# AN EARLY ROMAN SETTLEMENT IN MILTON KEYNES: EXCAVATIONS AT KENTS HILL 2016

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*Three phases of late Iron Age and early Roman activity were encountered during excavations in Kents Hill. A large, interesting and informative group of 1st-century pottery was recovered and, together with evidence of industrial and agricultural activities, attests to the presence of nearby occupation.*

## Introduction

Allen Archaeology Limited (AAL) was commissioned by Willmott Dixon Construction Limited to undertake an archaeological excavation as a condition of planning consent for the construction of a secondary school with associated facilities on land off Timbold Drive, Kents Hill, Milton Keynes. Kents Hill is a District in the south-east part of Milton Keynes, and the site lay in a former agricultural field bounded by Standing Way to the north, Timbold Drive to the east and Brickhill Street to the west, centred on NGR SP 8891 3768.

The project entailed excavation of a 60m x 50m area and was undertaken over a period of three weeks in January 2016. The majority of features encountered, which form the focus of this report, date to the late Iron Age and early Roman periods: two modern pits were also recorded. Full details of the site methodology and of the later finds can be found in the project archive which will be deposited with Buckinghamshire County Museum under the museum accession code AYBCM: 2016.6.

## Archaeological and historical background

The site lies 0.8km east of the river Ouzel in an area where the bedrock geology comprises Peterborough member mudstone covered by superficial deposits of clay, silt, sand and gravel (http://mapapps.bgs.ac.uk/geologyofbritain/home.html).

The Milton Keynes Historic Environment Record (MKHER) provides evidence of a limited number of prehistoric finds in the local area including an Iron Age coin of Cunobelin, found during a metal-detecting survey of Timbold Drive, directly to the east of the site (MKHER 1592). A Roman bronze bracelet fragment was discovered c.200m northeast of the site (MKHER 1260). Roman finds from metal detecting in the Kents Hill area in recent years have suggested the presence of an occupation site, though none has been identified until now. Further afieold, the well-documented Roman site of Bancroft villa lies 7km to the north-west and the small town of *Magiovinium* is 3.5km to the south. The Roman route of Watling Street passes c.5km to the west of Kents Hill (Fig. 1).

In 2015, evaluation trenching of the site revealed a focus of late Iron Age activity in the northeast corner. The quantity of finds from some of these features suggested that they represented more than merely agricultural enclosures (AAL 2015).

## Late Iron Age and Early Roman Features

The main phase of activity on site occurred during a relatively short period of time, with a predominance of late Iron Age to early Roman enclosures, boundary ditches and associated pits. Pottery of predominantly 1st-century date, dominated by

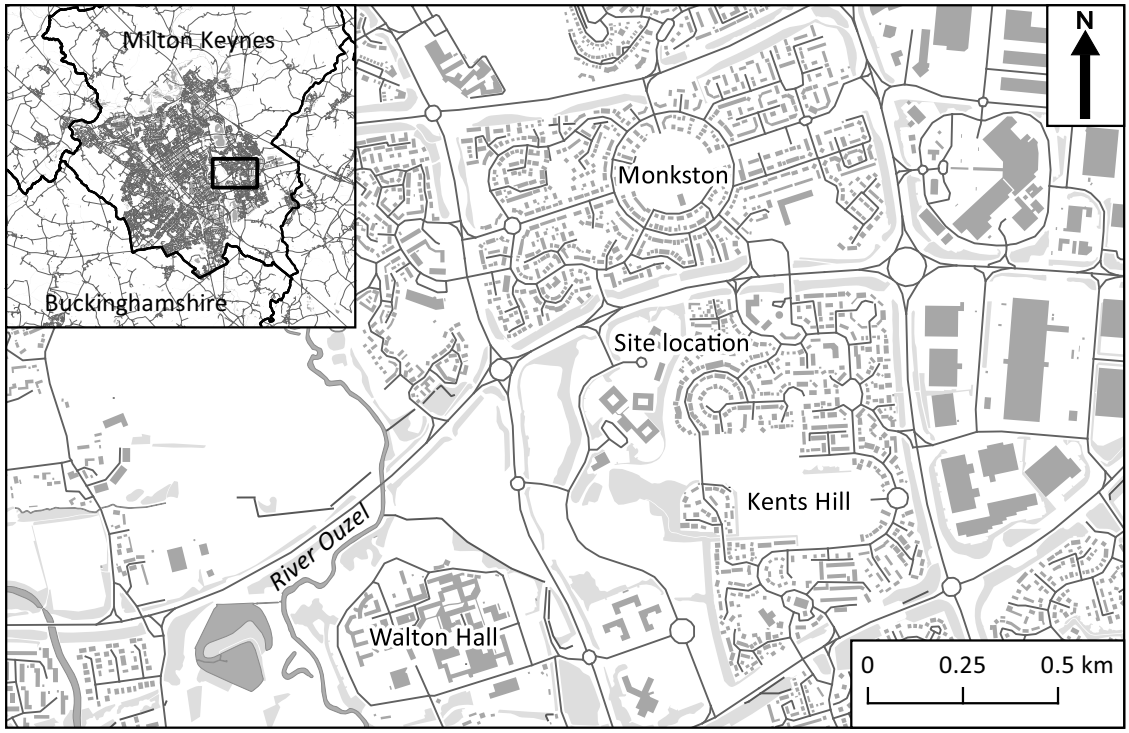


FIGURE 1 Site location plan (scale 1:20,000)

locally-produced jars and bowls in wheel-made 'Belgic' grog-tempered fabrics, was recovered from many of the features. The archaeological features were sealed by a 0.15–0.20m thick deposit of post-medieval subsoil, Group 1564, the variation in thickness being a result of the west-facing incline of the development area. At the western extent was a colluvial deposit resulting from the erosion of the natural geology, whereas the deposit in the eastern extent of site was more reminiscent of silty, cultivated soils.

Three phases of activity were identified on the site:

**Phase 1**

The earliest phase of activity may date from the pre-Roman Iron Age and comprises what appears to be a livestock enclosure and associated field system (Fig. 2). Group 1557 extended beyond the limit of excavation to the east and measured c.26m long by 1.0–1.75m wide with an average depth of 0.24m. The fills contained 1st-century pottery and flecks of charcoal. Group 1557 appears to have formed part of a rectangular enclosure together with Group 1554. The ditches in this phase are relatively shallow and narrow and it is possible that features 1314 and 1316 represent the heavily truncated and somewhat ephemeral remains of the continuation of the field system to the north, beyond the limit of excavation. A possible entrance to the stock enclosure is located at the southeast corner where the ditches appear to curve towards each other.

Towards the south, undated ditch 1411 has also been assigned to this phase, based on its character and stratigraphic relationship with the later ditch groups. Group 1558 was recorded as the recut of 1411 and the upper fill contained eleven sherds of pottery and two fragments of fired clay, one of which was marked with grass impressions. Group 1558 was heavily truncated by subsequent boundary ditches.

**Phase 2**

The ditches present in Phase 1 appear to have been replaced by more substantial features,

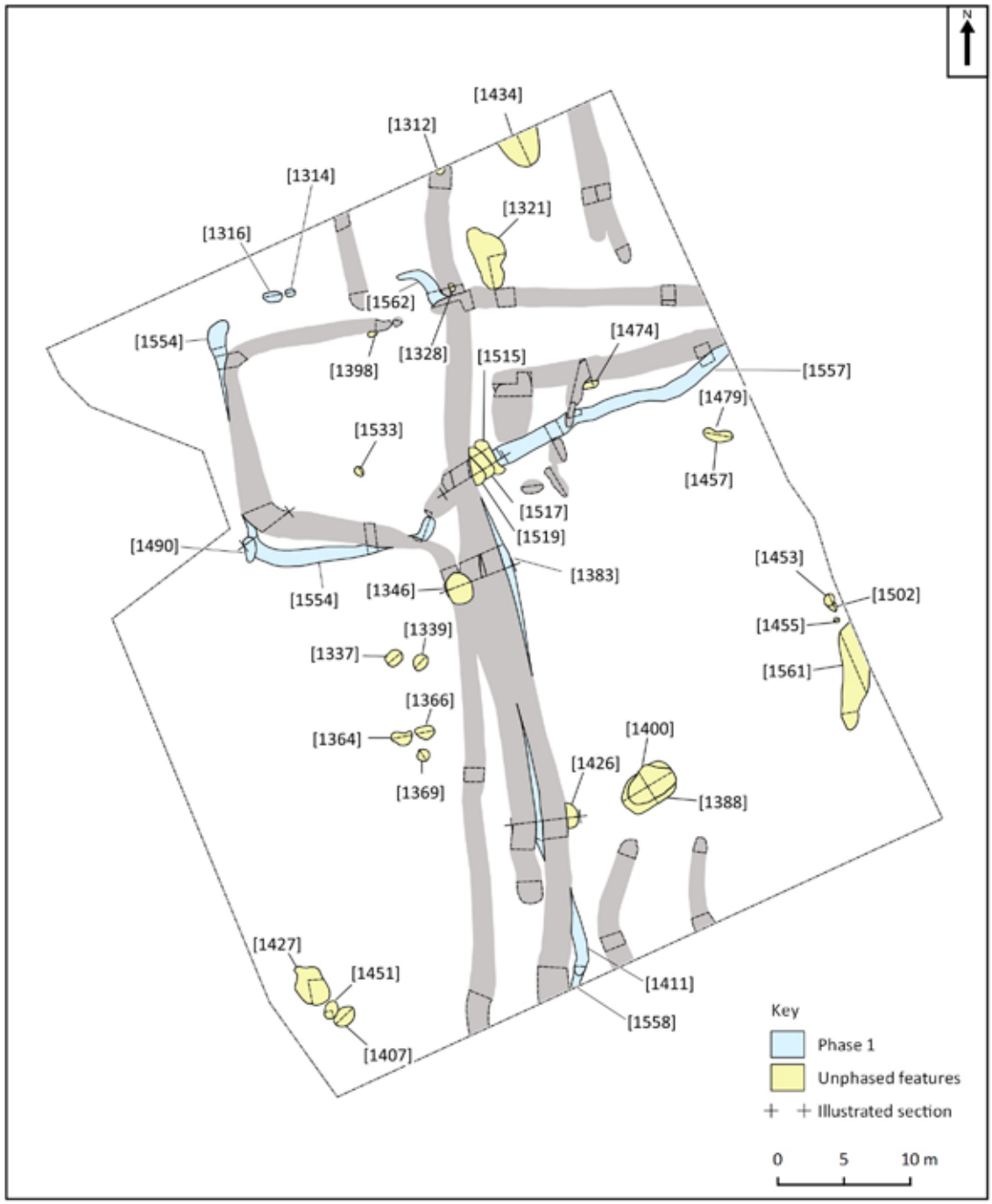


FIGURE 2 Plan of Phase 1 and unphased features (scale 1:500)

respecting a similar alignment and redefining the stock enclosure (Fig. 2). Enclosure Group 1555 cut through and roughly followed the line of its predecessor, Group 1554. 206 sherds of mid to late 1st-century pottery were recovered from this group together with a few small fragments of intrusive medieval and post-medieval ceramic building material.

A substantial north to south aligned boundary, Group 1551, was also established. A group of sherds from the upper fill of this Group could be reconstructed into a complete narrow-necked jar. Also of note is dumped deposit 1522 from which 131 sherds of pottery, weighing c3.5kg, were retrieved. These were found along with fuel waste, furnace slag, animal bone fragments and a relatively rich deposit of charred wheat and barley grains.

Groups 1555 and 1551 appear to have formed the boundaries of a droveway leading into the re-defined stock enclosure at the north end. A large posthole/pit [1384], was located at the eastern end of Group [1555], in the probable entranceway to the enclosure from the north.

An east to west-aligned boundary, Group 1553, extended approximately 20.5m from the eastern limit of excavation. It varied in width from 0.60–1.38m and was around 0.54m deep. Two flint flakes, one of possible late prehistoric date, were amongst the finds recovered from the ditch, as were 91 sherds from the same, near complete, stubby angular channel-rim jar of mid to late 1st-century date. The boundary was later recut (1444 in Phase 3), but the pottery recovered from the later feature indicates a short time span for this sequence of events and suggests that Phases 2 and 3 were of relatively brief duration. It is possible that this group represents a further droveway running from the east and into the same enclosure as the north-south aligned route.

**Phase 3**

The most substantial feature assigned to this phase is ditch Group 1556, a large, north-south aligned boundary which cuts through the droveway, effectively placing it beyond use (Figs 3 & 4). Group 1556 extended 55m south of the northwest limit of excavation and ended with a rounded terminus. Furnace slag, traces of wood fuel and low densities of spelt wheat in its fill demonstrate the presence of continued activity nearby.

Two narrow, curvilinear features, 1565 and Group 1552, have been tentatively assigned to this phase. Only a small part of these features fell within the excavated area and as such their function remains unknown. The only dating evidence came in the form of two fragments of folded copper-alloy sheet fragments of possible Roman date from within Group 1552. Two nearby pits, which are also believed to be contemporary, produced quantities of pottery and fragments of animal bone.

Pits 1515, 1517 and 1519 (a possible recut of 1517) were tentatively assigned to this phase. The pits were truncated by later boundary ditch Groups 1551 and 1556, and had shallow, irregular profiles. Pit 1515, the earliest in the group, contained no dateable material, but the others contained sherds of the same 1st-century pottery found elsewhere on site. The fill of 1517 also contained an abraded piece of furnace slag and two fragmented animal bones, whilst the fill of 1519 contained a rough-cut stone slab, possibly a drain cover. Three oblong undated pits, 1469, 1476 and 1545, were cut through the upper fills of boundary ditch Groups 1563 and 1557. Their relationship to the pits mentioned above remains unclear: the same is true for a number of pits south of boundary Group 1557.

Pit 1346 contained a hearth bottom slag. The pit was cut into the fill of boundary Group [1556] and Phase 2 boundary Group 1551 and it is unclear whether the slag is contemporary with the pit or a residual find redeposited from within the earlier ditch. Although no furnaces or ovens were recorded within the excavated area, the hearth bottom indicates smithing was taking place in the vicinity, as such material is rarely deposited far from its original source (McDonnell 1982, 6, 22).

Ditch Group 1559 in the northeast corner of the site appears to be a reinstatement of Phase 2 ditch 1481.

**Unphased 1st-century features**

A heavily truncated pit, 1525, was present at the western end of 1557 and contained a further group of early to mid/late 1st century pottery, including the tip of the grooved foot of a pedestal-based urn (Figs 3 & 4).

Near to the southeast corner of the excavated area was a probable ditch terminus, Group 1561. Its function and relationship to the features mentioned above remains unclear. A small pit or posthole, 1455, was recorded directly northwest of Group

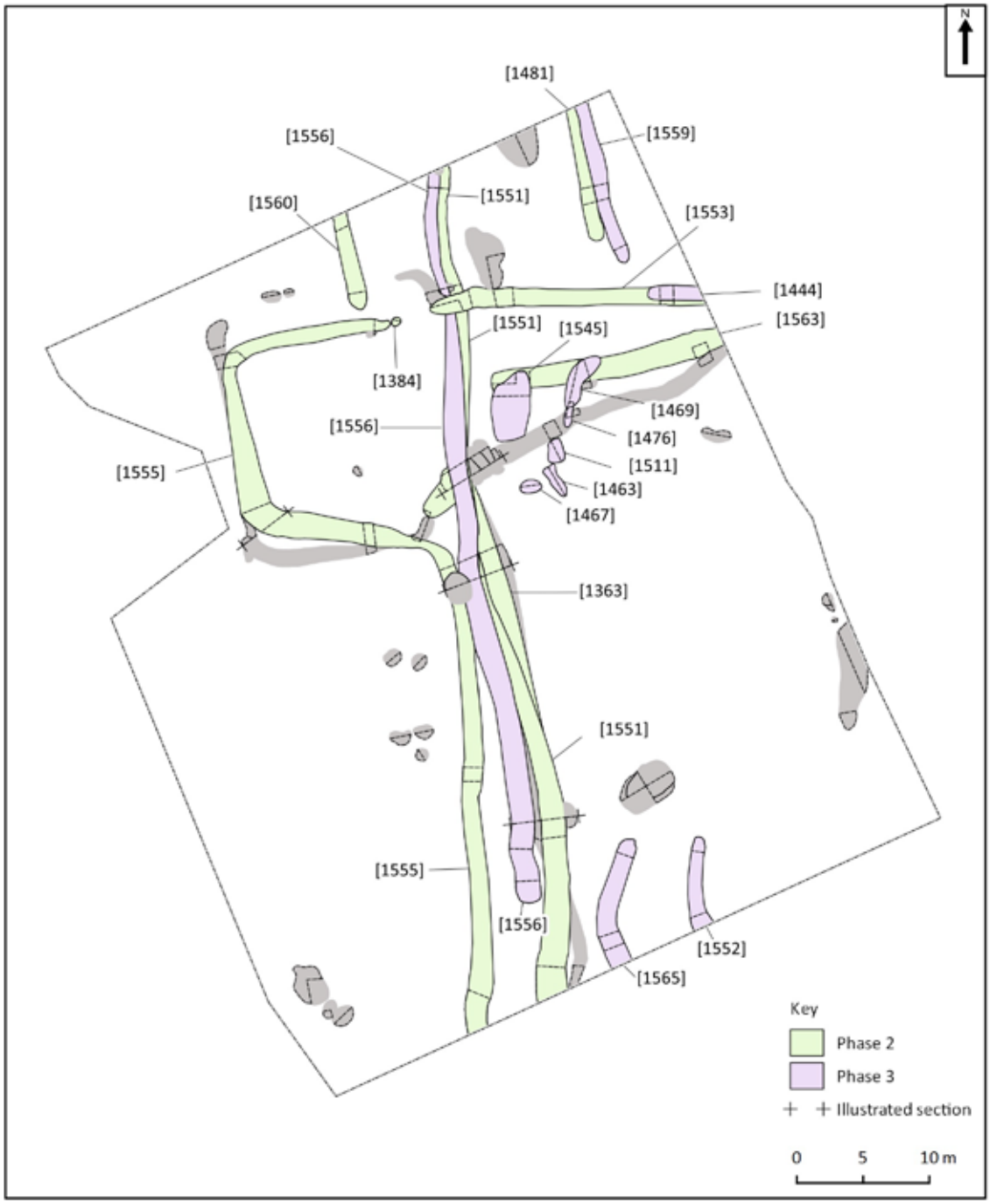


FIGURE 3 Plan of Phases 2 and 3 (scale 1:500)

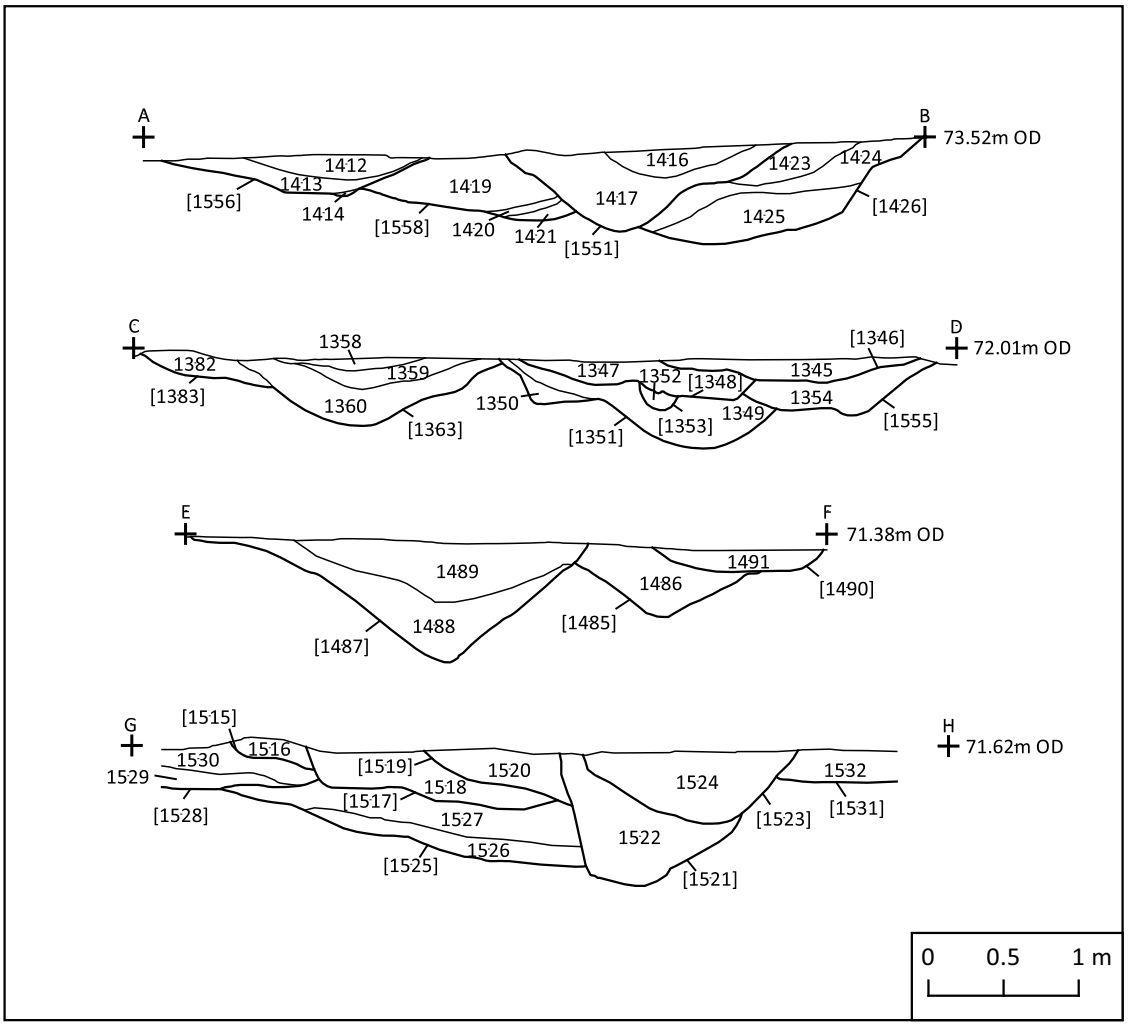


FIGURE 4 Selected sections (scale 1:50)

1561 and is tentatively placed in the same phase.

Two small groups of pits (one of five and the other of three) were recorded to the west of Group 1555. From one, oval pit 1407, the remains of a pair of femora and portions of the left arm of an adult of undetermined sex were recovered.

Undated feature [1434] extended beyond the limit of excavation to the north: it is unclear whether this represents a pit or the terminus of a further boundary ditch.

## THE FINDS

### The Roman Pottery

*By Andrew Peachey*

A total of 1098 sherds (16150g) of early Roman pottery were recovered and indicate that the sequence of boundary and enclosure groups spans the post-Roman Conquest period of the mid to late 1st century AD (Table 1). There appear to have been to major episodes of deposition in Groups 1551 and 1555, but the overall character of the assemblage is homogenous, with the fabric groups

recorded dominated by a range of locally-produced 'Belgic' grog-tempered fabrics, predominantly wheel-made, with common form types including angular lid-seated jars, barrel jars with bead rims, or necked bowls with plain cordons. Also present are occasional lids, storage jars, waisted bowls, narrow-neck jars and a pedestal-based urn. These are supplemented by a significant component of wheel-made, shell-tempered wares, entirely comprised of lid-seated/channel-rim jars. Other early Roman pottery is limited to isolated body sherds of fine sandy wares, both oxidised and reduced.

The assemblage is indicative of rubbish deposition and clearance resulting from domestic occupation in the close vicinity, and is consistent with mid-1st to late 1st/early 2nd-century groups previously recorded in Milton Keynes, notably from Cotton Valley and Constantine Way (Marney 1989, 9–16). Parallels can also be drawn with pottery produced at the kiln sites of Wavendon Gate (Williams, Hart & Williams 1996) and Caldecotte (Zeepvat, Roberts & King 1994), close to the east and south respectively.

***Methodology***

The pottery was quantified by sherd count, weight (g) and R.EVE, with fabrics examined at x20 magnification; in accordance with Barclay *et al.* (2016) and Darling (1994). Fabric codes and descriptions were cross-referenced, where possible, to the National Roman Fabric Reference Collection (Tomber & Dore 1998) and the type series developed for Milton Keynes (Marney 1989), while local or indistinguishable coarse wares were assigned an alpha-numeric code, summarised in Table 2 and fully described in the archive. Form types have been cross-referenced, wherever possible to Thompson (1982), with all Belgic types present from this corpus summarised in Table 4. A catalogue of the pottery by context forms part of the site archive.

***Fabric and Form***

The assemblage contained a single vessel that represents a continuation, or probably survival, of hand-made 'native' Iron Age vessels (fabric Q1); contained in ditch 1332 in association with Belgic pottery. It comprises a wide-mouthed jar or bowl

TABLE 1 Quantification of early Roman pottery by sherd count, weight and Rim Estimated Vessel Equivalent (R.EVE) on feature groups

| *Phase* | *Feature group* | *Sherd count* | *Weight (g)* | *R.EVE* |
|---|---|---|---|---|
| Phase 1 | L-shape enclosure: ditch groups [1557] & [1554] | 26 | 385 | – |
| Phase 1 | Ditch group [1558] & associated pits | 44 | 460 | 0.3 |
| Phase 1 | Ditch group [1562] | 11 | 105 | – |
| ? Phase 2 | Ditch group [1563] | 32 | 520 | 0.05 |
| Phase 2 | Boundary group [1551] | 238 | 5030 | 2.05 |
| Phase 2 | Enclosure group [1555] | 285 | 4049 | 2.4 |
| Phase 2 | Boundary group [1553] | 185 | 1940 | 0.5 |
| ?Phase 3 | Pits post-dating ditch group [1557] | 17 | 279 | – |
| Phase 3 | Boundary group [1556] | 78 | 1992 | 0.85 |
| Phase 3 | Ditch group [1559] | 6 | 104 | 0.1 |
| Unphased | Pits west of enclosure group [1555] | 113 | 551 | 0.3 |
| Unphased | Ditch group [1561] | 31 | 294 | 0.05 |
| – | Other pits | 18 | 251 | 0.1 |
| – | Un-stratified | 14 | 190 | – |
| – | ***Total*** | ***1098*** | ***16150*** | ***6.7*** |

TABLE 2 Fabric description (*type series after Marney 1989)

| *Fabric Code* | *MK type series* | *Fabric Name (full description in archive)* |
|---|---|---|
| *Q1* | \ | Handmade 'native' sand-tempered ware |
| SOB GT1sw | 46a | Belgic grog-tempered ware 1 (slow wheel-made/partially hand-made). Common grog (<1.5mm) temper |
| SOB GT1w | 46a | Belgic grog-tempered ware 1 (wheel-made). Common grog (<1.5mm) temper |
| SOB GT2 | 45 | Belgic grog-and-shell-tempered ware (wheel-made) |
| SOB GT3 | 46m | Belgic sand-and-grog-tempered ware (wheel-made) |
| ROB SH1 | 1a | Early Roman shell-tempered ware (wheel-made) |
| GRS1 | 9a | Sandy grey ware |
| GRF1 | 47a | Reduced fine ware |
| OXF1 | 44 | Oxidised fine ware |

with an upright rim and slightly shouldered body (Fig. 5.1), comparable to vessel types recorded at Wavendon Gate (Elsdon 1996, fig. 100.16) and Pennyland (Knight 1993, figs 91.5 and 93.48), but notable here for having a rim diameter of 34cm that, with the exception of a Belgic storage jar, makes it the largest vessel in the assemblage and signifies it may have been retained for a specific function, probably utilitarian or possibly industrial as there are traces of a sooty residue in the interior.

The bulk of the assemblage can be characterized as within the 'Belgic' ceramic tradition, broadly defined by the use of grog temper and localized production in clamp kilns, spanning the late 1st century BC and 1st century AD, possibly surviving slightly later in some areas. Nonetheless the form types in this assemblage support a narrower chronology in the mid to late 1st century AD, potentially coinciding with the establishment of Watling Street in Catuvellaunian territory (Buckinghamshire) in the post-Roman Conquest period, and with technological innovations noted in the mid-1st century AD kilns at Caldecotte (Marney 1989, 899). Thompson (1982, 16) classified Milton Keynes in her Zone 8, the most northwesterly of the areas in southeast Britain that adapt to this innovation in ceramic technology, with previously recorded material from Milton Keynes, notably the kilns at Caldecotte contributing to the ceramic profile of this geographic area (Marney 1989, 87–90). This fabric group is typically broadly defined under the umbrella of Southern British (Belgic) grog-tempered ware (Tomber & Dore 1998, 214), but in Zone 8 fabrics are characterised by the presence of grog, shell and mixed grog-and-shell temper, therefore five fabrics in this assemblage can be classified as Belgic (SOB GT1sw, SOB GT1w, SOB GT2, SOB GT3 and ROB SH), a classification supported by shared form types defined below. Further attempts to better define or divide the grog-tempered ware, specifically SOB GT1 sw and SOB GT1w, beyond their method of manufacture (*i.e.* on a wheel) were stymied by inconsistencies and variability in the use of grog, presumably dictated by the material at hand or recycled to incorporate into raw clay. Collectively these fabrics account for 1084 sherds (15941g) (Table 3), equating to *c.*98.7% of the assemblage by sherd count and weight, paralleling the overly dominant percentage of Belgic fabrics at Walton, adjacent to the southwest of Kents Hill, where the proximity of the Caldecotte kilns was postulated as having the result of flooding the local market (Marney 1989, 89), likely also skewing the composition of this assemblage. Only a small component of the Belgic pottery is not fully wheel-made, but manufactured on a slow wheel (SOB GT1sw), and all the forms in this fabric variant are widely paralleled in its wheel-made counterparts. Therefore, there is no suggesting that this variation is relative to chronology, but probably that these were a cheaper, less-well-finished product, potentially targeted at lower status or less obtrusive domestic or utilitarian functions, though there is no defini-

TABLE 3 Total quantification of fabric types in the assemblage, quantified by sherd count (SC), weight (W, in grams) and Rim Estimated Vessel Equivalent (R.EVE)

| *Fabric Code* | *Fabric Name* | *SC* | *W* | *R.EVE* |
|---|---|---|---|---|
| Q1 | Handmade 'native' sand-tempered ware | 6 | 135 | 0.10 |
| SOB GT1sw | Belgic grog-tempered ware 1; slow wheel/hand-made | 109 | 1784 | 1.05 |
| SOB GT1w | Belgic grog-tempered ware 1; wheel-made | 543 | 8019 | 2.55 |
| SOB GT2 | Belgic grog-and-shell-tempered ware | 147 | 2545 | 1.15 |
| SOB GT3 | Belgic sand-and-grog-tempered ware | 37 | 677 | 1.00 |
| ROB SH1 | Early Roman shell-tempered ware | 248 | 2916 | 0.85 |
| GRS1 | Sandy grey ware | 4 | 61 | – |
| GRF1 | Reduced fine ware | 1 | 5 | – |
| OXF1 | Oxidised fine ware | 3 | 8 | – |
| ***Total*** | | ***1098*** | ***16150*** | ***6.70*** |

tive contrast in finish or wear in comparison to the other Belgic fabrics.

The range of form types present in Belgic fabrics is modest (Table 4), though with a focus on utilitarian jars and bowls that exhibit a degree of bias relative to fabric type. Jars and bowls are typically plain but for slashed rims on a specific type, with surface treatments limited to plain burnishing, and evidence for wear (*i.e.* burning) rare. More complex form types are limited to isolated examples of a pedestal-based urn, a jug, and a lid, while storage jars are also present but rare. The most common form type are jars with channel or lid-seated rims, either with a plain bead (C5–1) or with a slashed bead (C5–2), but typically angular in their internal profile. Most common in ROB SH (shell) and SOB GT2 (grog and shell), these types also occur in SOB GT1sw and SOB GT3, but are conspicuously absent in the more well-finished SOB GT1w.

These types of jar appear more common in the northwestern zones of the distribution of grog-tempered fabrics in southeastern England, and most common in areas where shell-tempered fabrics are common (Thompson 1982, 249), as here, and also notably at Bletchley and Newport Pagnell. Comparable jars are relatively common in 1st century AD deposits across Milton Keynes (e.g. Marney 1989, figs 24.1–3, 7–8), including Groups 1 and 2 from Walton and Cotton Valley respectively (Marney 1989, 7–9), Wavendon Gate (Elsdon 1996, 173, fig. 37), Hartigans (Marney 1993, figs 100.2 & 4) and Broughton (Lyons 2014: fig. 3.34.7–8); as well as other sites in the region at Silverstone Fields and Biddlesden Road Bridge (Timby 2007, fig. 4.1.15, 20 & 22; 4.3.56).

While continuing as part of the domestic repertoire until the early 2nd century AD, the evidence suggests these lid-seated jars decline in popularity rapidly after the mid-1st century AD, therefore their relative abundance in this assemblage supports a chronology focussed on the period immediately after *c.*AD43. Examples in this assemblage with a plain bead (C5–1) include in ROB SH: Fig. 4.2, Fig. 4.3 with a rilled body, and the near-complete Fig. 4.4, with a grog-tempered example comprising Fig. 4.5. Examples with a slashed rim (C5–2) occur entirely in grog-tempered fabric variants, including Fig. 4.6, Fig. 4.7, Fig. 4.8, and with grooves on their body, Fig. 4.9 and Fig. 5.10. None of these jars exhibit any evidence of wear, though they are very consistently sized, with an average rim diameter of 15.6cm, occasionally ranging from 14–20cm.

Like the lid-seated jars, two further form types do not occur in SOB GT1w: simple ovoid jars with a bead rim and storage jars, suggesting a suite of utilitarian vessels that were consumed on a materially distinct level, either driven by production aims or consumer preference. The ovoid jars (C1–2) occur in SOB GT1sw (Fig. 5.11), SOB GT2 (Fig. 5.12) and SOB GT3; and are comparable to vessels recorded at Wavendon Gate (Parminter 1996, fig. 101.41). They vary considerably in size, but an example in ditch terminus 1441 is notable for a charred, sooty residue on the exterior suggesting it was used as a

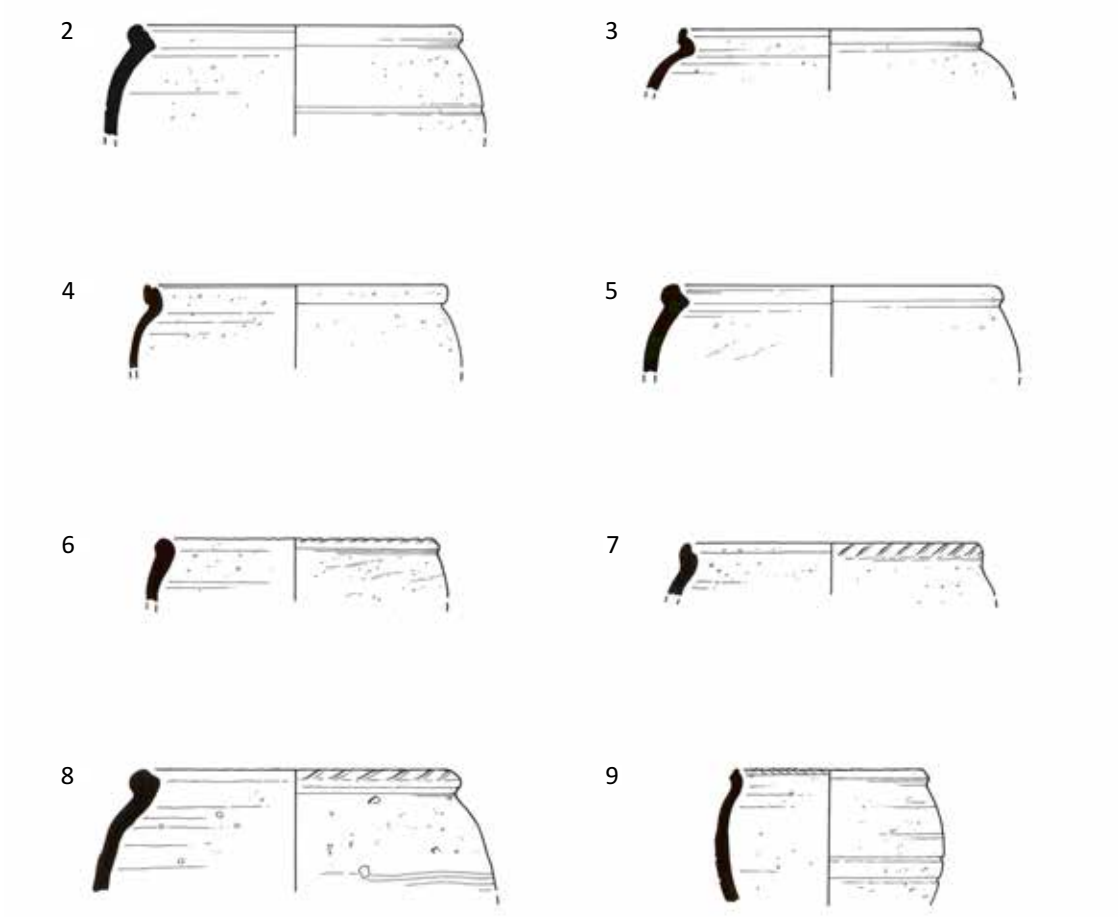


FIGURE 5 Roman pottery, 1–9 (scale 1:4)

cooking pot. Two storage jars with thick everted bead rims (C6–1) were present (Table 4), including in ditch 1415 (Fig.5.13), comparable to examples at Broughton (Lyons 2014, fig. 3.34.102). They are probably indicative of the storage of bulk staple goods (or liquids) rather than transport vessels; but with the combination of the quantity of common utilitarian vessels outlined above certainly associated with occupation in the immediate vicinity.

The remaining form types all occur in SOB GT1w, which is not to say sparse examples of the same form do not occur in other Belgic fabrics (Table 4). Superficially, the most common of these are jars or bowls with everted bead rims and rounded shoulders or shoulder cordons (B1–1/D1–1); however, the degree of definition within this is masked by fragmentation, which frequently fractures rim sherds that cannot be associated with body profiles. The bulk of examples have relatively thin walls and burnished exteriors, including Fig. 5.14, Fig. 5.15, Fig. 5.16, Fig. 5.17 and Fig. 5.18; comparable to examples produced in Caldecotte kiln 1 (Marney 1989, fig. 38.19), as well as mid to late 1st century AD examples from settlement at Caldecotte (Marney 1989, fig. 35.51 & 36.53) and Hartigans (Marney 1993, fig. 100.9 & 17).

Further form types represented by multiple examples that are manufactured to a comparably high standard to these common jars or bowls include narrow-neck jars (B3–1/B3–8), biconical bowls (B5–3) and waisted bowls (E1–1). The narrow-neck jars all have plain burnished neck cordons above a voluminous globular body; with a slightly convex cordon on Fig. 5.19 (B3-1), but

TABLE 4 Quantification of form types in Belgic fabrics by Rim Estimated Vessel Equivalent (R.EVE) and Minimum Number of Vessels (MNV)

| *Thompson (1982) type* | *Form* | *Description* | *SOB GT1 sw* | | *SOB GT1 w* | | *SOB GT2* | | *SOB GT3* | | *ROB SH* | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | *R.EVE* | *MNV* | *R.EVE* | *MNV* | *R.EVE* | *MNV* | *R.EVE* | *MNV* | *R.EVE* | *MNV* |
| A1 | Urn | Pedestal base (foot only) | | | - | 1 | | | | | | |
| B1-1/D1-1 | Jar/ Bowl | Everted bead rim, rounded shoulder | 0.05 | 1 | 0.70 | 5 | | | 0.05 | 1 | | |
| B3-1 | Jar | Narrow-neck, plain neck cordon | | | 0.15 | 1 | | | | | | |
| B3-8 | Jar | Narrow-neck, plain bulging neck cordon | | | 0.85 | 2 | | | | | | |
| B5-3 | Jar | Necked, plain shoulder cordon | | | 0.10 | 1 | | | 0.45 | 1 | | |
| C1-2 | Jar/ Bowl | Ovoid body with simple bead rim | 0.05 | 1 | | | 0.20 | 1 | 0.2 | 1 | | |
| C5-1 | Jar | Channel/lid-seated rim | | | | | 0.10 | 1 | 0.30 | 1 | 0.85 | 3 |
| C5-2 | Jar | Channel/lid-seated rim; slashed externally | 0.45 | 2 | | | 0.80 | 3 | | | | |
| C6-1 | Storage Jar | Thick everted bead rim | 0.05 | 1 | | | 0.05 | 1 | | | | |
| D2-3 | Bowl | Tall neck, plain neck cordon | | | 0.10 | 1 | | | | | | |
| ?D3-3/G6 | Jug | Bifid/stepped rim | | | 0.05 | 1 | | | | | | |
| E1-1 | Bowl | Tall shallow neck, plain neck cordon | 0.05 | 1 | 0.25 | 1 | | | | | | |
| L1 | Lid | Bell-shaped | | | 0.20 | 1 | | | | | | |
| \ | Jar/ Bowl | Misc. everted bead rim | 0.30 | 1 | 0.25 | 3 | | | | | | |
| \ | Handle | ?Cauldron | - | - | | | | | | | - | 1 |
| ***Total*** | | | ***0.90*** | ***6*** | ***2.70*** | ***18*** | ***1.15*** | ***6*** | ***1.00*** | ***4*** | ***0.85*** | ***4*** |

appearing to favour the bulging cordons and flattened shoulder angles exhibited on Fig. 6.20 and Fig. 6.21 (B3–8), supporting a post-Roman Conquest date as the form became increasingly Romanised (Thompson 1982, 171), and consistent with the products of kilns at Caldecotte (Marney 1989, fig. 39.31 & 34) and Wavendon Gate (Parminter 1996, fig. 102.4; 105.26 & 55).

The durability of these narrow-neck jars is illustrated by Fig. 6.21 which has a row of *post-cocturum* holes drilled through the upper neck, implying the weighty vessel was either suspended or attached to a frame; while it is also notable that higher proportions of individual narrow-neck jars were deposited as associated sherds, frequently cross-joining, suggesting either they were deposited very close to where they were used, or that, if suspended, only a minor break to the lower body rendered the container useless so the large vessel was discarded almost *in totum*. The bi-conical bowls also have

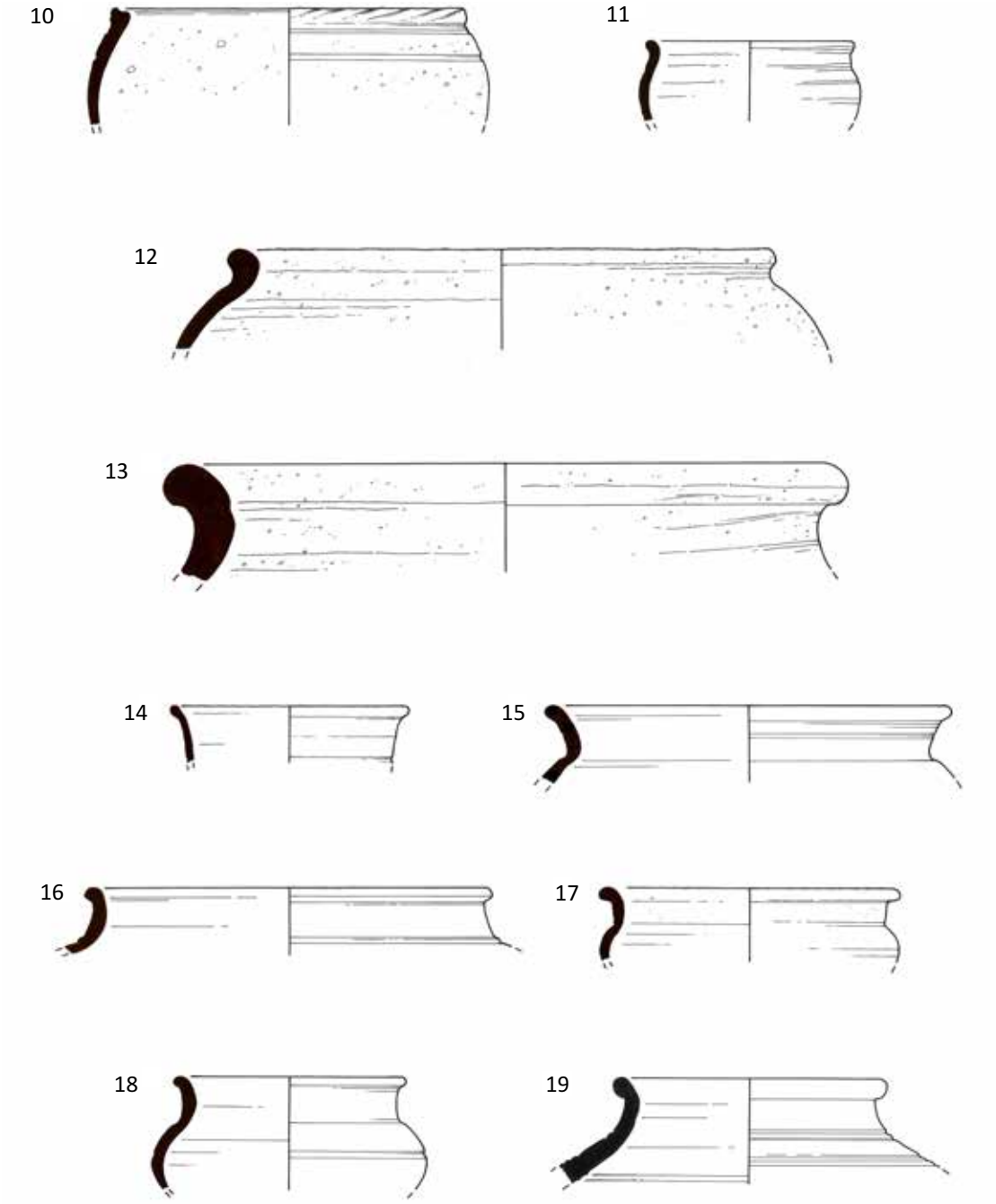


FIGURE 6 Roman pottery, 10–19 (scale 1:4)

single plain burnished cordons (Fig. 6.22 and Fig. 6.23) and have a broad chronology spanning the 1st century AD (e.g. Marney 1989, fig. 35.49); while the waisted bowls (Fig. 6.24 and Fig. 6.25) have multiple plain burnished cordons, but decline rapidly after the mid-1st century AD, being present at Silverstone Fields (Timby 2007, fig. 4.1.19) but still in production at Wavendon Gate (Parminter 1996, fig. 105.48 & 57). Also probably related to this range of utilitarian form types is a single example of a SOB GT1w bowl with a plain neck cordon and rounded mid-body carination (D2–3) in ditch 1422 (Fig. 6.26), which is also consistent with the mid to late 1st century AD products at Caldecotte (Marney 1989, fig. 38.20).

The SOB GT1w vessels include isolated examples of three less common form types: a pedestal-based urn (A1), a possible jug (?D3-3/G6) and a lid (L1), which are nonetheless well-attested in post-Roman Conquest site clearance deposits related to occupation in the Buckinghamshire region (Thompson 1982, 37). Evidence for a pedestal-based urn is limited to the tip of a grooved foot in pit 1525, which could potentially be associated with everted bead rim fragments of uncertain form (*i.e.* B1–1/ D1–1) but no firm association could be confirmed. Similarly limited in extent is a small fragment of stepped or bifid rim (Fig. 6.27) in pit 1384, possibly from a small bowl (D3–3) or from a jug (G6); with thin, smoothly finished orange surfaces, although microscopically the fabric is typical of SOB GT1w. The only lid is a bell-shaped variant (Fig. 6.28) in ditch group 1556, a type produced in Caldecotte kiln 2 (Marney 1989, fig. 39.18) that does not typically post-date the mid-1st century AD, though its chronology remains biased due to many examples recorded in funerary contexts.

One ROB SH form type in the terminus of ditch group 1555 remains particularly enigmatic and comprises a flat handle (Fig. 6.29) that may have been attached to a cauldron-like vessel. Handles were subsequently produced at Harrold, Bedfordshire and occasionally attached to lid-seated cooking pots (Brown 1994, 68: fig.33.218): however, this example appears significantly earlier and has more in common with the type of handle attached to late 1st to early 2nd century AD cauldrons at Caister St Edmund, Norfolk, albeit in a contrasting but heavily flint-tempered fabric (Atkinson 1937, 232, vessels S2–3).

The remaining early Roman fabrics account for just eight sherds (74g) and, while they are relatively fine smooth fabrics (GRS1, GRF1 and OXF1), all appear to have been made locally and there is no evidence for imports from Gallo-Belgica or Gaul. It is likely that these fabrics began to emerge in the late 1st century AD, with a paucity of fine wares prior to this potentially related to tribal boundaries and trade, or lack thereof (Marney 1989, 89). The presence of these fabrics in enclosure ditch group 1555, ditch group 1557 terminus and pit 1517 remains relatively uninformative as they are limited to small plain body sherds, but their chronology appears tied to that of the mid to late 1st century AD Belgic vessels they occur in association with.

***Distribution, pottery supply, consumption and chronology***

The main phase of early Roman activity on the site appears to represent the deposition or clearance of rubbish from domestic occupation into enclosure or boundary ditches and associated features, potentially spanning a short chronological range in the mid to late 1st century AD, probably within *c.*AD43–75. The earliest pottery comprises small groups contained in ditch groups 1563, 1558 and L-shape enclosure ditch groups 1557 and 1554 (Table 1), which collectively contained limited diagnostic sherds that include a grog-tempered storage jar (C6–1), lid-seated jars (C5–2) and a single cordoned bowl (D2–3) reflecting a post-Roman Conquest chronology.

The first major episode of deposition occurs in boundary Group 1551 and is predominantly comprised of a mix of the Belgic grog-tempered fabric variants, with occasional shell-tempered sherds also present. Form types include utilitarian lid-seated jars (C5-2) and an everted bead rim jar (B5-3), the latter with soot on the rim and exterior surfaces; associated with two narrow-neck jars (B3-8) of which one has holes drilled through the neck. Also present is a waisted bowl with multiple plain body cordons (E1-1) that in conjunction with the other vessels indicates a mid-1st century AD date.

The second major episode of deposition was into enclosure group 1555, which appears to replace and supersede group 1551. Shell-tempered pottery (ROB SH) is slightly better represented than in group 1551, present in higher quantities than all but the dominant Belgic fabric SOB GT1w. Form types

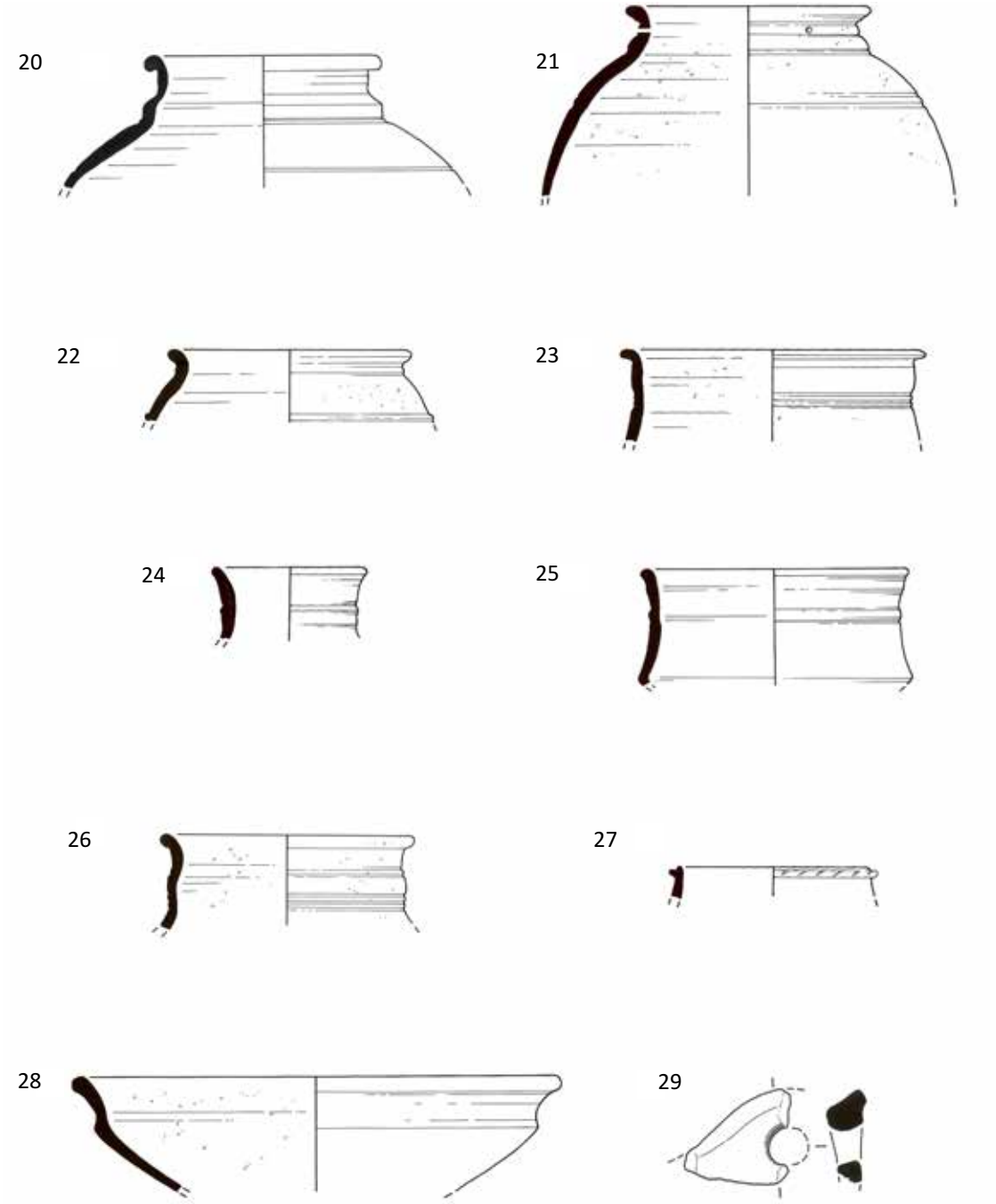


FIGURE 7 Roman pottery, 20–29 (scale 1:4)

are dominated by lid-seated jars (C5-1/C5-2) and simple jars or bowls with everted bead rims (B1-1/D1-1), with isolated examples of a narrow-neck jar (B3-1), and the intrinsically interesting fragments of a SOB GT1w small bifid rim, possibly from a jug (G6?) and a ROB SH flat handle possibly from a cauldron. The chronology of group 1555 could potentially span the mid to late 1st century AD, with the presence of occasional fine wares possibly supporting a date after *c*.AD60/70, but this definition is far from clear. The pits to the west of group 1555 are notable for minor concentrations (in pits 1366 and 1427), which include fabric and form types consistent with group [1555].

Boundary group 1556, which may replace group 1555, contained modest quantities of pottery in its excavated segments, not dissimilar in general make-up to group 1555 but notable for the presence of the only hand-made (Q1) vessel in the assemblage, and for the presence of a SOB GT1w lid (L1), which in conjunction with a storage jar (C6-1) and common jars or bowls (B1-1/D1-1) supports a chronology in the mid-1st century AD, potentially curtailing the postulated span of group 1555. The stratigraphically latest major pottery group was contained in boundary Group 1553; however, the bulk of material from this group consisted of a single dumped deposit, of which a large proportion was derived from a single ROB SH lid-seated jar (C5-1), which can be broadly dated to the mid to late 1st century AD.

The supply of pottery to the site appears to focus entirely on local kilns, with the kilns close to the site at Wavendon Gate and Caldecotte likely to have flooded the local market with Belgic grog-tempered pottery, with the latter possibly also accounting for early Roman fine wares (Marney 1989, 70). Shell-tempered pottery dating to the mid to late 1st century AD is known to have been produced at Emberton to the north of Milton Keynes (Mynard 1970, 62), with further kilns postulated closer to the site in the Ouzel valley. This pattern of supply is broadly comparable to Groups 2 and 3 from Cotton Valley and Constantine Way, Milton Keynes, dated to the mid to late 1st/early 2nd centuries AD (Marney 1989, 10 , 13 & 70), as well as smaller mid to late 1st century AD groups from Sherwood Drive and Walton (*ibid*, 58). It is typical in these groups for lid-seated (channel rim) jars to dominate, along with ovoid jars and simple bowls, with the range of other Belgic forms, notably narrow-neck jars and cordoned bowls, as well as a pedestal-based urn and lid, perhaps supported by the close proximity of kilns at Caldecotte and Wavendon Gate, whose industrial (kiln) and domestic (occupation) assemblages have close affinities with this assemblage, and where it was concluded consumption reflected comparative affluence (further supported by cremation groups at Wavendon Gate). Recent excavations at Middleton School to the north of Kents Hill have also recorded an assemblage deposited from a settlement, in which Belgic grog and shell-tempered fabrics dominate in the mid to late 1st century AD, being superseded by sandy coarse wares in the final decades of that period (Cooper 2016, 28–9). The Middleton assemblage provides an intriguing contrast in that ovoid jars, storage jars and jars or bowls with everted bead rims are paralleled, but the common lid-seated jars are absent, with platters not recorded in this assemblage conspicuous by their presence. Limited comparisons may also be drawn with mid-1st century AD burial groups from Broughton and Monkston Park (Lyons 2014; Bull & Davis 2006, 15–16), where the range of grave goods represents a contrasting suite of vessels, including cordoned bowls and pedestal-based urns present in low quantities here, but also includes significant quantities of Belgic beakers and imported flagons absent at Kents Hill.

These comparisons may suggest that firstly occupation at Kents Hill commenced after the Roman Conquest and had declined by the late 1st century AD. Secondly that the type, function or status of settlement in the historic area of Milton Keynes spanning from north to south Broughton, Middleton, Monkston Park, Kents Hill, Wavendon Gate and Caldecotte, varied significantly in its consumption and deposition of pottery between foci or zones of settlement, whose wider existence was supported or concluded by the kiln sites and funerary deposits, but that the latter site types may mask the social strata and daily domestic consumption patterns of the occupants, such as those evident at Kents Hill.

## Ceramic Building Material and Fired Clay

*By Sue Anderson*

Three fragments (102g) of probable Roman tile were found, in a soft pale orange fabric containing common white and pink clay pellets. Two

fragments were joining surface flakes from linear fill 1306, and the third was a fragment of possible roof tile, 15mm thick, from group 1555.

Forty-five fragments (1469g) of fired clay were recovered from six contexts during the fieldwork. The fired clay was fully catalogued and quantified by context, fabric and type, using fragment count and weight in grams. The presence and form of surface fragments and impressions were recorded, and wattle dimensions measured where possible.

Fabrics were assigned based on sand/silt content and major inclusions. Table 5 shows the quantities by fabric. Fine silty fabrics with organic (grass/chaff) inclusions were the most frequent in this group. A few had fine sand inclusions, which made them harder and less 'greasy'.

Colours varied, but most pieces were oxidised externally (buff, red, orange), with reduced cores (brown, grey, black).

A fragment from pit fill 1491 (pit 1490) had a sharply curving convex section, surviving to 50mm wide and 40mm thick. This appears similar to pieces of oven plate identified at other Iron Age and early Roman sites (e.g. Poole 1984, fig. 4.77). A fully oxidised, finely organic-tempered fragment from pit fill 1428 (pit 1427), one of the group of pits to the west of Group 1555 had two flat surfaces and a squared-off edge, was rectangular in section and 17–24mm thick. Another fragment, from pit fill 1491, with coarse organic tempering had a sub-rectangular section and was 25–30mm thick. The fragments both had straight edges. A few other fragments had rounded edges with two faces at right-angles, for example joining pieces from Group 1556. One fragment from pit fill 1491 was 32mm+ thick and had a curving edge. One other smaller fragment with a similar edge was found in 1428. Flat fragments with straight edges are also known as 'Belgic bricks', and are more likely to have been used in hearths than in structures (Allen 1986, 16).

The most complete fragment, made up of six joining pieces in pit fill 1491, had a roughly square section (58 x 56mm), flat end and flattish sides, and survived to a length of 65mm. This may be a fragment of a kiln or oven bar. Other fragments were generally abraded and too small to determine their function, although almost all had smoothed flattish or slightly convex surfaces and appeared similar to the larger pieces (Table 6).

## Lithics

*By Joshua T Hogue*

The lithic artefacts were examined using a x10 hand lens. An archive catalogue of the technological attributes indicative of the reduction methods and function of the artefacts, dimensions (using digital calipers with a precision of ±0.02 mm), weight (±0.1g) and condition, including the presence of patination, burning, and post-depositional damage, was compiled.

There were two flakes from ditch group 1553. The largest, measuring 24.6 x 32.9 x 7.3mm, was a fine-grained yellowish-brown semi-translucent flint with light patination, and a large plain striking platform with a pronounced bulb of percussion and unidirectional dorsal scar patterns. This distal termination is a partially recovered hinge. The flake appears to have been manufactured using the hard-hammer technique, which is characteristic of technological strategies adopted during

TABLE 5 Fired clay quantities by fabric

| *Fabric* | *Code* | *No* | *Wt/g* |
|---|---|---|---|
| fine sandy | fs | 3 | 40 |
| fine sandy organic | fso | 1 | 10 |
| silty with clay pellets | scp | 2 | 116 |
| silty with organic inclusions | so | 23 | 889 |
| silty with organics, sparse coarse limestone and ferrous fragments | solfe | 4 | 178 |
| silty organic with ?calcareous voids | sov | 7 | 209 |
| silty with clay pellets and ?calcareous voids | svcp | 5 | 27 |

TABLE 6 Fired clay

| *Context* | *Fabric* | *Type* | *No* | *Wt/g* | *Colour* | *Surface* | *Impressions* | *Abr* | *Notes* |
|---|---|---|---|---|---|---|---|---|---|
| 1311 | scp | KF? | 2 | 116 | buff-grey | smoothed, rounded right-angled edge | | | >32mm thick, joining, poss perforated? One edge curves slightly |
| 1347 | so | KF? | 1 | 23 | red-black-red | flat? | withy? at one edge | + | 22+mm thick |
| 1347 | so | | 1 | 6 | buff-black | flat? | | + | |
| 1410 | svcp | | 1 | 4 | pink-grey | smoothed | | ++ | |
| 1410 | so | | 1 | 10 | orange | smoothed? | | ++ | |
| 1410 | solfe | | 1 | 20 | buff-brown | smoothed flat, right angled? | | + | |
| 1419 | fs | | 1 | 20 | buff-grey | smoothed, flattish | grass on surface | + | 15+mm thick |
| 1419 | so | | 1 | 36 | grey-dark grey | smoothed, flattish | | + | 20+mm thick |
| 1428 | so | | 1 | 14 | dark grey-red | possible flattish on both sides | | ++ | 12mm thick, not 'greasy' like the other frags |
| 1428 | svcp | plate? | 1 | 7 | buff | smoothed, tapered to edge | | + | edge slightly curving? |
| 1428 | so | | 1 | 23 | buff-grey | flattish | | + | 19+mm thick |
| 1428 | so | | 1 | 41 | black | smoothed, rounded right-angled edge | | + | |
| 1428 | solfe | | 1 | 139 | orange | smoothed, flattish on both sides | | + | 30mm thick |
| 1491 | so | BB | 1 | 94 | orange | flattish both sides, right-angled edge | | | 17-24mm thick, looks like handmade tile |
| 1491 | so | plate? | 2 | 123 | buff-grey | smoothed convex | | + | curving edge, 32+mm thick |
| 1491 | so | | 1 | 111 | buff-grey | smoothed convex | | | 40+mm thick, rounded section, 50+mm wide |
| 1491 | sov | | 5 | 151 | buff-red | smoothed, flattish | | | 2 joining, 20mm thick, poss concave edge |
| 1491 | sov | | 2 | 58 | buff-red | smoothed, flattish | | | up to 23mm thick |
| 1491 | svcp | | 1 | 6 | orange | smoothed, rounded right-angled edge | | + | |
| 1491 | solfe | | 1 | 12 | red | smoothed | | | 14mm+ thick |
| 1491 | fs | | 2 | 20 | red/grey/buff | | | ++ | |
| 1491 | so | BB | 5 | 124 | grey-buff | 2 flattish, rounded right-angle edges | | | 25-30mm thick, sub-rect section, poss all 1 object |
| 1491 | svcp | | 2 | 10 | cream-pink | smoothed | | ++ | |
| 1491 | solfe | | 1 | 7 | red | flattish | | | |
| 1491 | fso | | 1 | 10 | buff-black | smoothed, slightly convex | | + | |
| 1491 | so | | 1 | 43 | orange | smoothed, irregular | | + | |
| 1491 | so | KB? | 6 | 241 | buff-grey-red | flattish on 5 sides | | | joining, end of square-section object 58 x 56mm x 65+ long |

Types: BB – 'Belgic brick'; KB – kiln bar; KF – kiln furniture

later prehistory. Small micro-chips on the margins appear consistent with post-depositional damage. The smaller flake was a brown semi-translucent flint with rounded cortex indicative of having been rolled in a fluvial environment. It was a secondary flake with a plain striking platform with diffuse bulb of percussion and its small size suggests it may have been struck whilst preparing a core. It measures only 13.0 x 10.3 x 4.2 mm.

There was a single, fire-cracked flint from Group 1551, weighing 7.8g.

**Metal and Other Finds**
*By Mike Wood*

The material was counted and weighed in grams, then examined visually to identify any diagnostic pieces and the overall condition of the assemblage. Reference was made to published guidelines (English Heritage 2011). The assemblage contained moderate quantities of largely modern or undated material which is not reported on here.

The only copper-alloy object likely to be Roman was a thin piece of folded sheet of uncertain function from undated ditch fill 1342 (ditch 1341). Weighing 7.8g and measuring 16.43 x 21.74 x 22.43mm, it was formed from two fragments of copper sheet c.0.97mm thick. The larger fragment comprised a rectangular sheet folded to form a flat base with a curved extension. A short length of corroded iron bar from ditch fill 1358 weighed 24.3g and was 56.29 x 15.73 x 9.7mm in size, but is of limited interest and is not diagnostic.

The most significant group of material is a collection of slag which alludes to historic ironworking taking place near the site with recovery of a smithing hearth bottom from pit 1346, which cut through both Phase 2 and Phase 3 ditches. Fragments of generally small and abraded furnace slag were also noted (Table 7). The smithing hearth bottom appears less abraded than the other material and has probably not moved far from its original place of deposition, indicating iron smithing likely took place very close to the location of this feature. The furnace slag fragments are generally small and abraded and could potentially have travelled some distance from the site of production.

Several examples of burnt stone were examined, all of which originated from unphased features. Most were coarse-grained sandstone cobbles, all unworked, and possibly glacially derived. The heating may have occurred when the stones were utilised around the edge of a fire, or for some industrial related function. A single fragment of ironstone was also recovered from Phase 2 ditch group 1551 amongst the furnace slags and was likely iron production waste. The ironstone appears to have been heated but not been fully processed.

**Human Bone**
*By Natasha Powers*

The human remains came from the primary fill, 1408, of an undated pit 1407 and consisted of the proximal portions of a pair of femora (thigh bones) and a partial left arm and hand of an adult of undetermined sex (mid and distal humerus, proximal and mid shaft fragments of the ulna and metacarpal shaft fragments). The bone was moderately well-preserved but highly fragmentary, with some of the breaks having been made in antiquity, though post-mortem. Although measurement was not possible due to their condition, the femora were platymeric in appearance (flattened from front to back).

The remains appear to originate from a single, disturbed burial of prehistoric or early Roman date, the evidence of old breaks suggesting that redisposition occurred sometime after decomposition and in antiquity. As such they indicate that burial was taking place on or near the site prior to the excavation of the pit in which the redeposited remains were found.

**Animal Bone**
*By Jennifer Wood*

A total of 155 (2204g) re-fitted fragments of animal bone were recovered by hand from features of all dates. The material from dated Iron Age and Roman contexts is reported on here.

Identification of the bone was undertaken with access to a reference collection and published guides. Remains were counted and weighed, and where possible identified to species, element, side and zone (Serjeantson 1996). Fusion data, butchery marks (Binford 1981), gnawing, burning and pathological changes were noted. Ribs and vertebrae were only recorded to species when they were substantially complete and could accurately be identified. Undiagnostic bones were recorded as micro (rodent size), small (rabbit size), medium

TABLE 7 Slag and fuel waste

| *Context* | *Material* | *Object* | *Measurements* | *Date* | *No.* | *Wt (g)* | *Comments* |
|---|---|---|---|---|---|---|---|
| 1345 | Slag | SHB | 88.8x79.25x31.55 | IA-RB | 1 | 336 | Sf 13. Plano-convex base. Iron smithing. |
| 1347 | Slag | Furnace slag | | Undated | 1 | | Sf 9. Abraded vesicular slag |
| 1392 | Slag | Furnace slag | | Undated | 2 | 40 | Heavily corroded and weathered. |
| 1412 | Slag | Furnace slag | | Undated | 1 | 480 | Sf 7. Large fragment of corroded slag |
| 1412 | Slag | Furnace slag | | Undated | 1 | 18 | Sf 5. Vesicular and weathered |
| 1412 | Slag | Furnace slag | | Undated | 1 | 31 | Sf 6. Vesicular and weathered. Retains charcoal impressions. |
| 1416 | Slag | Undiagnostic | – | Undated | 2 | 12 | Small weathered lumps of slightly vesicular slags. |
| 1416 | Iron stone | Natural iron stone | – | Undated | 1 | 43 | Fractured piece of ironstone, abundant iron oxide on surface. |
| 1431 | Slag | Furnace slag | | undated | 1 | 48 | Abraded slag. Corroded. |
| 1432 | Slag | Furnace slag | – | Undated | 1 | 17 | Abraded lump. Retains traces of charcoal. |
| 1518 | Slag | Furnace slag | | undated | 1 | 22 | Sf 12. Abraded slag |
| 1522 | Fuel waste | Charcoal | – | Undated | 2 | 4 | Roundwood charcoal fragments |
| 1522 | Slag | Furnace slag | – | RB | 1 | 61 | Fractured furnace slag, slightly magnetic. Retains traces of embedded natural clays. |

(sheep size) or large (cattle size). The separation of sheep and goat bones was carried out where possible using the criteria of Boessneck (1969) and Prummel & Frisch (1986). The quantification of species was carried out using the total fragment count, in which the total number of fragments of bone and teeth was calculated for each taxon. Where fresh breaks were noted, fragments were refitted and counted as one. Tooth eruption and wear stages were measured using a combination of Halstead (1985), Grant (1982) and Levine (1982), and fusion data was analysed according to Silver (1969). Measurements of fully fused bones were taken according to the methods of von den Driesch (1976). Full details can be found in the project archive.

The remains were generally of a moderate overall condition, averaging at grade 3 (Lyman 1996). A single fragment of large mammal sized vertebra recovered from Phase 2 Group 1551 displayed chop marks consistent with disarticulation/jointing of the carcass. Two fragments of pig bone recovered from Phase 2 group 1551 and Phase 3 group 1556 displayed evidence of possible carnivore gnawing. The lack of gnawing evidence within the remaining assemblage may suggest that

most of the remains were disposed of and buried rapidly, allowing little access for scavengers. Four fragments of bone recovered from unphased sub-rectangular pit 1364, from Phase 2 group 1551 and Phase 1 group 1557 displayed evidence of burning. No evidence of bone working or of pathological change was noted within the assemblage.

A total of 133 fragments originated from Iron Age and Roman features. Most of the identified remains were cattle (21 fragments), followed by sheep/goat (13 fragments). Small numbers of pig (4) and *equid* (7) were also identified. Of the remaining assemblage, 60 fragments were large mammal sized, nine were medium mammal sized and 19 unidentified.

The assemblage appears to represent a fairly typical domestic assemblage consisting of a mixture of food waste and butchery discard, with an emphasis on butchery discard.

**Charred Plant Remains and Wood Charcoal**
*By Ellen Simmons*

Twenty-seven bulk soil samples, comprising a total of 550 litres of soil, were processed by flotation for the recovery of charred plant remains and wood charcoal using a 300µm mesh. The resulting flots were scanned in order to determine the concentration, diversity and state of preservation of any archaeobotanical material present. A low density of charred plant remains and wood charcoal was found to be present in the majority of the sampled contexts. A high concentration of charred plant remains was however found to be present in Phase 2 group 1551, along with moderate concentrations of charred plant remains in Phase 3 group 1556, context 1431, the fill of ditch group 1555 terminus and context 1491, the fill of Phase 1 pit 1490.

A relatively high concentration of over one hundred wood charcoal fragments greater than 2mm in size was found to be present in Phase 2 Group 1551 and Phase 3 Group 1556. Just less than one hundred wood charcoal fragments greater than 2mm in size were also present in Phase 2 context 1358, the fill of feature 1363.

***Charred plant remains***
Samples selected for analysis were fully sorted using a low power reflected light binocular microscope (x10–x65). Identification of charred plant material was carried out using modern reference material in the Department of Archaeology, University of Sheffield and various reference works (e.g. Cappers *et al*. 2006). Cereal identifications follow Jacomet (2006). Other plant nomenclature follows Stace (2010). Quantification of cereal grains was based on the presence of embryo ends, glume bases, rachis nodes and the nodes of straw (Jones 1990, 92). The botanical composition of the samples is recorded in Table 8. The seed of the plant is always referred to in the table unless stated otherwise. The abbreviation *cf.* means 'compares with' and denotes that a specimen more closely resembles that particular taxa more than any other.

Preservation of charred cereal grains was variable, some grains exhibiting minimal distortion and retaining epidermis, but with most grains being puffed and distorted and identifiable by gross morphology only.

The assemblage of cereal grains, cereal chaff and wild or weed plant seeds present in the analysed contexts, particularly in Phase 2 group 1551, provides evidence that cereals were cultivated and processed at the site. The low density of charred crop material present in most of the sampled contexts may however indicate that cereals did not represent a major component of the economy of the site. It is also possible that crop processing by-products were generally used for other purposes such as fodder rather than being used as fuel or discarded onto fires, or that hearth waste did not become incorporated into the sampled features.

The cereal grains are likely to have been charred accidentally during parching or food preparation and redeposited as waste from domestic hearths. Glume wheats require parching using heat in order to enable the removal of the glumes prior to consumption and hulled barley requires parching in order to remove the hulls (Hillman 1981, 153–154). The presence of glume wheat glume bases in all five of the analysed contexts, along with a small number larger wild or weed plant seeds such as rye grass (*Lolium perenne*), brome (*Bromus hordeaceus* ssp. *hordeaceus/secalinus*) and black bindweed (*Fallopia convolvulus*) indicate the presence of bi-products from the later stages of glume wheat crop processing (Hillman 1981, 132–133). A significant number of smaller wild or weed plant seeds were also present however, suggesting that by-products from earlier stages of crop processing is also present, possibly mixed with waste from later processing stages in domestic hearths.

TABLE 8 Charred Plant macrofossils

| **Phase** | **1** | **2** | **2** | **2** | **3** |
|---|---|---|---|---|---|
| **Group** | **-** | **1551** | **1555** | **1551** | **1556** |
| **Context number** | **1491** | **1395** | **1431** | **1522** | **1347** |
| **Feature number** | **1490** | **1393** | **1429** | **1521** | **1348** |
| **Flotation sample number** | **30** | **16** | **21** | **31** | **11** |
| **Feature type** | **pit** | **ditch** | **ditch terminus** | **ditch** | **ditch** |
| Sample volume (litres) | 20 | 20 | 20 | 40 | 20 |
| Flot volume (ml) | 50 | 60 | 10 | 60 | 20 |
| % Intrusive roots | 25 | 95 | 95 | 5 | 20 |
| ***Cereals and other economic plants*** | | | | | |
| *Avena* sp. (oat) | | | | | |
| grain | | | | 3 | |
| cf. *Avena* sp. (oat) | | | | | |
| grain | | | | 5 | |
| *Hordeum sp.* (barley) | | | | | |
| symmetrical grain (hulled) | 1 | | | 4 | |
| asymmetrical grain (hulled) | | | | 1 | |
| indeterminate grain (hulled) | 1 | | | 4 | 3 |
| indeterminate grain | | 1 | | 9 | |
| cf. *Hordeum sp.* (probable barley) | | | | | |
| indeterminate grain | | | | 4 | 1 |
| *Triticum dicoccum* (emmer wheat) | | | | | |
| glume base | 2 | 1 | | 13 | |
| *Triticum* cf. *dicoccum* (probable emmer wheat) | | | | | |
| grain | | 1 | | 3 | |
| glume base | 1 | | | 8 | |
| *Triticum spelta* L. (spelt wheat) | | | | | |
| grain | | | | 1 | 1 |
| glume base | | | | 5 | 1 |
| *Triticum* cf. *spelta* L. (probable spelt wheat) | | | | | |
| grain | 1 | | | 8 | 3 |
| glume base | | | | 13 | 3 |
| *Triticum dicoccum* / *spelta* L. (emmer / spelt wheat) | | | | | |
| grain | | | | 1 | |
| glume base | 7 | 20 | 2 | 69 | 16 |
| *Triticum* cf. *aestivum* s.l. (probable free threshing wheat) | | | | | |
| grain | 1 | | | 3 | |
| *Triticum spelta / Triticum aestivum* s.l. (spelt / free threshing wheat) | | | | | |
| grain | | | | 2 | |
| *Triticum* indet. (indeterminate wheat) | | | | | |
| grain | 7 | 3 | | 30 | 3 |
| Cereal indet. (indeterminate cereal) | | | | | |
| grain | | 3 | | 3 | 8 |
| *Vicia* cf. *sativa* (probable common vetch) | 1 | | | 1 | |
| Large seeded legume | | | | 1 | |

| | | | | | |
|---|---|---|---|---|---|
| Wild / weed plant seeds | | | | | |
| *Papaver argemone* L. (prickly poppy) | | | 1 | | |
| *Papaver* spp. (poppies) | | | 1 | 2 | |
| *Ranunculus acris / repens / bulbosus* (meadow / creeping / bulbous buttercup) | | | 1 | | |
| *Lathyrus nissolia* L. (grass vetchling) | 1.5 | 1 | | 8 | |
| *Vicia* spp. / *Lathyrus* spp. (vetches / wild peas) | 9 | 1.5 | 0.5 | 60.5 | 5 |
| *Medicago* spp. / *Trifolium* spp. (medicks / clovers) | 4 | | 2 | 33.5 | 2 |
| *Aphanes arvensis* L. (parsley-piert) | 2 | 1 | | | |
| *Urtica dioica* L. (common nettle) | | 1 | 1 | | |
| *Persicaria maculosa / lapathifolia* (redshank / pale persicaria) | 1 | | | 2 | |
| *Fallopia convolvulus* (L.) Á. Löve (black bindweed) | 2 | | | | 1 |
| *Rumex acetosella* L. (sheep's sorrel) | | 1 | | 1 | |
| *Rumex crispus / conglomeratus / obtusifolius* (curled / clustered / broad-leaved dock) | 2 | | | 2 | |
| *Rumex* spp. kernel (dock) | 1 | 1 | | | |
| *Silene dioica* (L.) Clairv (red campion) | | | | 2 | |
| *Chenopodium album* L. (fat hen) | 3 | | 2 | 2 | 1 |
| *Atriplex* spp. (oraches) | 2 | | | 2 | |
| *Montia fontana* ssp. *chondrosperma* (Fenzl) Walters (blinks) | 4 | 1 | | 2 | |
| *Galium aparine* L. (cleavers) | 1 | 12 | | 3 | |
| *Hyoscyamus niger* L. (henbane) | | | | 2 | |
| *Veronica arvensis* L. (wall speedwell) | 2 | 3 | 1 | 2 | |
| *Plantago major* ssp. *major* L. (greater plantain) | | 1 | | | |
| *Plantago lanceolata* L. (ribwort plantain) | 1 | | | | |
| Asteraceae (daisy family) | 2 | | | 6 | |
| *Gnaphalium* cf. *uliginosum* (probable marsh cudweed) | 2 | 1 | | 6 | |
| *Knautia arvensis* (L.) Coult. (field scabious) | 2 | | | | |
| *Luzula* spp. (wood rushes) | 4 | | 1 | 2 | |
| *Juncus* spp. (rushes) | | | 6 | 8 | 1 |
| cf. *Lolium perenne* L. (probable perennial rye grass) | 1 | | | 1 | 1 |
| *Phleum pratense* L. (timothy) | | | 1 | 12 | 1 |
| *Bromus hordeaceus* ssp. *hordeaceus* / *secalinus* (soft / rye brome) | | | | 1 | |
| < 2mm Poaceae (small seeded grasses) | 6 | 25 | 11 | 33 | 1 |
| ***Other charred plant material*** | | | | | |
| Awn fragment | | 1 | | 2 | 1 |
| > 2mm culm node (cereal stem node) | | 1 | | 3 | |
| > 2mm culm base (cereal stem base) | | | | 1 | |
| < 2mm culm node (grass stem node) | 13 | | | 23 | 2 |
| < 2mm culm base (grass stem base) | | | | | 5 |
| Herbaceous plant root fragments | 25 | | | 41 | |
| Tuber / rhizome indet. | 2 | | | 3 | 1 |
| *Corylus avellana* L. (hazel) nutshell fragment (>2mm) | 1 | | | | 1 |
| Pod fragment | 1 | | | | |
| Thorn | | | | 2 | |

A high proportion of the assemblage of crop material in the analysed contexts was composed of glume wheat glume bases with lesser proportions of cereal grains. The principal cereals present in the analysed contexts were hulled wheats and hulled barley. A small number of the wheat grains were identifiable as spelt wheat (*Triticum spelta*), with four grains from Phase 2 group 1551 (one from context 1393 and three from context 1522) tentatively identified as emmer wheat (*Triticum* cf. *dicoccum*). A rich assemblage of glume bases was present in Phase 2 group 1551, context 1522, with similar quantities of glume bases identified as emmer wheat and spelt wheat, indicating that both emmer wheat and spelt wheat were cultivated. The remaining glume bases present, and the majority of the glume bases in the other sampled contexts, were generally too poorly preserved to be identified as either emmer or spelt. A small number of barley grains were identified as asymmetrical grains, which are characteristic of the lateral spikelets of the 'six-row' variety of barley (*Hordeum vulgare*), although the cultivation of the two-row variety cannot be ruled out. Oat grains (*Avena* sp.) were present in Phase 2 group 1551, context 1522, but as no oat chaff was recovered it cannot be determined whether the oat grains present are representative of wild plants or a cultivar. A similar suite of crop material was present at other Iron Age sites in the Milton Keynes area including late Iron Age contexts at Bancroft and middle Iron Age contexts at Pennyland (Nye & Jones 1994; Jones 1993), as well as in middle to late Iron Age contexts at Crick in Northamptonshire and late Iron Age contexts at Bierton in Buckinghamshire (Monckton 1998; Jones 1986).

Hulled barley and hulled wheat were the main crops cultivated during the middle to late Iron Age period in central southern Britain, with spelt wheat gradually replacing emmer wheat as the main wheat crop during this period (Campbell & Straker 2003, 18). The shift from the cultivation of emmer wheat to the dominance of spelt wheat has been shown to be more complex and variable than previously thought. Emmer wheat is present as only a minor contaminant of the spelt crop at Iron Age sites in the upper Thames valley and Wessex (Robinson & Wilson 1987; Jones & Nye 1991; Campbell 2000). However, evidence for the continued cultivation of emmer wheat alongside spelt wheat has now been recovered at Iron Age sites across central and southern Britain such as Stanstead Airport, Essex, Dowd's Farm, Hampshire, Cambourne, Cambridgeshire, sites on the route of the M6 Toll Road in the West Midlands and in parts of North-East England (Carruthers 2008; Pelling 2012; Stevens 2009; Stevens 2008; van der Veen 1992).

Ongoing debate surrounds the explanation for the continued cultivation of emmer wheat during the Iron Age in some areas, with a combination of cultural and environmental factors likely playing a role (Stevens 2009, 80). The presence of a primary deposit of similar quantities of both wheats, likely to have been from a single harvest, in an Iron Age pit at Wandlebury, Cambridgeshire has provided evidence for the possible cultivation of emmer and spelt wheat as a maslin (mixed crop) (Ballantyne 2004). Spelt wheat and emmer wheat have differing tolerances to soil type (Jones 1981, 106–107), and environmental conditions such as frosts and flooding (van der Veen & Palmer 1997; Davies & Hillman 1988). The cultivation of a mixed crop of emmer and spelt would therefore have increased the chances of a good yield (Stevens 2009, 80).

The association of the wild or weed plant seeds with charred cereal grain in Phase 2 group 1551 indicates that the majority of wild or weed plant seeds are likely to have been harvested along with the crops and charred as waste following removal during crop processing. The frequent occurrence of leguminous wild or weed seed taxa is consistent with the pattern seen in other Iron Age charred plant macrofossil assemblages. An increase in leguminous weeds such as clovers/medicks and vetches/wild peas during the Iron Age and Roman period on sites in the Thames valley has been linked to declining levels of soil fertility (e.g. Jones 1978; Lambrick 2010). Leguminous species have a competitive advantage where soil fertility is poor, due to the ability of these plants to fix nitrogen from the atmosphere (Jones 1988, 90). Wild or weed seed taxa, commonly associated with nitrogen enriched soils such as common nettle (*Urtica dioica*), fat hen (*Chenopodium album*), oraches (*Atriplex* spp.) and henbane (*Hyoscyamus niger*) were also present, indicating the possibility that measures to increase soil fertility were being undertaken. These taxa are also commonly associated with the nutrient enriched soils associated with human habitation.

A small group of taxa commonly associated

with damp soil conditions were present, including blinks (*Montia fontana* ssp. *chondrosperma*) and probable marsh cudweed (*Gnaphalium* cf. *uliginosum*), along with many of the species of wood rushes (*Luzula* spp.) and rushes (*Juncus* spp.) which could be potentially represented. Taxa more commonly associated with lighter and drier soils, such as prickly poppy (*Papaver argemone*), parsley piert (*Aphanes arvensis*) and wall speedwell (*Veronica arvensis*), were also present however, indicating the potential cultivation of lighter soils alongside damp soils in more low lying areas. A similar pattern was evident in the assemblage of wild or weed seed taxa from Iron Age contexts at Bancroft (Jones & Nye 1994, 565).

Cleavers (*Galium aparine*), a weed characteristic of autumn sown crops (Hillman 1981, 146), is also relatively frequently represented. The presence of a small group of perennial wild or weed seed taxa, such as curled/clustered/broadleaved dock (*Rumex crispus/conglomeratus/obtusifolius*), red campion (*Silene dioica*), probable perennial rye grass (cf. *Lolium perenne*) and timothy (*Phleum pratense*), may be related to the use of ard ploughing which results in minimal soil disturbance, allowing perennials to survive (Hillman 1981, 145). The presence of low-growing taxa such as parsley piert (*Aphanes arvensis*) and wall speedwell (*Veronica arvensis*) also indicates that harvesting was likely to have been carried out low on the cereal stem which would have resulted in the maximisation of the straw harvest (Hillman 1981, 151).

Other sources of charred wild or weed plant seeds such as fodder, tinder, roofing material or flooring material may also be represented in the assemblage. A relatively high frequency of grass seeds (Poaceae) was present, particularly in context 1395, along with a group of taxa commonly associated with grassland or heaths such as buttercup (*Ranunculus* sp.) grass vetchling (*Lathyrus nissola*), sheep's sorrel (*Rumex acetosella*) greater plantain (*Plantago major* ssp. *major*), ribwort plantain (*Plantago lanceolata*) and field scabious (*Knautia arvensis*). These taxa, along with the tuber/rhizomes and charred herbaceous plant root and stem material present in context 1347, 1491 and 1522, may therefore be representative of grassland, possibly collected for use as fodder, although many of these taxa may also be present amongst grassy field margins.

***Wood charcoal***

One hundred charcoal fragments greater than 2mm in size were identified from each context, with the aim of identifying a representative sample of the taxa present (Stuijts 2006, 28). A small number of <2mm fragments were identified from Phase 2 context 1358, the fill of feature 1363, in order to provide a total of one hundred identified fragments. Charcoal fragments recovered from both flots and residues were sieved into greater than 4mm and 2–4mm fractions. Less than fifty charcoal fragments greater than 4mm in size were present in all three assemblages selected for analysis, so all the greater than 4mm fragments were identified, with the remaining 2–4mm fragments randomly selected until a total of one hundred fragments was reached. Wood charcoal fragments were fractured manually and the resultant anatomical features observed in transverse, radial and tangential planes using high-power, reflected-light (episcopic) binocular microscopy (x50, x100 and x400). Identification of each fragment was carried out to as high a taxonomic level as possible by comparison with material in the reference collections at the Department of Archaeology, University of Sheffield and various reference works (e.g. Schweingruber 1990; Hather 2000). The charcoal assemblage composition of the samples is recorded in Table 9. Nomenclature follows Stace (2010).

Where possible a record was also made of the ring curvature of the wood and details of the ligneous structure, in order for the part of the woody plant which had been burnt and the state of wood before charring to be determined (*cf.* Marguerie & Hunot 2007). Where at least three growth rings were present, the ring curvature of the charcoal fragments was designated as weak, intermediate or strong, indicating larger branches or trunk material, intermediate sized branches and smaller branches or twigs, based on the classification in Marguerie & Hunot (2007, 1421). The presence of narrow rings which may indicate slow grown wood or poor growing conditions was recorded (*ibid*, 1422). The presence of thick walled tyloses in vessel cavities, which indicate the presence of heartwood and therefore mature trunk wood, was recorded. The presence of fungal hyphae, which indicate the use of dead or rotting wood, was recorded (*ibid*, 1419). The presence of radial cracks, which may relate to the dampness of the wood prior to charring as well as to the

anatomy of the wood was recorded (*ibid*, 1421). The degree of vitrification of the charcoal fragments was recorded as a measure of preservation, with levels of vitrification classified as either low brilliance refractiveness (degree 1), strong brilliance (degree 2) or total fusion (degree 3) (*ibid*, 1421). The presence of mineralisation in the vessel cavities, whereby mineral deposits penetrate into the vessels of the wood charcoal fragments obscuring morphological characteristics, was also recorded as a measure of preservation.

The wood charcoal assemblage was generally well preserved and identifiable. Vitrification, which results in anatomical features becoming fused and difficult to identify, had affected 23 of the charcoal fragments from context 1347, 19 of the fragments from context 1358 and nine of the fragments from context 1522. Mineralisation also affected ten of the fragments from context 1347, three of the fragments from context 1358 and five of the fragments from context 1522. It is likely that vitrification and mineralisation may have hampered the observation of features such as fungal hyphae and tyloses.

The number and weight in grams of wood charcoal fragments of each taxa present in the analysed contexts is listed below (Table 9). Comparison of the proportions of taxa represented by both weight and by number of fragments enables an assessment of any potential bias related to the density and susceptibility to fragmentation of different species, as well as the effect on the weight of charcoal of different charring conditions. The proportion of each taxa represented by both weight and number of fragments was however found to be broadly similar. One exception was the proportion of wild/bird cherry (*Prunus padus/avium*) charcoal in possible Phase 3 deposit, context 1522, which comprised a greater proportion of the assemblage by weight than by fragment number, due to the presence of a couple of large fragments.

The taxa identified as present in the charcoal assemblage as a whole are *Prunus* sp. (cherry/blackthorn), *Prunus avium/padus* (wild/bird cherry), Pomoideae (hawthorn, apple, pear, and

TABLE 9 WOOD CHARCOAL

| **Phase** | **3** | | **–** | | **2** | |
|---|---|---|---|---|---|---|
| **Group** | **1556** | | **–** | | **1551** | |
| **Context number** | **1347** | | **1358** | | **1522** | |
| **Feature number** | **1378** | | **1363** | | **1521** | |
| **Flotation sample number** | **11** | | **13** | | **31** | |
| **Feature type** | **ditch** | | **ditch** | | **ditch** | |
| Number / weight of fragments | No. | wt (g) | No. | wt (g) | No. | wt (g) |
| Taxon (common name) | | | | | | |
| Prunus sp. (cherry / blackthorn) | 2 | 0.032 | 5 | 0.030 | | |
| Prunus padus / avium (wild / bird cherry) | | | | | 21 | 1.406 |
| Pomoideae (hawthorn, apple, pear, rowan family) | 12 | 0.117 | | | 14 | 0.327 |
| Ulmus sp. (elm) | | | 1 | 0.010 | | |
| Quercus sp. (oak) | 71 | 1.035 | 83 | 0.576 | 53 | 1.013 |
| Corylus avellana L. (hazel) | 2 | 0.012 | | | | |
| Populus / Salix (poplar / willow) | 1 | 0.005 | 1 | 0.002 | | |
| Acer campestre L. (field maple) | 1 | 0.009 | 3 | 0.020 | 5 | 0.077 |
| Fraxinus excelsior L. (ash) | 7 | 0.075 | | | 4 | 0.052 |
| Indeterminate | 4 | 0.098 | 7 | 0.707 | 3 | 0.300 |
| Total weight / number of fragments | 100 | 1.383 | 100 | 0.707 | 23 | 3.175 |

rowan family), *Ulmus* sp. (elm), *Quercus* sp. (oak), *Corylus avellana* L. (hazel), *Populus/Salix* (poplar/willow) *Acer campestre* L. (field maple) and *Fraxinus excelsior* L. (ash). Charcoal from these taxa cannot be differentiated using morphological characteristics. Pomoideae is a large sub-family of the Rosaceae (rose family) containing many species, although the native woody plant species most likely represented would be *Pyrus communis* L. (wild pear), *Malus sylvestris* (L.) Mill. (crab apple), *Sorbus domestica* L. (service tree), *Sorbus aucuparia* L. (rowan), *Sorbus aria* (L.) Crantz. (common whitebeam), *Crataegus monogyna* jacq. (hawthorn) or *Crataegus laevigata* (Poir.) DC (Midland hawthorn). The three species of elm which are probably native to the British Isles are *Ulmus glabra* Huds. (wych elm), *Ulmus procera* Salisb. (English elm) or *Ulmus minor* ssp. *minor* Mill. (small-leaved elm) (Godwin 1975, 244). Oak charcoal also cannot be identified to species so either *Quercus petraea* (Matt.) Leibl. (sessile oak) or *Quercus robur* L. (pendunculate oak) is probably represented.

***Context 1347, the fill of ditch [1348]***

Oak (*Quercus* sp.) was the dominant taxa present, followed by hawthorn / apple / pear / rowan family (Pomoideae). Small proportions of cherry/blackthorn (*Prunus* sp.), hazel (*Corylus avellana*), poplar/willow (*Populus/Salix*), field maple (*Acer campestre*) and ash (*Fraxinus excelsior*) were also present.

Growth ring curvatures were observable on nine of the charcoal fragments. Of these, three had strong curvature, two had intermediate curvature and four had weak curvature. Tyloses were observed in the vessel cavities of thirty-two of the fragments, all of which were oak. Closely spaced annual growth rings were not noted as present on any of the fragments. Radial cracks were present on ten fragments, and fungal hyphae were present in the vessel cavities of one fragment.

***Context 1358, the fill of feature [1363]***

Oak (*Quercus* sp.) was the dominant taxa present, along with small proportions of cherry / blackthorn (*Prunus* sp.), elm (Ulmus sp.), poplar / willow (*Populus / Salix*) and field maple (*Acer campestre*).

Growth ring curvature was observable on one of the charcoal fragments which exhibited strong curvature. Tyloses were observed in the vessel cavities of sixteen of the fragments, all of which were oak. Closely spaced annual growth rings were not noted as present on any of the fragments and radial cracks were present on eleven.

Context 1522, the fill of ditch [1521]

Oak (Quercus sp.) was the dominant taxa present, followed by wild/bird cherry (*Prunus padus/avium*) and hawthorn/apple/pear/rowan family (Pomoideae). Small proportions of field maple (*Acer campestre*) and ash (*Fraxinus excelsior*) were also present.

Growth ring curvatures were observable on sixteen of the charcoal fragments. Of these, thirteen had strong curvature, one had intermediate curvature and two had weak curvature. Tyloses were observed in the vessel cavities of twenty-three of the fragments, all of which were oak. Closely spaced annual growth rings were present on one fragment and radial cracks were present on fourteen.

***Discussion***

Charcoal assemblage composition is likely to be influenced by a number of factors, including differences in availability and anthropogenic fuel wood selection strategies, as well as to taphonomic factors such as differential charcoal preservation and recovery (Asouti & Austin 2005, 8; Théry-Parisot *et al* 2010). It is therefore unlikely that the composition of the wood charcoal assemblage is directly representative of the nature and extent of woodland and scrub in the local environment. The high proportion of oak in the assemblage from all three analysed contexts is therefore likely to be related to the excellent properties of oak as a fuel wood (Webster 1919, 44; Porter 1990, 93) and as structural timber, rather than to a dominance of oak woodland in the surrounding environment. The presence of tyloses in a number of the oak fragments, indicating the use of mature heartwood, does however suggest that at least some mature oak trees were present in the vicinity of the site. A similar suite of taxa, including the frequent occurrence of oak, was present in Iron Age deposits at Bancroft (Cartwright 1994, 591).

A number of palaeo-environmental studies, principally molluscan assemblages and pollen sequences, have provided evidence concerning the possible extent and character of woodland in Milton Keynes and the wider region during the Iron Age. Molluscan data has provided evidence

for an environment of open grassland during the Bronze Age in the Ouse and Ouzel valleys (Evans 1974). In the upper Thames valley a general trend of increasing woodland clearance through later prehistory is indicated (Lambrick with Robinson 2009, 34–51).

Oak is one of the most common mixed deciduous woodland trees, but can also be present as a component of hedgerows (Rackham 2003, 283). Elm is a mixed deciduous woodland tree but is also commonly found growing outside woods (Rackham 2003, 255). Field maple is a woodland tree which is frequently associated with ash and hazel in open woodland, particularly on clay or calcareous soils (Rackham 2003, 203). Hawthorn, wild apple, wild pear and members of the rowan family which are represented by Pomoideae, along with wild/bird cherry are all hedgerow and scrub taxa as well as being frequently occurring underwood taxa in deciduous woodland (Rackham 2003, 349–358). Hawthorn is also the principal component of *Crataegus-Hedera* scrub (W21), which is the dominant sub-climax woody vegetation community on circumneutral and base rich soils in lowland England (Rodwell 1991, 334). Woodland clearings, woodland margins and scrub habitats would therefore favour rosaceous taxa such as those potentially represented by Pomoideae as well as cherry. Oak, hazel, ash and elm are also all taxa that flourish where more light is available such as in open woodland or at woodland margins.

Due to the small size of most of the charcoal fragments it was only possible to determine ring curvature for a small proportion of the assemblage. Where ring curvature was observable the use of smaller branches and twigs, intermediate branches and larger branches or trunk material was all indicated. Fungal hyphae was rarely noted as present, indicating the use of freshly cut or well-seasoned wood, although fungal hyphae may have been under-recorded where fragments had been affected by vitrification and mineralisation.

## Discussion and Conclusions

The main phase of activity on the site appears to span a short chronological range in the mid to late 1st century AD, probably within *c*.AD43–75, although that does not preclude an earlier origin in the late Iron Age.

The initial phase of activity comprised the construction of a stock enclosure and field boundaries. It is possible that livestock would have been controlled within this space using a series of moveable hurdles, which would leave little or no archaeological trace. There is no evidence for a droveway during this phase and it appears likely that livestock were herded into the enclosure via an entrance in the southeast of the enclosure.

Most of the fired clay was recovered from Phase 1 contexts and all came from the fills of pits. Of particular interest is the possible late Iron Age oven-plate fragment from context 1491. Six joining pieces of material also recovered from this context may be a fragment of kiln or, more likely, an oven bar. Much of the remaining material may be fragments of 'Belgic bricks' and as such is likely to have been used in hearths.

In Phase 2 the ditches were replaced by more substantial features, perhaps representing a concerted effort to replace existing stock control system with a droveway which leads north into the redefined stock enclosure. The creation of a droveway would have ensured that the livestock could not scatter when being moved, and has been noted at other sites such as Fengate (Pryor 1999, Figs 52 & 53). Large posthole/pit 1384 may have formed part of a gate used to control access between the enclosure and the continuation of the droveway to the north. It is possible that the east-west aligned ditches to the east of the site (e.g. 1553), established during this phase, represent a further droveway forming a T-shaped junction of droveways focussing on the stock enclosure.

A second major episode of deposition occurred into Phase 2 enclosure Group 1555, probably after c.AD60/70, and in all nearly ten times as much pottery was recovered from the features in Phase 2 than in the other phases, emphasising that the main focus of activity occurred at this time. Environmental evidence shows that cereals were cultivated at the site, but that there were also areas of open grassland.

In Phase 3 there appears to have been a shift in the nature of activity on the site as the probable stock enclosure was abandoned, though the layout of the fields in the eastern half of the site appears to have persisted. The wet nature of the site may also have contributed to the necessity for re-establishing and re-cutting the boundary ditches.

Although it is clear that a settlement lay in the near vicinity of the site, no structures could be

identified within the excavated area. Domestic evidence is mainly found within the pottery assemblage. Some in particular may have been used as cooking pots, for example those found within Phase 2 boundary Group [1555]. Both the pottery and finds assemblages also indicate the presence of industrial activity near to the site with recovery of a large, sooted Belgic storage jar, slag, fired clay and a hearth bottom. No slag was recovered from Phase 1 features, but the evidence suggests that smelting was occurring in the vicinity of the site during Phase 2 and possibly Phase 3.

The animal bone assemblage appears to represent a fairly typical domestic assemblage consisting of a mixture of food waste and butchery discard, with an emphasis on butchery discard. Most of the environmental samples showed a low density of charred plant material, a moderate quantity of wild or weed plant seeds and low densities of spelt wheat and barley. The environmental evidence suggests that the inhabitants practised cultivation of a mixed crop of emmer and spelt wheat to increase the chances of a good yield, though, given the low overall density of material it is possible that cereals did not represent a major component of the economy of the site, or that crop processing by-products were used as animal feed. The wild plants suggest the possibility that measures were undertaken to increase soil fertility and the other plant remains indicate that harvesting was carried in a manner to maximise the straw harvest. Fodder, tinder, roofing material and flooring material may also be represented.

There does not appear to have been any attempt during the later Roman period to re-establish previous boundaries or to utilise the site. This hiatus of activity lasted until the medieval period, and the site remained as open, agricultural land until the current development.

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