LAND AT WEST END, HADDENHAM CAMBRIDGESHIRE

ARCHAEOLOGICAL EXCAVATION
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LAND AT WEST END, HADDENHAM ARCHAEOLOGICAL EXCAVATION

ARCHAEOLOGICAL EXCAVATION ARCHIVE REPORT

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ROMAN BOUNDARIES AND DEPOSIT OF MULTIPLE ANIMAL CARCASSES AT WEST END, HADDENHAM, CAMBRIDGESHIRE

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ABSTRACT

In 2003 an archaeological excavation in Haddenham, Cambridgeshire, revealed intercutting ditches and a few pits. The features contained a large quantity of Roman pottery and animal bone. The ditches related to enclosures, which were regularly re-cut or redefined. The site occupies an upland location and was possibly used seasonally for grazing.

Also excavated was a ditch which contained the remains of over 18 cattle and horses, of varying ages, most of them arranged nose-to-tail, radiocarbon dated to 40 to 230 cal AD. The deposit was cut by a mid/ late 3rd to 4th century AD ditch and probably dates to the later Iron Age/early Roman period. The burials may represent the disposal of animals that succumbed to a disease or were slaughtered to reduce the size of a herd, either by the owners or by another tribe as an aggressive act. However, they were buried carefully and in a specific arrangement, suggesting a ritual significance. The discovery of special animal deposits is not unusual at Iron Age and Roman sites, however Haddenham is noteworthy as the only example of the deliberate burial of horse and cattle in a linear feature. Although it is not possible to explain why these animals buried in this way, it must represent a significant event in the lives of the people who inhabited the fenland.

INTRODUCTION

Between May and July 2003, Hertfordshire Archaeological Trust (HAT; now Archaeological Solutions Ltd) carried out an archaeological excavation on land at West End, Haddenham, Cambridgeshire (NGR TL 4613 7552), in advance of residential redevelopment (Figs. 1 & 2). A trial trench evaluation revealed archaeological features, principally Roman ditches (Crank and Pearson 2000). The excavation revealed a similar range of features (Plate 1), but also a ditch containing the skeletons of 18 cattle and horses, of varying ages (Crank and O'Brien 2003).

TOPOGRAPHY AND GEOLOGY

The village of Haddenham is centred on a triangle of roads. The church dates from the 13th century and is located at the main cross road, in the centre of the village. The site occupies 1.18 hectares of former orchard (currently pasture) on the western edge of the settlement, in the area known as West End.

The village of Haddenham is located on the highest island in the Fenland, lying at a height of 36m AOD. It lies on Kimmeridge Clay, overlain by Lower Greensand,

cretaceous sand and sandstone, which attracted a settlement to the island. It is overlain with soil of Bearsted 1 association, described as a well drained coarse loamy and sandy soil which is at risk from water erosion (Hall 1996; SSEW 1983).

The excavation lay at a height of 26 to 28m AOD, on a ridge of land that falls sharply to the south west. The Lower Greensand is absent or partly absent. In places a residual capping was present comprising a highly friable layer of sandstone material, which has been heavily weathered (Crank and Pearson 2000).

During the prehistoric period, the island was surrounded by fenland, consisting of a complex sequence of peat, marine deposits and riverine alluvium. The course of the River Ouse lay to the west of the parish, surrounded by a sand and gravel terrace (The Delphs and Foulmire), which attracted prehistoric activity (see below). A build up of alluvium, due to climatic fluctuations, occurred in the area during the middle Iron Age and, to a greater degree, in the post-Roman period (Hall 1996, 61).

ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

The earliest evidence for activity around the village of Haddenham is concentrated in the gravel terraces at the Upper and Lower Delphs area, to the west, and at Foulmire, to the north west. In these areas, prehistoric monuments have been recognised, including a Neolithic causewayed enclosure and up to 11 Bronze Age round barrows (Hall 1996). Aerial photography has revealed possible evidence for more prehistoric monuments closer to the village, consisting of a round barrow 2.5km south-west of the site (SMR 11114), and a long barrow 2.1km to the south-west (SMR 11117).

Several hoards of Bronze Age metalwork have been recovered in Wilburton, immediately to the east of Haddenham, even though 'the parish is a most unlikely area for prehistoric activity' (Hall 1996, 71). Also at Wilburton, a 'Celtic' urn was found containing a few nuts, adult teeth and a stag's horn on the top (SMR 05870).

The Haddenham survey, undertaken by Cambridge University during the 1980s, located middle Iron Age occupation activity at the Upper Delphs, *c.* 5.5km south west of the site, consisting of sub-square enclosures, the remains of round houses and land boundaries, indicating the presence of a long-term settlement (Evans and Serjeantson 1988; Evans and Hodder 1987). An evaluation at Flat Bridge Farm, *c.* 5km south west of the site, yielded evidence for short term occupation in the middle Iron Age, perhaps a peripheral activity zone associated with a more intensely used site elsewhere. The site was located on the border between the upper terrace pastures and the marshy riverine edges, and probably was abandoned prior to environmental degradation in the mid to late Iron Age (White 1997).

The presence of an Iron Age site, 1.45km south of the site and east of Aldreth Road, is indicated by a scatter of prehistoric flints (SMR 02052B), Iron Age pottery (SMR 02052A) and 3rd to 4th century Roman finds (see below). Isolated Iron Age finds were found in the vicinity of the site. These comprise a coin, found less then 1km to the site (SMR 05586), and the upper half of a beehive-shaped quern of grit stone, found *c.* 200m north east of the site, which is either Iron Age or Roman in date (SMR 02044).

Roman material has also been found at Aldreth Road, comprising pottery, a bronze bracelet and a coin, all dated to the 3rd and 4th century (SMR 05621; 07775; 02052). Another 3rd century coin was found 150m west of this main scatter (SMR 05628) and a fragment of a medical tool (SMR 06046a) and a fragment of a cow or sheep bell (SMR 09300A) was *c.* 800 south again, also along Aldreth Road, indicating several settlements were located between Aldreth and Haddenham. Roman material has also been recovered in Haddenham itself, consisting of a possible 2nd century coin (SMR 05623), and residual Roman pottery was found in post-medieval features at 7-11 High Street (Whittaker 1998).

A Romano-Celtic shrine was constructed on top of one of the Bronze Age barrows at the Upper Delphs, and excavation revealed that it was originally constructed in the mid-2nd century, but was destroyed, possibly by a fire, and re-built in the late 3rd century. Four complete sheep skeletons, each buried a pot, and a boar burial were also excavated. The site was abandoned in the later 4th century due to flooding (Hall 1996).

The settlement at Haddenham appears to have developed in the post-Roman period. An excavation in 1990 at the Three Kings public house, *c.*650m east of the site, revealed up to 11 Anglo Saxon furnished burials, broadly dated to the first half of the 6th century, including one double burial of a man and a woman (Robinson and Duhig 1990, 1993). The presence of Anglo-Saxon activity in the village is also indicated by St Ovin's Cross, which previously stood opposite the Holy Trinity Church. St Ovin was St Etheldreda's steward, who died in 676AD, and the cross may have been located at St Ovin's burial site or birth place. The cross was used as a mounting block up to the 18th century, before being moved to Ely Cathedral.

EXCAVATION AND RECORDING

Two areas were excavated (labelled A and B), each overlying the footprint of the proposed buildings (Figs. 1 & 2). The excavation revealed four principal phases of Romano-British field boundary systems, dated to the 2nd to 4th century AD (Figs. 3, 5 & 6).

The earliest phase probably dated to the 2nd century or earlier, comprising short ditch lengths, truncated by later ditch alignments, a few pits and a linear ditch which contained articulated cattle and horse skeletons buried in a row. Phases 2a and 2b, date to the late 2nd to mid/late 3rd century AD, and comprise field boundary ditches which may have formed enclosures or paddocks. During Phases 3a and 3b, dated to the mid/late 3rd to 4th century, these enclosures were enlarged and redefined. Phase 4, dated to the 3rd to 4th century, saw the realignment of the site on a NE/SW axis and several small pits cut earlier features, indicating their disuse.

Phases 2b and Phase 3b comprise features that contain material of similar date to those in Phase 2a and Phase 3a, respectfully, but stratigraphically are later, indicating that some Phase 2a and 3a features were disused and had been backfilled when the later ones were constructed. Thus, some of the earlier phased features may have been contemporary with the discrete later phased features.

Although Areas A and B were adjacent, archaeological features were not traceable from one area to the other

Phase	Date
1	Roman, pre-2nd to 3rd century AD
2a	Late 2nd to mid/late 3rd century AD
2b	Late 2nd to mid/late 3rd century AD
3a	Mid/late 3rd to 4th century AD
3b	Mid/late 3rd to 4th century AD
4	3rd to 4th century AD and/or later
Unphased (pits, gullies and ditches)	n/a
Unphased animal burials in linear ditch	Late Iron Age/Early Roman

Table 1 Summary of phases

EXCAVATION RESULTS

Phase 1 (Roman, pre-2nd to 3rd century AD) (Fig. 5)

The first phase comprises short lengths of boundary ditches and gullies, truncated by later features. Associated finds are few, and less than later periods. Pottery, animal bone and sparse building material (1g) were recovered.

Area A
In Area A, Phase 1 comprised two short ditch fragments, F2015 and F2061, and a pit F2065. Ditch F2015 was located in the north western corner of the site and was orientated WNW/ESE. It was truncated by Phase 2a Ditch F2003. Ditch F2061 was orientated ENE/WSW and was truncated by Phase 3a Ditch F2032.

Area B
In comparison to Area A, Area B revealed more tangible evidence for Roman field systems, all located in the north-western end of the trench. Parallel Ditches F2089 and F2120, along with F2075, were orientated NNE/SSW, while F2124 appeared to run on a SSE/NNW, possibly at right angles to the parallel ditches. Ditch F2101 was orientated NE/SW.

To the north of these fragmentary ditches were two pits F2111 and F2122. Pit F2122 contained no finds, but stratigraphically is assigned to Phase 1 as it was cut by Phase 2a ditch F2107. Pit F2140 was revealed in the base of F2094.

Phase 2a (Late 2nd to mid/late 3rd century AD) (Fig. 5)

From the late 2nd century onwards, larger ditches were constructed, mostly aligned NNE/SSW, respecting the natural slope of the site and easing drainage.

Area A
Area A contained four ditches, one pit and three tree-hollows. Ditch F2003 was a substantial curvilinear ditch which was re-cut at its north end (F2036; see Phase 2b). It contained a copper alloy Colchester brooch, dated to the first half of the 1st century (SF3; Fig. 8.1) (Crummy below). Ditch F2005 lay east of ditch F2003, and was

approximately parallel. It was less substantial in comparison to F2003 and contained residual struck flint. The southernmost segment of the ditch yielded 12th to 14th century pottery, fired clay, hearth lining, animal bone, a possible iron tool (SF 4) and iron nails. The medieval pottery was probably intrusive, introduced by the modern sewer cut immediately to the south. The quantity of fired clay is relatively high in comparison to other features, and no hearth lining was recovered from any other features, suggesting the material may also be intrusive.

These parallel ditches appeared to converge to the north, with ditch F2005, apparently cutting the backfilled re-cut of F2003, fragment F2036, and merging with ditch F2030 (Phase 3b). However, these relationships were unclear and the area had been disturbed by the construction of a modern drain.

Ditch F2011 appears to have been a major boundary ditch, remaining in use until Phase 3a as the lower fill yielded mid 2nd to early 3rd century pottery, while the upper fill contained late 3rd to 4th century pottery. F2011 was a long-established feature. It contained a large quantity of finds, comprising ceramic building material, fired clay/daub, animal bone, oyster shell, iron nails and an iron hook (Fig. 8.5), possibly a fitting for a loop-headed spike or part of a larger object such as steelyard or a spit (Crummy below). Seventy one fragments of sheep/goat bones, 69 of which came from the lower legs of at least seven animals, was recovered from this upper fill, possibly representing skinning or hide preparation (Phillips below).

To the east lay a large ditch, F2069. Unlike the other ditches, it was aligned ESE/WNW, possibly at right angles to F2011, F2005 and F2003. Finds include a small fragment of worked bone. Any relationship between F2069 and the other ditches were not discernible.

Irregular gully F2034, pit F2053 and pit F2057 were tree-hollows, and yielded pottery, animal bone, building material, oyster shell and struck flint. Pit F2051, located to the south, was isolated. It contained pottery, tile, animal bone and three iron nails.

Area B

Phase 2a features Area B comprised four ditches and a pit, all truncated by later features. In comparison to Area A, Area B contained fewer features and a significantly lower quantity of finds.

Ditch F2118, located in the north west side of the site, truncated Ditch F2120 (Phase 1), possibly representing the re-defining of an existing boundary. Its fill yielded sparse pottery, animal bone, oyster and an iron nail, some of which was dated to the 4th century and maybe intrusive deriving from Ditch F2126. Shallow Gully F2098 snaked across Area B on an approximate NW/SE axis, at right angles to the other Phase 2a ditches. Its relationship with the other features was not discernible. Its curvilinear form resembles the Area A parallel ditches F2003 and F2005 (above).

To the east of the features, lay a linear ditch/gully, F2134/F2180 which was truncated by Pit F2184 (Phase 4), making it difficult to determine whether F2134 and F2180 were the same feature. Furthermore, the plan of F2134 was distorted by outcrops of stone (as were Ditches F2009 and F2030 (Phase 3b, Area A). Its fill yielded animal

bone and mostly late 2nd to early 3rd century pottery, though a few sherds of 3rd to 4th century pottery was also found. F2180 was not affected by the stone outcrops and yielded late 2nd to mid 3rd century pottery, animal bone and fired clay/daub. It was roughly parallel to contemporary F2118 to the west, possibly forming two sides of an enclosure.

A large, shallow irregular pit, F2113, was also dated to this phase. This possible tree hollow was poorly defined, but yielded late 2nd to mid 3rd century pottery and animal bone.

Phase 2b (Late 2nd to mid/late 3rd century AD) (Fig. 5)

Only Area A contained Phase 2b features, further supporting the view that activity was focused in the north western end of the site.

Area A
F2036 was a ditch located north of Ditch F2003 (Phase1a) and may have been a continuation of Ditch F2003 or a later re-cut. F2036 contained large quantities of pottery, frequent animal bone, fragments of lava quern (SF 12), six iron nail fragments, and oyster and mussel shells.

Narrow Ditch F2013 was orientated E/W, one of only three ditches in this area on this axis. It contained a bone hairpin (SF2; Fig. 8.7) dating from the 2nd to the 4th century AD (Crummy below). It cut Ditches F2003 and F2005 (Phase2a) and indicates an alteration in the layout of the field systems.

Pit F2049 cut Tree Hollow F2057 (Phase 2a) and was in turn cut by Pit F2045 (Phase 3b). It contained a small quantity of pottery. Immediately east was a similar pit, F2047, also cut by Pit F2045 and also a modern sewer.

Phase 3a (Mid/late 3rd to 4th century AD) (Fig. 6)

Both areas contained features dating to the mid/late 3rd to 4th century, although there were less features associated with Phase 3a then Phase 3b. Phase 3a features consist of ditches and gullies, many of which appear slightly curvilinear in shape and orientated on a number of different alignments, suggesting the start of a major re-organisation of the landscape. The axes of the linear ditches were to be echoed in Phase 4 and the enclosure ditch was also re-cut in the subsequent phase.

Area A
Gullies F2007 and F2019 cut Ditch F2013 (Phase 2b). F2007 was parallel to and cut earlier Ditch F2005 (Phase 2a). It contained sparse finds. Gully F2019 also cut Ditch F2005 (Phase 2a) and curved towards Ditch F2003 (Phase 2a). Its stratigraphic relationship with Ditch F2003 was not clear. These gullies appeared to be related and linked.

In the east of the site, Ditch F2032 was constructed at right angles to Ditch F2011 (Phase 2a). Shallow, irregular, curving Gully F2067, which lay to the east, may have been a continuation of this ditch.

Area B
Ditch F2107 was aligned N/S and was cut by F2094, also assigned to this phase. Ditches F2148 and F2146, located in the east of the site, were roughly parallel, appearing to converge towards the south.

Ditch F2094 was aligned WNW/ ESE for a distance of 21m, before turning NE as F2155/F2109 for over 12m. The relationship between F2094 and F2155/F2109 was not clear. They may constitute one long, linked feature (like Ditch F2096 (Phase 3b) or represent two separate ditch fragments. Either way, these ditches probably represent the corner of an enclosure or a field

Phase 3b (Mid/late 3rd to 4th century AD) (Fig. 6)

Phase 3b saw the redefining of several of the enclosures, on the same axis as previous ditches. Area B continued to provide evidence for more intensive activity, in comparison to Phases 2a and 2b.

Area A
Large, linear ditch F2009 traversed the western part of the excavation on a NNE/SSW. It continued beyond a stone outcrop as Ditch F2030. Both features contained similar fills and finds. Ditch F2030 contained a single humerus from an infant; such finds are not unusual on Romano-British sites (Phillips below). It also contained the only fragment of slag, a by-product of smithing (Cowgill below), and part of a dish/bowl rim (Fig. 7.4). F2009 and F2030 were almost on the same alignment Ditch F2005 (Phase 2a), possibly representing the redefinition of this boundary. Similarly, Ditch F2028 was located *c* 10m east of Ditch F2009/F2030, and parallel to Ditch F2011 (Phase 2a) and may also have been a re-cut of a pre-existing land division.

Parallel Ditches F2063 and F2071, in the eastern corner of the site, were much disturbed by rooting, either during their use (a hedge?) or later when the site was used as an orchard. Two small oval pits, F2025 and F2045, cut Phase 2b features. Finds from Pit F2025 included a small iron awl (Fig. 8.4), associated with leather-working, an unfinished bone object (Fig. 8.8), either an incomplete hairpin or spoon, and small unworked quartz crystal (SF11), possibly collected as a curiosity (Crummy below). It truncated Ditch F2013. Pit F2045 cut Pits F2057, F2049 and F2047.

Area B
Parallel Ditches F2091 and F2105 were both difficult to trace due to the presence of many intercutting features. Ditch F2105 was only visible in section. To the west lay Ditch F2091, a substantial feature which contained an iron loop (SF8; Fig. 8.6). F2137 was a short gully which truncated enclosure Ditch F2094 (Phase 3a). Ditch F2144 truncated converging ditches F2148 and F2146 (Phase 3a), and unphased ditch F2169 that contained animal burials (below). It yielded substantial quantities of pottery (Figs. 7.1-7.3), and also animal bone, fired clay/daub, four nails and a lead disc, probably the base of a pewter vessel (SF 13; Fig. 8.2) (Crummy below). Although most of the pottery was late 2nd to early 3rd century, this ditch cut the Phase 3a converging ditches and therefore post-dated them.

Curving enclosure ditch F2096 and its eastern appendages, Ditches F2182 and F2109, mirrored the line of Ditches F2094/F2155/F2109 (Phase 3a), slightly cutting the southern edge of F2094, indicating that this enclosure had to be re-defined not long after it was first created in Phase 3a. This substantial feature also had similar proportions to the earlier ditch, although it was generally wider and contained three fills, one of which (L2097) yielded an iron brooch fragment (SF9; Fig. 8.3) which either dates to the late Iron Age or from the second half of the 1st century AD into the 2nd century and a fragment of the upper stone of a Niedermendig lava hand-quern (Crummy below). To the east, the enclosure ditch had a parallel fork consisting of Ditch F2159/F2182.

Phase 4 (3rd to 4th century AD and/or later) (Fig. 6)

The final phase of activity saw little activity in Area A. Area B had a series of new ditches, aligned on an almost N/S axis, markedly different to earlier boundaries.

Area A
Three small features truncated Phase 3b features or contained material dating to the 3rd to 4th century AD or later. Oval Pit F2017 cut Ditch F2009, Gully F2073 and Ditch F2071. F2073 may have been a re-cut of F2071. A further pit, F2021, cut F2003 (Phase 2a), possibly belongs to this phase. An environmental sample revealed small mineralised faecal concretions within the fill of F2021 (Fryer below).

Area B
Linear gully/ditch F2126 was cut by parallel Ditch F2085. Ditch F2085 traversed the full width of Area B. The configuration and alignment of ditches F2178 and F2188 was similar. F2178 was truncated by F2188. To the north of F2188, another gully, F2142, began, aligned on the same axis. It is possible that these two features formed one ditch, but Pit F2184, cut when F2188 and F2142 fell into disuse, obscured the relationship between them. Pit F2184 was a relatively deep feature, yielding late 2nd to mid 3rd century pottery. It was cut by a Tree Hollow, F2186, which yielded tile.

Unphased: Discrete features (Fig. 6)

Undated features were present in both Area A and B. These generally contained 2nd and 4th century pottery, and the lack of stratigraphic relationships with other features means that they could not be phased.

Area A
Undated features in Area A comprise possible tree hollows (F2039, possibly modern F2023 & F2041) gullies (F2043 & F2055) and an undated pit (F2059).

Area B
Three gullies (F2087, F2103 and F2167) and eight small pits or postholes (F2128, F2077, F2079, F2081, F2083, F2165, F2153 and F2132) in Area B, were undated. These postholes may be structural, and were generally clustered in the southern part of the site.

Unphased: Animal burials (Figs. 4 & 6, Plates 2, 2a-c)
The most significant feature investigated during the excavation was Ditch F2169, located in the east of the site and orientated NE/SW. It contained the remains of c. 19 individual cattle and horse skeletons arranged on the base of the ditch. Eleven of the 19 are sufficiently complete for analysis, while the remaining eight survived as small fragments of articulated skeletons or as individual bones (Table 2). The ditch pre-dated Ditch F2144 (Phase 3b), but it contained sparse Roman pottery (59g). A possible fragment of human bone was also recovered from the ditch, but it was too abraded for definite recognition. Two samples of animal bone, from L2173 and L2174 respectively, produced standard radiocarbon dates of 40 to 230 cal AD (Beta 192177 & 192198:Cal BP 1900 to 1720). The backfill also yielded fired clay/daub. The burials were truncated by Ditch F2144 (Phase 3b) and a modern sewer.

Out of nine horses identified, four of the more complete ones were aged as adults, two were young (less then 15 months), and one was neo-natal. Two were too fragmentary to be aged. Overall, the remains of 10 cattle were recognised comprising three aged five or older, four between 18 months and three and a half years, two just described as young and one foetus. Perhaps not surprisingly, the adult skeletons were better preserved then the younger individuals. None of the bones demonstrated any butchery or skinning marks, and most appear to have been buried as whole carcasses, demonstrating they were deliberately placed in the ditch and not accidental. It is unclear whether the smaller bone fragments recovered from the ditch were associated with nearby burials or represent individual burials (Phillips below).

Context	Species	Age	Position in ditch	Notes
2171	Horse	Probably adult	Located in far N-E of the ditch. Spine against N side of ditch. Head probably faced N-E	Skeleton truncated
2172a	Horse	5 years +	Spine against S side of ditch. Head faced SW	Truncated by Phase 3b Ditch F2144. Remains of a foal (possibly neo-natal) and a foetal calf were recovered, possibly located in the posterior end of the horse
2172b	Horse	Neonatal	-	Just the tibiae, radius and a femur were recovered from the same context as 2172
2172c	Cattle	Foetal	-	Femur, tibia, humerus, radius and metapodials of the left legs and part of the pelvis were recovered from the same context as 2172
2172-2173	Horse	<15 months	Spine possibly against S side of ditch. Head possibly faced SW	Remains of left femur, both tibiae, left radius and ulna mixed in two contexts
*2173	Horse	5 years	Spine against S	Mostly complete, but skull and

		+	side of ditch. Head faced NE, towards the head of 2172a	mandible lost. It appears to be facing horse 2172
*2174	Cattle	5 years +	Spine against S side of the ditch. Head pointed SW, but skull faced N out of the ditch	Remains fairly complete. Skull faced out of the ditch, resting on back of animal from 2176, suggesting it was placed in after
2175a	Horse	Young	-	Represented by molar. Possibly part of ditch fill
2175b	Horse	-	-	Represented by molar. Possibly part of ditch fill
2175c	Cattle	Young	-	Articulated spine and ribs
2176a	Horse	5 years +	Spine against S side of ditch. Head faced SW	Almost complete skeleton of a horse. A molar and incisor of another horse also recovered
2176b	Horse	-	-	A molar and incisor of horse recovered with 2176a
2177	Cattle	2-3 ½ years	Spine towards S side of the ditch. Head faced SW	Almost complete skeleton of adult cattle. Remains of a younger cattle, 2170, lay under skull and next to the forelegs
2170	Cattle	?Young	-	Metacarpal, 1st phalanx, carpal, atlas, axis, and some large ungulate sized fragments, found underneath skull and next to forelegs of 2177. Possibly associated with 2190 and distal tibiae and radius found in 2163 and 2164
2163	Cattle	5 yrs +	Spine towards S side of ditch. Head faced SW	Mostly complete adult cattle. Lay feet to feet with adult cattle skeleton 2164. Partly truncated by modern sewer
2164	Cattle	2-2 ½ years	Spine towards N side of ditch. Head faced SW	Mostly complete adult cattle. Lay feet to feet with adult cattle skeleton 2163. Partly truncated by modern sewer
2190	Cattle	18-30 months	-	Single mandible of cattle, located on top of 2163. Possibly associated with 2170 and distal tibiae and radius found in 2163 and 2164
2191	Cattle	5 years +	Unclear, but head may have faced SW	Partial remains of adult cattle skeleton. Truncated by modern sewer
2192	Cattle	2 – 3 ½ years	Placed in SW end of excavated ditch. Spine towards S	Almost complete adult cattle. Its size suggest it was a bullock and pathology suggests it was

			side of ditch. Head faced SW	used for traction, possibly pulling a grinding wheel

Key: samples marked with an asterisk were radiocarbon dated
Table 2 Catalogue of animals in Ditch F2169

Table 2 demonstrates that the horses were concentrated to the north-eastern end of the ditch, while the majority of the cattle were placed at the south-western end. All but two of the burials, (Horse 2171 and Horse 2173) were facing south-west, meaning they were nose to tail and all had their backs facing the south-eastern edge of the ditch, expect for one cattle (2164) and one horse (2171) which faced north-west. It maybe significant that Horse 2171, located at the far north-eastern end of the ditch, was the only burial that deviated from the norm twice, and its positioning may reflect its placement at the end of the feature.

Many of the lower leg and feet bones were stained black, which either indicates these parts of the carcass lay in wet conditions, allowing them the attacked by iron oxide, or they were covered by skins or hides which stained the less fleshy parts of the body as they rotted (Phillips below).

SPECIALIST REPORTS

Pottery
Andrew Peachey

Introduction
A total of 2842 sherds of Roman pottery, weighing 29.815kg were recovered. The average sherd weight is 10.44g (excluding mortaria and amphorae). The bulk of the pottery was recovered from open features (ditches) and is abraded, although the high rim estimated vessel equivalence (total assemblage r. EVE: 26.4) has allowed relatively narrow date ranges to be assigned to most features. One sherd (5g) of medieval glazed pottery was recovered from Ditch fill F2005 L2006 Seg. A, and is intrusive from a modern drain that cut the feature.

Methodology

The pottery was examined at x20 magnification and recorded on *pro forma*. The details recorded were fabric type, sherd count, weight, form type (including comparable forms from other site assemblages), rim estimated vessel equivalents (r. EVEs) (Orton, Tyers, and Vince 1993, 21) and state of preservation.

Fabric codes are based on the national system (Tomber and Dore 1998). If a fabric did not conform to this system it was designated a code on the same basis, regarding its finish (colour-coated) or fired state (reduced/oxidised). Two fabric groups, one oxidised and one white-slipped were recorded on *pro forma* as unspecified (UNS OX and UNS WS) and have since been assigned probable kiln groups, Cherry Hinton and Jesus Lane, Cambridge respectively, but the original codes used on the *pro forma* have been maintained. Fabric descriptions have been referenced to published material unless it was necessary to provide further information. Form comparisons referred to in this report and those that are not are included on a Microsoft Excel spreadsheet,

along with the sherd count and weight records for every context, and will be deposited with the site archive.

Fabric Descriptions

Samian ware (Tomber and Dore 1998, 30-31; Webster 1996, 13-16)
Moselkeramik black-slipped ware (Tomber and Dore 1998, 60)
Baetican (Late) amphorae 2 (Tomber and Dore 1998, 85)
Lower Nene Valley colour-coated ware (Howe *et al* 1980; Perrin 1999; Tomber and Dore 1998, 118)
Oxford red-slipped ware (Young 1977, 123; Tomber and Dore 1998, 174)
Romano British mica-dusted ware (Tomber and Dore 1998, 211; Hull and Pullinger 1999, 141-4)
Jesus Lane slipped ware (Hartley 1960, 26)
Cherry Hinton oxidised ware (Pullinger and Young 1981, 5)
Hadham oxidised ware (Going 1994, 297; Tomber and Dore 1998, 151)
Horningsea reduced ware (Evans 1991, 35; Tomber and Dore 1998, 116)
Horningsea oxidised ware (Evans 1991, 35)
Hadham reduced ware (Tomber and Dore 1998, 152)
Wattisfield reduced ware (Tomber and Dore 1998, 184)
Lower Nene Valley grey ware (Perrin 1999, 78-87)
Lower Nene Valley cream ware (Perrin 1999, 108-112)
Lower Nene Valley white ware (mortaria) (Tomber and Dore 1998, 119)
Verulamium white ware (Tomber and Dore 1998, 154)
Romano-British shell-tempered ware (Lucas 1994, 53; Brown 1994, 51)
Black burnished ware 2 (Tomber and Dore 1998, 131)
Flint gritted ware (Lucas 1994, 56)
Romanising grey ware Description: The fabric is dominated by poorly sorted, abundant quartz (0.5 – 0.7mm). Other inclusions are sparse and include fine mica (<0.2mm), flint and grog (0.5-1.5mm). The surfaces are black and the core varies between dark grey and red/brown. *Source*: The fabric would have been produced locally and shares many typological characteristics with the Horningsea wares (but not the quality or consistency of the fabric).
Sandy grey ware Description: The fabric is dominated by abundant, well sorted quartz (<0.5mm) and common red and black iron rich grains (<0.5mm). Other inclusions are not consistent and may include sparse flint or calcareous inclusions. *Source*: This fabric group is probably drawn from several different production centres including Horningsea, Cambridge, and the Lower Nene Valley.

The pottery assemblage can be divided into two phases of supply to the site (a general phase of 'Roman' has been added for features that can only be dated to the 2nd to 4th century). The first is broadly associated with stratigraphic Phases 2a and 2b, and the second with stratigraphic Phases 3a, 3b, and 4. However there is potentially a substantial overlap in both the stratigraphic and the ceramic phases in the 3rd century. The lack of definition between these phases may be due derivation of the pottery from open features (ditches). The occurrence of residual material in the latter phase of ceramic supply is high, and this may bias the proportions of fabric groups within the phase.

Fabric Code	Fabric Name	% Sherd Count			% Weight (g)			% r. EVE		
		Ceramic Phase 1	Ceramic Phase 2	Roman	Ceramic Phase 1	Ceramic Phase 2	Roman	Ceramic Phase 1	Ceramic Phase 2	Roman
LEZ SA2	Lezoux samian 2	0.36	0	0.52	0.43	0	0.58	4.29	0	0
RHZ SA	Rheinzabern samian	1.01	0.19	0.26	0.43	0.14	0.06	1.07	0	0
TRI SA	Trier samian	0.65	0.19	0	0.73	0.43	0	1.77	0	0
HGB SA	Heiligenberg samian	0.07	0	0	0.03	0	0	0.36	0	0
MOS BS	Moselkeramik black-slipped ware	0.07	0	0	0.03	0	0	0	0	0
LNV CC	Lower Nene Valley colour-coated ware	4.39	5.42	3.65	4.11	6.36	5.59	7.72	17.53	5.77
OXF RS	Oxford red-slipped ware	0	0.19	0	0	0.47	0	0	0.51	0
ROB MD	Romano-British mica-dusted ware	0.36	0	0	0.49	0	0	1.07	0	0
UNS WS	Jesus Lane slipped ware	0	0.09	0.52	0	0.05	0.14	0	0	0
UNS OX	Cherry Hinton oxidised ware	0.50	0.19	0	0.12	0.15	0	2.86	0	0
HAD OX	Hadham oxidised ware	0.14	2.05	1.04	0.16	2.25	3.30	0	4.59	3.07
HOR RE	Horningsea reduced ware	25.14	28.66	36.20	25.39	29.36	37.63	21.45	20.90	35.77
HOR OX	Horningsea oxidised ware	12.75	8.22	5.99	18.37	7.14	10.10	13.51	9.38	15.38
HAD RE	Hadham reduced ware	0.07	1.12	0	0.02	1.16	0	0	0	0
WAT RE	Wattisfield reduced ware	0.86	0.93	1.56	0.43	0.34	0.78	0.50	1.12	0
LNV GW	Lower Nene Valley grey ware	1.66	1.03	0.52	3.62	0.83	1.24	4.86	1.63	0
LNV CW	Lower Nene Valley cream ware	3.03	3.83	1.04	5.35	0.87	0.38	3.36	2.24	2.31
LNV WH	Lower Nene Valley white ware (mortaria)	0.65	0.28	1.04	1.38	1.13	0.32	1.07	0.51	0
VER WH	Verulamium white ware	0.14	0.09	0.78	0.03	0.03	0.23	0	0	0
ROB SH	Romano-British shell tempered ware	5.69	11.95	10.16	7.65	17.69	9.32	4.43	18.04	7.31
BB2	Black-burnished ware	0.22	0	0	0.20	0	0	0.71	0	0

UNS FL	Flint gritted ware	0.07	0.09	0.52		0.11	0.07	0.17		0	0	0
BAT AM2	Baetican (Late) amphorae 2	1.44	0	0		1.04	0	0		0	0	0
BSW	Romanising grey ware	31.71	22.60	26.04		22.33	21.71	23.47		21.31	18.45	24.62
GRS	Sandy grey ware	9.02	12.88	10.68		7.58	9.82	6.83		9.66	5.10	5.77
Totals		**100**	**100**	**100**		**100**	**100**	**100**		**100**	**100**	**100**

Table 3 Fabric distribution within phases

The occurrence of fabrics by phase is presented in Table 3.

Phase 1 contains 1388 sherds (16365 g) with a total r. EVE of 13.99. Phase 2 contains 1071 sherds (10055 g) with a total r. EVE of 9.81. Phase 3 contains 384 sherds (3455 g) with a total r. EVE of 2.60.

The phases of ceramic supply to the site are:
Ceramic Phase 1 (Archaeological Phases 2a & 2b) Late 2nd – Mid/Late 3rd C.
Ceramic Phase 2 (Archaeological Phases 3a & 3b) Late 3rd – 4th century AD
Roman 2nd – 4th century AD

Samian ware
A total of 36 sherds of samian ware (344g) with a r. EVE of 1.05 are present. The average sherd weight of the samian ware is 9.56g but a majority of the sherds are smaller. Although the samian ware is present as small fragments, the fragments are unabraded. Of the identifiable vessels only one (Drag. 31 bowl (Trier)) could be ascribed to Ceramic Phase 2, and only two to Ceramic Phase 2a (Drag. 31 bowl and Drag. 27 cup (Lezoux)). The bulk of the samian: one platter, one dish, two bowls, and 10 cups occurred in Ceramic Phase 1. The forms present were identified using both rim and (where substantial enough) base and foot-ring fragments, and are presented in Table 4. The dominance of products from Eastern Gaul, particularly cups from Rheinzabern, is a notable feature in this assemblage.

Fabric type		**Trier**	**Rheinzabern**	**Heiligenberg**	**Lezoux**	**Form totals**
Form	**Vessel**					
18	Platter				1	**1**
36	Dish	1				**1**
31	Bowl	1				**1**
37	Bowl		1			**1**
27	Cup		1			**1**
33	Cup	2	4		1	**7**
35	Cup			1		**1**
80	Cup				1	**1**

Fabric totals	**4**	**6**	**1**	**3**	**14**

Key: ' Dragendorff type

Table 4 The distribution of samian ware forms in Ceramic Phase 1

Fine ware

In Ceramic Phase 1 fine ware constitutes 5.42% of the pottery assemblage by sherd count (4.88% by weight). This proportion rises to 7.94% (9.28%) in Ceramic Phase 2. In both instances Lower Nene Valley colour-coated ware dominates. The only foreign import present is a single sherd of Moselkeramik black-slipped ware, probably from near Trier, in Ditch fill F2013 L2014 Seg. B. Regional imports consist of Romano-British mica-dusted ware (in Ceramic Phase 1), Oxford red-slipped ware and Hadham oxidised ware (both almost entirely in Ceramic Phase 2). The Romano-British mica-dusted ware is only present as a plain rimmed beaker with bands of rouletted decoration (Fig. 7.1) in Ditch fill F2144 L2145 Seg. F. The form is similar to a beaker found during the Castle Hill excavations in Cambridge (Vessel 861), but is unknown in this fabric. Mica-dusted fabrics such as this were produced at Wattisfield and West Stow in Suffolk, and Colchester (Alexander and Pullinger 1999, 141). The forms present in Hadham oxidised ware are a dish with a grooved and rouletted rim comparable to a vessel found at Baldock (Rigby 1986, fig. 137.439), and a ring-necked flagon comparable to Verulamium type 1943 (Wilson 1984). Both vessels were recovered from Pit fill F2045 L2046 Seg. A. The only identifiable form present in Oxford red-slipped ware is a dish imitating the form of a Dragendorff type 31 samian ware bowl.

The kilns in Water Newton (*Durobrivae*) and the surrounding area that were producing Lower Nene Valley colour-coated ware are approximately 40 km away from Haddenham. Two smaller groups of kilns producing fine wares were less than 20km away. These were situated at Cherry Hinton (Evans 1990) and Jesus Lane, Cambridge (Hartley 1960). The Cherry Hinton oxidised ware is very similar to the Oxford red-slipped ware, especially if the latter has had its colour coat abraded, but can be distinguished by the lower degree of mica in the fabric. The only form present in The Cherry Hinton oxidised ware is a disc-necked flagon comparable to a type found at the Obelisk Kilns, Harston, Cambridgeshire (Pullinger and Young 1981, fig. 13.2) and to the slightly more developed collared flagon at Cherry Hinton (Evans 1990, fig. 5.48).

The percentage proportions of Lower Nene Valley colour-coated ware remain similar in both the ceramic phases of the site, however the distribution of forms changes quite considerably, as illustrated in Table 5.

Vessel type	**Ceramic Phase**		**Total**
	1	**2**	
Beaker	8	3	*11*
Dish	1	3	*4*
Bowl	0	3	*3*
Jar	0	4	*4*
Total	9	13	22

Table 5 Forms of Lower Nene Valley colour-coated ware

The dish in Ceramic Phase 1 has a triangular rim (Type 216, Perrin 1999) where as the dishes in Ceramic Phase 2 have either rounded rims (Type 221, Perrin 1999) or a plain rim and curved sides (Type 221, Perrin 1999). In Ceramic Phase 2 the bowls are all of similar flanged varieties (Types 258, 260, 261, Perrin 1999). The beaker forms exhibit a greater degree of variety. Ceramic Phase 1 contains fragments of three cornice rim beakers (Types 124 and 128, Perrin 1999), one indented beaker with rouletted decoration (Type 167, Perrin 1999), one plain beaker and one curved rim beaker (Types 153 and 116, Perrin 1999). Also present is almost half a beaker with under slip, barbotine decoration (Fig. 7.2; Type 143, Perrin 1999), and a beaker with under slip oblique barbotine 'rustication' (Fig. 7.3). The latter vessel has the shape of a Type 158 beaker and the decoration of a Type 120 beaker (Perrin 1999). Ceramic Phase 2 contains two indented beakers with barbotine decoration (Type 166, Perrin 1999) and one further 'S' shaped rim that may belong to a vessel of similar type.

Coarse wares

Horningsea reduced and oxidised wares comprise, in total, 38.08% of the assemblage by sherd count (41.78% by weight). It is also likely that a large proportion of the Romanising grey ware and sandy grey ware vessels were from this source. The Horningsea vessels concur with the form series published by Evans (1991), and the most popular form on this site, everted or splayed bead rim jars, also occur with a high frequency in Romanising grey ware and sandy grey ware fabrics. Cordoned rim jars and storage jars, characteristic of the Horningsea industry (Evans 1991, 37; Walker 1912), are present but not common. Table 6 illustrates the occurrence of different forms. The sample of vessels that are certain Horningsea products is not large enough to comment on the evolution of vessel forms. It is curious to note that bead and flange bowls (Evans 1991, fig. 5.53-54) in Horningsea reduced ware only appear in Ceramic Phase 1, where as the comparable fine ware form, in Lower Nene Valley colour-coated ware, only occurs in Ceramic Phase 2. An unusual form in Horningsea oxidised ware is a dish/bowl with a grooved rim (Fig. 7.4) similar to Type 821 from Castle Hill, Cambridge (Hull and Pullinger 1999) occurs in Ditch fills F2009 L2010 Seg. C and F2011 L2012 Seg. C. Another unusual form is a cup in sandy grey ware that appears to be imitating the samian ware Form 33 cup (Fig. 7.5) in ditch fills F2011 L2012 Seg. C and F2005 L2038. This may reflect the demand for vessels of this type, as is also illustrated by the popularity of the samian ware Form 33 cup (above).

Type of vessel	**Horningsea reduced ware**		**Horningsea oxidised ware**	
	Ceramic Phase 1	**Ceramic Phase 2**	**Ceramic Phase 1**	**Ceramic Phase 2**
Jar				
Everted bead rim	9	3	1	3
Plain everted rim	4	3	4	1
Necked jar	3	2	0	2
Internally ledged jar	1	1	1	0
Cordoned rim	3	1	3	1
Hooked rim	0	1	0	1
Sub-total	*20*	*11*	*9*	*8*
Storage Jar				

Plain everted rim	0	1	0	1
Cordoned rim	0	0	3	0
Sub-total	*0*	*1*	*3*	*1*
Dish/Bowl				
Triangular/Rounded rim	5	5	1	0
Plain rim	1	2	0	0
Hooked rim	1	0	0	0
Cordoned rim	0	1	0	1
Bead and flange rim bowl	4	0	0	0
Sub-total	*11*	*8*	*1*	*1*
Ceramic Phase totals	**31**	**20**	**13**	**10**

Table 6 Horningsea ware form types

It is clear that although the Horningsea industry was the main supplier of coarse wares products from other production centres, notably Wattisfield and the Lower Nene Valley, were imported into the area. Dishes with rounded rims (Type 81, Perrin 1999) and triangular rims (Type76, Perrin 1999) are notable grey ware survivals from the Lower Nene Valley in the assemblage. These are solely present in Ceramic Phase 1, although small rim sherds probably from everted rim and necked jars do appear in Ceramic Phase 2 in Ditch fills F2028 L2029 Seg. B and Seg. C. A Lower Nene Valley source can also be suggested for cordoned/grooved jars (Types 26 and 49, Perrin 1999) occur in Ditch fill F2005 L2006 Seg. A and Seg. D, but whose fabric cannot be differentiated from that of the sandy grey wares (and probable Horningsea products). The Lower Nene Valley industry also produced cream ware vessels, notably jars with grooved rims and bodies (Types 323 and 324, Perrin 1999), and white ware reed-rimmed mortaria (Chelmsford types 14.1.1 and 14.2.1, Going 1987).

Sources of Romano-British shell tempered ware are varied, and it is likely that several sources account for the fabric in the assemblage. Channel rimmed storage jars in Ditch fills F2091 L2092 Seg. A and F2155 L2157 are probably products of the Harrold kilns in Bedfordshire (Type 100, Brown 1994), as are the channel rim jars and reed rim dishes (Type 115 and 136, Brown 1994). Other potential sources in East Anglia include Lakenheath, Suffolk and the Lower Nene Valley (Lucas 1994). The Lower Nene Valley appears to be a highly probable source given the range of other fabrics that arrived from the region. There is also a high occurrence of shell tempered jars with slightly undercut, everted bead rims (Types 432, 434, and 440, Perrin 1999) that are common in this assemblage and in the Lower Nene Valley.

List of Illustrations

Fig. 7.1 ROB MD. A plain rimmed beaker with bands of rouletted decoration, F2144 L2145 Seg. F

Fig. 7.2 LNV CC. A beaker with under slip, barbotine decoration, F2144 L2145 Seg. D

Fig. 7.3 LNV CC. A beaker decorated with oblique barbotine 'rustication', F2144 L2145 Seg. D

Fig. 7.4 HOR OX. A dish/bowl with a grooved rim, F2009 L2010 Seg. C

Fig. 7.5 GRS. A cup imitating samian ware form 33, F2011 L2012 Seg. C

Building materials
Andrew Peachey

A total of 4902g of ceramic building materials (CBM) was recovered. The CBM assemblage is entirely Romano-British date and comprises three fabric groups and daub. It is poorly preserved and highly fragmentary. There are no CBM groups present in the excavated features that can be associated with any building, demolition, or deliberate deposition. The small size and poor condition of the bulk of the fragments indicates that they may have been reused as an ingredient of daub.

Methodology
The CBM is examined with a x20 microscope to define fabric groups and recorded by weight. Colour references correspond with the Munsell Soil Colour Charts (2000). The types recorded are defined according to Brodribb (1987). If a form has at least one side complete then the dimensions of this form were recorded. In the case of large fragments of brick, even if one complete side was not present the thickness was noted. All data is entered into a Microsoft Excel database that is deposited in the site archive.

Fabric descriptions
Fabric 1: A medium-hard fabric with a slightly abrasive texture. Inclusions comprise abundant quartz sand (<1mm), sparse flint (<10mm) and sparse-common black iron rich grains (<0.5mm). The surface is light red (2.5YR6/6-6/8) although occasionally it may be reduced to a light grey. The core varies in colour from lighter than the surface to a very dark grey.

Fabric 2: A medium-hard fabric with a slightly abrasive texture. Inclusions comprise abundant quartz sand (<1mm), sparse chalk (<8mm) and sparse black and red iron rich grains (<1mm). The fabric is yellowish red (5YR5/6-5/8) with the core sometimes browner in tone.

Fabric 3: A very hard fabric with a smooth, wiped surface (?slipped). Inclusions comprise common fine quartz (<0.2mm), sparse chalk (<2mm) and sparse red iron rich grains (<0.5mm). The surface is reddish brown (2.5YR5/4) and the core usually red (10R5/8) although it may be partially reduced.

	Flat tile	**Box flue tile**	**Brick**	**Miscellaneous**	***Total***
Fabric 1	1213	106	288	2150	*3757*
Fabric 2	0	0	0	446	*446*
Fabric 3	366	0	0	0	*366*
Daub	0	0	0	333	*333*
Total	*1579*	*106*	*288*	*2929*	*4902*

Table 7 Quantification by weight (g) of CBM from West End, Haddenham

The bulk (76.64%) of the CBM was manufactured in fabric 1. Fabric 1 is associated with fragments of flat tile probably derived from tegulae roof tile sparsely distributed throughout the assemblage although no flanges are present in the assemblage to confirm this. Also present in fabric 1 are fragments of brick (type unclear) in L2064

and a fragment of box flue tile in L2014 Seg. F. There are no diagnostic sherds in fabric 2, while fabric 3 is only present as fragments of flat tile that probably formed part of tegulae roof tile.

Small finds

Nina Crummy

Introduction

The assemblage is dominated by iron objects, most of which derive from ditch fill. They include a brooch and hobnail, at least one tool, and some structural fittings, mainly nails. The iron brooch is unusual in having a square plate at the head, which relates it to Feugère's Type 7, late Iron Age brooches with expanded head (1985, 232-6, pl 69). In Britain perhaps the nearest in design is one from Salmonsbury (Dunning 1976, fig 21, 6). Given its unusual form, and the lack of available detail of the spring mechanism and catchplate, the date of the Haddenham brooch is far from certain, and it may be that it is contemporary with the main run of Romano-British trumpet-headed brooches in the second half of the 1st century AD into the 2nd century rather than with those of the Late Iron Age.

However, another brooch from the site is a copper-alloy Colchester brooch, which dates principally to the first half of the 1st-century AD up to the late Claudian or early Neronian period. The only other datable object in the assemblage is part of a bone hairpin of a long-lived type, which starts in the 2nd century and survives into the 4th (Down 1974, 46, 53; Crummy 1983, 24-5).

Though dress accessories are few, a wide range of activities are demonstrated by the remaining objects. A small awl points to leather-working, there is a fragment of an unfinished bone object, probably a hairpin or spoon, and there is a fragment of what may be a metal-worker's punch. Domestic equipment is restricted to some fragments of lava hand-querns and what may the base of a lead-alloy vessel.

Copper-alloy

Fig 8.1 SF 3. (2004) F2003. Ditch. Colchester brooch, complete apart from some damage to the catchplate. Length 58 mm. The spring has three coils on each side; the forward hook securing the superiod chord lies close against the head of the bow, which is of rounded to D-shaped section; the catchplate had stepped perforations. The date range of the type is broad, covering the first half of the 1st century AD. Those with elaborate catchplates, as was probably the case here, tend to be early.

Lead-alloy

Fig 8.2 SF 13. (2145) F2144. Ditch. Fragment of a thick disc, probably the base of a pewter vessel. Diameter 49mm.

Iron objects

Fig 8.3 SF 9. (2097) F2096. Ditch. Brooch with a flat plate at the head and a polygonal-section bow. The pin is missing. Details of the spring and catchplate cannot be made out. Length 56mm.

(2048) F2047. Pit. Hobnail. Length 11mm.

Fig 8.4 (2026) F2025. Pit. Small awl of Manning's Type 4a, round in section at one end, square at the other, with a pyramidal tip (1985, 40). Length 53mm.

(2086) F2085. Ditch. Punch fragment, the end missing, or possibly part of a large nail shank. Length 36mm.

Fig 8.5 (2012) F2011. Ditch. Long tapering square-section shaft, formed into a small hook at the thicker end. Length 121mm. This may be a fitting such as a loop-headed spike (Manning 1985, 130), or part of a much larger object such as a steelyard or spit.

Fig 8.6 SF 8. (2093) F2091. Ditch. Head of a large split-spike loop; only a short length of each arm remains. Length 60 mm, diameter 37mm.

SF 4 (2006) F2005. Ditch. Fitting with square-section shank and flattened spatulate head. Possibly a simple tool, or perhaps a variety of nail related to Manning's Type 2, which has a flat triangular head (1985, fig 32, 2). Length 69mm.

(2012) F2011. Ditch. Ring fragment, diameter 28mm.

(2064) F2063. Ditch. Two amorphous lumps. Maximum dimensions 31 by 26 by 15mm, and 60 by 24 by 26mm.

Iron nails

All the nails with the head remaining are of Manning's Type, with round flat or slightly domed head (1985, 134). Hobnails are listed with the other iron objects above.

SF	Context	Feature	Context description	Identification	Length (mm)
-	2006	2005	Ditch	3 nails, 3 fragments (?nails)	58, 23, 25
-	2010	2009	Ditch	2 shank fragments	15, 16
1, 5	2012	2011	Ditch	4 nails, 8 shank fragments	61, 41, 79, 42, 35, 41, 32, 34, 26, 72, 45, 13
-	2027	2011	Ditch	1 shank fragment	31
-	2024	2023	tree hole	2 nails, 1 broken just below the head	21, 35
-	2026	2025	Pit	2 nails, I broken just below the head, 2 shank fragments	38, 18, 34, 25
7	2029	2028	Ditch	1 nail, broken just below head, 1 shank fragment	21, 58
-	2037	2036	Ditch	2 nails, 4 shank fragments	29, 33, 37, 27, 28, 24
-	2044	2043	Ditch	1 nail, bent into hook-shape, 5 shank fragments	39 (bent), 51, 38, 27, 30, 37
-	2046	2045	Pit	1 shank fragment	41
-	2048	2047	Pit	1 shank fragment	34
-	2052	2051	Pit	3 nails, 1 broken just below head	41, 65, 30
-	2056	2055	Ditch	1 shank fragment	49
-	2060	2059	Pit	1 shank fragment	48
-	2064	2063	Ditch	1 nail, 4 shank fragments	67, 26, 22, 24, 27
-	2068	2067	irregular feature	1 head fragment, 1 shank fragment	-, 37
-	2070	2069	Ditch	1 shank fragment	21
-	2072	2071	Rooting	1 nail, broken just below head	21
-	2086	2085	ditch	2 nails, 1 broken just below the head	25, 23
10	2097	2096	Ditch	2 shank fragments	37, 45

-	2119	2118	Gully	1 shank fragment	43
-	2145	2144	Ditch	4 nails, 1 with only a short length of shank remaining, 1 clenched	71, 64, 20, 39 (bent)
-	2147	2146	Ditch	1 nail, 1 shank fragment	69, 14
-	2170	2169	Ditch	1 nail	82
-	-	-	Unstratified	2 nails, 1 clenched	30 (bent), 59

Table 8 Catalogue and description of iron nails

Worked bone

Fig 8.7 SF 2. (2014). F2013 Ditch. Hairpin with simple slightly domed reel head and central swelling on the shaft; the tip is missing. Length 48mm. The form belongs to Type 6, which dates from the 2nd to 4th centuries (Crummy 1979; 1983, 24-5).

(2006) F2005. Ditch. Fragment of a bone shaft, perhaps part of a pin or needle shaft, or a spoon handle. Length 16mm.

Fig 8.8 (2026) F2025. Pit. Worked bone shaft with irregular polygonal section formed by long knife cuts along the length of the fragment. Length 54mm. Similar fragments associated with the manufacture of both hairpins and spoons have been found in Winchester and Canterbury (Crummy 2001, 97-100; Greep 1995, 1135-41).

Stone and mineral

SF 12. (2037) F2036. Ditch. Two small fragments of Niedermendig lava hand-quern, each in two pieces. Maximum dimensions 77 by 88mm, 55 by 55mm. Total weight 234g.

(2097) F2096. Ditch. Fragment of the upper stone of a Niedermendig lava hand-quern. Maximum dimensions 88 by 62mm, thickness at rim 49 mm. Total weight 306g.

SF 11. (2046) F2045. Pit. Crazed and damaged quartz crystal of characteristic six-sided prism form. Though there is no sign of this having been worked, it may have been collected as a curiosity. Length 10mm.

Slag

Jane Cowgill

The slag has been washed, identified and recorded on *pro forma* recording sheets. Each piece was visually examined and identified solely on morphological grounds, sometimes with the aid of a x10 binocular microscope. The records were entered directly into the Catalogue below. A note of probable fuel type has been recorded when fragments were incorporated within the slags. The soil in the bags containing the slag pieces was checked with a magnet to establish whether any hammerscale was present.

Area	Context	Type	Count	Weight	Fuel	Comments
A	2031	PROTOHB	1	71g	COAL	30x50x35mm; dense

Key: Plano-convex slag accumulations (hearth bottoms), a by-product of iron smithing.

Table 9 Catalogue of slag

Human Bone
Carina Phillips

A single infant humerus was recovered from a Phase 3b Ditch F2030 (3rd to 4th centuries). The size of the bone indicates it is likely to have come from a new-born infant. The recovery of infant remains amongst other discarded waste during the Roman period is a common occurrence. Before the 4th century it appears to have been normal for the deposition of young children to have taken place within the city bounds, with the burial of adults and older children taking place outside the vicinity of the town. This practice implies that during the Roman period the life of the very young was not seen to warrant a formal grave (Watts 1989). A change in burial practices is suggested to have taken place in the 4th century as a result of the influence of Christianity, with the burial of young infants in the cemeteries coming into practice. The recovery of this infant bone from amongst the animal bone indicates pre-Christian burial.

Animal and bird bone
Carina Phillips

Introduction

A total of 1448 animal bone fragments were recovered from Haddenham in addition to the remains of nine horses and nine cattle from the ditch burial (F2169). These remains have been analysed separately from the rest of the bone assemblage. 1374 animal bone fragments were recovered from phased deposits and 74 fragments remain unphased. All the animal bone was well preserved.

Method

The bone fragments were identified and recorded to species when possible. Due to the difficulty in separating goat from sheep bones the category sheep/goat *(Ovis/Capra)* was used. Tooth wear was recorded using the method of Grant (1982) and ages were assigned using the method of (Hambleton 1999). When bones were complete enough measurements were taken following the method of von den Driesch (1976), these are available in the sites archive. Withers height estimates were calculated following Matolcsi (1970) for cattle and Kiesewalter (in von den Driesch and Bosseneck 1974) for horse. Fragments unidentifiable to a particular species were recorded under the categories of 'large ungulate size', consisting of cattle *(Bos sp.)*, deer *(Cervus sp.)* and horse *(Equus sp.)* sized fragments and 'small ungulate size' consisting of sheep, pig *(Sus sp.)* and dog *(Canis familiaris)* sized bone fragments. The unidentifiable bone fragments were recorded as so. Bone fusion was also recorded when possible, and ages assigned using Silver (1969). As was taphonomic evidence in the form of chopping, knife-cutting, sawing, smashing of the bone, gnawing and many natural damage. The minimum number of individuals (MNI) of a species was calculated from most frequent element of a left or right bone.

Results

A total of 1374 animal bone fragments were recovered from the six phases of occupation (74 fragments remain unphased). The bone has been analysed separately

for each phase, the numbers of identified bone and minimum numbers of individuals for each species are displayed below.

	Phase 1	**Phase 2a**	**Phase 2b**	**Phase 3a**	**Phase 3b**	**Phase 4**	*Total*
Cattle	8	47	50	77	85	15	*282*
Sheep/goat	2	88	32	25	41	7	*195*
Horse	1	19	6	6	11	2	*45*
Pig	0	3	5	2	5	3	*18*
Red deer	0	1	0	0	0	0	*1*
Dog	0	0	1	1	0	0	*2*
Hare	1	1	1	0	0	0	*3*
Domestic fowl	0	0	0	1	0	0	*1*
Crow	0	0	0	0	2	0	*2*
Goose	0	1	1	0	0	0	*2*
Bird	0	1	0	0	6	0	*7*
Large ungulate	26	75	64	37	68	10	*280*
Small ungulate	2	50	36	21	61	5	*175*
Unidentifiable	19	76	162	25	70	9	*361*
Total	*59*	*362*	*358*	*195*	*349*	*51*	*1374*

***Table 10** The number of animal bone fragments for each phase*

	Phase 1	**Phase 2a**	**Phase 2b**	**Phase 3a**	**Phase 3b**	**Phase 4**
Cattle	2	3	3	3	6	2
Sheep/goat	1	8	2	2	7	1
Horse	1	1	2	2	1	1
Pig	0	1	1	1	1	1
Red deer	0	1	0	0	0	0
Dog	0	1	1	1	0	0
Hare	1	1	1	0	0	0
Domestic fowl	0	0	0	1	0	0
Crow	0	0	0	0	1	0
Goose	0	1	0	0	0	0
Bird	0	1	0	0	1	0

***Table 11** The minimum number of individuals per species from each phase*

Phase 1

A total of 59 bone fragments were recovered from the earliest phase of site occupation (Roman/ pre-2nd to 3rd century). The eight bone fragments identified to cattle produced an MNI of 2, all being non-meaty elements such as the foot bones, usually discarded at the butchery stage. An MNI of 1 was calculated for sheep/goat, horse and hare. These minimum numbers of individuals indicate that cattle remains were disposed of and probably kept and utilised in larger numbers than the other species present. The lack of teeth from this phase has meant ageing was not possible. A chopped hare (*Lepus sp.*) mandible represents the only wild species present in this phase, its butchery suggesting it was used as part of the diet.

Very little evidence of taphonomy was present on the bones, consisting only of the chopped hare mandible and a smashed large ungulate sized, small ungulate sized and unidentifiable bone fragments. The smashing of the bone is used to break the bone to fit into a cooking pot and to get to the marrow, therefore indicating the disposal of some domestic waste

Phase 2a

The assemblage from this phase (2nd to 3rd century) consists of 362 fragments. Eighty-eight fragments were identified to sheep/goat, the highest number identified to species, producing an MNI of 8. However, context 2012 (Ditch F2011) yielded 71 sheep/goat fragments, 69 bones coming from the lower legs of at least seven animals (Chart 1). Cut marks were present on five right metacarpals and two fused central and fourth tarsal bones. The position of the cut marks suggests separation of the joints and the high number of foot bones present here indicates the disposal of waste from an activity carried out. A high number of foot bones can indicate skinning or hide preparation.

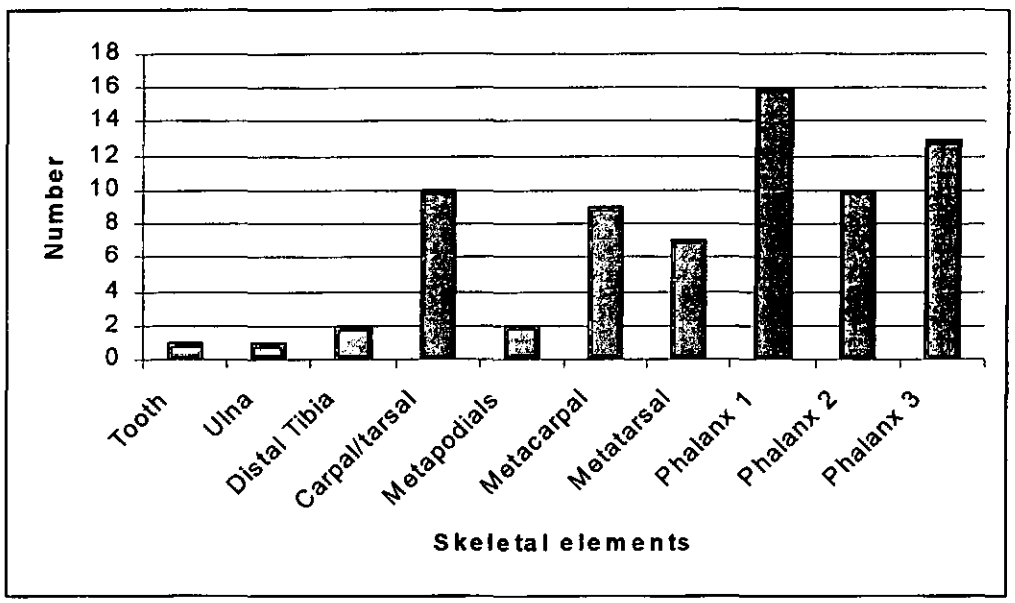

***Chart 1** The number of sheep/goat skeletal elements recovered from boundary ditch F2011 (fill L2012)*

47 cattle bones were identified, producing an MNI of 3, seven of these bones were chopped, and ten smashed, which suggests the disposal of some domestic waste. The two ageable cattle mandibles recovered came from an animal aged 8-18 months, and one aged 18-30 months. With only 19 horse bone fragments identified, giving an MNI of 1 it seems likely that the large ungulate sized bones were predominately cattle bone fragments. 31% of these 'large ungulate sized' fragments were smashed again suggesting domestic waste. Three pig bones were identified; a mandible aged 14-21 months, and smashed and gnawed fragments. The smashed bone suggests the consumption of pig meat was taking place in this phase, the gnawing of the bone indicates the remains were left in an area that dogs could access.

It is possible that the bones categorized as small ungulate sized could be a mixture of both sheep/goat and pig fragments, as the majority of sheep/goat remains came from a

single context. Half of these bone fragments were smashed, again indicating the use of these bones as food.

A single hare tibia was recovered from Phase 2a, demonstrating its present on site. Although no butchery marks were evident, it is likely that hare was utilised by the nearby occupants. The chopped red deer *(Cervus elaphus)* skull fragment with a pedicle sawn antler is the only other bone of a wild species. The sawing of the antler on the pedicle suggests the removal of as much of the antler as possible for working

The coracoid of a goose *(Anser sp.)* and the shaft of an unidentifiable bird long bone were also recovered, it cannot be ascertained if the bone came from domestic or wild goose.

Phase 2b
A total of 352 fragments were recovered from this phase (2nd-3rd centuries). Cattle bones were the most identified (50 fragments) producing an MNI of 3. An MNI of 2 was produced from the 32 sheep/goat fragments produced, and one mandible was estimated to be aged at 4-6 years. The old age of the mandible indicates the sheep/goat was utilised primarily for something other than meat, most likely wool production.

From the six horse bone fragments an MNI of 2 was produced. Bone fusion has indicated the presence of bones from an animal aged below 3-3 ½ years, and one aged above, no clearer age ranges were possible. A left femur was chopped, suggesting the butchery of horse took place. The posterior aspect of a 1st phalanx exhibited extensive ossification of both medial and lateral oblique distal sesamoid ligaments. These pathological changes would produce a serious level of lameness (Getty 1970; see Plates: Animal bone pathology, in this report).

The single bones of a dog, a hare and a goose were also present.

Phase 3a
195 fragments form the Phase 3a animal bone assemblage (3rd-4th centuries). Cattle, sheep/goat, pig and horse were all identified in the assemblage. Cattle bones were found in the highest numbers (77 fragments) producing an MNI of 3. Only two mandibles, from two separate animals were ageable from the teeth wear, both coming from animals aged 18-30 months. A mixture of skeletal elements were present, including meaty elements such as scapulae, and usual butchery waste, containing little meat such as the mandible and foot bones.

The 25 fragments identified to sheep/goat produced an MNI of 2. Teeth wear ageing was not possible, due to the lack of mandibles.

The six fragments identified to horse produced an MNI of 2. One chopped, two cut and one smashed fragments of bone were present, suggesting butchery of the horse was taking place, possibly for cooking. Pig was present to a lesser extent in this assemblage, with only two fragments identified to pig, producing an MNI of 1. One pig bone was smashed probably caused by breaking the bone during cooking preparation. A single fragment of a dog mandible was recovered, producing the MNI

of 1. The ulna of a domestic fowl (*Gallus sp.)* was also recovered; a cut mark was present on the distal condyle.

Phase 3b
A total of 349 fragments of animal bone were recovered from this phase (3rd-4th century). An infant human bone was also recovered (see Phillips above).

Cattle bones were the highest number of identified fragments from this phase, totalling to 85 and producing an MNI of 6. Three ageable cattle mandibles were recovered, coming from animals aged, 18-30 months, 'adult' and 'senile'. Only 8% of the bone was chopped, 8% had cut marks and 7% was smashed. Although this is only a small amount it does suggest the disposal of domestic waste. In consideration of the skeletal elements recovered it is noted the 22 of the bones recovered were mandibles and metapodials, suggesting the disposal of some butchery waste, which would not have been used in cooking.

41 sheep/goat bone fragments were recovered in this phase producing an MNI of 7. The mandibles from three animals produced ages of 6-12 months, 1-2 years and 4-6 years. Only 2% of the bone had cut marks and 5% was chopped, with 27% of the bone being smashed. Interestingly, like the cattle remains, a high number of mandibles and metapodials were recovered, than other skeletal elements. This again, indicates the disposal of butchery waste.

The five pig bone fragments recovered produced an MNI of 1, no taphonomy was present. An MNI of 1 was also calculated from the 11 horse bone fragments identified. Butchery of the horse is evident from the two chopped bones, the smashed mid-shaft of a long bone and the cut mark present on one bone. A crow *(Corvus corone)* femur and ulna were also identified (giving an MNI of 1), along with 6 unidentifiable bird bones.

Phase 4
This phase (3rd-4th century +) produced only 51 fragments of animal bone, 15 of which were identified to cattle, giving an MNI of 2. A single ageable cattle mandible was recovered from an animal aged 30-36 months.

An MNI of 1 was calculated from the seven sheep/goat fragments, two horse fragments and three pig fragments. Chop and cut marks were recorded on two of the cattle and sheep/goat bones and one cattle bone was smashed. A mixture of both meaty and non-meaty skeletal elements were identified to cattle and sheep/goat indicating a combination of domestic and butchery waste.

Taphonomy
Human (anthropogenic) damage to bones in the form of chopping, cutting, sawing, smashing and burning of the bone was low in the assemblages from all phases (Table 12). Smashing of the bone (with a blunt object) was most evident, more frequently found in bone identified to large and small ungulate sized, due to its fragmented nature. Higher amounts of human damage were found in Phases 2a, 2b, 3a, 3b and 4.

	Chopped	Cut	Smashed	Sawn	Burnt	Gnawed	Stained
Phase 1	1	0	3	0	0	1	8
	2%	0%	5%	0%	0%	2%	14%
Phase 2a	19	16	64	1	5	11	3
	5%	4%	18%	<1%	1%	3%	1%
Phase 2b	12	5	52	0	1	6	1
	3%	1%	14%	0%	<1%	2%	<1
Phase 3a	12	9	34	0	1	7	0
	6%	5%	17%	0%	<1%	4%	0%
Phase 3b	18	13	62	0	4	5	1
	5%	4%	18%	0%	1%	1%	<1%
Phase 4	4	4	6	0	0	3	0
	8%	8%	12%	0%	0%	6%	0%

Table 12 Taphonomy of the phased bone

Dog gnawing was evident on a small amount of bone in all phases this suggests that some of the assemblage was either given to the dogs or left in an area which they had access too. This also indicates the presence of dogs in all phases, even though dog bones are not present in all assemblages.

Natural damage was also recorded; mottled/greasy bone was recorded in all phases, although not all bone was in this state. This indicates that some of the bone was in waterlogged conditions. A very small amount of concreted bone was also recovered, indicating a waterlogged, anaerobic environment. Black staining of the bone in phases 1, 2a, 2b, and 3b to a small number of bones (and those in the ditch burial), was caused by the presence of mobile iron (Fe) products in waterlogged soil.

Discussion

The total number of fragments recovered from each phase reflects the size and number of features excavated from each phase. The assemblages from all the phases are made up of domestic and butchery waste, evident from the skeletal elements present and the taphonomy exhibited on the bone.

Domestic animals

The general pattern of animal bone over the phases at West End, Haddenham follows a disposal of more cattle bones than any other species, this is a typical pattern on Romano-British sites (King 1978). Based on the fairly good preservation of the bone it is unlikely that these numbers will be biased to a large extent.

The presence of more cattle bone fragments and the higher MNI numbers for this species in most phases is likely to reflect a cattle-dominated husbandry pattern in the area. The exception to this being phase 2a in which a larger number of sheep/goat bone fragments and higher MNI was calculated over cattle. It is likely, however, that although these numbers reflect the higher disposal of sheep/goat bones in this phase, the numbers are biased by the industrial waste disposed of in L2012. Consideration of the bone from other the features suggests the presence of more cattle than sheep/goat.

The animal bone assemblage from Phase 3b demonstrates an increase in the disposal of cattle and sheep/goat bones at this site. The higher number of fragments and MNIs

for both these species suggests an increase in the utilisation of these species, and possibly an increase in the numbers of animals kept in this area.

The numbers of pigs are fairly low, but are present in all phases with the exception of Phase 1, and are likely to be the result of domestic waste disposal. Dogs are also known to have been present in all phases based on the bones and gnawing evidence recovered.

Horses are present in all phases and an increase in the MNIs of this species is associated with an increase of cattle and sheep/goat, such as in Phases 2b and 3a (Table 11). The butchery of horse bones is evident in Phases 2a, 2b and 3a. Horse bones are poorly represented at Romano-British sites, possibly due to the decline in horses as an important meat provider (Maltby 1981). However, although not a common find a few butchered horse bones have been recovered from Romano-British sites, indicating horse meat was not regularly consumed (King 1978). The presence of the pathological horse phalanx in Phase 2b may indicate the use of horses as working animals. Evidence for the use of horse for working (and ox) was also found in the ditch burial (F2169).

The cut domestic fowl bone from Phase 3a shows that this species was being consumed nearby. The goose bones (from Phases 2a and 2b) are also likely to have been consumed.

The numbers of each species recovered at Haddenham are characteristic of a Roman site. It is typical for cattle to be kept in larger numbers than other domestic animals, due to the many uses they provide, in terms of milk production, meat, traction and skins. King (1978) notes the trend away from keeping sheep in the Roman period, accounting for the larger numbers of cattle present here.

Wild animals

Hare was found in the first three Phases (1, 2a, 2b), and it is likely that it was utilised by the nearby occupants; the chopped mandible from Phase 1 suggests that butchery of this species was carried out and this is likely to have continued into the next phases. Two hare species are present in the Britain, the mountain hare (*Lepus timidus*), which is found above 1200 feet and the brown hare (*Lepus sp.*), the two species are almost impossible to distinguish from each other with most of the skeleton (Yalden 1999). Based on the geography it is likely that brown hare was present at Haddenham. The small number of bone fragments recovered (although probably biased by survival rates) indicates it was not exploited regularly.

The butchered red deer skull fragment indicates the utilisation of antler on site it is, however tentative to suggest hunting of this species based on only one fragment. The remains found here suggest that antler working was carried out. Two crow bones were identified in Phase 3b; being a scavenging animal it is not unusual. The small number of wild animal remains present in the assemblages indicates they were not utilised extensively.

The linear mass burial (F2169)

Ditch 2169 contained the mass burial of articulated horse and cattle skeletons (Fig. 4; Plates 2-5). The excavated ditch was approximately 15 metres in length and orientated south-west, possibly extending into the adjoining field. The remains consisted of four adult horses, two young horses, a new born foal, two unageable horses, six adult cattle, a young cattle, a foetal calf and an unageable cattle were recovered from the ditch.

Results

The results of the analysis of the bone from ditch F2169 are displayed in Table 13. Both dental age and fusion age has been displayed due to some differences in age estimates. The remains are discussed in order of the skeletons (based on drawings and photographs produced at the time of excavation) with reference to context number rather than skeleton number.

Skeleton 1 L2171

The skeleton present in context 2171 has been identified to horse, the size of the bones suggesting an adult animal. The head of this animal is facing the north-east end of the ditch, its spine next to the south side of the ditch. Only the spine, ribs and a scapula of this animal were preserved. The hind quarters of this animal were truncated by ditch F2144.

Skeleton 2 L2172

The skeleton of an adult horse stretches across the length of this context (bone fusion ages this animal as over 3-3 and a half years). The head of this horse points to the south-west, its spine against the south side of the ditch. Black staining was present on the front of both the left and right mandible and an astragalus. The remains of a foal, probably neo-natal, were also recovered, consisting of both tibiae, both radius and a femur.

The bones of a foetal calf were also identified, consisting of the femur, tibia, humerus, radius and metapodials of the left legs and part of the pelvis. Based on the drawings and photographs of this feature it seems likely that the remains of both the foal and foetal cattle were recovered towards the posterior end of the adult horse skeleton

Skeletons 2-3 L2172-L2173

The remains of a young horse were recovered from both these contexts, aged less than 15 months based on bone fusion. From the recovery of the left femur and both tibiae from L2172 and the left radius (stained) and ulna from context L2173 suggests the head of this animal was pointing towards the south-west end of the ditch.

Skeleton 3 L2173

The fairly complete remains of an adult horse were excavated from context L2173. Most long bones and the foot bones from two legs were recovered, the skull and mandible were missing. Based on the drawings of this feature the skeleton looks to be facing the north-east end of the ditch, facing the head of the adult horse from L2172. Black staining has occurred on a metapodial, tarsals, and distal radius and tibiae. Exostosis occurs on the distal end of a left phalanx from this animal. Long bone measurements estimate this animal to have a withers height of approximately 137cm.

Skeleton 4 L2174
An adult cattle skeleton was excavated from this context. The remains are fairly complete with only the right back leg missing. A single calcaneum from this skeleton was recovered in context L2173. The head of the animal pointed to the south-west end of the ditch. The skull was complete when excavated and found facing out of the ditch, resting on the back of the animal from L2176. This suggests that this animal was put in the ditch after the bodies in L2176 and L2175. Ageing of the animal based on dental wear classes it at 'senile', bone fusion indicates it greater than 4 1/2 years. Long bone lengths indicate this animal to have a withers height of approximately 123cm. Black stained bone was recorded on the distal left tibia and two 1st phalanges.

Skeleton 5 L2175
The molars from two horses were recovered in this context; the molars from one horse were not yet in wear. A cattle vertebra from a young animal was also recovered. This context also contained the fragment of which may possibly be human, positive identification is affected by its small size and erosion. The disarticulated material from this context implies it is not part of an articulated skeleton, and may be part of the fill of the ditch.

Skeletons 6-7 L2176-L2177
The almost complete skeleton of an adult horse was recovered, (the phalanges from the front legs were found in L2177). The skull, (represented by only a few fragments and the maxillary teeth) faced the south-west. Bone fusion ages this animal as over five years, teeth wear ageing was not possible due to the erosion and black staining of the incisors and front of the mandible. A carpal was also stained black. A black stained molar and incisor from another horse was also recovered. A withers height estimate of approximately 145cm has been calculated.

Skeleton 7 L2177
An adult cattle skeleton aged between 2-3 ½ years (based on bone fusion and tooth wear) was recovered here its head facing the south-west end of the ditch. The skeleton was almost complete. Orange coloured iron staining has occurred on a right and left 1st phalanx and a right 3rd phalanx. Black iron staining was evident on a right and left calcaneum.

L2170
This context was situated in the space under the skull and next to the forelegs of cattle skeleton L2177. It contained a cattle metacarpal, 1st phalanx, carpal and atlas and axis and some large ungulate sized fragments (some with black staining). The cattle bones may have belonged to the young cattle skeleton from L2190, the rest of the skeleton was probably disturbed by feature? cutting across the ditch.

Skeleton 8 L2163
The adult cattle skeleton, aged about five years (based on teeth wear and fusion) was buried lying side by side with the remains of L2190 and L2164. The head of this animal pointed to the south-west and the spine of it faced the south side of the ditch. A majority of bones including the skull were present.

L2190
Lying next to the back end of skeleton L2163 was the mandible of a cattle skeleton aged 18-30 months (teeth wear). Distal tibiae and a distal radius have been recovered from contexts L2163 and L2164, fusion ageing them at 2-2 ½ years which supports the teeth wear ageing. Burning (part charred, part calcined) was noted on the distal radius recovered as context L2164. This indicates that the bone was close to a fire at some point, however because of the lack of the rest of the skeleton it cannot be ascertained whether the animal was buried as a complete skeleton. The position of the mandible from the drawing indicates the head of the animal (if buried as a whole animal) was facing the south-west end of the ditch, its back is likely to have been facing the south side of the ditch.

Skeleton 9 L2164
This adult cattle skeleton was substantially complete, with a majority of the long bones and (fragmented) skull present. The remains have been aged at 3 ½ - 5 years based on bone fusion, with an estimated withers height of 125cm. This animal was positioned facing L2163 with its back against the north side of the ditch and head pointing to the south-west. Burning occurred on the end of a distal radius indicating that at some point it was close to fire Black staining was present on the distal tibiae, a metacarpal, phalanges and a tooth.

Skeleton 10 L2191
The partial remains of this adult cattle skeleton (aged over five years) were recovered. The position of the mandible suggests that the head was towards the south-west end of the ditch.

Skeleton 11 L2192
An almost complete cattle skeleton was recovered here, aged 2-3 ½ years based on bone fusion with an estimated withers height of 128cm. Although parts of the skull and a fragment of the mandible were recovered, no teeth were found. The head of this animal was positioned at the south-west end of the ditch and the back (spine) of the animal was lying on the south side of the ditch. The size of the bones indicates this was a large animal possibly a bullock. Pathology was evident on the proximal end of a metatarsal from this animal in which an uneven surface possibly indicates ankylosis; unfortunately the related tarsal was fragmented. Ankylosis was also present on the left side of two cervical vertebrae from this animal. Stress on the joints will have led to this causing limited movement of these joints (Baker and Brothwell 1980). It is likely this animal was used for working, carrying out an activity that caused a strain on the ankles and neck of the animal, resulting in ankylosis. The position of this pathology on one side of the vertebrae indicates an activity in which the animal was made to pull its neck to one side, such as the pulling of a grinding wheel or something similar.

Context	Species	Teeth age	Fusion age	Position of head	Iron Oxide stained bone	Pathology
Sk 1 2171	Horse	-	-	North East	?	
Sk 2 2172 a	Horse	-	>5 yrs	South West	Mandible, astragalus	Congenial lesion/indent on right

						glenoid fossa
Sk 2 2172 b	Horse	-	Neo-natal	?	-	
Sk 2 2172 c	Cattle	-	Foetal	?	-	
Sk 2-3 2172-3	Horse	-	<15 months	South West	lower leg	
SK 3 2173	Horse	-	>5 yrs	North East	lower leg and foot bones	Some exostosis on distal shaft. Congenital lesion on right glenoid fossa
Sk 4 2174	Cattle	Senile	>5 yrs	South West	lower leg and foot bones	Congenital indent/lesion in proximal facets of right 1st phalanx and left 2nd phalanx
Sk 5 2175 a	Horse	young (not in wear)	-	?	-	
Sk 5 2175 b	Horse	-	-	?	-	
Sk 5 2175 c	Cattle	-	-	?	-	
Sk 6 2176 a	Horse	-	>5 yrs	South West	Mandible and foot bones	
Sk 6 2176 b	Horse	-	-	?	Teeth	
Sk 7 2177	Cattle	Old adult	2-3½ yrs	South West	Foot bones	
Sk 8 2163	Cattle	Adult/Old adult	5 yrs	South West	-	
Sk 9 2164	Cattle	Adult	2-2½ yrs	South West	Foot bone	
2190	Cattle	18-30 mths	-	South West	-	
Sk 10 2191	Cattle	Senile	5 yrs	South West	-	
Sk 11 2192	Cattle	-	2-3½ yrs	South West	Foot bones	Ankylosis on proximal end of a metatarsal and on two cervical vertebrae. Congenital lesion on facet

						of 3rd phalanx

Table 13 Summary of results of analysis of the skeletons from Ditch 2169

Discussion

The ditch has been dated as late Iron Age to early to mid-Romano-British, and pre-dates all the other features on the site. The number of animals recovered from the ditch is unusual and only two parallels are known. Most of the animals were articulated when buried, and with no evidence of butchery or skinning it seems probable that these animals were buried as whole carcasses. However, some elements (such as the horse teeth, and a possible human bone, from L2175) appear to be buried without the rest of the skeleton, due to their position in the ditch it is unclear as to whether they were disarticulated parts from a nearby skeleton or single burials of their own. The presence of burnt bone, probably from skeleton L2190, indicates its presence near to a fire before being buried, this implies that some kind of human activity was carried out near to the horse remains. However, the lack of other burnt bone and the rest of the skeleton limits further discussion. The majority of animals were adult, and most stretched across the width of the ditch. Young animals seem to have been buried under or in the space near to an adult animal. Horses appear to be more commonly buried towards the north-east end of the ditch and cattle towards the south-west end, however as the ditch is likely to have extended into the next field it is unknown how the pattern would continue. The position of the skeletons emphasises a trend of burying the animals with their heads pointing to the south-west end of the ditch, as only two skeletons from those recovered have there heads positioned towards the north-east. The animals appear to have been placed in the ditch starting from the south-west end of the feature, based on the position of the skull of L2174.

A higher number of older adult animals (five years and over) is evident, two of which (L2173 and L2192) were possibly used as working animals. This high number of older animals suggests the burial of animals that would not have provided prime meat. Some younger animals were also present, of particular significance is the cattle foetus (L2192) recovered with the remains of an adult horse, a foal and a young horse. The burial of the foetus with animals of a different species is unusual

The black staining and erosion of some of the bone is caused by the presence of iron oxide in a wet environment, the fact that it has only occurred on the foot bones and mandibles could indicate that the lower leg and feet were buried lower in the ground and in a more waterlogged environment. The other possibility is that the burials were covered by skins or hides, which rotted and attacked the foot bones, being covered in less flesh and rotting to the bone more quickly, the liquid from the skins would have affected these bones more than the meaty elements.

It is possible that disease led to these animals being buried at the same time and not butchered for meat. The older ages of them may have made the animals more susceptible to disease. It is unusual however, that a linear ditch would have been dug specifically to bury diseased animals in, unless it was already an open feature, although the lack of other finds questions this. The weight of these animals is also an important consideration - once dead these large carcasses would have been incredibly hard to move. The burial of them as complete carcasses therefore suggests an intention to bury them whole. It is therefore possible that these animals were a very late Iron Age or Romano-British ritual deposit.

The excavation report on the Roman villa at Keston, Kent (Philp *et al.* 1999) discusses the burials found within a shaft on the site. All burials were domestic animals, including dogs, sheep, pigs, oxen and horses. Nose to tail positioning was found, and cut marks were only present on the first phalanges of one horse, and have been suggested to have been caused by the removal of ropes used to drop the carcass sown the shaft. Artefacts recovered with these remains include, broken pottery, two glass vessels and an iron spear-head. Based on the number of skeletons, the associated artefacts and the positioning of the animals the feature is thought to have been used for a ritual purpose.

The complete articulated remains of a horse, dog and juvenile red deer were recovered from a pit at the eastern cemetery of Roman London (Barber and Bowsher 2000). The animals lay in a nose to tail arrangement, and no evidence of cut marks was apparent. The feature is dated to the broad range of 50-250 AD, but does predate the earliest human burials. A ritual interpretation is also suggested for these burials.

Like the burials found at Keston and the eastern cemetery the animals at Haddenham were articulated, positioned in a nose-to-tail arrangement, and had no evidence of cut marks. Like the pit burials at the eastern cemetery this ditch pre-dates the other features of the site. The ritual interpretation proposed for Keston and the London cemetery is suggested to be appropriate for the Haddenham ditch burials.

Metric analysis

Cattle

Nine cattle bones were substantially complete to enable the calculation of withers height from the animal bone assemblage. In addition to these, heights were estimated for three cattle skeletons in the linear ditch burial. Withers heights ranged from 113-142 cm. Surprisingly, Phase 3a contained the largest animals, although results may be bias due to the small size of the sample. The three cattle skeletons from the linear ditch burial are of similar sizes, ranging 123-128cm.

Phase	Withers height (cm)
1	113
3a	130
3a	134
3a	142
3b	113
3b	118
3b	124
4	115
4	120
Skeleton 9 2164	123
Skeleton 4 2174	125
Skeleton 11 2192	128

Table 14 Cattle withers height estimates

Horse
Only two horse bones from the animal assemblage were able to have withers heights estimated. Withers heights were also calculated for two horse skeletons from the linear ditch burial.

Phase	Withers height (cm)
2b	142
3b	147
Skeleton 3 2173	137
Skeleton 6 2176	145

Table 15 Horse withers height estimates

Summary
The animal husbandry displayed at West End, Haddenham is dominated by cattle across all six phases of occupation. A small increase in the numbers of these animals is seen after Phase 1, increasing quite dramatically in Phase 3b and dropping to the smaller numbers (as in Phase 1) in Phase 4. Domestic waste accounts for some of the animal bone recovered in all phases, with some evidence of butchery waste taking place in the phases with larger assemblages, being 2a, 2b, 3a and 3b.

The unusual feature of Ditch F2169 containing the cattle and horse skeletons clearly represents the remains of a mass burial of these animals at the same time. The animals appear to have been buried as complete carcasses, without being utilised for meat or skins. It is possible that these are the remains of diseased animals; however their burial in a linear ditch is questionable. Based on some similar sites it appears more likely that these are the remains of a late Iron Age or Romano-British ritual act.

Environmental Remains
Val Fryer

Introduction
Five samples were taken from Roman pits and ditches for the extraction and assessment of the plant macrofossil assemblages.

Methods
The samples were bulk floated, collecting the flots in a 500 micron mesh sieve. The dried flots were scanned under a binocular microscope at magnifications up to x 16, and the plant macrofossils and other remains noted are listed on Table 16 Nomenclature within the table follows Stace (1997). All plant remains were charred. Modern contaminants including fibrous roots, seeds, fungal sclerotia and arthropods were present throughout. As quantitative analysis was not undertaken, the density of material in each assemblage is expressed in the Table as follows: x = 1 – 10 specimens, xx = 10 – 100 specimens and xxx = 100+ specimens.

Results

Plant macrofossils

Cereal grains/chaff and seeds of common weeds and wetland plants were noted at low to moderate densities in all but Sample 7. Preservation was moderate to good, although some macrofossils were fragmented.

Wheat (*Triticum* sp.) grains were noted as single specimens in Samples 4, 6 and 22. Spelt wheat (*T. spelta*) glume bases were common in Sample 11, but otherwise chaff elements were rare.

Seeds of common weed plants were largely confined to Sample 11, although individual brome (*Bromus* sp.) seeds were present in Samples 4 and 22. Segetal taxa were predominant and included orache (*Atriplex* sp.), fat hen (*Chenopodium album*), medick/clover/trefoil (*Medicago/Trifolium/Lotus* sp.), dock (*Rumex* sp.) and vetch/vetchling (*Vicia/Lathyrus* sp.). Nutlets of saw-sedge (*Cladium mariscus*), a plant of reed-swamp and fens, were also common in Sample 11.

Charcoal fragments were common or abundant throughout, and indeterminate culm nodes were recorded from Sample 11.

Other materials

The fragments of black porous 'cokey' material and black tarry material are probably derived from the combustion of organic remains at very high temperatures. Small mineralised faecal concretions were noted in Sample 4.

Conclusions

Of the five samples taken, only one (Sample 11 from Pit F2045) contains sufficient material to enable tentative interpretation. The assemblage contains cereals, chaff and segetal weed seeds and is almost certainly largely derived from burnt cereal processing waste. However, the abundance of saw-sedge fruits within this material is somewhat puzzling. As this plant favours permanently wet conditions, the seeds are unlikely to be indicative of the cultivation of marginal land for agriculture, but they could be derived from a small quantity of discarded thatching material, as saw-sedge is commonly used to cap thatched roofs.

Sample No.	**4**	**6**	**7**	**11**	**22**
Context No.	**2022**	**2012**	**2031**	**2046**	**2170**
Cereals					
Cereal indet. (grains)	X			x	
Triticum sp. (grains)	X	X			X
(glume bases)				x	
(rachis internodes)				x	
(spikelet bases)				x	
T. spelta L. (glume bases)				xx	
Herbs					
Asteraceae indet.				x	
Atriplex sp.				x	
Bromus sp.	X				x
Chenopodium album L.				x	
Fabaceae indet.				x	
Medicago/Trifolium/Lotus sp.				x	
Rumex sp.				x	
Vicia/Lathyrus sp.				x	
Wetland plants					
Cladium mariscus (L.)Pohl				xx	
Other plant macrofossils					
Charcoal <2mm	Xxx	Xx	x	xx	xx
Charcoal >2mm				x	
Indet.culm nodes				x	
Indet.seeds	X				
Other materials					
Black porous 'cokey' material				xx	x
Black tarry material	X			x	
Bone	X			x	x xb
Burnt/fired clay				x	
Fish bone				x	
Faecal concretions	X				
Small coal frags.	X				
Small mammal/amphibian bones			xpmc	xpmc	
Vitrified material				x	
Sample volume (litres)					
Volume of flot (litres)	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**
% flot sorted	**100%**	**100%**	**100%**	**100%**	**100%**

Key: b = burnt pmc = possible modern contaminant

Table 16 Plant macrofossils

Radiocarbon dating
Beta Analytic Inc./Leonora O'Brien

Two samples of animal bone were submitted to Beta Analytic Inc., Miami, Fla for radiocarbon dating analyses. Radiocarbon dates (Table 17) were obtained in order to provide absolute dates for the linear feature F2169 containing cattle and horse burials.

Sampling strategy
The animal bone assemblage was sub-sampled for material for radiocarbon dating at the post-excavation stage. This was done on the basis of the perceived significance of the unphased source feature. Selected material included limb bones from horse L2173 and cattle L2174.

Method
Calibrated date ranges (Table 17) were based on the internationally recognised maximum intercept method (Stuiver and Pearson 1986). This calibration curve is generally agreed upon back to *c.* 2500BC, thus covering the period in question. Calibrations were compiled using a recent calibration database (Stuiver and van der Plicht 1998; Stuiver *et al.* 1998; Talma and Vogel 1993). No multiple calibration ranges were returned. The samples were not known to have been contaminated by groundwater or disturbed by later archaeological activity.

Results
It was anticipated that the animal burials would date to the later Iron Age or Roman period. Both samples provided a radiocarbon date range of 40 to 230 cal. AD (1900 to 1720 cal. BP) which suggests that they were deposited either in the very late Iron Age, or in the early to mid Romano-British period.

Laboratory number (Beta-)	AS sample number	Analysis	Conventional radiocarbon age	Calibrated results: 2 sigma calibration (95% probability)	Calibrated results: 1 sigma calibration (65% probability)	Intercept of radiocarbon age with calibration curve
192177	HAT453/ L2173	Radiometric standard delivery (collagen analysis)	1890+/-40BP	Cal AD 40 to 230 (Cal BP 1900 to 1720)	Cal AD 70 to 140 (Cal BP 1880 to 1810)	Cal AD 110 (Cal BP 1840)
192198	HAT453/ L2174	Radiometric standard delivery (collagen analysis)	1890+/-40BP	Cal AD 40 to 230 (Cal BP 1900 to 1720)	Cal AD 70 to 140 (Cal BP 1880 to 1810)	Cal AD 110 (Cal BP 1840)

Table 17 Calibration of radiocarbon age to calendar years

DISCUSSION

The excavation revealed the remains of several Roman enclosures, which were re-cut and redefined during the 2nd to 4th century. The earliest period of activity survived as small fragments of ditches mostly orientated north north east-south south west, dated to the early second century. During the late 2nd century and 3rd century, new

enclosure ditches were excavated on the same axes, mostly concentrated in Area A. By the mid/late 3rd century and 4th century, several new and larger enclosure ditches, more curvilinear in shape, were established, mostly aligned on the same axis as the earlier ditches, although a large ditch in Area B was orientated east south east/west north west. The final phase saw the establishment of several ditches in Area B on a more north-south alignment in comparison to earlier ones.

The most unexpected find on the site was the ditch containing 11 almost complete horses and cattle, of various ages was discovered, which predated the mid to late 3rd century to the 4th century. The feature may have been the earliest evidence of the activity present on the site.

The Roman landscape

The evidence suggests that the landscape was used for rearing stock in enclosures, probably on a seasonal basis. The site is in an upland area of the fens that did not become waterlogged during the wetter months, as the lower pasture lands may have, and the site may have seen winter grazing of stock. Seasonal use is also indicated by the frequent occurrence of the re-cutting and re-organisation of the landscape, suggesting the enclosures were not continually maintained. The low quantity of cereal remains recovered from the site also supports the view the land was used for grazing, not for cultivation.

Many of the finds recovered from the site represent domestic refuse, and may have been introduced to the site by manuring or midden spreading. The abraded nature of the pottery supports this view. Although some building material was recovered from the site, the quantity and quality of the material does not indicate that a building stood close to the site, however, the quantity of material on the site indicates that a settlement was located some distance away. This is supported by the small quantity of lava quern found on the site. The limited evidence found for metal and leather working may mean that occupants of the settlement practiced small scale industry, perhaps to provide themselves with iron and leather goods, or to mend items.

Overall, the finds suggest that the site was rural in nature, as only a small quantity of fine ware, samian ware and personal ornaments were found, along with the complete lack of coinage. The lack of coinage recovered at Wardy Hill Ringwork, Coveney, Ely, was interpreted as demonstrating a lack of contact with the military, and is a picture seen at other rural sites (Evans 2003). However, the presence of samian ware and lava stone does represent a level of 'Romanisation', and a limited participation in a wider exchange network.

It is likely that the site was used for rearing stock, most likely cattle, although the sheep/goat were also found in quite high numbers, a pattern seen at many Roman sites (Phillips above). Salway (1970) and Potter and Jackson (1996) argue for the presence of Roman Imperial estates, which controlled the production of salt and salted meats within the fenlands. There is no evidence from the site to support or refute the hypothesis that the site represents a part of a large, Imperial Estate, although it would perhaps be expected that a higher quantity of finds pointing to Romanisation would have been recovered (such as more samian ware and ornaments).

While the discovery of an intensively used landscape dating to the 2nd to 4th century was perhaps unexpected in the village of Haddenham, as more sites are recorded closer to the fen edge rather then the uplands, the date of this activity does fit in well with the pattern of Roman activity in the Fenlands. Excavations at Stonea date the use of the site in the Roman period from the 2nd century through to the mid 3rd century (Potter 1976) and Roman sites on Ely island, of which Haddenham is a part of, have yielded evidence for intensive activity throughout the 2nd to 4th century. The initial phase of the Romano-Celtic shrine, located on a round barrow, to the west of the site was dated to the late 1st/2nd century to the late 3rd century, overlapping with the use of the excavation site (Evans 1984; Hall 1996). More importantly, a number of finds recovered from the east of Aldreth Road provide strong evidence for a settlement dating to the 2nd to 4th century AD, approximately 1.45km to the south of the site. As they are contemporary, the potential for these sites to be linked in someway is high.

The linear animal burials

The discovery of a number of horse and cattle burials was unexpected and unprecedented. Animal bone from the feature provided a radiocarbon date range of 40 to 230 cal. AD (1900 to 1720 cal. BP). There are examples of animal burials in Iron Age and Roman interred in pits, although none are recorded in linear features. Interpreting such features is problematic, due to the lack of understanding of what circumstances may have brought about the killing up to 19 animals - there is no evidence (such as poleaxing) to indicate how they died. The slaughter and disposal of such a high number of animals, without them being used for meat or hide, must surely point to exceptional circumstances or an extraordinary event.

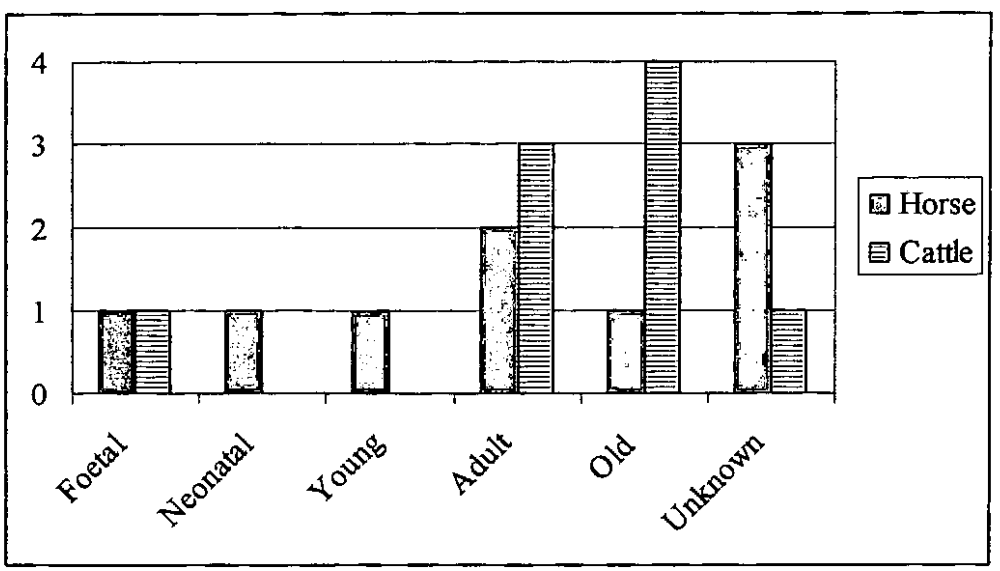

Chart 2 Age-range of individuals in the

One suggestion for the disposal of a number of animals is that they were all affected with a disease, although there is no known affliction that would affect both species. It is also possible that it was the family that kept the livestock who acquired a serious illness, and perhaps mortality lead to the inability to care for them. They may represent a cull of part of the herd in order to control numbers, if the herd had grown beyond the capacity of the land. A further explanation is that they were slaughtered during the uprising associated with the Boudiccan Revolt in AD 60-61 or by an opposing group of people in an act of aggression.

The main downfall with these explanations is that none address the ordered nature of their deposition. The burials appear to be deliberately arranged so most of the carcasses so they are nose-to-tail, with the horses deposited at one end and the cattle at the other (Chart 3). The deposit represents the investment of a high amount of energy from a several individuals in the slaughtering of the animals, the excavation of the linear feature, and physically placing the animals in the ditch. The ditch is narrow and shallow, and apparently purpose-cut to contain the carcasses. It is important to note that each individual horse and cattle must have been of a weight that meant it took the combined effort of more then one person to physically place the carcasses in the narrow ditch.

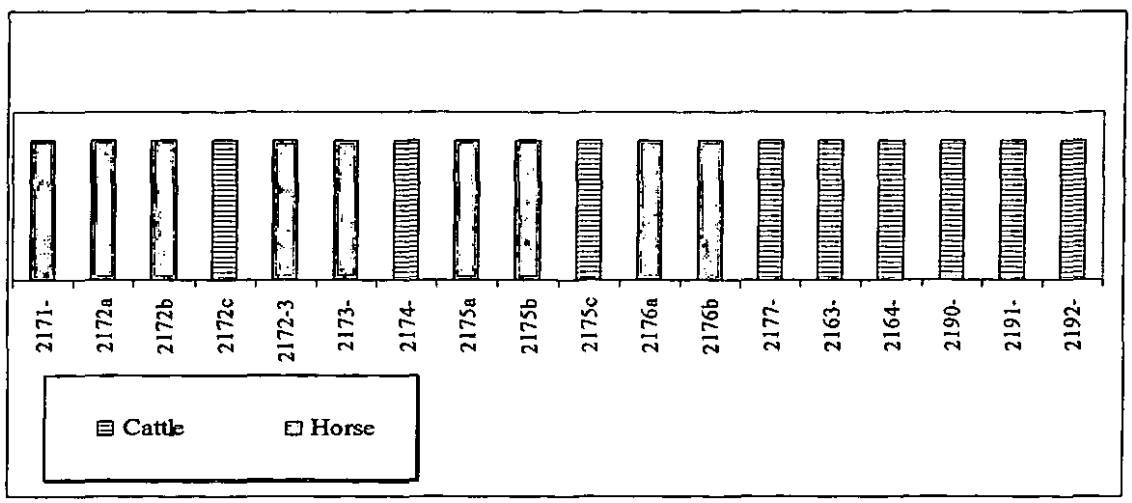

Chart 3 Species in animal deposit from north (left) to south (right)

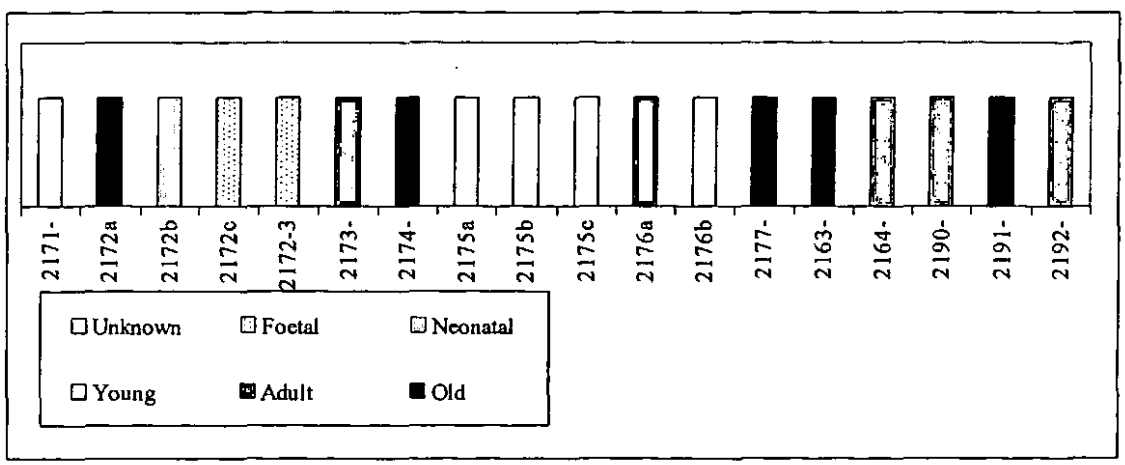

Chart 4 Approximate age of animals from north (left) to south (right)

The deliberate deposit of whole or part of animals is recorded at many Iron Age and Roman sites. Examples of the ritual deposition of animals in the Iron Age include the deposition at Iron Age settlements, such as Danebury, Hants (Grant 1984) and Ashville, Oxfordshire (Waite 1985) and Cadbury Castle, Somerset (Alcock 1972). In Roman period, they are recorded at cemeteries, (e.g the eastern cemetery in London (Barber and Bowsher 2000)), at villas (e.g. Keston, Kent (Philp *et al.* 1999)) and at shrines (e.g. Upper Delphs, Haddenham (Evans 1984)) and Cambridge (Green 2004)).

The deposits range from the internment of the skull, through to small parts of articulated bones to whole carcasses, and vary from single deposits in a pit to multiple deposits. They can consist of a single species to a mixture of two or more. In the majority of cases, the cause of death can not be established. The one exception to this is the pole-axed Roman cattle excavated at Portchester Castle (Grant 1984).

The reasons for the ritual deposit of animals during prehistory and the Roman period are unknown, although it is common practice both in the past and the present (Green 2004). They are potentially associated with fertility, either to encourage the birth of humans, animals or a good harvest. They may also serve to scare evil spirits or to appease certain deities. It is also likely that the reasons for a sacrifice were varied (Wilson 1999). It is also possible that the species of animal sacrificed was also significant. Miranda Green (2004) highlights the strong link between specific animals and certain gods, such as Epona with horses and Nehalennia with dogs.

Waite (1985, 151) outlined the criteria for identifying a specialised animal deposit (specifically for an Iron Age examples, although Roman ones appear to be judged on the same criteria), which is summarised below.

- Animals deposited which were not exploited for meat, bone, sinew or skin
- The quantity of animals deposited may not correlate with the amount that animal is normally exploited. In other words, just because sheep are kept in the highest number does not mean they are the species that are often deposited in ritual contexts
- The same body parts are consistently used
- The remains are carefully placed
- The burials only occur in pits

Waite (*ibid.*) further argues that in all Iron Age examples, the deposit is placed within a settlement, either in association with a building or in a pit at the end of a paddock/pen boundary pen. By the Roman period, animal deposits were also associated with religious centres, such as temples.

It is clear that the Haddenham burials fit very well the first four points. The use of a linear feature rather then a pit for a specialised animal deposit is unusual and it is inappropriate to dismiss the it as specialised deposit just because they are not deposited in a pit. The use a long, linear feature would have had a substantial visual impact on the immediate landscape and may have allowed a large number of people to view it at one time. It is also important to highlight that the full extent of the feature was not revealed during this excavation.

The amount of deposits placed, and the parts of the body included, probably vary according to the reason for the deposit. In other words, the more of the animal deposited, the larger the gesture. It is important to note that the deposition of an animal does not just exclude the opportunity for its meat to be consumed, but also that their secondary products (e.g. milk) is also lost. Analysis has shown that it was not just the older animals that were no use anymore that were selected for deposition, but younger ones too. The loss of so many animals at once must have had a major impact on the local economy, especially with the loss of the cattle. It is possible that the deposit does not represent a group of animals from one herd and that different family

units provided a 'sacrifice' for one large ceremony. This may explain the presence of two cattle placed side by side, indicating they were a single offering from a group.

As mentioned above, the Haddenham burials represent a single event, unlike the deposits recorded at other sites. At the villa in Keston, *c.* 25 animals, mostly dogs, were deposited in the same shaft over a period of years and at the other sites, animal deposits were recovered from many discrete features, indicating they were deposited on different occasions. The shaft at Keston is also similar to Haddenham burials in that it was a feature that contained the remains of several species of animals, and of the 49 pits at Danebury that contained deliberate animal deposits, just seven contained different species. In most cases, however, the deposit comprises of a single animal within a feature.

	Period		**Site Type**		**Deposit Type**			**Species Represented**					**Age of Animal**		**No. of Events**	
Site Name	**IA**	**Ro**	**S**	**R**	**W**	**P**	**S**	**c**	**h**	**p**	**s/g**	**d**	**Ad**	**In**	**Sn**	**Mt**
Ashville	*x*		*x*		*x*	*x*	*x*	*x*	*x*		*x*	*x*	*x*	*x*		*x*
Cadbury-Camelot	*x*		*x*	*x*	*x*		*x*	*x*	*x*	*x*	*x*		*x*	*x*		*x*
Cambridge		*x*		*x*	*x*			*x*	*x*			*x*	*x*		*x?*	
Danebury	*x*		*x*		*x*	*x*	*x*	*x*	*x*	*x*	*x*		*x*	*x*		*x*
Eastern Cemetery		*x*		*x*	*x*	*x*	*x*		*x*			*x*	*x*			*x*
Haddenham		*x*	*x*		*x*	*x*		*x*	*x*				*x*	*x*	*x*	
Keston		*x*	*x*		*x*	*x*		*x*	*x*	*x*	*x*	*x*	*x*	*x*		*x*
Upper Delphs		*x*		*x*	*x*		*x*			*x*	*x*		*x*			*x*

Key: IA = Iron Age; Ro = Roman; S = settlement; R = religious; W = whole; P = partial; S = Skull only; c = cattle; h = horse; p = pig; s/g = sheep/goat; d = dog; Ad = adult; In = infant; Sn = single; Mt = multiple.

Table 18 Comparison of sites which yielded deliberate animal deposits

As the majority of the animal deposits discovered on other sites are individual burials, it is difficult to understand the significance of the nose-to-tail arrangement of the Haddenham burials. However, in the shaft at Keston villa, a layer containing two horses and an ox arranged nose-to-tail in a circle was discovered. While it appears that these deposits were ordered in the same way, the Haddenham burials were all orientated south west – north east and the Keston burials were all orientated on differing alignments.

It may also be tentatively linked with the Romano-Celtic shrine, to the west of the site, which had also yielded evidence for the deliberate deposition of animals in features in Haddenham occurs at the late 1st to early 2nd century shrine at Upper Delphs. A number of sheep/goat mandibles were set within the floor with their respective hooves laid out on either side, and two of them had coins placed in their mouths, perhaps associated with a mortuary ritual. In the north-western corner of the compound a several intercutting pits were excavated that contained four complete sheep/goat skeletons, each accompanied by a pot (Evans 1984). If chronologically linked, it is possible that the use of horses and cattle at West End demonstrates that

this sacrifice was for an entirely different purpose (sacrifice for different god(s) or performed by a completely different set of people).

It must have taken an extraordinary event or circumstances to justify the loss of so many animals at one time. One reason for this may have been environmental degradation, which may have pushed the inhabitants of the immediate landscape to the limits of survival. Excavations of the middle Iron Age settlements at Upper Delphs revealed a layer of buried soil and alluvium overlying the site, dating to the mid to late Iron Age, evidence for increasing water levels during this period. The excavations showed that the occupants of these settlements altered the layout of their settlements to cope with the changing levels, but they were eventually abandoned (Evans and Serjeantson 1988; White 1997). It is possible that a number of animals were sacrificed at this time to ask a deity for their help and to increase the fertility of the land. The declining environmental may have led to the need to reduce the size of the herd to save valuable grazing land, representing a combination of ritual and mundane factors.

Conclusions

The excavations at Haddenham revealed a mixture of mundane and ritual activity within an upland area of the fenlands. The site was probably used on a seasonal basis and the associated settlement was located some distance away. The site supports dating evidence from other excavations in the area, suggesting the fenlands were used with increasing intensity during the 2nd to 4th centuries, before being largely abandoned, probably due to environmental factors.

It is impossible to understand what significance the animal burials had and the purpose for which they were slaughtered, other than it was not for consumption. It is evident that they mark a significant event in the lives of the people who inhabited the fenland. While the discovery of special animal deposits is not unusual at both Iron Age and Roman sites, Haddenham currently stands out as the only example of the deliberate burial of horse and cattle in a linear feature.

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PLATES

Plate 1	Overview of the excavations at Haddenham, looking downhill to the south
Plate 2	Animal burials in Ditch 2169 looking down the ditch to the south
Plate 2a	Detailed photograph of animal burial in ditch 2169. Horse 2171, located in the north end of the ditch. View facing east.
Plate 2b	Detailed photograph of horse and cattle burials in ditch 2169 (2172a, b, c; 2172-2173; 2173). View facing east.
Plate 2c	Detailed photograph of horse and cattle burials in ditch 2169 (2174, 2175, 2176, 2177). View facing east.

PLATES: ANIMAL BONE PATHOLOGY

Extensive ossification of both medial and lateral oblique distal sesamoid ligament in posterior 1st phalanx of horse bone (Ditch 2013 fill 2014)

PLATES

Plate 1 Overview of the excavations at Haddenham, looking downhill to the south

Plate 2 Animal burials in Ditch 2169 looking down the ditch to the south

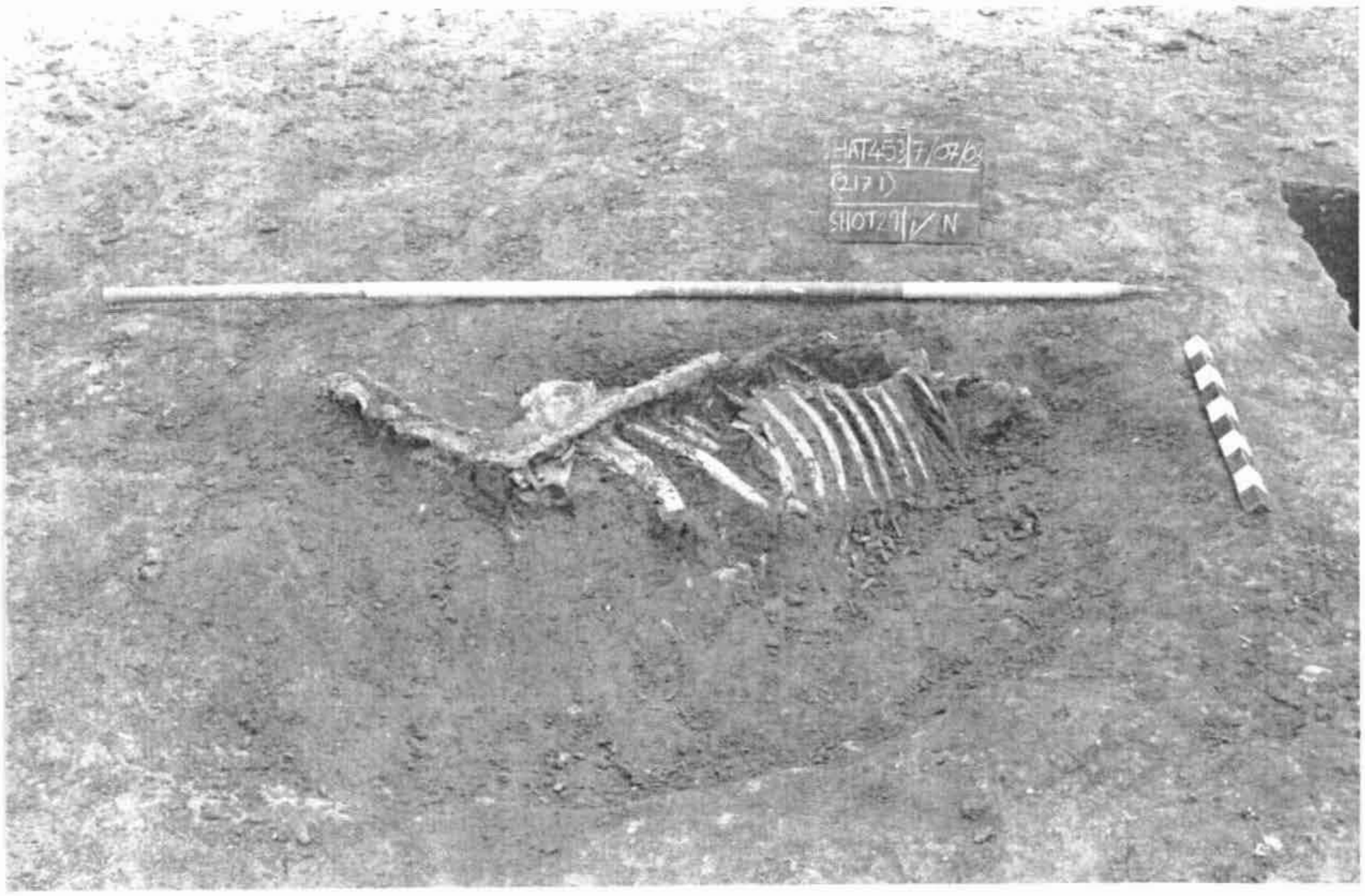


Plate 2a Detailed photograph of animal burial in ditch 2169. Horse 2171, located in the north end of the ditch. View facing east.

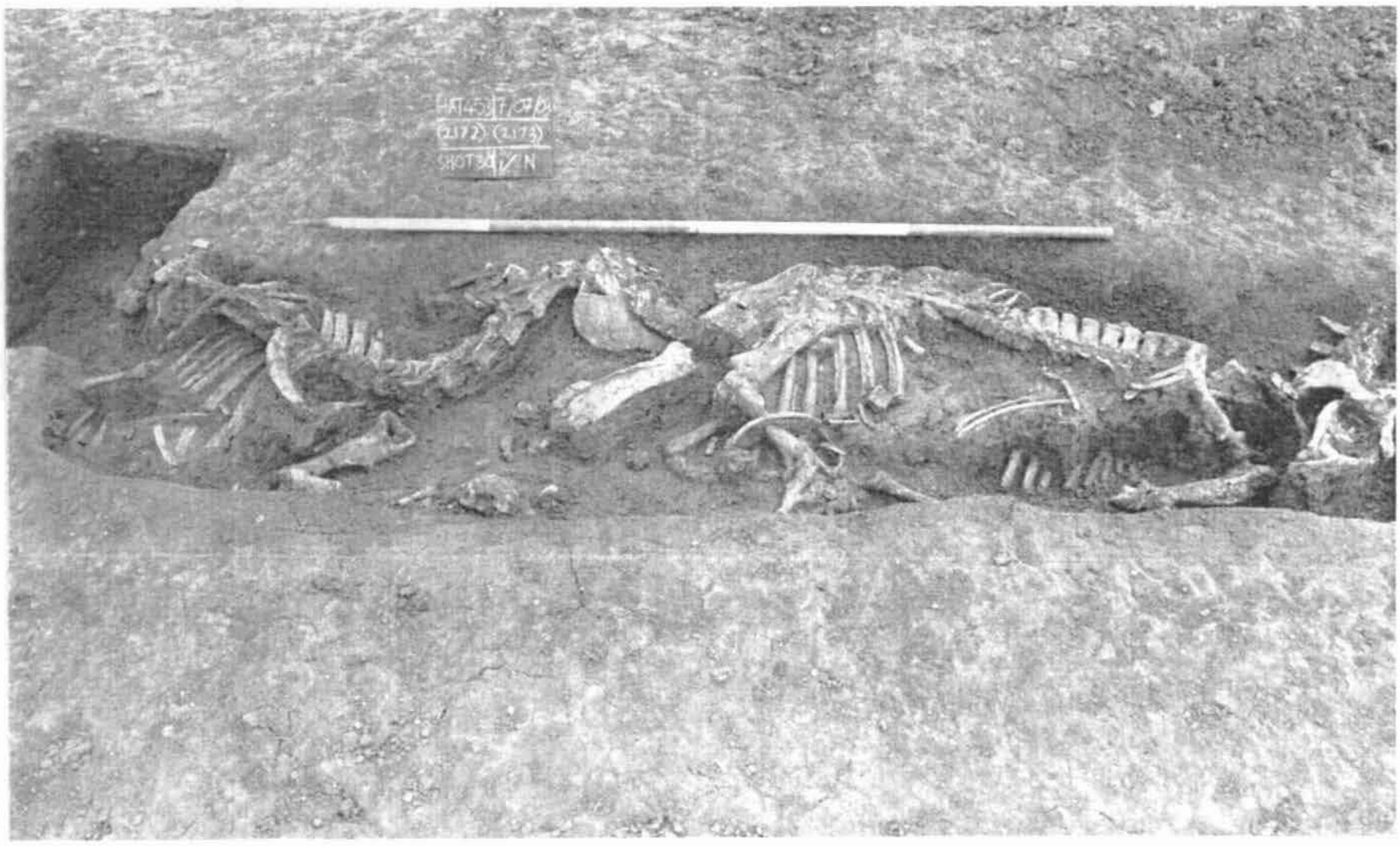
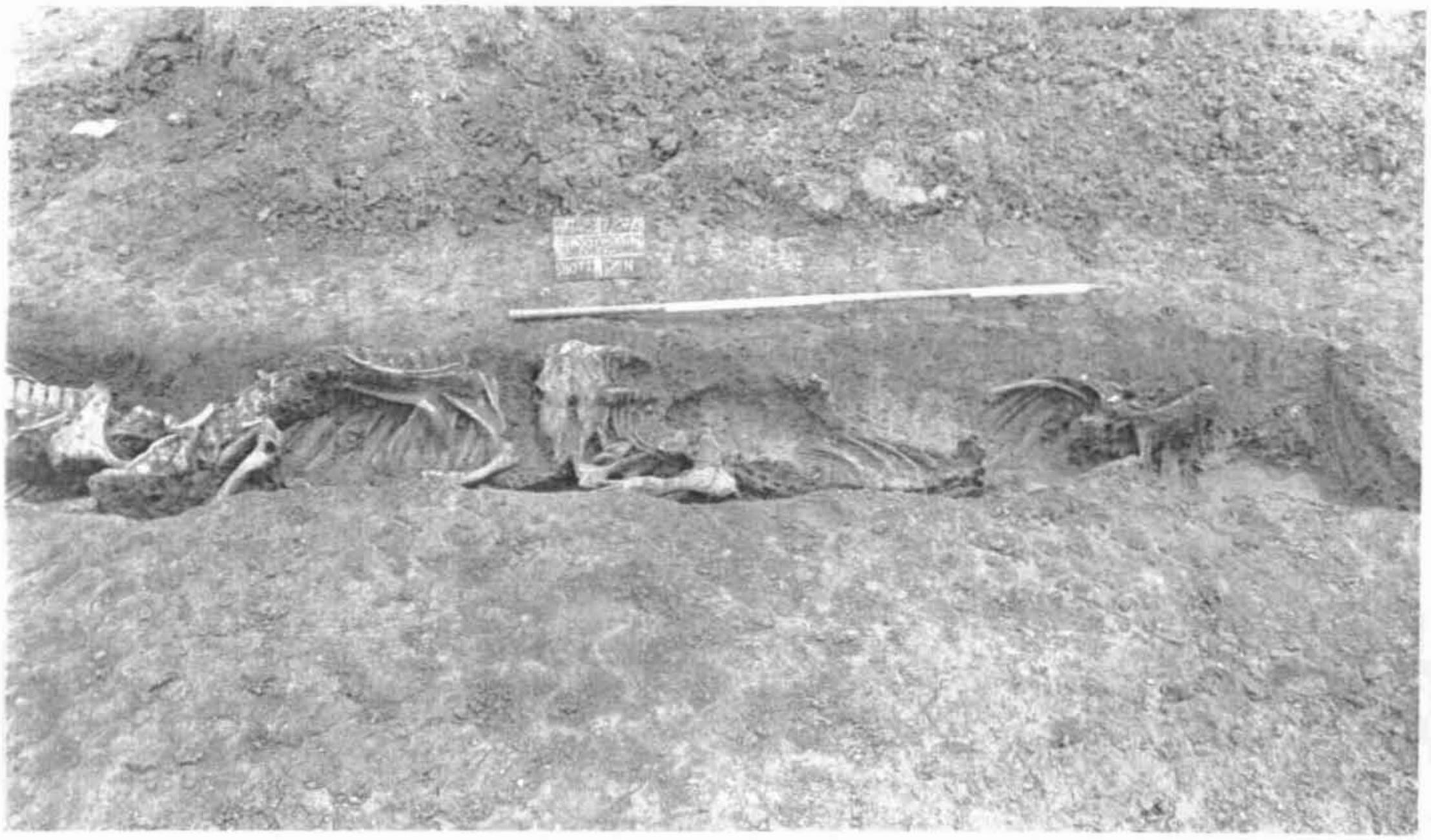


Plate 2b Detailed photograph of horse and cattle burials in ditch 2169 (2172a, b, c; 2172-2173; 2173). View facing east.



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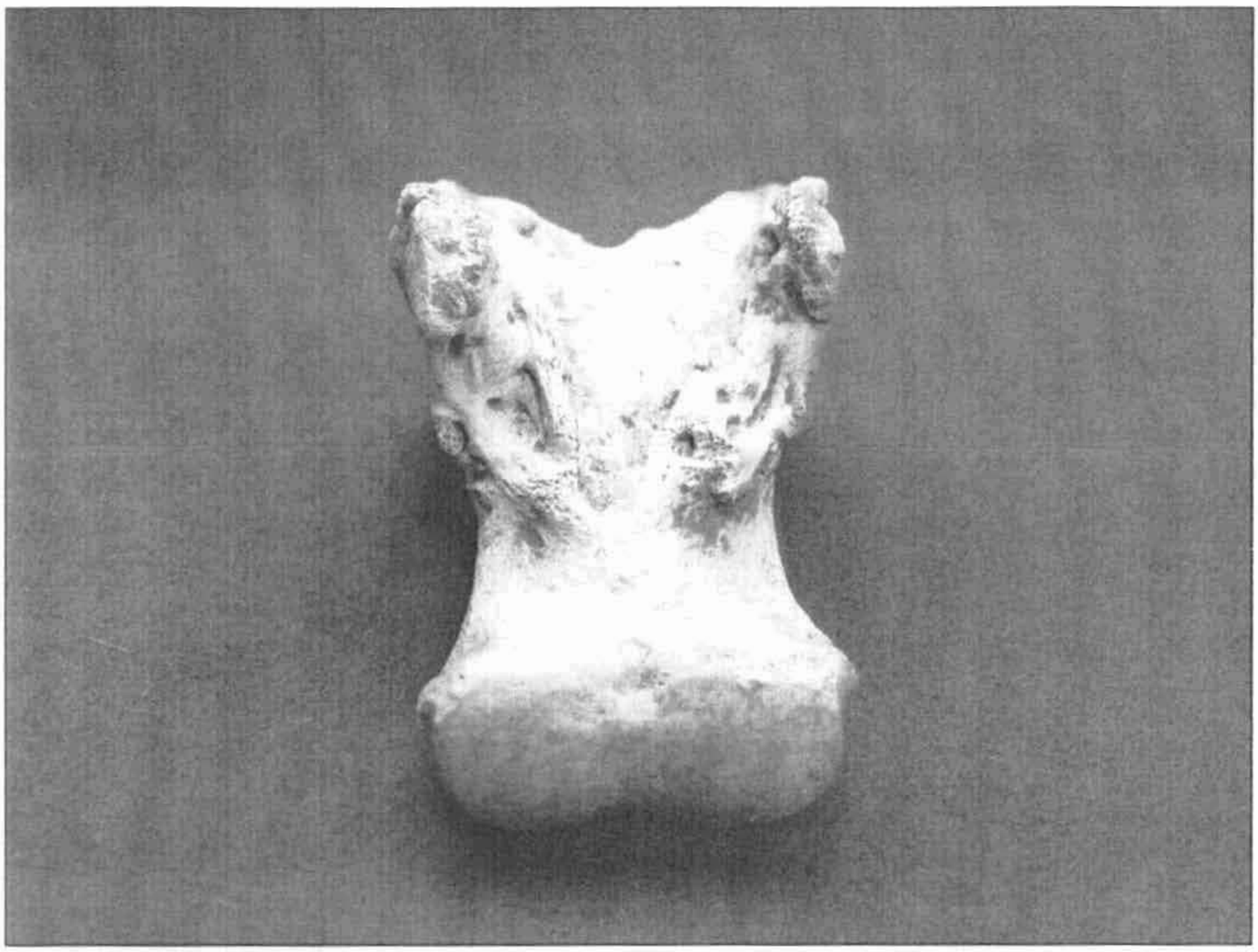

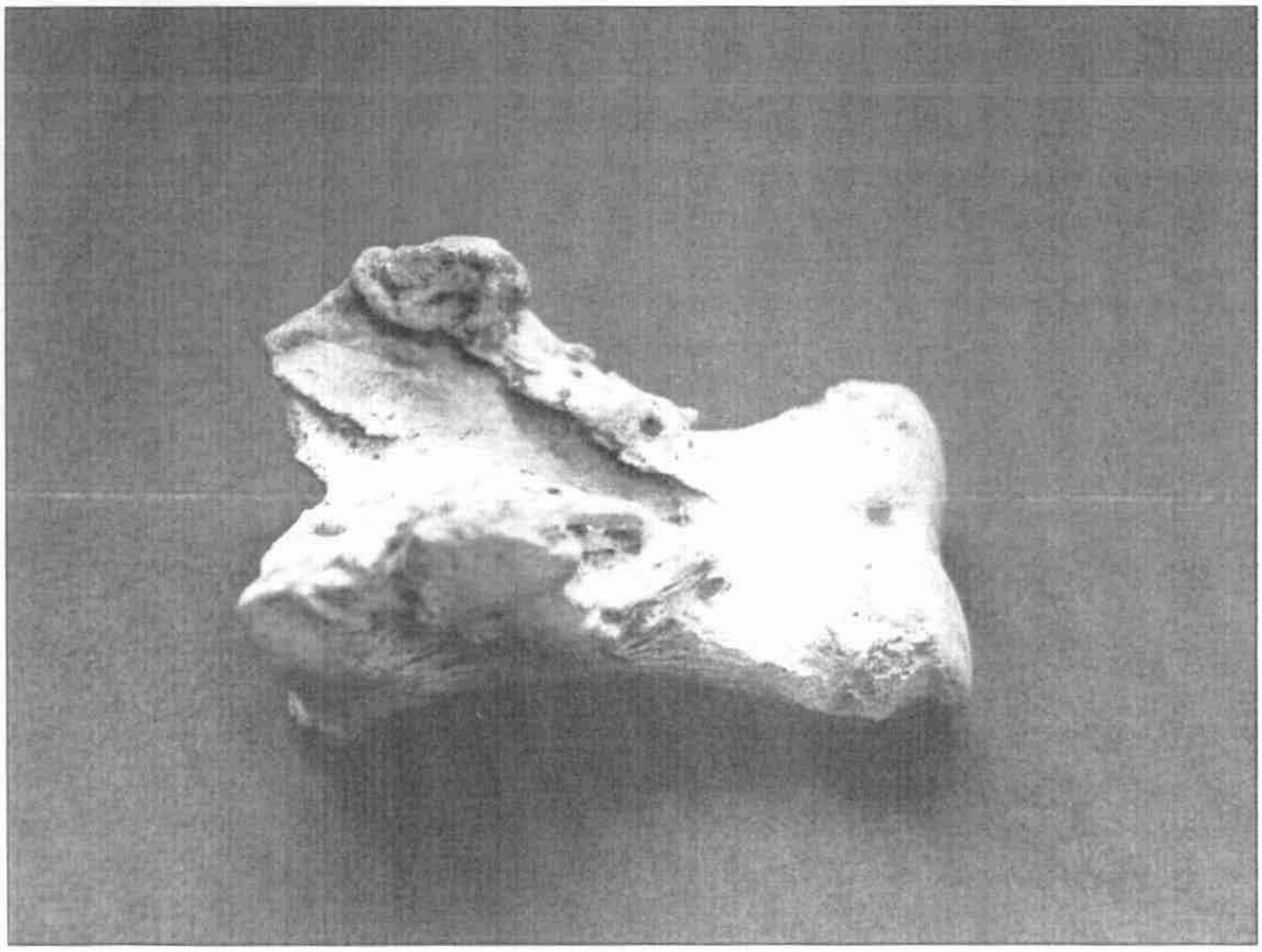

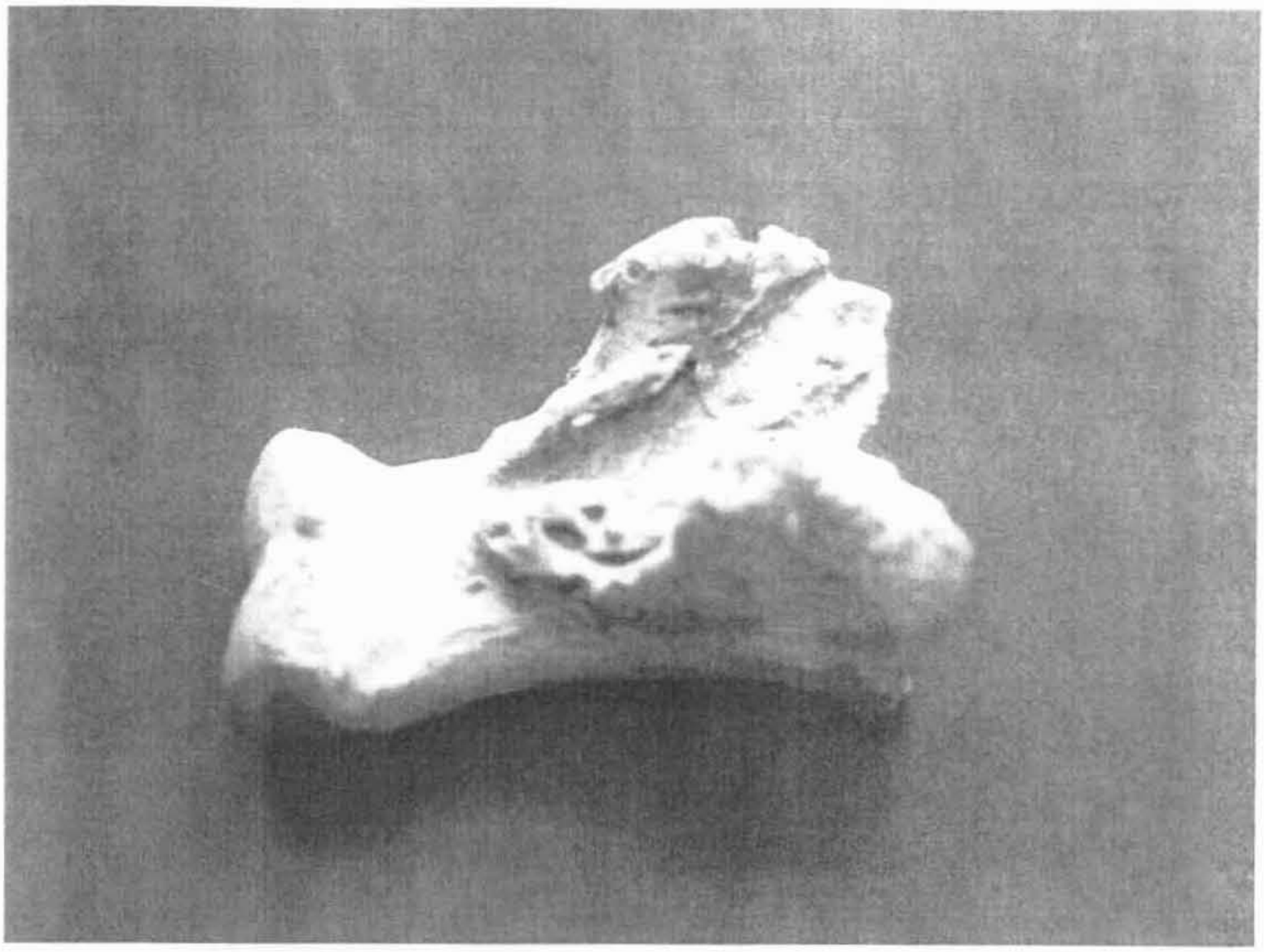

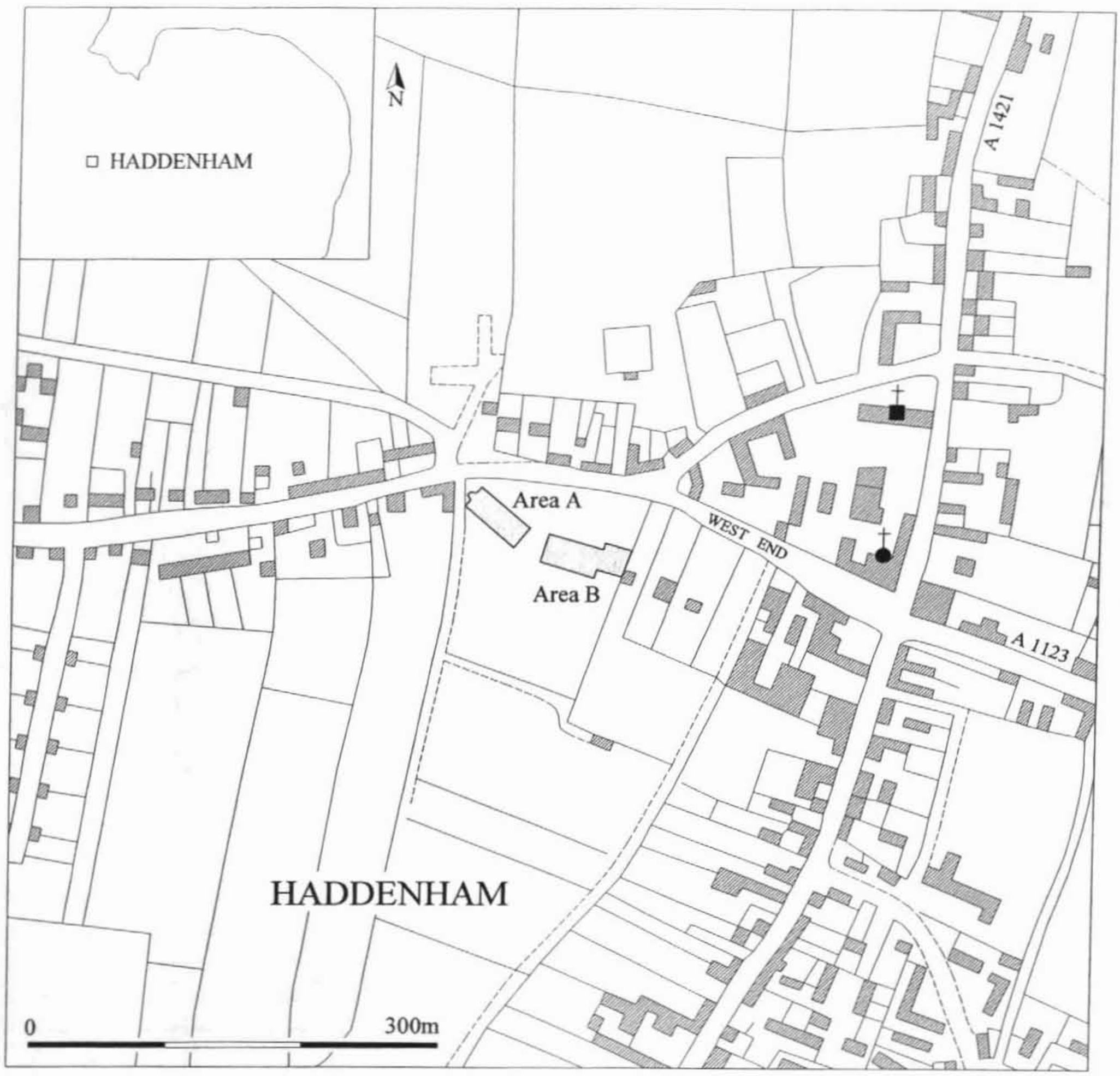

Fig. 1 Site Location

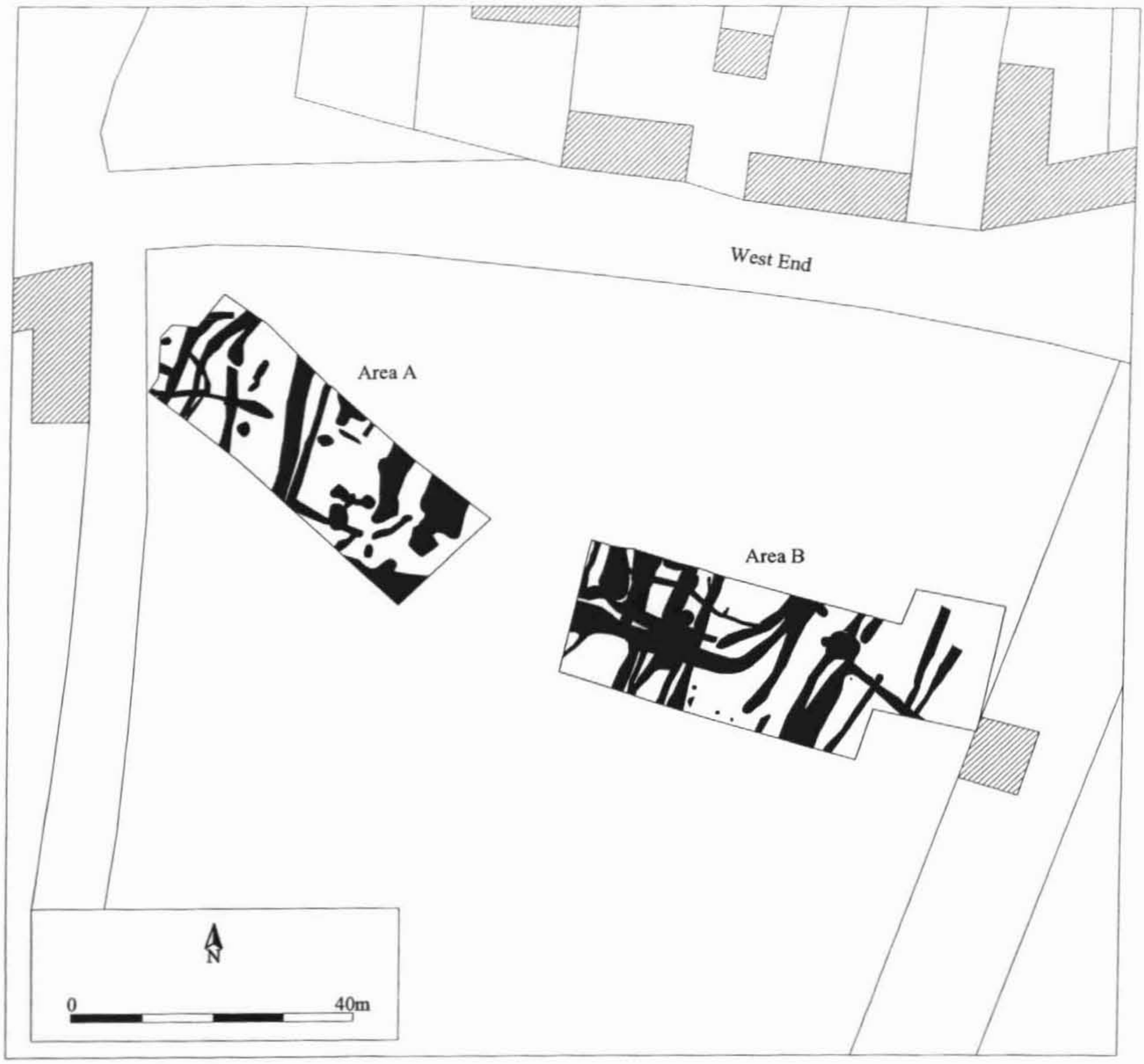

Fig. 2 Detailed Site Location

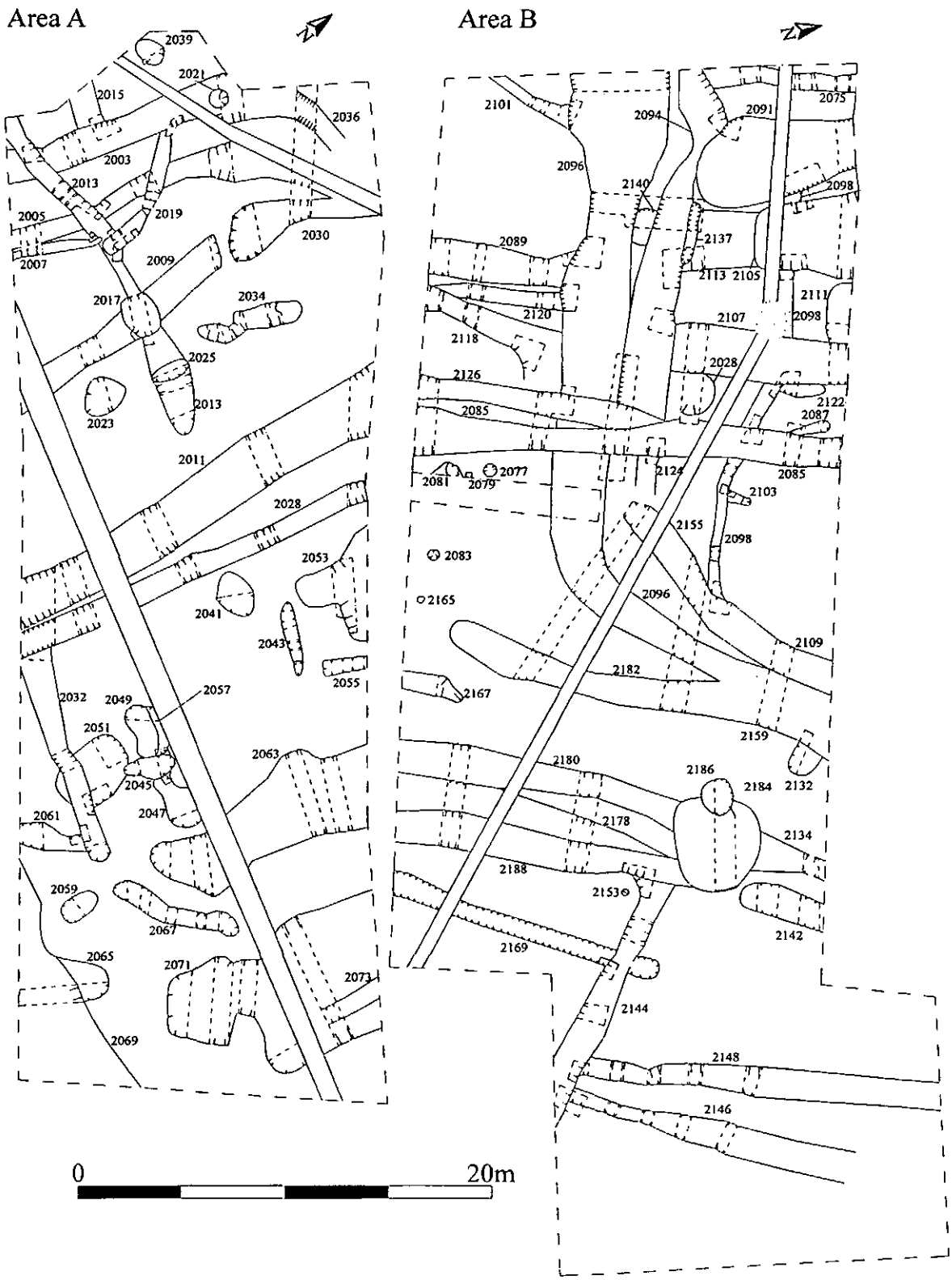

Fig. 3 All Features Plans

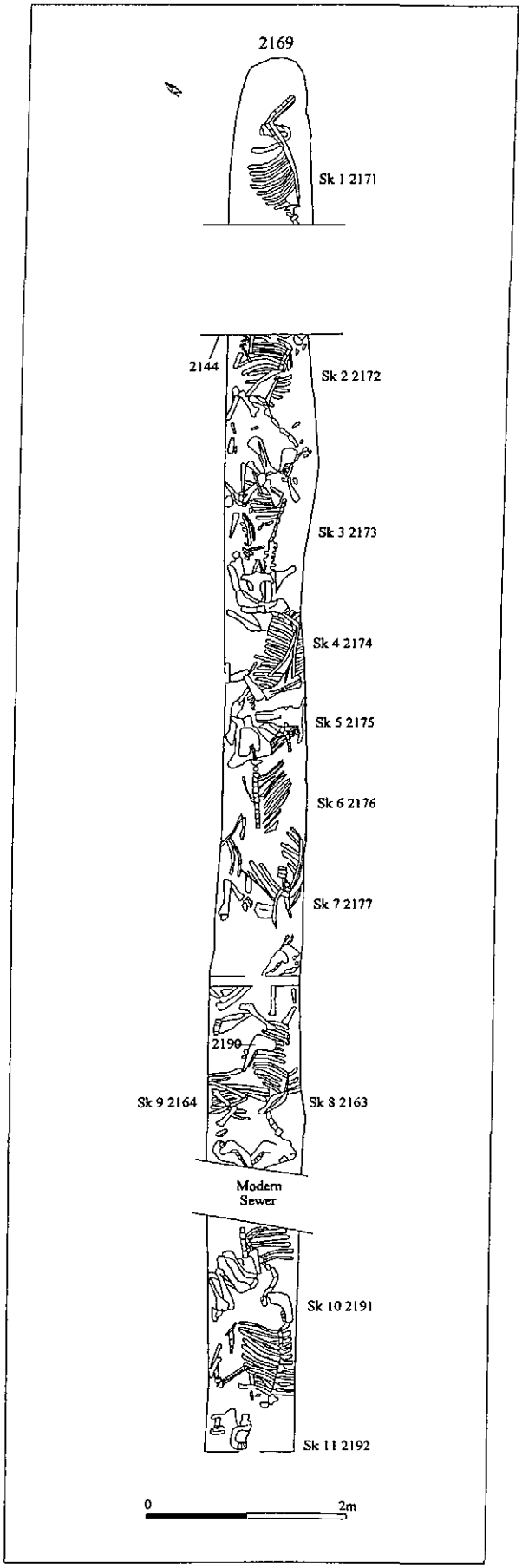

Fig. 4 Detail of F2169

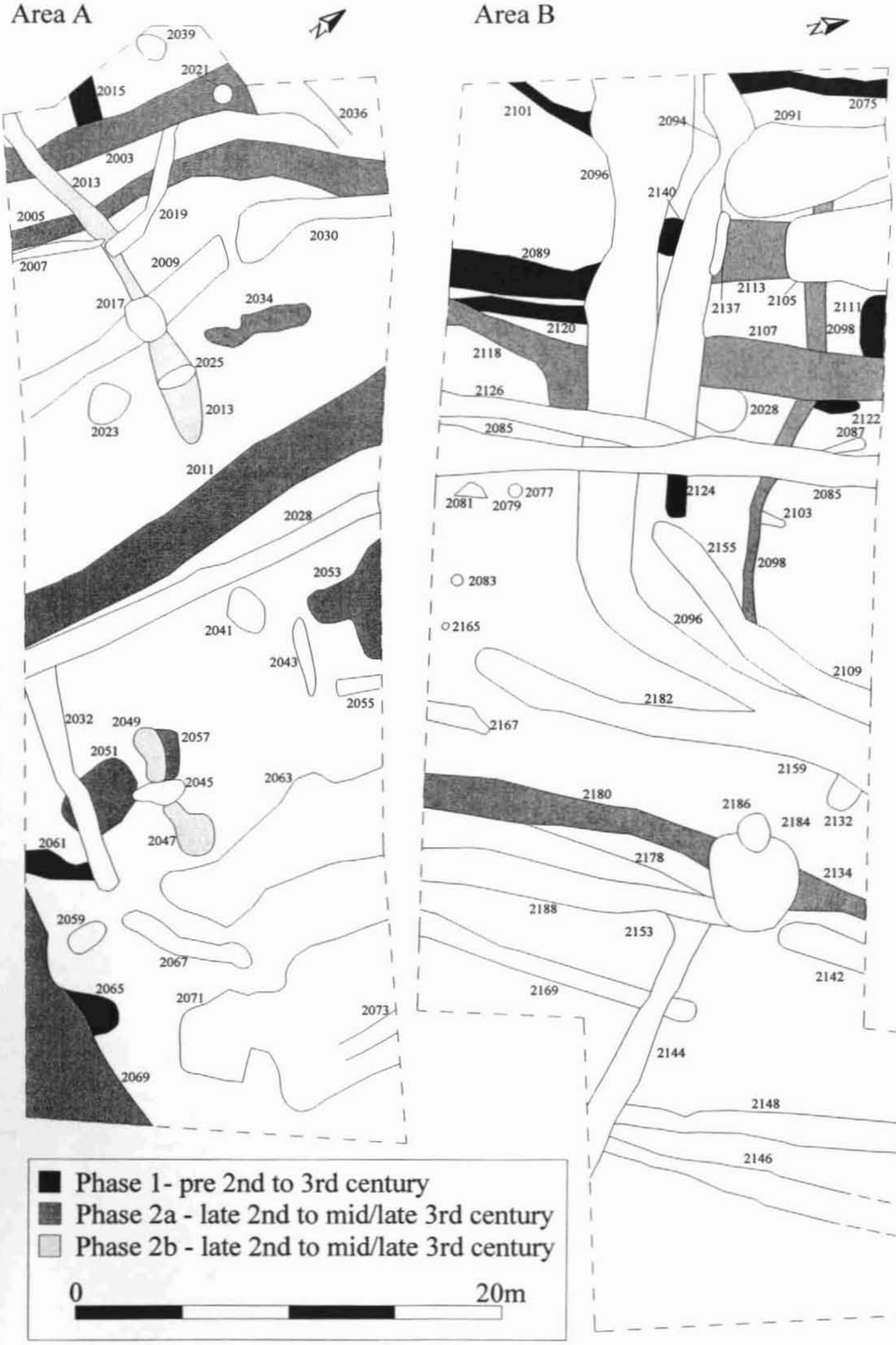

Fig. 5 Phase Plans

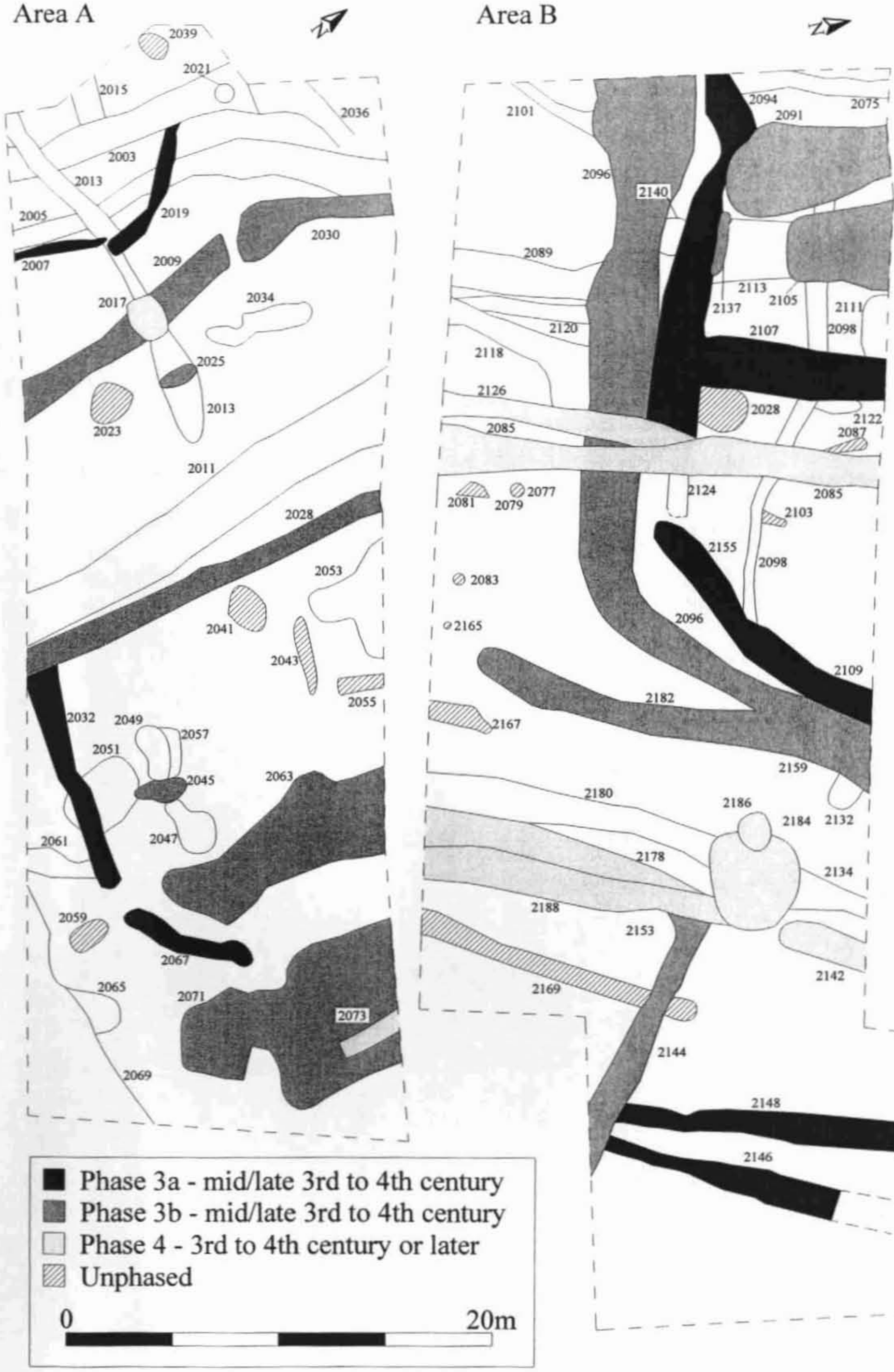

Fig. 6 Phase Plans

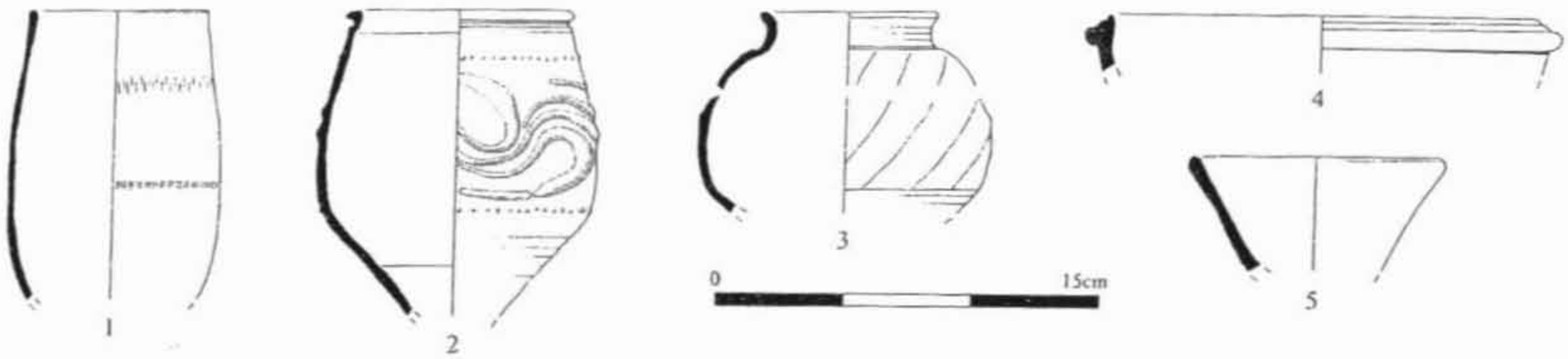

Fig. 7 Pottery

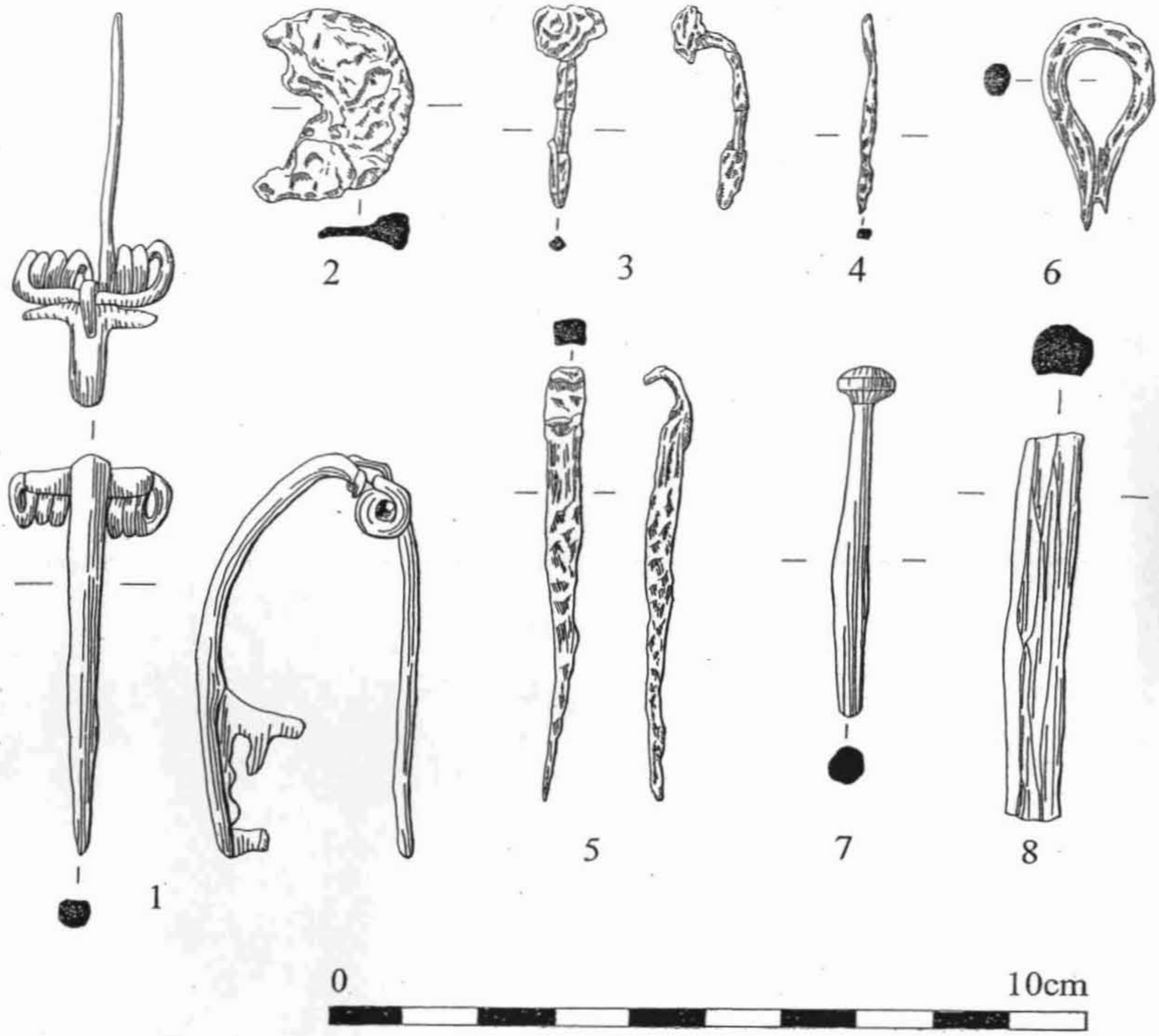

Fig. 8 Small Finds

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