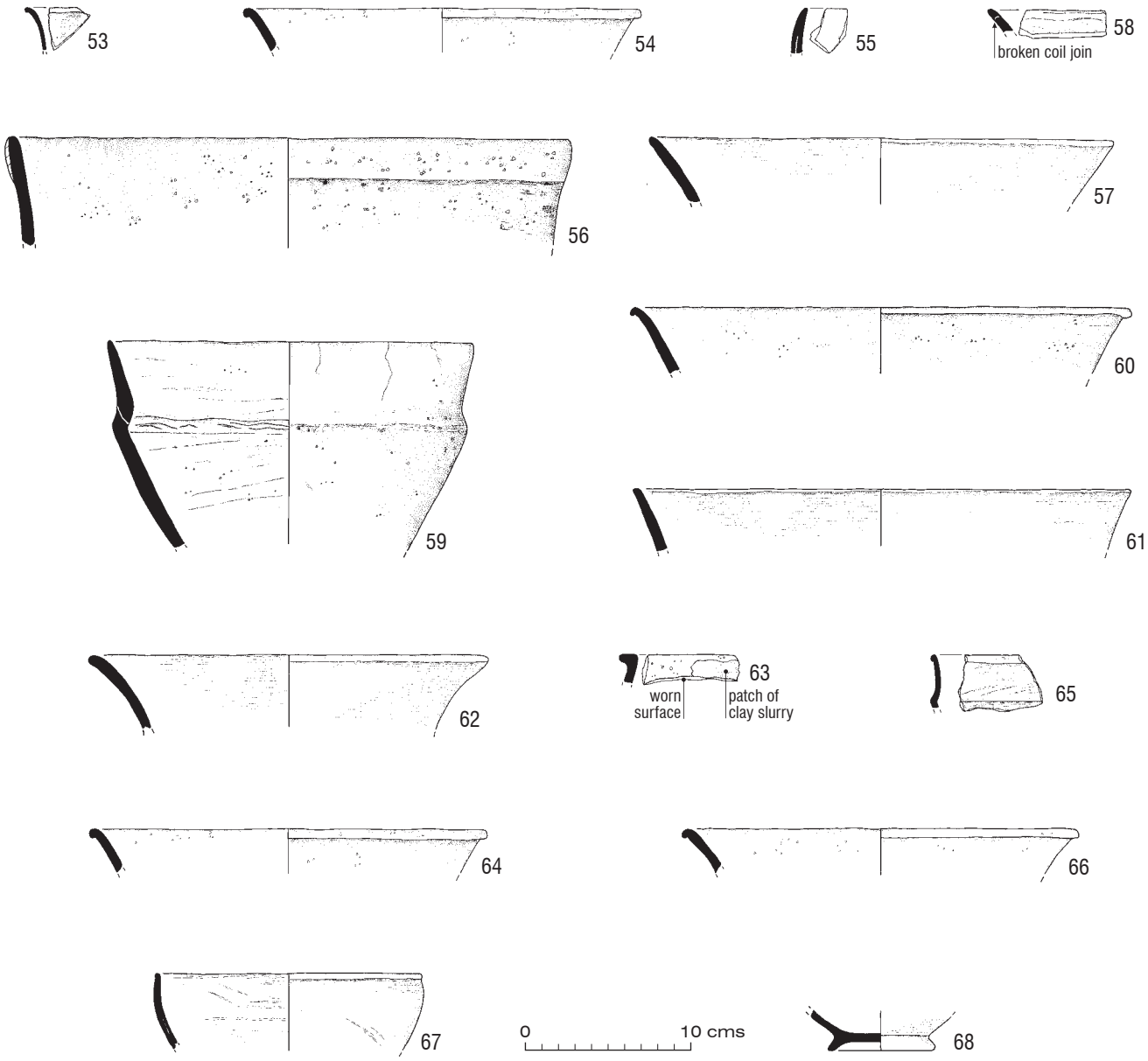


Fig 21. Prehistoric pottery, nos 53–68 (scale 1:4).

Burnishing

Burnishing has been applied to 1405 sherds (23.4 per cent). The majority of the sherds have been burnished on both the interior and the exterior, with just a few examples, which have been burnished on either the interior or the exterior only. Burnished pots occur in the early Neolithic and throughout the late Bronze Age at Ellington, and into the early Iron Age. Burnishing is both functional and decorative, and the process compacts the surface of the pot, slightly reducing permeability (Gibson and Woods 1997, 113). It is suggested that some of the burnished pots at Ellington may have been used to contain liquid, and others may have been used within a social situation, possibly as tablewares. The actual quality of the burnish is quite variable, ranging from poor irregular burnishing through to vessels, which are well polished. The early Neolithic bowls have been particularly well finished. The condition of the excavated pots may of course be as a result of post depositional circumstances, but it also suggests that on some vessels the potters have given greater attention to achieving a good polish. Many vessels from pit F138 are very well burnished, and the significance of this will be discussed in more detail later on in this report.

Application of clay slurry

Of the burnished sherds, 431 (7.2 per cent) have been coated in very thin clay slurry, and this may have made the process of applying a burnish a little easier. Some of the burnished pots have been made using quite coarse flinty fabrics and burnishing them would probably have been quite a challenge. Applied clay slurry without any additional

surface treatments appears on a number of vessels mostly dating from middle to late Bronze Age transition and the late Bronze Age plain phase. Patches of this slip has worn away to reveal the coarse flint fabric underneath (Fig 20, 44). The application of this extra coating of clay may have helped reduce permeability in vessels intended for storage or may have been used to make the pot more attractive by disguising unsightly coil joins. It may simply have been added in order to make the handling of the pot easier. Vessels coated in this slip are tempered with angular flints and may well have caused discomfort to the people using them.

It is during the later stages of the late Bronze Age decorated phase that combinations of surface treatments are evident. The application of clay slurry is still used, which has then been smoothed or wiped. Some of the Ellington examples have been quite roughly wiped and are similar to pots, which have been 'rusticated', a surface treatment peculiar to east Kent and of continental origin in the early-middle Iron Age (Macpherson-Grant 1991, 41–3). The sherds do not have the 'encrusted' effect that some rusticated sherds can have. It is tentatively suggested that the Ellington examples may represent some form of transitional period from the end of the late Bronze Age into the Iron Age. The applications of clay slurry on pots are also noted by Macpherson-Grant at Monkton Court Farm (Macpherson-Grant 1994, 258).

Wiping and smoothing

Wiping and smoothing are common types of surface treatment. Grass or straw wiping is evident on some sherds, and other examples have been wiped with the fingers often in a horizontal fashion. Finger wiping may have been used to smooth and bond coil or slab joins. The smoothing on some of the pots may actually be a very superficial burnish, but is it difficult to tell because of the poor condition of the sherds.

Rustication

Three sherds from Ellington appear to be rusticated, and fairly thick clay slurry has been applied and then 'roughened'. The presence of rusticated sherds at Ellington suggests that occupation continued into the early Iron Age.

Basal Flints

Thirteen fragments of base sherds, which probably represent eight vessels, have flint chips on the exterior of the base (Fig 19, 21–23). These range in date from the middle to late Bronze Age transition through to the earliest Iron Age and may indicate that manufacture of the pot was carried out on a bed of burnt and crushed flint to prevent the pot from sticking. This form of surface treatment has been noted for late Bronze/early Iron Age assemblages from Kent (Macpherson-Grant 1991, 19; 1994, 253), and occurs on several prehistoric sites. It is interesting to note that much of the flint is very fine, and has been crushed very well, and not all the flint appears to have been calcined. This would have made the crushing of the flint quite difficult. The base sherds themselves have been made with fabrics that are fairly coarse in terms of the inclusion of larger pieces of poorly sorted flint, so even though fine flint was available the potters may have deliberately chosen not to use it to make these particular vessels. The size of the inclusions within a pottery fabric varies with the size of the vessels, wall thickness, and the intended function of the pots. Therefore, potters making small, medium and large vessels could be expected to use tempers with different particle sizes (Rye 1981, 27). The flint may be crushed by the potters themselves, who can then grade the fragments possibly by sieving. Basal flints offer an interesting snapshot into the technological decisions made by potters.

Decoration

The Ellington School assemblage is largely undecorated and only 319 sherds (5.3 per cent) display any form of decoration. The decorative techniques are as follows:

D1: Fingernail decoration on the exterior of the rim (Fig 19, 6)
D2: Fingertip decoration on the shoulder (Fig 19, 4)
D3: Applied cordon (vertical) with small round impressed holes (Fig 19, 18)
D4: Thin applied horizontal cordon (more like a belt) around the top of the exterior of the rim (Fig 19, 6)
D5: Applied cordon with diagonal slashed decoration (Fig 19, 13).
D6: Applied cordon with fingertip impressed decoration (Fig 19, 15).
D7: Horizontal tooled lines with diagonal hatching in between the lines (Fig 20, 49).
D8: Horizontal tooled lines (Fig 19, 31–32).
D9: Cable decoration on top of the rim (Fig 20, 38).
D10: Fingernail decoration on top of the rim.
D11: Early prehistoric decoration. Horizontal incised grooves 2-3mm apart possibly made by a comb (Fig 19, 3)
D12: Horizontal incised decoration (Fig 20, 43).
D13: Plain applied cordon (Fig 19, 9).

Lack of decoration may be partly due to the fragmentary condition of the pottery, but this is also fairly typical of the largely undecorated assemblages dating to the beginning of the first millennium BC as defined by Barrett (1980). Of the pottery from Ellington 39.4 per cent can be assigned to this period. Decorative techniques increase during the late Bronze Age decorated phase; however, the actual percentage of pots that are decorated remains quite low. This trend can be seen on other Kentish sites of the same period, for example at Ramsgate Harbour Approach Road just 4 per cent of the assemblage is decorated (McNee 2006b); at Saltwood Tunnel 3 per cent of the assemblage is decorated (Jones 2006c), and at Little Stock Farm just 5.5 per cent of the sherds are decorated (Bryan 2006).

The decoration of pots during the early prehistoric period at Ellington is confined to horizontal incised grooves 2-3mm apart possibly made by a comb (Fig 19, 3). The pot is quite worn, but the grooves would probably have been quite pronounced in its original state. The decoration is similar to a grooved ware pot from Eyhorne Street (Edwards 2006a).

Decorative techniques employed during the middle Bronze Age period are restricted to fingertip impressions on top of the rim and on the shoulder, and this form of decoration continues into the middle to late Bronze Age transitional period. Two vessels during this transitional period have applied cordons (Fig 19, 10), and an additional sherd has an applied cordon with fingertip decoration (Fig 19, 15). One rim sherd has fingernail decoration on the exterior of the rim (Fig 19, 6).

Decoration during the late Bronze Age plain phase is restricted to one rim sherd, which has 'pie crust' decoration on top of the rim (Fig 19, 28); seven sherds with applied cordons (Fig 19, 13, 14 and 30), and a small body sherd with tooled decoration (Fig 19, 33). A further vessel has a vertical applied cordon, which has been decorated with small round holes (Fig 19, 18). The cordon has snapped off but is possibly a 'horse shoe' shaped cordon. This decoration is quite unusual and is usually found on middle Bronze Age ceramics; however, the Ellington example is more typical of a late Bronze Age form. It is possible that it represents a transition form and might be dated to the earlier part of the late Bronze Age.

The most popular decorative technique employed during the decorated phase is horizontal tooling, and this mostly occurs on quite fine burnished vessels. This decoration is similar to the decorated pottery from Monkton Court Farm (Macpherson-Grant 1994, fig 9), and also Ramsgate Harbour Approach Road (McNee 2006b, fig 6/57). One sherd is decorated with tooled triangles and this decorative technique occurs at Monkton Court Farm (Macpherson-Grant 1994, fig 5/3) and Iwade (Hamilton and Seager Thomas 2005, fig 35/6).

Further decorative techniques occurring during the decorated phase include one rim sherd with tooled decoration (Fig 20, 49); one very worn rim sherd with fingertip impressions on the shoulder and on top of the rim and one rim sherd (form type R17) with cable decoration on top of the rim (Fig 20, 36). The early Iron Age pottery is completely plain, with the exception of one vessel, which has an applied 'belt' cordon (Fig 21, 56). Almost all of the early Iron Age pots display some form of surface treatment and suggests that surface treatments have now replaced decoration as the preferred mode of vessel embellishment.

Use-wear

There is little evidence of vessel use, however 102 sherds (1.7 per cent) have sooty residues either on the interior or the exterior of the vessel. Only one sherd is sooted on both the interior and exterior. This suggests the use of these vessels in a cooking activity. The majority of the sherds are body sherds with the exception of two base sherds (base type B1, and one small rim sherd (rim type R4). Form type R4 is a fairly straight sided vessel and a suitable form for cooking as the absence of corners or angles can minimise natural shock (Rye 1981, 27; Rice 1987, 233). Most of the pots have been wiped, and surface roughening can enhance the properties of cooking vessels (Rice 1987, 232).

The assemblage contains two vessels bearing post-fired perforations (Fig 19, 28). Holes drilled after firing are generally regarded as repair holes, enabling cracks or breaks to be repaired by binding (Cleal 1988, 139).

Discussion

Groups producing very small quantities of mostly indeterminate pottery have not been discussed. The Prehistoric Ceramic Research Group guidelines recommend that the minimum number of sherds from which the dating of occupation can be determined with any confidence is in the range of 25-30 sherds (PCRG 1995, 21). The investigation of the Ellington site was divided into four areas (Fig 2).

Area 1

Pit F21 contained six coarse body sherds dating to the middle to late Bronze Age and also the late Bronze Age plain phase. Pottery from post pits (F9 and F11) consists of fairly worn body sherds dating to the late Bronze Age plain phase and decorated phase. Pottery from pits (F14 and F15) belongs to the decorated phase, and there is also one very worn middle to late Bronze Age sherd in pit F15.

Ditch F20 contained several worn body sherds dating to the late Bronze Age plain phase. More late Bronze Age plain phase pottery can be found in large pit or ditch terminal (F18) and includes two bowls (form types R14 and R22). This feature also contained late Bronze Age decorated phase pottery. Ditch F2 contained a large assemblage of both late Bronze Age plain phase and decorated phase pottery. The primary fill contained worn body sherds consistent with those of a late Bronze Age plain phase tradition. The upper fill contained a mixture of both late Bronze Age plain and decorated phase pottery, including a large coarse shouldered jar (form type R3, Fig 19, 34). A second slot [S6] across this ditch revealed a similar pattern. The basal fill contained late Bronze Age plain phase pot, including a coarse bowl (type R22, Fig 19, 24). Other deposits within this feature contain a mixture of late Bronze Age and decorated phase pottery, and also two worn middle to late Bronze Age pottery.

Ditch F1 contained pottery dating to the late Bronze Age decorated phase. To summarise, pit F21 contains pottery, which can be phased to the middle to late Bronze Age, and the earliest part of the late Bronze Age. The middle to late Bronze Age sherds found in ditch F2 might be redeposited material. Ditch F20 contained late Bronze Age plain phase sherds only. Ditch F2 and F1 contained a mixture of both late Bronze Age plain and decorated phase pottery. This might suggest post depositional disturbance of the pottery within these features. It might also suggest a chronological

overlap between the two phases of pottery, and therefore a date range could be around 800 BC. It might also be the case that these features were in use for quite a long period of time. Nonetheless, features within this area show distinct phases of activity.

Area 2

Cremation group G5, F25
This included a small base of a middle Bronze Age cremation urn, and several body sherds. The urn was probably deposited whole but is badly damaged, with no surviving rim. It is very worn and may have been used in a domestic context prior to being used in a funerary context.

Pit features F204 and F205
F204 contained half a base (Fig 19, 19) and several body sherds belonging to a late Bronze Age (plain phase) pot. F205 also contained several body sherds and a rim (form type R17) belonging to a late Bronze Age plain phase pot. Both pots had been placed *in situ*. The pots are slightly later than the F25 cremation urn, but their deposition may suggest that this particular area was used for special events over a long period of time.

Pit group G9
Five pits from this group produced late Bronze Age plain phase pottery (F176, F177, F178, F191, F193); including a jar (form type R18, Fig 19, 27), which derived from pit F191. One sherd of worn Deverel-Rimbury pottery was also found in F191. The condition of the pottery would suggest the pits were used for rubbish disposal.

Pit group G11
Most of the pottery deriving from pit F180 belongs to the late Bronze Age plain phase. It is worn with a low mean sherd weight and may represent discarded rubbish. Context 2086 is a deposit above F180 and this produced decorated phase pottery, and also some worn middle to late Bronze Age body sherds. Pottery from pit F179 appears very slightly later (decorated phase). The sherds have a higher than average mean sherd weight but are very worn. The pottery may have come from a domestic context where it would have been well used and disposed of during a clearance of some description. Pottery from F183 and F184 also dates to the decorated phase. The ceramics indicate that these pits were used and re-used from the late Bronze Age plain phase and this continued into the decorated phase. The pottery may have derived from different sources. The presence of middle to late Bronze Age pottery may suggest that some rubbish dumps were in use for a long period of time, and or it may simply represent the removal and re-deposition of pottery.

Ditch group G17, F208, F222 and F223
Ditch F222 represents the earliest of these ditches and contains twenty sherds of middle to late Bronze Age pottery. F208 and F223 contain late Bronze Age plain phase and decorated phase pottery. F208 also contains a sherd of middle to late Bronze Age pottery, which may have been redeposited from F222, and a large base sherd, which is very similar to one found in F204. There are no sherd joins, but the fabric is almost identical, and vessel diameter is the same. The two bases may be contemporary, or even belong the same pot, although it is very difficult to tell. If the bases do join it would suggest that the pot in F209 had not been deposited whole, but rather selected sherds were chosen for deposition.

Ditch group G19
Ditch segments F95, F218 and F220 appear to be quite contemporary. Late Bronze Age decorated phase pottery was recovered from these features and includes two form type R17 vessels (Fig 19, 28), and three burnished body sherds decorated with horizontal tooling. The general condition of the pottery is fairly worn but does include some larger than average sherds including a large base. This might suggest that the pottery has derived from different sources.

Miscellaneous pits F27, F192 and F197
Pit F27 contained a mixed assemblage of middle to late Bronze Age pottery and late Bronze Age plain phase sherds, and includes a late Bronze Age bowl (R22, Fig 19, 29). A small 'placed' deposit (2167) was also present which consisted of pot sherds, animal bone, lumps of burnt daub and fragments of sandstone. The pottery dates to the late Bronze Age and consists of worn coarse body sherds. This suggests that pottery we may consider to be discarded rubbish was at times deliberately deposited, and therefore of importance to the inhabitants.

Pit F192 produced a large assemblage of pottery (249 sherds). The majority of the pottery can be phased to the whole of the late Bronze Age, and includes two jars (Fig 20, 52), two jars (form type R17, Fig 20, 39), and a half of a tiny base sherd (Fig 20, 48). There are also a number of worn body sherds, which may belong to a middle Bronze Age phase, or even earlier. Finally, pit F197 has a very mixed assemblage of pottery dating from the later stages of the middle Bronze Age and continuing throughout the late Bronze Age.

Miscellaneous ditch segments
Six hundred and twenty-six sherds were recovered from this group and span the whole of the late Bronze Age. Ditch F22 contained late Bronze Age plain phase pottery including three coarse base sherds, and a mixture of late Bronze Age plain and decorated phase pot. The sherds are in good condition but very small and might suggest the pots were smashed before being deposited. F87 contained late Bronze Age material including half a small base, which is in fairly good condition, and may have been deliberately deposited.

Area 3

Pit group G71
Pit F237 contained middle to late Bronze Age pottery sherds, including a coarse ovoid jar. Pit F246 also contained middle

to late Bronze Age sherds, which may suggest that these two features are contemporary.

Feature F364
This feature contained a crushed *in situ* early prehistoric vessel. The problems regarding the dating of this vessel have already been discussed as the pot contains characteristics of both grooved ware and beaker pottery and appears to be a hybrid of both ceramic styles.

Area 4

Pits and other features
Pit F118 contained middle to late Bronze Age pottery including a bucket jar (form type R1, Fig 19, 7). The pottery is in quite a good condition with a higher than average mean sherd weight, which may suggest careful and deliberate deposition.

Pit F138 contained a large assemblage of pottery (617 sherds). Pottery from the primary context was found in association with a large assemblage of worked flint including two polished flint axes. Analysis of the flints suggests that these appear to date to the Neolithic period. As previously mentioned precise identification of each sherd is problematic and it is possible that the pit contains a mixture of pottery dating to both the early Neolithic and latter stages of the late Bronze Age decorated phase and the start of the early Iron Age. The size and condition of the sherds appears to fall into three categories: (1) the assemblage contains large and freshly broken sherds; (2) some sherds are medium sized and in very good condition with fine polished surfaces and fresh edges; (3) some sherds are small and worn.

No complete vessels are present, but the assemblage contains thirty-two rims, which are in good condition, mostly belonging to burnished bowl forms (R6, R8, R9 and R11). Form type R6 particularly dominates the assemblage, and most of the bowls are medium size, with rim diameters of between 20cm and 28cm. The size range of possible bowl type R10 is more varied and is represented by both small and medium size vessels (Fig 21, 58). Form type R9 is quite small, with rim diameters of between 14cm and 16cm. Jar form type R7 is present within the assemblage, and can be classified as large, with a rim diameter of 34cm (Fig 21, 56). None of the rims are joining, and although they appear quite similar it is suggested that most of them belong to different vessels, maybe as many as thirty.

The vessels found within the pit would have been suitable for a range of activities, such as the preparation and serving of communal meals. The pottery itself may have come from different sources prior to deposition. Pots which are in very good condition may have been deliberately smashed and placed within the pit soon after breakage. An alternative explanation is the sherds were kept in a protected environment and therefore not subjected to a great deal of wear and tear. Sherds which are quite worn may have derived from a rubbish dump. If the pit was filled within a single act, it may suggest that freshly broken pots were mixed with pots, which had fallen out of use. Although the majority of the sherds have been phased to the early Neolithic and the early Iron Age a few sherds might be slightly earlier (late Bronze Age decorated phase). It is sherds from this phase that are quite small and worn, and further suggests pottery placed on top of the flint tools derived from different sources. The upper fill of the pit contained sherds, which appear contemporary with those associated with the Neolithic flint work. These sherds are fairly worn, and may either represent redeposited material, or pottery deriving from a rubbish dump, which has been used to seal the pit.

Some of the early Neolithic rim sherds are similar to those recovered from Thanet Earth in terms of form, fabric, surface finish and wear. The vessels from both sites may have been deliberately broken and deposited soon after breakage, or carefully curated before final deposition (McNee 2013). There are however differences between the nature of deposition relating to these two assemblages. At Thanet Earth it is more likely that pottery from more or less whole vessels were buried (*ibid*) and at Ellington it is possible that token rim sherds from a number of different vessels were chosen for deposition. Previous research relating to Neolithic depositional practises has demonstrated that pits can contain whole pots, but more often parts of a number of vessels are found, implying that the material had been selected from more substantial deposits (Thomas 1999, 68).

Pottery from pit F144 is comparable to the pottery from F138 and suggests a group of related material which includes a few early Neolithic sherds. Although there are no obvious sherd joins some pottery from context F144 is very similar to pottery from pit F138 and may be from the same pot. Pots from the same vessel that have ended up in different pits may have derived from the same source, possibly a rubbish dump or a carefully curated midden, which was then cleared into open pits. Pits F138 and F144 could have been filled in at the same time.

Pit F121 contained pottery dating to the late Bronze Age plain phase. Most of the pot is in very poor condition. Pottery from pits F142 and F143 are also in quite a poor condition and may date to the late Bronze Age. A few body sherds from F142 are quite similar to those recovered from F138, and it is therefore possible that a small number of early Neolithic sherds might be present. Pottery from the lower fill of pit F143 is consistent with late Bronze Age plain phase ceramics. Pottery from the upper fill includes some coarse worn sherds, which are probably late Bronze Age plain phase, and also some decorated phase pot.

Forty-five sherds were recovered from the upper fill of pit F120. They include sherds from a middle to late Bronze Age pot with fingertip decoration (Fig 19, 11). There are also some worn middle to late Bronze Age sherds deriving from a nearby ditch feature F65, ditch feature F72 and ditch feature F59. It is interesting to note the presence of a rim sherd with a possible 'horse shoe' shaped cordon within F55 (Fig 19, 18). This is a late Bronze Age plain phase form with a middle Bronze Age decoration and could be dated to

the middle to late Bronze Age transition or the earlier part of the late Bronze Age.

More middle to late Bronze Age sherds can be found in quarry pit F260. Some of the pottery appears a little earlier, dating to the middle Bronze Age. Middle and middle to late Bronze Age sherds were also recovered from hollow way F50; ditch F63; pit F114; pit F116 and ditch F266. Finally, a middle to late Bronze Age pot (Fig 19, 6) was placed within a small pit F113. The presence of Deverel-Rimbury and middle to late Bronze Age pottery within this particular area may suggest a distinct phase of earlier occupation at Ellington.

Pottery dating to the late Bronze Age decorated phase and early Iron Age were also recovered from hollow way F50. Context 4112 was a pottery spread, which overlaid the hollow way, and this produced early Iron Age pottery, including a burnished bowl (Fig 21, 63), and a possible late Iron Age base sherd. Some of the pottery is similar to the ceramics recovered from pits F138 and F144, and this feature may have been used for rubbish disposal.

Sunken-floored building G52 (see Anglo-Saxon pottery report below)

Organic-tempered plain body sherds dating to the Anglo-Saxon period and a Roman base sherd were recovered from this feature. The one Roman base sherd is very worn and is an unusual form. It is an Oxford colour-coated ware and dates to AD 250–400 (Jonathon Dicks, pers comm).

Conclusion

The prehistoric settlement at Ellington School produced a very large assemblage of prehistoric pottery and is a site of some significance. In terms of the ceramics, the earliest phase of activity is represented by fragments of early Neolithic bowls recovered from pits F138 and F144. A few sherds may also be present in feature F142. A very late Neolithic or early Bronze Age *in situ* vessel in Area 3 represents the next phase on the site. A few pottery sherds may date to the early to middle Bronze Age, but it is difficult to tell. There may therefore be a hiatus of activity during this period (2000–1600 BC). The next phase of ceramic activity begins in the middle Bronze Age. A cremation urn was excavated in Area 2 to the north of the site, and sherds of Deverel-Rimbury pottery were recovered from pits also in Area 2. More middle Bronze Age pottery derived from pits in Area 4, and several sherds of middle to late Bronze Age were also found in pits and ditch segments within this area and Area 2. This might suggest that a middle Bronze Age settlement area of some size existed in this area.

The ceramic evidence would suggest continuous occupation from the middle Bronze Age into the late Bronze Age. Late Bronze Age plain phase pottery appears in all four areas of the site. Occupation continues into the late Bronze Age decorated phase and the early Iron Age, but it is interesting to note that Area 3 appears to be devoid of any decorated phase pottery, and early Iron Age pottery is only found in areas 2 and 4. This might suggest that Area 3 was not used very much in the latest Bronze Age, however a small assemblage of sherds recovered from this area could not be identified with any degree of certainty, and these may represent later material. The majority of the very latest late Bronze Age and early Iron Age pottery occurs in Area 4 and might suggest that this area becomes the main focus of activity, or an area where the inhabitants came together for social events.

Ellington is characterised by deliberately placed objects including five almost complete pots. Although pit and ditch features at Ellington may have been used for the routine disposal of rubbish, deliberate deposits of material on later prehistoric sites were common (Hill 1995, 82), and some pit features appear to contain special deposits. The presence of very fresh pottery deliberately deposited with worn pottery suggests that there may be more symbolic properties in the choice of material selected for deposition and its context (*ibid*). Hill, re-analysing the quantities of rubbish found in a range of contexts on Iron Age sites concluded that little of the rubbish created on site actually enters the archaeological record. This may help explain the paucity of rim sherds at Ellington and also suggests that the deliberate deposition of sherds which we would consider to be rubbish was in actual fact of some significance to Bronze Age people. The pottery recovered from context (2167) (F27) may be a good example of this. A similar example may be found at Stansted Airport in Essex. The pottery from a pit feature here contained large unabraded sherds and highly abraded sherds and may represent the transfer of material from a surface midden as a deliberate act rather than as casual rubbish disposal (Brown 2004, 53).

Some of the pots found in pit F138 are in good condition and it is tentatively suggested that maybe they were made especially for use at a feast. None of the pots from this context, or pit F144 display any evidence of use wear apart from one small sooted body sherd, and this could suggest that it is the containers used for eating and drinking activities that were disposed of within these pit features, and that cooking pots were disposed of elsewhere. The special depositions also include some household rubbish and may have been deposited together at a community event.

At some point during the early Iron Age activity at the site appears to cease. The evidence for site abandonment is a feature of the emerging pattern of prehistoric Kent (Champion 2007, 102). This pattern also occurs in other regions, for example at Broom in Bedfordshire where two pits were cut on the abandonment of a roundhouse and infilled with large amounts of broken pottery including a wide range of vessels with fresh breaks (Mortimer and McFadyen 1999). It is possible that the pottery was deliberately smashed and buried on abandonment (Brück 2001b, 153), and that on some sites special closing deposits appear to have been made on abandonment (*ibid,* 151). This may well be the case at Ellington.

A date range for the Ellington site has tentatively been suggested. The early Neolithic sherds may be estimated to fall between 3900-3700 cal BC (Radiocarbon age of associated material 3783–3638 cal BC). The early

prehistoric grooved vessel may date to around 2200 BC or slightly earlier. The next definite phase of occupation commences in the middle Bronze Age (1600 BC), and continues into the early Iron Age or early to early middle Iron Age (600–500 BC). The ceramic assemblage at Ellington shares similarities with Ramsgate Harbour Approach Road (McNee 2006b) and with Monkton Court Farm. The main phase of occupation at Monkton appears to be between 800–600 BC, and the site also appears to have been abandoned around 600 BC, or a little earlier (Macpherson-Grant 1994, 287). It is therefore suggested that Ellington was abandoned a little later than Monkton. It is difficult to say when Ellington became occupied again. There are a few scraps of pottery which may be of late Iron Age to early Roman date, and the presence of an Oxford colour-coated ware base the sunken-featured building (G52) may suggest Romano-British activity, although the sherd could also have been brought to the site by the people who occupied the structure.

Catalogue of illustrated sherds

Fig 19

1: Rim from a late Neolithic vessel, same pot as Fig 20, 39 and 40. Fabric GF2; context 3020; prn 236.
2: Base sherd from a late Neolithic vessel. Fabric GF2; context 3020; prn 237.
3: Grooved decoration. Fabric GF2; context 3020; prn 238.
4: Body sherd decorated with fingertip impressions. Fabric F1; context 3288; prn 30.
5: Base sherd from a middle Bronze Age cremation urn. Fabric F1; context 2019; prn 1.
6: Middle to late Bronze Age jar. Fabric F1; context 4003; prn 6.
7: Middle to late Bronze Age jar. Fabric F2; context 4075; prn 3.
8: Rim sherd from a middle to late Bronze Age jar. Fabric F1; context 3113; prn 239.
9: Middle to late Bronze Age body sherd with applied cordon. Fabric F1; context 2296; prn 433.
10: Rim sherd with applied cordon. Fabric F2; context 2283; prn 529.
11: Middle to late Bronze Age sherd with fingertip decoration. Fabric F1; context 4182; prn 10.
12: Body sherd from a middle to late Bronze Age jar with fingertip decoration. Fabric F1; context 2086; prn 253.
13: Body sherd with applied cordon and diagonal slashed decoration. Fabric F3; context 1033; prn 127.
14: Body sherd with thin applied cordon decorated with diagonal slashed decoration. Fabric F5; context 5006; prn 566.
15: Body sherd with applied cordon decorated with fingertip impressions. Fabric FG1; context 1033; prn 128.
16: Late Bronze Age jar. Fabric F6; context 1034; prn 139.
17: Late Bronze Age bowl. Fabric F5; context 1033; prn 124.
18: Late Bronze Age jar with applied cordon. Fabric F2; context 4105; prn 16.
19: Late Bronze Age base. Fabric F4; context 2033, prn 23.
20: Late Bronze Age base sherd. Fabric FQ3; context 1007; prn 386.
21: Base sherd with flint gritted base. Fabric F3; context 2350; prn 449.
22: Base sherd with basal flints. Fabric F4; context 1034; prn 138.
23: Base sherd with a flint gritted base. Fabric F3; context TR1 13; prn 310.
24: Late Bronze Age bowl. Fabric F3; context 1048; prn 353.
25: Late Bronze Age bowl. Fabric F6; context 1000; prn 365.
26: Late Bronze Age vessel. Fabric F1; context 2180; prn 17.
27: Late Bronze Age jar. Fabric F5; context 2136; prn 204
28: Rim sherd with cable decoration on top of the rim, and one repair hole. Fabric F5; context 2030; prn 470.
29: Late Bronze Age bowl. Fabric GF1; context 2023; prn 378.
30: Sherd with applied cordon decorated with fingertip impressions. Fabric F3; context 2223; prn 337.
31: Body sherd with horizontal tooled decoration. Fabric FQ6; context 2077; prn 557.
32: Body sherd with shallow horizontal tooled decoration. Fabric QS2; context 2005; prn 276.
33: Body sherd with tooled decoration. Fabric F9; context 2128; prn 281.
34: Large late Bronze Age jar. Fabric F3; context 1025; prn 150.

Fig 20

35: Late Bronze Age bowl. Fabric FQ3; context 303; prn 316.
36: Late Bronze Age jar with decoration on top of the rim. Fabric FQ3; context 305; prn 317.
37: Late Bronze Age vessel. Fabric F6; context 1000; prn 366.
38: Rim sherd from a late Bronze Age jar with decoration on top of the rim. Fabric F6; context 2030; prn 166.
39: Late Bronze Age jar. Fabric FQ3; context 2223; prn 341.
40: Rim sherd. Fabric QS1; context 2074; prn 292.
41: Late Bronze Age bowl. Fabric F3; context 4047; prn 491.
42: Late Bronze Age jar with fingernail impressions on the exterior. Fabric FQ3; context 1034; prn 141.
43: Body sherd with incised decoration. Fabric F7; context 2223; prn 336.
44: Late Bronze Age shoulder sherd, Fabric F5; context 2030; prn 41.
45: Small base sherd from a possible cup. Fabric F4; context 2063; prn 245.

46: Late Bronze Age base sherd. Fabric F5; context 1003; prn 222.
47: Late Bronze Age base. Fabric F6; context 2086; prn 410.
48: Late Bronze Age base with basal flints. Fabric F3; context 2223; prn 340.
49: Late Bronze Age body sherd with tooled decoration. Fabric F7; context 1025; prn 153.
50: Rim sherd. Fabric FQ3; context 4114; prn 184.
51: Possible open bowl. Fabric FQ3; context 4322; prn 106.
52: Late Bronze Age or early Iron Age jar. Fabric FQ1; context 2259; prn 192.

Fig 21

53: Early Neolithic bowl. Fabric QS2; context 4322; prn 60.
54: Early Neolithic bowl. Fabric FQ3; context 4321; prn 215.
55: Late Bronze Age decorated phase pot. Fabric F5; context 4322; prn 103.
56: Jar with a round topped rim, and a 'belt' cordon. Fabric FQ5; context 4322; prn 44.
57: Bowl with flaring rim. Fabric FQ3; context 4322; prn 46.
58: Early Neolithic vessel. Fabric FQ3; context 4322; prn 49.
59: Early Iron Age bowl? The shoulder and neck have been poorly joined, and the interior roughly wiped/ burnished. Fabric FQ/4; context 4322; prn 43.
60: Early Neolithic bowl? Fabric F6; context 4322; prn 59.
61: Rim sherd with highly burnished interior. Fabric FQ3; context 4322; prn 50.
62: Early Neolithic bowl. Fabric FQ3; context 4322; prn 62.
63: Early Iron Age bowl. Fabric F3; context 4112; prn 26.
64: Early Neolithic bowl. Fabric FQ3; context 4321; prn 215.
65: Early Neolithic bowl. Fabric FQ/3; context 4322; prn 47.
66: Early Neolithic or early Iron Age bowl. Fabric FQ3; context 4321; prn 216.
67: Early Neolithic bowl. Fabric FQ3; context 4322; prn 48.
68: Iron Age foot ring base. Fabric GF1; context 4112; prn 28.

Post-Roman pottery

Luke Barber

The archaeological work at the site recovered eighty-three sherds of post-Roman pottery, weighing 453g, from seven individually numbered contexts. The material, which has been fully listed for archive on an excel spreadsheet, is of two distinct periods. Details of the small later period assemblage, which was all post-medieval in date are not presented here and are retained in the archive.

The vast majority of the assemblage can be ascribed an early/mid Anglo-Saxon date. This period accounts for eighty-one sherds (weighing 417g), representing an estimated seven different vessels from five different contexts. The average sherd size is small (5.1g) and there is a high percentage of small chips and sherds to 15mm across. Most sherds exhibit some signs of erosion to their breaks but on the whole the material is in good condition, particularly when one considers the low-fired nature of the vessels. Two fabric groups are represented. The most common is organic tempered (EMS 4) which accounts for sixty-five sherds (265g). The other fabric (16 sherds weighing 152g) is essentially a reduced black fine/medium sandy ware with rare to sparse voids left by organic inclusions (EMS 1/4). It is better fired than EMS 4 hence its higher average sherd size (9.5g). Very few feature sherds are present in either fabric. Vessels are hand-made, usually reduced, and devoid of decoration.

Ditch F94 only contained EMS 1/4 sherds (7/79g), including a rounded basal angle from a jar. Pit F183 contained only two sherds (67g) both in EMS 4 one of which may be from a carinated jar. The largest group came from the SFB G52, the upper fill of which (context 4020) contained forty-three (161g) sherds of EMS 4, including the shoulder of a crude jar with simple hooked rim, and eight body sherds (66g) of EMS 1/4. The fill below, context 4106, contained a further twenty small body sherds (37g) in EMS 4. The assemblage probably represents a relatively short period of occupation between the mid sixth and seventh centuries though more diagnostic pieces would be required to be certain of this.

The late Bronze Age hoard

Sally Worrell with Barbara McNee and Andrew Richardson

During the excavation an incident of illegal metal detecting at the site resulted in the discovery and removal of a large assemblage of late Bronze Age metalwork and an associated pottery vessel. The metal detectorist reported the discovery of some of these finds to the Trust for Thanet Archaeology and to the Finds Liaison Officer for Kent. The find-spot, less than 1m from the stripped area (Area 2), was subsequently located by members of the excavation team. Re-excavation of a loosely backfilled hole revealed a shallow pit [F211] containing a fragment of a socketed axehead and six pottery sherds (Worrell 2008, Addendum nos 8 and 9). Subsequent action by Kent Police recovered additional objects from the finder's home (Worrell 2008, Addendum nos 1–7)); the finder admitted that these were from the site at Ellington, but claimed they were found between two spoil heaps, rather than together with the rest of the material. It is likely, however, that all these pieces were deposited as a single hoard and that they were recovered together. It may also be possible, despite the best efforts of Kent Police, that not all of the pieces were recovered from the finder.

The combined assemblage, with the case number 2005 T261, was declared Treasure by the Coroner for North East Kent at inquest in early 2006 and subsequently deposited at the Powell-Cotton Museum, Birchington (Worrell 2008). The finder received a caution for theft.

Circumstances of discovery

The hoard was located in a shallow pit about 10m south of a complex of mid to late Bronze Age and early Iron Age ditches, trackways and settlement features, either in, or in association with, a fragmentary pottery vessel. The finder reported that the axeheads and ingots were found at the base of the pit, the spearheads had their blades pointing downwards and with the sword blade fragments placed above and criss-crossing each other.

The pottery vessel

Barbara McNee

The fifty-one sherds of pottery associated with the metalwork weighed 365g, with a mean sherd weight of 7.2g. The surface of some of the sherds is fairly worn, and the edges are quite fresh. The assemblage consisted of body sherds belonging to the same vessel. The pot has been made with a coarse flinty fabric (fabric type F/9, see above). There is evidence of a coil join, and a few sherds have sooting on the exterior. This suggests use in some form of cooking activity. The pot has been burnished on both the interior and exterior to a very high standard. A thin clay slip has been applied, and this would have helped disguise some of the flint inclusions, create a smooth surface, and subsequently aid the burnishing process.

It is unclear whether the pot was complete prior to its illegal removal by a metal detectorist, and it is possible that parts of the vessel were not recovered. However, the lack of featured sherds may indicate that the pot was not complete when buried. An alternative explanation is the pot may have been buried complete and used to accompany the metalwork. It has become fragmented as a result of post depositional events, and this has resulted in a pot, which is missing its entire rim, base, and shoulder. The mean sherd weight is fairly low, and this is often consistent with pottery that has not been deposited in a complete state and had derived from a midden or rubbish tip. The breakage patterns, and wear on some of the sherds, are also suggestive of this.

Overall, the prehistoric pottery assemblage from Ellington is substantial, and the lack of featured sherds has been referred to above. It has been suggested that certain parts of the pot may have been selected for deposition, and this might relate to unusual deposits, which signify a special event. It is interesting that a pot displaying a highly polished surface was chosen to accompany an assemblage of metalwork, and therefore the pot may have been especially selected because of its visual similarity to metalwork. Creative/transformative activities such as metalworking and potting were considered analogous processes because each was affected by heating and crushing (Brück 2001b, 158), and the deliberate deposition of pottery and metal within the same feature suggests a complex social act.

The possibility that a broken pot was used to accompany a hoard of metalwork is also significant. Jo Brück suggests practices involving the intentional destruction of artefacts and the specialized treatment, re-use or deposition of these fragments allowed Bronze Age people to conceptualize the passing of time both within and beyond their own lifecycles (Brück 2006, 297). On many sites special closing deposits were made on the abandonment of a roundhouse, perhaps involving the deliberate destruction of the settlement's set of ceramics (*ibid*, 300).

Ellington is characterised by deliberately placed objects including five almost complete pots, and a large assemblage of pottery deposited with much earlier Neolithic flint artefacts (see above). The hoard pot is another example of an unusual deposit and may signify the abandonment of the site. Dating this vessel is problematic; as close dating cannot be achieved with any degree of confidence when small body sherds alone are represented. However, the fabric, surface treatment and vessel thickness are all consistent with a late Bronze Age pottery tradition. Highly polished vessels tend to be more common towards the later end of the Late Bronze Age, and therefore a late Bronze Age Decorated Phase/earliest Iron Age date is suggested (800–600 BC).

Discussion

Sally Worrell and Andrew Richardson

This combined group of artefacts is made up of eighty-six late Bronze Age copper alloy objects and fifty-one sherds of Bronze Age pottery. The majority of the artefacts are types which commonly occur in late Bronze Age hoards in south-eastern Britain. There are six complete, twenty-one incomplete and fourteen fragments of socketed axes representing a minimum of at least thirty-two axes. The majority of the socketed axes are of south-eastern type and show signs of having been deliberately broken for inclusion in the hoard as scrap metal. In addition, there is one side-winged axe, two socketed knives, one socketed gouge, one Bugle-shaped fitting, nine Ewart Park sword fragments, one Carp's Tongue sword fragment, five spearheads, twenty-one ingot fragments and fifty-one pottery sherds. Of particular note are the socketed axes and spearhead (Worrell 2008, Addendum 1, nos 1–7). Although entirely contemporary and of similar forms to other artefacts within the main group, they are visually distinctive being either complete and well-preserved examples with well-defined decoration or as fragments with an atypical surface patination. It is very likely that they were originally deposited with the main group of artefacts.

The metal objects in the hoard date to the late Bronze Age, with some pieces dating to the Ewart Park phase (*c* 800–700 BC). The pottery vessel, which does appear to have been deposited in association with the metal hoard, suggests a date of deposition for the overall assemblage after 800 BC and perhaps as late as 600 BC.

The large numbers of broken tools, ingots of raw material and metalworking equipment may be interpreted as scrap and suggest that this is a deposit usually termed a 'founder's hoard'. Recent interpretations of such deposits have, however, moved away from straightforward explanations involving the hiding or storage of scrap intended for re-use (Barber 2003). A considerable number of similar late Bronze Age metal hoards are known from east Kent, a pattern that has been reinforced in recent years by both metal-detected and excavated finds. Indeed, the pattern of recent finds from across the South-east suggests that there is a greater concentration of these hoards in east Kent than elsewhere in the region. There is also a degree of consistency between hoards, both in terms of their composition and find-spots, which display a general association with coastal and/or river system localities. These consistencies suggest that notions of these assemblages as simple 'scrap' hoards need to be revised. Deposition of such hoards only took place during limited periods, and in specific areas, during the late Bronze Age, perhaps as a cultural response to particular circumstances (for example, the disruption of economic structures and networks). The interpretation of the practice of metal hoarding should therefore be approached as specific cultural behavior, rather than a simple functional hiding or storing of scrap metal. Thus, the metal hoard and associated pottery vessel from Ellington are best interpreted as the most elaborate of several deliberately placed deposits of metal and/or pottery at the site.

Metal small finds

Andrew Richardson

Apart from the late Bronze Age hoard, seven other metal small finds (three of iron, three of copper alloy and one with possible copper content) were recovered. These are catalogued and discussed below by material of manufacture as there are too few finds to discuss by functional group. The iron objects have not been described here as all were heavily corroded and undiagnostic. Details remain in archive.

Copper alloy objects

A length of copper alloy blade (No 1) was recovered. This is clearly of late Bronze Age date, probably *c* 1100–750 BC. The length of blade appears to have been deliberately cut at each end in antiquity, and it is likely that it represents a piece of scrap that has been cut down for recycling. Such blade sections are relatively commonly found in metal hoards. A small fragment from the same context (No 2) may be a piece of metalworking residue. Both finds were from Feature F204, which also contained an upright but damaged and incomplete pottery vessel of late Bronze Age date. The sword blade and fragment were underneath the vessel; it seems likely that all three represent a small placed deposit comparable in nature, if not in scale, to the metal hoard also recovered from this site. The presence of apparently placed ceramic vessels of late Bronze Age date in Features F205 and F206 nearby suggests that the sword blade and associated vessel in F204 was indeed part of a wider pattern of placed deposits at the site during this period.

Context 4158, a lower fill within the Anglo-Saxon sunken-featured building G52, contained a single copper alloy find, a disc-headed fitting that was probably a rivet. This could be of early Anglo-Saxon (fifth- to seventh-century) date but is not sufficiently diagnostic to date further. It could represent either a dress (most likely buckle or belt) fitting, or possibly a box fitting.

The broken fragment of copper alloy sheet (No 4) from context 4271 (a metalling of the hollow way F50) is undiagnostic, but its bright green patina would be consistent with a prehistoric or Roman date.

1. Fragment of copper alloy sword blade. Double-edged, with parallel sides and a lozenge-shaped cross-section. The blade has a worn transverse break at each end and is slightly bent towards one end. Length: 87mm, width: 33mm, thickness: 6mm, weight 71.1g. FN 384 (site FN 1), Context 2031 (F204). Not illustrated.
2. Irregularly-shaped fragment with a flat cross-section and rounded (worn?) edges. Small green spots suggest the presence of copper, but silica inclusions also appear to be present. Possibly a fragment of metalworking residue or waste? Length: 18mm, weight 3.9g. FN 385 (site FN 2), Context 2031 (F204). Not illustrated.
3. Copper alloy disc-headed fitting, probably a rivet. An off-centre, round-sectioned shaft projects from the underside of the oval disc. This shaft, which tapers very slightly towards its end, is broken at its narrow end. Length: 10mm, diameter of head: 12mm, diameter of shaft: 3.2mm, weight: 0.9g. FN 398 (site FN 16), Context 4158 (G52). Not illustrated.
4. Copper alloy sheet metal fragments. Two joining fragments forming an ovoid sheet of metal. Bright green patina overall, however the break is unpatinated suggesting it represents recent damage. Length: 27mm, width: 20mm, thickness: 2mm, weight: 3.3g. FN 403, Context 4271 (F50). Not illustrated.

Non-metal small finds

Lynne Bevan with Rob Ixer

Eight registered non-metal small finds were examined and have been catalogued and discussed in detail below. In addition, several potentially-worked stone items were examined and subsequently discounted as not having been humanly-worked and, as such, these are not included in the catalogue or discussion.

All small finds were examined individually, preliminarily identified, and then researched according to material group. All of the finds are catalogued and discussed separately by material of manufacture below, as there are too few finds to discuss by functional group.

This small assemblage of small finds was very well preserved, with nearly all of the items being identifiable and, to some extent, datable. The earliest item - two joining fragments from a polished, coarse-grained diorite axehead (No 9) - dates to the Neolithic period. The worked bone awl (No 8, Fig 22), may also be of prehistoric date. A possible quern fragment with one smoothed working surface (No 10, not illustrated) was probably of Roman date. The other items all appear to be of prehistoric or Anglo-Saxon date. These comprise an Anglo-Saxon green glass cylinder bead (No 8), three spindlewhorls (Nos 5–7, Pl 17) and possible loomweight fragments from a prehistoric post-hole (not illustrated, details in archive), all probably prehistoric in date.

Ceramic objects

Ceramic objects consisted of three spindlewhorls (Nos 5–7, Pl 17), the first two of which were biconical in shape and made from a similar grey-coloured, hard-fired, flint-tempered clay. The third, and largest, of the spindlewhorls (No 7) was of an irregular shape with a flattened base, distorted at one side, and made from a porous, reddish-brown fired clay.

Pl 17. Ceramic spindlewhorls, nos 5–7.

5. Spindlewhorl, biconical in shape, and made from a coarse, grey-coloured, hard-fired, flint-tempered clay. Diameter: 36 mm, height: 23 mm. FN 391 (site FN 8), Context 2128 (F94).
6. Spindlewhorl, biconical in shape, and made from a grey-coloured, hard-fired, flint-tempered clay, slightly less coarse in texture than Cat. No. 1, above. Diameter: 35 mm, height: 20 mm. Weight: 19g. FN 379. Unstratified.
7. Spindlewhorl, of a roughly biconical, though distorted, shape, made from a porous, reddish-brown fired clay. The circular perforation is slightly off-centre. Diameter: 56 mm, height: 18 mm. FN 386 (site FN 5), Context 2066 (F95).

Glass bead

A cylinder bead of opaque mid-green glass was recovered (No 8). This common type of Anglo-Saxon bead (Guido 1999, pl 4: 5iii, 41, fig 1) may have developed from the cut-cylinder beads of the Roman period (Guido 1978, 95).

8. Cylinder bead of opaque mid-green glass, a common type of Anglo-Saxon bead (Guido 1999, Pl 4: 5iii, 41, fig 1) which may have developed from the cut-cylinder beads of the Roman period (Guido 1978, 95). Single and double versions of this type of bead in green, terracotta-coloured and yellow glass, were mainly 'made and buried in the sixth to seventh centuries and they are sufficiently concentrated in Kent to suggest that some at least were imports' (Guido 1999, 43–4). Length: 5 mm, diameter: 7 mm. FN 397 (site FN 14), Context 4158 (lower fill of sunken-featured building G52). Not illustrated.

Worked stone

Worked stone finds from the site comprise part of a polished, coarse-grained diorite axehead (No 9) and a possible quern fragment with one smoothed working surface (Cat No 10, not illustrated). The axehead, which was in two joining pieces and which appears to have been partially burnt, was of Neolithic date. The possible quern fragment, of a common type of medium- to coarse-grained sandstone, was less diagnostic, though a Roman date seems likely for this item.

9. Part of a polished, coarse-grained diorite axehead, in two joining fragments, partially burnt. Neolithic. Dimensions: 60 mm x 60 mm x 15 mm. FN 381, Context 1035 (F1). Not illustrated.
10. Possible quern fragment with one smoothed working surface. Medium- to coarse-grained sandstone. Possibly Roman. Dimensions: 64 mm x 45 mm x 50 mm. Not illustrated. FN 378, unstratified.

Worked bone

Andrew Richardson

A single worked bone object was recovered from the site; a sheep or goat metapodial shaped into an awl. It was recovered from the lower fill (4322) of pit F138 of early Iron Age date (although the feature also contained Neolithic material).

8. Worked bone awl, crafted from a sheep or goat metapodial. Dimensions: 71mm x 15mm. Context 4322. Fig 22.

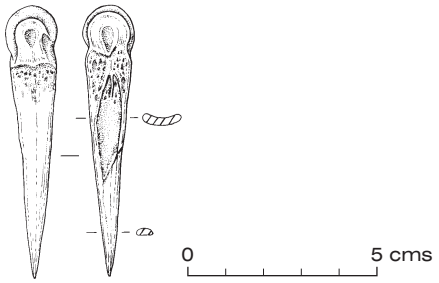


Fig 22. Bone awl (scale 1:2).

The animal bone

Susan Jones

The examined animal bone derived from both the hand-recovered assemblage and sieved samples. It included material from the evaluation trenches, the watching brief and full excavation. In total fifty-one contexts from the hand-recovered assemblage produced 800 fragments of animal bone which derived from three phases on the site. The majority of the contexts related to mid Bronze Age to early Iron Age features including enclosure and drainage ditches, post-holes, pits and a hollow way whilst other deposits derived from Anglo Saxon and modern features.

The sieved assemblage produced 1015 fragments of bone from twenty-three samples that derived from twenty-two contexts.

Methodology

All animal bones were identified to species and element with the aid of a comparative osteological reference collection and a number of reference publications (Amorosi 1989; Bosseneck 1969; Hillson 1992; Payne 1985; Prummel and Frisch 1986; Schmid 1972; France 2009). Where species could not be identified, bone was placed into size categories such as medium mammal (*c* sheep size) or large mammal (*c* cattle sized). Where possible the state of epiphyseal fusion was recorded for all species. Mandibular toothwear or eruption state was recorded for cattle, pig, sheep/goat according to the criteria set out in Grant (1982). Tooth crown height for equid teeth was recorded according to Levine (1982). These results were then utilised to calculate the estimated age at death for individuals according to Halstead (1985); Payne (1985); Hambleton (1999); Silver (1969) and Reitz and Wing (1999). Where possible, metrics were taken using the criteria laid out in Von den Driesch (1976) unless otherwise stated. Each bone was scanned for signs of pathological change or taphonomic alteration including level of completeness, gnawing, burning, butchery, erosion, and abrasion. Sieved material from samples was weighed and remains recorded in full for each context. All data was recorded onto an Excel database.

Results

Overall the assemblage contained 800 fragments of animal bone. The majority (97 per cent) derived from mid Bronze Age to early Iron Age contexts whilst 2 per cent originated from Anglo-Saxon features and 1 per cent from modern topsoil.

Most of the animal bone examined was in very poor condition. Much of the bone displayed extremely high levels of fragmentation and degradation with many fragments showing signs of splitting, exfoliation, root etching and abrasion. As a reflection of these characteristics only thirty-one out of fifty-one bone producing contexts produced any identifiable bone and 80 per cent of the fragments could not be identified to species. Most contexts produced fewer than twenty fragments whilst only three features produced over fifty (F22, F191, F138). It is likely from the highly weathered state of the fragments that some of these remains were left exposed to the elements for periods of time before becoming incorporated into the soil matrix and some may have been residual finds.

The species range identified included cattle, sheep/goat, pig, hare, red deer and wolf. A full inventory of the fragment counts per species for each context is retained in archive.

Mid Bronze Age to early Iron Age

In total 763 fragments of bone derived from forty-three contexts related to this period with 60 per cent originating from pit related contexts, 39 per cent from ditch contexts and 1 per cent from a hollow way. A number of pits relating to this period were highlighted as containing specially placed deposits that may relate to ritual activity. Those that contained animal bone were F27, F138 and F179. No articulating skeletons were identified in the assemblage.

Overall much of the assemblage was badly weathered and abraded. As a result, 38 per cent of the fragments could not be identified or categorised to size, 33 per cent were identified only as large mammal (*c* cattle size) and 10 per cent as medium mammal (*c* sheep size). Only two fragments of bone showed evidence of canid gnawing which were a sheep/goat tibia and a pig femur. No bone showed evidence of rodent gnawing and twelve fragments were burnt.

Out of the total number of fragments that were identified to species (n=147) 50 per cent were cattle, 22 per cent were sheep/goat, 22 per cent were pig, 3 per cent were horse, 2 per cent were red deer and 1 per cent was wolf. Whilst cattle fragments and sheep/goat fragments were found fairly evenly in both ditches and pit contexts, it is of note that pig

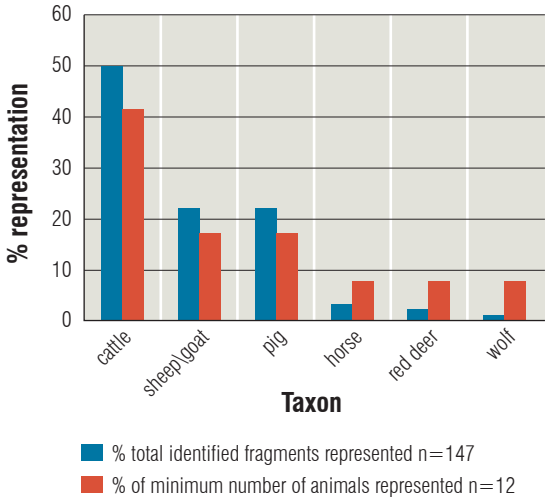


Fig 23: Comparison of species abundance calculated from the total fragment count (NISP) and the minimum number of individuals (MNI) for each species.

was clearly skewed towards pits with 70 per cent found in a single pit (F138). All the red deer fragments came from ditch contexts whilst the wolf and horse were only in pit deposits. The higher volume of pig in pit F138 and the wolf and horse deposits all derive from pits containing special deposits and may have formed parts of these special assemblages. All the red deer was found in ditch F2 although in two different contexts (1048, 1034) and it is of note that one of these contexts formed a basal deposit within the ditch. Given the fact that the matrix in both these contexts was similar it is possible that the red deer in each context may have been deposited at a similar time.

Following a system of counting present left and right repeatable zones on each recordable bone specimen (Dobney and Reilly 1988) absolute minimum numbers of animals (MNI) represented in the whole assemblage were calculated. In total twelve animals were represented by the faunal remains 42 per cent were cattle (MNI=5), 17 per cent sheep/goat (MNI=2), 17 per cent pig (MNI=2), 8 per cent horse (MNI=1), 8 per cent red deer (MNI=1) and 8 per cent wolf (MNI=1). Proportionate species abundance based upon total fragment counts and the minimum number of individuals are portrayed in Fig 23.

It is clear that the main species represented in the assemblage are the three main domesticates with cattle being the most abundant. Wild species, wolf and red deer had a minimal presence. Horse was also sparsely represented, and from the teeth present there was no evidence to suggest it was ridden. Canid gnawing on a couple of bones suggests the presence of dog although whether the tooth marks derived from domesticated dogs or wolf is unclear.

Pits with special deposits

A number of pits were identified as having artefacts formally deposited in the primary layers. Animal bone was present in some of these layers.

Pit F138 produced a considerable number of worked flints as well as ceramics that may have been formally placed in the basal deposit of the pit (context 4322). This deposit also produced the largest volume of bone from contexts dating to this period. It produced 151 fragments, the only context to produce over 100 fragments. Around 2/3 of the assemblage was highly weathered suggesting that the bone may have been exposed for a period of time. One third of this deposit contained fragments that were hardly weathered at all suggesting that these were subjected to slightly different disposal strategies than the rest of the deposit or that they were protected from the elements more than the rest of the assemblage. It may be of note that the pig fragments seemed much less weathered than other species. This may possibly reflect slight differences in how they were deposited.

In total 75 per cent of the assemblage could not be identified to species, most of the assemblage being small shaft fragments that could not be positively identified. Fifty-five per cent of the identifiable fragments were pig, 25 per cent were sheep goat and 20 per cent were cattle. A minimum number of three animals was represented, one for each species. The majority of the assemblages for each species consisted of foot and cranial fragments including metapodials, mandible, cranium, phalanges and loose teeth suggesting that the deposit may have been formed as a product of primary butchery. The only meat bearing bones present were eight small fragments of sheep/goat and pig humerus and femur. It is possible that meat bearing bones may have been represented in the unidentifiable bone and may indicate that these elements were subjected to more intense levels of processing.

It is of note that butchery marks were only identified on the femur/humerus fragments and seem indicative of portioning and filleting processes. The cut marks were fine with slightly curved characteristics possibly indicative of marks resulting from flint tools. A small number of helical fractures with smooth surfaces on cortical bone fragments indicated that some limb bones were broken shortly after death and the presence of a small number of impact scars suggest it is possible they were exploited for marrow.

It is also of note that this context produced a gnawed piece of bone and eight highly burnt fragments from cattle and pig. These fragments were not meat bearing bones but represented foot bones and cattle teeth. All bone was calcined suggesting temperatures of over 800^{o} C were reached.

It is possible this deposit reflected the remains of butchery processing rather than direct meat consumption and feasting. It is also of note that one of the sheep metapodials in this deposit had been used as an awl. Its relationship to burnt flint, worked flints, worked bone and pottery may possibly reflect a processing theme. The greater presence of pig bone in this deposit may be of significance, given its rarity in all other contexts across the site.

Pit F27 was a subrectangular pit with primary deposits containing charcoal, flint fragments and copper alloy. A

placed deposit of pottery, daub and sandstone was also observed overlying this primary level. Deposits 2114 and 2115 may have been part of this deposit. The rare presence of a large well preserved right wolf mandible supports the premise that these deposits may have been significant. Deposit 2114 contained a horse maxilliary tooth, a cattle tooth and tibia fragment as well as unidentified cortical bone from large mammals. Deposit 2115 contained the wolf mandible, a sheep/goat tibia, a cattle humerus fragment and both large and medium mammal cortical bone fragments.

Context 2169 from the same pit had a deposit that contained four mandibles from a minimum number of three animals as well as cortical bone fragments from large mammal and a pig radius fragment. It is possible that the dominating presence of mandibles in this pit may be of ritual significance. The small presence of meat bearing elements does not suggest this was purely a primary butchery deposit.

Pit F179 also contained a structured deposit including pottery and bone in its primary layers. This deposit consisted almost exclusively of large mammal fragments, with cattle being the only identifiable species. Virtually no limb bone fragments were identified, the assemblage being formed from trabecular bone including cranial fragments (including some horncore fragments), pelvis and scapula. It is possible that the absence of long bone was significant in this deposit. It seems that bone may have been selected because of its structure, composition being of trabecular, flat, bone rather than round cortical bone. This is unlikely to be a preservational bias as cortical bone tends to survive better than trabecular bone in burial conditions.

Cattle

In total seventy-three fragments of cattle bone were identified deriving from twenty-three contexts relating to this period resulting from a minimum number of five individual animals. Twenty-six fragments derived from ditch contexts, nine from the hollow way and thirty-eight from pit contexts. Whilst the hollow way (F50) produced purely broken tooth fragments the other contexts produced a range of elements from all areas of the body suggesting that in general whole animals were processed close to the site producing a mixture of primary butchery (head and feet) and secondary (meat bearing bones) processing waste. When viewed cumulatively few differences were apparent between the types of elements deposited in pits and ditches (see Fig 24). The only observable difference was in deposition of cranial, pelvis, scapula and rib fragments in pits only. This may reflect one of the special deposits discussed above.

If a minimum number of five animals was represented in the assemblage then it is clear that only a small proportion of the total expected numbers of elements is present in the assemblage. Whilst recovery bias may affect smaller elements like phalanges being overlooked during the excavation process and greater taphonomic destruction may have affected elements with large proportions of trabecular bone, it seems that selection and different processing methods must have also affected the direct formation of the deposits.

Small sample sizes from most contexts and the spread out nature of many of the deposits across the site may relate to a number of small events which at a smaller scale, may reflect very specific processes, and as seen in the pit deposits may for example reflect primary butchery processes, food waste or deliberate selection for certain qualities like species or type of bone.

One point of interest is that on the site a minimum number of five tibiae were identified deposited across pit and ditch contexts. All these elements were from the right side of the animal and it is possible that side and choice of element had a significance in deposition. Similarly all the cattle scapulae (only found in pit contexts) identified on the site were left elements.

All elements in the assemblage were fully fused, highlighting the absence of juvenile animals in the assemblage. Only one mandible provided toothwear data that could be used for ageing. This gave a mandible wear stage of 41 suggesting that the animal was an adult aged between 4 and 6 years when it died. The only pathological change observed in the assemblage was on a distal tibia, suggestive of osteoarthritis and may have been age related. The fully adult status of the assemblage suggests that these animals may have been exploited for products other than meat. It is possible the adults represented were used for milk

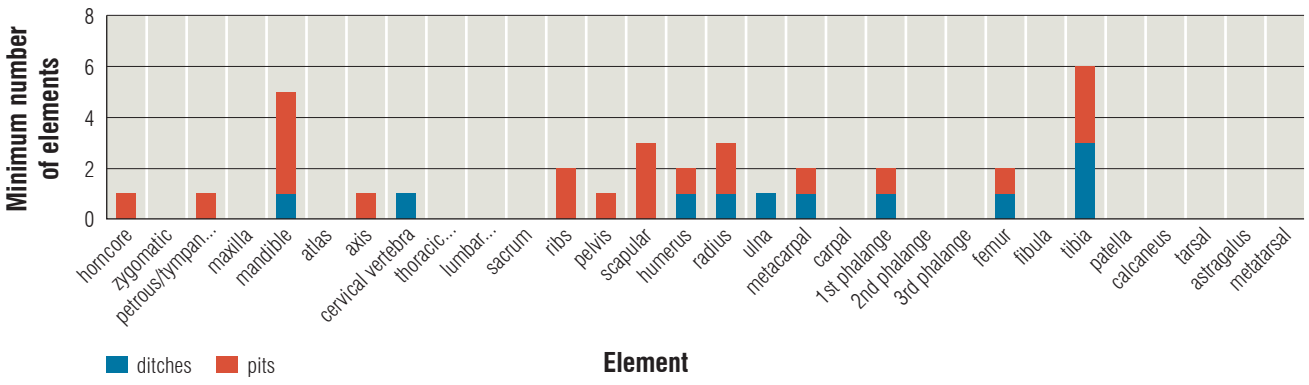


Fig 24. Chart to compare the differences in the minimum number of elements present in pits and ditches for cattle.

production, traction or manure. Furthermore it is possible that juvenile animals were selectively not incorporated into these deposits.

Only two fragments provided metrical data. The distal breadth of two tibiae were 57.8 and 54.2mm.

A small proportion of limb bone fragments and a mandible showed smooth surfaced helical fractures indicative of fresh fractures and impact scars which might suggest some of the bones were smashed open to extract marrow. One tibia fragment had fine cuts at a tendon attachment site suggesting that it may have been made cutting through strong muscle attachments during the process of disarticulation. Both the pit contexts and the ditch contexts contained a mixture of badly weathered fragments and those that were hardly affected by it. This might support the fact that many small deposits were formed in different ways some incorporated into the soil matrix quickly and others after a lengthy period of exposure.

Sheep /Goat

Thirty-two fragments were identified as sheep/goat deriving from thirteen contexts. A minimum number of two individual animals were represented on the site. The highly fragmented nature of the remains meant that no distinctive features particular to either sheep or goat were identified; 69 per cent of the fragments were found in pit contexts whereas 31 per cent were from ditch contexts.

Although the sample size is small, the distribution of elements seems to favour meat bearing elements in pits and more peripheral ones in the ditches. The tibia (like cattle) is the most commonly represented element although unlike cattle there seems no real preference for side. From the distribution it may be that food waste was deposited in pits and primary butchery waste in ditches. Preferential taphonomic destruction of small elements and those largely consisting of trabecular bone may partly have led to the absence of trabecular rich bones like the vertebrae, pelvis, cranium etc. However, the total absence of a large number of elements may rather reflect depositional preferences with some deposits being deliberately chosen for inclusion in deposition. The total assemblage only represents a small proportion of the bone that would be expected from a minimum number of two animals.

Only one bone, a phalange, showed evidence of burning, being completely calcined, a state reached after prolonged exposure to heat or through temperatures reaching greater than 800° C.

The highly fragmented state of the bone meant that no metrics were able to be taken from the assemblage fragments.

The presence of porous bone and a number of unfused elements indicate that juvenile sheep were present in the assemblage. In the late fusing category two specimens were unfused meaning the individuals were less than 42 months at the age of death and 1 was fused indicating an animal over 36 months. There was no evidence of neonatal animals or of animals < 10 months old (earliest fusion elements all fused) whilst an unfused middle fusing element suggested an animal of less than 28 months.

No toothwear data was derived from the assemblage that could be used for ageing, although the presence of a deciduous pre molar indicates juveniles were present. The adult individual represented by the fusion data may have been exploited for wool and manure during its life.

Only one fragment showed signs of butchery, a fine cut mark possibly made with a flint tool on a femur which may suggest that disarticulation of the carcass took place. The use of sheep/goat bone to make tools was also indicated by the presence of a bone awl created from a metapodial, a single distal condyle forming the handle.

Two fragments, a metatarsal and a radius fragment both showed signs of canid gnawing suggesting bones had been accessed by dogs. A mixture of highly weathered and well preserved fragments in both types of context again suggests that some bone may have been left exposed whilst other deposits were incorporated into the soil matrix quickly.

Pig

A total of thirty-two fragments from across eight contexts were identified as pig with 72 per cent deriving from pit contexts and 28 per cent from ditches. Seventy per cent of the fragments came from a single pit deposit (4322; F138) as

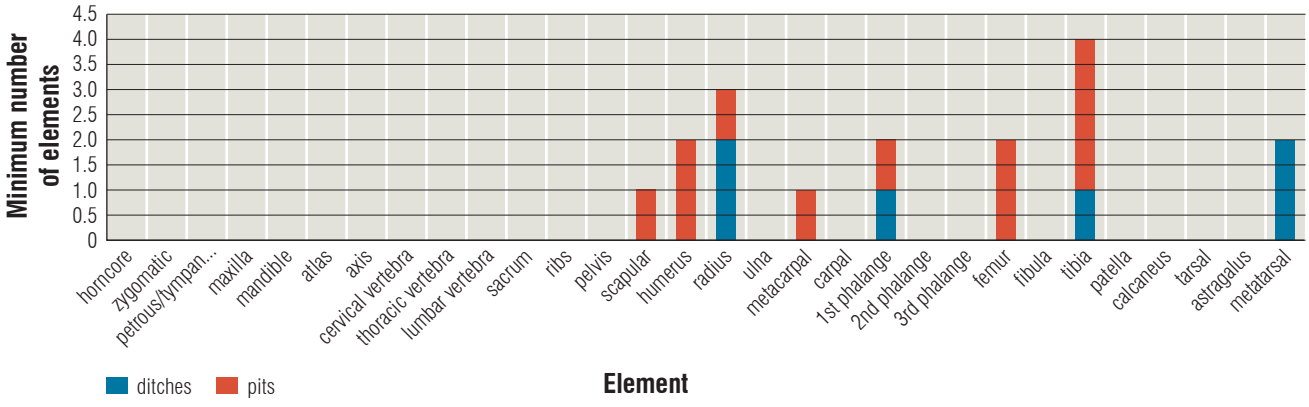


Fig 25. Chart to compare the differences in the minimum number of elements present in pits and ditches for Sheep/Goat.

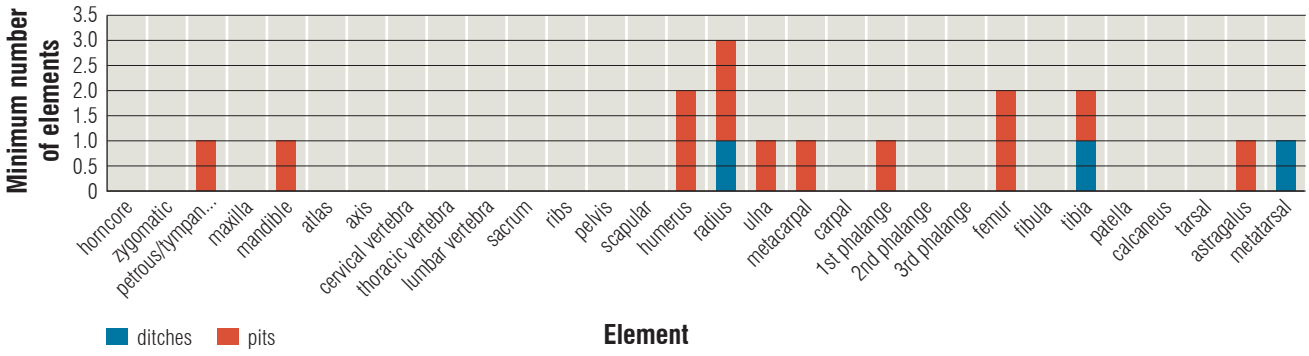


Fig 26. Chart to compare the element distribution between pit and ditch contexts for pig.

discussed above and may have formed part of a deliberately placed assemblage. A minimum number of two pigs are represented in the assemblage.

The range of elements included cranial fragments limb and foot bones. No thoracic elements were present in the assemblage. Whilst to a certain degree this may reflect preferential survival of cortical bone elements it is also possible that deliberate selection contributed to formation processes with limb bones or head / foot bones being the result of differing butchery processes or selective deposition. It is of note that the pit deposit contained mostly primary butchery waste and that limb bones were found across other contexts.

No ageing data was derived from toothwear although the fusion data suggested that no animals in the assemblage had reached full adulthood and were less than 42 months. Similarly there was no evidence from the fusion data to support the presence of juveniles of less than one year in the assemblage. This pattern supports the general pattern for pig husbandry across most periods in that animals are culled for their meat in the second or third year of life having reached optimum meat proportions. Keeping pigs to old age is of little value to most communities as they have little use for exploitation of secondary products during life.

Four foot fragments were burnt to a grey /white colour suggesting that temperatures approaching 800^{o} C were reached in the fire. It is of note that the only burnt sheep/goat fragment was a phalange and although speculative may hint at a disposal of these peripheral bones in fires. Curved cracking, caused as a flesh line retracts under intense heat observed on a pig phalange may suggest that the element was fleshed at the time of heating.

A single femur showed signs of canid gnawing suggesting that bone was accessible to dogs whilst in a fairly fresh state. In general, over 70 per cent of the fragments were well preserved indicating differences in the deposition processes for this species compared to others on the site. The low levels of weathering suggest that much of the material was incorporated into the ground quickly without exposure to the elements.

The only metrics that could be taken were from a single pig astragalus where the distal breadth was 26.71mm and the greatest lateral length was 44.3 mm.

Horse

Horse fragments were sparse on the site deriving purely from two pit contexts 2114 (F27) and 2136 (F191) and represented a minimum number of one individual. Six fragments were identified as horse, all of which were loose teeth. Pit F191 contained a row of maxillary teeth that seem to have derived from the same individual whereas 2114 contained a single fragmented maxillary molar fragment.

The crown heights of the teeth in context 2136 suggested that a horse aged between 10 and 14 years of age was represented in the deposit (following Levine 1982). It is possible that the teeth were in articulation at the time of burial, but that the surrounding trabecular bone on the maxilla did not survive burial conditions; tooth enamel tends to preferentially survive over cortical or trabecular bone. There was no evidence on the second premolar to suggest that the horse had been bitted and hence ridden.

Red deer

Red deer was identified in two fills (1048 and 1034) of ditch F2 and included two scapula fragments and a radius fragment. As already discussed these bones may derive from the same animal. It was not possible to take metrics from the fragments and no fusion data was apparent.

Wolf

One right mandible fragment was identified in context 2115 (F27). Metrics (von den Driesch 1976) were taken from the mandible and found to fall in the range of a modern timber wolf (Kate Clark, pers comm). The tooth crowding index developed by Clutton-Brock (1963) also comes out within the range for wolf (<100) with an index of 92.9. Canid mandibles from this period rarely fall within this clear wolf range suggesting that this is a rare find and is likely to have held great significance as a deposited artefact. The teeth were all permanent and showed signs of considerable wear suggesting the animal was mature at the time of death.

Anglo-Saxon period

Four contexts deriving from features relating to a sunken-floored building (4020, 4106, 4137, 4149) produced eighteen fragments of animal bone. Only one fragment could be identified to species, a small eroded fragment of a cattle axis bone. The assemblage was extremely abraded/eroded and may represent residual material from earlier periods.

The sieved samples

In total 1019 fragments of animal bone were recovered from twenty-two samples deriving from across twenty-three contexts. No small mammal bone was identified in the assemblage. Only fourteen fragments were identified to species. This reflects the overall poor state of preservation found in the hand recovered assemblage. Such a low proportion of identifiable remains, limits the value in utilising sample results to examine overall recovery bias within the hand recovered assemblage.

Almost half the assemblage consisted of burnt bone which was calcined suggesting exposure to temperatures of over 800^{o} C or exposure to lower temperatures for lengthier periods of time (Shipman *et al* 1984). This may imply that burnt remains were under-represented in the hand recovered deposits.

The species represented in the sieved assemblage included dog, sheep/goat, cattle and pig. Only three contexts produced identifiable remains which all related to the mid Bronze Age to early Iron age phase of the site. Whilst the species represented largely reflected those found in the hand recovered assemblage, the presence of a maxillary tooth belonging to a dog in ditch context 1033 (F2) added dog to the species list for this period. The presence of a neonatal distal phalange from a sheep/goat in pit context 4322 (F138) suggests that breeding occurred close to the site.

Discussion

It clear that the vast majority of bone derived from mid Bronze Age to early Iron Age contexts and that bone found in the Anglo-Saxon features may have been residual from earlier phases**.**

Whilst the small sample size and highly fragmented nature of the assemblage limits the level of interpretation that can be made from the faunal remains in terms of broad speculation on economic strategy or husbandry practices, the remains provide a number of snapshot scenarios of small depositional events within pit and ditch contexts. It is clear that a number of special deposits were made within pit contexts that incorporated deposition of animal bone alongside other artefacts into a formal act with possible ritual connotations, the symbolism of placing items into the ground reflecting cultural ideals and beliefs of that time.

The nature of the bone deposits in all cases was fragmented rather than as articulating units suggesting the deposition of material occurred after other processing activities had occurred and deposits of fleshed joints or portions of animals were not identified in the assemblage.

The presence of both domesticated and wild bone in some of the structured deposits on this site was noted, suggesting that both types of animal had a significance in the act of deposition. The presence of wild animal was rare on the site, and the deposition of a wolf mandible must have held great significance to those that placed the offering. It is notable that wild animal deposits are a rare occurrence at other sites from similar periods, for example Flag Fen Basin and at Runnymede (Halstead *et al* 2001; Serjeantson 1996). It is of interest that a possible wolf mandible was chosen for deposition at a pit alignment within the Flag Fen Basin (Halstead *et al* 2001, 347).

Although exact meanings to the rituals involved will always remain elusive, the examples on this site have hinted at possible criteria involved in selection processes for some of the acts of deposition. It is possible that in some deposits the side of the animal or type of bone may have been important. Other deposits seem to reflect ideals represented in the process of transformation, with primary butchery waste deposited alongside worked flint, a bone awl and pottery.

Not all the deposits may have been deliberately structured with some highly fragmented and badly weathered bone incorporated into deposits possibly resulting from lengthy exposure on the surface, or from burial close to the surface. Some of this may have been incorporated accidently into fills or purely as a by-product of processes like marrow extraction or as the result of food waste.

Butchery marks evident on a small proportion of bone suggest that disarticulation and filleting of carcasses took place. Animals were being prepared for consumption. Helical fractures and impact scars indicate that bone was smashed open to extract marrow whilst a worked sheep metapodial showed evidence of the utilisation of bone for tools, a carefully sharpened piece of bone crafted into an awl.

The very low level of burnt bone on the site was also recognised at other sites dating to this period including Runnymede and the Flag Fen basin. The limited range of elements represented in the burnt assemblage merely hints at a type of disposal method utilised for some primary butchery waste and does not seem to reflect food heated for consumption.

The range of species represented on site suggests that both domesticated and wild animals were exploited albeit that the wild animals were rare occurrences and the domination of the faunal remains was by domesticates including cattle sheep/goat and pig. The presence of an aged horse in the assemblage hints at their exploitation although there was no direct evidence of riding. The high presence of cattle and the overall rarity of pig in deposits may lead to the speculation that cattle formed the greater part of meat in the diet. It may be that pig was reserved for special occasions, its rarity in most contexts and differential preservational state reflecting this.

What must be remembered is that these deposits represented a tiny proportion of the volume of bone expected to be produced from twelve animals. The majority of bone has not been preserved and as such the relative species abundance in the deposits here may not be a true reflection of economic or husbandry practices of the time. The deposits may merely reflect a selection process driven by taphonomic, processing and possibly ritual factors. The presence of only mature cattle in the deposits may not be taken as meaning no juveniles were slaughtered merely that juveniles were not utilised in the formation of these deposits.

The presence of older cattle however does hint at their exploitation for other products like traction, milk or manure, whilst the mixture of juvenile and older sheep hints at an economy supporting meat and wool production. The presence of a neonatal sheep/goat in the sieved samples indicates that breeding occurred close to the site. The total absence of mature pigs may reflect a breeding programme primarily for meat although such small sample sizes makes this extrapolation to broader economic strategies a speculative one.

The charred plant remains

Wendy J Carruthers

During the excavation soil samples were taken from a range of features for the recovery of environmental information. A total of 444 bulk samples were taken and processed using standard methods of floatation. A 0.5mm mesh was used to recover the flots and a minimum mesh of 1mm was used to retain the residues (Allison 2006). Thirty-three flots were sent to the author for sorting and analysis. These samples came from pits, ditches, layers and a sunken-featured building (SFB) in areas 1, 2, 3 and 4. The results of the analysis are presented as Appendix 3. Nomenclature and much of the habitat information follow Stace (1997). Other texts used to provide ecological information include Ellenberg (1988).

A note on preservation and identification

Small, rounded, possible free-threshing wheat (*Triticum* sp.) grains. Most of the wheat grains from Neolithic pit F138 (26 grains) and three grains from F144 were extremely small (3-4mm long), rounded in profile, blunt-ended and deep-backed, similar to Zohary and Hopfs' *T aestivum* subsp *compactum* (2000, p.27, fig. 5b). The rounded embryo depressions, curved ventral surface and short, rounded form of the grain suggested that the Ellington School grains may have been a small, compact form of free-threshing wheat.

Descriptions, dimensions and photographs given in Percival (1921, 307) fit in with this identification. However, grain dimensions for club wheat overlap with those for bread wheat (Jacomet 2006) so unless rachis fragments are recovered identification cannot be confirmed. Hexaploid free-threshing wheat (which includes bread wheat and club wheat) has not yet been confirmed by direct radiocarbon dating as being present in the British Isles in the Neolithic period, but the recovery of well-preserved probable tetraploid free threshing wheat grains (rivet-type wheat (*Triticum turgidum*-group)) and traces of confirmed tetraploid rachis fragments from Thanet Earth, Kent, dated to between 3944 and 3653 cal BC (three possible tetraploid-type wheat grains) provide a possible explanation for the Ellington Road grains. Unfortunately, no free-threshing wheat chaff fragments were recovered from the two pits and the grains were very poorly preserved due to surface erosion. The alternative explanation is that these grains may be a short form of emmer, since a few more typical elongated grains and an emmer glume base were present in pit F138. The significance of this is discussed below.

Discussion

The thirty-seven flots all contained reasonable quantities of charred plant remains. Considering that they had been selected from 444 bulk samples from different areas of the site it is, perhaps, not surprising that some concentrations of charred food waste were found. Comparing the average concentrations per area (Table 12), a big difference could be seen between the northern (Areas 1 and 2) and southern (Areas 3 and 4) interventions:

Area	Location	No of samples	Charred fragments per litre of soil processed (fpl)
1	N	9	27.0
2	N	9	23.5
3	S	1	0.7
4	S	14	1.4

Table 12. Average concentration of charred fragments.

Since the two northern areas (located on the brickearth) both contained settlement features predominantly dating to the mid to late Bronze Age/earliest Iron Age, whilst activity in the southern areas (on periglacial clays and sands) also included activity of Neolithic and Anglo-Saxon periods (as well as predominantly mid Bronze Age activity) several factors may have caused this contrast. Firstly, during the late Bronze Age period hulled wheats were the predominant cereals grown for human consumption. With grain requiring parching and cleaning on a regular basis prior to cooking, there would have been ample opportunity for chaff, weeds seeds and spoilt grain to have become charred. Once free-threshing naked wheats became dominant in the Anglo-Saxon and medieval periods parching and piecemeal processing was no longer required, so the occurrence of charred chaff fragments in archaeobotanical assemblages is greatly reduced. In the Neolithic period small-scale cereal cultivation appears to have created very little waste to burn, since chaff is extremely rare in assemblages of

this date. No doubt cereal processing waste was a valued winter fodder for livestock. These points are discussed in more detail below.

Neolithic

Pits F138 and F144. Although few Neolithic features were excavated, the considerable quantities of flintwork recovered from later features, and from Areas 3 and 4 in particular, indicated that the site had been occupied during this period. Five samples from two subcircular pits in Area 4 were examined; pit F144 and pit F138. The pits were thought to have had ritual significance, since the lower fill of pit F138 contained a large assemblage of worked flint, including flint axes, scrapers and some flint-tempered pot sherds. A small, rounded wheat grain (*Triticum* sp.) from the lower fill of each pit was submitted for accelerator dating. Sample 316 from context 4114 provided a date of (1 sigma) cal BC 3765-3722 (UBA-13517) and Sample 396 from context 4321, a date of (1 sigma) cal BC 3695-3651 (UBA–13518).

The charred plant assemblages from the two pits showed several similarities suggesting that they had probably had very similar origins. The basal fills contained the highest concentrations of charred material and it is likely that these deposits contained placed burnt offerings, since several types of economic plants were represented. The most abundant charred remains were hazelnut shell (*Corylus avellana*) fragments. The fragments were concentrated in the bases of the pits, and both pits produced over 500 fragments each. Although this is an impressive number of fragments it is equivalent to just a few handfuls of whole nuts. It is unknown whether whole nuts or empty nutshells had been burnt as the oily kernels rarely survive charring, and the nuts would probably have burst open if they had been burnt whole.

Cereal remains consisted primarily of emmer/spelt grains in the base of F144 (*Triticum dicoccum/spelta*; 29 grains), most likely emmer since spelt is not found until the early/middle Bronze Age. Other cereals present in smaller numbers were short, rounded wheat grains and poorly preserved barley (*Hordeum* sp). No chaff was present in this feature suggesting that processed grain had been burnt. Small, rounded wheat grains were the dominant cereal in the base of F138 (*Triticum* sp; 26 grains). In addition, a few larger, plumper wheat grains (*T aestivum/turgidum*) were present in the base, as well as emmer/spelt wheat. The recovery of an emmer spikelet fork (*T dicoccum*) confirms the presence of this species. The feature also contained at least six cultivated flax seeds (*Linum usitatissimum*) and two small flax capsule fragments. Weed seeds were fairly scarce, particularly in F144 which only produced a single black bindweed seed (*Fallopia convolvulus*). Pit F138 contained a few dock achenes (*Rumex* sp), twenty small vetch /tare seeds (*Vicia/Lathryus* sp), three cleavers nutlets (*Galium aparine*), a grass seed (Poaceae) and a henbane seed (*Hyoscyamus niger*), almost all of which were found in the basal fill. Henbane is a poisonous plant that has been used for medicinal purposes in the past. Its possible significance in this context is discussed in the period summary below.

Mid to late Bronze Age/early Iron Age settlement

The majority of features excavated on the site were of mid to late Bronze Age/early Iron Age date, particularly in Areas 1 and 2. The extent and range of features and artefacts discovered in these areas indicated that occupation had been fairly long-lasting. This suggestion is supported by the archaeobotanical evidence, in that arable agriculture appears to have been well-developed and was clearly an important contributor to the economy. Cereal processing waste was frequent in some pits, and widespread in the fourteen pits and ditches examined in detail. The features are briefly described individually below.

Area 1

Ditch F18, contexts 1000 (upper; sample 1) and 1002 (lower; sample 2). This feature produced the most concentrated assemblage of cereal processing waste, particularly the lower fill, context 1002 (= 175.8 charred fragments per litre of soil processed (fpl)). Cereal grains were less frequent in this feature than in the other pits and ditches (= 10 per cent of total), suggesting that domestic waste such as spilt grain from cooking and hand cleaning was not present. Chaff fragments and weed seeds were abundant, amounting to 63 and 27 per cent of the charred remains respectively. Emmer (*Triticum dicoccum*) and spelt wheat (*T spelta*) were the predominant crop plants represented, at a ratio of 12:5 emmer to spelt chaff fragments (glume bases + (2 x spikelet forks)). Hulled barley (*Hordeum vulgare*) grains were fairly common (around half as frequent as hulled wheat grains). However, it should be noted that it is not possible to compare chaff quantities of barley and wheat when trying to assess relative importance, as anatomical differences mean that charring affects the survival of chaff to very different extents (Boardman and Jones 1990).

Other crop plants represented were Celtic beans (*Vicia faba* var *minor*), probable peas (cf *Pisum sativum*) and cultivated flax (*Linum usitatissimum*). Remains from these crops were surprisingly frequent considering that they are less likely to become charred than cereals as they do not require parching during processing. They are also often badly affected by charring, particularly the oil-rich seeds of flax which can become distorted to unrecognisable degrees. This may partly account for the fact that flax capsule fragments were far more common than seeds, although obviously the seeds were valued for oil, flavouring and medicinal properties so would not deliberately have been burnt as waste. However, flax seeds may have come into contact with fire while being heated to improve oil extraction.

A wide range of weed seeds were recovered from the feature, with fat-hen (*Chenopodium album*), dock (*Rumex* sp) and brome grass (*Bromus* sect *Bromus*) being the dominant taxa. On balance, remains from weeds of nutrient-

rich soils were more frequent than weeds of poor soils (such as leguminous weeds), although sheep's sorrel (*Rumex acetosella*) was much more frequent in the two samples from this feature than in any other. This weed of cultivated, heathy and grassy places is found most frequently on poor, acidic, sandy soils. It occurs consistently in low numbers in the other samples from Areas 1 and 2, but not in Area 3 or 4. Differences either in the soils being cultivated or the method of cultivation between the different periods could be indicated. Alternatively, the incidence of sheep's sorrel could be due to the presence of charred hay and/or stable waste in the deposit, since it is notable that all of the high sheep's sorrel samples also have relatively high pulse and barley frequencies. This is discussed further below.

Ditch F1, context 1005, sample 3. A moderate quantity of charred grain (emmer/spelt and barley), chaff fragments (emmer and spelt chaff in roughly equal proportions) and weed seeds were present (2.5 frags per litre), in addition to two possible peas. A single bread wheat-type grain was tentatively identified, but the state of preservation was too poor to confirm the identification. Proportions of the charred assemblage were 27 per cent grain, 58 per cent chaff and 15 per cent weed seeds, suggesting that cereal processing waste was the principal source of material. Burnt fodder may be included in this deposit, perhaps accounting for the presence of the barley and possible peas. Weed species were typical weeds of cultivated and disturbed soils, such as dock, cleavers and brome grass.

Pit F14, context 1011, sample 6. As in the previous sample, a moderate quantity (3.5 fpl) of charred grain, chaff and weed seeds was present in very similar proportions to sample 3; 22 per cent grain, 65 per cent chaff and 13 per cent weed seeds. Low concentrations of cereal processing waste of this type are often considered to represent the day-to-day processing waste that may have been burnt on domestic hearths and found its way into features around an occupation site. Cereals represented in this case were possibly more indicative of human waste, whilst ditch F1 may have contained some burnt fodder. Free-threshing wheat and emmer/spelt grains were present, with the chaff identifications indicating that emmer and spelt were present in roughly equal proportions. A similar range of weed species was present and a possible fragment of flax seed indicated an additional crop plant being grown.

Ditch F2, contexts 1025 (sample 13 – highest up profile), 1033 (sample 18), 1034 (sample 19) and 1042 (sample 29 – lowest). Since no obvious trends were observed in the four samples and each produced very similar assemblages, the samples have been discussed as a whole.

Although the uppermost and lowest samples produced slightly higher concentrations of charred plant remains, the average concentration of 4.5 fpl indicated that once again, general background waste from de-husking hulled wheats, floor sweepings and the cleaning out of hearths was probably the source of material. The proportions of 20 per cent grain, 68 per cent chaff and 12 per cent weed seeds closely matched the previous assemblage confirming their similar origins. Hulled wheat was again the dominant component, although free-threshing wheat and barley were present in some samples. The emmer to spelt chaff ratio was roughly 3:1, which is similar to the concentrated cereal processing waste in pit F18. Small dumps of larger-scale cereal processing waste may be represented, therefore, mixed with some domestic waste.

Other foods represented were hazelnuts (trace) and a possible pea. The weed assemblage was very similar to previous sample, with docks and brome grass being the dominant taxa.

Ditch F20, context 1027, sample 14. As with the previous features, the 5.0 fpl concentration suggested that background waste might be present, but in this instance the 42 per cent grain, 51 per cent chaff and 7 per cent weed seed ratios suggest that some burnt whole, cleaned spikelets could have been present. However, leaving out the barley grains and comparing the hulled wheat grain to chaff ratio (adjusting for the fact that each spikelet fork usually holds two grains), a figure of 1 to 5 is obtained, demonstrating that chaff was still much more frequent than in an ear of wheat. The scarcity of weed seeds is more typical of the waste from de-husking clean spikelets than the previous samples, but maybe they were mixed with other types of waste, such as animal fodder containing cereal processing waste.

Several fragments of large leguminous seeds indicated that peas or beans may have been present in this feature.

Area 2

Ditch F22, context 2005 (sample 30), context 2013 (sample 31). The two samples from this ditch produced low concentrations (average = 2.1 fpl) of charred waste that may have originated from animal fodder, since barley was more frequent than wheat and a pea was identified. The proportions of 11 per cent grain, 77 per cent chaff and 12 per cent weeds demonstrate that cereal processing waste was the main component. The weed assemblage was very similar to other samples from Areas 1 and 2.

Pit F27, context 2023, sample 38. A slightly higher concentration of remains was found in this pit (7.9 fpl) and free-threshing wheat, emmer/spelt, barley and oat (*Avena* sp) were recorded (albeit in low numbers). The proportions of 49 per cent grain, 38 per cent chaff and 13 per cent weed seeds suggest that waste grain as well as cereal processing waste may have been deposited. Since most of the cereal grains were in such a poor state of preservation that they were unidentifiable, it is possible that chaff fragments were lost during high-temperature charring or by trampling. In addition, the waste was probably lying around the site for some time before it was redeposited. Several large legume fragments and a possible pea provided evidence for the cultivation of pulses. Perhaps the assemblage represented grain, pulses and crop processing waste used for fodder, spilt amongst bedding, trampled then burnt as waste, since barley was the dominant cereal.

Ditch F87, context 2063, sample 52. This sample produced a similarly high concentration of waste (10.2 fpl)

and high percentage of unidentifiable, poorly preserved cereal grains. The assemblage contained an even higher percentage of grain, (64 per cent grain, 28 per cent chaff and 8 per cent weed seeds) but the very poor state of preservation suggested that this was not likely to represent deliberate burning of infested grain. Once again, the relatively high number of barley and pulse remains (including one identifiable pea) and poor state of preservation of the grain suggest that burnt stable waste including hay (possibly indicated by high sheep's sorrel seeds) and spilt fodder or dung were present.

F206, context 2029, sample 46 from vessel 2030. This small soil sample (5 litres) from the inside of vessel 2030 produced nothing to distinguish it from other background waste samples (concentration = 3.2 fpl). Grain, chaff and weed seeds were scarce, but of the same character as other charred plant assemblages from late Bronze Age features. The only closely identifiable cereal fragment was a spelt glume base. Whatever had been present in the vessel had left no identifiable trace in the form of charred plant material.

Post-hole F49, context 2246, sample 134. Small quantities of background waste were present in this sample (4.3 fpl) including grain, a trace of chaff and several weed seeds. The weed seeds could have been growing locally rather than been deposited amongst cereal processing waste, since seeds from the twining plant black bindweed (*Fallopia convolvulus*) were the most frequent remains. No items were frequent enough to provide information about what was taking place in the vicinity of the post-hole.

Pit F192, context 2261, sample 158. This small soil sample (3 litres) produced a high concentration (150.3 fpl) of charred plant remains including frequent grain and chaff. The only weed taxon that was frequent was brome grass (52 seeds), a tall weedy grass with grains of a similar size to hulled wheats and therefore often still common in fully processed crops because of separation difficulties. It is likely, therefore, that this assemblage which comprised 31 per cent grain, 52 per cent chaff fragments and 17 per cent weed seeds (mostly brome grass) represented cereal processing waste from the de-husking of semi-cleaned emmer and spelt spikelets. Only a little barley and a possible free-threshing wheat grain were present, and one Celtic bean was identified.

One aspect of this feature, together with the two pits described below, F198 and F199, was the dominance of spelt chaff over emmer for the first time in the later Bronze Age samples. A ratio of 1 to 36.5 (emmer to spelt chaff) was obtained from this sample, compared with the 12 to 5 ratio from pit 1001 at the northern end of the trench, Area A1. This topic is discussed in more detail below.

Pit F199, context 2322, sample 227. This assemblage closely resembled the one from pit F192, comprising 21 per cent grain, 66 per cent chaff and 13 per cent weed seeds. Brome grass was the most frequent weed and fragments of pulse including Celtic bean were present. A little free-threshing wheat and barley was identified, but the dominant cereals were hulled wheats, emmer and spelt. The ratio of these two wheats, according to the identifiable chaff fragments, was around 1 to 3 emmer to spelt. The pit appears to have contained small-scale cereal processing waste (concentration = 7.6 fpl), perhaps in addition to other types of waste such as hay and fodder. It is interesting to note that, as well as being the only spelt-dominated features, these three pits produced the only assemblages containing traces of wetland plants in the form of occasional sedge nutlets (*Carex* sp). Perhaps hay grown on slightly damper soils had been burnt, or maybe increased cultivation of spelt at this time necessitated the ploughing up of slightly damper soils. However, the only occurrence of stinking chamomile (*Anthemis cotula*), an arable weed of heavy damp soils, was in the medieval sample from the sunken-featured building (sample 334) so it appears that cultivation continued to be focused on sandier soils in the late Bronze Age.

Pit F198, context 2327, sample 228. A similar assemblage to F192 and F199 was recovered from this pit, with an emmer to spelt glume base ratio of around 1 to 4. Barley and pulse fragments were present, and brome grass was the most frequent weed seed. The concentration of charred material was 23.9 fpl. As with the other pits, deposits of burnt cereal processing waste had been deposited in the pit, with a composition of 12 per cent grain, 70 per cent chaff and 18 per cent weed seeds.

Area 4

Pit F118, context 4075, sample 295. Low levels of background waste were recovered from this pit (0.4 fpl), including a few cereal grains (including cf. emmer/spelt and barley), and poorly preserved emmer/spelt chaff fragments. Three weed seeds included a weedy vetch/tare seed (*Vicia/Lathyrus* sp), a cleavers fragment (*Galium aparine*), and a possible heath-grass seed (cf. *Danthonia decumbens*).

Pit F116, context 4029, sample 314. A slightly higher concentration of cereal processing waste was present in this pit (3.0 fpl). Chaff fragments were most frequent (65 per cent), with emmer chaff outnumbering spelt by roughly 3 to 1. The few weed seeds came from common weeds of cultivated and disturbed places, as found in Areas 1 and 2. A single small fragment of hazelnut shell (HNS) could be redeposited from earlier levels, since the fills of Neolithic pits F144 and F138 in this area produced abundant HNS.

Layer sealing metalling 4401, F50, contexts 4271 (sample 437) and 4402 (sample 439). These two samples produced very low levels of material (average 0.5 fpl) consisting mainly of poorly preserved chaff fragments (amongst which only emmer was identified) with a single emmer/spelt grain and a few weed seeds. Two HNS fragments were present and a single small fragment of cultivated flax capsule.

Sunken-featured building G52. Although this feature was Anglo-Saxon in date, a large free-threshing wheat grain from the sparse charred assemblage was radiocarbon dated to cal AD 1446-1484 (1 sigma) (UBA-13519) revealing that some intrusive medieval charred plant material was present. The few remains from this sample (0.1 fpl)

included the single free-threshing wheat grain, a possible rye grain (*Secale cereale*), a spelt glume base (possibly residual), two HNS fragments (possibly also residual) and a stinking chamomile (*Anthemis cotula*) seed. This is the first and only occurrence of stinking chamomile in the assemblages, a weed that typically first occurs on sites during the late Iron Age to Romano-British periods (Jones 1981) and is common in medieval assemblages. Since it is a weed of heavy, damp clay soils its occurrence may indicate the cultivation of new areas of land. However, the single, small seed may have been intrusive, along with the free-threshing wheat grain, so any interpretation must be very tentative. Free-threshing wheat grows well on heavy, clay soils, whilst rye might have been better suited to the lighter, sandy soils that were available locally. There may have been some continuation in the cultivation of spelt wheat into the Anglo-Saxon period as at West Stow, Suffolk (Murphy 1985), or the spelt glume base could have been residual. The uncertain dating of this assemblage and low density of material means that it is of little interpretative value.

Summary and Conclusions

Neolithic

Activity during the Neolithic period involved the deposition of potentially votive offerings in the base of pits F138 and F144. The offerings consisted of food remains that had been burnt, including hazelnut shell and fully processed cereals. A range of possibly free-threshing and hulled cereals was being cultivated at this time, comprising possible free-threshing wheat (a small-grained rounded wheat) emmer and barley. Cultivated flax seeds and a couple of small capsule fragments were found, perhaps representing the crop as a fibre plant (since stems and leaves would have burnt away completely), an oil-seed, food or medicinal plant. It is possible that the hazelnuts were whole when burnt, since some large fragments of shell were present, but this cannot be confirmed since the oily kernels rarely survive charring. Although the HNS fragments were abundant, calculations using experimentally charred nuts suggest that a few handfuls of nuts were represented by over a thousand HNS fragments (Carruthers 2000, 409).

It is possible that some of the weed seeds also represent deliberately burned offerings, since highly toxic and visually impressive weeds such as henbane (represented by one seed) have had medicinal and hallucinatory uses in the past (Long *et al* 2000), so were probably highly symbolic. Although doubt has been placed on the hallucinatory role of henbane recovered from residues adhering to Grooved Ware pot sherds from Balfarg, Scotland (Long *et al* 2000), the possibility of some sort of medicinal or narcotic use increases with each identification from a ritual context. Henbane is a weed of nutrient-rich disturbed soils in locations such as farmyards and middens. It is not so abundant (either in the landscape today, or in archaeobotanical assemblages) that it is likely to have been growing nearby and become mixed with the assemblage by chance. However, nutrient enrichment of soils around pyres and sacrificial sites could have provided a suitable habitat. Even if the plant was growing as a weed, it is likely that use would have been made of such a distinctive and powerful plant.

Because no identifiable free-threshing wheat rachis fragments were recovered from the site uncertainties remain concerning the identification of the larger free-threshing wheat grains (most likely bread wheat and possibly intrusive in some features, as in SFB G32) and small, rounded wheat grains in F138 (possibly a Neolithic short-grained form of emmer or tetraploid free-threshing wheat). Because the grains were poorly preserved it was not possible to compare them closely with the well-preserved tetraploid free-threshing wheat grains and occasional rachis fragments from Neolithic pits at Thanet Earth (Carruthers 2013*), as described above. The small round grains show similarities to an illustration of club wheat grains in Zohary and Hopf (2000, 27). Club wheat (*Triticum compactum* Host) is also described by Percival (1921, 307) as being the oldest type of wheat cultivated by Neolithic man across Europe. Simmonds (1976) notes that it was the earliest form of hexaploid wheat recorded, being found at Tell Ramad, Syria, in *c* 7000 BC. Sites in central and Western Europe that produced the earliest traces of arable agriculture were growing compact wheats at the end of the fourth millennium BC. Today it is grown in Afghanistan and the north-western United States (Zohary and Hopf 2000), but it may also occur sporadically amongst other free-threshing wheats. In the British Isles authors sometimes mention the possibility that a mixture of bread and club wheat may have been grown (eg Wessex, Green 1981), but no sites have produced positively identified and radiocarbon dated pure club wheat assemblages. One recent find of small, rounded wheat grains was an early medieval assemblage from Pembrokeshire, West Wales (South Hook LNG, Carruthers forthcoming), and another small deposit was a ritually placed Chalcolithic assemblage containing naked barley grains, emmer wheat and some small, rounded wheat grains at the dramatically located cliff-top site of Le Pinacle, Jersey (Carruthers 2001). In the 1950 publication of this site Percival described the wheat grains as follows; 'one can hesitate between *Triticum dicoccum* Schrank and more probably *T. vulgare* Vill.' (Godfray and Burdo 1950). *Triticum vulgare* is the old Latin binomial for *T. aestivum*, bread wheat, so Percival was suggesting that it was similar to emmer and free-threshing wheat, a combination that takes us back to the tetraploid free-threshing wheats found at Thanet Earth.

The identification of the larger free-threshing wheat grains in the Neolithic and Bronze Age samples is equally uncertain as the earliest dated bread wheat in the British Isles is middle Iron Age (Rhodaus Town, Canterbury, *Triticum aestivum* rachis fragments dated, Carruthers 2016), and the crop only becomes common in charred assemblages after the Roman period. Both tetraploid and hexaploid free-threshing wheats are found from the Neolithic onwards in

many parts of continental Europe (eg Western Continental Europe, Bakels 1991) so it is possible that they were introduction into Kent at an early date. However, well-preserved chaff and grains would be required to positively identify these taxa in the British Isles.

Late Bronze Age/early Iron Age settlement

The widespread deposition of cereal processing waste around the settlement in areas 1, 2 and 3 indicated that during the late Bronze Age arable cultivation was occurring at a significant level. According to the frequency of charred chaff fragments, emmer appears to have been the dominant crop for most of the period of occupation, but three adjacent pits in Area 2 produced predominantly spelt assemblages, suggesting that spelt may have become dominant by the time these features were in use.

These three pits were located in the same area towards the centre of this Area 2. In contrast to the *c* 12:5 ratio of emmer to spelt glume bases in F18 and *c* 3:1 in F2, F192 produced a 1:37 ratio. Whether this represents different activities, different properties or a slightly later period is difficult to determine from this type of excavation. In the British Isles as a whole the cultivation of emmer wheat was gradually overtaken by the increased cultivation of spelt, starting in the early/middle Bronze Age in south-east England, with the earliest radiocarbon dated records of spelt chaff being from the Isle of Thanet, Kent (Martin *et al* 2012). By the Roman period many sites produce very little emmer wheat, although the timing of the replacement by spelt varies in different parts of the country. Radiocarbon dates were carried out on emmer/spelt grains from samples 2 (emmer-dominated), 158 (spelt dominated) and 227 (spelt dominated). The results in Table 13 were obtained (calculated as a percentage of the total identifiable emmer + spelt chaff, adjusting for 1 spikelet fork = 2 glume bases).

Whilst Sample 2 from pit F18 may well be older than the spelt-dominated features, particularly <227>, there is an overlap that makes the relationship unclear. It remains likely, however, that during the lifetime of the settlement spelt cultivation increased at the expense of emmer. This is a process which van der Veen (1992) has suggested may occur naturally over a period of time if the two crops were grown as a mixed crop or 'maslin' because of spelt being the more vigorous crop. It is quite likely that emmer and spelt were being grown as a maslin on this site since they were almost always both present in the samples and crop husbandry, processing and storage methods are more or less the same for both crops. An alternative explanation for the difference in these three pits is that spatial or behavioural differences have been revealed, with spelt being stored in a different area of the site or particular family groups growing more spelt than emmer.

Most of the samples analysed for this report contained low-level cereal processing waste of the kind that would have been produced on a day-to-day basis during preparations for cooking. In damp climates like that of the British Isles hulled wheat would have been stored in the form of cleaned spikelets (pairs of grains still enclosed in chaff) in order to protect the grain from pests and diseases (Hillman 1981). Prior to cooking or grinding into flour, the spikelets would require parching, pounding, winnowing and perhaps sieving in order to remove the chaff. The fine chaff and weed seeds produced as waste in small quantities may have been burnt on hearths (along with some spilt grain) or fed to livestock.

Other types of waste, such as that from animal byres (including spilt fodder and dung), may also have been burnt as fuel or used for tinder. Some of the material in the low-level 'background waste' type of assemblages described above may well have come from this source. Cereals commonly used for fodder such as barley and oats, and some of the weed taxa that commonly grow in meadows and pastures, such as sheep's sorrel, thistles (*Cirsium/ Carduus* sp), grasses and ribwort plantain (*Plantago lanceolata*) may also have come from animal waste. The high occurrence of sheep's sorrel (an indicator of acidic soils) has been discussed (see description of pit F18 assemblages above) and tentatively linked to the presence of fodder. However, as most of these taxa will also grow as crop weeds (particularly on newly ploughed grassland), or along field margins, precise interpretations of these types of mixed assemblages are not often possible. It is interesting to note, however, that compared to most sites, remains from wet-ground taxa such as sedges and spike-rush, were very scarce, suggesting that if hay was represented, both meadows and arable fields must have been located on well-drained rather than low-lying, damp land.

Other information gleaned from the weed assemblages suggests that manuring was probably being carried out, at least in the wheat fields, since nitrophilous weed seeds such as fat hen (*Chenopodium album*) were frequent. The occurrence of some leguminous weeds indicative of poor soils suggests manuring may have been patchy or restricted to certain crops. For example, flax, peas and beans would not have required manuring, and could have been grown on poorer land. It is possible that pulses (peas and Celtic beans) were being grown as a maslin with barley, as they were most frequent in samples with high barley counts. Alternatively, this could be because both of these crops

Sample no	Radiocarbon date	Percentage emmer/spelt
<2>	cal BC 921-889 882-843 (1 sigma) (UBA 13514)	72% emmer/28% spelt
<158>	cal BC 895-867 858-825 (1 sigma) (UBA-13515)	3% emmer/97% spelt
<227>	cal BC 810-794 (1 sigma) (UBA-13516)	6% emmer/74% spelt
<228>	Not dated	21% emmer/79% spelt
Average for low concentration waste (26 samples, all Areas) 75% emmer/25% spelt		

Table 13. Radiocarbon dates from late Bronze Age/early Iron Age features.

were being used for fodder, so the burnt waste came from the same source. Because climbing weeds such as black bindweed and cleavers were relatively frequent and a few straw-sized stem bases were recovered, it is likely that harvesting was being carried out by uprooting, as was found in the late Bronze Age settlement at Heathrow (Carruthers 2010, 28). These suggestions are tentative because limited evidence was recovered, and mixed waste assemblages are difficult to interpret with certainty.

Comparing the results from Ellington School, Ramsgate, with those from a late Bronze Age/early Iron Age settlement 3km north-west of Canterbury at Shelford on the London clay (Carruthers and Allison 2010), a very similar picture emerges. Emmer was the dominant wheat on both sites, and at Shelford this was even more pronounced, with only around 13 per cent of the identifiable chaff belonging to spelt in the settlement features, 19 per cent in a four-post storage structure and *c* 4 per cent in corn drier assemblages. Barley and oats may have been a little more frequent at Shelford, with cultivated oat being confirmed as a crop plant, and both peas and beans were common in the settlement features, although none were found in the corn drier. Interestingly, at Shelford there was also one feature that produced a different emmer/spelt ratio, with roughly equal quantities of both cereals being recovered from a rich deposit of clean spikelets in a post-hole. As a whole, the Ellington School and Shelford evidence support the suggestion that emmer and spelt were being grown as a maslin. It is possible that the atypical spelt-rich deposits could have been accidentally burned stored seed-corn, particularly if the change from emmer to spelt dominance was actively being encouraged by retaining seed-corn from the best, most spelt-rich crops. The frequency of charred peas and beans in late Bronze Age and Iron Age assemblages appears to be a common character of sites in Kent, as does the cultivation of flax. Evidence for the collection of wild fruits and nuts was scarce on both sites in comparison to some contemporary sites in Wessex, perhaps because the pulse and cereal-based diet was sufficiently well developed and varied to meet the needs of the population, in conjunction with raising livestock for meat and dairy products.

Medieval sunken–featured building G52

Because only one, fairly unproductive sample was recovered from the feature it is difficult to say much about this period. Bread-type wheat was the only identifiable cereal grain, and this was radiocarbon dated to the fifteenth century, undoubtedly deriving from contamination. The two hulled wheat chaff fragments may have been redeposited, considering how widely the late Bronze Age cereal processing waste had been distributed across the site. Similarly, the hazelnut could have come from earlier deposits, although hazelnut shell fragments have been recovered in varying quantities from sites of all dates. The only new species was a single seed of stinking chamomile, a weed of damp clay soils that may indicate the cultivation of new, heavier land or the importation of grain to the site.

4
Discussion of the archaeological evidence

The Neolithic period and evidence for a midden

There was little direct evidence for early prehistoric occupation of the site apart from the single late Neolithic/early Bronze Age feature (F364) containing the possible Grooved Ware pot and perhaps the undated horseshoe-shaped feature F68. Though it contained no finds, F68 pre-dated the mid Bronze Age as it was cut by a ditch of the period. Although it could conceivably represent a tree-throw, similar horseshoe- or penannular-shaped enclosures, usually much larger than F68 are not uncommon in the Neolithic period (see for example Hey *et al* 2011, 261–85). Other possible parallels are the two groups of features delineating three-sided or 'horseshoe'-shaped areas located within the complex of the Neolithic enclosure at Chalk Hill, Ramsgate, which have been suggested to 'represent analogues of the much-later three-sided megalithic 'coves' found at Avebury' (Clark *et al* 2019, 70–71). More closely paralleled is a very similar feature (Structure 145), found within the Briar Hill causewayed enclosure; this was of late Neolithic date, much later than the enclosure. The supposed structure measured 4.5 by 3m internally and was defined by a horseshoe-shaped gully of irregular size (about 1m wide and 0.7m deep at maximum) open at the east end; it was therefore, virtually the same size and shape as feature F68. However, at Briar Hill, ten post settings were recorded within these 'wall slots' (Bamford 1985, 44 and fig 22) enabling a more definite structural interpretation to be proposed than here.

The recovery of a considerable residual assemblage of cultural material dated to both the early and later Neolithic periods (primarily flintwork) may suggest that other features might have existed but been lost to truncation. This would not seem unlikely given that Neolithic pits tend to be shallow (Thomas 1999, 64). Such truncation would certainly have led to a general distribution of any artefacts that may have been deposited within these features. However, the high proportion of Neolithic material (nearly half the worked flint) recovered from the fills of the earliest Iron Age pits, may suggest a different derivation.

Apart from the substantial deposits of flint in these pits (much comprising just flakes but with some finely worked objects such as polished axeheads), Neolithic pottery and plant remains radiocarbon dated to the early Neolithic were recovered. The pottery was associated with much later ceramics and the condition of the assemblage was mixed (see above). Dating of these sherds from both pits F138, F144 and possibly F142 suggests a mixture of material comprising early Neolithic and late Bronze Age to early Iron Age forms. Similarly, the animal bone from the pits was in a mixed condition. Pit F138 produced a large animal bone assemblage consisting of two elements; a weathered and fragmentary group, and a significant quantity of pig bone, with very little weathering. It seems probable that the bone in better condition was associated with the Iron Age activity, but the weathered material probably derived from a different source and may have been earlier. The environmental assemblages from pits F138 and F144, particularly their lower fills were also comparable and suggested the deposition of similar types of material, possibly from placed burnt offerings, since several types of economic plants were present (Carruthers, above).

The inclusion of these concentrations of Neolithic material within the early Iron Age pits is problematic. Some argument can be made for the curation of certain flint artefacts, particularly the axes (these do often appear in later prehistoric features; see for example Allen *et al* 2012, 15; Cramp 2008, 24.30–31). However, it seems unlikely that charred plant remains and much earlier fragmentary pottery or flint flakes were curated over extensive timespans. One possibility is that the contents of Neolithic pits were disturbed by the excavation of the later pits, and that these contents were redeposited within the later features. However, if this was the case, a greater distribution of this material across a wider range of later features might be expected. Equally, the likelihood of achieving the density of artefacts witnessed in these pits would seem highly improbable.

Another possibility is that the material was derived from a more substantial deposit, perhaps a midden or refuse dump, later completely eradicated (apart from its residual artefactual and ecofactual elements) by truncation. Perhaps the pits were cut through the 'midden' deposit, with the upcast being inadvertently redeposited in the features as they backfilled. However, as with the above scenario, similar artefact assemblages would be anticipated in a range of nearby features and not, therefore, restricted to this group of morphologically similar pits (residual flints were recovered from a spread of features nearby, but in considerably smaller amounts). In addition, it again seems unlikely that such a concentration of earlier artefacts could be accumulated in this way. Although it may never be possible to determine exactly how this concentration of

earlier material arrived in the Iron Age pits, it is proposed here that it is most likely that it did derive from a midden, probably situated nearby (potentially within the area of the flint scatter), but not by accidental re-incorporation.

Certainly, the quantities, range and types of earlier cultural material recovered from the Iron Age pits could be consistent with the types of occupation refuse seen in midden or refuse dump deposits. Furthermore, the condition of some of the classes of artefact could also be an indicator. The pottery assemblage from these pits is possibly very significant, and may suggest that the Neolithic component derives from a midden. The condition of the Neolithic sherds is not compatible with their having derived waywardly, as a residual element. They were fragmented but in good condition suggesting that once disposed of they had remained in a benign environment (such as an undisturbed midden) until redeposited in the pits. This is at variance with the later pottery, which must have had a different history.

Another factor which might be significant, is the presence of Henbane in the charred plant remains, a weed of nutrient-rich disturbed soils in locations such as farmyards and middens (Carruthers above).

The variable nature of midden deposits has been noted at a Neolithic site in the Thames valley, where clusters of refitting pottery, and groups of highly fragmented pottery were recorded. The flint assemblage displayed a high degree of breakage and slight edge-damage (Allen *et al* 2004, 89–90). The condition of the flint was thought to be indicative of exposure for a period prior to becoming buried, and micromorphological analysis of the deposits suggested that the soils were disturbed by animal trampling which could have led to the abrasion and fragmentation of the material. Other midden sites, for example at Potterne, Wiltshire and Runnymede, Berkshire, although dating to the late Bronze Age/early Iron Age period, have presented similar characteristics. Excavation and analysis has highlighted the possibility that artefacts had complex histories, which involved perhaps passing through a number of refuse cycles prior to deposition on the midden (Needham and Spence 1996, 234, fig 108; Lawson 2000, 177).

At Ellington, the density of possible midden material within this group of pits must suggest deliberate rather than accidental deposition. Another intriguing factor which also suggests that the Neolithic pottery was deliberately included in the suite of various materials recovered, is that rims and the upper portion of vessels only, are represented. This is also a common trait of pottery deposited in Neolithic pits (see above) suggesting perhaps that the sherds were chosen for their distinctive nature. Early Neolithic base sherds especially 'lack distinct angles and often surface treatments' (Barbara McNee, pers comm), rendering them particularly anonymous. The inclusion of just these rim sherds suggests that a similar conceptual notion of the more distinctive pottery fragments was also the case here, in the earliest Iron Age (the derivation of the later pottery is discussed below).

On this basis, for the midden material to have become incorporated into features of early Iron Age date, the deposit must have survived as a feature in the landscape. If not as a defined feature itself, it may have perhaps been identifiable by enhanced vegetation growth indicating an area of enriched soil. It is likely that the fertility of such an area would have been recognised, and it has been suggested that this perception was a factor in the reuse of Mesolithic middens during the Neolithic period (Guttmann 2005, 235). It may even be that the midden attracted further deposition of refuse during the late Bronze Age/early Iron Age or even that the midden was cultivated at that time. Evidence for the latter has been identified at several sites, although not yet in southern England (*ibid*, 233). Cultivation of such a deposit would almost certainly expose earlier artefactual material, which then by various processes, including perhaps deliberate collection or curation could potentially produce the concentration and type of deposition presented here.

No prehistoric midden sites have yet been found in Kent but are often postulated as an intermediate stage in the final deposition of artefacts in Neolithic pits (eg Thomas 1999, 87; Clark *et al* 2019, 207). The Ellington evidence is therefore, an important indicator that such deposits were present in Kent but have not survived subsequent dispersal by agricultural activity in the following centuries, at least not in sufficient numbers to have yet been found. As for the earlier assemblages in the Iron Age pits themselves, the potential deliberate deposition of Neolithic midden material within them implies that this material was perceived to hold some significance or importance at the time. Whatever the motivation, evidence for the re-deposition of midden material during the Neolithic period has led to the suggestion that it held greater meaning than simply being waste (Thomas 1999, 63) and, that there was perhaps a perception that these deposits embodied a 'link' between fertility, death and regeneration' (Guttmann 2005, 235). A similar perception, or perhaps that of a bond with antiquity through the re-use of an earlier site, has also been suggested by features encountered at several late Bronze Age/early Iron Age sites (*ibid*).

The middle to late Bronze/ earliest Iron Age

Landscape and development

Interpretation of this phase in the northern part of the site is hampered by the restricted area of the investigation and a lack of well-defined dating evidence for the majority of features. By far the greatest proportion of pottery derives from a period between the middle Bronze Age (Deverel-Rimbury forms) and the earliest Iron Age (*c* 1500–600 BC) and while it seems likely that most of the sterile features also belong to this period, it is virtually impossible to construct meaningful chronologies. The understanding of the chronological development within this period is also hindered by the pottery assemblage itself, where there is either a strong residual element in many of the features or chronological overlap in some the ceramic phases that have

been isolated (some late Bronze Age ceramic forms and fabrics are also long lived; Barbara McNee, pers comm). This mainly hinges on the dating of the late Bronze Age/ earliest Iron Age plain and decorated wares (see Champion 2011, 156–64). This is particularly a problem in Areas 3 and 4 where there is relatively little reliable dating evidence. It is clear, however, that more than one phase of activity occurred within this extended time span.

The earliest evidence for middle Bronze Age activity would appear to be elements of an agricultural field system. Middle to late Bronze Age field systems and other agricultural features long recognised in the Thames valley (Yates 2001; 2007 *passim*) are being increasingly recorded in Kent and extensive fields and droveways were recorded at Thanet Earth near Monkton, a few kilometres to the west of Ellington (Rady *et al* in prep*). It is clear that at Ellington, part of such a system was exposed but not over a large enough area for a wider form to be appreciated. This situation is paralleled in large scale excavations in Kent, such as the High Speed Rail Link (Champion 2011, 183–5) or Westhawk Farm and Brisley Farm, both near Ashford (Booth *et al* 2008, 25; Stevenson 2013, 20–33).

Although the precise configuration of landscape features and settlement is very difficult to discern in Areas 1 and 2 the arrangement and development in Areas 3 and 4 is easier to identify, although still restricted by relatively limited bounds of investigation. The earliest features appear to be the droveways, and although their sometimes fragmentary and sinuous nature (Fig 5) gives little indication of their more extensive disposition, the ultimate course of Droveway 1 can be postulated with some confidence. To the north, it may have followed the contours to the head of the dry valley to the west and the upland plateau beyond. On this course, it is likely to have eventually connected with a main ridgeway thought to extend from Sarre on the western tip of Thanet to Margate (Moody 2008, 116 and fig 66). To the south-east, it probably extended centrally down the ridge of the spur to the conjunction of the two dry valleys situated to east and west of the site. This alignment passes close to two barrows situated on the brow of the hill here (evident as cropmarks; Fig 2), perhaps an example of the interdependent relationship that has been perceived between these ancient landscape components (see for example Løvschal 2013). From here the route perhaps followed the valley base to the sea at the 'gap' or 'gate' (*c* 2km distant) where modern day Ramsgate is located. Several significant Bronze Age sites flank this valley's sides (Moody 2008, 108). This arrangement, linking the uplands with the various bays where access to or from the sea was possible, has been noted elsewhere on Thanet (*ibid*, 93, 99, 116, 120).

The importance and longevity of the route is indicated by the wide hollow way (F50) that subsequently formed on the same line, obliterating the earlier droveway ditches on the crest of the slope where erosion would be heavier. Such hollow ways, sometimes metalled, are not uncommon in Thanet (*ibid*, 120), and metalled routes of one sort or another are known elsewhere in south-east England from the mid Bronze Age onward (Yates 2001, 66; Meddens 1996, 326). Although the Thanet hollow ways have been usually dated to the Iron or late Iron Age, often persisting into the Roman period, as at Monkton (Hicks 2008, 273) and Thanet Earth (Rady *et al* in prep*), it is likely that many had an earlier origin, as here and some could be of greater antiquity still. The hollow way at Holywell Coombe near Folkestone for example, originated in the Beaker period although it was buried under colluvium by the later Bronze Age (Bennett 1989, 52–3). The Ellington hollow way probably formed in the later Bronze Age or earliest Iron Age, although there was earlier material from its fills which could signify an earlier development.

Although the dating evidence is inconclusive, the disposition of the ditches forming adjacent fields or enclosures suggests that they were a later development, at least later than the hollow way. The form of Enclosure 5 (Fig 5), which appears rather unusual at first sight, can in fact be closely compared with enclosures or fields of co-axial arrangement on other Bronze Age sites in south-east England[33]. Multi-phased ditched fields of subrectangular or slightly trapezoid shape at Green Park, Reading dated from the mid Bronze Age and were of varying size, some up to about 90m across (Brossler *et al* 2004, 13–16). At Shrubsoles Hill on the Isle of Sheppey, a large irregular open-ended enclosure 'some 110m by 125m, and widening downslope' (Coles *et al* 2003, 15) appears much like Enclosure 5 at its narrower end, even with a potentially comparable entrance at one corner (*ibid*, fig 1.6). This enclosure, dated to the mid-late Bronze Age, was of uncertain function. It did not appear defensive and no settlement evidence was found within it (*ibid*, 52–3). A very similar arrangement of Bronze Age ditches forming part of a co-axial field system was evident at Ford Airfield in West Sussex (Hart 2008).

Although Enclosure 5 almost certainly represents a field in its earlier stages, there is persuasive evidence for occupation in its north-east corner (where multiple recutting of the enclosure boundary took place) and just outside to its east, primarily indicated by complexes of post-hole structures. The spread of the datable ceramic material across the site plainly shows that the earliest Bronze Age assemblages are concentrated in this area which is also where the Neolithic finds were situated, highly suggestive that the settlement originally focussed on an earlier feature here, potentially the proposed Neolithic midden (above). Apart from this, the evidence for occupation in and near Enclosure 5 is not dissimilar to what seems a common form of mid to late Bronze Age settlement in Kent, relatively small, with only fragmentary structural remains and very often set within field systems, sometimes within small enclosures at the corners of fields (Rady *et al* in prep*; Champion 2011, 179).

An entirely separate area of generally later settlement represented by parallel multi-ditched alignments and

3 One other possible enclosure (Enclosure 4) was also revealed at the extreme southern end of the site, but its size (although large) or date could not be gauged (Fig 5).

numerous other features was evident to the north of the site (Figs 7 and 9). Although there is still perhaps a residual component of mid Bronze and mid to late Bronze Age transitional pottery (perhaps deriving from an earlier field system), finds evidence suggests a predominantly late Bronze Age to the earliest Iron Age chronology. This is to some extent confirmed or augmented by two radiocarbon dates from this area (909-809 cal BC and 827-781 cal BC at 95% probability (above). Although the field system ditches and possible droveway or boundary ditches may belong to the earlier part of the period, many of the features undoubtedly relate to the large complex of interconnected earliest Iron Age enclosures subsequently examined in detail to the east of Area 2 (the present Forelands School site; Simmonds 2015).

Burials and other ritual features

There was a greater variety and concentration of features in the northern area of the site, including burials and other potential ritual features and depositions, and considerably more environmental evidence generally. The few examples of burials, all likely to be of mid to late Bronze Age date conform with the usual practice of cremation at this time (Cunliffe 2005, 67) though none were associated with ceramic vessels, probably being buried within a bag or other organic container. Un-urned cremations of this period seem to date from about 1400 BC into the early first millennium BC (Champion 2007, 111; Cunliffe 2005, 543) and examples have been found on a number of sites on the High Speed Rail Link (Champion 2011, 232); on the A2 widening scheme from the thirteenth or fourteenth centuries BC (Allen *et al* 2012, 108–9), Bridge Down, where a C-14 date of *c* 980 cal BC was obtained (Macpherson-Grant 1980, 170) and Shrubsoles Hill, Sheppey (*c* 900–800/700 cal BC; Coles *et al* 2003, 17–9). They are, therefore probably of similar date to the Area 2 occupation phase.

Often situated close to settlement areas (Coles *et al* 2003, 18), cremation burials of this date are not necessarily found in formal cemeteries, but in small groups or isolated and dispersed within the landscape, sometimes in the corners of fields or against other boundaries (see Donnelly *et al* 2012; Brück 1995; Rady *et al* in prep*). In fact, there would seem to be a progression away from burials around or near early Bronze Age ring-ditches in the earlier part of the period to this more dispersed pattern (Allen *et al* 2012, 109–10). There were no other instances of human bone, cremated or otherwise found in other features of the settlement, although this is common on many sites of the late Bronze and Iron Ages. However, animal bones were found in potentially ritual contexts, so at Ellington this lack of evidence, however it may be interpreted, is possibly due to other factors such as sampling bias.

It is probably significant that some features (F25 and F204-6) containing what would have originally been whole or near complete vessels were found close to the northern cremation burials. This type of deposit is common on Bronze Age sites (Brück 2006) and very often the vessels are upside down or incomplete, so as to rule out a storage function. Sometimes, buried pots near cremation vessels may have directly related to the mortuary rite, such as one containing charcoal from Star Lane, near Manston (Egging Dinwiddy and McInley 2009), but there was no evidence to suggest that this was the case for the Ellington pots. However, the presence of a fragment of sword blade in F204 (closest to the burials) is indication that these represented important ritual or specific depositions possibly associated in some way with the burials, perhaps as votive offerings, reinforcing the ritual significance of the location.

As well as these few burials and associated features there were a few potential examples of intentionally placed or structured depositions which can also be interpreted as expressions of ritual or superstitious thought. This aspect of later prehistoric society has been extensively discussed (Merrifield 1987; Cunliffe 1995; Bradley 2003; Brück 1995; 2001b; 2006; Chadwick 2012), although some generally held interpretations have been increasingly challenged (Garrow 2006; Brudenell and Cooper 2008). However, there are some quite discrete depositions at Ellington which undoubtedly stand out and further, these very often, seem to be associated with pottery of the decorated phase. Elsewhere, critical points in fields and settlements seem to be 'marked by the deposition of artefact concentrations or the placing of special single finds including quernstones, bronze objects and token human cremations' (Brück 2001b, 151). That some unusual, or perhaps distinctive combinations of artefacts, particularly pottery may have come about entirely by accident (see Brudenell and Cooper 2008, 17–24 in particular) cannot be denied.

Perhaps the most significant of this type of feature was the bronze hoard (F211) situated immediately south of the area of concentrated activity in Area 2. Middle to late Bronze Age hoards, depositions of individual bronzes or in some cases finds that may have derived from disturbed hoards, are not particularly uncommon in Kent, but seem to be concentrated around the Thames Estuary and the north Kent coast (Thanet in particular). An association with wet places, such as rivers, river valleys, estuaries, lakes and bogs is evident (emphasised by recent wider studies such as Yates and Bradley 2010), thus hoards are clustered around the mouth of the Medway, along the Stour valley and on the fringes of the Wantsum (Champion 2007, 113; Moody 2008, 113; Andrews *et al* 2009, 77–81; Perkins *et al* 1994, fig 24).

At Ellington, the burial of the hoard within or associated with a large ceramic vessel may be significant and appears to be unusual; few later Bronze Age hoards associated with pots are documented in Kent (Andrew Richardson, pers comm).[4] The pottery vessel itself, a large burnished piece

4 A hoard of fourteen palstave axes found at Birchington was associated with Deverel-Rimbury tradition bowl of mid Bronze Age date, (Moody 2008, 101). Hoards with the metalwork contained in a vessel are known outside Kent, at Dorking, Surrey, Burnham in Essex, Isleham in the Fens (Malim et al 2010).

of some significance in its own right cannot have had any practical significance in this situation, particularly as it was probably broken or at least incomplete when buried. That both the metalwork and the vessel were broken supports the idea that ritual intent, as opposed to mere functionality, should be considered for this feature. Most hoards are located in positions near streams or rivers or on higher ground overlooking them and often deposited close to, but not necessarily within, settlements (Yates and Bradley 2010, 66). In many instances an association with field systems or ancient routeways can be seen, as at Isleham in the Fens (Malim *et al* 2010). The Ellington hoard, probably located on the margins of the late Bronze Age settlement and not far from a number of ancient trackways demonstrates many of these traits although there is no obvious close association with water, the hoard being more distant from the coast than other Thanet examples (see Andrews *et al* 2009, fig 2.8; Moody 2008, fig 54). However, it is possible that one or both of the adjacent dry valleys define the location of spring-fed streams that may have been extant at the time (Moody 2008, 30). Thus, the metal hoard and associated pottery vessel are best interpreted as the 'most elaborate of several deliberately placed deposits of metal, pottery or animal bone at the site' (Worrel *et al* 2011) and like the earlier Iron Age pits in Area 4 to the south (below), may represent a 'closure' deposit at the end of one phase of the settlement's life.

Artefactual and environmental evidence

Apart from pottery, few other artefactual remains were recovered from the site. Three spindle whorls and some fragments of possible loomweight indicate that weaving took place. Environmental and other evidence from Areas 1 and 2 gives some indication of the contemporary agricultural system. Farming had become an important element of society and of individual settlement during this period (cf Cunliffe 2005, 48–50; Yates 2001; Pryor 1998; Champion 2007, 98), pastoral and agrarian economies probably co-existing to mutual benefit. Animal husbandry is almost certainly indicated by the drove roads at Ellington, and a pastoral economy was possibly predominant in the earlier part of this period. Unfortunately, the relatively small sample of animal bone recovered and its poor preservation and highly fragmented nature limits the level of interpretation that can be made in terms of broad speculation on economic strategy or husbandry practices (Jones, above). It is also likely that the sample was statistically affected by taphonomic and processing factors as well as structured deposition. However, the main species was cattle, and thus perhaps provided the greater part of meat in the diet. Butchery and other marks on a few of the bones indicated preparation of carcasses and the extraction of bone marrow for consumption. The presence of older cattle suggests their potential use for traction and the production of milk or manure, whilst the mixture of juvenile and older sheep hints at an economy supporting meat and wool production. Neonatal sheep or goat remains are indicative of breeding close to the site. Pig was perhaps reserved for special occasions (Jones, above).

Food cultivation is demonstrated by the extensive deposition across the site of cereal processing waste during the period. The charred remains suggest arable cultivation of emmer wheat as the dominant crop for most of the period of occupation, but three adjacent pits in Area 2 produced predominantly spelt assemblages, suggesting that this may have been the main crop when these features were in use. These pits were also part of a group of features of a character more suggestive of storage pits than other features in this area and one contained seeds of wetland plants which, although not present in particularly significant numbers, may indicate the importation of crops from further afield. These factors therefore and the uncertainty of dating, make it difficult to judge whether the predominance of spelt here is significant or due to some localised condition (Carruthers, above). It seems likely however that both crops were grown together and there is no reason to suppose that Ellington was at variance with the increasing preponderance of spelt cultivation over the period seen elsewhere (see Champion 2007, 103).

That a combined regime of agrarian and pastoral agriculture was practiced is indicated by the weed taxa, which include nitrophilous weeds such as fat hen (*Chenopodium album*). This suggests that manuring was being carried out, at least in the wheat fields, as leguminous weeds indicative of poor soils were also present. Sheep's sorrel (*Rumex acetosella*) found in abundance in a ditch terminal of Enclosure 1, but also in smaller quantities across Area 2, also occurs most frequently on poor, acidic, sandy soils. The presence of such taxa is often seen as partial evidence for the extension of cultivation to more marginal areas (Cunliffe 2005, 408–9). Other weeds (sheep's sorrel, thistles (*Cirsium/Carduus* sp), grasses and ribwort plantain (*Plantago lanceolata*) commonly grow in meadows and pastures but will also grow as crop weeds (particularly on newly ploughed grassland), or along field margins. Other indicated crops included barley and oats as well as flax, peas and beans which could have been grown on poorer land.

Overall the plant assemblage is comparable to others in Kent, emmer being the dominant wheat (although probably grown in combination with spelt) and peas and beans being common (Carruthers, above). The site therefore provides further evidence for the diversification and development of agriculture through the later Bronze Age (Cunliffe 2005, 409; Champion 2007, 100–3). Though a great deal of the local landscape must have been either under cultivation or pasture by this time, it is unclear how much woodland had been cleared by then (Champion 2007, 100).

The near complete absence of fish and shellfish from most of the later prehistoric deposits is a common factor in the south-east, even in a maritime environment such as Kent, although such wild resources do seem to have been exploited in the middle Bronze Age (Champion 2011, 174). The only context with any sea shell was a discrete

dump of mussel in the terminal of a ditch of Droveway 5, which further suggests that the droveways were early in the sequence.

The earlier Iron Age pits

The latest phase of occupation on the site may be represented by the six pits in Area 4 dating to the earliest Iron Age (F120, F121, F138, F142, F143 and F144). These have been discussed above in relation to the considerable quantities of Neolithic material within them and the complex nature of their various assemblages (summarised in Table 14).

The later prehistoric pottery from most of the features comprised two components, which also suggests that in part pottery fragments were deposited as part of a ritual act. The worn and small late Bronze Age sherds were probably residual from occupation of that period in the vicinity, maybe having laid on the surface for some time and therefore having arrived in the pits fortuitously. However, the earliest/early Iron Age sherds appeared to derive from the latest occupation of this area, which could explain their larger size and variable wear, either deliberately broken relatively new pots or older ones that had seen considerable use. Thus, the backfilling and the nature and disposition of at least parts of the assemblages within these features is suggestive of a ritual act, perhaps representing the abandonment of the settlement. Both the Neolithic and the earliest Iron Age pottery, the group of flint axe fragments, scrapers and the arrowhead and perhaps the pig bone recovered from pit F138, all suggest a structured deposit, adding to the possibility that the earlier midden from which at least some of this material may have derived, was valued as much as the more notable objects.

If we accept the dating evidence for these pits, then it is clear that there is an extraordinary chronological range of material within them, ranging from the early Neolithic through to the early Iron Age. Furthermore, the nature of these assemblages bears a striking resemblance to the tradition of structured deposition in pits during the Neolithic (see for example Garrow 2006; Anderson-Whymark and Thomas 2012; Carver 2012 and Clark *et al* 2019, 207–8), particularly with the inclusion of occupation material such as pottery, worked flint, animal bone, and charcoal-rich soil, the last in this instance containing significant amounts of charred plant remains. Although an initial storage function for the features cannot be ruled out, there was no clear evidence for this and in general they were all much smaller than typical storage pits of the early Iron Age period. This suggests the possibility that they were formed specifically for the deposition of the material, either during one single act of infill, or at most a few closely spaced depositional events; these aspects all show close similarity with the Neolithic tradition.

Potential structural or 'ritual' deposition (or any other term we may decide to use) is also commonly perceived, in Iron Age pits, though sometimes not without reservations (see for example (Cunliffe 2005, 570–2; Cunliffe and Poole 1991a, 161–2; 1991b, 482–3; Hill 1995). In many cases the buried material has been viewed as a mixture of 'ritual', accidental and more casual disposal (see for example Gransar *et al* 2008, 560), which also seems to be a strong possibility with the present examples. Thus, the basic concept (if not the actual intent) of deliberate selection and burial in pits of various types of material can be seen to be generally analogous in both the Neolithic and Iron Age periods. Even if the resemblance to Neolithic practises in this case is perhaps coincidental, it may be that the particular conditions present in the area at the time affected the choices made in the selection of the material for burial; the presence in the area of a long-cultivated midden being a strong contender. Although the purpose behind such depositions may never be fully understood, perhaps the pits in this part of the site correspond with the abandonment of the settlement, and if this was only intended to be temporary, could be interpreted as laying claim (perhaps in a conceptual sense) to this specific parcel of land.

Overall dating

In summary, for this overall phase of activity on the site, the general trend of the dating is clearly from the mid Bronze Age through to the early Iron Age period, with the emphasis on a later Bronze Age/earliest Iron Age phase (*c* 800–600 BC) that yielded the most ceramic evidence. This is augmented and to some extent confirmed by the date of the hoard (*c* 800–700 BC) and two absolute dates, 909-809 cal BC and 827-781 cal BC from features of this phase. However, the ceramic assemblage also suggests continuous occupation from the middle Bronze Age into the late Bronze Age (McNee 2007b), a not inconsiderable timespan also evident on some other sites in Kent (Champion 2007, 101). However, at Ellington there would appear to be more than one settlement focus (further suggested by the 2014 Foreland School excavations), perhaps shifting over time, so each individual element may not have been settled for the entire period. Occupation of these settlements seems to end sometime around 700–600 BC.

Pit	Pottery (sherd count)	Worked flint (nos)	Animal bone (fragments)	Other
F138	617 (EN, BA, EIA)	650+ (mostly lower fill); including 5 axeheads	151 (pig, sheep/goat, cattle)	Charred plant remains
F144	222 (EN, BA, EIA)	300+ (mostly lower fill)	–	Charred plant remains
F121	253 (EN? BA, EIA?)	28	–	–
F142	59 (BA, EIA)	18	–	–
F120	45 (BA)	77 (upper fill)	–	–
F143	102 (BA, EIA)	39	–	–

Table 14. Summary of assemblages from the early Iron Age pits (EN – early Neolithic; BA – mid-late Bronze Age; EIA – earliest/early Iron Age).

The later history of the site

As well as a lack of occupation after the activity described above, there seems to be little evidence for the use of the fields or creation of new fields. It is possible that the earlier fields continued in use as although the ditches may have completely silted up there is good evidence here and elsewhere that at least some boundaries, probably marked by low banks and hedgerows, survived through the Iron Age and Roman periods and even into the earlier second millennium AD. This was apparent at Thanet Earth (Rady *et al* in prep*) and Heathrow Terminal 5 where medieval ditches often followed the alignment of middle Bronze Age ditches (Lewis and Smith 2010, 379). At Ellington, at least one boundary (the G49, F63 complex in Area 4) was almost certainly respected by a similarly aligned Anglo-Saxon sunken-featured structure G52 (Fig 11). The significance of this is that the overall Bronze Age layout of fields was not replaced and that any arable farming deliberately respected the boundary up to at least the mid Anglo-Saxon period.

The Anglo-Saxon structure adds little to the protracted debate regarding the above-ground form of these buildings (and will not be dwelt on here) and whether the sunken area represents the floor or whether there was a suspended floor (planked) over the pit. These arguments remain unresolved (Tipper 2004, 64, 182–5). The Ellington structure contained primary layers (and 4083, 4158 and 4122) which could be construed as trample, perhaps indicating a floor level. The derivation of these thin deposits, however, although in this case likely to be related to and contemporary with occupation of the building, has sometimes been attributed to material trickling through the gaps between suspended floor planks or conversely to 'post-use disturbance or re-use of the pit base' (Tipper 2004, 86–7) so would not necessarily rule out the presence of a suspended floor. There was no evidence for the structural dismantlement of the building. It was assumed that the end posts (both quite large at about 0.3m in diameter) rotted *in situ*, since there was no evidence for 'rocking' or other sign of extraction. The backfills of the main pit are usually seen as being deposited after disuse, often with the deliberate deposition of domestic rubbish (from ongoing occupation in the vicinity, the clearance of middens etc; Tipper 2004, 102–3). The Ellington feature demonstrated a tri-partite infill sequence, but there is little evidence to indicate how these bulk fills originated, only that the upper deposit yielded the most artefactual evidence, albeit minimal in relation to some assemblages from similar contexts.

How this single sunken-featured structure relates to the Anglo-Saxon settlement pattern of Kent, still imperfectly understood, is beyond the scope of this article. Suffice to say, evidence for earlier Anglo-Saxon rural settlement in Kent has often been characterised by single, isolated sunken-featured structures and these are rarely associated with evidence for associated post-built halls (but see Parfitt 2014, 177–80, for recently located examples). The apparent isolation of these structures is probably not a true reflection of the settlement level and in many earlier, smaller scale excavations it is possible that a full picture of the Anglo-Saxon settlement evidence was not obtained. There is also the greater difficulty of locating post-hole structures (Tipper 2004, 35–7; 162–3, Welch 2007, 202), which may be skewing the evidence. At Ellington, however, a more significant factor may be truncation, where evidence for associated but more shallowly founded above-ground structures has quite possibly been completely eradicated leaving only the base of this deeper sunken-featured building as evidence of a more extensive settlement site. Even so, the lack of significant pits or other features, and minimal recovery of cultural and environmental material probably indicates that the settlement was modest in terms of size and longevity.

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Appendix 1
Additional pottery from the watching brief, environmental samples and main excavation

The additional pottery was quantified using the same methodology (also see main report for ceramic phasing). This consisted of 531 sherds weighing 2259g and with a mean sherd weight of 4.3g. Middle Neolithic, late Neolithic, early Bronze Age and early Iron Age pottery was not observed. Some of the environmental samples consisted of tiny crumbs and were too small to analyse.

Summary of pottery by sherd count and weight

	count	weight (g)
CP1: Early Neolithic	127	332
CP3: Middle Bronze Age	2	26
CP4: Middle to late Bronze Age	27	188
CP5: Late Bronze Age (plain phase)	249	1168
CP6: Late Bronze Age (earliest Iron Age)	101	458
CP9: Possible late Iron Age	13	41
CP11: Possible Anglo-Saxon	6	28
Indeterminate	6 (plus crumbs)	18

Pottery from the Watching Brief

Context	Group	Feature	Description	Sherd count	Sherd weight	Average sherd weight	Ceramic phases
5025	83	F343	Ditch segment	1	25	25	3
5046	0	F430	Fill of ditch segment	2	3	1.5	4
5100	19	F378	Fill of ditch segment	30	217	7.2	5,6
5102	0	F379	Fill of post-pit	1	11	11	6
5104	19	F379	Fill of ditch segment	7	4	6.28	5
5108	9	F383	Fill of pit	10	75	7.5	6
5110	19	F385	Fill of ditch segment	12	74	6.2	5
5112	9	F386	Fill of pit	24	103	4.3	6
5116	9	F384	Fill of pit	7	43	6.1	5
5118	19	F382	Fill of ditch/gully	3	7	2.3	ind
5120	19	F378	Fill of ditch segment	27	223	8.2	5,6
5123	9	F387	Fill of pit	1	4	4	5
5127	0	0	Layer	9	64	7.2	4, 9?
5129	0	F388	Fill of post-pit	3	14	4.6	4
5131	9	F389	Fill of pit	15	71	4.7	5
5143	9	F395	Fill of pit	8	39	4.9	6
5145	9	F383	Fill of pit	13	86	6.6	5

Pottery from environmental samples

Context and sample number	Group	Feature	Description	Sherd Count	Sherd Weight	Average sherd weight	Ceramic Phases
13 (20)				1	11	11	5
105 (18)				1	1	1	5
233 (13)				2	8	4	4
303 (26)				2	10	5	5
1000 (1)	0	F18	pit?	9	19	2.1	6
1005 (3)	0	F1	ditch	1	3	3	5
1019 (12)	4	F17	pit	2	5	2.5	5
1025 (13)	0	F2	ditch	17	41	2.4	5
1027 (14)	0	F20	ditch	crumbs	~	~	ind
1033 (18)	0	F2	ditch	24	97	4.04	5,6
1034 (19)	0	F2	ditch	13	21	1.6	5
2022 (37)	0	0	layer	crumbs	~	~	ind
2023 (38)	88	F27	pit	10	54	5.4	5
2029 (46)	7	F206	fill of pot in pit	17	37	2.1	5

Continued

Context and sample number	Group	Feature	Description	Sherd Count	Sherd Weight	Average sherd weight	Ceramic Phases
2032 (42)	7	F204	from pot 2033	43	130	3.02	5
2063 (52)	89	F89	ditch	16	39	2.4	5
2159 (90)	13	F186	pit	4	12	3	5
2261 (158)	88	F192	pit	4	9	2.25	5
3113 (148)	71	F237	pit	1	14	14	5
4029 (314)	0	F116	pit	9	7	0.7	4
4039 (275)	0	F118		crumbs	~	~	ind
4075 (295)	45	F118	pit	2	10	5	5
4079 (297)	50	F107	post-pit	1	1	1	3
4113 (315)	45	F144	pit	14	26	1.8	1
4114 (316)	45	F144	pit	62	148	2.3	1
4131 (324)	53	F69	ditch	1	8	8	5
4322 (436 and 436)	45	F138	pit	53	165	3.1	1
4367 (422)	53	F263	ditch	1	23	23	4

Additional pottery from the main excavation

Context	Group	Feature	Description	Sherd Count	Sherd Weight	Average sherd weight	Ceramic phases
1004	0	0		1	7	7	6
1033	0	F2	ditch	1	4	4	5
2026	8	F28	Post-pit	1	2	2	5
2107	14	F42	Post-pit	2	20	10	5
2292	88	F195	pit	1	9	9	6
2310	0	F210	Hollow way?	2	7	3.5	6
3258	65	F302	Post-pit	8	23	2.8	9?
4018	0	F115	ditch	2	38	19	4
4114	45	F144	Pit	1	4	4	1
4272	0	F50	silting	12	49	4.1	6, 9?
4308	0	F260	pit	1	4	4	4
4322	45	F138	pit	12	35	2.9	6
4354	0	F266	ditch	5	55	13.7	4

Discussion

Four new fabrics were identified (see below) and all of the new fabrics have been used to make late Bronze Age pottery. In addition eighteen fabrics which have been identified and described in the main report were utilised.

Flint type F/10

A medium coarse fabric containing moderate (15 per cent) poorly sorted subangular flint up to 2mm. The clay matrix is silty and micaceous with traces of black iron ore; fracture is quite fine; surface feels rough.

Flint type F/11

A medium coarse fabric containing common (25 per cent) poorly sorted subangular flint up to 2mm. The clay matrix is silty and micaceous; fracture is quite fine; surface feels rough.

Flint and quartz type FQ/10

A fairly coarse fabric containing moderate (10%) poorly sorted subangular flint up to 2mm in size. The clay matrix consists of fine quartz sand; fracture is irregular; surface feels rough.

Flint and quartz type FQ/11

A fairly fine fabric containing moderate (10%) quite well sorted poorly sorted subangular flint up to 1mm in size. The clay matrix consists of very fine quartz sand; fracture is irregular; surface feels rough.

Forms

All of the pottery is quite worn and mostly consists of plain body sherds. One rim sherd was recovered from a sample associated with pot 2033 (context 2032). It belongs to a shouldered jar with a short everted rim (form type R17). This is a form type which has been introduced during the late Bronze Age and continues throughout the whole of the late Bronze Age. Examples have been recovered from numerous sites across Kent. Two small rims belonging to straight sided jars were identified. One rim belongs to a middle Bronze Age bucket jar (context 5025) and the other rim is late Bronze Age (5116). Straight sided vessels are quite rare during the earliest Iron Age, so this example has been phased to late Bronze Age plain phase. Two tiny rims were recovered from possible Neolithic pit features (F138 and F144). The fabric and the presence of rolled rim types may suggest that these belong to early Neolithic bowl forms.

Surface treatments

As previously mentioned the pottery is quite worn and as a consequence it is difficult to identify any surface treatments. It is still possible to identify burnishing on the early Neolithic rolled rim sherds, and this would suggest that the pots were originally very carefully burnished to a high polish. The application of a thin clay slurry is still apparent on the exterior of twenty-two late Bronze Age sherds. A small number of late Bronze Age sherds have been wiped and vertical smearing is evident on nine sherds. This type of surface treatment has been carried out by wiping or smoothing the pot with the fingers.

Decoration

Five sherds displays horizontal combed decoration (context 2292, 5112 and 5120), and this type of surface treatment may be seen on a number of late Bronze Age sites, for example Monkton Court Farm (Macpherson-Grant 1994, pl 111). Two late Bronze Age sherds have fingertip decoration on the exterior (context 2107 and 5120) and one possible late Iron Age sherd has deep fingertip/nail decoration on the shoulder (context 3258).

Usewear

Eight sherds display evidence of having been used in cooking activities. One early Neolithic sherd (context 4322) has traces of soot on the exterior of the rim. Exterior soot deposits in the upper part of the vessel indicate that vessels were placed directly on an open fire (Hally 1983, 10), and vessels placed in the fire were probably used for boiling (Rice 1987, 235). Soot also tends to survive in the recesses created by the application of certain types of decoration, for example fingertip impressions, and this is the case with two late Bronze Age sherds (context 2107).

Most of the pottery derived from contexts already described in the main report. The early Neolithic sherds derive from environmental samples recovered from pits F138 and F144 in area C1. These are comparable with the ceramics described in the main report, and although there are no conjoining sherds the similarity would suggest a group of contemporary material and may also belong to the same vessel/s. A similar pattern may be seen with the middle and late Bronze Age pottery. Middle and middle to late Bronze Age pottery was mostly recovered from area C1, and the majority of late Bronze Age pottery derived from Area A2.

Appendix 2
Summary of pottery by context from both the evaluation and excavation

Context	Group	Feature	Description	Sherd count	Sherd weight	Average sherd weight	Ceramic phases
TR 1/12			Ditch	51	202	4	5
TR 1/13			Ditch	97	575	5.9	5,6
TR 2/22				41	137	3.3	5,6
TR 2/23				6	52	8.7	5,6
TR 2/28				26	83	3.2	5
TR 2/29				6	13	2.2	5.6
TR 3/32				19	68	3.6	5
TR 4/42				7	82	11.7	5,6
TR 13/136				10	10.5	1.1	5
TR 14/140				7	17	2.4	3
TR 15/152				3	8	2.7	5
TR 15/156				4	13	3.3	ind
TR 17/170				1	3	3	5
TR 17/172				20	45	2.3	5
TR 17/173				9	24	2.7	4
TR 19/193				6	13	2.2	6
TR 19/195				3	8	2.7	6
TR 20/203				9	150	16.7	5
TR 23/233				7	22	3.1	6
TR 30/303				22	197	9	5,6
TR 30/305				6	70	11.7	6
TR 30/307				6	24	4	5
TR 6/601				4	8	2	5
TR 8/801				3	18	6	6
TR 9/901				1	1	1	5
1000	0	F18	Pit or ditch	34	196	5.8	5,6
1002	0	F18	Pit or ditch	2	41	20.5	5
1005	0	F1	Ditch	87	461	5.3	5
1007	0	F2	Ditch	50	325	6.5	5
1009	0	F1	Ditch	1	29	29	9
1011	4	F14	Pit	5	32	6.4	6
1015	4	F15	Pit	28	52	1.9	4 and 6
1025	0	F2	Ditch	84	343	4.1	4,5,6
1027	0	F20	Ditch	67	304	4.5	5
1031	0	F20	Ditch	2	22	11	5
1033	0	F2	Ditch	87	819	9.4	4,5,6
1034	0	F2	Ditch	38	309	8.1	5,6
1035	0	F1	Ditch	15	105	7	5
1037	3	F9	Post pits	14	62	4.4	6
1041	0	F2	Ditch	15	38	2.5	5
1042	0	F2	Ditch	20	188	9.4	5
1044	0	F21	Pit	6	18	3	4,5
1046	0	F2	Ditch	22	167	7.6	5
1048	0	F2	Ditch	24	100	4.2	5
1050	3	F11	Post pits	2	4	2	5
1052	0	F1	Ditch	7	25	3.6	6
1054	0	F1	Ditch	2	0.5	0.25	5
1056	0	0	Pot spread	146	736	5	6
1057	0	0	Layer of colluvium	96	400	4.2	5
TR 9/1903				4	3	0.75	5
2000	89	F22	Ditch	167	851	5.1	6
2002	89	F22	Ditch	3	6	2	5
2004	89	F22	Ditch	40	122	3.1	5,6
2005	89	F22	Ditch	45	252	5.6	6
2006	89	F22	Ditch	6	84	14	5
2014	89	F22	Ditch	11	38	3.5	6

continued

Context	Group	Feature	Description	Sherd count	Sherd weight	Average sherd weight	Ceramic phases
2015	89	F26	Ditch	35	201	5.7	5,6
2016	89	F26	Ditch	12	60	5	5
2017	0	0		194	2178	11.2	5,6
2019	5	F25	Cremation burial	74	297	4	3
2022	0	0	layer	12	93	7.8	5
2023	88	F27	Pit	37	180	4.9	4,5
2030	7	F204	Pot in pit	194	2178	11.2	4,5
2033	7	F206	Pot in pit	105	1081	10.3	5
2035	88	F27	Pit	1	3	3	5
2038	7	F205	Pot in pit	243	459	1.9	5
2041	8	F49	Post pits	3	6	2	5
2044	9	F176	Pit	18	87	4.8	5
2051	8	F30	Post pits	9	13	1.4	5
2053	8	F31	Post pits	1	2	2	ind
2059	9	F177	Pit	2	18	9	5
2063	89	F87	Ditch	132	683	5.2	6
2064	19	F220	Ditch	17	96	5.6	6
2066	19	F95	Ditch	19	205	10.8	6
2067	9	F178	Pit	2	14	7	6
2069	19	F218	Ditch	11	103	9.4	6
2074	19	F220	Ditch	10	205	20.5	6
2077	19	F95	Ditch	4	21	5.3	6
2086	0	0	Deposit above F180	48	309	6.4	4 and 6
2087	11	F180	Pits	22	59	2.7	5,6
2090	18	F221	Ditch	14	16	1.1	5,6
2094	10	F38	Post pits	6	14	2.3	6
2096	11	F179	Pits	6	101	16.8	6
2099	890	F870	SAME AS 2252	1	11	11	5
TR 1/2102	10	F39	Post pits	2	1	0.5	ind
2109	14	F43	Post pits	2	13	6.5	6
2114	0	0	SAME AS 2169	14	62	4.4	5
2115	0	0	SAME AS 2211	70	276	3.9	5
2117	11	F185	Pits	11	36	3.3	5
2118	17	F208	Ditch	8	76	9.5	6
2119	17	F208	Ditch	14	87	6.2	6
2121	18	F221	Ditch	3	15	5	5
2123	17	F222	Ditch	17	88	5.2	4
2128	89	F94	Ditch	106	377	3.6	5,6
2130	17	F208	Ditch	5	37	7.4	5,6
2132	11	F183	Pit	17	149	8.8	6
2134	11	F184	Pit	5	21	4.2	6
2136	9	F191	Pit	133	747	5.6	3,5, 9
2141	89	F94	Ditch	4	46	11.5	6
2145	14	F46	Post pits	24	87	3.6	6
2152	0	0	deposit	6	19	3.2	5
2159	13	F186	Pit	7	16	2.3	5
2164	17	F222	Ditch	3	34	11.3	4
2167	88	F27	Placed deposit in feature	9	73	8.1	5,6
2169	88	F27	Pit	15	381	25.4	4
2170	17	F208	Ditch	5	43	8.6	5
2180	17	F208	Ditch	54	440	8.1	4,5
2182	17	F208	Ditch	12	137	11.4	6
2191	89	F225	Ditch	5	23	4.6	5
2213	15	F213	Ditch	1	2	2	ind
2220	G89	F217	Deposit	28	252	9	5,9
2223	88	F192	Pit	147	1369	9.3	5,6,7
2245	8	F49	Post pits	2	13	6.5	5
2247	20	F51	Small pit	2	6	3	ind
2249	89	F26	Ditch	1	0.5	0.5	5
2252	89	F87	Ditch	46	266	5.8	5
2259	88	F192	Pit	88	645	7.3	2 and 6
2276	9	F193	Pit	15	23	1.5	6
2283	89	F224	Ditch	5	24	4.8	4
2296	88	F197	Pit	49	135	2.8	4 and 7
2297	16	F201	Pit	18	73	4.1	5
2301	16	F199	Pit	16	77	4.8	5

continued

Context	Group	Feature	Description	Sherd count	Sherd weight	Average sherd weight	Ceramic phases
2306	89	F209	Ditch	3	8	2.7	5
2320	88	F197	Pit	20	29	1.5	5
2321	88	F197	Pit	2	9	4.5	6
2322	16	F199	Pit	12	11	0.9	5
2325	17	F223	Ditch	3	14	4.7	6
2341	88	F192	Pit	14	11	0.8	6
2342	17	F223	Ditch	2	5	2.5	6
2344	17	F223	Ditch	11	17	1.5	5,6
2350	88	F197	Pit	5	63	12.6	5
2352	16	F201	Pit	3	12	4	5
2355	16	F199	Pit	5	22	4.4	6
2505	89	F217	Ditch	1	6	6	6
3011	15	F96	Ditch	2	21	10.5	5
3020	84	F364	In situ pot	152	401	2.6	2
3030	0	0	Same as 2235	8	5	0.6	ind
3038	0	0	Same as 2239	10	19	1.9	5
3044	72	F233	Pit	16	54	3.4	5
3056	81	F348	Ditch	5	4	0.8	ind
3073	71	F237	Pit	8	83	10.4	4
3088	83	F343	Ditch	8	18	2.3	5
3099	62	F239	Pit	5	22	4.4	ind
3113	71	F237	Pit	29	285	9.8	4
3128	83	F343	Ditch	3	5	1.7	5
3150	62	F289	Pit	5	34	6.8	ind
3155	58	F291	Post pits	1	2	2	ind
3162	58	F293	Post pits	7	16	2.3	5?
3178	81	F348	Ditch	1	1	1	ind
3192	56	F296	Post pits	11	9	0.8	ind
3211	73	F356	Ditch	3	48	16	4
3226	71	F246	Pit	5	60	12	4
3233	76	F347	Ditch line	4	16	4	5
3242	83	F343	Ditch	4	3	0.75	4
3247	58	F319	Post pits	1	4	4	3
3250	71	F249	Pit	1	2	2	5
3262	73	F341	ditch	2	41	20.5	4
3265	56	F303	Post pits	3	11	3.7	4
3280	82	F307	Post pit	1	3	3	5
3288	69	F252	Pit	2	86	43	3
3322	91	F255	Tree throw?	4	4	1	5?
3332	58	F317	Post pits	1	3	3	4
4003	0	F113	Pot in pit	106	565	5.3	4
4006	0	F114	Pit	5	21	4.2	3
4020	52	F373	Grub hut	58	478	8.2	Anglo Saxon and Roman
4028	0	F50	Silting layers within hollow way	3	21	7	4
4029	0	F116	Pit	28	112	4	3,4
4041	0	F260	Quarry pit	11	24	2.2	4
4045	47	F142	Pit	59	396	6.7	4,6,7
4047	47	F143	Pit	19	97	5.1	6
4049	50	F100	Post pit	3	17	5.7	5
4058	47	F143	Pit	60	465	7.8	6,7
4059	47	F143	Pit	23	119	5.2	5
4062	50	F105	Post pit	1	4	4	5
4075	45	F118	Pit	43	762	17.7	4
4105	55	F55	deposit	1	120	120	5
4106	52	F373	Grub hut	27	70	2.6	Anglo Saxon
4112	0	F50	Pot spread overlaying hollow way	179	1371	7.7	7,9
4113	45	F144	Pit	26	84	3.2	6,7,8
4114	45	F144	Pit	196	1113	5.7	1,6,7
4135	52	F152	Pit	2	7	3.5	ind
4137	52	F153	Pit	2	3	1.5	ind
4178	44	F71	Ditch	2	7	3.5	5
4180	53	F72	Ditch	9	49	5.4	4
4182	48	F120	Pit	45	336	7.5	4,5
4192	47	F121	Pit	253	569	2.2	6,8
4225	42	F125	mixed	1	3	3	5
4247	0	F63	Ditch	3	22	7.3	4,5

continued

Context	Group	Feature	Description	Sherd count	Sherd weight	Average sherd weight	Ceramic phases
4251	49	F65	Ditch	7	14	2	4,5
4266	0	F63	Ditch	47	385	8.2	4
4268	0	F50	Silting layers within hollow way	25	328	13.1	6,7
4270	0	F50	Silting layers within hollow way	13	141.5	10.9	4,7,9
4271	0	F50	Silting layers within hollow way	4	13	3.3	4,8
4306	0	F260	Quarry pit	60	351	5.9	3
4307	0	F260	Quarry pit	4	69	17.3	3
4321	45	F138	Pits	127	566	4.5	1,6,7
4322	45	F138	Pits	490	3203	6.5	1,6,7,8,9
4351	0	F260	Quarry pit	49	185	3.8	4
4383	0	F50	Silting layers within hollow way	8	84	10.5	2,4
4385	0	F50	Silting layers within hollow way	1	2	2	ind
4389	0	F266	Ditch	10	27	2.7	4
4392	0	F50	Metalling from hollow way	3	12	4	4
4393	0	F50	Silting layers within hollow way	7	20	2.9	7
4395	0	F260	Quarry Pit	20	39	2	4
4400	55	F59	Ditch	3	132	44	4
4424	0	F50	Silting layers within hollow way	3	20	6.7	6
5001	0	0		2	30	15.5	4
5006	8	F397	Post pits	1	9	9	5
5014	0	F208	Ditch	17	281	16.5	7
5015	13	F403	Pit	4	13	3.3	5
5023	0	0	Unstratified finds	1	8	8	5
TR 20/20003				2	11	5.5	5
TR 20/20006				2	12	6	5
TR 20/20007				14	19	1.4	5
TR 20/20008				7	27	3.9	4
U/S				18	61	3.4	5,6
Total				5996	34965		

Appendix 3
Charred plant remains

AREA	evaluation				A1									A2						A2			A3	C1													
FEATURE					F18		F1	F14	F2				F20	F22		F27	F206	F87	F49	F192	F199	F198	F247	F118	F116	F144		F69	F373	F119	F146	F138			F263	F50	F50
Sample	20	21	26	27	1	2	3	6	13	18	19	29	14	30	31	38	46	52	134	158	227	228	247	295	314	315	316	324	334	339	354	395	396	435	422	437	439
Context	13	22	303	303	1000	1002	1005	1011	1025	1033	1034	1042	1027	2005	2013	2023	2029	2063	2245	2261	2322	2327	3224	4075	4029	4113	4114	4131	4158	4175	4202	4321	4322	4322	4367	4271	4402
Feature & type					P1001		D1006	P1012	D1026				D1028	D2003		P2025	vessel	D2254	PP2246	P2269	P2329	P2303	G3225	P4076	P4030	P4115		D4132	SFB4021	P4176	P4203	P4323			D4368	L	L
Grain																																					
Triticum aestivum/turgidum (free threshing wheat grain)							cf.1	4		2	1					1		cf.1		cf.1	2								1†				cf.2	6			
Triticum sp. (small (3-4mm) rounded wheat grain)																											cf.3 †						12 †	14			
Triticum dicoccum/spelta (emmer/spelt grain)		24	1	2	38	62	3	9	9	7	5	3	17	1		2		29	5	52 †	13 †	3		cf.1	5		29	2		3	1		5	5	3	1	
Triticum sp. (indeterminate wheat grain)							3		5			2	3				1f			3						cf.2							1				
Hordeum vulgare L.emend. (hulled barley grain)					11	10			1	1	1	1	7		1			2	1	1	1	1	2		2			1		1					4		
Hordeum sp. (barley grain)		4	2	2	9	16	2		3	5	1		5	4		6		14	2	1	5	3		3	6		2	1							2		
Triticum/Secale cereale L. (wheat/rye grain)																													cf.1			cf.1					
Avena sp. (wild/cutivated oat grain)																2																					
Avena/Bromus sp. (oat/chess grain)																																	2				
Indeterminate cereal or large grass caryopsis		67	12	2	40	115	16	18	68	24	21	5	29	5	2	64	1	144	15	82	41	22	1	4	28	2		14	2	8		11	41	86	13		
Chaff																																					
Triticum sp. (tough rachis cf. free-threshing wheat)													1																								
Triticum dicoccum (emmer glume base)	3	12	10	9	164	423	3	7	9	13	33	18	14	3	7	3		4		2	18	9	5		9			6		9					4	1	
Triticum dicoccum (emmer spikelet fork)		1	2	3	21	97		1	4	6	4	3	3	2		3					1	1			2			3		6			1		3		2
T. spelta (spelt glume base)	1	6	8	3	93	226	5	6	6	9	12	6	6	3		5	1	4		69	51	36			4			2	1						3		
T. spelta (spelt spikelet fork)					2	9	1						1							2	3	3															
T. dicoccum/spelta (emmer/spelt glume base)	20	25	45	47	161	319	34	59	142	66	54	46	24	34	12	30	8	55	2	106	86	80	6	2	32			36		6				1	14	8	5
T. dicoccum/spelta (emmer/spelt spikelet fork)	11	15	20	15	133	270	9	17	27	30	43	20	24	15	11	16	2	19		51	33	26	4	1	40			26		21				1	1	2	7
T. dicoccum/spelta (emmer/spelt rachis frag.)	2		1	2	3	6			2		2	4		1	2	1		1		1	1	3			1			1	1	4					2	2	
Hordeum sp. (barley rachis frag.)					1	23															4	1															1
Avena sp. awn fragment		++			++	+			+	+			+	+	+			+			+								+								
cereal-siezd culm node					1	5	1		1	1		1								2										1							
cereal-sized culm base												1								1																	
Other																																					
Papaver cf. *argemone* (cf. prickly poppy capsule lid) AD					1						1f																										
Fumaria sp. (fumitory achene) CD						2																															
Urtica urens L. (small nettle achene) CDn									1	1																											
Corylus avellana L. (hazelnut shell fragments) HSW		1		1						1															1	26	507	1	2	7	24	55	227	209	2	2	
Atriplex patula/prostrata (orache seed) CDn									2												1																
Chenopodium album L. (fat-hen seed) CDn		1			40	110			3	4	1	1							2	5	9	12															1
C. polyspermum L. (many-seeded goosefoot seed) CD					2	4	1				1											1															
Chenopodiaceae embryo			2		2							5							1																		
Montia fontana ssp. *chondrosperma* (Fenzl.)Walters (blinks seed) w											1																										
Stellaria media (L.) Villars (common chickweed seed) CD						4		1				1								1	1																
Persicaria maculosa/lapathifolia (redshank/pale persicaria achene) Cdo					11	13					2		3			2	1f																				
Polygonum aviculare (knotgrass achene) CD	3				2	4													2	1	1	4			2												
Fallopia convolvulus (L.)A.Love (black bindweed achene) CD	3	1f	1		2	4	1		2		1				1			1	4	1		1					1										
Rumex acetosella L. (sheep's sorrel achene) EoGCas	1	1			34	47	1	1	7	1	5	1			1	3	1	8	5	2	2	1															
Rumex sp. (dock achene) CDG	1	3	1		79	174	4	2	2	3	5	2	1	2		3		8	2	9	8	7											1	2		1	
Malva sp. (mallow seed) DY								1																													
Raphanus raphanistrum (wild radish capsule segment) CD																																					
Brassica/Sinapis sp. (mustard, charlock etc. seed) CDG																																					

continued

AREA	evaluation				A1								A2								A2			A3					C1									
FEATURE					F18		F1	F14	F2				F20	F22		F27	F206	F87	F49	F192	F199	F198	F247	F118	F116	F144		F69	F373	F119	F146		F138		F263	F50	F50
Sample	20	21	26	27	1	2	3	6	13	18	19	29	14	30	31	38	46	52	134	158	227	228	247	295	314	315	316	324	334	339	354	395	396	435	422	437	439
Context	13	22	303	303	1000	1002	1005	1011	1025	1033	1034	1042	1027	2005	2013	2023	2029	2063	2245	2261	2322	2327	3224	4075	4029	4113	4114	4131	4158	4175	4202	4321	4322	4322	4367	4271	4402
Feature & type					P1001		D1006	P1012	D1026				D1028	D2003		P2025	vessel	D2254	PP2246	P2269	P2329	P2303	G3225	P4076	P4030	P4115		D4132	SFB4021	P4176	P4203		P4323		D4368	L	L
Prunus spinosa L. (sloe stone) HSW																																					
Rosa sp. (rose seed) HSW*						1f																															
Vicia cf *tetrasperma* (L.)Schreb. (cf. smooth tare seed) G						1						1				1												1					3	5			
Vicia/Lathyrus sp. (vetch/tare <2mm seed) CGD	1	1	1		1	2	1	1	1	2				1		7		1		1	2			1	1			1		2		1	4	6	3		1
Vicia/Lathyrus sp. (vetch/tare 2-3mm seed) CDG									1																								1				
Vicia/Lathyrus/Pisum sp. (large vetch/bean/tare/pea frag.) CD*			2		9	18	2		6			2	5			4		7			5	2									1						
Pisum sativum L. (pea seed) *		cf.1			cf.3	cf.2	cf.2				cf.1f			1		cf.1		1+cf.1																			
Vicia faba var. minor (Celtic bean seed) *					1+6f	12 †														1	1f																
Medicago/Trifolium/Lotus sp. (medick/clover/trefoil seed) GCD					10	10			1	1	1			4						2	1	2															
Linum usitatissimum L. (flax seed) *					1			cf.1																									cf.2f	6			
Linum usitatissimum L. (flax capsule frag.) *			1		19	15																											1	1			1
Apiaceae cf. *Apium* sp. (wild celery etc. mericarp)					1													1	1																		
Hyoscyamus niger L. (henbane seed) Dn																																	1				
Plantago laceolata L.(ribwort plantain seed) Go		1				1			1										1																		
Odontites verna/Euphrasia sp. (red bartsia/eyebright seed) ADG											1																										
Sherardia arvensis L. (field madder nutlet) AD					3	7		2	3					1		2					1																
Galium aparine L. (cleavers nutlet) CDSH					4	2	1	1	1	1	2		cf.1f											1f				1f							1	2		
Galium sp. (1.5mm)						2	1														1				2			1									1
Sambucus nigra L. (elder seed) DHSW						1																														1	
Valerianella dentata (L.)Pollich. (narrow-fruited corn-salad fruit) AD					3	3																1														
Carduus/Cirsium sp. (thistle achene) GDY						cf.1f																															
Lapsana communis L. (nipplewort achene) DHWo																																					
Anthemis cotula L. (stinking mayweed achene) Adhd																													1								
Tripleurospermum inodorum(L.)Sch.Bip. (scentless mayweed achene) CD					3	2			1																												
Eleocharis subg. *Palustres* (spike-rush nutlet) MPd																																					
Carex sp. (trigonous sedge nutlet) MPd																					1	1															
Carex sp. (lenticular sedge nutlet) MPd																				1																	
Bromus sect. *Bromus* (brome grass caryopsis) CD	1f				46	156	4	3	3	2	5	2	5			2	1	4		52	10	15						1			cf.1		cf.2f		3		
Danthonia decumbens (L.) DC (heath-grass caryopsis) Ega																								cf.1													
Lolium-type (ryegrass-type long-seeded grass caryopsis) CDG						3						1			1													1						1			
Poaceae (small seeded grass caryopsis) CDG	1f		3	1	7	13		6	7	2	5			1	1	1		2			3	4			1											
NFI tuber						1	2				3																										
Total remains:	40	167	115	89	967	2197	98	140	319	149	182	212	126	78	39	159	16	307	43	451	306	239	18	14	136	30	542	99	9	68	27	68	306	60	344	17	19
Sample volume (litres soil):	10	10	25	10	50	50	40	40	50	40	50	50	25	35	20	20	5	30	10	3	40	10	25	35	45	25	45	45	70	40	50	50	60	40	58	40	40
% flot quantified	100	100	100	100	50	25	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
charred fragments per litre of soil sieved:	4.0	16.7	4.6	8.9	38.7	175.8	2.5	3.5	6.4	3.7	3.6	4.2	5.0	2.2	1.9	7.9	3.2	10.2	4.3	150.3	7.6	23.9	0.7	0.4	3.0	1.2	12.0	2.2	0.1	1.7	0.5	1.4	5.1	1.5	5.9	0.4	0.5

C·A·T
Canterbury Archaeological Trust Ltd

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Registered Office: 92a Broad Street, Canterbury, Kent, CT1 2LU
tel: 01227 462 062
email: admin@canterburytrust.co.uk
http://www.canterburytrust.co.uk

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