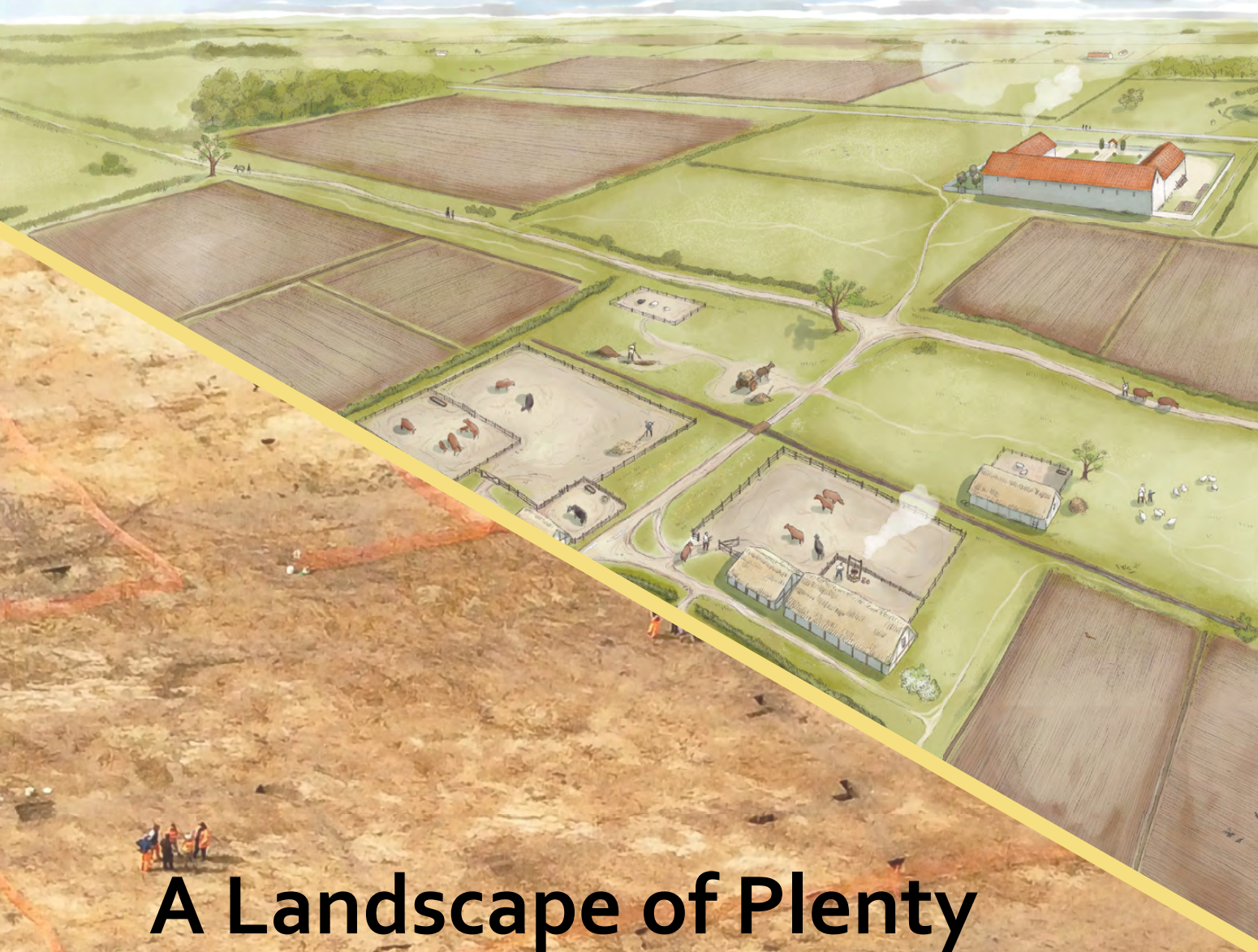

A Landscape of Plenty

Excavations on a Roman Estate, Cambridgeshire

Francis M. Morris and James E. R. Davey

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Cover: Aerial view of the site, looking north-north-west; Reconstruction by Ada Lewkowicz.

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Summary

A large open area archaeological excavation of 3.56ha was undertaken in 2023 prior to the construction of the new Cambridgeshire Southern Police Station on a site directly west of the village of Milton, 4.2km north-east of the historic core of Cambridge. The fieldwork was undertaken by Archaeological Research Services Ltd (ARS Ltd) on behalf of Cambridgeshire Constabulary.

The earliest human activity on the site was represented by seven prehistoric worked flints, probably datable to the Middle Neolithic period or later, but all residual in features of Roman or later date. Middle to late Iron Age occupation was evidenced by a ditch, a circular gully, perhaps a drip gully for a roundhouse, a pit and a well containing waterlogged wood at its base (Period 1). The circular gully contained evidence for small-scale localised crop processing. These features probably represented a peripheral part of a larger Iron Age settlement.

A scatter of pottery and a few other finds of early to middle Roman date, including a couple of coins, a copper-alloy bow brooch of Colchester Derivative type and several glass vessel fragments, were found residual in late Roman features and presumably derived from a contemporary settlement in the vicinity of, but beyond, the excavated area.

The Roman period features could be sub-divided into three distinct phases or periods, each with three sub-phases, based on a combination of stratigraphy, spatial analysis, artefactual dating and scientific dating. The main features revealed in the investigations on the Police Station site were ditches that formed part of an extensive and complex series of intercutting Roman enclosures with associated boundary ditches, trackways, small timber structures, pits and other features, such as waterholes or wells, a pond and an oven (Periods 2–4). Pottery, coins, other finds and radiocarbon dates indicated that these features dated to late in the Roman period, probably beginning in the mid 3rd century AD (Period 2), with activity on the site apparently peaking in the mid to late 4th century AD and possibly extending into the 5th century AD (Periods 3 and 4).

The compartmentalised layout of these enclosures indicated that corralling of livestock was a significant activity at the site. This was supported by a substantial and well-preserved assemblage of over 5000 animal bones from Roman contexts. These bones primarily represented cattle (65.7% of main domesticates by number of identified specimens), with a smaller proportion of sheep (22.4%), some horses and possible donkeys/horse-donkey hybrids (9.4%), with a very small amount of pig (2.5%). The relative proportions of the animals remained fairly similar throughout Periods 2–4. There was evidence for local breeding of cattle, sheep and possibly horses/equids in Periods 3 and 4. Examination of the bones indicated that cattle were primarily raised to provide traction, i.e. for ploughing and transport, and presumably manure, to support arable farming. The cattle and sheep would also have provided meat and milk/cheese, but probably for fairly local consumption rather than for export. Cheese production at the site was indicated by fragments of four cheese presses or strainers.

Analysis of environmental samples from Roman contexts showed a high quantity of cereal grains as well as glume fragments from late-stage crop processing activities. This indicated that cereals, predominantly spelt wheat and to a lesser extent emmer wheat, were being produced for export to a wider area, rather than just for consumption by the local community. Further evidence of crop processing at the site, the grinding of grain into flour, was provided by many worn fragments of probable rotary querns.

The features recorded on the site clearly represented a late Roman intensive agricultural working area, which may well have formed part of a Roman villa estate. There is evidence from the site and its vicinity that a villa likely lay nearby, most probably in the unexcavated area immediately to the south. Many fragments of Roman ceramic building material, comprising tegulae, imbrices, brick and flue tiles, were found scattered in ditch fills across the site. Several fragments of building stone were also recovered from Roman contexts, including two stone roof tiles (one with a nail hole),

a possible flagstone and a large piece (weighing *c.*27kg) of roughly-shaped masonry in a light cream-buff fossiliferous limestone, which would have been imported to the site from further afield. A previous excavation *c.*200m to the south at Milton Landfill in 1994, also revealed roof tiles, box tiles and worked stone — thought to represent destruction material from a villa — in the fills of Roman ditches in the northern part of that site (Reynolds 1994).

The Milton Police Station site may have formed part of one of many late Roman villa estates known from the area around Cambridge and to the south of the Fens. It was evidently involved in the production of crops on a considerable scale for export and was well connected to potential distribution and consumption centres by waterways, such as the River Cam, which lay just 1.75km to the east, and an artificial Roman canal (the Old Tillage/Car Dyke), which ran north-north-west from the River Cam near Waterbeach (*c.*3km east-north-east of the site) to a former tributary of the River Great Ouse. The Roman road (Akeman Street, also known as Mere Way; Margary 1973, Road 23b) which ran north-east from Cambridge into the Fens passed just *c.*500m to the west of the site. The nearby Roman nucleated settlement/small town of Cambridge may well have served as a distribution centre for agricultural products from the surrounding area via state supply and marketing networks.

The large Roman pottery assemblage (nearly 7000 sherds, weighing about 140kg) recovered from the Police Station site suggested basic, utilitarian occupation and activity with a domestic element. A few vessels, however, provided possible evidence for higher-status habitation in the vicinity. These were a rare and unusual costrel-like vessel and fragments of four flagons decorated with human faces.

A fairly large assemblage of 68 Roman copper-alloy coins was recovered from the Police Station site, a quantity perhaps more in keeping with a villa site rather than a farmstead. Coin use at the site seems only to have become widespread at a relatively late date, sometime between AD 330 and 350, instead of the late 3rd century AD as is typical on other nearby rural sites. In apparent contrast to most other local farmstead sites, coin use continued on a considerable scale into the late 4th century AD and down to the end of the Roman period, a trend also evident at some other villa sites in the region.

Other Roman copper-alloy objects included a well-preserved plate brooch of octofoil form with a pronounced central boss and red and blue enamel decoration, several late Roman bracelet fragments and a dining spoon, which may originally have been silver plated. Whilst by no means exceptional, these objects possibly indicate 'higher-status' occupation in the vicinity of the site and some may have been worn or used by the inhabitants of a postulated adjacent Roman villa.

Roman ironwork comprised dozens of nails and hobnails, as well as a few structural pieces, tools and knives, consistent with what might be expected from a working agricultural rural site. Several bone and antler objects were also recovered, mostly of a fairly utilitarian nature, such as handles and very rarely identified bone cases for iron sewing needles, but also including a simple, undecorated, double-sided composite antler comb of a well-established local type, datable to *c.*AD 350–425, as well as an antler pestle and a possible wall hook in antler. There was also evidence for small-scale bone and antler working, which appeared to reflect the manufacture of pins and handles respectively. A small assemblage of glass vessels included fragments of two 4th- to 5th-century AD beakers. A poignant discovery was a burial of three infants of the same age, very likely triplets, in a pit cut into the inner side of an enclosure ditch, probably in the late 4th century AD.

The late Roman agricultural working area/probable villa estate at the Police Station site appears to have gone out of use around the end of the Roman period, *c.*AD 400 or shortly after. The enclosure and boundary ditches were all filled up at about this date, or in the following decades, either through gradual silting up following the abandonment of the site, or by deliberate infilling that perhaps marked a shift to larger open fields. This probably related to the wider political, military and economic circumstances at this time. Britain left the Empire in AD 409 and after this date state payments to Britain were no longer made and army pay ceased. In the wake of this a dramatic economic collapse followed and the villa estate system, of which the Police Station site at Milton was probably a part, likely broke down. This opens up important questions about how the landscape was used during the post-Roman period and into the Anglo-Saxon period. Did woodland regenerate or were fields still tilled or given over to grazing. The infilling of the ditches suggests that land divisions, and potentially ownership or tenure, were deliberately changed as new systems of control, governance, coercion and military and political dominance took hold.

No features or finds of Anglo-Saxon date were recorded in the excavation, but a large number of parallel ditches and/or furrows on a very similar alignment to the Roman features related to the use of this area as an agricultural field in the medieval/post-medieval periods (Period 5).

Chapter 1

Introduction

Outline of the study

This monograph presents the results of a large open area archaeological excavation of 3.56ha undertaken in 2023 by Archaeological Research Services Ltd (ARS Ltd) prior to the construction of the new Cambridgeshire Southern Police Station. The Police Station site was located on the west side of the village of Milton, just west of the A10 road (Figure 1.1). It lay a short distance north of the A14 road and the modern suburbs of the city of Cambridge and *c*.4.2km north-east of this city's historic core, including the site of Roman Cambridge on Castle Hill. Immediately prior to excavation, the area of the site was a disused arable field. It was bounded to the north-east by Milton Park and Ride (which lay south of Butt Lane), to the east by another field adjacent to the A10, and to the south, west and north-west by the remainder of the same field, beyond which lay the large Milton landfill.

In 2020 a planning application (20/04010/FUL) was submitted by Cambridgeshire Constabulary to the relevant local planning authority (South Cambridgeshire District Council Planning Committee) ahead of the construction of the new police station. A desk-based archaeological assessment (DBA) had been prepared the previous year in support of this application (Higgs 2019). Planning permission was granted the following year (2021) and a condition was set requiring the implementation of a programme of archaeological work. Preliminary archaeological works included a geophysical survey on the site in 2021. This identified numerous linear anomalies which appeared to form a series of rectilinear ditched enclosures (Summers 2021). Trial trenching carried out in 2021–22 targeted these linear anomalies and indicated that they were ditches dating to the late 3rd to 4th centuries AD, that is to the late Roman period (Clarke and Newton 2022).

ARS Ltd was subsequently commissioned by Cambridgeshire Constabulary to conduct archaeological mitigation by excavation on the site, as outlined in a written scheme of investigation (WSI) prepared by ARS Ltd (Lavender 2023) and approved by Andy Thomas, Senior Archaeologist at Cambridgeshire Historic Environment Team (CHET) and the archaeological planning advisor for the local planning authority. The entire site was archaeologically excavated by these means between March and September 2023 (Figure 1.2–Figure 1.4), revealing a sequence of late Roman ditched enclosures, as well as features and objects from several other periods, including the edge of a middle to late Iron Age settlement.

This first section of this monograph (Chapter 1) introduces the study and describes the geology and physical setting of the Police Station site, its archaeological and historical background, the aims, objectives and methodology of the archaeological investigations and the phasing. The results of the excavation are presented in Chapter 2. Specialist reports are provided in Chapter 3, whilst Chapter 4 presents an overall summary and discussion of the results of the excavation and sets the site in its regional context.

A detailed archive report providing comprehensive descriptions of all contexts and analysis of the artefacts and the human, faunal and palaeoenvironmental remains recovered is available online through the Archaeology Data Service (Davey and Morris 2025; cf. Davey and Morris 2024). The physical archive for the 2023 excavation will be deposited with Cambridgeshire County Council County Archaeological Store under the accession number ECB7040, which is also the Event Number and site code. The paper records and drawing sheets have all been scanned and the digital records, including photographs, will be archived with the Archaeology Data Service. The OASIS number for the project is archaeol5-512141.

Geology and physical setting

The underlying solid geology of the site is sedimentary Gault Formation mudstone/clay, formed 113–100 million years ago during the Cretaceous period, with sporadic capping by superficial sedimentary sand and gravel river terrace deposits, which are approximately 2.6 million years old (British Geological Survey 2024; cf. Connor 1999, 3; Phillips 2015, 7).

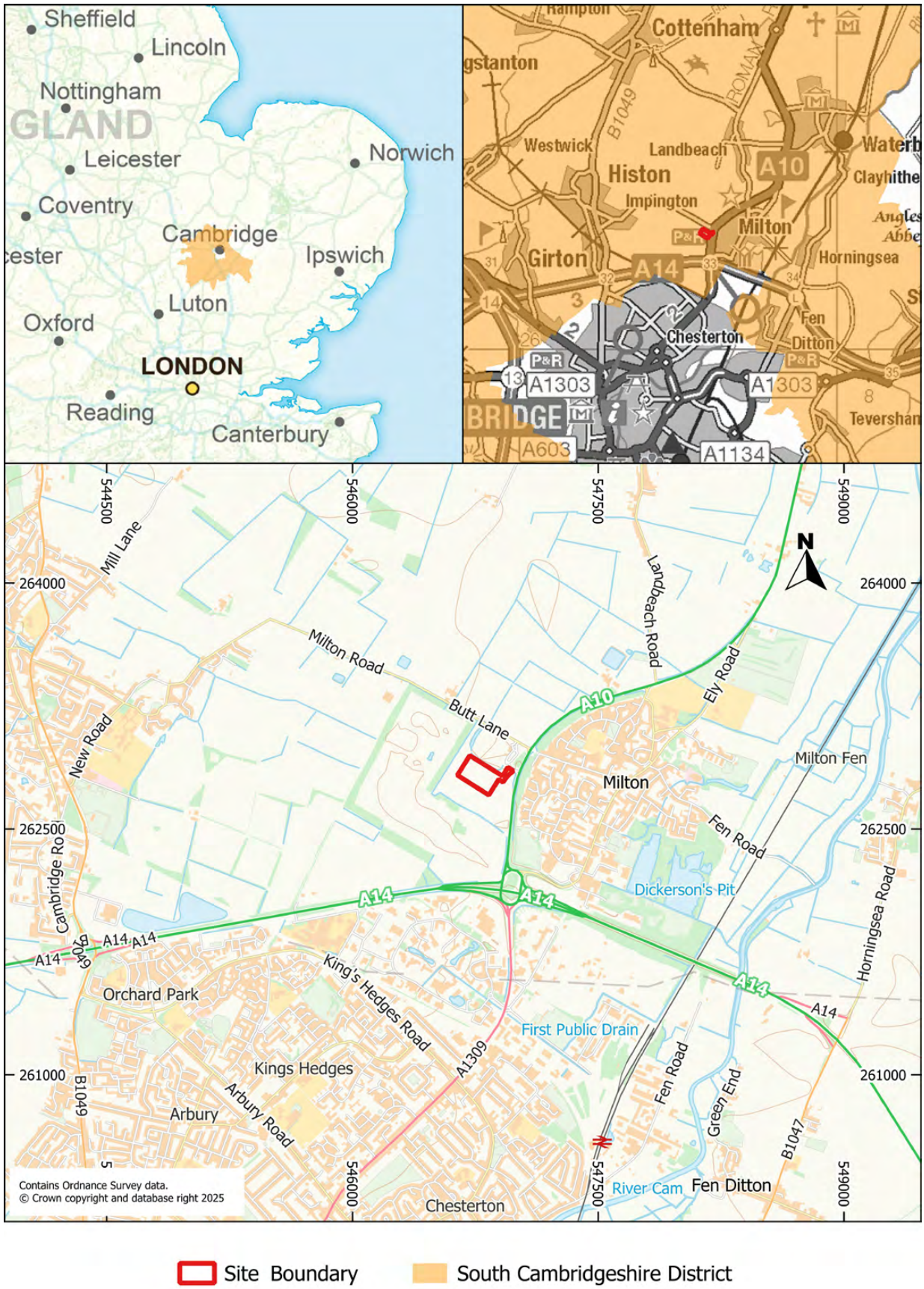

Figure 1.1. Site location.

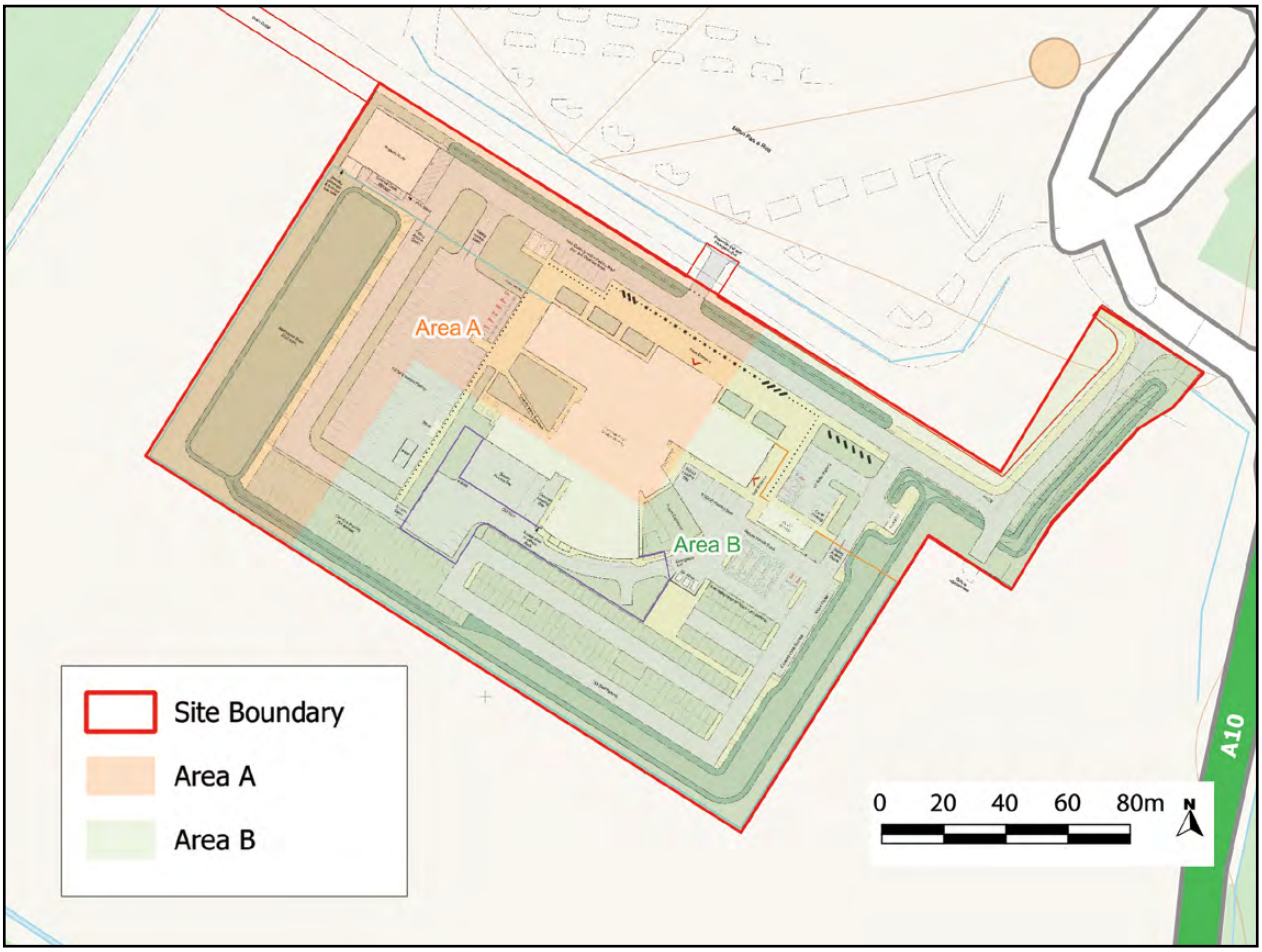

Figure 1.2. Excavation location.

The overlying soils are characterised by the Cranfield Soil and Agrifood Institute as *Soilscape* 9, which is lime-rich loamy and clayey soil with impeded drainage, and *Soilscape* 5, which is freely draining lime-rich loamy soil (Cranfield University 2025).

The site lay at 10–11m above Ordnance Datum. The land was broadly flat on a low terrace of the Cam Valley, situated to the south of the Fens and approximately 1.75km west (at its closest point) of the north-east-flowing River Cam.

Archaeological and historical background

Introduction

The Police Station site is in an area that has been subject to a remarkable amount of previous archaeological work (Figure 1.5). Extensive archaeological fieldwork has taken place on various adjacent sites: in 1994–8 and 2007–13 at Milton Landfill immediately to the south, west and north-west (Reynolds 1994; Bray and Reynolds 1997; Connor 1997; Connor 1998; Connor 1999; Collins 2012; Collins 2013; Phillips 2013; Phillips 2015); and in 2007 at Milton Park and Ride immediately to the north (Phillips 2010; Phillips 2015; preceded by fieldwalking: Cooper 2007). As noted above, in 2021 a geophysical survey was conducted on the subject site (Summers 2021) and in 2021–22, as part of the pre-determination evaluation for the current application, trial trenching was carried out (Clarke and Newton 2022).

The following archaeological and historical background proceeds chronologically and uses information from Cambridgeshire Historic Environment Record (CHER) provided by CHET (Thomas 2022) and publicly accessible on the Heritage Gateway website (https://www.heritagegateway.org.uk/gateway/); accessed 8th August 2024), as well as from the series of reports describing archaeological fieldwork on adjacent sites. The archaeological and historical background of the surrounding area has previously been summarised in the DBA and WSI for the site (Higgs 2019; Lavender 2023, 7–13). The study area used for this background extends 1km from the Police Station site. In this area there are 37 monument records, 21 archaeological interventions and 11 surveys or assessments (Lavender 2023, Table 1). There are no Scheduled Monuments, nine Listed Buildings, one Registered Park and Garden, and no Registered Battlefields.

Figure 1.3. Aerial view of the site, looking north-north-west with Milton Park and Ride top right.

Figure 1.4. Aerial view of the east part of the site during excavation, looking east-south-east towards the A10 road with the western edge of Milton beyond.

Mesolithic to Bronze Age

Evidence of brief Mesolithic activity (worked flints in topsoil), possibly representing a hunting stand, was recorded in 1994 at Milton Landfill, a short distance to the south of the Police Station site (Reynolds 1994, 8, 12; cf. Bray and Reynolds 1997, 25; CHER no. 11669A). A Mesolithic flint blade was found in 1984 in fieldwalking *c.*850m north of the Police Station site (CHER no. 05273).

A couple of possible Neolithic flakes were residual finds in Roman ditches excavated in trial trenches dug on the Police Station site in 2021–2 (Clarke and Newton 2022). Excavations at Milton Landfill in 2007–9, south-west of the Police Station site, produced worked flints (all residual in later contexts), including six blades of Mesolithic/early Neolithic date and three Neolithic scrapers (Phillips 2013). Several more struck prehistoric flints, typically consistent with a Neolithic to early Bronze Age date but not precisely datable, have also been recovered from various other excavations and fieldwalking at Milton Landfill and Milton Park and Ride. A Neolithic stone fabricator was found further east in the garden of 16 High Street, Milton, *c.*2005 (CHER no. MCB16668).

Excavations in 1996 in the north-west part of Milton Landfill, a short distance north-west of the Police Station site, revealed possible late Neolithic/early Bronze Age remains including a probable cremation with a small number of pot sherds that may be of this date, as well as a second possible cremation otherwise undatable (Connor 1997; CHER no. CB15698). Similar sherds of pottery were probably residual in an apparently Iron Age hearth and residual worked flints that could be of this date were also found. Other possible Bronze Age features identified on the basis of pottery comprised a pit, a hollow with stakeholes and a posthole or small pit, all within *c.*2m of each other.

Excavations in the south-west part of Milton Landfill in 2007–9, south-west of the Police Station site, disclosed an early Bronze Age waterhole, which contained a large assemblage of waterlogged wood, a fragment of which was radiocarbon dated to between 1700–1520 cal. BC with 95% confidence (Phillips 2013; Phillips 2015; CHER no. MCB19563). The waterhole truncated a pit that included cattle bones. At least one late Neolithic/Beaker sherd was residual in a later feature. Field ditches, a post-built roundhouse and two post alignments, all assigned to the middle to late or 'later' Bronze Age (*c.*1500–800 BC, but none particularly well dated), were also recorded on this site.

Excavations in the south-west part of Milton Landfill in 1997, partly overlapping and partly east of the excavations of 2007–9, revealed postholes of a possible roundhouse, a four-post structure, various other

postholes and pits and a midden/buried soil deposit, all dated to the middle Bronze Age (Connor 1998; CHER no. CB15707).

Somewhat further afield, a few sparse Bronze Age features were found in 1998 *c*.800m to the south-east of the Police Station site at Milton recreation ground (Lucas 1998; CHER no. CB14682), with pits (some apparently of early Bronze Age date) and ditches (some apparently of mid- to late Bronze Age date). An evaluation at Cambridge Science Park, *c*.700m south of the Police Station site (Hutton 2007; CHER no. MCB17525) recorded a pit containing a single, possibly residual, Neolithic flake and another pit with small quantities of late Bronze Age or early Iron Age pottery. Fragments of a finger-pinched rusticated Bronze Age beaker were also discovered prior to 1970, *c*.700m to the south-south-east of the subject site (CHER no. 05532; probably Cambridge Museum of Archaeology and Anthropology Acc. No. Z 14812).

Iron Age

Early Iron Age occupation was recorded in 2012–13 in excavations in the central part of the west side of Milton Landfill, west of the Police Station site (Collins 2013; CHER no. MCB19987). Features of this date included a ditch representing the south-west angle and parts of the south-east and south-west sides of a large enclosure with an entranceway in the south-east side; no internal features were identified suggesting it may have been a stock enclosure. There are hints on plan of a ditch running towards the enclosure and possibly forming a trackway *c*.10m wide along its south-west side (Collins 2013, Fig. 4). To the east of the enclosure lay three four-post structures, a post alignment and various pits also of early Iron Age date. The enclosure is visible as a sub-rectangular cropmark on both sides of Mere Way (the former Roman road running north-east from Cambridge) on an aerial photo taken in 1996, suggesting it may be a major feature measuring *c*.175m

Figure 1.5. Archaeological excavations in the vicinity of the Police Station site. The plan of the Police Station 2023 site has been imposed on Phillips' (2013, Fig. 24) plan showing other archaeological excavations at Milton Landfill and at Milton Park and Ride, with Roman features highlighted in green (reproduced with permission from Tom Phillips, Oxford Archaeology). An additional plan showing excavations at Milton Landfill in 2010–13 has been added (after Collins 2013, Fig. 2).

north-west to south-east by *c.*90m north-east to south-west (Connor 1997, Pl. 2; cf. Phillips 2013, 30, Fig. 20).

Intensive early Iron Age settlement activity (dated to *c.*600–350 BC), possibly continuing into the middle Iron Age, was found in 2007–9 during excavations in the south-west part of Milton Landfill (Phillips 2013; Phillips 2015), south-west of the Police Station site. This settlement comprised a scattered and seemingly unenclosed agricultural community represented by a series of large waterholes accompanied by the remains of post-built structures, including roundhouses and granaries, as well as small groups of pits. A partial log ladder with two surviving steps rested on the base of one of the waterholes and was radiocarbon dated to between 800–510 cal. BC at 95% confidence. Another log ladder was recovered from a different recut waterhole and this ladder was radiocarbon dated to 740–400 cal. BC at 95% confidence. A few narrow linear ditches from this site were tentatively dated to the late Iron Age.

Evidence for middle Iron Age activity was uncovered in 2010–11 during excavations in the centre-west of Milton Landfill immediately to the south of the 2012–13 excavations and to the north of the 2007–9 excavations (Collins 2012; CHER no. MCB19987). This activity included five four-post structures, a north-west to south-east ditch and a dispersed scatter of other postholes and pits. An earlier excavation in 1998 in the area surrounded by the 2010–11 and 2012–13 excavations revealed postholes, some probably structural, including a possible roundhouse as well as pits, all said to be of middle to late Iron Age date (Connor 1999; CHER no. CB15708).

Postholes (including possible four-post structures), pits and a pair of parallel east–west ditches that may have represented boundaries or a trackway, all regarded as late Iron Age in date, were recorded in 1997 in the south-west part of Milton Landfill, in an excavation area partly overlapping and partly east of the excavations of 2007–9 (Connor 1998; CHER no. CB15707).

Excavations in 1994 in the south-east part of Milton Landfill, south of the Police Station site, disclosed a multi-phase Iron Age farming settlement (dated to the late Iron Age) with ring ditches, field boundary ditches, enclosures, timber structures and gravel extraction pits, as well as a feature initially thought to be a timber mortuary enclosure, but apparently later reinterpreted as a possible kiln (Reynolds 1994, 8–10; cf. Phillips 2013, 9; CHER no. 11669A). In 1995 evaluation trenches at Milton Landfill adjacent to and west of the 1994 site revealed the continuation of the Iron Age settlement ditches as well as a ring ditch and post-built structures (Anon. 1995; CHER no. 11669A).

Late Iron Age remains including a large number of postholes, probably representing several structures, as well as pits and a hearth, were also uncovered in a 1996 excavation in the north of Milton Landfill, a short distance north-west of the Police Station site (Connor 1997; CHER no. CB15698). On the basis of the pottery this occupation dated to the 1st century BC. A north–south ditch was dated to the late Iron Age/?early Roman period.

Excavations in 2007 at Milton Park and Ride, immediately to the north of the Police Station site, identified the southern edge of a substantial 'later' Iron Age (dated to *h.*350–*c.*50 BC) rural settlement with evidence of a roundhouse, post-built structures, pits, a waterhole, a trackway and ditched fields (Phillips 2010; Phillips 2015; CHER no. MCB18209). The waterhole contained a log ladder radiocarbon dated to 400–200 BC at 95% probability. This settlement did not appear to continue into the southern part of the site (adjacent to the Police Station site) and the main part of it presumably lay further north beyond Butt Lane. There were two further phases of reorganisation of this settlement, which by the late Iron Age was represented by a large rectangular enclosure containing an internal sub-enclosure and surrounded by several waterholes.

Roman

The Police Station site is located *c.*500m east of Akeman Street, also known as Mere Way, which was part of the Roman road (Margary 1973, Road 23b) that ran north-east from Roman Cambridge into the Fens, probably passing through Ely and perhaps terminating at Littleport or continuing to meet Margary (1973) Roads 25 and 38 at or near Denver (Norfolk). A section of this road was excavated in 1991, west-north-west of the Police Station site, during the laying of a water main from Milton to Histon. This excavation revealed flanking ditches 16m apart, between which lay an agger of hard-packed clay silt, 10m in width and 0.45m in height, covered by 0.15m of sandy gravel road metalling (Ozanne 1991; CHER no. 07610).

In 2021 a geophysical survey was conducted on the Police Station site itself (Summers 2021). This identified numerous linear anomalies that appeared to form a series of rectilinear ditched enclosures across the entire development area. In 2021–2, evaluation trial trenches were dug targeting these linear anomalies, which confirmed the presence of ditch features (Clarke and Newton 2022). A significant amount of Roman pottery (1066 sherds; 25,689g) was recovered, including numerous well-dated small groups from ditches, indicating that the enclosures dated to the late 3rd to 4th centuries AD — that is to the late Roman period. Two possibly distinct phases of occupation within the

late Roman period were noted: the first datable to the late 3rd to early/mid-4th centuries AD and the second to the mid- to late 4th century. Postholes and possible beam slots were also identified. The archaeobotanical assemblage demonstrated the frequent processing, use, and carbonisation of cereal crops, with a concentration of deposits of carbonised material in one location sufficient to suggest that a corn-drying oven or malt-drying kiln was located near this point. Mill or quern stone fragments recovered from several locations provided further evidence for crop processing. The animal bone assemblage was mostly composed of the waste from meat processing and meat consumption. The evidence, in totality, was consistent with the use of the site as agricultural yards or working areas. A few loose fragments of roof tile, box flue tile and bessalis brick were also found, which suggested the former presence of a well-appointed Roman building in the vicinity, whilst a few fragments of worked sandstone and limestone may also have derived from a building.

An excavation *c.*200m to the south of the subject site, at Milton Landfill in 1994, revealed four phases of Roman settlement activity (Reynolds 1994, 10–12; CHER no. 11669). The first of the Roman phases (Phase 4) comprised boundary ditches (including at least one possible large rectangular enclosure), which were recut on slightly different alignments in a subsequent phase (Phase 5). The ditches from these two phases were thought to be part of an estate associated with a Roman villa as roof tile, box tile and worked stone — perhaps representing destruction material from a villa or stone building — was found in the fills of the ditches in the northern part of the site. The most likely location for this possible villa would perhaps be in the unexcavated area north of the 1994 excavation at Milton Landfill and south of the Police Station site. A series of north-west to south-east ditches that ran at right angles to the Roman road (Akeman Street) were subsequently cut (Phase 6). These silted up and in a final Roman phase (Phase 7) a timber barn associated with an oven/corn dryer, pits and a pond was constructed in the north part of the site.

In 1995 evaluation trenches at Milton Landfill adjacent to and west of the 1994 site confirmed that the Roman boundary ditches extended into the northern part of this area (CHER no. 11669; Anon. 1995; Bray and Reynolds 1997, Fig. 2; cf. Phillips 2013, Fig. 24). In the northernmost trench (Trench I) three inhumation burials were found, the fills of which included small fragments of Roman pottery. A barrow containing three cremations and 15 inhumations appears to have been found *c.*50m further south-east in Trench IV (CHER no. CB15701; cf. Bray and Reynolds 1997, 1, 26). Most of the barrow burials lacked grave goods, but two small jars were found in a box containing a cremation and a whole pot was placed in one of the graves, which also contained a fragment of bone pin. The burials were thought to span the 2nd and 4th centuries.

An excavation in the south-west part of Milton Landfill in 1997, south-west of the Police Station site, uncovered a sequence of quarry pits targeting a restricted area of fine white gravel (Connor 1998; CHER no. CB15707). These pits produced only Iron Age pottery, but were probably dug to provide material for the construction of the Roman road north-east from Cambridge that was situated just over 100m to the west. A pair of parallel east–west ditches *c.*20m apart included a few Roman sherds in their fills and may have been a replacement of a late Iron Age trackway.

In 1998 an excavation took place in the central part of the west side of Milton Landfill, west of the Police Station site (Connor 1999; CHER no. CB15708). The whole of this excavation area was crossed by a series of 20 closely-spaced (2 to 3m apart) parallel north-east to south-west cultivation ditches/planting beds, which produced only small abraded pot sherds of broad Iron Age date. A small pit cutting one of the cultivation ditches included a Colchester or Colchester Derivative type brooch datable to the 1st century BC or 1st century AD.

The continuation of these planting beds was revealed in excavations at the landfill in 2010–11 and 2012–13; they are very probably Roman in date rather than late Iron Age, although there is a lack of available evidence to prove this with certainty. The 2010–11 excavations covered a large area immediately to the south and east of the 1998 excavation (Collins 2012; CHER no. MCB19987). Here, the Middle Iron Age features were overlain by a remarkably preserved system of agricultural planting beds spaced between 2 and 3m apart (more than 50 aligned north-east to south-west, spanning an area at least 200m east–west by 85m north–south). These planting beds produced a small amount of pottery of middle Iron Age and late Iron Age/early Roman date. They terminated to the south where they were bounded by a gully, but extended beyond the limit of excavation to the north, west and east. In the south-west part of the site there was an extensive area of intercutting quarry pits, which produced Iron Age pottery, but were probably Roman in date with a similar function to the pits found in the 1997 and 2007–9 excavations a short distance to the south.

Excavations at Milton Landfill in 2012–13 (Collins 2013; CHER no. MCB19987) took place a short distance to the north of those from 1998 and 2010–11. The northern continuation of the Roman agricultural planting beds recorded in 1998 and 2010–11 was recorded, along with their northern boundary ditch, indicating that the

beds ran north-east to south-west for *c*.105m. To the north of the boundary ditch was another parallel ditch; these two ditches probably formed a trackway, *c*.8m wide, running along the north side of the planting beds towards the Roman road. Several groups of apparently Roman quarry pits were also identified cutting the planting beds and trackway. Hardly any Roman pottery or other objects were recovered from this site indicating that it lay some distance from any related settlement activity.

Excavations at Milton Landfill in 2007–9 (Phillips 2013) took place immediately to the south of the 1998 and 2010–13 excavations and to the north and west of the 1997 excavations. Early Roman activity was represented by hundreds of shallow quarry pits in an area of good quality gravel, probably for the surfacing of the Roman road a short distance to the west. These pits included mainly residual Iron Age pottery, but 27 sherds of Roman pottery were also recorded. There was also a ditch of Roman date, which ran north-west to south-east, approximately at a right angle to the Roman road.

In 2007 an excavation was undertaken at Milton Park and Ride, immediately to the north of the Police Station site (Phillips 2010). The Roman remains consisted only of three sides of a single square or rectangular enclosure, the fills of which included late Roman Oxfordshire colour-coated ware. A very small amount of Roman pottery was found in the excavations (well below the amount of Iron Age pottery) suggesting that, in contrast to the middle to late Iron Age, the area of this site was not intensively settled in the Roman period.

Various other stray Roman objects have been recorded within the 1km study area, including a lead fully-costumed emperor figure found in Milton, *c*.800m east of the Police Station site (CHER no. 05533). Metal detecting about 600–800m north of the site produced a fragment of a bronze jug handle (CHER no. 08778), two copper-alloy bow brooches, three copper-alloy radiates of the House of Constantine (early to mid-4th century), four barbarous radiates (late 3rd century) and one unidentified silver coin (CHER no. MCB16263), as well as four illegible Roman coins, possibly of the late 3rd century (CHER no. 08779). A scatter of Roman pottery sherds of 2nd- to 4th-century date was found in 1970 during fieldwalking *c*.500m north-east of the site (CHER no. 05538). Fieldwalking in 1984, *c*.600m north of the site produced Roman pottery including samian, greyware, colour-coated ware and Horningsea ware (CHER no. 05273A). These finds suggest Roman settlement in the vicinity of the site, with a clear concentration of finds to the north and possibly even a high-status burial from which the jug handle may have derived.

Anglo-Saxon and medieval

Milton is recorded in historical sources regarding land grants and exchanges from the 970s onwards (Wright and Lewis (eds) 1989, 179), indicating that the settlement was in existence by the late Anglo-Saxon period. Archaeological evidence for Anglo-Saxon activity in the area is, however, limited. A bronze wrist clasp apparently of Anglo-Saxon date was found during the 1995 excavation at Milton Landfill, south of the Police station site (Bray and Reynolds 1996, 2). A 9th-century gilded silver pin was also 'found at Milton' *c*.1984 (CHER no. MCB27492).

The medieval and later history of Milton is outlined in detail in Wright and Lewis (eds) (1989, 177–92). At the time of Domesday (1086) there were 31 peasants and 5 *servi*. The village church was first recorded in the mid-12th century; the medieval church of All Saints, so named by 1520, is now a Grade II* Listed Building. The former medieval manor lay on the south-east side of Milton, well to the east of the subject site.

Excavations in 2007 at Milton Park and Ride (Phillips 2010, 31–2; CHER no. MCB18210), immediately to the north of the Police Station site, produced the foundations of a medieval windmill on the northern limit of excavation, the fills of which included pottery of 13th- and 14th-century date. Remains of ridge and furrow cultivation of medieval or post-medieval date have been recorded in the various excavations around the Police Station site, as at Milton Park and Ride to the north (Phillips 2010, 32–3) and on Milton Landfill to the south and west (Connor 1997, 27; Connor 1998, 23–5; Connor 1999, 20–1; Collins 2012, 4; Collins 2013, 4; Phillips 2013, 29). A sherd of medieval Ely ware was found in 2006 during fieldwalking on the Milton Park and Ride site (Cooper 2007, 15–16) and a small amount of medieval pottery was retrieved in 1990 during fieldwalking on the Milton Landfill site (CHER no. 10211C). Medieval features and finds are otherwise rare in the immediate vicinity of the subject site, suggesting that during this period it lay in an area principally comprised of agricultural fields.

Slightly further afield, undiagnostic medieval pottery including possible Stamford and Cistercian ware was discovered during fieldwalking in 1984, *c*.600m north of the Police Station site (CHER no. 05273B), whilst a silver coin long cross penny of Edward I or II has been recorded from a location *c*.800m north of the Police Station site (CHER no. MCB16263).

Post-medieval to modern

Historical records indicate that by the late 16th century, and probably by 1300, Milton parish was mostly divided between arable open fields occupying its western four fifths, including the area of the site (which lay in an area known as South field), and the fen pastures to the east (for full details, see Wright and Lewis (eds) 1989, 182–6). The large arable fields were divided into selions in separate ownership, averaging two-thirds to three-quarters of an acre in size. In 1800 Samuel Knight (owner of the Milton manorial estate) and the rector obtained without opposition an inclosure Act. The allotments were set out that year, the award being executed in 1802. South field was mostly divided into ten smaller allotments.

The first edition Ordnance Survey 1:10,560 map of 1886 shows the site in an area of fields south of Butt Lane and north and east of the Thirteenth Public Drain; the nearest buildings lay to the north and north-east along Butt Lane, whilst to the east, on the south-west side of Milton, were a series of orchards, greenhouses and associated buildings, known as 'The Vineries', used for market gardening (cf. Wright and Lewis (eds) 1989, 182–6).

The former medieval manor of Milton was moved to a new position near the village church *c.*1550. The current Milton Hall was built by Samuel Knight, who probably completed it in 1794 (Wright and Lewis (eds) 1989, 179–82). Its surrounding park was laid out to designs of 1789 by his friend Humphrey Repton, producing a vista east from the house surrounded by plantations, and a lake to the south-east. Milton Hall is a Grade II Listed Building, but the building and its grounds lie well to the east of the subject site.

Post-medieval features revealed through excavations immediately around the Police Station site, as at Milton Park and Ride to the north (Phillips 2010, 33) and on Milton Landfill to the south and west (Bray and Reynolds 1997, 5; Connor 1997, 27–9; Connor 1998, 23–5; Connor 1999, 20–1; Collins 2012, 4; Collins 2013, 4; Phillips 2013, 29), principally related to agricultural activity, such as land drainage and ploughing.

Aims and objectives

The aims and objectives of the excavation were set out in the WSI (Lavender 2023, 14), the primary general aim being 'to record and enhance understanding of the significance of any heritage assets to be lost during the proposed development in a manner proportional to their importance, and to make this evidence (and any archive generated) publicly accessible' (MHCLG 2023, para 205).

On the basis of the preceding archaeological evaluation work on the site (Summers 2021; Clarke and Newton 2022), it was expected that an extensive system of late Roman ditched enclosures would be encountered. Previous excavations *c.*200m to the south at Milton Landfill also suggested the possible presence of a Roman villa in the vicinity (Reynolds 1994). The potential for previously unknown remains from other periods to also survive on the site was not discounted and indeed Bronze and Iron Age settlements had been found in adjacent excavations. Relevant research aims/agenda for the late Iron Age to Roman period listed in the *East of England Research Framework* (Research Framework Network 2019; cf. Medlycott (ed.) 2011; Evans 2019) included the following:

- LIA-Rom 01: How can we improve methodological approaches to the Late Iron Age and Roman periods?
- LIA-Rom 06: How can we increase our understanding of the Iron Age and Roman environment?
- LIA-Rom 07: How can we better understand the region's Roman villas?
- LIA-Rom 08: How might we distinguish Roman estate-centres?
- LIA-Rom 13: How can we increase our understanding of Late Iron Age and Roman farmsteads?
- LIA-Rom 14: How can we improve the environmental sampling of Late Iron Age and Roman farmsteads?
- LIA-Rom 18: How can we make greater use of artefact distributional analyses?
- LIA-Rom 19: How can we make greater use of metal-detecting during the excavation of Roman sites?
- LIA-Rom 20: How can we improve the recovery of Late Iron Age and Roman buildings?

Methodology

Coverage and fieldwork

The excavation was undertaken according to the methodology set out in detail in the agreed Written Scheme of Investigation (Lavender 2023) and in the archive report (Davey and Morris 2025). The site was excavated in two parts. Area A was excavated first, with spoil placed at the eastern extremity. After approval from CHET, Area B was excavated, with spoil double-handled back to Area A (see Figure 1.2). All archaeological features and deposits were sample excavated, with targeted excavation addressing site-specific questions related to date, sequence, function, and deposition

processes. Discrete features, like individual pits and postholes, were half-sectioned, while linear features, such as ditches, were sample excavated at intervals of at least 1m, covering a minimum of 25% of their length, with all junctions and terminals investigated.

Metal-detecting survey

A metal-detecting survey was conducted as an integral part of the broader fieldwork programme. Areas for survey were chosen based on insights from complementary geophysical and geochemical techniques. The scope of the survey included comprehensive area coverage as well as targeted transects set at 20m intervals, aligned with the longest boundary of each surveyed land parcel. A sweep width of approximately 2m (1m on either side of the operator) targeted all types of metals.

Artefacts were not removed from depths greater than the plough soil or from undisturbed contexts earmarked for archaeological excavation. Each artefact identified was carefully recorded, assigned a unique identification number, and its exact location was pinpointed using Ordnance Survey Active Global Navigation Satellite System (GNSS) network equipment with an accuracy exceeding ±0.5m. Post-medieval or modern artefacts were only collected if they held particular significance. Furthermore, significant non-metallic artefacts identified during the metal-detecting survey were recorded using Real Time Kinematic (RTK) GNSS equipment, ensuring high precision in documentation. All metal-detecting personnel were proficiently trained and utilised high-grade instruments from ARS Ltd, such as MineLab 600 and Deus XP.

UAV photographic survey

Unmanned aerial vehicles (UAVs) were utilised to perform aerial photography, capturing high-resolution images from overhead. This enhanced the photographic documentation and supported detailed site recording through photogrammetry. UAV surveys were conducted using a multi-rotor drone equipped with a 12-megapixel camera (focal length of 20mm, ISO range of 100–3200, CMOS sensor), ensuring a minimum ground sampling distance of 5.1 cm/pixel. The photographic overlap achieved was 80% frontal and 60% side, optimizing the coverage and detail of the imagery.

This UAV-based survey was crucial for producing accurate and detailed orthomosaics of the site, which were further enhanced using raster calculations within QGIS to better visualise ephemeral archaeological features. The integration of fixed ground control points, recorded with RTK GNSS equipment to an accuracy of >±0.5m, ensured high precision in the aerial surveys.

Survey techniques and methodologies employed on site

To maximise data capture directly in the field, a Leica Viva GS08plus equipped with a custom codelist and symbology was employed. This marked a significant departure from previous manual recording methods, where features were drawn at a 1:20 scale, and transformed the process into a streamlined digital survey approach. By integrating this system, the need for manual sketches was effectively eliminated, as the GPS was used as a digital tool to survey feature outlines, capture variations in topography, sample data, and find distributions and section point locations.

The captured data was exported in DXF and CSV formats. Initial processing was conducted in Draftsight, where polyline data was refined using quadratic smoothing techniques to ensure alignment with our field observations — particularly for complex features like pit clusters and curvilinear elements. During this stage, layers were organised systematically before exporting the project as a DXF file for import into QGIS. Despite experimenting with QGIS's CAD capabilities, the objective remained to establish a methodology that could be seamlessly adopted more widely. An edited CSV table containing contextual information was linked within QGIS, enriching the spatial data with descriptive details and ensuring comprehensive attribute data integration.

Recognising the potential of drone technology in archaeological surveys, an integrated approach was employed. While traditionally, orthomosaics are often employed merely as visual aids, these were fully embedded within our GIS workflows, enhancing the accuracy and detail of our survey process. To achieve this, conducted drone flights were undertaken using a DJI Air 2S at an altitude of 30m, providing an optimal level of detail with a Ground Sampling Distance (GSD) of approximately 0.0033m per pixel. This level of resolution ensured that even subtle features and landscape variations were accurately captured, contributing to a high-resolution dataset that could be precisely analysed and incorporated into our broader survey methodology.

To ensure accurate georeferencing and maintain consistency throughout the survey, a network of 12 permanent ground control points (GCPs) was established across the site. Eight of these were strategically placed around the site's periphery to form a robust external framework, while four were centrally located to enhance internal grid accuracy. Arranged in a triangular formation after the site clearance, these points ensured comprehensive coverage and stability. Each GCP was observed with the GNSS rover for 3 minutes on two separate occasions, with the readings

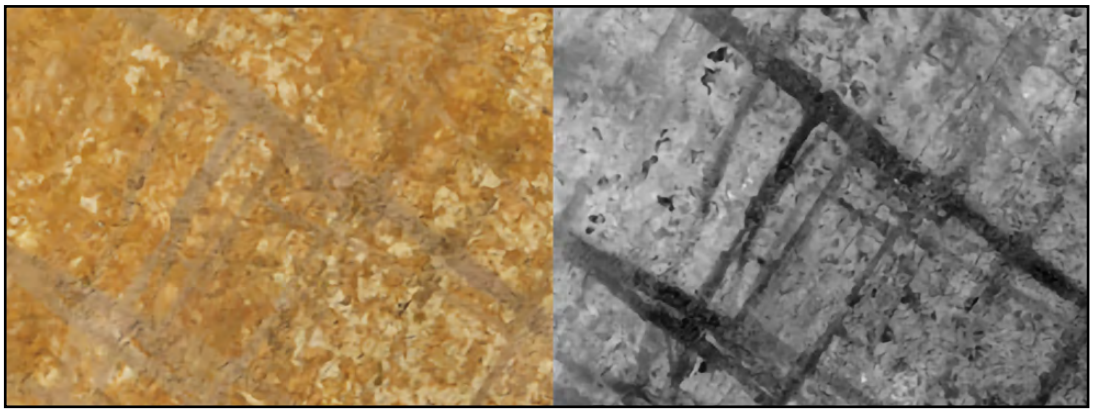

Figure 1.6. Enhancement of archaeological features on the Milton site.

averaged to improve precision. This dual observation method effectively minimised random errors and reduced the influence of multipath errors, which are common in GNSS surveys.

As a result, the final orthomosaic achieved an exceptionally high degree of positional accuracy, with an XY accuracy ranging from 0.01 to 0.025m and a Z accuracy of approximately 0.02m. These carefully established GCPs served as reliable reference points for all subsequent surveys conducted on the site, ensuring the spatial data collected remained consistent and precise.

The aerial data was processed using Agisoft Metashape, resulting in an orthomosaic and Digital Elevation Model (DEM) exported as GeoTiff files, which were then imported into QGIS. Where archaeological features were not immediately visible, their representation was enhanced by directly annotating the orthomosaics in QGIS, creating new polygon data that was subsequently exported as a DXF file and integrated back into our CAD project.

Despite the accuracy achieved, challenges with the ephemeral characteristics of some archaeological features were encountered, particularly those formed from naturally silted soils. To address these challenges, advanced data processing workflows inspired by multispectral image analysis techniques were adopted. Specifically, raster algebraic operations were used

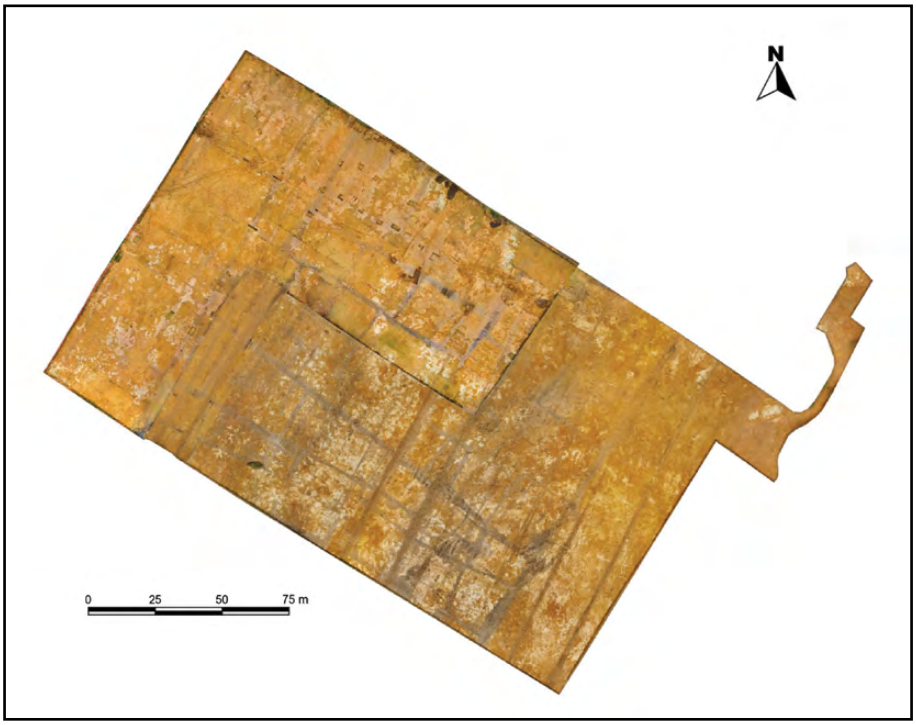

Figure 1.7. Area othomosaic.

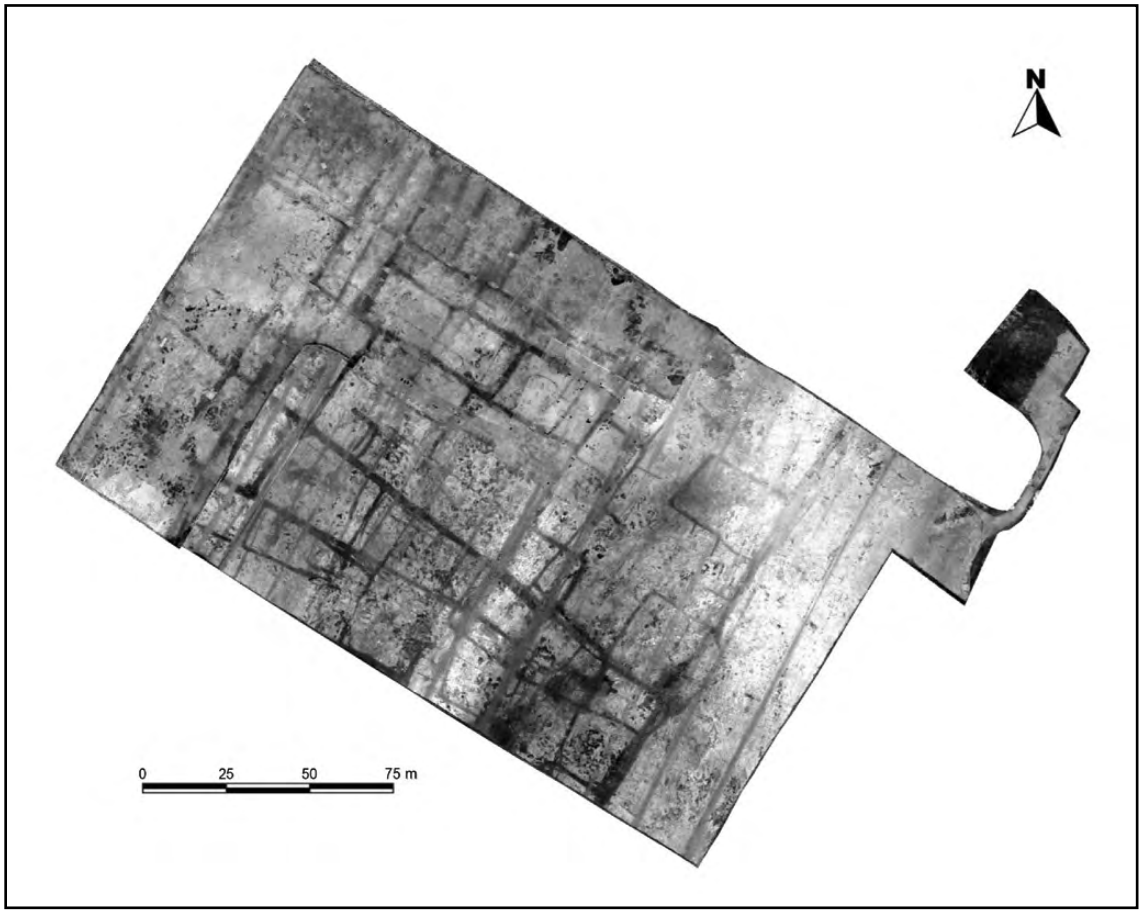

Figure 1.8. Area enhanced orthomosaic.

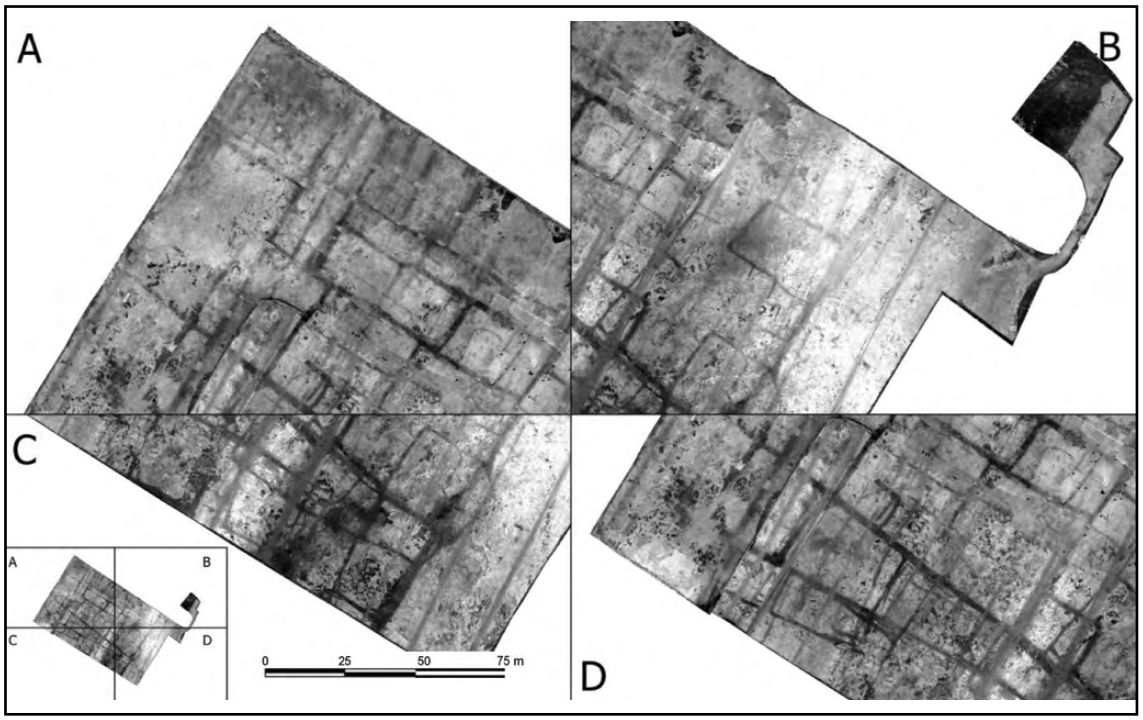

Figure 1.9. Area enhanced orthomosaic (zoned).

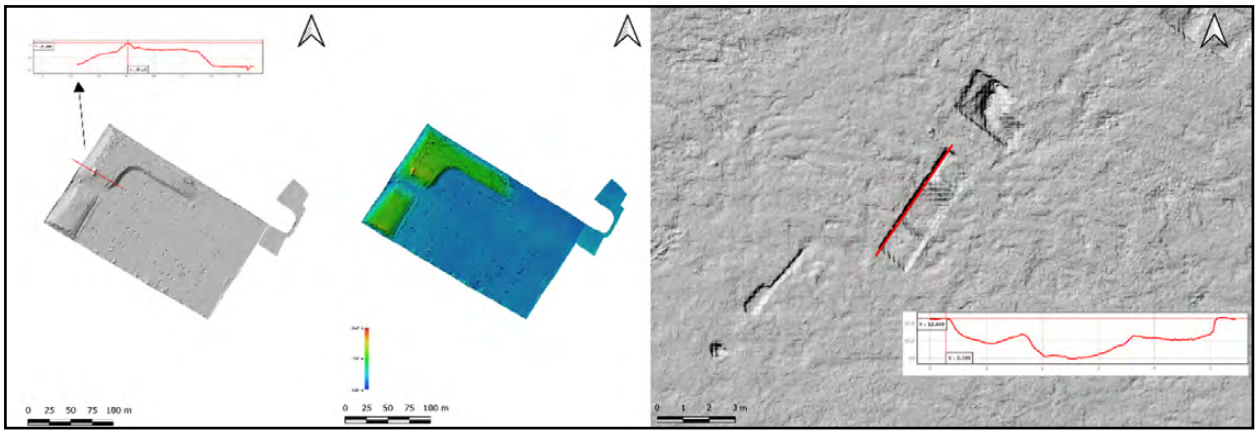

Figure 1.10. Enhancement of topographic visibility on the Milton site.

within QGIS's raster calculator, applying differential band analysis by subtracting the red spectral band from the green band. This was followed by the application of histogram equalization, optimizing brightness, contrast, and saturation to enhance feature visibility (Figure 1.6–Figure 1.9).

Further analysis was conducted using the Semi-Automatic Classification Plugin (SCP) in QGIS, where supervised classification techniques were applied. This involved defining Regions of Interest (ROIs) and training spectral signatures to refine the classification schema, significantly improving the detection and differentiation of subtle archaeological features. The DEM data was processed in two formats: a paletted version for straightforward visual assessment and a non-paletted hillshade version to enhance topographic visibility. This comprehensive visualization validated on-site survey data, particularly section profiles, and facilitated the extraction of critical topographic information (Figure 1.10).

Site phasing

A chronological phasing sequence was established for the site on the basis of stratigraphic and spatial analysis of the features revealed in excavation, combined with analysis of the artefactual evidence. This sequence is summarised in Table 1.1 and the evidence is described in greater detail in the following chapter of this monograph. All of the excavated contexts were divided into six periods (Periods 1–6). Three of the periods (Periods 2–4, late Roman) were each divided into three sub-phases, as Periods 2.1, 2.2, 2.3, 3.1, etc.

Table 1.1. Periods of activity on the Police Station 2023 site, as revealed by excavation.

Period	Date	Activity
	Neolithic to Bronze Age	Residual worked flints
1	Middle to late Iron Age	Ditch, structure (circular gully probably for roundhouse), well, pit
	Early to mid-Roman	Residual finds
2.1, 2.2, 2.3	Late Roman, mid-3rd to mid-4th centuries AD	Enclosures, ditches, timber structures, pits, watering hole/well, oven
3.1, 3.2, 3.3	Late Roman, mid- to late 4th century AD	Enclosures, ditches, timber structure, pits
4.1, 4.2, 4.3	Late Roman, late 4th to ?5th centuries AD	Enclosures, ditches, timber structures, pits, infant burials
5	Medieval/post-medieval	Furrows, ditches
6	Modern	Pit, manhole, geo-tech pit, intrusion

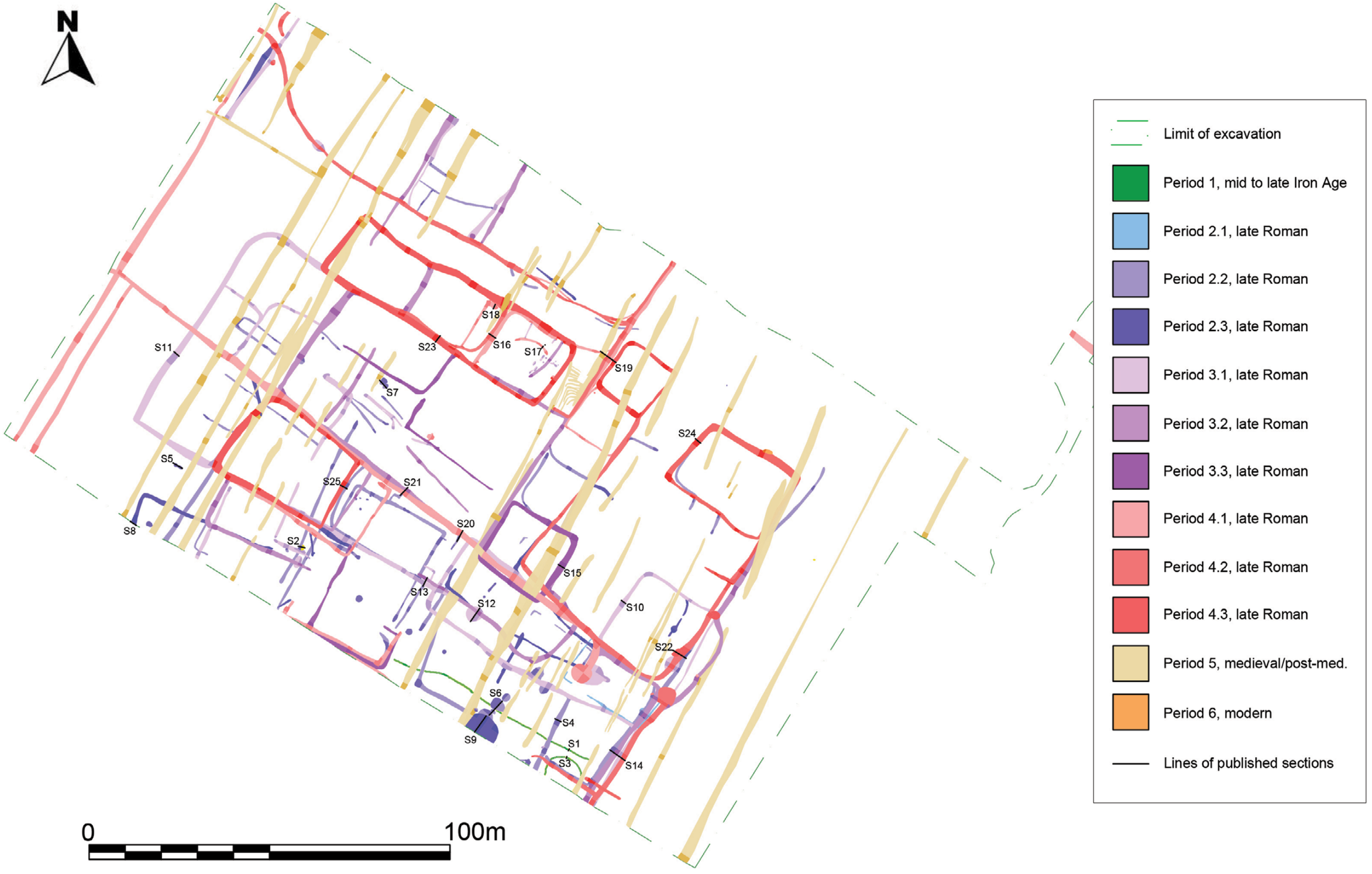

Figure 1.11. Archaeological phased plan of the site showing features of all periods and the lines of Sections 1–25 (S1–S25).

An overall phased plan of the excavation area is presented in Figure 1.11, with more detailed plans of the different periods and their sub-phases included below in Chapter 2. It should be noted that the repeated recutting of numerous Roman ditches (Periods 2–4) on similar, sometimes slightly varying, alignments, the lack of directly observable relationships between many features, the presence of various isolated features and the lack of a surviving sequence of occupation layers between the natural deposit and the post-medieval plough soil, means that there is a necessary degree of uncertainty in the complex phasing.

Chapter 2

Results

Introduction

The topsoil/overburden on the Police Station 2023 site consisted of a modern plough soil (001), which overlay a post-medieval/modern subsoil (002). These were excavated by machine down to the archaeological horizon. Archaeological features were typically cut into a natural deposit (003), described on site as a yellow-brown silty clay gravel.

The phasing of archaeological features has been outlined above at the end of Chapter 1, Table 1.1. Summary text descriptions of the key features from each period are presented below in order. A table providing full descriptions and phasing for all contexts is included in the archive report (Davey and Morris 2025, Appendix I).

Unstratified prehistoric struck flints

The earliest human activity was evidenced by seven humanly struck flint flakes probably datable (on the basis of the flint-working strategy used) to the middle Neolithic period or later (for detailed discussion, see below, pp. 86-7). These flakes were likely associated with activity of some description at the site during or after the late 3rd millennium BC, but all were residual in features of Roman or post-medieval date.

Period 1. Middle to late Iron Age

Four features were found which have been assigned to the middle to late Iron Age (Figure 2.1). The first of these was a somewhat meandering linear ditch (D13), surviving up to 0.46m wide and 0.15m deep, that ran north-west to south-east for at least 64m in the south-east part of the site (Figure 2.2, Section 1; Figure 2.3). The line of D13 was crossed (and presumably cut) by three features assigned to Period 2.2 (ditch D12, pit [855] and ditch [899]). A single small sherd (8g) of shell-tempered ware of late Iron Age to Roman date was recovered from a fill of D13 (1231).

Just 1.5m to the south of D13, and possibly contemporary/associated with it, was the ditch/gully of a circular enclosure (ST4) with an internal diameter of *c.*9.5m (Figure 2.2, Section 3; Figure 2.4). This ditch had a maximum surviving width of 0.44m and depth of 0.27m. Just three sherds (19g) of pottery were recovered from one of its fills (1115). These were in coarse sandy grey ware (CSGW) of Roman date. ST4 most likely represented the drip gully of a structure of Iron Age date, perhaps a roundhouse. The small quantity of Roman pottery may be intrusive, or the ditch may still have been filling up into the early Roman period. A Roman date for the ditch/structure cannot be entirely ruled out as circular buildings were still constructed across parts of England throughout the Roman period and into the 4th century AD, although they declined over time in relation to rectangular buildings. Perhaps the densest concentration of Roman circular buildings in England is on the so-called 'West Anglian Plain' (Smith 2016a, 47–51, Figs 3.4–3.7), which includes the fen-edge Ouse and Nene valleys and the Cambridge area and 4th-century AD examples are apparently known from several sites in this region (Smith 2016a, Fig. 3.6; Smith 2016b, 168, Fig. 5.29). Nonetheless, an Iron Age date for this feature seems most probable. No entranceway (i.e. a gap) was recorded in the ST4 gully, but the southern part of the feature extended beyond the limit of excavation. An environmental sample from the gully produced barley grains alongside hulled wheat glumes (see Aitken, below). The number of hulled wheat glumes present in the assemblage suggests that some small-scale localised crop processing activities were taking place within Structure 4 during this period. Weed seeds were also identified in the sample that are often found alongside late-stage crop processing waste material.

In the south part of the site, *c.*41m north-west of the western recorded limit of D13, was a vertical-sided well [907], 1.41 by 1.36m and 1.2m deep (Figure 2.2, Section 2; Figure 2.5). It had three fills. The basal fill (908) contained four preserved pieces of waterlogged wood, all with traces of woodworking (Figure 2.5; for details, see report by Michael Bamforth, Section 5.19). The second fill (909) had no finds. The upper fill (910) represented a dump of rubbish, presumably to level the surface after the well had fallen out of use. This upper fill included sherds of middle to late Iron Age flint-tempered pottery jars and a late Iron Age Black

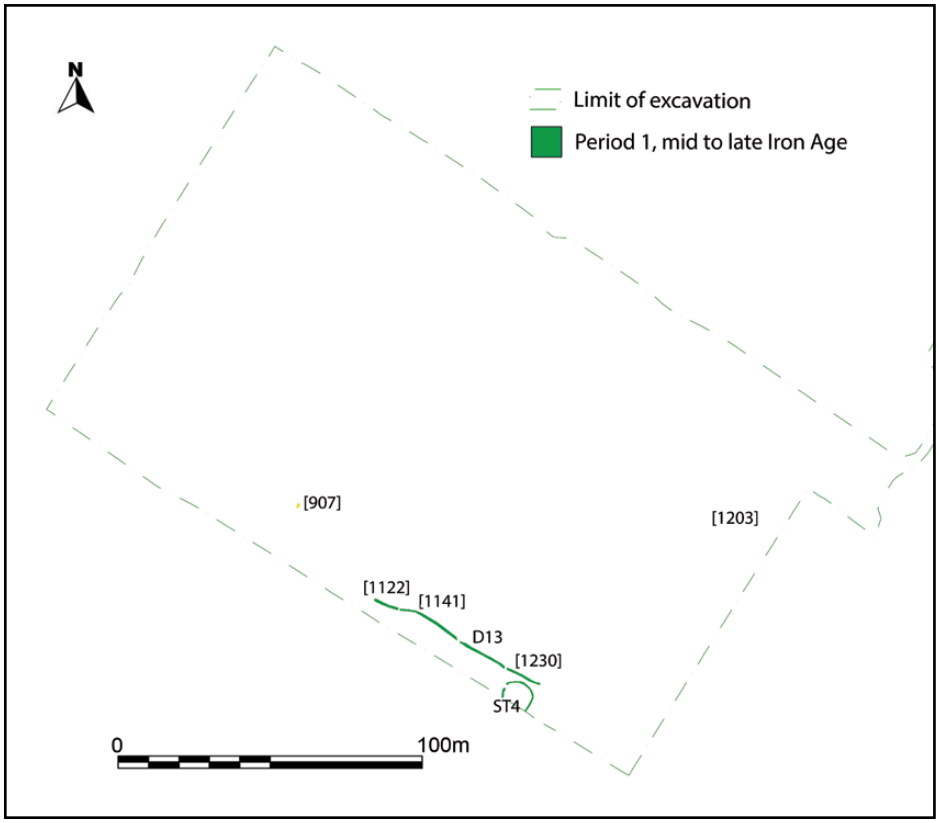

Figure 2.1. Plan of the site showing features of Period 1, middle to late Iron Age.

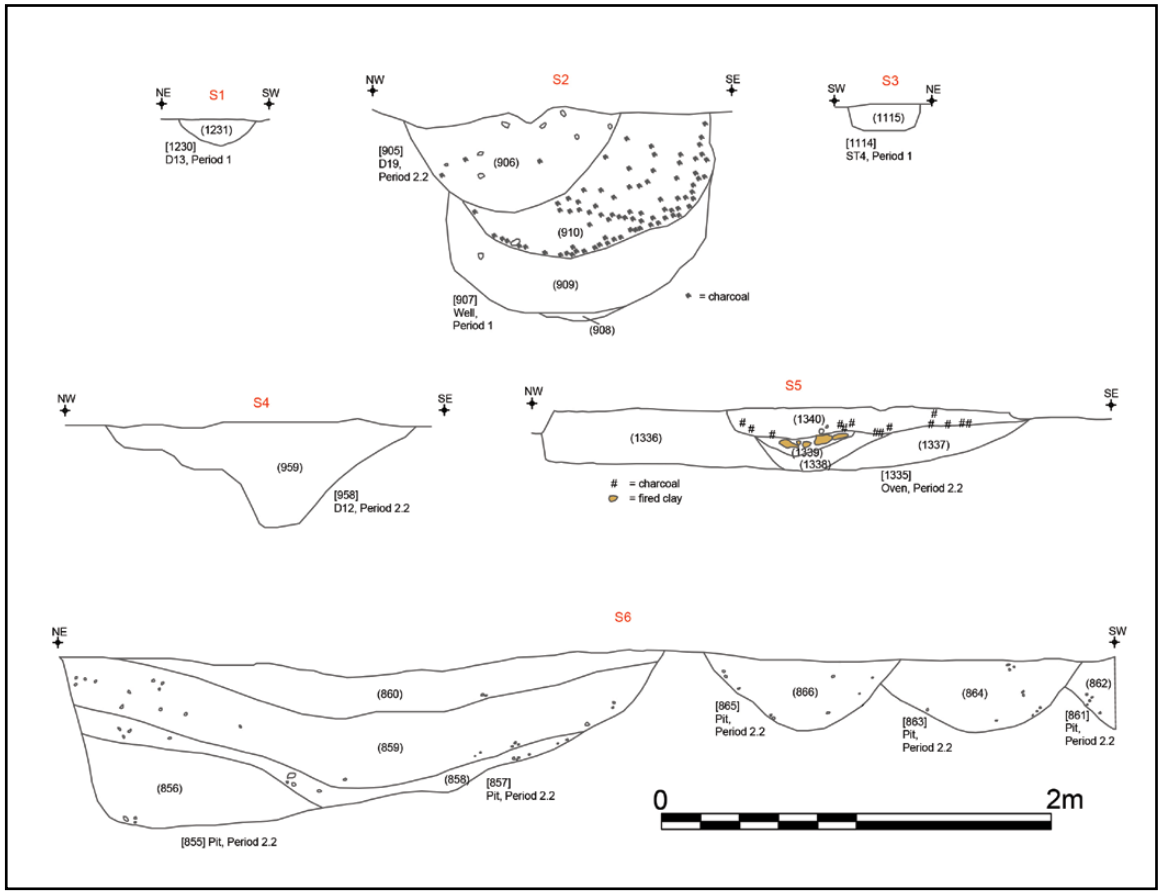

Figure 2.2. Sections 1–6 showing features of Periods 1 and 2.2 (for section lines, see Figure 1.11).

Figure 2.3. North-west-facing section of ditch D13, [1122], of Period 1. Scale 0.3m in 0.1m graduations (Photo no. 100-1184).

Figure 2.4. South-east-facing section of curvilinear gully ST4, [1114], of Period 1. Scale 0.3m in 0.1m graduations (Photo no. 100-1181).

ware jar (Figure 3.2, Nos. 1–3). A cattle mandible from the upper fill produced a middle Iron Age radiocarbon date of 398–209 cal. BC at 95.4% probability, supporting a middle to late Iron Age date for the feature and most of its infilling. The upper fill of the well was cut by D19 of Period 2.2 (Figure 2.2, Section 2), the fill of which included pottery of 3rd- to 4th-century AD date, such as an imitation D38 bowl in Lower Nene Valley colour-coated ware.

In the north-east part of the site was an isolated very shallow pit [1203], 0.71 by 0.52m and surviving only 0.07m in depth. This pit included flint-tempered (6 sherds, 45g) and black/brown ware pottery (10 sherds, 42g) of middle to late Iron Age date as well as charcoal.

Figure 2.5. South-west-facing section of well [907] of Period 1, with waterlogged oak timber (T3) in base. The upper part of the pit is cut to the left by ditch D19, [905], of Period 2.2, which is hard to perceive. Scales 2m in 0.5m graduations and 0.4m in 0.1m graduations (Photo no. 100-0951).

Early to middle Roman (residual finds)

No certain early to middle Roman features were found at the Police Station site. There were, however, some residual finds of this period recorded alongside later material in features of Periods 2–4 or later date. These early finds included some pottery, two coins, a copper-alloy bow brooch of Colchester Derivative type and a few glass vessel fragments. They presumably derived from a settlement of this date in the vicinity of the site.

Period 2. Late Roman, mid-3rd to mid-4th centuries AD

Introduction

The main features found on the site were a complex and extensive series of intercutting Roman enclosures with associated boundary ditches, trackways, structures, pits and other features, such as waterholes or wells, a pond and an oven (for an overall plan of Roman features, see Figure 2.6). Pottery and other finds (e.g. coins) indicate that these features principally date to late in the Roman period, between the mid-3rd and the late 4th or possibly 5th centuries AD. It is possible that a few isolated Roman features, and/or some of those that lay early in the stratigraphic sequence, might in fact date to the earlier in the Roman period, but on the basis of the available evidence no Roman features can certainly be assigned a date prior to the mid-3rd century AD.

Figure 2.6. Plan of the site showing all late Roman features of Periods 2 to 4.

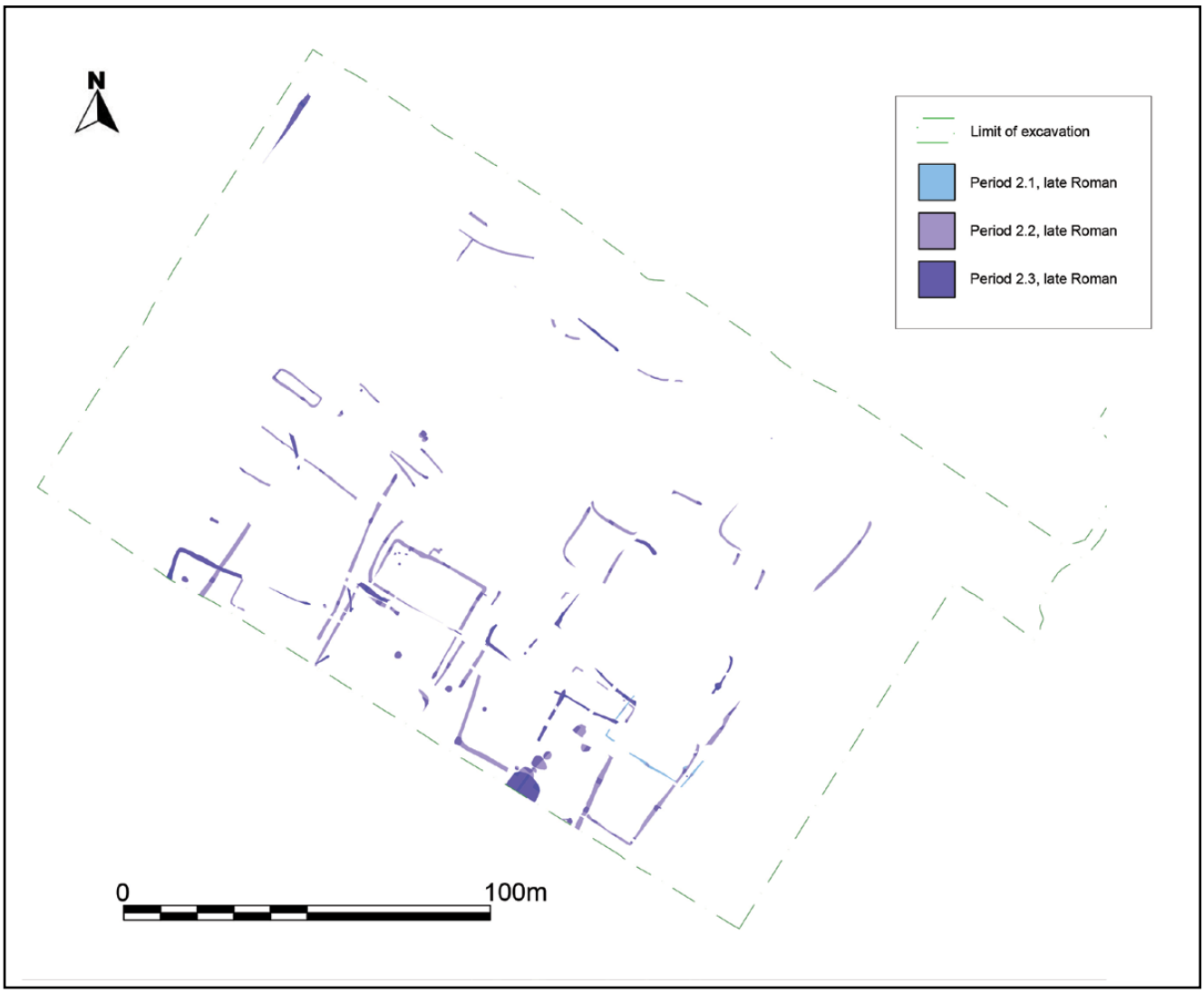

Figure 2.7. Plan of the site showing features of Period 2, late Roman.

The first Roman period (Period 2) has been dated to the mid-3rd to mid-4th centuries AD on the basis of pottery recovered from many of its constituent features. This period has been divided into three sub-phases: Periods 2.1, 2.2 and 2.3, which are described in turn below (for an overall plan of features from Period 2, see Figure 2.7). In Period 2 activity appears to concentrate along the southern edge of the site, indicating that the focus of occupation lay in this area and presumably extended further south beyond the limit of excavation.

Period 2.1

The first identified Roman sub-phase (Period 2.1) contains just two features (Figure 2.8): an enclosure with a pit apparently lying within, both of which were cut by features in Period 2.2. Some of the many other features assigned to Period 2.2 may in fact be contemporary with those in Period 2.1.

The first of the Period 2.1 features is an apparently rectangular enclosure (EN20) in the south-east part of the site, although only three of its sides were recorded (its north-east ditch was not found and may have been cut away by later ditches). This enclosure measured approximately 25m north-west to south-east by at least 16.5m north-east to south-west internally. Like virtually all of the Roman enclosure and other ditches of Periods 2–4, the ditches of EN20 were aligned approximately parallel or at right angles to the Roman road that ran west of the site, indicating that the road probably influenced its layout. The EN20 ditches varied in width from about 0.33m on the north-western side to 0.6m on the south-western side, with depths varying from 0.18m on the north-west side to 0.28m on the south-west. The line of the north-west ditch of EN20 was crossed by EN22 of Period 2.2 and by D10 and D11 of Period 2.3, whilst the line of the south-west ditch of EN20 was crossed by the south-east ditch of EN21 of Period 2.2. This indicates that EN20 was not contemporary with

EN21, EN22, D10 and D11. EN20 has been placed before these other features in the site sequence, although no relevant stratigraphic relationships were recorded on site. The fills of EN20 included a few sherds of Roman grey ware and shell-tempered ware. The south-east ditch of EN20 lay along the approximate line of a major north-east to south-west boundary that was recut on numerous occasions throughout Periods 2–4 and appeared to form the south-east limit of Roman enclosures on the site. This boundary may possibly have originated in Period 2.1, its early traces perhaps having been removed elsewhere by later recutting.

A pit, [1007], lay within the east part of EN20 and was cut by the south-east ditch of EN21 of Period 2.2. This pit included a few sherds of Roman pottery in coarse sandy grey and oxidized wares.

Period 2.2

This is the main sub-phase of Period 2. Several of its constituent features cut those of Period 2.1 or are cut by those of Period 2.3; however, many features assigned to Period 2.2 have no stratigraphic relationships with features of Periods 2.1 and 2.3 and could potentially belong elsewhere in Period 2 or even earlier or later in the Roman period. Features in Period 2.2 are shown on Figure 2.9. They include enclosures, other ditches, structures, beam slots, an oven, pits and a watering hole or well.

Enclosure 21 (EN21) was located in the south-east part of the site. It measured at least 33m north-east to south-west by *c*.20m north-west to south-east internally. It was represented by ditches on its south-west and south-east sides, with the north-west side apparently being formed by D12 (Figure 2.2, Section 4), which continued south-west of the enclosure beyond the limit of excavation. The north-east side of EN21 may have been cut away by a later ditch, e.g. the north-east ditch of EN28 of Period 3.2. The ditch defining EN21 was *c*.0.8m wide on the south-east side of the enclosure (Figure 2.21, Section 14), but only *c*.0.2m wide on the south-west side, where it was truncated by parallel D9 of Period 4.2. EN21 cut ST4 and pit [1007] of Period 2.1 and it overlapped (and was thus not contemporary with) part of EN20 of Period 2.1. EN21 was cut by EN28 of Period 3.2 (cf. Figure 2.21, Section 14; Figure 2.24)

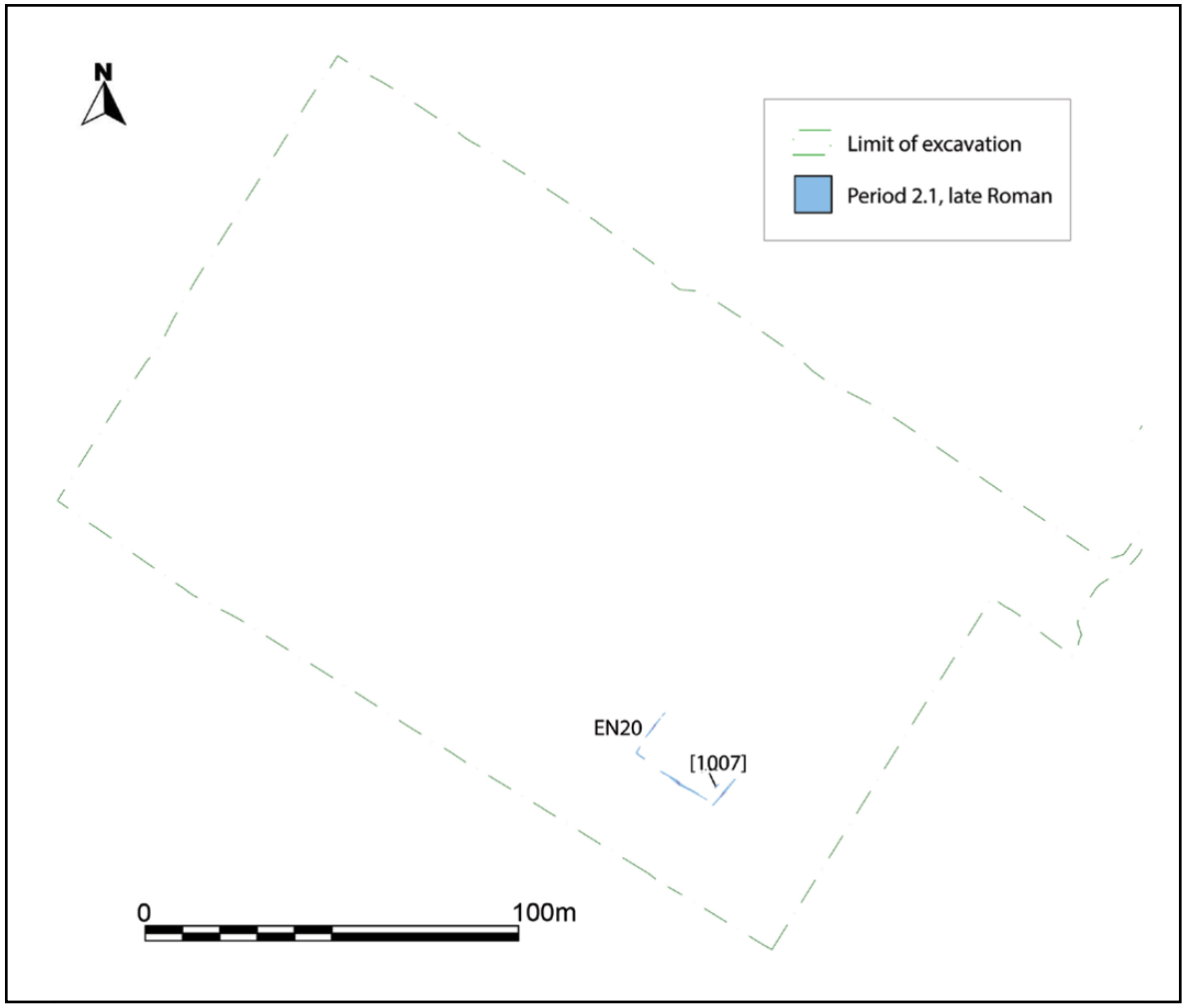

Figure 2.8. Plan of the site showing features of Period 2.1, late Roman.

and by D9 of Period 4.2. Its south-east side appeared to lie on the line of a major north-east to south-west aligned boundary, which apparently formed the south-east limit of virtually all Roman activity during Periods 2–4 (cf. Figure 2.24). The first recorded feature along this line appears to have been EN20 of Period 2.1. D4 represents the continuation of this boundary north-east of EN21 in Period 2.2, with ditch [1391] possibly forming another part of the same boundary further north-east. This boundary was repeatedly recut during Periods 3 and 4, potentially removing earlier parts of it.

Enclosure 22 (EN22) was located immediately west of the northern part of EN21. Parts of the ditches forming its north-east and south-east sides were found in excavation, with other parts of the north-east ditch and the north-west corner identified during post-excavation analysis of orthomosaic images. The best recorded ditch section, [1187], along the north-east side, was 0.54m wide and 0.16m deep with a concave base. EN22 was *c*.22m north-west to south-east by at least 4.5m north-east to south-west internally. Whilst recorded as an enclosure, EN22 might represent the beam slots of a large timber structure. It overlapped (and was therefore not contemporary with) part of EN20 of Period 2.1 and was cut by P1 of Period 4.1.

Enclosure 23 (EN23) was located west of EN22 in the central southern part of the site. EN23 was rectangular, *c*.28m north-west to south-east by *c*.17m north-east to south-west internally, and defined by a ditch recorded on all four sides, with a typical width of 0.8–0.9m and a depth of 0.15–0.27m. It was cut by EN27 of Period 3.2 and by EN10 of Period 4.1. Its south-west side was largely cut away by the parallel D5 of Period 3.1 and it appeared to lie along, and presumably determined or influenced, the line of a significant boundary in Periods 3 and 4. A well-preserved burial comprising a complete skeleton of subadult horned sheep (not affected by gnawing, butchery or burning, which suggested an immediate burial of its articulated remains) was found in the central part of the north-east ditch of enclosure EN23, [921] (Figure 2.11). In the north-west corner of the enclosure was a small cluster of five possible postholes (ST7), three of which, [701], [714] and [734], form a straight line.

Enclosure 25 (EN25) was a square enclosure, *c*.15 by 15m internally, located in the centre-east part of the site. Its north-west and south-west sides were defined by a single ditch with a curving south-west corner. Most of the south-west side was truncated by EN12 of Period 3.3, but much of the presumed south-east side of EN25 was recorded further east below a medieval/post-medieval ditch. The north-east side of EN25 was defined by D20, also of Period 2.2, which was cut to the west by EN15 of Period 3.2. D20 curved towards the north-east at either end, presumably indicating the presence of another contemporary enclosure to the north-east of EN25, which had been cut away further north-east by Period 4 enclosure ditches following similar lines. The EN25 ditch was between 0.5 and 0.8m wide on the north-west side and *c*.0.6m wide on the south-east side. It was *c*.0.30m deep.

Enclosure 29 (EN29) was located in the centre of the southern side of the site, to the south of EN23. EN29 was represented by a curving ditch, probably forming an entrance to guide livestock into the south-east part of this enclosure. This curving ditch was cut by EN26 of Period 4.1, which also cut EN18 of Period 3.3. The ditch of EN18 turned at a right angle at a similar location to the curve in the EN29 ditch, whilst the south-east ditch of EN26 terminated at approximately the same location. This suggests that EN29 may be a forerunner to EN18 and EN26 and that the south-west and part of the south-east sides of EN29 were heavily truncated/recut by these later features. The other sides of EN29 were possibly formed to the north-west by D34, which was also the south-eastern ditch of a probable trackway, and to the north-east by D35 and/or the south-west side of EN23. D35 may have formed part of an entrance into the north-west corner of EN29 leading from the trackway to the north-west. The northern part of the south-east side of EN29 may have been defined by D22, which was the north-west ditch of another probable trackway leading towards the possible south-eastern entrance into EN29. If the above assumptions are correct, EN29 would have been *c*.30m north-west to south-east by *c*.25m north-east to south-west with trackways and entrances on either side and another slightly smaller contemporary enclosure to the north-east.

The south-west corner of another possible enclosure was recorded to the south-east of EN29 and north-west of EN21, but only a single section of this ditch was excavated at its south-west corner, [899]. No stratigraphic relationships to other Roman features were evident in the excavated section, but the digital site plan drawn after topsoil stripping suggests this ditch cut across D13 of Period 1. The south-west ditch of this enclosure was in line with the south-west ditch of EN29 and with other later ditches of Periods 3 and 4, but the north-west ditch has an unusual alignment in relation to other Roman features, apart from EN24 of Period 2.3 and EN17 of Period 3.2, which are situated to the west. The phasing of this enclosure is uncertain, but it has tentatively been placed in Period 2.2.

Structure 3 (ST3) was located in the western-central part of the site and is one of the westernmost features assigned to Period 2. It was defined by a sub-rectangular ditch, *c*.14m north-west to south-east by *c*.3.5m north-east to south-west. This ditch was 0.4 to 0.5m wide and

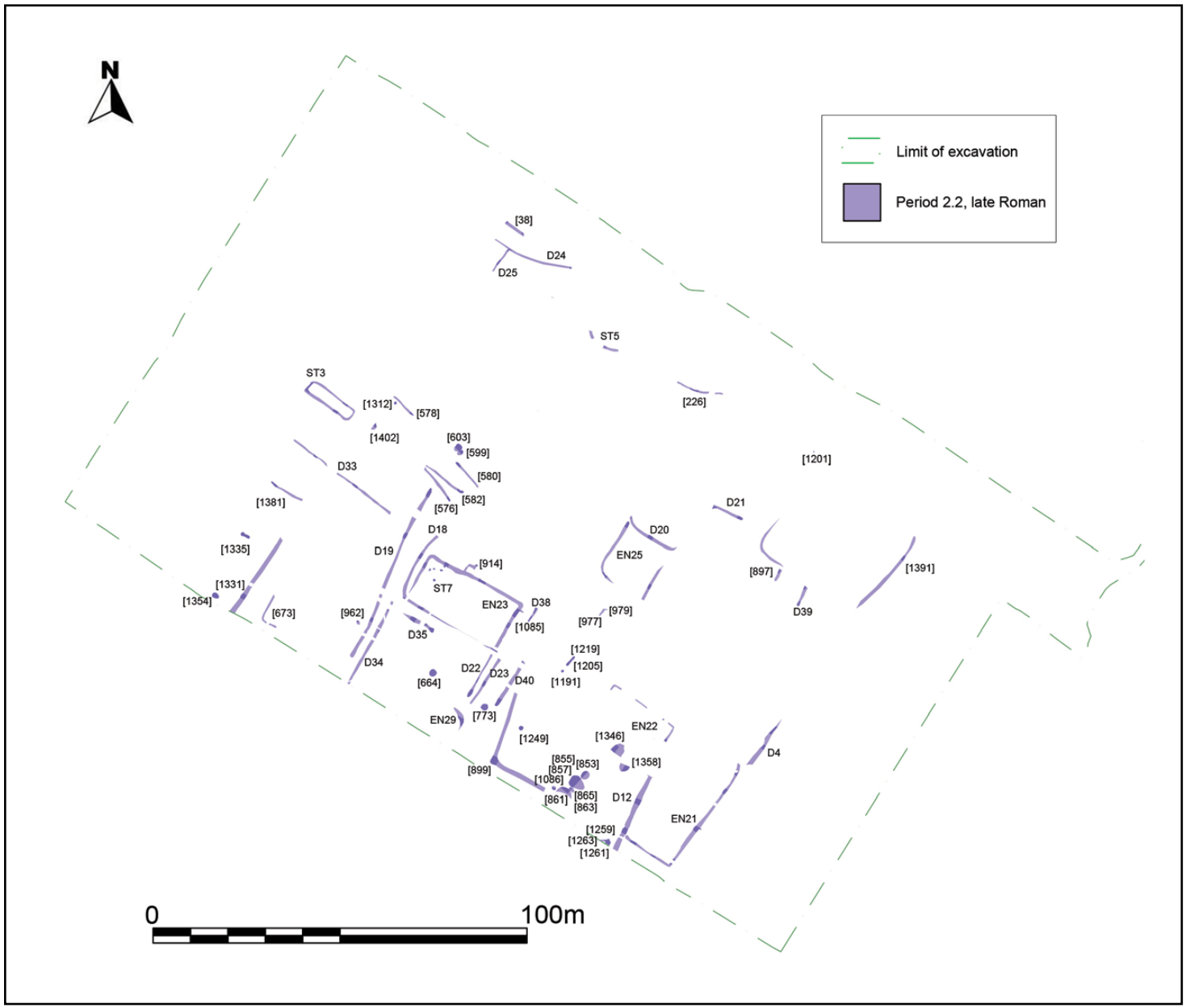

Figure 2.9. Plan of the site showing features of Period 2.2, late Roman.

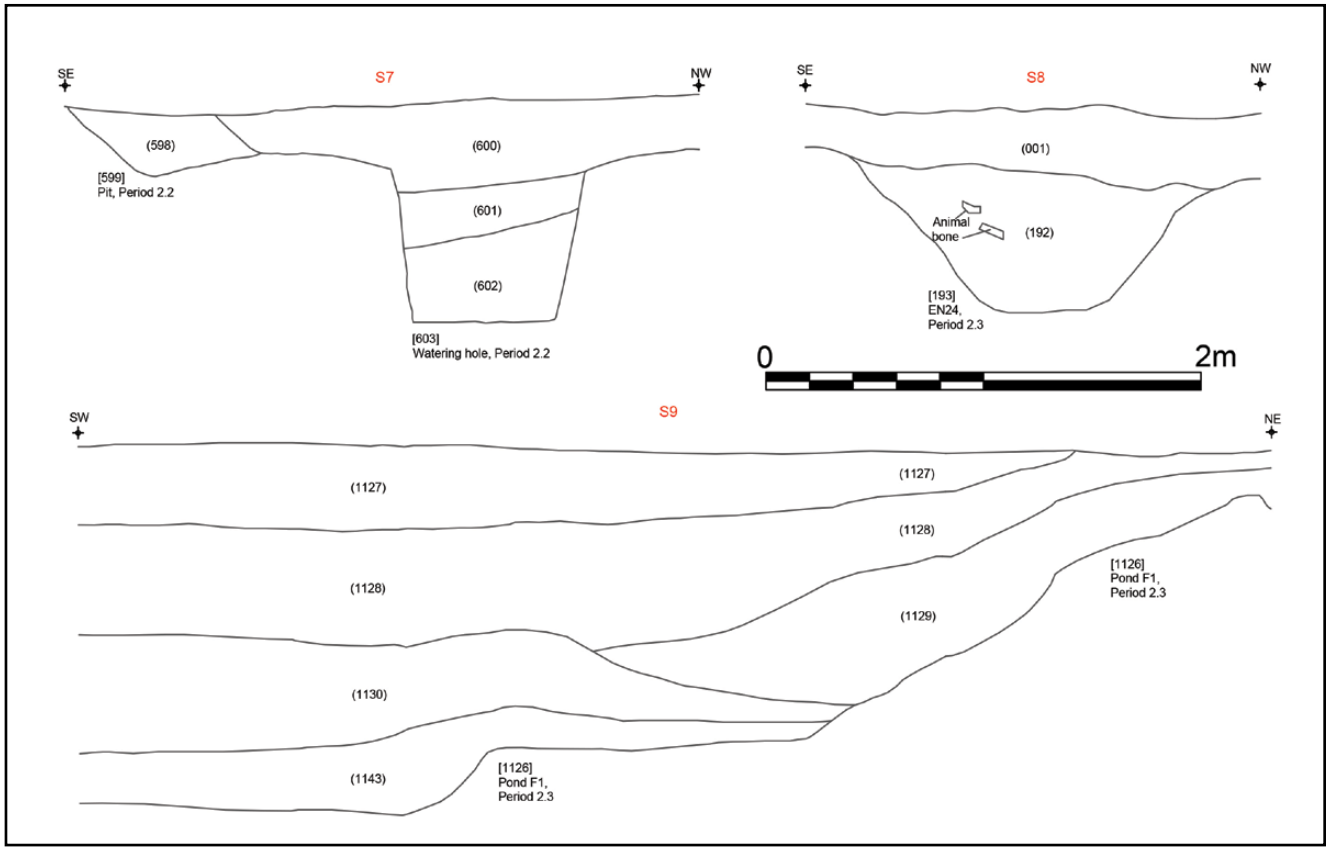

Figure 2.10. Sections 7–9 showing features of Periods 2.2 and 2.3 (for section lines, see Figure 1.11).

0.1 to 0.2m deep. ST3 has been assigned to Period 2.2, although it had no recorded stratigraphic relationships with other Roman features. It was, however, crossed by (and thus cannot be contemporary with) DIV4, an internal division within EN16 of Period 3.1 and the digital site plan drawn after topsoil stripping suggests DIV4 cut across ST3. ST3 is tentatively identified as a slotted building, which may have housed both humans and livestock, integrating living spaces and agricultural operations within a single farmstead. These structures are typically characterised by their simple design, often including areas for storage, workshops and animal pens. The absence of visible partitions in ST3 raises some interpretive questions, but its dimensions and location support its interpretation as a multifunctional timber-slotted building.

Structure 5 (ST5) was a curving ditch that might form the south-west part of a circular gully with a projected internal diameter of well over 10m. It was cut to the north by BD1 of Period 4.2, but there were no other stratigraphic relationships (cf. Figure 2.37). D2, which is assigned to Period 2.3, crossed the potential internal area of ST5, suggesting that these two features were not contemporary. There was no trace of ST5 cutting into the natural soil north of BD1 (Figure 2.37), which suggests that ST5 may not in fact form a full circle. It seems unlikely that ST5 represents a structure and it may simply be part of a curvilinear ditch, cf. D24 to the west and ditch [226] to the east, both also assigned to Period 2.2.

Short lengths of contemporary possible beam slots, [977] and [979], 2.3 and 0.76m long respectively, were found just east of the centre of the site, south of EN25. These might represent part of a small timber structure of uncertain form. Another possible beam slot [1205], 3.2m long (which cut a pit, [1219], assigned to the same phase), was recorded *c*.12.5m further south-west.

As noted briefly above, ditches D18 (Figure 2.34, Section 25; cf. Figure 2.40), D19 and D34 may define a north-east to south-west aligned trackway running along the north-west sides of EN23 and EN29, with a possible entrance into the north-west corner of EN29 defined by D35. Another north-east to south-west trackway or trackways, defined by D22 and D23, appeared to run along the south-east side of EN29 and led towards a probable entrance into the south-east part of this enclosure.

Numerous other ditch segments assigned to Period 2.2 are shown on Figure 2.9. These presumably formed parts of an extensive network of enclosures, trackways,

Figure 2.11. Looking south-west at the complete skeleton of a subadult horned sheep buried in the north-east ditch of enclosure EN23, [921], of Period 2.2. Scale 0.4m in 0.1m graduations (Photo no. 100-0995).

structures and/or field ditches, but they were typically too disturbed and interrupted by ditches of later phases for firm interpretations to be made.

Another feature of note assigned to Period 2.2 was an isolated oven, [1335] (Figure 2.2, Section 5; Figure 2.12). This was located in the south-west part of the site, apparently outside any known enclosure. The oven lay 12.8m west of EN17 of Period 3.2 and only 2.7m south of EN16 of Period 3.1, which probably continued in use into Period 3.2 and perhaps into Period 4. Oven [1335] was keyhole-shaped, 2.64m in overall length, aligned north-west to south-east, with a chamber at the north-west end and a stokehole to the south-east. The chamber was 0.97 by 0.95m and the flue was 1.69m long and 0.83m wide. Both chamber and flue had steep vertical sides and were lined with packed/compact clay. Burnt debris and fired clay were found within the feature. It is uncertain what the oven was used for, although its fills contained a notable amount of charred cereal grains and a large number of charcoal fragments which included fragments of oak (*Quercus* sp.) wood and birch (*Betula* sp.) wood. A charred barley grain from the fill of the oven produced a radiocarbon date of 129–311 cal. AD at 95.4% probability, 129–250 cal. AD at 90.4% probability and 203–247 cal. AD at 69.9% probability. This suggests that the oven dated to the first half of the 3rd century AD. The small amount of pottery from the fills of this feature (a few sherds of Horningsea grey ware and black-slipped ware, including a jar) was consistent with this date.

Several pits have also been assigned to Period 2.2 (Figure 2.9). These include an apparent group/concentration in the south-east part of the site, west of D12 and EN21: pits [853], [855], [857], [861], [863], [865], [1086], [1346] and [1358] (Figure 2.2, Section 6). At least one of these, [1358] (2.6m by at least 1.9m, 0.75m deep and cut by EN19 of Period 3.1), was recorded as an extraction pit, but it is unclear if any pits were used as quarries, or if gravel deposits were present in the area of the excavation. Some may have been watering holes and others rubbish pits.

Three or four pits, [664], [773], [1249] and possibly [853], appeared to form a straight line over a north-west to south-east distance of 30 or 50m in the south part of the site. These pits might represent a boundary of some sort, although this would have cut across several enclosures also assigned to Period 2.2. One example of these, pit [1249], was circular, 1.12 by 1.10m and 0.32m deep with steep sides and a flat base (Figure 2.13). Its fills included charcoal, pottery and animal bone.

Figure 2.12. Looking north-east at oven [1335] of Period 2.2. Scale 2m in 0.5m graduations (Photo no. 100-1431).

Figure 2.13. South-east-facing section of pit [1249] of Period 2.2. Scale 1m in 0.5m graduations (Photo no. 100-1330).

Further north, just west of the centre of the site, lay a possible watering hole or well, [603], 2.4 by 2.4m and 1.1m deep (Figure 2.10, Section 7; Figure 2.14). This cut a smaller pit, [599], 1.0 by 0.9m and 0.32m deep, assigned to the same phase.

Period 2.3

This sub-phase comprises features cut through features of Period 2.2, or which otherwise appeared in plan to be later than those of Period 2.2, but were themselves typically cut by features of Period 3. There are, again, uncertainties in the phasing and some features may belong in earlier or later phases. Features of Period 2.3 are shown on Figure 2.15.

Enclosure 24 (EN24)Top of Form was located on the south-western edge of the site, not far from the south-west corner. This enclosure measured at least 39m west-north-west to east-south-east by 8m north-north-east by south-south-west, although only parts of its north-north-east and west-north-west ditches were found in excavation, with the latter running beyond the limit of excavation to the south. The ditch defining the enclosure had a width of 0.9 to 1.2m and a depth of 0.3 to 0.4m (Figure 2.10, Section 8). EN24 had an alignment that differed somewhat from most other Roman features on the site, apart from the west ditch of the possible enclosure represented by [899] of Period 2.2 to the east. This alignment was later followed by EN17 of Period 3.2, which partly recut and was clearly influenced by EN24. The reason for this unusual alignment is unclear, but it may reflect some feature beyond the limit of excavation to the south/ south-west. EN24 ran across ditch [1331] of Period 2.1; although the intersection of the ditches was not excavated, the digital site plan drawn after topsoil stripping suggests EN24 cut ditch [1331]. EN24 is cut by EN17 of Period 3.2.

Several other ditches are assigned to Period 2.3 (Figure 2.15). These were typically short fragments, but probably include parts of further enclosures and/ or trackways, the plans of which have largely been obscured and cut away by later features. Of these, D10, south-east of the centre of the site, may continue north-west to join D42, which turned at a right angle to run north-east, apparently towards a curving terminus which was recorded but not excavated; however, these ditches were heavily interrupted and cut/recut by later Roman features, so precise relationships between them are unclear. The central part of D10, [251], included a burial of a large dog (Figure 2.16).

Another ditch assigned to Period 2.3 was [997]. This was cut by a pit with steep sides, [999] (also assigned to Period 2.3), 1.89 by 1.50m and 0.89m deep, which included Oxford red slip ware of mid-3rd- to 4th-century AD date. D2, which lay in the central part of the north side of the site had no stratigraphic relationships to other Roman features, but it has been placed in Period 2.3. [1009] was a steep-sided small pit containing a notable amount of burnt material, including fired clay. It was cut by ditch [1013] of EN28 of Period 3.2.

Figure 2.14. Looking south-west at possible watering hole or well [603] of Period 2.2, with smaller pit [599] of the same period to left and a medieval or post-medieval ditch/furrow, [605], to right. Scale 2m in 0.5m graduations (Photo no. 100-0662).

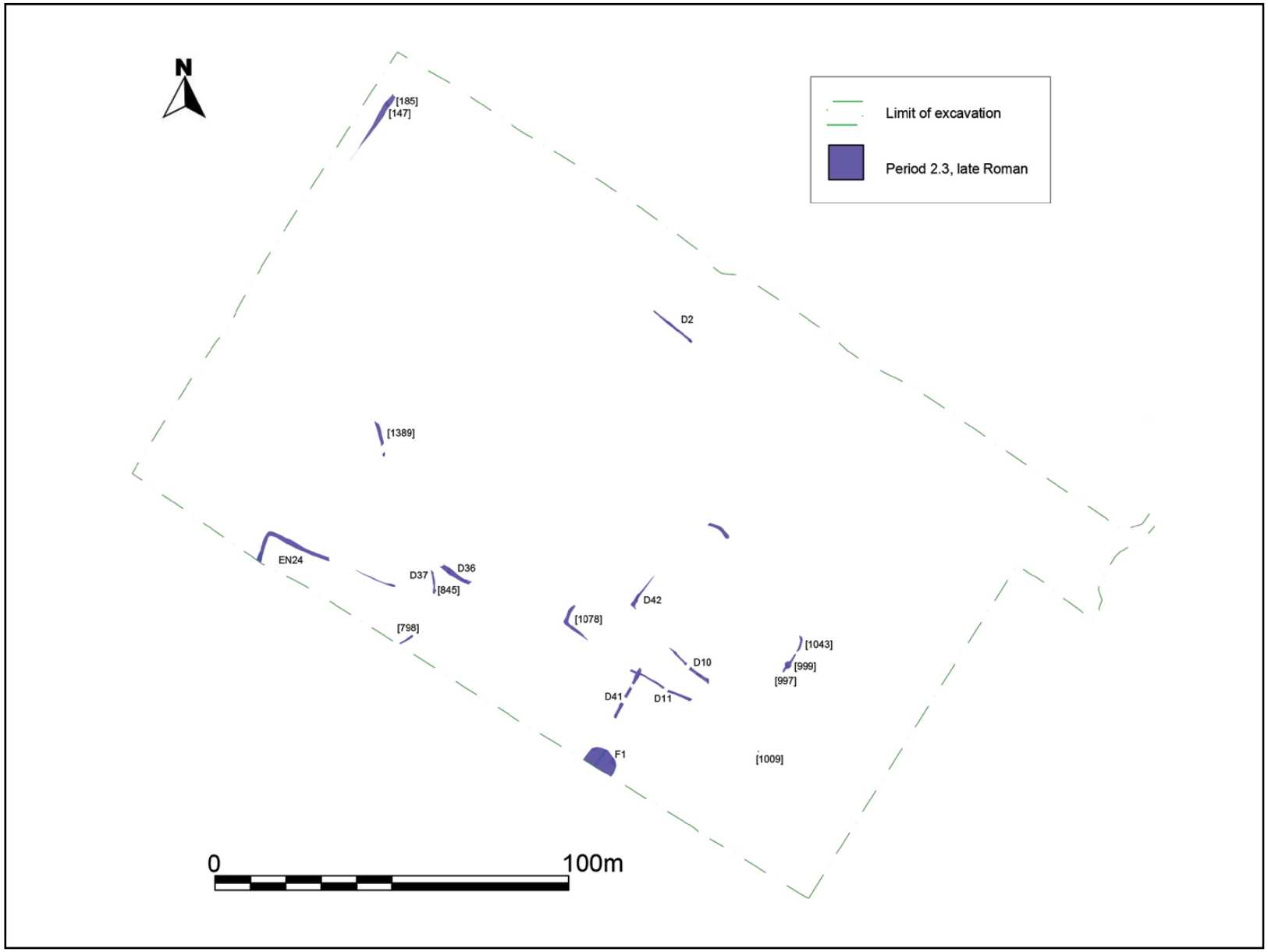

Figure 2.15. Plan of the site showing features of Period 2.3, late Roman.

Figure 2.16. Looking north-east at burial of a large dog in ditch D2, [251], of Period 2.3. Scale 0.4m in 0.1m graduations (Photo no. 100-0307).

Another notable feature assigned to Period 2.3 was a possible pond, F1, in the south part of the site, near a concentration of pits from Period 2.2. F1 extended beyond the limit of excavation to the south-west, but it was 9m by at least 6m. It was at least 1.73m deep, although its base was not reached due to safety reasons (Figure 2.10, Section 9; Figure 2.17).

Period 3. Late Roman, mid- to late 4th century AD

Introduction

Period 3 has been divided into three sub-phases: Periods 3.1, 3.2 and 3.3, which are described in turn below. The Period 3 ditches were significantly less disturbed than those of Period 2 and from Period 3.1 onwards the layout of enclosures on the site is much clearer (Figure 2.18). The Period 3 enclosures typically cut across the lines of Period 2 features, but there was also some continuity as several of the lines established by enclosures and ditches in Period 2 were followed by, or influenced, the layout of enclosures and ditches in Period 3. In Period 2 the enclosures, ditches and other features appeared to concentrate along the southern edge of the site, but in Period 3 the focus of activity extended further northwards, encompassing the southern and central parts of the site.

Period 3.1

In Period 3.1, an interconnected series of enclosures was constructed, replacing an earlier and less clearly defined series of enclosures from Period 2. Features from Period 3.1 are shown on Figure 2.19.

Enclosure 11 (EN11) was located in the south-eastern part of the site. It was square, covering an area of approximately 23 by 23m internally, and was aligned north-east to south-west and north-west to south-east. Its ditch had a surviving depth of 0.2–0.4m and was about 1.2m wide on the north-west side (Figure 2.20, Section 10), but only 0.5m wide on the north-east and south-east sides. The ditch forming the north-east side of the enclosure cut ditch [1043] of Period 2.3. A small trace of the ditch forming the south-west side of EN11 was found turning south-east from the south-west corner, but this side of the enclosure was almost totally cut away by part of the south-west side of EN7 of Period 4.2. The south-east boundary of EN11 lies on a line that forms the approximate south-east boundary of activity on the site down to the end of the Roman period. This boundary was subjected to repeated recutting and its position appears to have wandered slightly over time. It may already have been in place in Period 2, e.g. with the south-east side of EN21, D4 and ditch [1391] of Period 2.2 and/or the south-east side of EN20 of Period 2.1. What appears to have been a substantial pit, [1151], located in the south-east part of EN11 has been assigned to the same phase (Period 3.1). This pit measured 4 by 4m and is 1.2m deep.

Enclosure 13 (EN13), situated west of EN11, was approximately square and measured *c.*22.5m north-west to south-east by *c.*21m north-east to south-west. The enclosure ditch had a width ranging from about 0.8 to 1.3m, and a depth of *c.*0.2 to 0.5m. It cut ditch D5, which is assigned to the same phase (Period 3.1) and itself cut features of Period 2.2 (EN23 and D23) and 2.3 (D36). EN13 also cut D42 of Period 2.3 and was cut by EN14 of Period 3.2 and BD5 of Period 4.1 (Figure 2.22). Within EN13 was a large sub-circular pit, [869], also cut by EN14. This pit was *c.*4.5m in diameter and 1m deep and it included pottery of 3rd- to 4th-century AD date (Figure 2.20, Section 12).

Figure 2.17. South-east-facing section of possible pond F1, [1126], of Period 2.3 on the south-west edge of the excavation. Scale 2m in 0.5m graduations (Photo no. 100-1196).

Enclosure 16 (EN16) was a large rectilinear enclosure in the west part of the site, measuring 60m north-east to south-west by *c*.25–28m north-west to south-east. Its north-east, north-west and south-west sides were clearly identifiable. Its south-east corner clearly turned to the north-east, indicating the presence of its south-eastern side, which was largely cut away by EN14 of Period 4.3 and presumably also by EN15 of Period 3.2 further north. The line of its south-west side continued south-east for a total distance of 100m as D5 (also Period 3.1; Figure 2.21, Section 13), at least as far as EN13, which cut D5. EN16 had a substantial ditch, *c*.1.6 to 2.3m in width and 0.6 to 1.1m in depth (Figure 2.20, Section 11; Figure 2.23). Within EN16 were two apparently contemporary internal dividing ditches, DIV3 and DIV4, which cut ST3 of Period 2.2. These ditches probably served as sub-divisions within the enclosure.

Enclosure 19 (EN19) was situated in the south-eastern part of the site, south of EN11 and EN13. The north-east ditch of EN19 ran south-east from the south-east corner of EN13 for 43m and represented a continuation of the line of the south-west ditch of EN13. EN19 was probably contemporary with EN13, but their junction was disturbed by a medieval/post-medieval furrow, [1170]. The south-east side of EN19 was at least 23m long, but it extended beyond the limit of excavation to the south-west. EN19's north-east ditch ranged from approximately 0.8 to 1.7m in width and 0.72 to 0.77m in depth. The south-eastern ditch was *c*.1.2m wide and noticeably deep (0.8m) with steep sides (Figure 2.21, Section 14; Figure 2.24). No ditch was located which might form the north-west side of EN19, suggesting that it might be a very large enclosure or field, perhaps stretching as far as D7 (also of Period 3.1), 128m to the north-west. Fragmentary human remains, comprising a skull and torso of a perinate (±1 month before/after birth), were found in fill (836) of the south-east ditch of EN19, [835]. The presence of various elements from the upper portion of the body suggests that the body may have been at least partially articulated at the time of deposition. A single humerus of a human perinate was also recorded from fill (1363) of the north-east ditch of the same enclosure (EN19), [1361], but *c*.27m further north-west, alongside one skeletal element of chicken and a portion of skull and butchered elements of torso and forelimbs of cattle. A copper-alloy coin of the House of Valentinian, datable to AD 364–78, was found in an upper fill of the south-west ditch of EN19 which cut D41 of Period 2.3.

Various other ditches assigned to Period 3.1 probably defined other enclosures and possibly fields or structures, but these were typically fairly fragmentary and/or isolated making precise interpretation difficult. These include ditch D31, which was cut by D30 of Period 3.2 and included two copper-alloy Roman coins from the same fill, one of the House of Constantine, datable to AD 335–40, the other a minim of late 3rd- to 4th-century AD date.

To the north of the centre of the site were several small features, recorded variously as postholes, pits, beam slots and ditches, which may together represent parts of some sort of timber structure (ST6) of at least 6 by 6m, aligned north-east to south-west and north-west to south-east. Ditches [534] and D17, situated *c*.4 and *c*.7m to the north and north-west of ST6 respectively, may also form parts of this possible structure. The area of these features was cut across by D16 of Period 3.2.

A large pit, P2, has also been assigned to Period 3.1. The pit was situated in the area bounded to the south-west by EN11, to the north-west by EN13 and to north-east by EN19. This area may have been another enclosure. P2 was at least 6.2 by 6.0m and at least 0.8m deep, although it had been truncated to the west by P1 of Period 4.1. P2 had irregular sides and a ramp, *c*.1.3m wide, in the south-east leading down to the base. It was possibly a waterhole.

Figure 2.18. Plan of the site showing features of Period 3, late Roman.

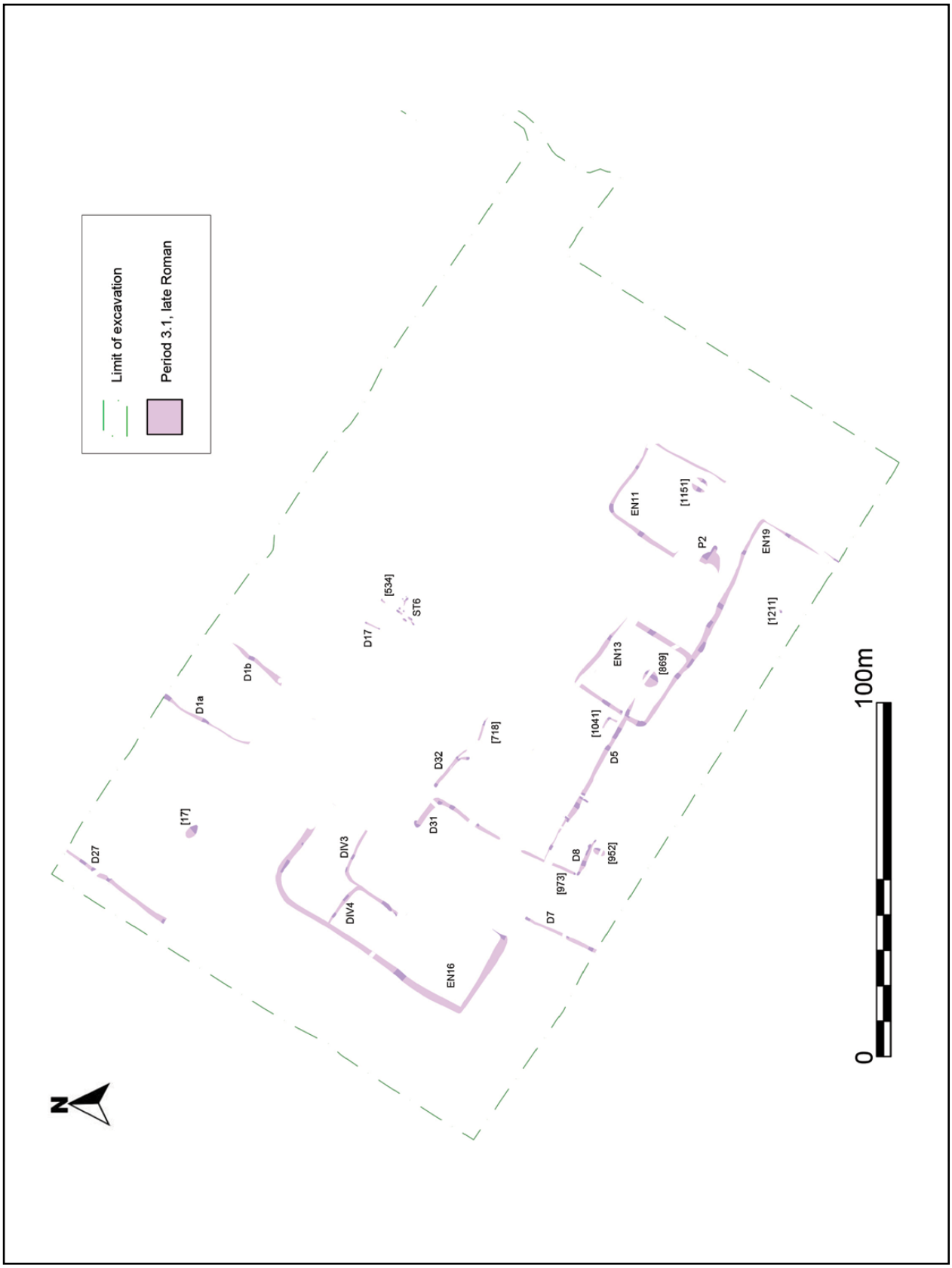

Figure 2.19. Plan of the site showing features of Period 3.1, late Roman.

Period 3.2

Features from Period 3.2 are shown on Figure 2.25.

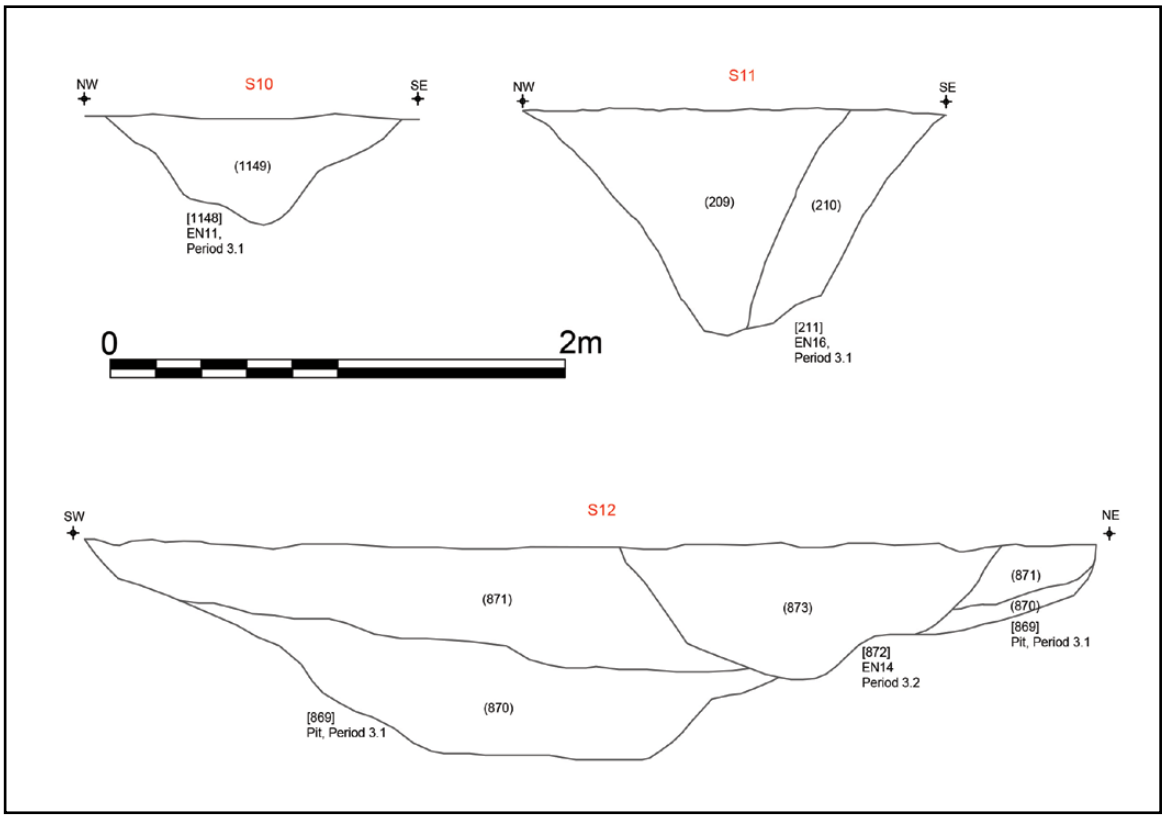

Figure 2.20. Sections 10–12 showing features of Period 3 (for section lines, see Figure 1.11).

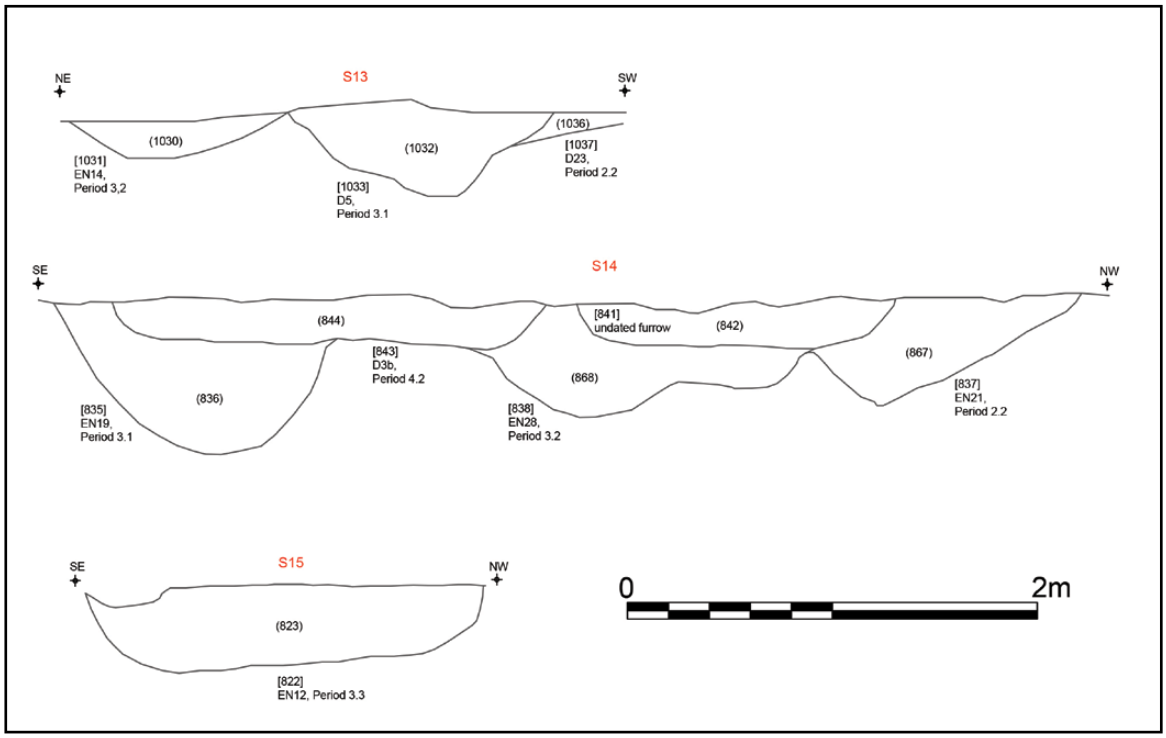

Figure 2.21. Sections 13–15 showing features of Period 3 (for section lines, see Figure 1.11).

Figure 2.22. South-east-facing section through Roman ditches, from left to right: EN12, [1232], of Period 3.3, which is cut by BD5, [1234] of Period 4.1, which also cuts EN13, [1240], of Period 3.1. Scale 2m in 0.5m graduations (Photo no. 100-1309).

Figure 2.23. South-west-facing section of the north-west ditch of enclosure EN16, [211], of Period 3.1. Scale 2m in 0.5m graduations (Photo no. 100-0236).

Figure 2.24. North-east-facing section showing intercutting Roman ditches near the south-eastern corner of the site, from left to right: the deepest ditch is [835] of EN19 of Period 3.1, the fill of which is cut by the almost imperceptible [843] of D3b of Period 4.2; the central ditch is [838] of EN28 of Period 3.2, to the right of which lies [837] of EN21 of Period 2.2. Scale 2m in 0.5m graduations (Photo no. 100-0889).

During this phase further enclosures were constructed. Several of the enclosures in use during Period 3.1 were replaced on similar or slightly differing lines.

EN14 was a somewhat irregular sub-rectangular enclosure located in the south-east part of the site, overlying and cutting across EN13 of Period 3.1. EN14 measured approximately 42m north-west to south-east and at least 17m north-east to south-west, with its ditch being *c*.0.8 to 1m wide and *c*.0.3 to 0.5m deep (Figure 2.20, Section 12; Figure 2.21, Section 13; Figure 2.30, Section 21). This enclosure appeared to have an opening towards the north-west, perhaps *c*.15m wide. Contemporary enclosure EN15 lay on the north-east side of this opening, with contemporary EN27 located opposite the opening, 26m to the north-west. There was a pronounced S-shaped curvature in the south-west ditch of EN14, perhaps suggesting that the south-east part of the enclosure was used to corral livestock. The ditch of the south-east end of the enclosure curved gently around, heading north-west for *c*.10m before turning at a right angle to run north-east for at least 3m at a location 21.5m south-east of EN15. The ditches of the north-eastern part of EN14 did not survive beyond this point, having been cut away by EN12 of Period 3.3. It is unclear whether there was another wide opening into the north-east part of EN14, or if was joined to EN15 by a ditch that was perhaps later recut by part of EN12.

Enclosure 15 (EN15) was a major rectilinear enclosure in the central part of the site and seemingly formed the central and main enclosure during Period 3.2. It was slightly trapezoidal, narrower towards the north-west than to the south-west and measured *c*.69m internally north-west to south-east by *c*.35m north-east to south-west at its north-west end and by *c*.41m north-east to south-west at its south-east end. The ditch had a typical width of 1 to 2m, with the most substantial and deepest sections located on its north-west side, e.g. [408], which was 2.76m wide and 0.72m deep. Two ditches within the enclosure appeared to be contemporary with it and have been assigned to Period 3.2. The first of these is D30, which appeared to define a sub-enclosure in the north-west part of the enclosure, covering an area of *c*.35m north-east to south-west by *c*.18m north-west to south-east. The second is D6, which lay in the southern part of the enclosure and ran north-west to south-east at a slight angle to the enclosure ditches for *c*.25m. D6 may represent part of another sub-enclosure, or was possibly part of a structure that controlled the movement of livestock in or out of the south-east part of the enclosure.

Immediately to the south-west of EN15 was contemporary enclosure EN27, of which the ditches of its south-east and part of its south-west sides were

Figure 2.25. Plan of the site showing features of Period 3.2, late Roman.

found. The north-east boundary of EN27 was the south-west ditch of EN15, whilst its north-west boundary probably lay on the same line as part of the south-east ditch of EN16 of Period 3.1, which may have remained in use in this phase. This part of the boundary was presumably recut by EN9 of Period 4.3, which also resulted in the recutting and removal of much of the south-west boundary of EN27. The south-west ditch of EN27 cut into and followed the same line as D5 of Period 3.1. EN27 was, therefore, rectilinear and slightly trapezoidal like EN15. EN27 had a probable area of *c*.34–36m north-west to south-east by 19–24m north-east to south-west. The single excavated ditch section on its south-east side was 0.6m wide and 0.18m deep, whilst its south-east corner was 0.45m deep.

EN17 was located in the south-western part of the site immediately south of EN27. EN17 spanned approximately 30m north-west to south-east by 11.5m north-east to south-west. It may have been open to the south-east as no ditch was traced along this side. The enclosure ditch was typically 1.2–1.3m wide and 0.4–0.6m deep. It cut D7 and pit [952] of Period 3.1 and the infilled ditch was cut near its presumed north-west corner by EN9 of Period 4.3.Top of Form EN17 did not seem to work well on plan with EN10 of Period 4.1 (it lay on a somewhat different alignment) and is perhaps more likely to have been an enclosure on the south side of and contemporary with (or added to) EN27 with which it is more closely aligned. An animal bone (sheep frontal bone) from the fill of the central part of the south ditch of EN17 produced a radiocarbon date of 263–535 cal. AD at 95.4% probability, 348–535 cal. AD at 92.9% probability, 348–440 cal. AD at 73.0% probability and 379–433 cal. AD at 65.5% probability. This is strongly suggestive that the EN17 ditch was filled in the mid-4th-century or later and probably in the late 4th to early 5th century. It also supports a late 4th- to ?5th-century date for Period 4.

EN28 lay in the south-east part of the site. It was represented by ditches on its south-east and north-east

sides only. The ditch forming its south-east side was at least 36m long and continued south-west beyond the limit of excavation; this ditch lay on the line of a major north-east to south-west boundary, first established in Period 2 and recut down to the end of Period 4 (Figure 2.21, Section 14; Figure 2.24). This boundary was represented further north-east by D3a of Period 3.2. EN28 was defined on its north-east side by a ditch at least 19m long, which lay along the approximate line of the major boundary formed further north-west by the south-west ditch of EN15 (later recut by BD5 of Period 4.1) and in the area of EN28 by EN7 of Period 4.2. It was unclear if the north-east ditch of EN28 continued further north-west towards EN14 of the same phase, or if it turned towards the south-west for a short distance. There was, however, no clear evidence of any ditch of this phase running south-west of P2 of Period 3.1. This suggests that E28 may have been a very large enclosure or perhaps a field, to the south-west of the main area of Period 3 enclosures.

Several other linear ditches assigned to Period 3.2 were found in the north-west part of the site, to the north of EN15. These comprised D1c, D1d, D29, D16, all aligned north-east to south-west. D1a and D1d lay *c*.23m apart and may have formed two sides of an enclosure, perhaps replacing an earlier example formed by D1a and D1b of Period 3.1. D29 and D18, meanwhile, may possibly have formed part of a predecessor or predecessors of enclosures EN1, EN2 and EN3 of Period 4.

Period 3.3

Period 3.3 features are shown on Figure 2.26. During this phase further additions and replacements were made to the system of enclosures. Enclosure 12 (EN12) was located just south-east of the centre of the site. It was approximately square, *c*.18m north-east to south-west by *c*.19m north-west to south-east internally, with a ditch 1.3 to 1.6m wide and 0.25 to 0.38m deep (Figure 2.21, Section 15). EN12 appeared to be tacked on

Figure 2.26. Plan of the site showing features of Period 3.3, late Roman.

to the south-east corner of EN15 of Period 3.2 (which extended in use into Period 3.3), but it extended *c*.3m further south-west than the projected line of the south-west ditch of EN15. EN12 cut across parts of EN13 of Period 3.1 and EN14 of Period 3.2. It was cut by BD5 of Period 4.1 (cf. Figure 2.22) and by EN7 of Period 4.2.

Enclosure 18 (EN18) was centrally positioned by the south-east side of the site, immediately south-west of north-west to south-east aligned D5 of Period 3.1. The ditch forming the north-west side of EN18 ran almost right up to D5, suggesting that EN18 was tacked on to a part of D5 which was presumably still in use in Period 3.2 (it is also possible that EN18 in fact dates to Period 3.1). EN18 was *c*.25m north-east to south-west by *c*.22m north-west to south-east. At a point *c*.9.5m from the south-east corner of the enclosure, the south-east ditch turned at a right angle before terminating *c*.4.5m to the north-west, leaving an apparently very wide gap of *c*.15m in the north-east part of the enclosure. The ditch surrounding EN18 was 0.55m wide and 0.28m deep on the north-west side and *c*.1m wide and 0.38m deep along the south-west and south-east sides. A copper-alloy coin of the House of Theodosius, datable to AD 388–402, was recovered from a fill of the south-west corner of EN18, which is cut by EN26 of Period 4.1.

Other features assigned to Period 3.3 are DIV1 and DIV2, were L-shaped ditches representing internal divisions within EN15 of Period 3.2. DIV1 created an area of *c*.32 by 17.5m within the north-west part of EN15, whilst DIV2 defined an area of *c*.36 by 28m within the north-east part of EN15.

Period 4. Late Roman, late 4th to ?5th centuries AD

Introduction

During Period 4, the general layout of the Period 3 enclosure system was retained, with new enclosures and boundary ditches constructed, often recutting or following/extending the same or similar lines as ditches from Period 3 (Figure 2.27). There appears to have been much greater continuity between Periods 3 and 4 than between Periods 2 and 3. Several features of Period 3 may have continued in use into Period 4, whilst others may have gone out of use and/or been partially or completely replaced. In Period 4, enclosures were concentrated in the central part of the site and, in apparent contrast to Periods 2 and 3, several clear enclosures were now constructed in the north-central part of the site. This perhaps represents a northwards extension of the focus of activity on the site, continuing a trend evident from Periods 2 to 3. Period 4 has been divided into three sub-phases: Periods 4.1, 4.2 and 4.3, which are described in turn below.

Period 4.1

Features of Period 4.1 are shown on Figure 2.28. Enclosure 2 (EN2) lay just north of the centre of the site on the north-east side of EN15, the central enclosure of Period 3.2. EN15 may have continued in use into Period 4 as no ditches of this date cut through its interior. The north-west side of EN2 ran north-east at a right angle from the north-east side of EN15 for 17.5m before turning at a right angle to run south-east for 13.8m where it appeared terminate, perhaps marking the north-west side of an entrance. No stratigraphic relationship between EN2 and EN15 was observed due to truncation of both by EN1 of Period 4.3. The south-west side of EN2 was presumably formed either by the EN15 ditch, or it lay on the same line as, and was later entirely recut by the south-west side of EN1. The south-east side of EN2 may also have been recut by the south-east side of EN1, or it might have been formed by BD3 of Period 4.1, which lay further east (in this case D28 may have been part of the north-east ditch of EN2). In the former case EN2 would have had an internal area of *c*.17.5m north-east to south-west by *c*.19.5m north-west to south-east. In the latter case, an internal area of *c*.17.5m north-east to south-west by *c*.29m north-west to south-east. The ditch of EN2 had a surviving width of *c*.0.8 to 1.1m and a depth of *c*.0.2 to 0.4m (Figure 2.29, Section 16; cf. Figure 2.39).

Inside the north-east part of EN2 lay a curving ditch, ST2, at least 10m in length, possibly representing the north-east quarter of a circular gully (Figure 2.31). Ditch ST2 cut D17 of Period 3.1 and has been regarded as contemporary with EN2. ST2 had a width of 0.5 to 0.6m and a depth of about 0.28 to 0.30m (Figure 2.29, Section 17). If the ditch was circular, it would have a projected diameter of *c*.13m and might represent a drip/drainage gully of a structure within EN2. This may have been an agricultural structure of some sort, or perhaps a threshing area, or simply a drainage gully around a hayrick or fodder storage (Evans and Lucas 2020, 346–8).

Immediately to the north-west of EN2 was Structure 1 (ST1). This comprised a north-east to south-east aligned ditch, at least 14.9m long and typically 0.65m wide and 0.21m deep, with a short return (*c*.2.7m long, up to 1.35m wide and 0.39m deep) to the south-east at its north-east end (Figure 2.29, Section 18). A posthole [309] lay in the terminus of the south-east return. ST1 and EN2 were both cut by EN3 of Period 4.2. ST1 might have formed part of another enclosure or perhaps represented slots of a timber structure.

Enclosure 5 (EN5) was a small approximately square enclosure in the north-east part of the site. It was *c*.13m north-east to south-west internally by *c*.15m north-

west to south-east. Its south-west corner cut partly into and along the edge of EN15 of Period 3.2 near the north-east corner of the latter, suggesting that EN15 may have remained in use with EN5. The south-west and parts of the north-west sides of EN5 were found in excavation. The ditch of this enclosure clearly curved towards the north-east and south-east sides, which were otherwise entirely cut away by EN4 and EN7 of Period 4.2. A single posthole, [556], which lay in the north-east corner of EN5 has been assigned to Period 4.1. This had a black fill with charcoal all the way through indicating that it contained burnt material, perhaps from the burning of its post.

Enclosure 10 (EN10) was situated in the south-central part of the site, immediately south-east of EN16 of Period 3.1 and immediately south-west of EN15 of Period 3.2. about 16m east of Enclosure 9 (EN9). EN10 cut D5 of Period 3.1 and EN18 of Period 3.3. EN10 lay approximately parallel to boundary ditch BD5, also of Period 4.1, which was cut along the line of the south-west ditch of EN15, but it lies at a slight angle compared to other adjacent Period 3 enclosures, except perhaps for EN16 to the north-west and EN13 and EN19 further south-east, indicating that orientations of enclosures in this part of the site varied slightly over time. EN10 was probably rectangular, measuring *c*.43.5m north-west to south-east by *c*.22.5m north-east to south-west. It was represented by an apparently continuous ditch forming its south-east and part of its south-west sides. The north-east end of the south-east side turned at a right angle to run north-west for *c*.3.5m. There was a gap of only c.0.25m between this short north-western return and BD5 to its north-east and a gap of *c*.1.5m between the north-west return and the south-west ditch of EN15, which was cut by BD5. The north-east ditch of EN10 may initially have been formed by EN15, with the north-west return of the former perhaps defining a narrow entrance into the north-east part of the enclosure. This entrance may have gone out of use when the south-east ditch of EN15 was recut by BD5 in Period 4.1. The north-west boundary of EN10 presumably lay on the same line as the south-east boundary of EN16 of Period 3.1, but this was almost completely cut away by the north-west ditch of EN9 in Period 4.3. A copper-alloy coin of the House of Valentinian, datable to AD 364–78, was found in a fill of the south-east ditch of EN10, near the south-east corner.

Enclosure 26 (EN26) lay in the centre of the southern part of the site, near the south-western limit of excavation. It appeared to be a replacement of EN18 of Period 3.3. EN26 cut into EN18 and followed similar lines on the south-east and south-west sides, but it extended further north-west. The north-west side of EN26 extended north-east for *c*.4.3m before ending at a shallow terminus. It seems probable that the ditch originally extended further north-east, but has been truncated by later ploughing. EN26 was rectilinear, *c*.29m north-west to south-east by at least *c*.10m north-east to south-west. If it originally extended as far north as EN10 it would have measured *c*.21.5m north-east to south-west.

Another north-west to south-east ditch [806], with hints of slight curves to the south at each end, lay *c*.1m to the south of the south-east part of EN26 along the south-west limit of excavation. Ditch [806] cut EN18 of Period 3.3 and was at least 15m long. It perhaps represented part of another enclosure that lay south of EN26.

Boundary ditch 3 (BD3) was centrally located in the northern part of the site (Figure 2.29, Section 19). It was a linear ditch running north-east from the north-east corner of EN15 of Period 3.2, continuing the line of the south-east ditch of EN15 for at least 52m. BD3 extended beyond the north-east limit of excavation. It was recut by BD2 of Period 4.2, which truncated the junction with EN15 and the junctions with EN5 of Period 4.1 to the south-east and with ditches D15 and D28 of Period 4.1 and BD1 of Period 4.2 to the north-west. EN5 may have abutted BD3, whilst D15 and D28 are possible boundary or enclosure ditches, which could potentially have run into the north-west side of BD3. The construction of BD3 indicates the extension of an existing Period 3 boundary line into the northern part of the site, although it is possible that BD3 had a Period 3 forerunner, all trace of which was removed by recutting in Period 4.

D15 was a curvilinear ditch running north-west from BD3 in the north-central part of the site for at least 28m. It was truncated by the much better preserved BD1 of Period 4.2, which was a major boundary across the northern part of the site. D15 appears to follow a similar line to BD1 and may have been a forerunner that was largely lost due to recutting. If so, another major boundary of Period 4.2 was already established in Period 4.1 and possibly earlier, as north-east to south-west ditches D1a and D1b of Period 3.1 and D1d of Period 3.2 all appear to stop against the line of BD1, which cuts them. As noted above, D28 of Period 4.1 might be part of the ditch of the north-east part of EN2 of the same period.

Boundary ditch 4 (BD4) ran next to and approximately parallel to the north-western edge of the site for *c*.120m. It had a width of 1.2 to 2m and a depth of 0.2 to 0.5m. It continued beyond the limit of excavation to the south-west, but was truncated by a medieval/post-medieval furrow to the north-east, obscuring its possible continuation through the north-west corner of the site. BD4 may possibly be a replacement of a pre-existing boundary as ditch [147] of Period 2.3 and D27 of

Figure 2.27. Plan of the site showing features of Period 4, late Roman.

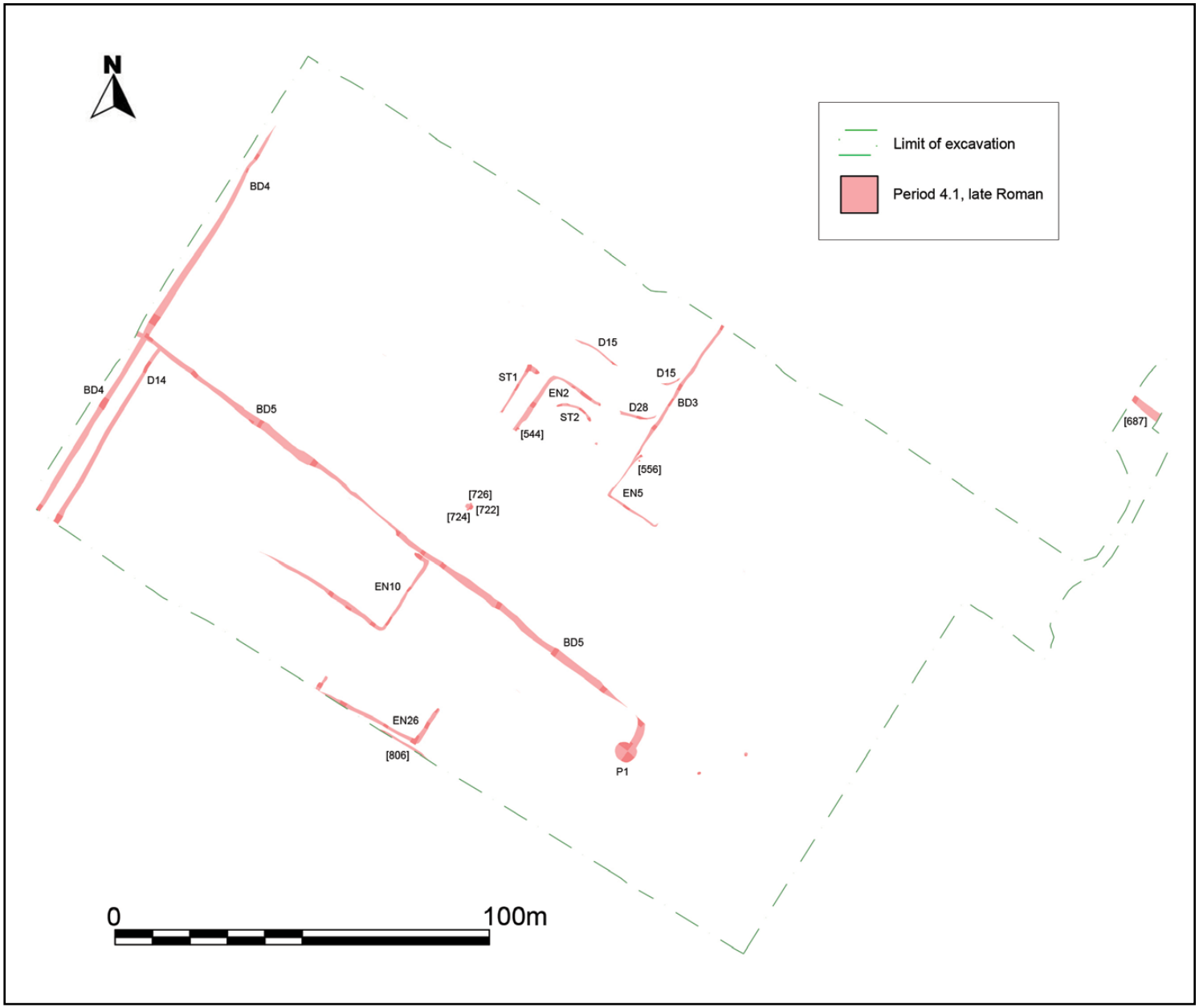

Figure 2.28. Plan of the site showing features of Period 4.1, late Roman.

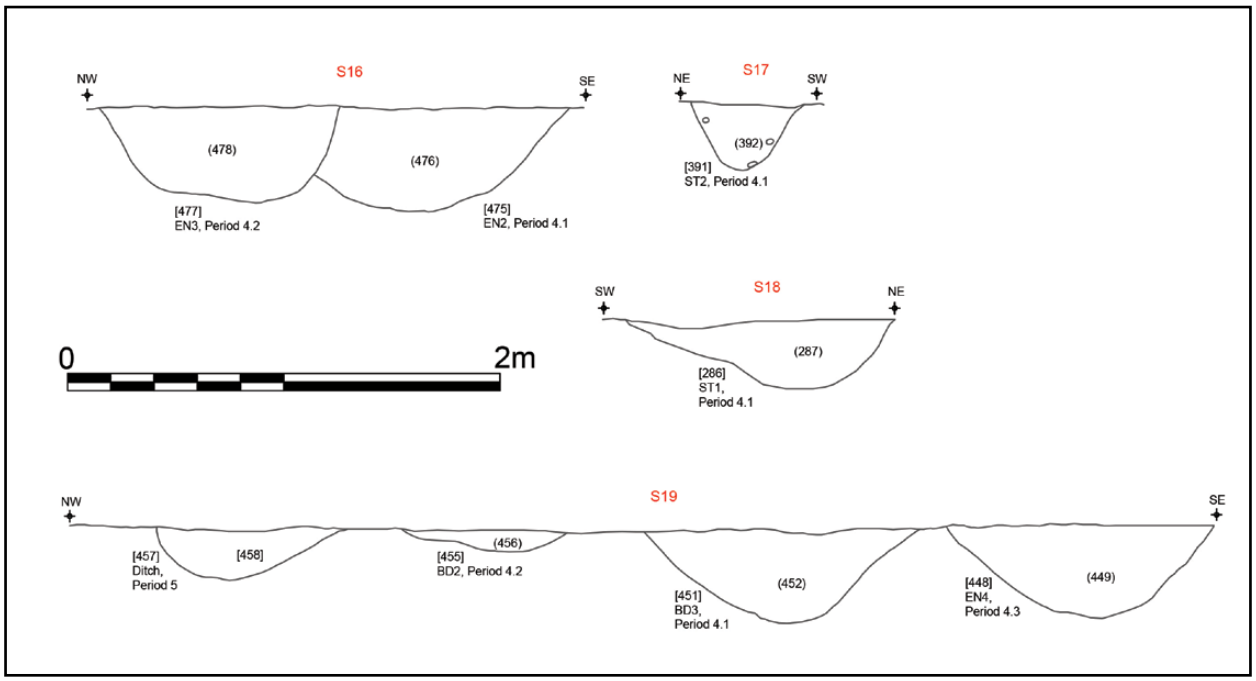

Figure 2.29. Sections 16–19 showing features of Period 4 (for section lines, see Figure 1.11).

Period 3.1 run parallel to and very close to the northern part of its line.

BD4 was cut by BD5, which is a major boundary ditch also assigned to Period 4.1 (Figure 2.30, Sections 20 and 21; cf. Figure 2.22). BD5 ran south-east across the site for *c*.170m from the north-western limit of excavation before turning at a right angle and apparently discharging into a large contemporary drainage pit or waterhole, P1, *c*.7m to the south-west. BD5 cut through various Period 3 enclosure ditches, including the south-west ditch of EN15, which shared almost the exact same line as BD5. BD5 may have represented the extension of a pre-existing Period 3 boundary line further across the site in Period 4.

The drainage pit or waterhole, P1, into which BD5 appeared to discharge, was *c*.5.6 by 4.9m and up to

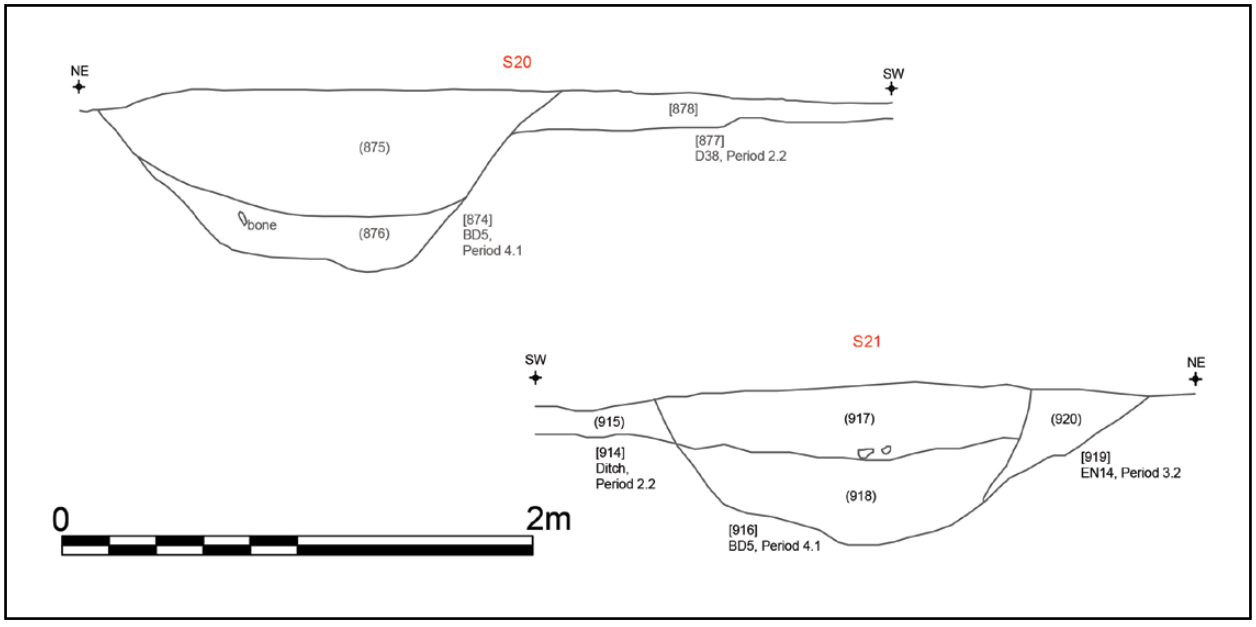

Figure 2.30. Sections 20 and 21 showing features of Period 4 (for section lines, see Figure 1.11).

Figure 2.31. North-west-facing section of curvilinear gully ST2, [391], of Period 4.1. Scale 0.40m in 0.1m graduations (Photo no. 100-0434).

1.21m deep with steep sides and a concave base (Figure 2.32). It cut partly into the earlier quarry or waterhole, P2, of Period 3.1 and itself appears to have been recut at least once. The fill of P1 included Oxford red-slip ware of mid-3rd- to 4th-century AD date.

Ditch D14 ran south-west from BD5 in the south-west part of the site. D14 also ran parallel to and *c*.3.5m to the south-east of the south-west part of BD4. D14 appears to form a trackway with part of BD4, perhaps leading to some sort of passage across BD5. The junction between D14 and BD5 was not excavated, but the relationships in plan between D14, BD4 and BD5 suggests all may have been in use at the same time. A copper-alloy coin of the House of Valentinian, datable to AD 364–78, was recovered from a fill of D14.

In the north-east corner of the site lay an isolated section of the north-west to south-east aligned ditch, [687]. This included pottery of 3rd- to 4th-century AD date. It has been assigned to Period 4.1 and perhaps ran towards BD3 further north-west.

Other Period 4.1 features included three adjacent sub-circular pits, [722], [724] and [726], near the central area of EN15 of Period 3.2, which perhaps remained in use into Period 4. The largest of these pits, [722], was 1.9 by 1.11m and 0.22m deep. It was flanked by [724], which was 0.65 by 0.6m and 0.1m deep and by [726], which was 0.45 by 0.38m and 0.23m deep. The two smaller pits may have been postholes on either side of [722]. Another pit, [544], cut through the fill of the edge of the north-west ditch of EN2, near its south-west corner.

Period 4.2

Features of Period 4.2 are shown on Figure 2.33. Enclosure 3 (EN3) appears to have been a rectangular enclosure. Its south-east ditch abutted and cut partly into the north-west ditch EN2 of Period 4.1 (Figure 2.29, Section 16), whilst its south-west ditch cut ST1 of Period 4.1 and D29 of Period 3.2. The north-east and south-west ditches of EN3 were partly truncated by EN1 of Period 4.1 (Figure 2.34, Section 23). EN3 was *c*.16m north-east to south-west by at least 25m north-west to south-east. Its north-west ditch perhaps followed the same line as, and was completely removed by, the north-west ditch of EN1. If so, EN3 would have measured *c*.48m north-west to south-east. The EN3 ditch was 0.8 to 0.9m wide and 0.48 to 0.53m deep (Figure 2.29, Section 16).

Enclosure 7 (EN7) was a major new enclosure of Period 4.2, although a similar area may already have been enclosed on three sides during Period 3 between EN15 to the north-west, D3a to the south-east and various small enclosures to the south-west. EN7 was represented by a ditch on its north-west, south-west and south-east sides. It was rectilinear, *c*.50m north-west to south-east by at least 50m north-east to south-west. The EN7 enclosure ditch was 0.8m wide on the north-west side, at least 1.3m wide on the south-east side (Figure 2.34, Section 22; Figure 2.35), and 1.6m wide on the south-west side. It had a depth of 0.3 to 0.5m. It cut along the south-east ditch of EN5 of Period 4.1

Figure 2.32. Looking north-west at a quarter-excavation of drainage pit or waterhole P1, [1351] and [1353], of Period 4.1. Scale 2m in 0.5m graduations (Photo no. 100-1443).

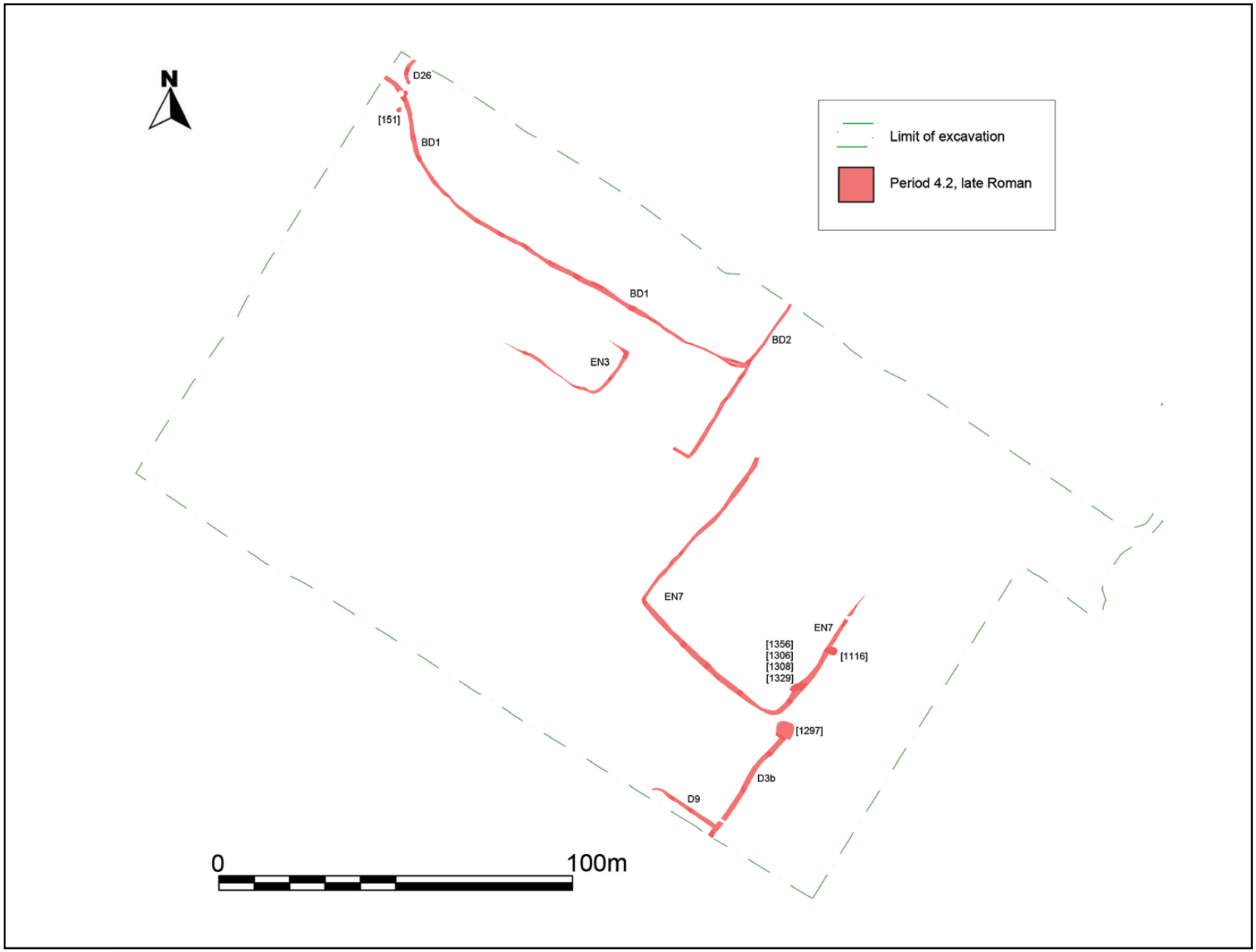

Figure 2.33. Plan of the site showing features of Period 4.2, late Roman.

to the north-west. Further south, it cut BD5 of Period 4.1 and various Period 3 enclosures. It was cut to the north-west and north-east by EN4 and EN6 respectively of Period 4.3. It is unclear whether EN7 was completely open on its north-eastern side, or if it was partly closed by an earlier ditch that was later recut by part of EN6, leaving an entrance about 19m in width. Although EN7 lay close to and partly followed the line of pre-existing ditches, such as BD5 to the south-west and D3a to the south-east, the position of its south-west corner meant that EN7 was not neatly aligned with respect to pre-existing EN15 and BD5. An incomplete double-sided composite comb in antler (SF320) was recovered from a fill of the central part of the south-west ditch of EN7.

An oval pit, [1306]=[1329], containing the articulated remains of three infant burials (very likely triplets that died soon after birth) was cut partly into the inner side of the south-east ditch of EN7 (Figure 2.34, Section 22; Figure 2.35; Figure 2.36). It cut [1308] and [1356], which could be earlier pit(s) or the edge of the EN7 ditch. The burial pit was *c*.2.5 by *c*.1.8m and at least 0.48m in depth. It had gradually sloping sides and a concave base. Its fill was a dark black brown silty clay with charcoal, animal bone, pottery and iron nails, perhaps from a coffin(s) or box(es) in which one or more of the burials were placed. A cattle mandible from the fill of the pit produced a radiocarbon date of 250–405 cal. AD at 95.4% probability and 309–405 at 62.8% probability, clearly indicating a late Roman, probably 4th-century AD, date. A few perinatal human skull fragments were found in the fill of the ditch of EN7 immediately next to pit [1306]=[1329] and may have derived from disturbance of an infant burial in that pit.

Boundary ditch (BD1) was a major curvilinear boundary in the north-west part of the site (Figure 2.37). It ran north-west from BD2/BD3 and was cut by BD3. BD1 probably replaced D15 of Period 4.1, which appears to have been its forerunner. At one point, BD1 had two branches, which diverged and then re-joined, suggesting it may have been recut. BD1 extended for at least 131m and continued beyond the north-west limit of excavation. It had a variable width ranging from 0.5 to 1.5m and a depth of 0.3 to 0.5m. BD1 likely formed a boundary for an agricultural field to the north of the site. It may also have defined the north-east side of a trackway, *c*.8m wide that ran along the north-east side of, and provided access to/from the central area of enclosures, here represented by EN2 of Period 4.1, EN3 of Period 4.2 and EN1 of Period 4.3. In the north-west corner of the site a curvilinear ditch, D26, was traced *c*.2.2m to the north of BD1, possibly forming part of an entrance into another field or enclosure to the north-west of the site.

Boundary ditch 2 (BD2) was a major boundary feature running north-east from and along the line of EN15 of Period 3.2 for at least 52m. BD2 extended beyond the north-east limit of excavation and represented a recut of BD3 of Period 4.1. BD2 also cut EN5 and D15 and D28 of Period 4.1 and BD1 of Period 4.2. The south-west end of BD2 turned at a right angle and ran north-west for *c*.5m, abutting and partly cutting into the north-eastern edge of part of the north-east ditch of EN15. BD2 was 0.8 to 1m wide and 0.26 to 0.5m deep (Figure 2.29, Section 19).

Another feature of Period 4.2 was D3b, a recut of part of the major and repeatedly redefined Roman boundary along the south-east side of the site (Figure 2.21, Section 14; Figure 2.24). D3b was at least 36m in length, typically *c*.1.5m wide and 0.22–0.67m deep. It extended beyond the limit of excavation to the south-west and appeared to discharge into a large possible pit, [1297], to the north-east. Pit [1297] was at least 3m in diameter, but the stratigraphy of this part of the site was extremely complicated due to repeated recutting of the boundary ditch and the interpretation of this feature as a pit relies principally on lidar data. To the north of the possible pit, the line of the same boundary was continued by EN7 of Period 4.2.

A ditch, D9, ran north-west at a right angle from the south-west recorded part of D3b for *c*.20m. D9 cuts EN28 of Period 3.2 and it appeared to be approximately contemporary with D3b, although no stratigraphic relationship between them was recorded in excavation. The north-west angle of D9 curved slightly towards the west before apparently terminating. D9 may define one side of an enclosure, field or trackway in the south-east part of the site, the remainder of which perhaps lay south of the south-west limit of excavation.

Other features assigned to Period 4.2 comprised two pits: [151], which lay in the north-west corner of the site near BD1 and cut D27 of Period 3.1; and [1116], which cut the south-east side of EN7 of Period 4.2.

Period 4.3

Features of Period 4.3 are shown on Figure 2.38. This is the final stage of Roman activity on the site. Enclosure 1 (EN1) was a major and clearly defined feature in the north-west part of the site (Figure 2.39). It was rectangular, *c*.69m north-west to south-east by *c*.18 to 19m north-east to south-west, and it appeared to form part of the north-east side of the system of enclosures on the site. Its ditch was 1.2 to 1.6m wide and 0.4 to 0.8m deep. EN1 cut various earlier features, including EN2 of Period 4.1 (Figure 2.39) and EN3 of Period 4.2 (Figure 2.34, Section 23). It represented a replacement/redefinition of EN2 and EN3, following similar lines to these, but

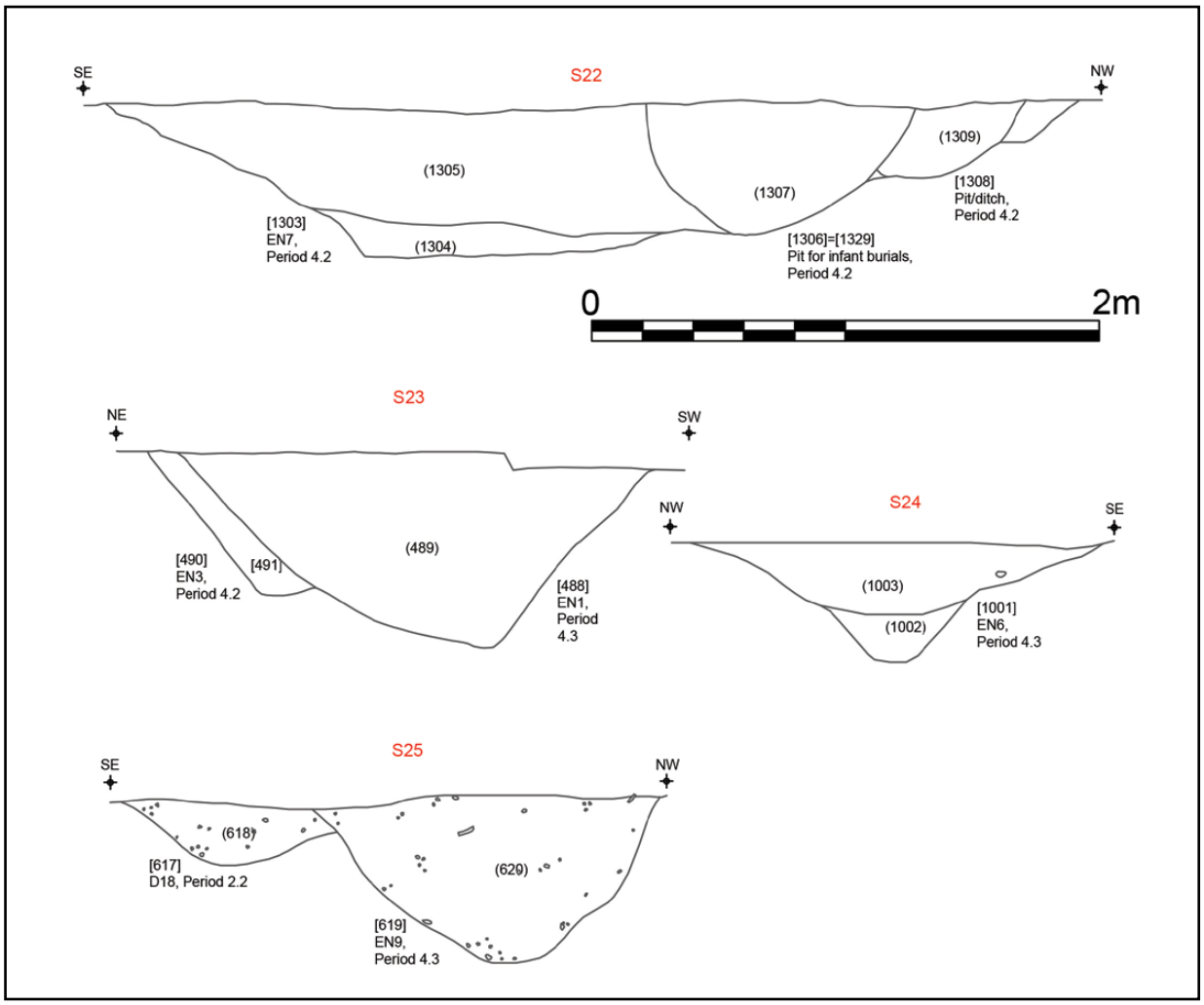

Figure 2.34. Sections 22–5 showing features of Period 4 (for section lines, see Figure 1.11).

combining their former areas into a single larger enclosure. Three copper-alloy Roman coins were recovered from a single upper fill of the north-east ditch of EN1 at its junction with the south-east ditch of EN3 (the same fill extended into the top of the adjacent EN3 ditch). These comprised two coins of the House of Valentinian, datable to AD 364–78, and one copy of the House of Constantine, datable to AD 353-360. It is possible that EN1 and some of the other narrow enclosures recorded on the site might represent timber sill-beam buildings, although there is no clear evidence to support this.

Enclosure 4 (EN4) lay *c*.10m to the east of EN1, immediately to the east of BD2 of Period 4.2. EN4 was approximately 14m square, with a ditch *c*.1.1m wide on its north-west (Figure 2.29, Section 19) and south-west sides, but only *c*.0.5m wide to the north-east and south-east. Its ditch was 0.58 to 0.9m deep. Its south-west ditch neatly cut/recut the north-east ditch of EN5 and part of the

Figure 2.35. North-east-facing section of the south-east ditch of enclosure EN7, [1303], of Period 4.2, cut to the right by pit [1306]=[1329] of the same period, which contained three infant burials (very likely triplets). Scale 2m in 0.5m graduations (Photo no. 100-1386).

Figure 2.36. Looking north at one of three infant burials (very likely triplets) in pit [1306]=[1329] of Period 4.2, which was cut into the inner (north-west) side of the south-east ditch of enclosure EN7, [1303], of the same period. Scale 0.4m in 0.1m graduations (Photo no. 100-1416).

north-west ditch of EN7, both of Period 4.2. EN5 and EN7 might have remained in use with EN4.

About 19m to the south-east of EN4 was Enclosure 6 (EN6). This was rectangular, *c*.30m north-west to south-east and *c*.21m north-east to south-west. Its ditch was recorded as 1m wide on the north-east and north-west sides (Figure 2.34, Section 24) and 0.6m wide on the south-west side. It was 0.4m deep. Much of the south-east side of EN6 was truncated by medieval/post-medieval furrows, including its presumed junction with EN8 of Period 4.3 and/or EN7 of Period 4.2. EN6 has been assigned to Period 4.3, but it may possibly be contemporary with EN7.

Immediately to the south of EN6 lay Enclosure 8 (EN8). This survived as an L-shaped ditch running south-west of EN6 for *c*.13.5m, cutting into and along the line of the south-east ditch of EN7, before turning at a right angle to run north-west for *c*.8.5m. Its ditch was *c*.1m wide and *c*.0.2 to 0.3m deep. EN8 probably represented a small enclosure, perhaps lying in the north-east part of the very large EN7 of Period 4.2, assuming EN7 remained in use into Period 4.3.

Enclosure 9 (EN9) was situated in the south-west part of the site. It was a clearly defined, slightly trapezoidal, rectilinear enclosure, covering an area of *c*.31m north-west to south-east by *c*.20 to 23m north-east to south-west. Its ditch was *c*.0.6 to 1.3m wide and 0.4 to 0.6m deep (Figure 2.34, Section 25; Figure 2.40). The north-east ditch of EN9 cut along and through part of the line of BD5 of Period 4.1. Its north-western ditch probably approximately followed and completely truncated part of the south-east ditch of EN16 of Period 3.1, which may possibly have remained in use into Period 4.3 as its internal area was respected by and not cut by subsequent Roman enclosures. The south-west ditch of EN9 cut the south-west ditch of EN27 of Period 3.2. It seems likely that EN9 was a replacement for EN10 of Period 4.1, which itself replaced EN27, although the south-east ends of each of these enclosures lay in different positions. EN27 appears to be the smallest of the three in terms of area and EN10 the largest.

Other features of Period 4.3 included a sub-circular pit, [143], *c*.2.0 by 1.8m and 0.55m deep, with steep sides and a flat base. This pit lay near the north-west corner of the site and was cut into BD1 of Period 4.2.

Pit [516], which lay in the centre-north part of the site, was also assigned to Period 4.3. It was oval, 1.2 by 0.6m and 0.11m deep, and it was partly cut by the inner edge

Figure 2.37. North-west-facing section of ditch BD1, [160], of Period 4.2, cutting curvilinear ditch of possible structure ST5, [163], of Period 2.2, to the right. Scale 1m in 0.5m graduations (Photo no. 100-0198).

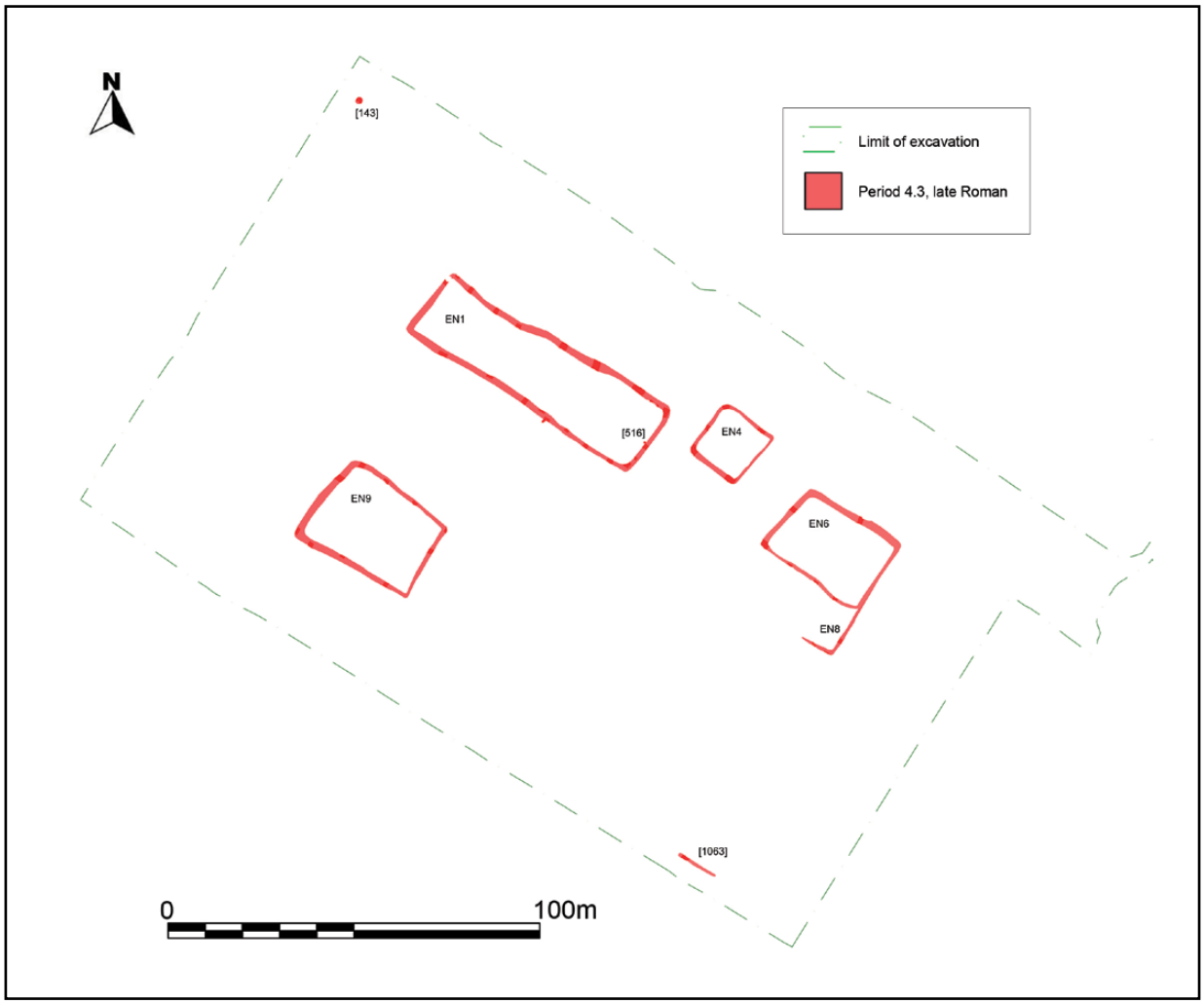

Figure 2.38. Plan of the site showing features of Period 4.3, late Roman.

Figure 2.39. South-east-facing section of the north-east ditch of enclosure EN1, [341], of Period 4.3, cutting the north-east ditch of enclosure EN2, [343], of Period 4.1, to the left. Scale 2m in 0.5m graduations (Photo no. 100-0393).

Figure 2.40. North-east-facing section of the south-east ditch of EN9, [619], of Period 4.3, cutting shallower ditch D18, [617], of Period 2.2, to the left. Scale 2m in 0.5m graduations (Photo no. 100-0654).

of the south-east ditch of EN1 of Period 4.3. The dating of pit [516] is not certain and it may belong earlier in the Roman period, perhaps relating to ST6 of Period 3.1.

The final feature of Period 4.3 is a short linear ditch segment, [1063], which cut across and runs to either side of D3b of Period 4.2. Ditch [1063] was *c.*11.5m long. It was aligned north-west to south-east, perpendicular to D3b and parallel to D9 of Period 4.2, which lay *c.*1.4m to the south-west. The interpretation of [1063] is unclear. It may relate to drainage of the adjacent fields into D3b.

Period 5. Medieval/post-medieval

Features of Period 5 are shown on Figure 2.41. These comprise a large number of ditches and/or furrows, which ran north-east to south-west across the site and related to the use of this area as an agricultural field (or fields) in the medieval/post-medieval periods. The majority of these ditches/furrows cut Roman features of Periods 2–4 and their fills were sealed by the post-medieval/modern subsoil (002) and topsoil (001). Their alignment was similar to that of the Roman features. The fills of the Period 5 features included residual Roman material, as well as post-medieval and modern material (cf. below, pp. 62-124). Only one ditch ran north-west to south-east, perpendicular to the others. This lay in the north-west corner of the site and was at least 36m long. It ran beyond the limit of excavation to the north-west, but apparently terminated to the south-east against a north-east to south-west ditch of the same period. No field ditches are shown in the area of the site on historic maps.

Period 6. Modern

A small number of features of very recent date are assigned to Period 6 (Figure 2.41). These comprise a pit, a manhole, a geo-tech pit and another intrusion.

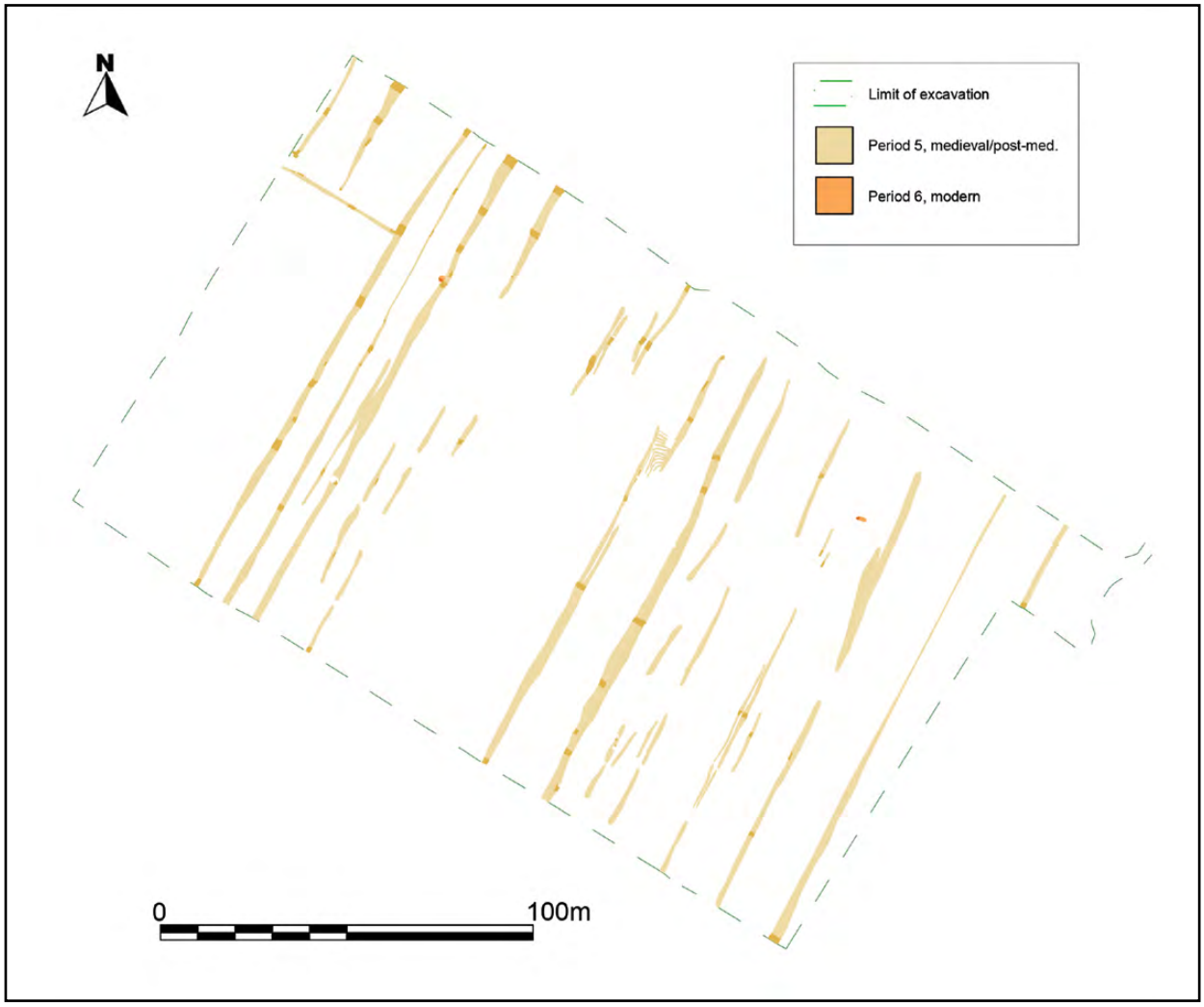

Figure 2.41. Plan of the site showing features of Periods 5 and 6, medieval/post-medieval to modern.

Chapter 3

Specialist reports

Introduction

A large quantity of finds was recovered from the excavation. Specialist reports on the artefacts by category are presented in this chapter, along with reports on the human, animal and palaeoenvironmental remains and other specialist material. The types and quantities of material recovered are summarised in Table 3.1.

Table 3.1. Finds and samples from the site by material, quantity and weight.

Material	Quantity	Weight (g)
Iron Age and Roman pottery	6912 sherds	140,867
Medieval and later pottery	33 sherds	450
Ceramic building material	143 fragments	12,134
Burnt clay	286 fragments	1664
Mortar	4 fragments	399
Struck flints	7 flints	189.5
Utilised stone artefacts	71 fragments	48,633
Coins	69 coins	146
Other copper-alloy objects	26 objects	250
Iron objects	527 objects	7717
Lead objects	11 objects	266
Miscellaneous material	6 pieces/groups	715.5
Objects of antler and bone	13 objects	544
Glass	13 fragments	99
Clay tobacco pipe	6 fragments	26
Human infant bones	4 complete/partial skeletons, 4 disarticulated bones, 2 rearticulated skeletal elements	
Animal bone	10702 fragments with 6325 refitted specimens (NISP) recorded as disarticulated bones (NISP=5435) and seventy-six Associated Bone Groups (NISP=890)	Just under 300kg
Marine shell	323 fragments	5669
Molluscan remains	Present in 176 of 180 environmental samples	
Palaeoenvironmental samples	180 samples	
Waterlogged wood	4 pieces	
Radiocarbon samples	4 samples	

Iron Age and Roman pottery

By Rob Perrin

Introduction

A large and significant assemblage of Roman pottery (with a smaller amount of Iron Age material) was recovered from the excavations. The pottery was recorded per context by count of rims, body sherds and bases, together with weight in grams and rim percentage per fabric. Where possible, the form of vessels was noted. A total of 6912 sherds weighing 140,867 grams with an estimated vessel equivalent (EVE) of 117.12% was recovered from 426 contexts in 371 identifiable features/cuts, together with topsoil, surface, unstratified and unclassified layers (Table 3.2). Over 80% of the contexts and features/cuts were assigned to one of various feature group categories and all of the contexts, grouped and ungrouped, were divided into six periods and 10 phases, most of which belonged to the later Roman period. A large proportion of the assemblage was recovered from various ditches and, as a whole, appears to have been very disturbed with a great deal of breakage. The distribution of the pottery from Roman contexts is shown on Figure 3.1, with selected Iron Age and Roman vessels illustrated on Figure 3.2 and Figure 3.3–Figure 3.8 respectively.

The fabrics and vessel forms

Table 3.2 shows the amounts of pottery per fabric. The fabrics of imported continental and regionally-traded wares are assigned to the codes in the National Roman Pottery Fabric Reference Collection (Tomber and Dore 1998) and, for the local wares, the fabric codes are those used by the Cambridge Archaeological Unit and for pottery assemblages from other recent excavations in the vicinity. Six fabrics account for over 80% of the total by sherd count. Well over 900 possible forms were noted and Table 3.3 lists the basic forms. The number of forms is probably an over-estimate, given the difficulty in identifying joins between the contexts.

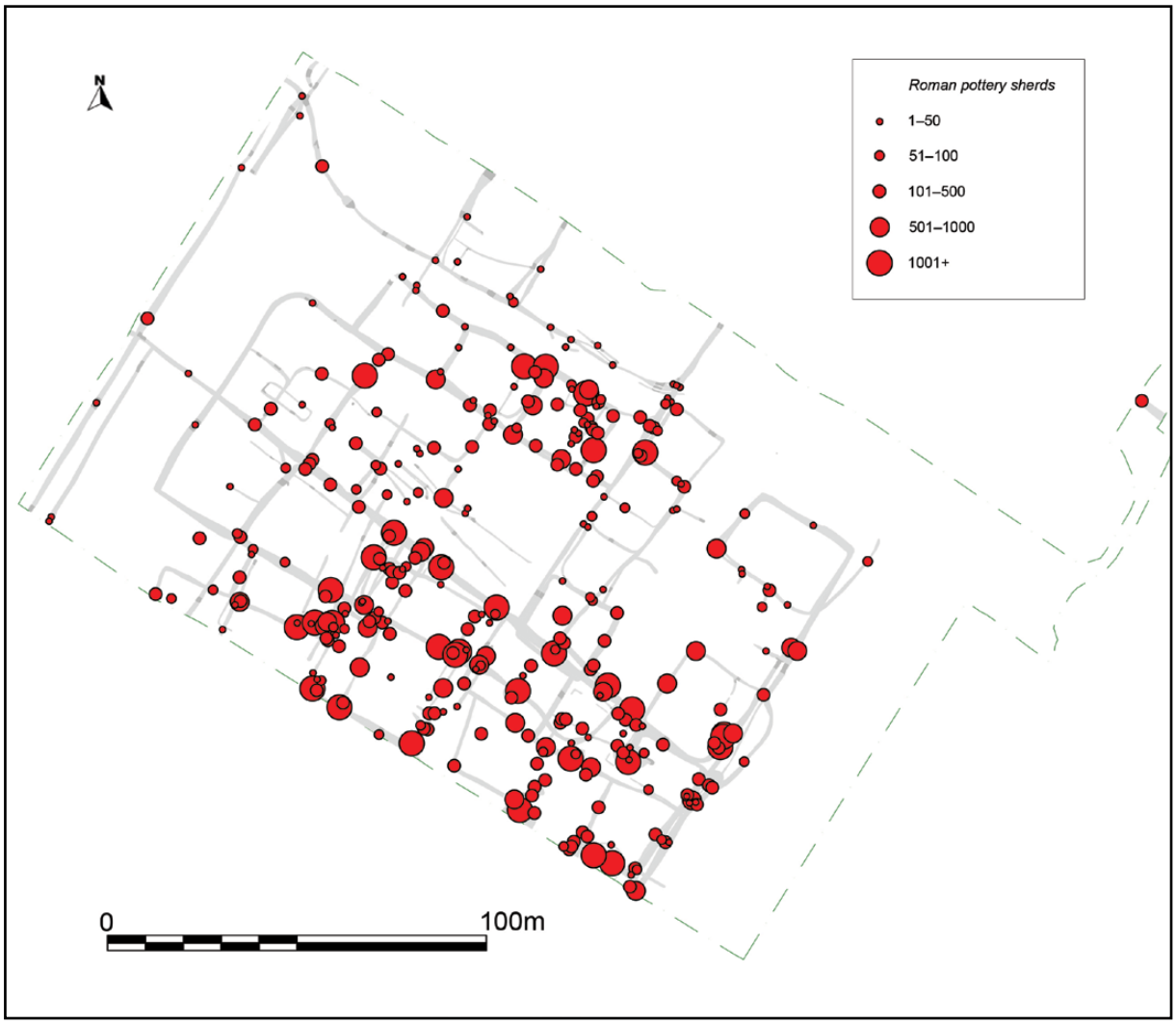

Figure 3.1. Distribution of Roman pottery from Roman contexts.

Table 3.2. Iron Age and Roman pottery: fabric quantification.

Fabric	Description	NoSh	%	Wgt (g)	%	EVE (%)	%	Vessels	%
Continental imports									
BAT AM 1	Baetican amphora	26	0.38	4024	2.86	0	0	13	1.33
GAL AM 1?	Gaulish amphora	1	0.01	106	0.08	0	0	1	0.1
LMV SA	Les Martres de Veyre samian	1	0.01	1	0	0	0	0	0
LEZ SA 2	Lezoux samian	37	0.54	560	0.4	0.66	0.56	27	2.76
RHZ SA	Rheinzabern samian	8	0.12	192	0.14	0.17	0.15	7	0.72
TRI SA	Trier samian	1	0.01	27	0.02	0.08	0.07	1	0.1
SAM	Unsourced samian	2	0.03	1	0	0	0	0	0
CNG CC	Central Gaulish colour-coat	1	0.01	1	0	0	0	0	0
Regionally-traded wares									
LNV CC	Lower Nene Valley colour-coat	571	8.26	15166	10.77	19.74	16.85	160	16.34
LNV GW	Lower Nene Valley grey	25	0.36	549	0.39	0.37	0.32	5	0.51
LNV WH	Lower Nene Valley white	33	0.48	2011	1.43	1.11	0.95	27	2.76
MAH WH	Mancetter-Hartshill white	2	0.03	38	0.03	0.07	0.06	2	0.2
OXF OX	Oxfordshire oxidised	3	0.04	16	0.01	0	0	3	0.31
OXF PA	Oxfordshire parchment	1	0.01	9	0.01	0.06	0.05	1	0.1
OXF RS	Oxfordshire red-slipped	64	0.93	1596	1.13	2.12	1.81	29	2.96
OXF WH	Oxfordshire white	18h	0.26	842	0.6	0.71	0.61	12	1.23
OXF WS	Oxfordshire white-slipped	9	0.13	533	0.38	0.99	0.85	7	0.72
HADHAM?	Hadham?	1	0.01	9	0.01	0	0	1	0.1
SOB GL?	South British glazed?	1	0.01	1	0	0.03	0.03	1	0.1
'Native' wares									
FLINT	Flint-tempered	58	0.84	1673	1.19	0.59	0.5	7	0.72
B L A C K / BROWN	Black or brown	30	0.43	326	0.23	0.2	0.17	3	0.31
Local wares									
GROG	Grog-tempered	147	2.13	2999	2.13	0.62	0.53	3	0.31
G R O G / SHELL	Grog/shell-tempered	7	0.1	80	0.06	0.14	0.12	1	0.1
SHELL	Shell-tempered	950	13.74	18431	13.08	18.47	15.77	140	14.3
BLKSL	Black-slipped	546	7.9	9474	6.73	18.03	15.39	130	13.28
Imit. BB	Imitation black-burnished	54	0.78	1326	0.94	1.62	1.38	19	1.94

Table 3.2. Iron Age and Roman pottery: fabric quantification, continued.

Fabric	*Description*	*NoSh*	*%*	*Wgt (g)*	*%*	*EVE (%)*	*%*	*Vessels*	*%*
Local wares (continued)									
CSBLK	Coarse sandy black	1	0.01	9	0.01	0	0	0	0
CSGW	Coarse sandy grey	2300	33.28	35100	24.92	26	22.2	177	18.08
FSGW	Fine sandy grey	1	0.01	4	0	0	0	0	0
GREY	Grey	233	3.37	4005	2.84	3.41	2.91	27	2.76
HORNGW	Horningsea grey	381	5.51	17538	12.45	2.09	1.78	30	3.06
HORNOX	Horningsea oxidised	325	4.7	11495	8.16	0.1	0.09	3	0.31
BUFF	Buff	58	0.84	990	0.7	1.87	1.6	9	0.92
CREAM	Cream	7	0.1	215	0.15	0	0	1	0.1
PINK	Pink	8	0.12	42	0.03	0	0	0	0
WW	White	2	0.03	10	0.01	0.22	0.19	2	0.2
CSOX	Coarse sandy oxidised	350	5.06	3745	2.66	2.93	2.5	35	3.58
OXID	Oxidised	649	9.39	7723	5.48	14.72	12.57	95	9.7
Total		**6912**		**140867**		**117.12**		**979**	

Table 3.3. Iron Age and Roman pottery: vessel form quantification.

Form	Count
Amphora	15
Bowl	125
Dish	136
Bowl/dish	19
Beaker	27
Cup	7
Flagon	21
Face flagon/Jar	4
Jar	468
Jar/bowl	41
Lid	11
Castor Box	6
Mortaria	67
Costrel?	1
Cheese Press?	4
Misc.	27
Total	**979**

Amphora

The Baetican amphora (BAT AM 1) sherds are of Dressel 20 type and the Gaulish amphora (GAL AM 1) sherd is Dressel 2–4.

Samian ware

The small samian ware assemblage has been analysed by J.M. Mills (Table 3.2 and Table 3.4–Table 3.6). It comprises 49 sherds weighing 781g (0.91 rim EVEs) representing a minimum number of 35 vessels (MNV). The mean sherd weight is relatively large at almost 16g. The samian came from Central and East Gaul, with the vast majority belonging to the second half of the 2nd century AD. No 1st-century AD samian was identified and just one small plain body sherd weighing 1g (1194) may have come from the Trajanic-Hadrianic kilns at Les Martres-de-Veyre. There is an absence of characteristically Hadrianic and early Antonine forms, no Drag. 42, Drag. 18/31 or 18/31R dishes, or Drag. 27 cups are present, although there is a possible Cu. 11 bowl.

Much of the samian is in a good or fair condition, some of the slip is scuffed or scratched and the slip has been lost from a few of the rims. None of the samian shows any sign of post-depositional burning or heavily abraded breaks. The mean sherd weight of 15.9g for the

Table 3.4. Samian ware per period/phase (SC = sherd count).

Period/ phase	LMV SA		LEZ SA 2		RHZ SA		TRI SA		SAM	
	SC	Wt (g)	SC	Wt (g)	SC	Wt (g)	SC	Wt (g)	SC	Wt (g)
2.2			7	129	1	31				
2.3	1	1	4	117						
3.1			3	19						
3.2			6	95	1	14				
3.3			1	5	1	10				
4.1			4	38	2	114	1	27		
4.2			9	76						
4.3			1	27	3	23			2	1
6			1	35						
NP			1	19						
Total	1	1	37	560	8	192	1	27	2	1

whole assemblage and the low level of abrasion and attrition indicates little post-depositional disturbance. The East Gaulish wares survive as larger sherds than the Central Gaulish material with a mean sherd weight of more than 20g as may be expected for some of the latest samian in the group.

Heavy or prolonged use was noted for six bowls (Table 3.5). Two of these are decorated forms (from the fill (864) of pit [863] and the fill (1082) of Enclosure 23) and there are also two Drag. 31R bowls and two flanged Drag. 38 bowls. Only one vessel, a Drag. 30 (864), has a heavily worn foot-ring which might indicate that that vessel had a particularly long life. Patches of slip had been worn away from small areas of the lower wall of the interior of two vessels, such wear suggesting concentrated stirring or grinding actions undertaken with the bowl tipped on one side (joining sherds Drag. 31R in topsoil (2) and fill (515) of Enclosure 1; Drag. 37? in fill (1082) of EN23). The two Drag. 38 bowls had much, if not all, of the slip missing below the flange suggesting that these bowls had been used standing on the foot-ring for prolonged periods for stirring/ mixing or grinding. The ring of wear at the base angle of Drag. 31R (1106), Ditch [1105], Enclosure 14 suggests large stirring movements, although perhaps not for an extended period.

The assemblage is a small one and for this reason only one potential post-breakage alteration was observed. The base of a Drag. 31 dish from (1029), Ditch [1028], D11, may have broken in this manner, or it may have been roughly trimmed, removing the wall sherds but no further shaping or finishing is evident. Similarly,

Table 3.5. Samian ware: vessels with evidence of use wear.

Context	Feature	Group	Fabric	Form	Details of use wear
(864)	Pit [863]	-	LEZ SA 2	30	Foot heavily worn
(771)	Ditch [770]	EN26	RHZ SA	38	Heavy internal wear, large patch with almost all slip worn away almost up to height of flange
(345)	Ditch [343]	EN2	LEZ SA 2	38	Heavy internal wear, most slip worn away below flange height
(2) + (515)	Topsoil Ditch [513]	EN1	LEZ SA 2	31R	Joining sherds 2 separate patches of wear, one on each sherd
(1082)	Ditch [1083]	EN23	LEZ SA 2	?37	Internal patch of wear
(1106)	Ditch [1105]	EN14	LEZ SA 2	31R	Internal ring of use wear along base angle

Table 3.6. Samian ware: vessel forms.

Vessel function	Vessel form	Vessel fabric					Total MNV
		?LMV SA	LEZ SA 2	RHZ SA	TRI SA	SAM	
Plate or dish	31		3				
	31R		4				
	31 or 31R		1				
	36		4	1			
	Lud Tg		1				
	Curle15		1				
	Curle15 or 23		1				
	79		1				
	dish		1				
Dish or bowl			1				
Decorated bowl	30		2				
	37		2	2	1		
	38			3			
	44/Lud Sn			1			
Cup	Cu 11?		1				
	33		3				
	80		1				
	40 var/Bet 3						
Total MVN			**27**	**7**	**1**		**35**
No form: sherds/weight		**1/1g**	**7/65g**	**1/2g**	**0**	**2/1g**	**11/69g**

there is limited evidence for vessel repair; a single small sherd was noted as being broken across a cut slot from a leaded repair. A repair rate of between 1 and 3% appears to be the most common rate (Willis 2005, 11.5), and as such a single example within this assemblage is consistent with this observation.

There is one vessel from Les Martres de Veyre (LMV SA) dated AD 100–30 but the majority of vessels are from Lezoux (LEZ SA 2) and include forms Drag. 30, 31, 31R, 33, 36 and 37, together with a Curle 11 and one which is either a Drag. 44, or a Ludowichi Sn (Table 3.6). The Lezoux products range in date from AD 110–220/30 and one sherd has a stamp attributed to Divixtus dated AD 140–165. There are also a number of Rheinzabern (RHZ SA) sherds from Drag. 37 and 38 forms ranging in date from AD 150–220/30, a Trier (TRI SA) possible Drag. 37 dating to AD 160–230 and some unattributed, possibly East Gaulish (SAM), sherds from Drag. 31R and 33 forms dating from AD 160–220.

Central Gaulish colour-coated ware (CNG CC)

A tiny sherd may be from a Central Gaulish colour-coated ware beaker.

Regionally-traded wares

The most common regionally-traded pottery are the products of the Lower Nene Valley industry, comprising mainly colour-coated ware (LNV CC), together with some grey ware (LNV GW) and white ware (LNV WH). The white ware are all mortaria, barring a dish, and the mortaria types are bead and flange, grooved bead and flange, reeded bead and flange, wall-sided and reeded wall-sided. These are mainly 3rd and 4th AD century in

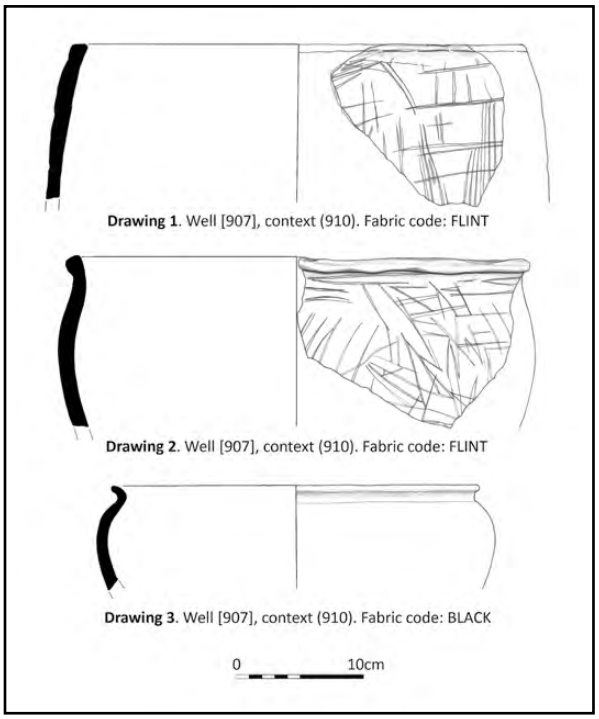

Figure 3.2. Iron Age pottery: jars (Nos 1–3) of mid- to late Iron Age date from the upper fill of well [907] of Period 1.

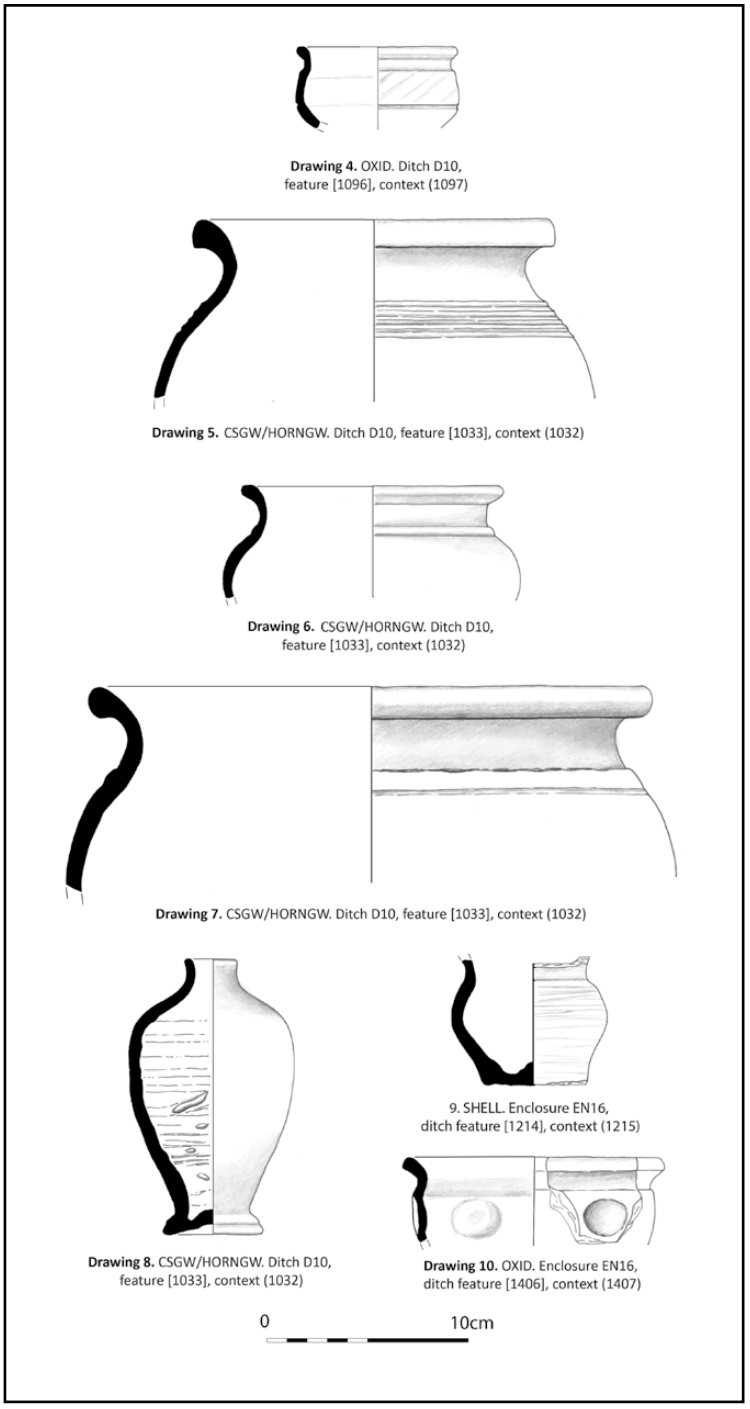

Figure 3.3. Roman pottery: cup with incised lines (No. 4) from a context of Period 2.3; jars (Nos 5–7, cf. Evans et al. 2017a, Fig. 3.10, J10.5, J10.9 and J10.4), jar or bottle (No. 8), miniature vessel (No. 9) and bowl/cup with dimples (No. 10) all from contexts of Period 3.1.

date. The possible LNV GW vessels are a bead-rimmed dish, two plain-rimmed dishes, a jar or bowl and a possible beaker; these are probably of 3rd-century AD date. The large number of colour-coated vessels are mainly bowls, jars or bowls, dishes and beakers. Of the 31 bowls, two are bead-rimmed, 23 flanged, three imitations of samian ware Drag. 37s and three imitations of samian ware Drag. 38s. The 31 jars or bowls are all of the large-mouthed type and of the 38 dishes, 31 are plain-rimmed, two flanged, one triangular-rimmed and one each of imitations of samian ware Drag. 31 and 36. There are 26 beakers, six 'Castor' boxes, 10 flagons and also three lids, three dishes or bowls, four other jars four jars or flagons and two beakers or flagons. The date range of the LNV CC is 3rd to 4th century AD, probably with an emphasis on the latter.

Products of the Oxfordshire industry comprise red-slipped (OXF RS), oxidised (OXF OX), white (OXF WH), white-slipped (OXF WS) and parchment (OXF PA) wares. The parchment ware comprises a double-rimmed bowl of form Young (1977) P24. The 21 oxidised, white and white-slipped vessels are all mortaria, including forms (*ibid.* M22, WC4, WC6, WC7), apart from a carinated bowl of form (*ibid.*) WC3.1. The red-slipped types are 13 mortaria, including (*ibid.*) C100 and 16 bowls including forms (*ibid.*) C41, C51, C75 and C78). All of these Oxfordshire products are of mid-3rd- to 4th-century AD date. The other regionally-traded wares are a possible Mancetter-Hartshill (MAH WH) mortarium of 2nd- to 3rd-century AD date, a 4th-century AD Hadham (HAD OX) ware face flagon (Figure 3.5, No. 13 and Figure 3.6) and a 2nd-century AD glazed sherd which might be part of a cup in SOB GL ware, although it could be medieval in date. It should be noted that pottery very similar to Oxfordshire types was produced more locally at Harston (Bird and Young 1981). The oxidised ware sherds which have a boss, or dimples (Figure 3.7, No. 15) may be Hadham products.

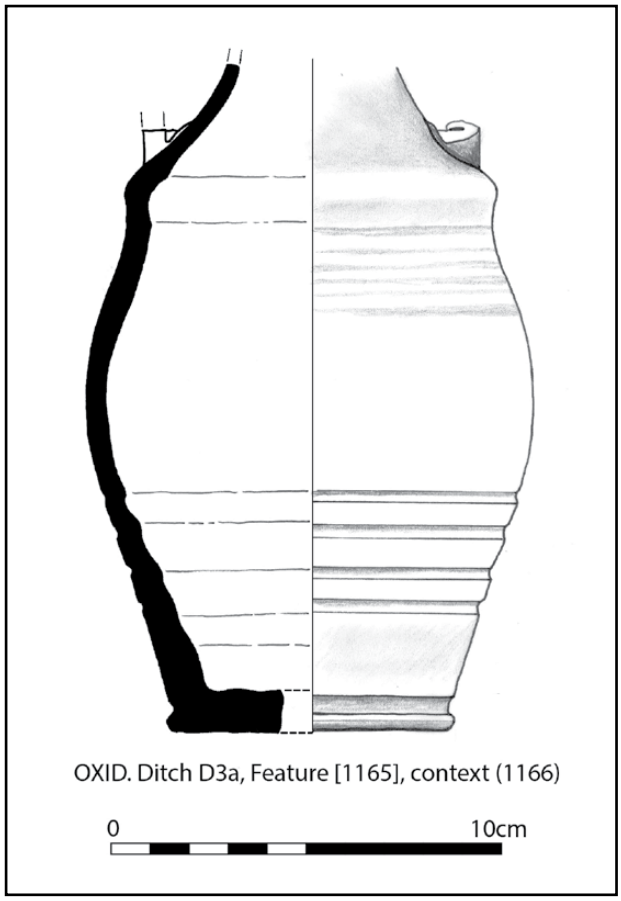

Figure 3.4. Roman pottery: costrel-like vessel (No. 11) from a context of Period 3.2.

'Native' wares

The vessels in these 'native' wares are all jars. The general form is globular and neckless with plain, beaded, curved or flat-topped rims. The flint-tempered vessels (Figure 3.2, Nos 1–2) are probably mid- to late Iron Age in date, those in black/brown (Figure 3.2, No. 3) and grog/shell wares late Iron Age and the grog-tempered late Iron Age to early Roman.

Local wares

Many kiln sites are known in and around Cambridge (https://romankilns.net). The most significant of these in terms of the Milton excavation are those of the Horningsea industry, which include kilns at Milton itself (Evans *et. al.* 2017a, Fig. 3.1, Table 3.3). The most recognisable product of the industry are the large HORN GW and HORN OX storage jars, many of which are the grooved, double rim forms SJ2.1 and 2.2 (*ibid.* Fig 3.8) which date from the Antonine period into the 4th century AD (*ibid.* 61). Most of the grey ware from the site is also likely to have been part of the industry's repertoire, certainly, the forms of the grey ware vessels — jars, bowls, dishes, lids, cheese presses or strainers — can be matched at Horningsea (*ibid.* Figs 3.7-3.16); this likelihood had already been noted for the prior site evaluation assemblage by Peachey (2022, 33). The Horningsea industry, as a whole, was active from the Flavian period into the 4th century AD (Evans *et. al.* 2017a, 79-80, Fig. 3.21) and was intensely conservative in terms of the addition of new form, especially after the Antonine period (*ibid.* 80). Part of the production also included black-slipped vessels (*ibid.* 52, fabric R04), mainly imitating black-burnished ware types of jars, bowls and dishes. Similar black-slipped wares were also part of the Hadham industry and other local sources are, however, also possible for some of the various grey wares.

Oxidised wares, mainly in reddish-yellow, buff, white and cream-coloured fabrics, were produced in the early Roman period at kilns in the vicinity at Teversham (*ibid.* 33) and Cherry Hinton (*ibid.* 34) and in the 2nd and 3rd centuries AD slightly further afield at Godmanchester (*ibid.* 19). As with some of the grey wares, some other local sources are possible, including Horningsea (*ibid.* 89-91). The main vessel forms in these fabrics are various bowls, dishes, jars, flagons and mortaria. The bowls include ones with bead or flanged rims and imitations of samian ware Drag. 38. The dishes include ones with bead, triangular or plain rims and an imitation of samian ware Drag. 36. The flagons include ones with double or curved rims and ring-necked types. The jar forms include ones with double or lid-seated rims and narrow-mouthed and miniature types and the mortaria are bead and flange types. More unusual reddish-yellow oxidised ware forms that occur are a costrel-like vessel (Figure 3.4, No. 11), some cups (Figure 3.7, Nos 14-15), a possible beaker and cheese presses or strainers (Figure 3.8).

The majority of the shell-tempered ware vessels are jars including ones with lid-seated, plain, triangular and undercut rims, together with narrow-mouthed and storage jar types. Other shell-tempered ware forms are flanged bowls, wide-mouthed bowls, grooved-rim bowls and plain-rimmed dishes. Shell-tempered ware was used in the later Iron Age and throughout the Roman period with the lid-seated and plain-rimmed jars being mainly of later Iron Age and early Roman date and the flanged bowls, wide-mouthed bowls, and plain-rimmed dishes belonging to the 4th century AD, most likely to be the products of the Harrold, Bedfordshire kilns (Brown 1994).

Decoration

Some of the LNV CC beakers have barbotine, or overslip white paint, or rouletted decoration and the latter is also present on sherds of 'Castor' boxes and on an imitation samian ware Drag. 37 bowl. White paint also

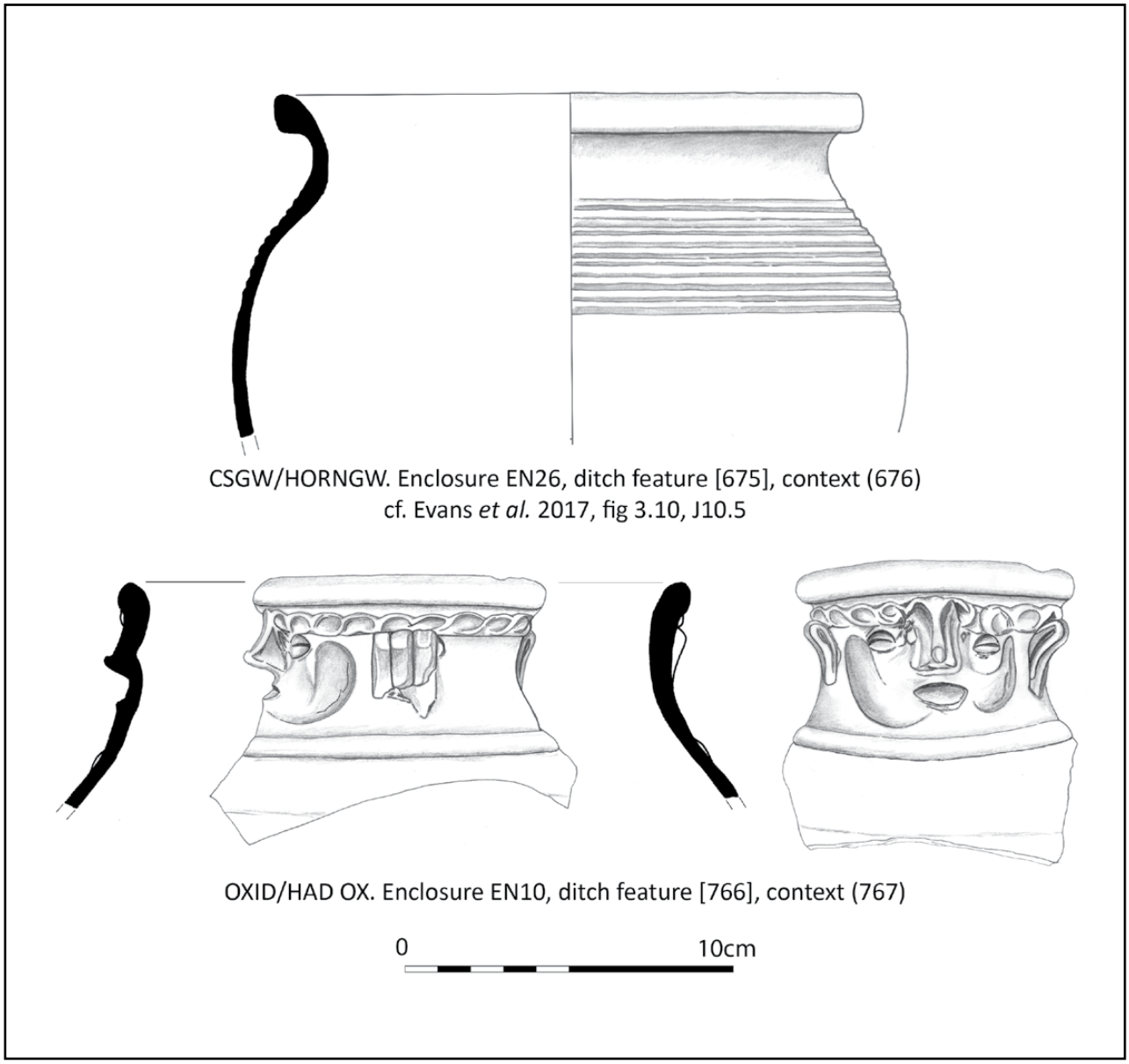

Figure 3.5. Roman pottery: jar (No. 12) from a context of Period 4.1 and face flagon (No. 13) from a context of Period 4.2.

Figure 3.6. Roman pottery: face flagon in OXID/HADOX fabric from context (767), ditch feature [766], Enclosure EN10.

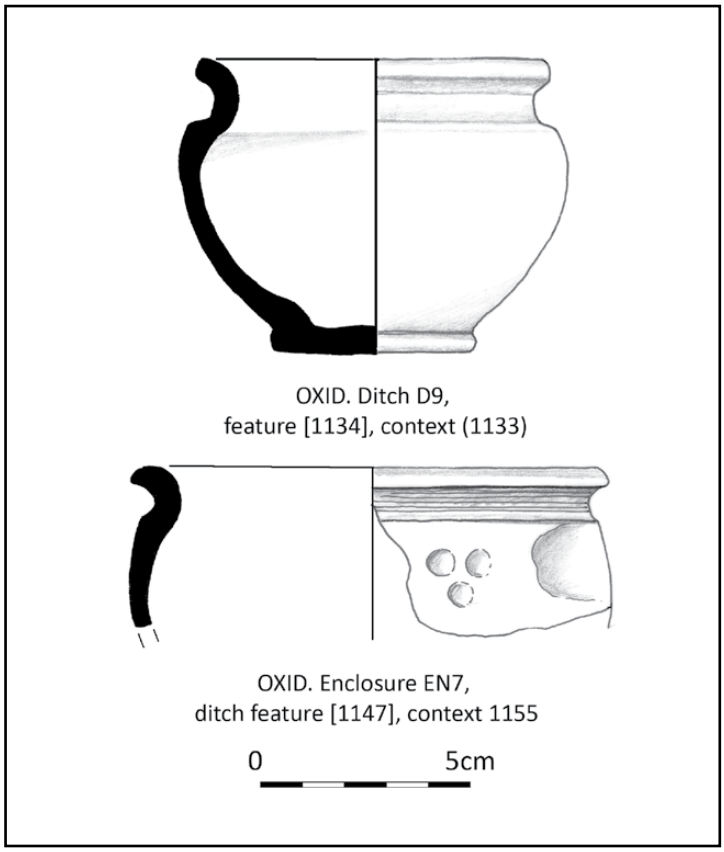

Figure 3.7. Roman pottery: cup (No. 14) and cup with dimples (No. 15) from contexts of Period 4.2.

occurs on the rim of an imitation samian ware Drag. 36 dish. A LNV CC flagon has a neck cordon and a LNV WH dish has an internal, red-painted X/cross motif. Some OXF RS sherds are rouletted and this decoration also occurs together with semi-circular stamps; other sherds have stamped rosettes. An OXF PA bowl has red-painted decoration.

Traces of surface wiping occur on a flint-tempered sherd and a jar has crude lattice scoring, while a grog-tempered jar has a cordon at the junction of its neck and cordon and another sherd has horizontal rilling. Assuming that most of the grey wares are Horningsea products, the range of common decorative techniques and motifs are discussed by Lyons (in Evans *et al.* 2017a, 57, 59). Additions to these occurring on sherds in the Milton assemblage are notches on the girth or shoulder, dimples and a frilled rim on a narrow-mouthed jar. A black-slipped dish has an internal burnished X/cross. The common combed decoration on the Horningsea storage jars includes many sherds with both internal and external combing as discussed by Lyons (*ibid.*), but also stab marks which might have occurred when finishing the combing; some sherds have notches and, occasionally, open lattice decoration. Many oxidised ware sherds are burnished, others are white or cream slipped and a few have a red wash or slip. Notches and dimples also occur (Figure 3.7, No. 15), one vessel has a boss and another a frilled rim. Frilled rims or neck also occur on shell-tempered jars, together with notches, incised wavy lines and rilling; the latter is also present on some wide-mouthed bowls.

Assemblage characteristics and usage

The assemblage appears to have been very disturbed with a great deal of breakage. Many of the vessels are just represented by rim sherds, with few profiles surviving and the average rim percentage is a low 11%. There are, however, around 20 more complete vessels. The mean sherd weight is 20g, but less if the weights of the heavy amphora and storage jar sherds are deducted. Most of the contexts are very mixed with a large number of fabrics and forms, often of varying dates, which presents problems in defining a clear phasing sequence. Much of the pottery shows signs of abrasion or wear and many sherds have evidence of burning. Sooting is also apparent on many rims and limescale is present on some sherds. A grog-tempered jar has a large hole in its base and two buff and oxidised ware sherds have drilled or cut holes in their bases. A LEZ SA 2 Drag. 36 dish has traces of a repair. A BLKSL and a grey ware vessel have slightly warped rims and an oxidised ware plain-rimmed dish

Figure 3.8. Roman pottery: fragment of cheese press or strainer (OXID) with drilled holes in the base, from context (649), [648], Enclosure EN18 of Period 3.3.

has a possible batch mark consisting of three cuts in the rim. There are also nearly 50 complete bases in the assemblage which might suggest post-breakage reuse.

Only one per cent of the total by sherd count are imported wares and around 11% regionally-traded wares, mainly from the relatively nearby Lower Nene Valley industry. The main vessel form is jars, accounting for around a half of the total. The mortaria and cheese presses or strainers indicate food preparation and the bowls and dishes, which comprise over a quarter of the vessels, together with the cups, flagons and 'Castor' boxes, relate to consumption. Overall, the assemblage suggests a basic, utilitarian occupation and activity with a domestic element. The costrel-like vessel, which is an unusual and reasonably rare type, and the face vase(s) are evidence for higher status habitation in the vicinity. This is presumably related to the villa thought to be located immediately south of the site. The location of these vessels and those of the other finer wares and those associated with food preparation and consumption tends to be scattered across the site throughout the periods (cf. Figure 3.9), as might be expected, as the deposits will probably mainly derive from rubbish disposal and redeposition. Some patterns might just be discernible, however, in that a concentration could be perceived along the south-west edge of the site in, for example, D23, D34, D35 of Period 2.2, F1 and EN24 of Period 2.3, D5, D8, EN16 and EN 19 of Period 3.1, EN14, EN17, EN27 and EN28 of Period 3.2, EN18 of Period 3.3, EN26 of Period 4.1 and D9 of Period 4.2 (cf. Figure 3.1). Similarly, there is a possible concentration of mortaria in the vicinity of F1 of Period 2.3, EN11 and EN19 of Period 3.1, EN28 of Period 3.2, EN12 of Period 3.3, BD5 of Period 4.1 and EN7 of Period 4.2.

Figure 3.9. Roman pottery: distribution of cheese presses or strainers, face flagons and costrel-like vessel in late Roman features.

The periods, phases and dating

The site has been divided into six periods, based on a combination of stratigraphic sequence and spot-dating information, with the latter relating to the presence of the various fabrics and particular forms. The fact that the Roman pottery assemblage mainly comes from Roman ditches (Periods 2–4), which were probably subject to recuts and revisions, with different episodes of emptying and filling, resulting in a great deal of disturbance and mixing, means that the divisions between the Roman phases of the site are not clear-cut or distinct. The bulk of the pottery dates after the mid-2nd century AD with an emphasis on the 3rd and 4th centuries AD. It is possible that there was a break in occupation in the later 1st century AD. The periods and phases are:

- Period 1. Mid- to late Iron Age.
- Period 2. Late Roman, mid-3rd to mid-4th centuries AD, Phases 2.1, 2.2, 2.3.
- Period 3. Late Roman, mid- to late 4th century AD, Phases 3.1, 3.2, 3.3.
- Period 4. Late Roman, late 4th to ?5th centuries AD, Phases 4.1, 4.2, 4.3.
- Period 5. Medieval/post-medieval features.
- Period 6. Modern features.

Table 3.7 shows the amount of pottery from each of these.

The amount of mid- to late Iron Age pottery, comprising flint-tempered, grog-tempered and black/brown wares is small, accounting for just over 3% of the total by sherd count. Although there is not a specific early to mid-Roman period, there is obviously pottery of this date in the assemblage, but this tends to occur along with later material. This includes the samian ware, most of which dates within a mid-2nd to mid-3rd century AD range, together with the amphora, the early shell-tempered wares, at least some of the oxidised pink, cream, buff and reddish-yellow wares, including sherds from flagons and double-rim jars, the CNG CC and SOB GL sherds and some of the grey ware.

Groups and features

Most of the site contexts and features/cuts were assigned to group categories. Some were not grouped, however, together with those which were surface and unstratified layers. The categories mainly comprise ditches of various types and Table 3.8 shows the amounts of pottery from each of the categories.

The features can also be divided into different types and Table 3.9 shows the amount of pottery from the main

Table 3.7. Iron Age and Roman pottery: quantification by period.

Period	NoSh	%	Wgt (g)	%	EVE (%)	%	Vessels	%
1	66	0.95	1627	1.15	0.33	0.28	3	0.31
2.1	18	0.26	240	0.17	0.29	0.25	4	0.41
2.2	531	7.68	9887	7.02	8.09	6.91	71	7.25
2.3	407	5.89	7886	5.60	5.22	4.46	47	4.80
3.1	1009	14.60	21365	15.17	17.72	15.13	113	11.54
3.2	1022	14.79	19677	13.97	17.30	14.77	154	15.73
3.3	219	3.17	5614	3.99	4.05	3.46	40	4.08
4.1	1378	19.94	27567	19.57	25.53	21.80	205	20.94
4.2	755	10.92	16779	11.91	15.40	13.15	130	13.28
4.3	1196	17.30	21704	15.41	18.47	15.77	166	16.96
5	212	3.07	3760	2.67	1.98	1.69	19	1.94
6	10	0.14	281	0.20	0.12	0.10	1	0.10
Not phased	59	0.85	3359	2.38	1.47	1.26	20	2.04
Not dated	30	0.43	1121	0.80	1.15	0.98	6	0.61
Total	**6912**		**140867**		**117.12**		**979**	

Table 3.8. Iron Age and Roman pottery: quantification by main group type.

Group	Description	Count	NoSh	%	Wgt (g)	%	EVE (%)	%	Vessels	%
BD	Boundary ditches	5	661	9.56	12327	8.75	13.94	11.90	100	10.21
D	Ditches	37	1331	19.26	26505	18.82	21.66	18.49	139	14.20
DIV	Dividing ditches	4	95	1.37	1955	1.39	2.41	2.06	24	2.45
EN	Enclosure ditches	28	3539	51.20	69962	49.67	60.36	51.54	539	55.06
F	Pond feature	1	111	1.61	3143	2.23	1.05	0.90	13	1.33
P	Pits	2	41	0.59	1358	0.96	0.75	0.64	8	0.82
ST	Structures	7	176	2.55	3849	2.73	2.08	1.78	22	2.25
Total		**84**	**5954**	**86.14**	**119099**	**84.55**	**102.25**	**87.30**	**845**	**86.31**

Table 3.9. Iron Age and Roman pottery: quantification by main feature type.

Feature	NoSh	%	Wgt (g)	%	EVE (%)	%	Vessels	%
Ditch	5744	83.10	114192	81.06	98.09	83.75	810	82.74
Oven	19	0.27	355	0.25	0.21	0.18	1	0.10
Pit	333	4.82	6685	4.75	5.43	4.64	50	5.11
Pond	106	1.53	2797	1.99	0.94	0.80	12	1.23
Watering hole/well	2	0.03	16	0.01	0	0	0	0
Posthole	26	0.38	463	0.33	0.05	0.04	2	0.20
Well	49	0.71	1532	1.09	0.33	0.28	3	0.31
Ditch/furrow	2	0.03	11	0.01	0	0	0	0
Beam slot	75	1.09	1180	0.84	1.21	1.03	7	0.72
Cultivation channel	4	0.06	29	0.02	0	0	0	0
Total	**6360**	**92.01**	**127260**	**90.34**	**106.26**	**90.73**	**885**	**90.40**

Table 3.10. Iron Age and Roman pottery: quantification of the main pottery-producing groups by period.

Period	Group	NoSh	%	Wgt (g)	%	EVE (%)	%	Vessels	%
2.2	EN23	73	1.06	878	0.62	0.93	0.79	9	0.92
2.2	D23	46	0.67	874	0.62	0.92	0.79	5	0.51
2.3	D10	53	0.77	1154	0.82	1.12	0.96	9	0.92
2.3	F1	111	1.61	3143	2.23	1.05	0.90	13	1.33
3.1	EN13	59	0.85	1316	0.93	1.47	1.26	12	1.23
3.1	EN19	121	1.75	2687	1.91	1.84	1.57	24	2.45
3.1	D5	541	7.83	10309	7.32	7.94	6.78	27	2.76
3.1	D8	69	1.00	2688	1.91	1.35	1.15	7	0.72
3.2	EN14	208	3.01	4079	2.90	3.46	2.95	31	3.17
3.2	EN15	410	5.93	7967	5.66	8.29	7.08	66	6.74
3.2	EN17	114	1.65	3297	2.34	2.75	2.35	23	2.35
3.2	EN28	133	1.92	1719	1.22	0.75	0.64	13	1.33
3.3	EN12	56	0.81	851	0.60	0.52	0.44	7	0.72
3.3	EN18	76	1.10	3077	2.18	1.51	1.29	13	1.33
3.3	DIV1	55	0.80	951	0.68	1.59	1.36	15	1.53
4.1	EN2	281	4.07	4048	2.87	2.7	2.31	31	3.17
4.1	EN10	132	1.91	2831	2.01	3.16	2.70	23	2.35
4.1	EN26	154	2.23	4086	2.90	3.38	2.89	27	2.76
4.1	BD5	593	8.58	11025	7.83	12.52	10.69	85	8.68
4.1	ST1	70	1.01	1900	1.35	0.77	0.66	9	0.92
4.2	EN3	49	0.71	1201	0.85	0.92	0.79	12	1.23
4.2	EN7	335	4.85	7681	5.45	6.78	5.79	56	5.72
4.2	D3b	55	0.80	1000	0.71	1.37	1.17	12	1.23
4.2	D9	141	2.00	3221	2.28	2.93	2.50	20	2.04
4.3	EN1	474	6.86	9295	6.60	7.4	6.32	74	7.56
4.3	EN4	311	4.50	4596	3.26	4.02	3.43	29	2.96
4.3	EN6	49	0.71	891	0.63	1.15	0.98	10	1.02
4.3	EN9	303	4.38	6058	4.30	4.59	3.92	43	4.39
Total		**5072**	**73.37**	**102823**	**72.98**	**87.18**	**74.46**	**705**	**72.04**

feature types, showing that the bulk of the sherds come from ditches.

Only 28 of the 84 feature group categories and 36 of the 371 individual features/cuts contain around or over 50 sherds (Table 3.10) and a few other non-grouped features also have similar amounts (Table 3.11).

Table 3.11. Iron Age and Roman pottery: quantification of the main pottery-producing non-grouped features by period.

Period	Feature	Description	Group	NoSh	Wgt (g)	EVE (%)	Vessels
1	907	Well	NG	49	1532	0.33	3
2.2	977	Beam slot	NG	49	854	0.92	3
2.3	999	Pit	NG	46	598	0.16	4
2.3	1078	Ditch	NG	51	815	0.55	5
4.2	1306	Pit	NG	63	1368	1.39	11
4.2	1329	Pit	NG	50	1267	0.60	4

Selected groups by period

Introduction

The following provides an indication of the range of fabrics and forms and show the mixed nature of the assemblages.

Period 1

Ungrouped well feature [907], context (910) contains 40 flint-tempered sherds (1368g, 0.28 EVE) and nine black ware sherds (134g, 0.05 EVE). The flint-tempered ware includes two jars, one flat-topped with crude lattice scoring (Figure 3.2, No. 1) and another neckless and bead-rimmed (Figure 3.2, No. 2), together with a sherd with traces of wiped decoration. The black ware is from a globular jar (Figure 3.2, No. 3).

Table 3.12. Quantification of Roman pottery from Enclosure EN23.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
RHZ SA	1	2	0	1
LNV CC	1	11	0	0
LNV GW?	1	28	0.07	1
LNV WH	1	13	0	1
GROG?	1	3	0	0
SHELL	7	63	0.22	2
BLKSL	9	71	0.35	1
CSGW	40	509	0.22	2
GREY	3	43	0.07	1
HORNGW	2	74	0	0
HORNOX	2	38	0	0
CSOX	5	23	0	0
Total	**73**	**878**	**0.93**	**9**

Period 2.2

Enclosure ditch EN23 comprises ditch features [621], context 622, [732], context 733, [921], context 922, [930], context 931 and [1083], context 1082. Containing 12 different fabrics, Table 3.12 shows the amounts.

The CSGW includes two jars, the GREY ware a plain-rimmed dish and the BLKSL a narrow-mouthed jar. The SHELL vessels are two jars, that in LNV WH a mortarium, together with a RHZ SA Drag. 37 and a possible LNV GW bead-rimmed dish. Most of the numerous other Period 2.2 groups and features only contain a few sherds each, but beam slot [977], context (978) has 20 CSGW sherds (446g, 0.24 EVE) from two bases and a jar or bowl, together with 14 (268g, 0.53 EVE) in BLKSL, including a jar and two CSOX (20g).

Ditch Group D23, feature [737], context (737) mostly comprises CSGW (24, 243g, 0.12 EVE), including a jar and a possible lid and BLKSL (15, 232g, 0.8 EVE) including a jar, together with HORNGW (3, 170g), LNV WH (1, 9g), SHELL (1, 10g) and CREAM (1, 165g), the latter possible from an amphora.

Beam slot [977], context (978) has 49 sherds weighing 854g, with an EVE of 0.92, of which 20 (446g, 0.24 EVE) are CSGW, 14 (268g, 0.53 EVE) BLKSL, 13 (120g, 0.15 EVE) SHELL and 2 (20g) CSOX. There are three vessels, jars in BLKSL and SHELL and a jar or bowl in CSGW.

Period 2.3

Ditch Group D10 has four features containing pottery, [956], context (957), [1057], context (1058), [1096], context (1097) and [1288[, context (1092). These collectively have sherds in eight different fabrics (Table 3.13).

There are two jars in SHELL, a CSGW flanged bowl, a BLKSL bead-rimmed dish, a CSOX flanged bowl or

Table 3.13. Quantification of Roman pottery from Ditch Group D10.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LNV CC	8	192	0.18	2
LNV WH	1	135	0	1
SHELL	10	201	0.3	2
BLKSL	1	28	0.07	1
CSGW	13	195	0.14	1
HORNOX	3	196	0	0
CSOX	8	70	0.18	1
OXID	9	137	0.25	1
Total	**53**	**1154**	**1.12**	**9**

Table 3.14. Quantification of Roman pottery from Pond F1.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LEZ SA 2	1	10	0	0
SAM	2	31	0	0
BAT AM 1	9	800	0	0
LNV CC	9	120	0.11	2
LNV WH	1	19	0	1
SHELL	4	233	0.90	1
BLKSL	2	31	0	1
CSGW	24	360	0.45	3
GREY	13	202	0	0
HORNGW	8	462	0.11	1
HORNOX	13	563	0	0
BUFF	1	96	0	0
CSOX	14	144	0.22	2
OXID	10	72	0.07	1
Total	**111**	**3143**	**1.05**	**12**

imitation Drag. 38, an imitation Drag. 38 bowl with a broken flange and a wide-mouthed jar or bowl in LNVCC, an OXID ware cup with incised diagonal lines (Figure 3.3, No. 4) and a LNVWH dish with an internal red-painted cross design.

Group F1, possibly a pond, comprises features [1040], context 1171, [1088], contexts 1089, 1090 and [1126], contexts 1128, 1130, 1143. These contexts together have 14 different fabrics, but none are predominant (Table 3.14).

Table 3.15. Quantification of Roman pottery from Enclosure EN13.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LNV CC	8	254	0.48	1
OXF RS	1	3	0	0
SHELL	10	661	0.24	2
BLKSL	2	12	0.15	2
CSGW	16	139	0.25	3
HORNGW	3	56	0.07	1
HORNOX	7	93	0	0
BUFF	2	7	0	0
CSOX	10	91	0.28	3
Total	**59**	**1316**	**1.47**	**12**

Table 3.16. Quantification of Roman pottery from Enclosure EN19.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
BAT AM 1	1	116	0	1
LNV CC	22	747	0.82	6
LNV GW?	1	2	0	0
LNV WH	1	64	0	1
OXF OX	1	3	0	1
OXF WS	1	28	0.07	1
SHELL	22	500	0.28	4
BLKSL	4	57	0.30	3
CSGW	29	286	0.31	4
GREY	1	2	0	0
HORNGW	16	469	0	0
HORNOX	2	81	0	0
BUFF	2	12	0	0
CSOX	5	124	0	1
OXID	13	196	0.06	2
Total	**121**	**2687**	**1.84**	**24**

The vessels present are a BAT AM amphora, a BLKSL dish, jars in CSGW, CSOX and SHELL, a HORNGW storage jar, a LNV CC beaker and flanged bowl and a LNV WH mortarium. The OXID sherds include a handle and one with a white slip. Again, the other Period 2.3 groups and features each contain just small amounts of pottery, but Pit [999], context (1000) and Ditch [1078], context (1079) have a few more. Ditch [1078] has sherds in eight fabrics including jars in CSGW and BLKSL, a HORN GW

Table 3.17. Quantification of Roman pottery from Ditch Group D5.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LEZ SA 2	2	15	0.05	2
BAT AM 1	1	236	0	0
LNV CC	9	71	0	1
SHELL	11	158	0.10	1
BLKSL	14	209	0.27	2
CSGW	468	9018	7.52	20
HORNOX	4	192	0	0
PINK	5	32	0	0
CSOX	23	359	0	1
OXID	4	19	0	0
Total	**541**	**10309**	**7.94**	**27**

storage jar and a BLKSL plain-rimmed dish; the other fabrics present are GREY, CSOX, HORNOX, LNV CC and SHELL. Pit [999] also has eight different fabrics but the only vessels are jars in CSGW and SHELL and mortaria in LNV WH and OXF WH; the other fabrics are BUFF, OXID, HORNOX and LNV CC).

Pit [999], context (1000) has 46 sherds, weighing 598g with an EVE of 0.16. There are eight fabrics comprising LNV CC (7, 71g), LNV WH (2, 99g), OXF WH (2, 99g), SHELL (19, 238g, 0.08 EVE), CSGW (7, 88g, 0.08 EVE), HORNOX (1, 22g), BUFF (3, 16g) and OXID (5, 13g). There are four vessels, mortaria in LNV WH and OXF WH and jars in CSGW and SHELL. Ditch [1078], context (1079) has 51 sherds, weighing 815g with an EVE of 0.55, also in eight different fabrics. These comprise LNV CC (3, 18g), SHELL (5, 50g), BLKSL (11, 121g, 0.31 EVE), CSGW (15, 103g, 0.16 EVE), GREY (1, 2g), HORNGW (12, 419g, 0.08 EVE), HORNOX (2, 96g) and CSOX (2, 6g). There are five vessels, jars in LNV CC, CSGW and SHELL, a CSOX storage jar and a CSGW plain-rimmed dish.

Table 3.18. Quantification of Roman pottery from Ditch Group D8.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LNV CC?	1	55	0.75	1
BLKSL	8	70	0	0
CSGW	40	1603	0.19	2
Imit. BB?	2	152	0.15	1
GREY	1	31	0.14	1
HORNGW	5	344	0.07	1
HORNOX	3	150	0.05	1
CSOX	8	274	0	0
OXID	1	9	0	0
Total	**69**	**2688**	**1.35**	**7**

Period 3.1

Four of the features comprising Enclosure EN13 contain pottery: [826], context (828), [1167], context (1168), [1240], context (1241) and [1247], context (1248). Together these have eight different fabrics (Table 3.15).

Jars occur in CSGW, CSOX, SHELL and HORNGW, the latter of storage type, together with a jar or bowl and a plain-rimmed dish in BLKSL and a LNV CC flanged bowl. Another CSOX sherd has a white slip.

Five of the Enclosure EN19 features contain pottery, [835], context (836), [990], context (991), [1214], contexts (1215–16), [1343], context (1345) and [1361], contexts (1362–3). There are 15 different fabrics represented (Table 3.16).

Jars occur in CSGW, BLKSL, OXID and SHELL fabrics. One of those in the latter is an almost complete miniature vessel of which only the rim is missing (Figure 3.3, No. 9) and another has a frilled rim. Other vessels are a BAT AM 1 amphora, a lid and a plain-rimmed dish in BLKSL, a CSGW bead-rimmed bowl, an OXID flagon, mortaria in CSOX, this with white trituration grits, LNV WH, OXF WH and OXF WS and two flanged bowls, a flanged dish, a plain-rimmed dish, a wide-mouthed jar or bowl and a jar or flagon in LNV CC.

Ditch D5 comprises features [637], context (638), [764], context (765), [881], context (882), [885], context (886), [1033] context (1032) and [1111], context (1113). Only 14 sherds come from contexts (765), (882), (886) and (1113) with 74 from context (638) and the rest from context (1032). Nine fabrics occur, of which 86% by sherd count is CSGW (Table 3.17).

The CSGW includes jars, narrow-mouthed jars, jars or flagons and a bead-rimmed dish; four of the jars, all from context (1032), are substantially complete (Figure 3.3, Nos 5-7). Another substantially complete vessel, a jar or bottle, from context (1032) is in CSOX (Figure 3.3, No. 8) and other vessels present, again all in context (1032), are a narrow-mouthed jar and a grooved rim dish in BLKSL, a LNV CC beaker, two LEZ SA 2 Drag. 36 dishes and a SHELL jar; the OXID sherds have a cream slip.

Only two of the features comprising Ditch D8 have pottery, [936], context (937) and [964], context (965). There are nine fabrics (Table 3.18) with the only vessels jars, one miniature, in CSGW, HORNGW and HORNOX,

the latter a storage jar, a GREY flanged bowl, a triangular-rimmed bowl in possible imitation BB and a flagon in possible LNV CC.

Period 3.2

Eight features comprising Enclosure EN14 contain pottery: [753], context (751), [873], context (872), [1031], context (1030), [1105], context (1106), [1264], context (1265), [1270], context (1271) and [1440], context (1441). Features [1264] and [1271] only have single sherds. There are 14 different fabrics and Table 3.19 shows the fabric quantification.

Jars occur in BLKSL, CSGW, CSOX, SHELL, HORNGW, GREY and OXID. Those in the latter two have double rims with the GREY vessel also being narrow-mouthed, while that in HORNGW is a storage type. There are flanged bowls in BLKSL, CSGW and GREY and an imitation Drag. 38 bowl in OXF RS. Flagons occur in BUFF, OXID and LNV CC and the other LNV CC vessels are beakers. The two LEZ SA 2 vessels are Drag. 31R dishes and that in RHZ SA is a possible Drag. 36 dish. The imit. BB vessel is a plain-rimmed dish.

Ten of the 14 features comprising Enclosure EN15 contain pottery: [327], contexts (329 -30), [356], context (357), [401], context (402), [408], contexts (411–12), [435], context (436), [440], context (441), [484], context (485), [502], context (503), [594], context (595), [753], context (751), [920], context (919) and [1399], contexts (1400–01), including (1400) surface. Collectively, they have one of the larger assemblages with 14 different fabrics (Table 3.20).

Jars occur in BLKSL, CSGW, GREY, SHELL, CSOX, OXID, LNV CC and HORNOX. One each in the latter and SHELL are storage types and there are narrow-mouthed types in CSGW and OXID, with one in OXID having notches on its lower rim. Flanged bowls are present in BLKSL, GREY and LNV CC; one in OXID is curve-sided and might be from a mortarium. Other bowls are a flat-topped type in CSGW, an unusual possible imitation Drag. 38 in OXID and two in OXF RS, one a Young (1977) form YC75; the OXID vessel is sufficiently unusual to suggest may be the same as one in Period 4.1 Enclosure EN10 [766], context (767), below, Period 3.3 Enclosure EN18 [802], context (803), below, and Period 2.2 Ditch 35 [889], context (892). Dishes comprise a Drag. 31R in LEZ SA 2, plain-rimmed types in BLKSL and Imit. BB, LNV CC and possible LNV GW and there is a dish or bowl with a bead rim in BLKSL and one with a flange in SHELL. Wide-mouthed jars or bowls occur

Table 3.19. Quantification of Roman pottery from Enclosure EN14.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LEZ SA 2	3	70	0.01	2
RHZ SA	1	14	0	1
LNV CC	14	119	0.46	4
OXF RS	1	34	0.11	1
SHELL	20	261	0.47	3
BLKSL	6	178	0.32	4
Imit. BB?	1	60	0.12	1
CSGW	75	1048	0.92	8
GREY	14	281	0.45	2
HORNGW	23	925	0.05	1
HORNOX	24	765	0	0
BUFF	3	31	0.22	1
CSOX	16	167	0.10	1
OXID	7	126	0.23	2
Total	**208**	**4079**	**3.46**	**31**

Table 3.20. Quantification of Roman pottery from Enclosure EN15.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LEZ SA 2	1	11	0.07	1
LNV CC	38	1428	1.64	14
LNV GW?	2	41	0.14	1
LNV WH	1	28	0	1
OXF OX	1	7	0	1
OXF RS	13	211	0.05	4
SHELL	154	2465	1.65	12
BLKSL	16	325	0.53	6
Imit BB?	5	117	0.12	2
CSGW	74	937	1.91	8
GREY	5	191	0.44	3
HORNGW	12	443	0	0
HORNOX	21	1191	0	1
BUFF	2	10	0	0
CSOX	8	34	0.08	1
OXID	57	528	1.66	11
Total	**410**	**7967**	**8.29**	**66**

Table 3.21. Quantification of Roman pottery from Enclosure EN17.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LNV CC	22	1069	1.37	8
LNV GW?	6	213	0.09	1
OXF RS	2	20	0.03	1
SHELL	29	740	0.34	4
BLKSL	4	212	0.41	2
CSGW	20	280	0.27	3
GREY	4	53	0	0
HORNGW	9	224	0	0
HORNOX	2	166	0	0
BUFF	1	12	0.12	1
CSOX	6	188	0.12	2
OXID	9	120	0	1
Total	**114**	**3297**	**2.75**	**23**

Table 3.22. Quantification of Roman pottery from Enclosure EN28.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LEZ SA 2	2	14	0.07	2
LNV CC	9	127	0.25	2
LNV GW?	9	168	0	1
LNV WH	1	48	0	1
OXF RS	2	26	0	0
SHELL	15	253	0.27	3
BLKSL	2	20	0	0
CSGW	78	903	0.14	2
GREY	1	3	0	0
HORNGW	3	48	0	0
CSOX	6	65	0	0
OXID	5	44	0	1
Total	**133**	**1719**	**0.75**	**12**

in LNV CC, together with beakers with overslip white barbotine decoration. Mortaria are present in LNV WH, OXF OX and OXF RS and other vessels are a CSGW lid, a LNV CC 'Castor' Box and a LNV CC possible lid.

All bar one of the Enclosure EN17 features have pottery: [614], context (615), [633], context (634), [639], context (640), [660], context (661), [683], contexts (684, 703) and [954], context (955). Twelve fabrics are present (Table 3.21).

Jars occur in BLKSL, CSGW and SHELL, wide-mouthed jars or bowls and flanged bowls in LNV CC, plain-rimmed dishes in LNV CC and possible LNV GW, possible flagons in OXID and LNV CC, mortaria, one with white grits, in CSOX, a jar or flagon in BUFF and a possible Drag. 38 bowl in OXF RS, together with a sherd with rouletting, and semi-circular stamps.

Six features of Enclosure EN28 have pottery: [791], context (792), [838/839], contexts (840,868), [983], context (984), [1013], context (1015), [1059], context (1060) and [1324], context (1325). 12 fabrics occur (Table 3.22). The few vessels are jars in CSGW and SHELL, LNV CC plain-rimmed dishes, a CSGW flat-topped dish, a LNV WH mortarium, a possible LNV GW beaker and a Drag. 80 cup and a Drag. 37 bowl in LEZ SA 2. An OXF RS sherd has semi-circular stamps.

Period 3.3

Four of the features comprising Enclosure EN12 contain pottery: [808], context (809), [822], context, (823), [966], context (967) and [1387], context (1388). There are 13 fabrics (Table 3.23).

The few vessels are a flanged bowl and a jars in BLKSL, other jars in SHELL and OXID, and OXF WH mortarium, an OXF WS carinated bowl and a LEZ SA 2 Drag. 33 cup.

Enclosure EN18 comprises six features with pottery: [623], context (624), [648], context (649) including its surface, [758], context (759), [802], context (803) and [829], context (830). CSGW is the most common of the 12 fabrics (Table 3.24). The vessels occurring are a plain-rimmed dish and a dish or bowl in LNV CC, an OXF WH mortarium, a BLKSL grooved-rim dish, two jars and a possible cheese press or strainer in CSGW, a HORNGW jar and another possible cheese press or strainer (Figure 3.8) and a possible Drag. 38 bowl in OXID (see Enclosure EN15 Period 3.2 above).

The four features of DIV1, one of the internal divisions within Enclosure EN15 all contain pottery: [548], context (549), [560], context (561), [562], context (562) and [582], context (585). Nine fabrics occur (Table 3.25).

Plain-rimmed dishes are present in BLKSL, OXID and SHELL, flanged bowls and wide-mouthed jars or

Table 3.23. Quantification of Roman pottery from Enclosure EN12.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LEZ SA 2	1	5	0	1
LNV CC	4	21	0	0
OXF WH	1	11	0	1
OXF WS	3	160	0.18	1
SHELL	9	140	0.06	1
BLKSL	6	66	0.20	2
CSGW	18	132	0	0
GREY	1	4	0	0
HORNGW	1	85	0	0
HORNOX	3	80	0	0
BUFF	1	89	0	0
CSOX	1	8	0	0
OXID	7	50	0.08	1
Total	**56**	**851**	**0.52**	**7**

bowls in LNV CC, jars in BLKSL, CSGW and OXID, together with a storage jar and a double-rimmed jar in HORNGW and an OXID possible Drag. 38 bowl.

Period 4.1

The five features comprising Enclosure EN2 contain pottery, with most coming from [343]: [343], contexts (344-7), [475], context (476), [520], context (521), [536], context (537) and [542], context (543). Fourteen fabrics are represented (Table 3.26).

Jars occur in BLKSL, CSGW, GREY and SHELL with one in GREY being narrow-mouthed and decorated with shoulder notches. There are flanged bowls in CSGW and LNV CC, a GREY plain-rimmed dish with an external groove just below the rim, a possible imitation Drag. 36 in CSOX, a RHZ SA Drag. 38, a wide-mouthed bowl, a flagon, a jar or flagon and beakers in LNV CC, mortaria in CSOX, LNV WH, OXF WH and OXF RS. The OXID vessels are a bead-rimmed dish, a jar or flagon and a bowl with notches and rouletting; other OXID sherds have a similar decoration to the latter and one has a possible boss, while a LNV CC sherd has overslip white barbotine decoration.

Six of the Enclosure EN10 features contain pottery: [627], context (628), [710], context (711) including its surface, [748], context (747), [766], context (767), [890], context (891) and [1284], context (1285). 12 fabrics are represented (Table 3.27). Plain-rimmed dishes occur

Table 3.24. Quantification of Roman pottery from Enclosure EN18.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
RHZ SA	1	10	0.04	1
LNV CC	5	262	0.18	2
OXF WH	2	217	0	1
SHELL	9	174	0.10	2
BLKSL	2	36	0.11	1
CSGW	29	457	0.55	3
GREY	1	27	0	0
HORNGW	17	1379	0.28	1
HORNOX	1	83	0	0
CSOX	3	17	0	0
OXID	5	410	0.25	1
PINK	1	5	0	0
Total	**76**	**3077**	**1.51**	**12**

Table 3.25. Quantification of Roman pottery from internal division DIV1.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LNV CC	8	233	0.56	4
SHELL	4	134	0.17	1
BLKSL	9	129	0.28	2
CSGW	16	183	0.16	2
GREY	2	7	0	0
HORNGW	4	140	0.11	2
HORNOX	2	18	0	0
CSOX	2	8	0	0
OXID	8	99	0.31	4
Total	**55**	**951**	**1.59**	**15**

in BLKSL and LNV CC, jars in BLKSL, CSGW, HORNGW and SHELL. Other vessels are a BLKSL flanged bowl, a beaker and a dish or bowl in LNV CC, two LNV WH mortaria and an imitation Drag. 38 bowl (see Enclosure EN15 Period 3.2 above) and a face flagon in OXID; the latter may be Hadham ware (Figure 3.5, No. 13; Figure 3.6). Two of the BLKSL jars are narrow-mouthed, two in CSGW have triangular rims and two in HORNGW and one in SHELL are of storage size; the LNV CC beaker has overslip white barbotine decoration.

Table 3.26. Quantification of Roman pottery from Enclosure EN2.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
RHZ SA	1	21	0	1
LNV CC	25	519	0.61	6
LNV WH	1	8	0	1
OXF RS	3	19	0	1
OXF WH	1	16	0	1
SHELL	48	727	0.56	4
BLKSL	16	136	0.45	6
CSGW	66	862	0.26	4
GREY	7	168	0.36	3
HORNGW	8	349	0	0
HORNOX	21	609	0	0
BUFF	1	7	0	0
CSOX	20	167	0.11	2
OXID	63	440	0.35	3
Total	**281**	**4048**	**2.7**	**32**

All of the Enclosure EN26 features contain pottery: [643], contexts (644-5), [658], context (659), [675], context (676), [677], context (678), [770], contexts (771-2), [777], context (778), [804], context (805) and [831], context (832). Seventeen different fabrics occur (Table 3.28). Jars occur in CSGW (Figure 3.5, No. 12), GREY, CSOX, OXID, HORNOX and SHELL. That in CSOXZ and one in SHELL are lid-seated types, the HORNOX jar and one in SHELL are storage size and that in GREY is narrow-mouthed. There is a bead-rimmed dish in BLKSL, plain-rimmed dishes in LNV CC and Imit. BB and a possible LEZ SA Drag. 36 and the bowl forms are a possible flanged type in BLKSL, a wide-mouthed flanged bowl in SHELL, a Drag. 38 in RHZ SA, a possible Drag.38 imitation in LNV CC and one with a double rim and red-painted decoration in OXF PA, probably Young (1977) type YP24. Other vessels are a BAT AM 1 amphora, a BLKSL lid and a LNV WH bead and flanged mortarium.

Boundary ditch BD5 also comprises multiple features: [196], contexts (197) and (237), [252], context (253), [590], contexts (591),(591/597), (596-7), [670], contexts (668–9), [750], context (749), [874], contexts (875–6), [916], contexts (917–8), [1055], context (1056), [1188], context (1197) and [1234], contexts (1235–6). Of these, feature [916] accounts for a third of the total and [874] just over a quarter by sherd count. The features combined have the largest amount of pottery of all the Groups; 20 fabrics are represented (Table 3.29).

Table 3.27. Quantification of Roman pottery from Enclosure EN10.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LNV CC	9	175	0.27	4
LNV WH	2	94	0.14	2
SHELL	11	550	0.15	3
BLKSL	22	245	0.96	7
CSGW	43	511	0.29	4
Imit. BB?	2	34	0	0
GREY	7	115	0	0
HORNGW	7	476	0.14	2
HORNOX	9	113	0	0
BUFF	2	10	0	0
CSOX	8	95	0	0
OXID	10	413	1.21	2
Total	**132**	**2831**	**3.16**	**24**

The CSGW and BLKSL forms are mainly jars together with plain-rimmed dishes and a grooved-rim dish in BLKSL; the SHELL vessels are all jars apart from a grooved-rim bowl. Flanged bowls, plain-rimmed dishes, wide-mouthed jars or bowls occur in LNV CC, together with one, possibly two, 'Castor' boxes, an imitation samian ware Drag. 31, an imitation samian ware Drag. 37, a 'coffee-pot' lid, a beaker with overslip white barbotine decoration and a flanged dish. Other fabrics and vessels are BAT AM 1 amphora, a BUFF ware flagon and jar, a GREY jar and plain-rimmed dish, a HORNGW storage jar, Imit. BB plain-rimmed dishes, LNV WH, OXF RS, OXF WH, OXF WS and possible MAH WH mortaria, an OXID jar, a jar and a bowl in CSOX, a Drag. 33 cup and a possible Curle 11 dish in LEZ SA 2 and a possible Drag. 37 bowl in TRI SA. Of the Oxfordshire mortaria, that in OXF WH is probably Young (1977) type YM22, the OXF RS one (*ibid*.) type YC100 and the OXF WS (*ibid*.) type YWC4.

Three of the features comprising Structure ST1 have pottery: [286], context (287), [307], context (308) and [316], context (317). [307] has the most pottery and there are 13 fabrics (Table 3.30). The few forms present are CSGW flanged bowls and jars, one narrow-mouthed, LNV WH and OXF WH mortaria, the latter probably Young (1977) type YM22, a HORNGW storage jar and a LNV CC beaker.

Table 3.28. Quantification of Roman pottery from Enclosure EN26.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LEZ SA 2	1	22	0	1
RHZ SA	1	93	0	1
BAT AM 1?	1	195	0	1
LNV CC	16	809	0.99	3
LNV WH	1	29	0.07	1
OXF PA	1	9	0.06	1
SHELL	9	568	0.42	4
BLKSL	13	209	0.17	3
CSGW	80	1225	1.20	7
GREY	2	16	0.12	1
Imit. BB?	1	58	0.11	1
HORNGW	13	472	0	0
HORNOX	3	181	0.05	1
BUFF	1	6	0	0
CREAM	1	11	0	0
CSOX	3	54	0.19	1
OXID	7	129	0	1
Total	**154**	**4086**	**3.38**	**27**

Table 3.29. Quantification of Roman pottery from Boundary Ditch BD5.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
BAT AM 1	2	353	0	2
LEZ SA 2	3	16	0.14	2
TRI SA	1	27	0.08	1
LNV CC	40	909	1.57	14
LNV WH	4	200	0.18	2
MAH WH?	1	10	0	1
OXF RS	2	108	0.17	1
OXF WH	1	69	0.12	1
OXF WS	1	171	0.35	1
SHELL	69	1234	1.7	9
BLKSL	80	1204	3.88	17
Imit BB	6	108	0.21	2
CSGW	261	3429	2.53	20
GREY	6	84	0.09	2
HORNGW	42	1681	0.17	2
HORNOX	16	863	0	0
BUFF	6	73	1.03	2
CREAM	4	30	0	0
CSOX	25	198	0.05	2
OXID	23	258	0.25	4
Total	**593**	**11025**	**12.52**	**85**

Period 4.2

Four of the Enclosure EN3 features have pottery: [335], context (336), [353], context (352), [477], context (478) and [490], context (491). [353] has the most and there are 10 fabrics (Table 3.31). The vessels are jars in CSGW and SHELL, a HORNGW storage jar, a Imit. BB flanged bowl, an OXID imitation Drag. 38 bowl, another imitation Drag. 38 bowl, a plain-rimmed dish, a flagon and a 'Castor' box in LNV CC and a mortarium and bowl in OXF RS.

Enclosure EN7 has numerous ditches of which 12 have pottery: [782], context (783), [946], context (948), [994], contexts (995-6), [1053], context (1067), [1100], context (1101-2), [1146], context (1156), [1147], context (1155), [1303], context (1305), [1319], contexts (1319-20), [1385], context (1386), [1436], context (1387) and [1447], context (1448). 16 fabrics are represented (Table 3.32). The main vessel types present are jars in BLKSL, CSGW, GREY, OXID, LNV CC and SHELL; one of the latter is of storage size and two other have undercut rims, plain-rimmed dishes in BLKSL, CSGW, LNV CC and SHELL and mortaria in LNV WH, OXF RS and OXF WS; the latter is Young (1977) type YWC6.1 and that in OXF RS, type YC 100.2 (*ibid.*) Other vessels are LNV CC wide-mouthed jars or bowls, a flagon and a beaker, a bead-rimmed bowl in OXF RS, a bead-rimmed dish in CSGW, an OXID cup (Figure 3.7, No. 15), double-rimmed flagon and possible imitation Drag. 38 bowl and dishes or lids in BLKSL and CSGW.

All of the features associated with Ditch D3b have pottery: [795], context (796), [843], context (844), [1004], context (1006) and [1299], context (1300). Most comes from [795] and nine fabrics occur (Table 3.33). Vessels present include a HORNGW storage jar, other jars in SHELL, OXID and CSOX, an OXID plain-rimmed dish and flanged bowl, a possible 'Castor' box and a possible beaker in LNV CC and two OXF RS bowls, one a possible imitation Drag. 38 of type (Young 1997) YC41. The CSOX jar has a double rim and that in OXID is a miniature type.

Table 3.30. Quantification of Roman pottery from Structure ST1.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LNV CC	2	20	0	1
LNV WH	1	26	0	1
OXF WH	1	44	0.08	1
SHELL	1	2	0	0
BLKSL	4	30	0	0
GREY	2	143	0	0
CSGW	15	246	0.64	5
Imit. BB	4	48	0	0
HORNGW	28	1246	0.05	1
HORNOX	3	28	0	0
BUFF	1	18	0	0
CSOX	1	25	0	0
OXID	7	24	0	0
Total	**70**	**1900**	**0.77**	**9**

Table 3.32. Quantification of Roman pottery from Enclosure EN7.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
BAT AM 1	1	77	0	1
LEZ SA 2	5	45	0.12	4
LNV CC	45	1482	0.98	6
LNV WH	4	339	0.10	2
OXF RS	13	430	0.49	4
OXF WS	1	50	0.17	1
SHELL	55	1226	2.08	14
BLKSL	18	352	0.22	4
CSGW	2	72	0	0
GREY	49	788	0.54	7
Imit. BB?	43	793	0.47	4
HORNGW	7	357	0	0
HORNOX	22	757	0	0
BUFF	1	12	0	0
CSOX	9	107	0	0
OXID	60	794	1.61	9
Total	**335**	**7681**	**6.78**	**56**

Table 3.31. Quantification of Roman pottery from Enclosure EN3.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LNV CC	9	307	0.14	4
OXF RS	2	100	0.23	2
SHELL	13	222	0.20	2
BLKSL	2	12	0	0
CSGW	6	40	0.08	1
GREY	3	19	0	0
Imit. BB	3	27	0.08	1
HORNGW	1	104	0.07	1
HORNOX	7	330	0	0
OXID	3	40	0.12	1
Total	**49**	**1201**	**0.92**	**12**

Table 3.33. Quantification of Roman pottery from Ditch 3b.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LNV CC	6	99	0	2
OXF RS	3	95	0.16	2
GROG?	2	16	0	0
SHELL	17	281	0.53	2
CSGW	10	142	0	0
HORNGW	1	61	0.04	1
HORNOX	1	59	0	0
CSOX	5	77	0.16	2
OXID	10	170	0.48	3
Total	**55**	**1000**	**1.37**	**12**

Four of the Ditch D9 features contain pottery: [824], context (825), [1134], context (1133), [1065], context (1066) and [1257], context (1256). 11 fabrics are represented (Table 3.34). The vessels present are jars in BLKSL, CSGW, OXID and SHELL, plain-rimmed dishes in BLKSL, CSGW and Imit. BB, a grooved rim dish and a triangular-rimmed bowl in BLKSL, a LNV CC flanged bowl and beaker, an OXID cup (Figure 3.7, No. 14) and a dish or lid and a BLKSL dish or bowl. One of the SHELL jars is a storage type and the OXID a dish or lid has three cuts in its rim, possibly a batch mark or other identifier.

Pit [1306] has one fill, context (1307) which contains sherds in 10 fabrics (Table 3.35). The vessels include jars in BLKSL, GREY and SHELL, plain-rimmed dishes

Table 3.34. Quantification of Roman pottery from Ditch 9.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LNV CC	12	265	0.15	2
SHELL	30	789	0.25	4
BLKSL	7	193	0.58	6
CSGW	3	76	0.09	2
GREY	45	973	0.42	0
Imit. BB?	6	34	0	2
HORNGW	4	179	0	0
HORNOX	6	150	0	0
BUFF	1	12	0	0
CSOX	2	48	0	0
OXID	25	502	1.44	4
Total	**141**	**3221**	**2.93**	**20**

in BLKSL and LNV CC, a LNV CC wide -mouthed jar or bowl, a SHELL flanged bowl and a wall-side LNV WH mortarium; the BLKSL jar is a wide-mouthed type.

Pit 1329 also has one fill, context (1330) which contains sherds in nine fabrics (Table 3.36). The four vessels are jars in OXID and SHELL, a CSGW bead-rimmed bowl and a LNV CC plain-rimmed dish.

Period 4.3

All bar one of the 23 features that comprise Enclosure EN1 contain pottery: [120], context (119), [288], context (289-90), [313], context (314), [331], contexts (332, 334), [337], contexts (338, 340), [341], context (342), [351], context (350), [353], context (349), [354], context (355), [364], context (365), [384], context (386), [403], context (404), [469], context (471), [488], context (489), [490], context (491), [492], context (493), [499], context (500), [506], context (507), [513], context (515), [538], context (539), [540], context (541) and [546], context (547). There are 20 fabrics (Table 3.37).

The large number of vessels are jars in possible GROG, SHELL, BLKSL, CSGW, GREY and OXID, of which those in SHELL include narrow-mouthed and undercut rim types and those in OXID a lid-seated and a miniature vessel. The bowls are imitations of Drag. 38 in OXF RS and OXID, another bowl in OXID, a RHZ SA Drag. 37, flanged bowls in BLKSL, GREY and LNV CC, an OXF RS bead-rimmed bowl and a flat-topped type in CSGW. Dishes comprise an OXID imitation Drag. 36, plain-rimmed types in BLKSL, Imit. BB and LNV CC, a Drag. 31R and a Drag. 44. Ludowichi Sn in LEZ SA 2 and two dishes or lids in SHELL. Other LNV CC vessels are wide-

Table 3.35. Quantification of Roman pottery from Ditch [1306].

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LEZ SA 2	3	29	0	2
LNV CC	10	322	0.55	2
LNV WH	1	61	0.14	1
SHELL	14	198	0.26	3
BLKSL	8	114	0.36	2
CSGW	2	10	0	0
GREY	11	141	0.08	1
HORNOX	10	470	0	0
BUFF	1	10	0	0
OXID	3	13	0	0
Total	**63**	**1368**	**1.39**	**11**

Table 3.36. Quantification of Roman pottery from Pit [1329].

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LEZ SA 2	1	2	0	0
LNV CC	1	14	0.08	1
SHELL	16	316	0.32	1
BLKSL	2	33	0	0
CSGW	6	125	0.10	1
GREY	7	48	0	0
HORNGW	3	200	0	0
HORNOX	9	485	0	0
OXID	5	44	0.10	1
Total	**50**	**1267**	**0.60**	**4**

mouthed jars or bowls, beakers, a jar or flagon and a flagon or jug. Mortaria occur in LNV WH, OXF WK and OXF WS and there are possible cheese press or strainer sherds in CSGW and OXID. More unusual vessels are a face flagon in probable Hadham oxidised ware and another possible face flagon or jar in OXID.

Enclosure EN4 comprises features [111], contexts (112–13), [116], context (114), [130], context 129, [324], contexts (325–6), [448], context 449 and [944], context 945. All bar 19 sherds are from feature [324]. There are 13 fabrics (Table 3.38). Vessel forms in CSGW and BLKSL are jars and plain-rimmed dishes, together with a BLKSL flanged bowl; there is also a Imit. BB plain-rimmed dish. The SHELL and BUFF vessels are jars and there are a storage jar and a flanged bowl in HORNGW. Mortaria

Table 3.37. Quantification of Roman pottery from Enclosure EN1.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
LEZ SA 2	1	27	0	1
RHZ SA	2	21	0	2
LNV CC	50	1196	1.26	12
LNV WH	1	125	0	1
OXF RS	5	151	0.39	4
OXF WH	1	15	0	1
OXFWS?	1	40	0.08	1
HADHAM?	1	9	0	1
GROG?	5	508	0	1
SHELL	85	1342	1.68	14
BLKSL	37	520	0.86	7
Imit BB	3	78	0.05	2
CSGW	123	1911	0.75	8
FSGW	1	4	0	0
GREY	23	377	0.47	2
HORNGW	26	1293	0	0
HORNOX	25	940	0	0
BUFF	1	5	0	0
CSOX	18	86	0	0
OXID	65	647	1.86	17
Total	**474**	**9295**	**7.40**	**74**

occur in LNV WH and OXF WH, this probably Young (1977) type YM 22 and in LNV CC there are beakers, a flanged bowl, a plain-rimmed dish, a wide-mouthed jar or bowl and an imitation samian ware Drag. 37. There are also an amphora in BAT AM 1, a jar and a bead-rimmed bowl in OXID.

All six of the features associated with Enclosure EN6 contain pottery: [895], context (896), [901], context (902), [911], context (912), [924], context (925), [971], context (972) and [1001], context (1003). Most comes from [911] and 12 fabrics are represented (Table 3.39). The vessels are jars in SHELL, CSGW and LNV CC, a SHELL wide-mouthed flanged bowl, a flagon and a 'coffee-pot' lid in LNV CC, a CSOX mortarium and possibly two amphora in BAT AM 1.

Eight of the features comprising Enclosure EN9 contain pottery: [592], context (593), [619], context (620), [629], context (630), [635], context (696), [667], context (666), [704], context (705), [740], context (741), [788], contexts

Table 3.38. Quantification of Roman pottery from Enclosure EN4.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
BAT AM 1	1	122	0	1
LNV CC	26	491	0.51	5
LNV WH	1	130	0.13	1
OXF WH	4	152	0.30	1
SHELL	30	301	0.44	4
BLKSL	21	417	0.62	7
CSGW	101	1022	0.56	3
GREY	18	253	0.06	0
Imit. BB	9	166	0.20	1
HORNGW	11	567	0.18	2
HORNOX	13	366	0	0
BUFF	2	22	0.08	1
CSOX	10	90	0	0
OXID	64	497	0.94	2
Total	**311**	**4596**	**4.02**	**28**

Table 3.39. Quantification of Roman pottery from Enclosure EN6.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
BAT AM 1	2	98	0	2
RHZ SA	1	2	0	0
LNV CC	8	143	0.45	3
SHELL	14	279	0.63	3
BLKSL	2	12	0	0
CSGW	2	15	0.07	1
GREY	2	87	0	0
HORNGW	3	43	0	0
HORNOX	2	64	0	0
BUFF	2	28	0	0
CSOX	3	39	0	1
OXID	8	81	0	0
Total	**49**	**891**	**1.15**	**10**

(789-90) and [1404], context (1405). 18 fabrics occur (Table 3.40). Jars occur in FLINT, BLKSLK, GREY, CSGW, OXID, CSOX, SHELL and HORNGW. Three each of those in SHELL and HORNGW are storage jars, that in BLKSL is a narrow-mouthed type and the one in FLINT is flat-topped. There are three wide-mouthed jars or bowls in

Table 3.40. Quantification of Roman pottery from Enclosure EN9.

Fabric	NoSh	Wgt (g)	EVE (%)	Vessels
SAM	2	1	0	0
CNG CC	1	1	0	0
LNV CC	30	514	0.82	6
LNV WH	3	130	0.06	3
OXF OX	1	6	0	1
OXF RS	3	108	0.07	3
OXF WH	2	137	0.13	1
OXF WS	1	64	0.08	1
FLINT	2	11	0.05	1
SHELL	56	1212	1.26	9
BLKSL	35	534	0.89	5
CSGW	84	1310	0.56	6
GREY	5	83	0.14	1
HORNGW	41	1403	0.17	3
HORNOX	14	378	0	0
CSOX	12	54	0.11	1
OXID	11	112	0.25	2
Total	**303**	**6058**	**4.59**	**43**

LNV CC and other vessels in this fabric are two-plain-rimmed dishes and a bead-rimmed bowl. Plain-rimmed dishes also occur in BLKSL, OXID, CSGW and SHELL, while there are two flanged bowls in BLKSL, together with other bowls in BLKSL and OXF RS and dishes or bowls in CSGW and OXF RS. The LEZ SA 2 vessel is a Drag. 31 dish, the three LNV WH vessels are mortaria, including a grooved flange type and there are other mortaria in OXF OX, OXF WH, OXF RS and OXF WS, the latter possibly Young (1977) type YWC6.

Comparison with other sites

Introduction

As noted above, six fabrics account for over 80% of the site total by sherd count, all local wares apart from products of the relatively nearby Lower Nene Valley industry. Only one per cent of the total by sherd count are imported wares with around 11% regionally-traded wares. This picture is repeated at many other, mainly rural, sites in the vicinity, though not necessarily close to the Milton site. The references for the sites mentioned are: Cambridgeshire Southern Police Station, Milton, archaeological evaluation report (Peachey 2022); North-West Cambridge (2012–13 sites, Anderson 2014; Traveller's Rest sub-site and sites II Central and IV North, Perrin 2015a and 2015b); Northstowe Phase 1 (Mazzilli 2016, 2017) and Phase 2a (Mazzilli 2020, 2021); Cambourne New Settlement (Seager Smith 2009); Brampton Road, Buckden (Hylton 2006); Ash Plantation, Bourn Airfield and Childerly Gate (Lyons in Abrams and Ingham 2008); and Summersfield, Papworth Everard (Anderson 2012). Additional, more recently excavated, sites are Bar Hill and Conington, two of those along the line of the A14 Cambridge to Huntingdon improvement scheme (Lyons 2024).

The overall picture from these other sites is similar to the Police station assemblage. Coarse sandy grey wares, often including a significant proportion of local Horningsea products, dominate. Shell-tempered ware occurs in varying amounts and the main regionally-traded ware is Lower Nene Valley fine ware, supplemented by smaller amounts from Oxfordshire and Hadham, with very limited amounts of continental imports, mainly samian. The pottery supply is consistent with patterns of domestic consumption across rural sites of varying status and with contemporary late Roman groups in the local area.

Continental imports

Only one sherd of RHZ SA samian and one of BAT AM 2 amphora were recovered from the evaluation of the later excavated Police Station site though, as with the excavated assemblage, the activity was late Roman in date. Imported pottery, mainly samian ware, but with some Central Gaulish, Rhenish and Cologne colour-coated ware and Baetican amphora, comprised 2.7% of the large assemblage from the 2012–13 excavations at North-West Cambridge. Just a few sherds of samian ware and amphora occurred in the far smaller assemblages from the North-West Cambridge Traveller's Rest sub-site and sites II Central and IV North. At Northstowe, Phase 1, samian ware hardly occurs in Areas C, E and J and accounts for less than 2% of the whole assemblage from Area M. In Phase 2a Areas AA1, AA2, AA3/4 and AA6 the total is similar. At the five Cambourne sites samian totals between 1% and 6% of the pottery sherds and 1.6% for the whole assemblage. There are also only very small amounts of samian ware in the Ash Plantation and Childerley Gate. Amphora, mainly Southern Spanish types, account for just 1% of the pottery by weight from Northstowe Area M, but almost 2% in Phase 2a. Just 0.2% of the sherds from the Cambourne sites are amphora and they are completely absent from Ash Plantation, with only a few sherds from Childerley Gate, very small amounts from Summersfield, Papworth Everard. None of the sites discussed include any imported RHZ SA or TRI SA. Imported samian ware accounts for just over

3% of the Bar Hill assemblage by weight, mainly from Lezoux, but also with some from South Gaul and the Rhineland. At Conington, it comprises 2% by weight, all from Lezoux barring a few Rhineland sherds. Imported Baetican amphora sherds are present at Bar Hill and Conington and Central Gaulish colour-coated ware has also been recorded at the latter.

Regionally-traded wares

Fine ware in the Police Station evaluation assemblage is dominated by colour-coated wares from the Lower Nene Valley (LNV CC), accounting for 13.7% by sherd count and 15.2% by weight. Hadham oxidised ware (HAD OX) accounts for 10.3% of the assemblage by sherd count and 6.3% by weight, but OXF RS accounts for just 1.5% by sherd count and 1.2% by weight.

Lower Nene Valley products, mainly colour-coated ware, comprise 5% of the Bar Hill pottery with sherds of BB2, Colchester, Hadham, Oxfordshire, Godmanchester and Verulamium accounting for another 2%. The percentage of Lower Nene Valley products, again mainly colour-coated ware, is a higher 12% at Conington, with Colchester, Hadham, Oxfordshire, Godmanchester and Verulamium sherds accounting for another 1.5%. Lower Nene Valley colour-coated and possible grey wares comprise a high 23% by sherd count of the North-West Cambridge site II Central, owing to the presence of two substantially complete beakers, together with a few sherds of possible Oxfordshire red-slipped and 11% of site IV North, again occurring with Oxfordshire red-slipped. The amount of Lower Nene Valley pottery is far less at the 2012–13 sites, accounting for around 3%, occurring with some Pakenham colour-coated wares, Oxfordshire red-slipped wares, Colchester colour-coated wares, Hadham red-slipped wares, together with a few Wattisfield, Verulamium, possible Portchester D, Alice Holt and Highgate Wood sherds. Lower Nene Valley, Hadham, Colchester and Oxfordshire products occur in Areas C, E and J at Northstowe, with Nene Valley colour-coated wares dominating (10%). The Northstowe area M assemblage also has pottery from the Nene Valley (7%), Hadham, Colchester, Dorset and Oxfordshire. These also occur in the Phase 2a sites with Lower Nene Valley colour-coated wares accounting for 5% and all Lower Nene Valley wares 7%. Hadham products comprise 1.5% by count and weight at the Northstowe Phase 1 sites and around 2% in Phase 2. Additional Phase 1 fabrics are Alice Holt/Farnham, Cherry Hinton, West Stow, Mancetter-Hartshill and Oxfordshire parchment ware. These also occur in the Phase 2 sites with the addition of Verulamium/Godmanchester white ware, Oxfordshire red-slipped and white ware, Wattisfield and possible pink grog-tempered.

At Cambourne, the traded wares comprise Lower Nene Valley colour-coated, grey and white wares, Oxfordshire white ware, Hadham oxidised ware, Verulamium white ware and Dorset black-burnished ware with Lower Nene Valley colour-coated at 5%, Verulamium white ware at 3% and Hadham wares at 4% having the most sherds. The Ash Plantation and Childerley Gate assemblages contain a few sherds of Lower Nene Valley colour-coated, grey and white wares, Oxfordshire colour-coated and white wares, Hadham oxidised ware and Verulamium white ware. The only traded wares at Summersfield, Papworth Everard are again a few sherds from the Lower Nene Valley, Verulamium and Lower Nene Valley colour-coated ware accounts for 17.7% of the sherds in the small assemblage from Brampton Road, Buckden.

Local wares

As far as definite Horningsea pottery is concerned, HORGW and HOROX dominate the Police Station evaluation assemblage, accounting for a total of 44.8% by sherd count and 48.1% by weight, with HORNOX being less common. Roman shell-tempered ware comprises another 18.7% by sherd count and 18.5% by weight. At North-West Cambridge it accounts for around 10% of the assemblage from the 2012–13 excavations, 15% at the Traveller's Rest site, 6% at site II Central and 15% at site IV North. Generally small amounts occur in Areas C, E, J at Northstowe, but in Area M it comprises 6% by count and 14% by weight and a much higher total of 25% by count and 30% by weight in the Phase 2a sites; this is partly due to the presence of a kiln producing pottery similar to Horningsea (Mazzilli 2021, 168). Otherwise, small amounts are also present at Cambourne, Ash Plantation, Childerley Gate and Summersfield, Papworth Everard. Horningsea products comprise 43% of the Bar Hill pottery by weight and 15% of the Conington assemblage.

The Police Station evaluation assemblage includes other grey wares, including some possibly of Lower Nene Valley and Hadham origin and these together comprise 2.6% by sherd count and 2.9% by weight. Other unsourced local coarse and fine wares, comprising a mixture of buff sandy wares, black slipped wares, shell-tempered wares, grog-tempered ware, coarse and fine sandy micaceous or non-micaceous grey wares and oxidised wares, constitute the bulk of the rest of the pottery at the North-West Cambridge sites and Northstowe in Phases 1 and 2a, with the relatively small assemblage from areas C, E, J. The larger assemblage from Northstowe area M is similar, but the range of other unsourced local coarse and fine wares is less at around 50% by sherd count in Northstowe Phase 2a owing to the kiln products, but the fabric range is similar.

At five of the sites with Roman pottery excavated in advance of the Cambourne New Settlement, the percentage of local grey/reduced wares ranged from 51% to 75% (56% for all sites), that of local oxidised wares from 3% to 14% (5% all sites) and shell-gritted ware 3% to 19% (15% all sites). A small assemblage from an evaluation at Brampton Road, Buckden, 'is dominated by locally manufactured kitchen and tablewares in coarseware and fineware fabrics with grey wares making up 34.9% of the total by weight'.

Local wares are also prominent in various features at the early to middle Roman farmstead at Ash Plantation. Nearly half of the assemblage in Ditches and eaves drip gully G40 comprises sandy grey wares and a smaller amount of finer sandy grey ware was also recovered. The overall assemblage of pottery recovered from Pits and postholes G42 is dominated by sandy grey wares which account for more than 68% of the total and the standard and coarse varieties of sandy oxidised ware are also present in moderate numbers. Similarly, at the early to middle Roman ladder system at Childerly Gate (*op. cit.*), sandy grey ware predominates in Enclosure G4 and sandy grey wares form 57% of the assemblage by weight in quarry pit G7–G7. The assemblage in drove-ways, boundary ditch and pond G10–10 consists mainly of locally produced utilitarian coarse wares with sandy reduced wares being the most common fabric and sandy grey wares also constitute a substantial part of the assemblage. In the Building and rubbish pits G17 utilitarian sandy grey ware is the commonest fabric, accounting for 54% of the assemblage and in the retained enclosure ditches: G3.2, G5.2, G7.3 and G11.2 of the Late Roman farmstead at Childerley Gate utilitarian sandy grey wares account for 41% of the assemblage by weight.

Sandy grey ware is the most common fabric at Bourn Airfield both in Enclosures G49 and the reorganisation of roadside settlement where it constitutes 43% of the assemblage. In assemblages dating to the Late Iron Age/early Roman period at Summersfield, Papworth Everard, 'sandy fabrics were the most common, representing 75% of the pottery (by number), with coarse sandy grey wares the most common fabric type representing 40% of the early Roman pottery. Other fabrics likely to have been made locally included sandy whitewares, black-slipped wares, buff sandy wares sherds and shell-tempered vessels'; at the same site, sandy grey wares dominated later Roman (2nd–4th century AD), assemblages. Some 40% by weight of the rest of the Bar Hill pottery and 52% of that from Conington comprises a range of local and unsourced grey and oxidised wares, together with some grog-tempered ware.

Roman shell-gritted ware accounts for 4% of the pottery by count from the NW Cambridge 2012–13 sites, 5% of

Table 3.41. Medieval and later pottery: occurrence by number and weight (in g) of sherds per context by fabric type.

Context	Feature	Period	HEDI		CASG		PMR		CHPO		ENGS		ENPO		CREA		HORT		BLUE		TPW		Pot date
			No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	
82	D1b	3.1			1	1																	M14thC
1180	D3a	3.2					2	77															16thC
145	BD4	4.1					1	5															16thC
46	47	5	1	15																			M12thC
55	54	5					1	10															16thC
95	104	5					4	32															16thC
98	99	5					1	4															16thC
103	102	5					2	31															16thC
203	204	5					1	22															16thC
693	694	5											1	5									M18thC
698	697	5					1	21															16thC
1050	1049	5					2	23							1	1							M18thC
1176	1175	5	1	1			1	1	1	13					2	7							M18thC
1184	1182	5									1	3									1	1	MOD
1209	1208	5																	1	2			MOD
2	Subsoil	6					2	114															16thC
692	691	6																			3	4	MOD
U/S	-	-															1	57					MOD
Total			**2**	**16**	**1**	**1**	**18**	**340**	**1**	**13**	**1**	**3**	**1**	**5**	**3**	**8**	**1**	**57**	**1**	**2**	**4**	**5**	

Site IV North but only a few sherds at site II Central. Some 7% of the sherds (8% weight) at Northstowe site M and 6% in Phase 2a are shell-gritted ware. for 13% of the sherds and 17% of the weight and 6.5% of the sherds at Brampton Road, Buckden. At Cambourne, the sherd percentage at the five sites varied from 3% to 19% with 15% for the assemblage as a whole, while 18% of the sherds at Summersfield, Papworth Everard are shell-gritted ware. In the Bar Hill assemblage, Roman shell-gritted ware accounts for 3.5% by weight, but almost 15% of that from Conington.

Vessel forms

The LNV CC vessels in the Police Station evaluation assemblage comprise mainly dishes and jars, together with some flagons, bowls and lids and a few beakers. The OXF RS forms are either samian ware imitations or bead-rimmed bowls, together with some OXF RS mortaria and LNV WH mortaria also occur. The HAD OX vessels include a cupped mouth flagon and bowls, some imitating samian forms. The HORNGW types are various jars, dishes and bowls, although those in HORNOX are mainly storage jars. The Roman shell-tempered ware vessels are mainly jars, plus some dishes and the other grey wares mainly occur as jars, dishes or bowls, including flanged types.

Jars comprise around 75% of the vessels at North-West Cambridge site II Central, together with a dish and beakers, and half of those from site IV North, occurring with bowls, dishes, beakers, flagons, lids, mortaria and a 'Castor' box. Over 60% of the vessels from the North-West Cambridge 2012–13 sites are jars, followed by 5% each for dishes and bowls, around 15% beakers, 10% flagons, together with some cups, lids and mortaria. The most identifiable vessel form at Northstowe Areas C, E and J was jars, including storage vessels, representing 31.8% of all diagnostic sherds, followed by a lower percentage of bowls (20.4%). There were only 1–2 fragments of flagon, jug, cup, or dish forms and two beaker sherds and three mortaria fragments. Similarly, the most common vessel form at Area M was jars, 58.1%, followed by bowls (8.48%) including London-type ware from West Stow, samian imitations in Oxfordshire red-slipped, Hadham red-slipped and Nene Valley coloured-coated ware. A further 3.5% of the assemblage comprised of dishes and beakers formed just above 2% of the whole assemblage. Less than 1% of the assemblage comprised of cups. Area M also included mortaria (1%), flagons (0.5%), lids (0.37%) and jugs. A similar proportion (32% by weight) of the diagnostic sherds were jars at the Phase 2a sites and around 5% by count were dishes or bowls. Flagons and beakers accounted for 2% each by count with other forms occurring were flasks or bottles, a 'Castor' box, cups and mortaria.

Overall, jar forms predominate (52%) at Cambourne New Settlement, while bowls/dishes represented 33% of the vessels recognized. Other forms were much less common – drinking vessels 5%, flasks/flagons 2%, storage jars 4% and mortaria 2%, while lids and Castor boxes represented less than 1% each. The reports covering Brampton Road, Buckden, Summersfield, Papworth Everard, Ash Planation, Childerley Gate, Bourn Airfield do not provide precise figure for the proportions of the various vessel forms. Jars, bowls, dishes, a cup and a mortarium occur at Brampton Road, Buckden and Summersfield, Papworth Everard, the Late Iron Age/early Roman period included three bowls, two beakers, one dish and 12 different jars, while the early Roman assemblage was essentially jar-dominated, together with amphora sherds, five beakers, 15 bowls, two cups, three dishes, seven flagons, three lids, three mortaria and two platters.

At Ash Plantation, the only identifiable forms in ditches and eaves drip gully G40 are jars, a globular, neckless beaker and sherds that may be from a Nene Valley colour-coat beaker. Pits and postholes G42 contained jars, a bowl, a lid, a globular beaker, a ring-necked flagon, two cups and a dish/bowl, while final occupation and abandonment layers contained jars, a flanged bowl and a dish. At Childerley Gate, Fields and trackway G3, Enclosures G4 and G5 and layers associated with the remodelling of ladder system included jars, together with a mortarium in Enclosure G5. The Enclosure and quarry pit G7–G7 contained jars, dishes, mortaria, a bag-shaped beaker and a cupped-rim flagon and drove-ways, boundary ditch and pond G10–10 jars, dishes, beakers and a 'Castor box' lid. Enclosure ditches G3.2, G5.2, G7.3 and G11.2 of the Late Roman farmstead contained jars including large storage jars, dishes, bowls, flagons, a beaker and a mortarium, plus amphora sherds and various dark earth deposits contained jars, bowls, dishes and a flagon; other features contained a selection of jars, dishes, bowls, beakers and mortaria. Contexts at the Bourn Airfield settlement contained jars, a flagon a beaker and mortaria. Of the recognisable vessels in the Bar Hill assemblage, 78% are jars, 12% dishes, 2.5% beakers, 2% each bowls and mortaria, together with

amphora, flagons, cups, lids and specialised types. The Conington assemblage has a much smaller proportion of recognisable types but, unusually, there are far fewer jars (13%) compared to 27% dishes, 29% bowls, 14% beakers, 6% each mortaria and amphora, 2% flagons, along with lids and cups.

Medieval and later pottery

By Paul Blinkhorn

The medieval and later pottery assemblage was mostly post-medieval or modern and comprised 33 sherds with a total weight of 450g. The vast majority of these sherds derived from ditches or furrows of medieval or post-medieval date (Period 5), although a few sherds appeared to be intrusive in the fills of late Roman ditches (see Table 3.41).

The medieval pottery was recorded using the system of codes and chronologies suggested by Spoerry (2016) for Cambridgeshire, as follows:

- CASG: Cambridgeshire Sgraffito Ware, AD 1350–1500. 1 sherd, 1g.
- HEDI: Hedingham Ware, mid-12th–14th century. 2 sherds, 16g.

The post-medieval pottery was recorded using the conventions of the Museum of London type-series, as follows:

- BLUE: Blue Stoneware, 1800–1900. 1 sherd, 2g.
- CHPO: Chinese Porcelain, AD 1580–1900. 1 sherd, 13g.
- CREA: Creamware, AD 1740–1880. 3 sherds, 8g.
- ENGS: English Stoneware, AD 1700–1900. 1 sherd, 3g.
- ENPO: English Porcelain, AD 1745–1900. 1 sherd, 5g.
- HORT: Horticultural Earthenwares, 19th–20th century. 1 sherd, 57g.
- PMR: Post-medieval Redware, 16th–19th century. 18 sherds, 340g.
- TPW: Transfer-printed Whiteware, AD 1830–1900. 4 sherds, 5g.

The pottery occurrence by number and weight of sherds per context by fabric type is shown in Table 3.41. Each date should be regarded as a *terminus post quem*. The range of fabric types is typical of sites in the region.

The medieval material was all very abraded, and could easily be residual. The GRE was in a similarly poor condition. The sherd of HEDI from context 46 was a rim from a glazed jug, a typical product of the industry. The rest of the assemblage is entirely unremarkable.

Ceramic building material

By Phil Mills

Introduction

There are 143 fragments, 12,134g, of ceramic building material (CBM). This includes 128 fragments, 10,485g, of material collected as bulk finds from stratified contexts and one fragment, 9g recovered from a sample from context 371 (Table 3.45 at the end of this report). The material was examined by context with fabric codes assigned using a fabric type series previously used in Warwickshire. Unidentified fragments were recorded as 'B/T' (Brick/Tile). Fragments which could be Roman brick or tegulae were recorded as 'Flat'. Metrics recorded were: number of fragments, No; weight in grams, Wt; number of corners, Cnr. Complete dimensions are recorded in mm.

Dating

There are 116 fragments, 11,101g, of material that is probably Roman in date. The majority of these are in Horningsea fabric. This includes a Warry (2006) Type C.4 tegular lower cutaway which has a suggested approximate date range in the mid-2nd to mid-3rd centuries AD.

There is a single fragment of a probable Harrold product. The Harold industries were supplied to London in the 2nd century AD, but expanded their regional market in the later 3rd century AD. They are to date rarely noted in Cambridgeshire.

There are 27 fragments, 1033g, of post-Roman CBM, all in the form of Ely region products. CBM production probably starts in the 14th century in Ely and continues from then. There are no complete bricks so these cannot be used to date the material more precisely, although the fabric suggests a 14th- to 17th-century date.

Taphonomy

Table 3.42 shows the breakdown of the CBM by context type. The mean sherd weight (MSW) is in the median range for a group largely composed of Roman material. The majority of the material is from ditches which is in line with a rural site. The number of corners is quite low suggesting a reworked and redeposited group.

Supply

Table 3.43 shows the breakdown of the stratified CBM by fabric.

Table 3.42. Ceramic building material by context type.

Context type	No %	Wt %	Cnr%	MSW
Ditch	94.4%	95.3%	100.0%	83.59
Pit	4.0%	1.4%	0.0%	28.20
Pond	0.8%	3.2%	0.0%	330.00
Slot	0.8%	0.2%	0.0%	17.00
N/AVG	**126**	**10435**	**9**	**82.82**

Table 3.43. Ceramic building material by fabric.

Fabric code	No%	Wt%	Cnr%
T021	79.4%	89.6%	100.0%
T22	0.8%	0.7%	0.0%
TZ43	19.8%	9.7%	0.0%
N	**126**	**10435**	**9**

T021 is a pale red to red fabric with inclusions of common coarse sand and occasional flint, a product of the Horningsea industry. This is the most common fabric present, not surprising given the number of Horningsea kilns noted in Milton (Evans *et al.* 2017a). The breakdown of forms in this fabric is shown in Table 3.44. Forms identified included: flat fragments, c.15–30mm in thickness, with one example having a single curved finger line signature; flue tile with key combing; Roman brick at 33–65mm thickness; imbrex and tegula, including one example of a Warry (2006) Type c.4 lower cutaway tegula and an unstratified tegula with a dog print (Figure 3.10). The flat fragments include a number of burnt fragments including possible wasters or seconds. There is also a trimmed sherd. The relatively high level of imbrex, Roman brick and flue tile is consistent with material derived from a nearby hypocaust structure.

Table 3.44. Ceramic building material forms in fabric T021.

Form	No	Wt	Cnr
B/T	54	1304	0
Flat	9	1754	0
Flue tile	7	377	0
Imbrex	17	545	0
Roman brick	15	3723	4
Tegula	12	3289	5
Trimmed	1	36	0

Figure 3.10. Dog print in an unstratified Roman tegula in Horningsea fabric (T021).

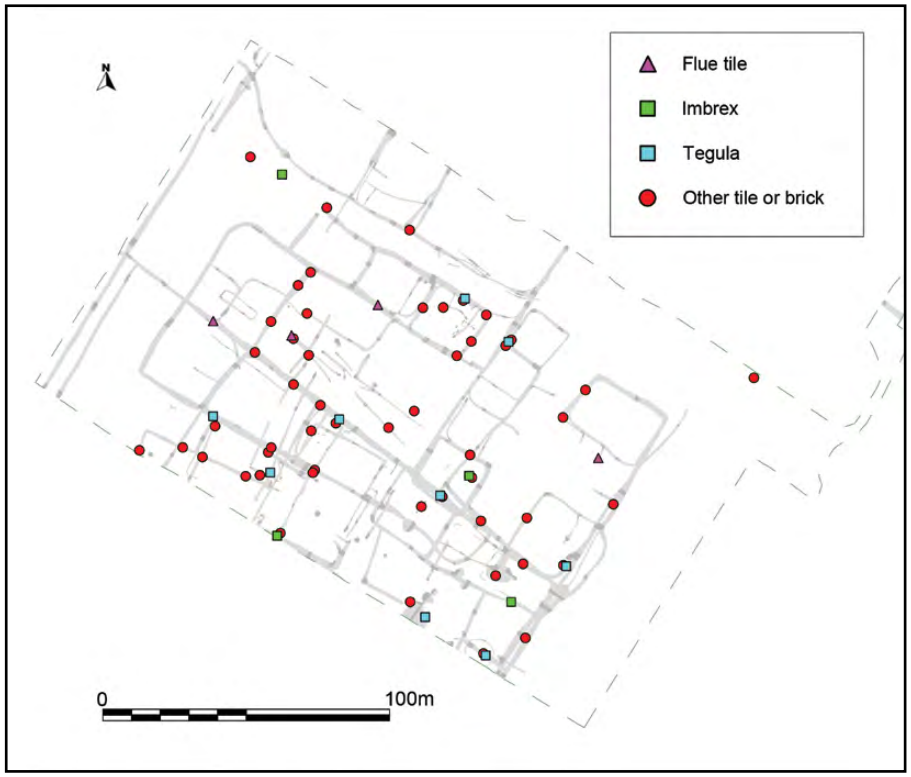

Figure 3.11. Distribution of Roman ceramic building material fragments.

T22 is a pale red fabric with common shell inclusions, probably a product of the Harrold region. A single flat fragment, 16mm thick, was noted.

TZ43 is a hard yellow fabric with lenses of red clay with common medium sand inclusions, probably from an Ely region Gault source (Lucas 1993). Forms noted in this fabric were brick tile and a peg tile with a squared peg hole.

Table 3.45. The ceramic building material catalogue, ordered by period and context.

Context	Feature	Period	Fabric Code	Function	NoSh	Wt	corner	Width	Thickness	Date	Comments
622	EN23	2.2	T021	B/T	1	4	0	0	0	Roman	
894	D39	2.2	T021	Flue tile	2	40	0	0	0	Roman	5+30
906	D19	2.2	T021	Tegula	1	283	2	0	20	MC2-MC3	Warry 2006 C.4 cutaway
1087	1086	2.2	T021	B/T	2	7	0	0	0	Roman	
1207	1205	2.2	T021	B/T	1	17	0	0	0	Roman	
963	962	2.2	T021	B/T	1	54	0	0	0	Roman	Poss sj bs
192	EN24	2.3	T021	B/T	1	2	0	0	0	Roman	
1171	F1	2.3	T021	Tegula	1	330	0	0	22	Roman	
1275	EN24	2.3	T021	B/T	1	9	0	0	0	Roman	
82	D1b	3.1	T021	B/T	1	32	0	0	0	Roman	
609	D31	3.1	T021	Flat	1	16	0	0	15	Roman	Poss sj bs
626	D31	3.1	T021	Flat	1	96	0	0	20	Roman	
626	D31	3.1	T021	Flue tile	3	173	0	0	16	Roman	Combed: 5teeth 32mm
626	D31	3.1	T021	Trimmed	1	36	0	0	14	Roman	80mm 25% round trimmed? Possibly an Oxidised HS base
663	D7	3.1	T021	B/T	1	3	0	0	0	Roman	
765	D5	3.1	T021	B/T	1	10	0	0	0	Roman	
836	EN19	3.1	T021	B/T	2	12	0	0	0	Roman	
991	EN19	3.1	T021	Imbrex	1	167	0	0	20	Roman	
1149	EN11	3.1	T021	Roman brick	1	97	0	0	35	Roman	
330	EN15	3.2	T021	B/T	2	41	0	0	0	Roman	
411	EN15	3.2	T021	Flat	1	80	0	0	30	Roman	
412	EN15	3.2	T021	B/T	1	9	0	0	0	Roman	
640	EN17	3.2	T021	B/T	2	8	0	0	0	Roman	
684	EN17	3.2	T021	B/T	1	47	0	0	0	Roman	
985	EN28	3.2	T021	B/T	2	46	0	0	0	Roman	
1400	EN15	3.2	T021	B/T	3	177	0	0	0	Roman	
585	DIV1	3.3	T021	B/T	1	2	0	0	0	Roman	
649	EN18	3.3	T021	Roman brick	1	153	2	0	40	Roman	
197	BD5	4.1	T021	Flue tile	1	134	0	0	16	Roman	Comb keying: 4+teeth 35
344	EN2	4.1	T021	Roman brick	1	592	0	0	40	Roman	

Table 3.45. The ceramic building material catalogue, ordered by period and context (continued).

Context	Feature	Period	Fabric Code	Function	NoSh	Wt	corner	Width	Thickness	Date	Comments
345	EN2	4.1	T021	Tegula	1	308	0	0	22	Roman	2 grooves
371	ST2	4.1	T021	B/T	1	9	0	0	0	Roman	From Sample no. 43
476	EN2	4.1	T021	Roman brick	3	503	0	0	40	Roman	
597	BD5	4.1	T021	Roman brick	1	134	0	0	40	Roman	
611	EN5	4.1	T021	B/T	1	6	0	0	0	Roman	
628	EN10	4.1	T021	B/T	2	106	0	0	0	Roman	
628	EN10	4.1	T021	Roman brick	1	77	0	0	33	Roman	
644	EN26	4.1	T021	Imbrex	2	136	0	0	20	Roman	Pale
668	BD5	4.1	T021	B/T	1	21	0	0	0	Roman	Poss burnt clay
747	EN10	4.1	T021	B/T	1	27	0	0	0	Roman	V sandy
749	BD5	4.1	T021	Tegula	1	273	2	0	20	Roman	
767	EN10	4.1	T021	B/T	1	25	0	0	0	Roman	
767	EN10	4.1	T021	B/T	1	194	0	0	10	Roman	Poss pot with incised dec
1236	BD5	4.1	T021	Flat	1	167	0	0	22	Roman	Pale
1236	BD5	4.1	T021	Tegula	1	88	0	0	30	Roman	Pale
1251	P1	4.1	T021	B/T	1	7	0	0	0	Roman	
1370	P1	4.1	T22	Flat	1	73	0	0	16	Roman	
825	D9	4.2	T021	Flat	1	767	0	0	23	Roman	Sooted
825	D9	4.2	T021	Tegula	1	407	0	0	23	Roman	Poss waster
1054	EN7	4.2	T021	Roman Brick	1	184	0	0	42	Roman	
1067	EN7	4.2	T021	B/T	1	2	0	0	0	Roman	
1155	EN7	4.2	T021	B/T	1	32	0	0	0	Roman	Burnt
1155	EN7	4.2	T021	Tegula	1	339	0	0	30	Roman	Waster/ second?
1386	EN7	4.2	T021	B/T	1	13	0	0	0	Roman	
290	EN1	4.3	T021	Flat	1	80	0	0	21	Roman	Clean
326	EN4	4.3	T021	B/T	1	25	0	0	0	Roman	
326	EN4	4.3	T021	Flat	1	84	0	0	30	Roman	
326	EN4	4.3	T021	Flat	1	300	0	0	20	Roman	
326	EN4	4.3	T021	Tegula	1	54	0	0	20	Roman	
326	EN4	4.3	T021	Tegula	1	164	1	0	17	Roman	
338	EN1	4.3	T021	B/T	3	50	0	0	0	Roman	
489	EN1	4.3	T021	Flue tile	1	30	0	0	20	Roman	Comb 3 30mm

Table 3.45. The ceramic building material catalogue, ordered by period and context (continued).

Context	Feature	Period	Fabric Code	Function	NoSh	Wt	corner	Width	Thickness	Date	Comments
493	EN1	4.3	T021	Flat	1	164	0	0	16	Roman	Poss sj bs
500	EN1	4.3	T021	B/T	1	10	0	0	0	Roman	Poss pot with incised dec
501	EN1	4.3	T021	B/T	1	41	0	0	0	Roman	
630	EN9	4.3	T021	B/T	1	97	0	0	0	Roman	
636	EN9	4.3	T021	Tegula	1	168	0	0	20	Roman	
789	EN9	4.3	T021	B/T	4	8	0	0	0	Roman	
912	EN6	4.3	T021	Roman brick	2	600	2	0	50	Roman	rra
1003	EN6	4.3	T021	Roman brick	1	303	0	0	40	Roman	Brown
26	27	5	TZ43	Brick	1	358	0		0	C14+	ELY yellow surface
95	104	5	T021	Imbrex	3	110	0	0	15	Roman	Pale
95	104	5	TZ43	Brick	12	363	0	0	0	C14+	
103	102	5	TZ43	B/T	2	11	0	0	0	C14+	
117	118	5	T021	B/T	1	17	0	0	0	Roman	
240	238	5	T021	Roman brick	1	422	0	0	65	Roman	Thumb print
693	694	5	T021	B/T	1	93	0	0	0	Roman	Brown
698	697	5	TZ43	B/T	2	8	0	0	0	C14+	
1050	1049	5	T021	B/T	1	36	0	0	0	Roman	
1050	1049	5	T021	Imbrex	1	25	0	0	17	Roman	
1050	1049	5	TZ43	B/T	3	15	0	0	0	C14+	
1050	1049	5	TZ43	Peg tile	1	44	0	0	12	C14+	Square peg hole
1050	1049	5	TZ43	Tile	3	179	0	0	12	C14+	
1184	1182	5	TZ43	Tile	1	34	0	0	12	C14+	
127	-	-	TZ43	Tile	2	21	0	0	12	C14+	
731	730	-	T021	B/T	3	4	0	0	0	Roman	
1075	1074	-	T021	B/T	1	1	0	0	0	Roman	
gps8	-	-	T021	Roman brick	1	196	0	0	44	Roman	
gps10	-	-	T021	Roman brick	1	462	0	0	45	Roman	
gps13	-	-	T021	Tegula	1	115	0	0	22	Roman	
gps15	-	-	T021	Imbrex	10	107	0	0	20	Roman	
us	-	-	T021	Tegula	1	760	0	0	27	Roman	Dog print

Discussion

The majority of the material is CBM of the Horningsea industry and is likely to date from the mid-2nd to mid-3rd centuries AD. Horningsea pottery was produced in Milton with known kilns *c.*2km to the east near the Old Tillage. The current group contains some burnt pieces which possibly represent seconds from a nearby kiln. However the range of forms present: tegula, imbrices, Roman brick and flue tile are consistent with material which derives from a hypocaust structure in the near vicinity. The distribution of the Roman CBM is shown on Figure 3.11, which indicates that the material was generally scattered in Roman ditch fills across the site, with a concentration in the southern and central parts of the site.

Table 3.46. Burnt clay: catalogue.

Context	Feature	Period	Sample no	Fabric code	Function	No	Wt (g)	Cnr	Thickness	Comments
1019	EN20	2.1		D021	Unidentified	1	26	0	0	
733	EN23	2.2		D11	Unidentified	1	3	0	0	
906	D19	2.2		D021	Surface	1	52	0	40	Org imp could be a bar
1012	EN21	2.2		D11	Unidentified	3	23	0	0	
1258	1259	2.2		D021	Plate	7	97	0	0	
1260	1261	2.2		D021	Unidentified	5	71	0	0	
1339	1335	2.2		D11	Unidentified	53	355	0	0	
1010	1009	2.3		D11	Shaped	32	305	0	0	Poss bar?
1032	D5	3.1		D021	Bar	3	67	3	30	
1227	P2	3.1		D021	Unidentified	11	67	0	0	
1228	P2	3.1		D021	Unidentified	20	69	0	0	
412	EN15	3.2		D01	Unidentified	12	53	0	0	Poss. Plate with org imp
661	EN17	3.2		D01	Unidentified	26	84	0	0	Surfaces poss plate?
661	EN17	3.2	93	D01	Unidentified	4	15	0	0	
1015	EN28	3.2		D11	Unidentified	4	27	0	0	
1441	EN14	3.2		D021	Shaped	4	68	0	0	Surface
549	DIV1	3.3		D01	Unidentified	1	1	0	0	
717	DIV2	3.3		D021	surface	2	21	0	0	
776	EN18	3.3		D11	Shaped	1	21	1	0	Rounded arrises corner fragment - Kiln bar or loom weight
776	EN18	3.3		D11	Unidentified	2	6	0	0	
968	EN12	3.3		D021	Unidentified	1	4	0	0	
645	EN26	4.1		D11	Unidentified	1	1	0	0	
668	BD5	4.1		D021	Unidentified	3	35	0	0	Org imp poss kiln bar
1067	EN7	4.2		D021	Surface	2	35	0	0	Poss luting
620	EN9	4.3		D01	Unidentified	9	18	0	0	
235	234	5	20	D11	Unidentified	78	192	0	0	
731	730	Undated		D021	Unidentified	1	8	0	0	
1075	1074	Undated		D021	Unidentified	2	8	0	0	

Burnt clay

By Phil Mills

There are 286 fragments, 1664g, of burnt clay. This includes 204 fragments, 1457g, collected as bulk finds from stratified contexts, and 82 fragments, 207g, recovered from environmental samples. The material was examined by context and assigned a fabric type and form where possible. Metrics recorded were: number of fragments, No; weight in grams, Wt; with complete dimensions recorded in mm. The full catalogue is shown in Table 3.46.

Table 3.47 Shows the breakdown of the burnt clay by context type. The majority of the burnt clay is from ditches which is normal for a rural site. There is a large amount from pits which can be a result of some industrial activities. There is also a high amount from oven [1335], likely oven lining.

Three fabrics were identified:

- D01 is a red to brown fabric with moderate sand inclusions. This includes fragments with organic impressions on the surface, which may be from kiln plates.
- D021 is a pale red to grey fabric with moderate coarse sand and occasional flint inclusions. Forms identified in this fabric include a possible kiln bar, fragments from possible kiln plate and a possible luting fragments.
- D11 is a dark red fabric with common sand inclusions. Forms included a shaped fragment which was possibly from a loom weight or kiln bar and fragment from a possible bar.

Much of the material is in the form of unidentifiable fragments, although the material from oven [1335] of Roman Period 2.2 is likely to be from oven lining. There are a number of possible kiln furniture fragments including from kiln bars, kiln plates and luting. The presence here is consistent with the known focus of Milton for Horningsea pottery production. There is a possible loom weight which would indicate some local textile production.

Mortar

By Phil Mills

There are 4 fragments, 399g, of mortar from late Roman contexts. These were in a fabric comprising very coarse rounded gravel with some fine white mortar. These are possibly floor underlay mortars. The catalogue is given in Table 3.48.

Struck flints

By Robin Holgate

Seven humanly-struck flints weighing 189.5g were recovered from seven contexts dating to the Roman or post-medieval periods (see Table 3.49). The flints comprise flakes that were fashioned on dark brown flint. Cortex, where present, was mostly thin and abraded. One flint had an orange band running below the cortex, which is reminiscent of a flint pebble that originated from Bullhead Beds. The flint is likely to have been obtained from the nearby River Terrace deposits. The flakes were detached from cores using hard, probably stone, hammers without abrading the platform edges of the cores in between detaching each flake. This

Table 3.47. Burnt clay by context type.

Context type	NoSh	Wt	MSW
Ditch	37.9%	35.3%	6.76
Oven	25.7%	23.8%	6.70
Pit	34.0%	36.1%	7.69
Tree root hole/animal hole	2.4%	4.8%	14.20

Table 3.48. Mortar: catalogue

Context	Feature	Period	Sample no.	Function	NoSh	Wt (g)
665	664	2.2	91	Flooring	2	189
412	EN15	3.2		Flooring	1	125
1320	EN7	4.2		Flooring	1	85

Table 3.49. Struck flints: description by context.

Context	Feature	Feature type/ description	Period	No. of flints	Weight (g)	Description of flints
(1251)	[1249]	Pit	2.2	1	1	1 flake fragment (fire-fractured)
(192)	EN24	Enclosure ditch	2.3	1	3	1 flake fragment
(1275)	EN24	Enclosure ditch	2.3	1	3	1 flake
(174)	D14	Ditch	4.1	1	6	1 flake
(1199)	P1	Pit	4.1	1	175	1 flake
(4)	[5]	Ditch	5	1	0.5	1 flake
(312)	[311]	Ditch	5	1	1	1 flake

flint-working strategy was in common usage from the middle Neolithic period onwards and it is likely that the flakes were associated with activity of some description at the site during or after the late 4th millennium BC.

Utilised stone artefacts

By Soren Greasley

Introduction and methodology

A total of 71 fragments of utilised or possibly utilised stone artefacts, weighing 48,633g, were found in the excavation, all from late Roman features of Periods 2–4. The majority of the assemblage by fragment count comprised quern stones. There were 21 fragments of probable rotary quern stones alongside a further 24 potential/possible quern stone fragments. There were also two whetstones and two sharpening stones. An additional 22 fragments of stone were recovered, which included two stone roof tiles, a possible flagstone and two pieces of roughly-shaped masonry, but also material with no clear signs of working which may have been deposited in the area through ancient river activity, rather than being anthropogenically imported for use at the site. While the presence of imported stone at the site is noteworthy, the utilisation of Millstone Grit from northern England as a source for quern/mill stones is not unusual in Cambridgeshire (Hayward and Meckseper 2016, 300, 307, 313; Shaffrey 2015; Shaffrey 2022). None of the querns were thought to have been intentionally placed deposits. A catalogue of the stone artefacts is included as Table 3.50 at the end of this report.

All the coarse stone fragments recovered from the excavation were examined using a 10x hand lens in order to review their lithology. No microscopic or chemical work was undertaken on the assemblage. Thanks are extended to Professor Ian Boomer for advice on identifying the stones.

Quern stones

A total of 45 fragments of likely quern stone, weighing 15,388g in total, were recorded. Of these, 21 fragments were identified as probable rotary querns, 19 of which were in medium-coarse moderately well sorted sandstone, likely Millstone Grit from northern England. One was in a greyish medium-fine grained well sorted sandstone and one other in puddingstone, probably from Hertfordshire. There were also 16 fragments that were potentially quern stones, being of a material utilised for querns and having a worn or worked grinding surface, but in too poor a condition to label definitively as querns. These all appear to have been of similar lithology and were again likely Millstone Grit. In addition, there were eight highly degraded fragments of material that are typically associated with quern manufacture, two of which were likely of Millstone Grit and six joining fragments of a lava stone which would have been imported from Germany or less likely France.

All of the quern fragments were in very abraded condition, with no fragments representing more than 10–15% of the original artefact. There were no examples of handle-holes and no certain central holes. All fragments indicate high degrees of wear on grinding surfaces. Pecked dressing is present on examples from contexts (624), (711), (767), (886), and (1345) (Dressing Type 1 in Lepareux-Couterier 2014). Fragments from contexts (338), (636), (668), and (711) may have furrowed dressing across the grinding surface (Lepareux-Couterier 2014), however, these are very heavily worn and cannot be more accurately identified than this. The fragment from context (1345) has a single larger groove running parallel with edge of the fragment. The larger flatter fragment from context (711) has a single pronounced groove running across its 'upper' surface (i.e. opposing the potential grinding surface), this may indicate the remains of a hopper, however, this cannot be said for certain. The presence of very faint buff-

brown residue on this fragment may indicate reuse as masonry.

Fragments from contexts (767) and (1345) are from the same artefact, likely an upper quern stone with a diameter of 400–430mm, a thickness of 34mm at its outer edge and 16mm at its centre edge. The grinding surface is characterised by a series of random peck marks and a single tooled 'channel' or groove. Given that these features belong to separate, distinct phases, it is certain that at least one of the fragments is residual.

A single fragment of the upper stone of a conglomerate or 'puddingstone' quern was recovered from context (888). It is hemispherical in profile, with a diameter of *c*.260mm, a thickness of 45mm and weighing 659g. There is no surviving hopper or hand-hole. There is potentially a central hole which would indicate a 60mm diameter, though this is damaged considerably and therefore uncertain. The grinding surface is well worn with a slightly concave angle.

An additional 16 fragments of potential querns of likely Millstone Grit with at least one possible grinding surface, were recorded, however, these are too small and fragmented to be certainly identified as querns. There were, in addition, two further fragments of likely Millstone Grit with no surviving traces of a grinding surface, whilst six adjoining fragments of lava stone (again with no surviving traces of a grinding surface) were recovered from context (968). Lava such as this was utilised extensively in querns imported from Germany and France during the Roman period and later (Peacock 2013).

Whetstones and sharpening stones

There were two potential whetstones and two potential sharpening stones, collectively weighing 1034g. A probable whetstone of hard siltstone to very fine sandstone was recovered from context (624), SF162. It is cuboid in shape with bevelled edges (Figure 3.12). The artefact is well smoothed on all sides and measures 81mm by 22mm by 15mm. Its small size and well smoothed appearance potentially indicates use as a portable hone or whetstone, with which to sharpen smaller bladed implements. A potential second whetstone was recovered from context (1155) (Figure 3.13). This artefact is made of a fine-grained hard sandstone or micaceous siltstone with a roughly cuboid shape and has a well-worn surface indicating potential utilisation as a whetstone, though this wear may have occurred through natural processes.

Figure 3.13. A potential whetstone in fine-grained hard sandstone or micaceous siltstone, recovered from context (1155).

A potential sharpening stone made of a hard fine-grained dark blue-green sandstone was also recovered from context (875) (Figure 3.14). Roughly trapezoidal in shape, the artefact has one face and two edges that appear very well smoothed. The smoothed surface has a concave depression indicating use either a sharpening stone or a rubbing stone, potentially a tablet style whetstone (Allen 2022). There are two short parallel grooves (approx. 22mm) present on the edge of the concavity, potentially indicating the artefact was used to sharpen pointed implements (Allen 2019). The smoothed sides may also indicate that the stone was used to sharpen curved bladed tools and implements, or that the artefact was utilised for another processing purpose. A second potential sharpening stone was

Figure 3.12. A probable whetstone in hard siltstone to very fine sandstone, recovered from context (624), SF162.

Figure 3.14. A potential sharpening stone in a hard fine-grained dark blue-green sandstone, recovered from context (875).

recovered from context (850). It is of a finely grained green-grey sandstone. It is characterised by a very well-worn sloping surface, likely the grinding surface.

Additional material

Additional material comprises 22 fragments weighing 32,384g. The majority of these fragments are in micaceous siltstone to fine sandstone with some examples having interspersed shell fragments. While Cambridgeshire does not have any hard stone outcrops, it seems most likely that such stones were deposited in the region through ancient river activity, rather than necessarily being anthropogenically imported for use at the site. Of these stones, four fragments show signs of potential sooting or burning (contexts 668; 904; 854; 1054). The fragment from context (1155) exhibits an obvious hole in the centre of its longest edge, along which it has fractured (Figure 3.15). The fragment from context (1054) has a potentially worked curving edge, however, this is not certain. These two examples may have potentially have been roofing tiles or 'tilestones', however, given their limited number and the fact that it might be expected that most Cambridgeshire sites would have tended towards ceramic roofing tiles, as at Crystal Park, Bottisham (Hayward and Meckseper 2022), this cannot be said for certain.

Figure 3.15. Stone roof tile (light pinkish grey micaceous siltstone to fine sandstone) with nail hole, from context (1155).

A small fragment of micaceous siltstone to fine sandstone was recovered from context (711). The fragment has one well-worn surface with a dark grey-black patina, potentially indicating sooting. Three of its edges may have been worked. The potentially worked edges and the well smoothed patinated surface indicate that the fragment may have been a flagstone or decorative tile.

Two pieces of likely masonry were recovered from contexts (330) and (412), both from the west side (near the north-west corner) of EN15 of Period 3.2 in the centre-west part of the site. Both pieces were of a yellow-cream buff fossiliferous limestone. The smaller fragment (330) has been roughly shaped, but there is no indication of decorative tooling. One surface has traces of a dark grey-brown residue, potentially remnants of mortar. The larger block (412) is of the same material. The surfaces of the block are roughly shaped, with no obvious dressing. One surface is characterised by a 212x90x53mm sized concavity with traces of a buff-brown residue, similar to the residue seen on (330). These examples are likely to have been imported and would have represented a considerable cost, given that the larger of the two weighs approximately 27kgs.

Finally, a fragment of worked pale buff-grey, hard, siltstone or impure limestone was recovered from context (875). The fragment has a very well smoothed surface, potentially having begun to have been polished. There is a shallow groove, 1mm wide and <1mm deep, running across the length of the fragment (Figure 3.16). After 48mm the groove becomes less obvious, where the fragment has broken on one side of the groove. While it seems unlikely that the groove would have occurred through natural processes, the purpose of this stone is not certain.

Figure 3.16. Fragment of apparently worked pale buff-grey, hard, siltstone or impure limestone recovered from context (875).

Discussion

The distribution of the numerous fragments of quern stones is shown on Figure 3.17. This shows that these objects were concentrated in ditches in the southern part of the site, perhaps indicating that grain was ground in this area. The two whetstones and two sharpening stones were also found in the southern part of the site. The material was in a much abraded condition and it is therefore likely that these stone finds were residual in their deposits. The majority were recovered from boundary ditches and refuse pits

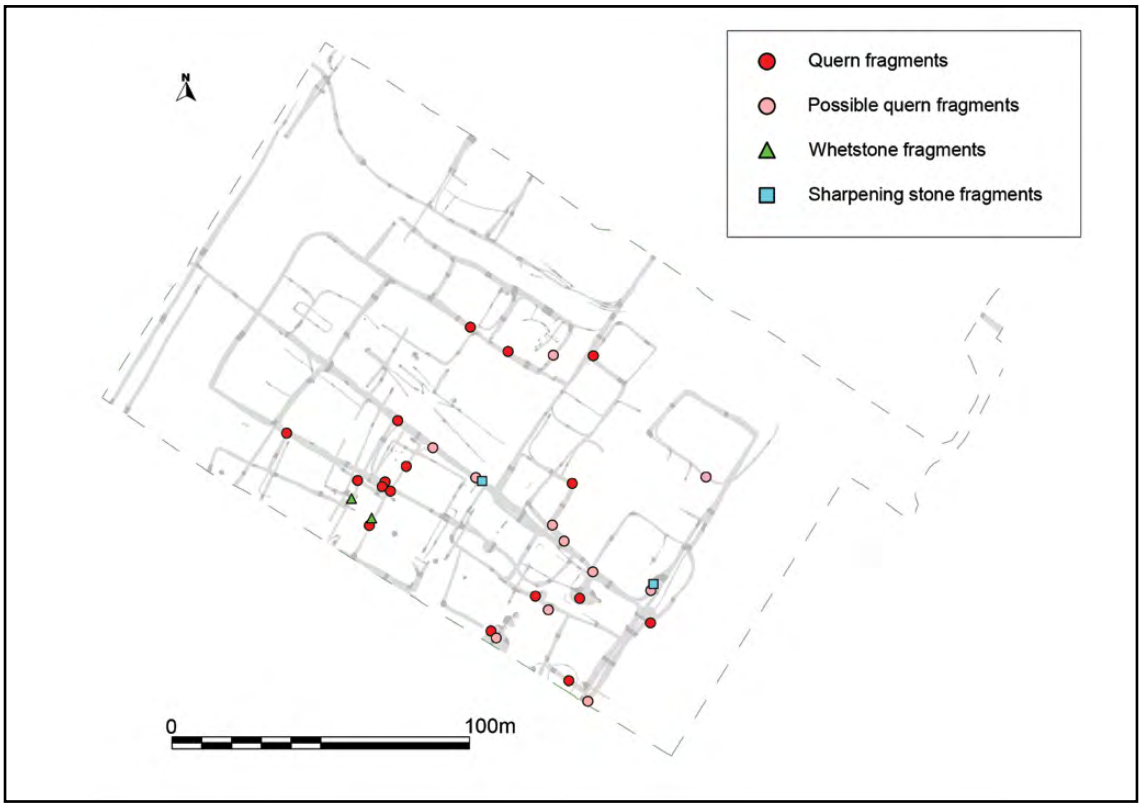

Figure 3.17. Distribution of quern fragments, whetstones and sharpening stones from late Roman contexts.

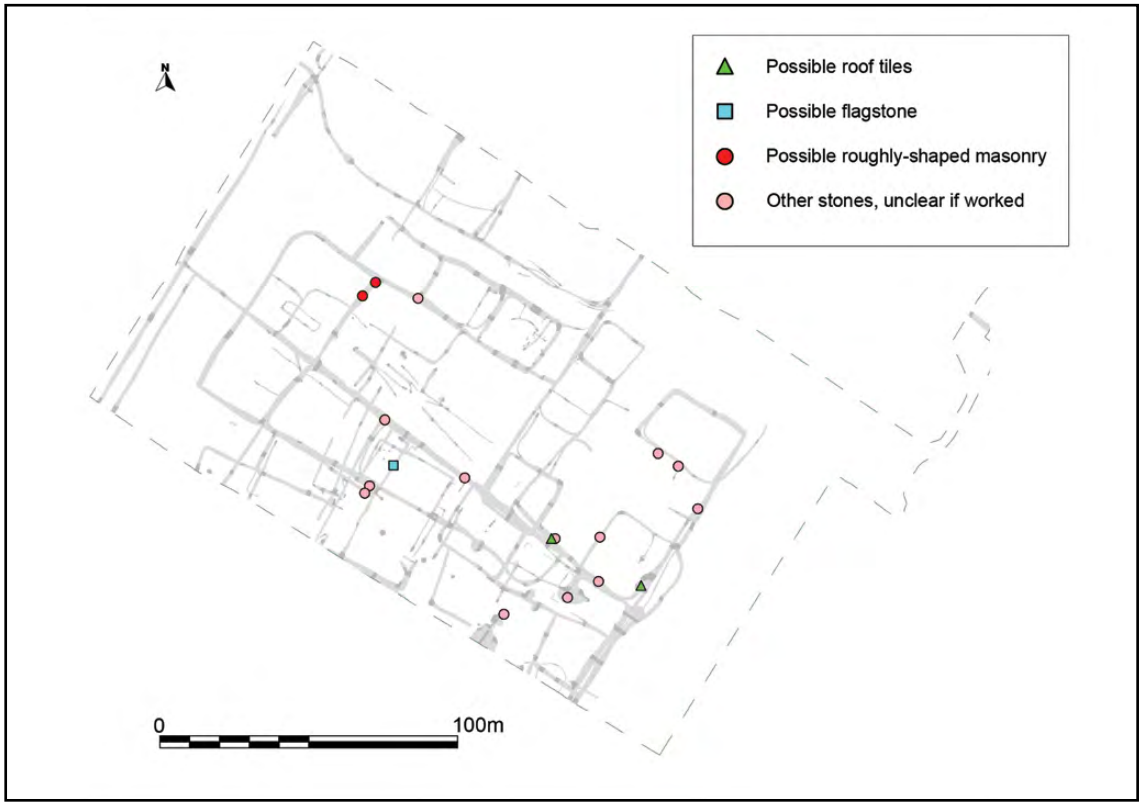

Figure 3.18. Distribution of possible stone building material from late Roman contexts.

Table 3.50. Utilised stone artefacts: catalogue.

Context	Feature group	Feature type	Period	Description	Fragment dimensions (mm)	Fragment count	Weight (g)
Quern stone fragments							
888	D36	Ditch	2.3	A fragment of the upper stone of a puddingstone quern, made from conglomerate/puddingstone with a dark blue grey-dark buff cement (likely Hertfordshire Puddingstone). Hemispherical in cross section, with a diameter of Approx. 260mm, a thickness of 45mm and a weight of 659g. Due to the fragmentary nature no hopper or rim is present, nor is a handle hole. The feed pipe is potentially present (though very incomplete) and is 6cm in diameter. the grinding surface is well worn with a concave angle.	116x80x49	1	659
1089	F1	Pond	2.3	Probable quern fragment of likely Millstone Grit. Two worn faces survive with a generally flat but slightly hemispherical profile. The more worn of the two edges, potentially the grinding surface, also has a very slight concave shape.	106x76x33	1	316
886	D5	Ditch	3.1	Rim fragment of flat disc quern, likely made of Millstone Grit, with a thickness of 36mm, diameter of 400–420mm. The rim and one flat surface are relatively well worn. The other larger flat surface is less well worn and is characterised by a series of semi random peck marks (potentially the base or a less well used grinding surface).	121x91x26	1	731
1345	EN19	Ditch	3.1	Rim fragment of upper stone of quernstone of likely millstone grit, 190-200mm in diameter, with a thickness tapering from 41mm to 18mm and weighing 152g. The grinding surface is concave and with random peck marks and a pronounced groove running parallel to the rim, likely representing a 'distributor groove'. The profile is not certain. Joins with fragment from (767).	79x43x32	1	152
402	EN15	Ditch	3.2	Fragment of upper quern stone of medium-coarse moderately well sorted sandstone, likely Millstone Grit, with a diameter of approx.260mm, thickness tapering from 35mm at the rim to 21mm at the central hole. Beyond a slight curve, indicating a potential diameter of approx. 40mm, any trace of the central hole is missing. The grinding surface is concave. Both the grinding surface and the upper surface are very well smoothed.	83x49x31	1	211
1302	D3a	Ditch	3.2	Upper stone quernstone fragment of likely millstone grit, 180mm in diameter with a 29mm thickness and weighing 207g. The grinding surface is flat, angled at 10 degrees and well worn, with three very faint shallow grooves present at the unbroken rim edge. Due to use-wear these are not visible across the whole surface. The other remaining original surfaces have been shaped using random pecks.	81x76x29	1	207
624	EN18	Ditch	3.3	Rim fragment of quern stone upper stone of likely Millstone Grit disc-quern, with a diameter of 350mm and a thickness of 49mm, weighing 900g. The grinding surface is flat and slightly concave, with semi-random peck marks. There is no surviving central hole.	109x106x41	1	900
967	EN12	Curvi-linear ditch	3.3	Fragment of probable quernstone, of a medium grained rough sandstone. Only two faces survive, the outer rim and a flat surface, which may be the grinding surface or a well smoothed upper surface. This surface is worn and concave in shape. No profile is discernible. Dark discolouration on the broken surface may indicate exposure to heat.	95x81x50	1	371
668	BD5	Ditch	4.1	Fragment of quernstone, potentially Millstone Grit. There are two opposing worn, worked faces, potentially indicating that the fragment was a disc quern.	62x59x 54	1	270
668	BD5	Ditch	4.1	Probable upper stone quernstone fragment of likely Millstone Grit. 42mm thickness and 260mm diameter. The profile likely represents a truncated cone. The two larger faces are well smoothed, the lower surface is very slightly concave and shows traces of three tooled grooves, probable distributor grooves. There is a single tooled groove running along the outer 'rim' edge.	68x76x42	1	328

Table 3.50. Utilised stone artefacts: catalogue, continued.

Context	Feature group	Feature type	Period	Description	Fragment dimensions (mm)	Fragment count	Weight (g)
711	EN10	Ditch	4.1	Probable millstone or quern stone fragment of likely Millstone Grit. One surface is particularly worn with the obverse being characterised by a single pronounced, curving groove, potentially distributor groove. A small section of potential rim remains, measuring approx. 39mm, however this is too fragmented to give an accurate diameter. Likely flat disc in profile.	164x125x36	1	1048
711	EN10	Ditch	4.1	Probable rim fragment of quern in likely Millstone Grit, with a diameter of 550–560mm and a thickness of 62mm. Likely the upper stone, with a flat disc profile. The potential grinding surface is well worn and smooth, with some very faint tool marks (potentially punch or chisel), possibly indicating reuse as masonry.	114x104x59	1	1208
767	EN10	Ditch	4.1	Fragment of upper quernstone made of likely Millstone Grit, with a thickness of 34mm and diameter of 340mm. The grinding surface is concave, set at 15 degrees and well worn with traces of peck marks. The profile, whilst incomplete, would likely have represented a truncated cone. Joins with fragment from (1345).	62x45x39	1	188
1285	EN10	Ditch	4.1	A probable Millstone Grit quern. Profile is likely hemispherical or flat disc. The largest faces are well worn, with the 'lower' of the two faces presenting small tooled perforations or pecked tool marks, likely create with a punch or point. The edges have been clearly recut and the 'upper' face has traces of a cream/buff dusty residue, potentially mortar, indicating use or reuse as a building material.	146x125x59	1	1851
1370	P1	Pit	4.1	Probable likely Millstone Grit quern fragment, with a minimum diameter of 280mm, a thickness of 29mm and a weight of 202g. The grinding surface is well worn and slightly concave and the profile is hemispherical. The fragment also has a pronounced downturned lip around the grinding surface, holding the stone in place during use.	77x75x27	1	202
1370	P1	Pit	4.1	Probable quern fragment of likely Millstone Grit. The fragment has a single well-worn flat surface, likely representing the grinding surface, and a central hole of 80mm diameter. The outer rim is too damaged to obtain an accurate overall diameter, though it would have measured at least 280mm.The profile is roughly hemispherical, however the upper surface is damaged, obscuring the full extent of this.	97x88x34	1	398
825	D9	Ditch	4.2	Fragment of probable quernstone, of Millstone Grit. Only two original surfaces remain, the outer rim and a very well-worn face, potentially the grinding or upper surface. The quern would likely have been 280–300mm in diameter with a minimum thickness of 42mm. The fragment in its current state weighs 602. It likely had a truncated cone profile, though the fragment is incomplete so this is not certain. There is some dark patination on one surface potentially indicating heat exposure or burning.	106x103x41	1	602
825	D9	Ditch	4.2	Fragment of probable quernstone of Millstone Grit, 280mm diameter and 41mm thick and weighing 860g. The probable grinding face is well worn, flat. There is a short section of potential rim measuring 73mm. The profile is difficult to discern but seems likely to have been a flat disc. The fragment appears to have been recut, likely for use as masonry.	116x45x35	1	860
325	EN4	Ditch	4.3	Probable upper quernstone fragment of likely Millstone Grit with one well-worn slightly concave face, potentially the grinding surface. There is also a short section of potential rim 50mm. 41mm thickness	79x76x40	1	357
338	EN1	Ditch	4.3	Probable quern stone fragment of likely Millstone Grit. While the profile is difficult to discern, appears closest to a truncated hemisphere. One face is well worn (grinding surface) and has traces of two parallel tooled grooves. The opposing surface is also clearly shaped and there is a gentle slope towards, what would likely have been, the Hopper. The fragment also has a small 26mm section of 'rim' indicating a possible diameter of 200–220mm.	66x59x34	1	190

Table 3.50. Utilised stone artefacts: catalogue, continued.

Context	Feature group	Feature type	Period	Description	Fragment dimensions (mm)	Fragment count	Weight (g)
636	EN9	Ditch	4.3	Probable millstone or quern fragment of likely Millstone Grit. Heavily fragmented with well-worn largest faces. Traces of two groove-like tool marks are present on one of these surfaces, potentially representing 'distributor grooves'. No clear profile is discernible	149x92x54	1	1004
Possible/potential quern stone fragments							
1360	**1358**	Pit	2.2	Small fragment of medium to coarse moderately well-sorted sandstone, likely Millstone Grit with one smoothed, well-worn face, potential rubbing stone.	62x37x24	1	94
1128	F1	Pond	2.3	Fragment of potential millstone, likely of Millstone Grit. One of the larger flat faces is well worn and smoothed. The fragment has clear surviving rim nor is an accurate profile discernible. Appears to have been recut, when considered alongside the heavily worn surface likely to have been reused as masonry.	144x94x34	1	688
402	EN15	Ditch	3.2	Fragment of medium-coarse moderately well sorted sandstone, likely Millstone Grit, quern stone material.	48x48x27	1	72
1441	EN14	Ditch	3.2	Fragment of medium grained well sorted sandstone with small quartzitic inclusions, potentially Millstone Grit. Potentially loose masonry or rubbing stone, with one well-worn face.	95x74x22	1	189
968	EN12	Curvi-linear ditch	3.3	Fragment of volcanic stone (potentially lava), in six adjoining pieces. Too fragmented to be a discernible artefact, but of quernstone material.	52x44x29	6	108
875	BD5	Ditch	4.1	Possible fragment of quern stone, of Millstone Grit. With a single worn face and a section of potential rim indicating a possible diameter of 230–250mm.	52x39x9	1	54
875	BD5	Ditch	4.1	Potential quern stone fragment, likely Millstone Grit, the probable grinding surface is worked, with clear tooled perforations and is fairly well worn.	91x73x31	1	206
876	BD5	Ditch	4.1	Small fragment of Millstone Grit, quern stone material.	32x24x21	1	20
917	BD5	Boundary ditch	4.1	Fragment of potential quern stone, likely Millstone Grit. Two faces are clearly worked, one with random 'peck' marks and the other likely representing a worn 'grinding' surface face. There is a surviving 'rim'-like edge potentially having been recycled from a quern stone. Although difficult to discern, the profile is reminiscent of a truncated hemisphere.	84x72x20	1	273
917	BD5	Boundary ditch	4.1	Fragments of potential quern stone, Millstone Grit, likely representing fragments of the same object, due similarities in lithology, thickness and patination. The first measuring 85x45x29mm, weighing 173g. The second measuring 57x54x28mm weighing 165g. Both have well-worn opposing faces, with the lower examples appearing to show a very slight concave shape. Both examples have short, curving 'rim'-like edges, indicating potential quern stone use.	85x45x29 and 57x54x28	2	173; 165
1370	P1	Pit	4.1	Potential rubbing stone or quern fragment of likely Millstone Grit, slightly concave surface.	87x65x26	1	210
1370	P1	Pit	4.1	Fragment of potential rubbing quern stone of likely Millstone Grit. The fragment has a single well-worn face with 5 very faint tooled grooves running across the surface. There is a short potential 'rim'-like section along one edge measuring 39mm.	59x43x19	1	86
796	D3b	Ditch	4.2	Fragment of potential grinding stone, of likely Millstone Grit with a worn, pecked face. This surface has a darker patination not seen on the rest of the fragment.	68x52x26	1	140
1054	EN7	Ditch	4.2	Fragment of potential quern or rubbing stone material, likely of Millstone Grit. One heavily worn face, potentially indicating use as rubbing stone.	42x45x30	1	103
1102	EN7	Ditch	4.2	Potential Millstone Grit quern stone. One of the sides is very well smoothed potentially representing the intentional reuse of a quern as rubbing stone.	65x59x27	1	131

Table 3.50. Utilised stone artefacts: catalogue, continued.

Context	Feature group	Feature type	Period	Description	Fragment dimensions (mm)	Fragment count	Weight (g)
1156	EN7	Ditch	4.2	Triangular fragment of potential quern, likely Millstone Grit, with a single well-worn worked face.	89x78x28	1	300
493	EN1	Ditch	4.3	Potential quern fragment of medium moderately well sorted sandstone, likely Millstone Grit. Two surfaces are very well worn, with one surface sloping at a 5–10 degree angle (potentially the grinding surface). Same red gritty material seen in fragment from context 668.	64x54x52	1	277
972	EN6	Ditch	4.3	Potential quern stone fragment. The material is likely Millstone Grit. Four unshaped faces and one worn face, with a section that is very smooth potentially indicating use as rubbing stone.	72x54x33	1	211
Whetstones and sharpening stones							
850	D34	Ditch	2.2	Fragment of potential grinding or sharpening stone of micaceous siltstone. The upper face is characterised by an area of very well worn stone indicative of large amounts of repetitive rubbing activity. Potentially indicating use as a tablet-style whetstone.	99x117x17	1	316
624, SF162	EN18	Ditch	3.3	Hard very fine grained sandstone or siltstone with micaceous flecks, probable whetstone, rectangular in profile with bevelled edges. Smoothed and well worn, with one broken face.	81x22x15	1	75
875	BD5	Ditch	4.1	Potential sharpening stone. Hard micaceous siltstone. Very well smoothed/polished face and concave depression in centre of face indicates use as either a sharpening/whetstone or the lower stone used for grinding. Two short tooled parallel grooves (approx. 22mm) are present on the edge of the concave dish, the grooves may have been used to sharpen point implements (Allen 2019). Tablet shaped whetstone or may have been utilised as a smoothing stone for leather/agricultural processing (Allen 2019, 50, 321–330).	122x114x17	1	468
1155	EN7	Recut ditch	4.2	Potential sharpening stone. Fine grained micaceous sandstone or siltstone. With one very well smoothed polished face.	112x44x21	1	175
Stone roof tiles							
1054	EN7	Ditch	4.2	Fragment of potential siltstone to very fine sandstone with shell fragments, and dark grey patination. May be potential tilestone, given thickness and lower edge may have been worked into a curve, however this cannot be said for certain.	117x69x18	1	235
1155	EN7	Recut ditch	4.2	Light pinkish grey micaceous siltstone to fine sandstone. Similar lithology to 1054. The longest edge has a nail hole midway along it.	97x71x16	1	101
Possible flagstone							
711	EN10	Ditch	4.1	Small fragment of finely grained dark grey brown siltstone with micaceous flecks. One surface is very well smoothed and has a dark grey-tinge/patination potentially sooting.	68x52x22	1	126
Possible roughly-shaped masonry							
330	EN15	Ditch	3.2	Loose masonry. Light cream-buff fossiliferous limestone. Five of six sides roughly shaped, with no obvious dressing, traces of a buff/brown residue. Potentially mortar on the sixth side.	162x157x115	1	3112
412	EN15	Ditch	3.2	Large block of loose masonry. Light cream-buff fossiliferous limestone. The surfaces of the block are roughly shaped, with no obvious dressing. One surface is characterised by a 212x90x53mm sized concavity with traces of a buff/brown residue, potentially mortar or cement.	390x254x124	1	26800

Table 3.50. Utilised stone artefacts: catalogue, continued.

Context	Feature group	Feature type	Period	Description	Fragment dimensions (mm)	Fragment count	Weight (g)
Additional stones, not clear if worked							
854	**853**	Pit	2.2	Fragment of likely micaceous siltstone with some dark patination indicating potential heat exposure on one surface.	103x71x17	1	206
898	**897**	Ditch	2.2	Small fragment of siltstone to very fine sandstone. No clear evidence of working.	56x46x15	1	63
904	D39	Ditch	2.2	Micaceous siltstone to very fine sandstone. No clear evidence of working, but with some evidence of sooting in two separate small areas.	127x119x20	1	506
888	D36	Ditch	2.3	Medium grey-buff impure limestone siltstone, with dark patination. No clear signs of working.	66x54x17	1	159
1149	EN11	Ditch	3.1	Three fragments. Lithologically very similar to the example from (1155), likely micaceous siltstone to fine sandstone.	78x54x11, 63x56x9 and 62x56x10	3	82; 45; 47
668	BD5	Ditch	4.1	Fragment of likely micaceous siltstone to fine sandstone. Due to size may have been a tile, rubble or made up a thin rough course.	120x61x17	1	158
875	BD5	Ditch	4.1	Fragment of siltstone to impure limestone. One face in considerably smooth but it is not clear whether this would have been through anthropogenic or natural processes. On this face there is a shallow groove 1-2mm wide, <1mm and running across the length of the fragment. After 48mm the groove becomes less obvious, where the fragment has broken.	129x47x30	1	262
891	EN10	Ditch	4.1	Fragment of likely micaceous siltstone to fine sandstone, similar to example from (1155), with occasional shelly fossil inclusions.	129x64x15	1	181
1370	P1	Pit	4.1	Fragment likely siltstone with some pinkish red patination and interspersed shells. No clear signs of working	62x61x17	1	130
987	EN7	Ditch	4.2	Fragment of micaceous siltstone. No obvious signs of working.	59x48x9	1	83
1067	EN7	Ditch	4.2	Likely micaceous siltstone. Some dark patination may indicate sooting. No other obvious signs of working	95x74x10	1	206
515	EN1	Ditch	4.3	Fragment of siltstone to very fine sandstone with red ferrous patination. No clear sign of working.	49x41x13	1	56
1161	EN8	Ditch	4.3	Two fragments of siltstone to very fine sandstone with dark specks and interspersed shells.	104x65x12 and 63x32x8	2	136; 39
1161	EN9	Ditch	4.3	Likely fragment of impure limestone to siltstone.	79x76x21	1	227

dating to the late Roman period, which were associated with agricultural and domestic activity. The quern stone fragment from context (1089) was recovered from a potential pond, which appears to have filled naturally. When considering this, alongside the highly fragmented condition of the stone and the high amounts of use-wear, size, and fragmentary condition of the querns, it is likely that many of the fragments were exhausted prior to deposition. The examples from contexts (711), (825), and (1285) show signs of reuse and may have been incorporated into walls or structures.

There does not appear to be a distinction between artefact type and chronological distribution as all objects were recovered from deposits that appear to date to the later Roman period. The assemblage probably indicates considerable use of querns in grinding of grain during the late Roman period as well as the use of whetstones to sharpen knives or tools, perhaps also for use in an agricultural context. Some stone may have derived from a building or buildings. The distribution of the possible building stone (and various other pieces of stone which are not clearly worked) is presented on Figure 3.18, which shows a scatter across the southern and central part of the site.

When discussing the lithology of the quern stone assemblage some interesting points can be raised. There is a high degree of favourability towards the use of Millstone Grit from northern England, with

only one fragment of puddingstone, probably from Hertfordshire. Likewise, lava from Germany (or possibly France) is absent beyond a single group of joining fragments in very poor condition. This is interesting as large amounts of lava querns were imported into the region during the Roman period (Peacock 2013) and it might be expected that a higher-status site, as this appears to be, would have utilised querns of this material type.

Given the presence of a notable amount of imported stone, particularly in reference to the quern stones, the site may have been part of a high-status Roman complex used for crop/grain processing.

Coins

By Peter Guest

The archaeological excavation at Milton produced 69 coins, all but one of which are Roman copper-alloy issues (the exception is a very worn 17th- or 18th-century jetton or token). In general, the coins are rather worn, but 61 (88%) could be identified to an emperor (or other ruler), or to a 4th-century AD issue period. The project archive includes the full catalogue of Roman coins that complies with CIfA's *Toolkit for Finds Reporting: Roman Coinage*.

The full list of coins from Milton is presented in the Table 3.52 at the end of this report, while the sequence of Roman coins is summarised on Table 3.51, which includes 'coins per mill' (‰) values that allow different assemblages of excavated site finds to be compared to one another regardless of the quantities of coins they contain (Casey 1986, 68–113; Reece 1987, 71–97; Reece 2002, 89–106). Table 3.51 indicates that the Milton coin assemblage's characteristic feature is the 'peak' of 4th-century AD coins, notably from 340/350 to the 390s.

The period up to the middle of the 3rd century AD is represented by only two coins (3% of all Roman issues): a dupondius of Trajan (SF109) and a dupondius or an as probably struck for a Flavian emperor (SF20). After this long period of low coin loss at Milton, the assemblage includes at least 12 coins from the second half of the 3rd century (18%), including eight official radiates and four radiate copies (also known as 'barbarous radiates'). Of the radiates, one was struck in the name of Volusian as Caesar during the reign of Trebonianus Gallus (251), four were issued during Gallienus's sole reign (260–268) and another was produced for the so-called 'Britannic' emperor Allectus (293–296). The only identifiable radiate copy imitates an official coin of the Gallic emperor Victorinus. The 4th century is represented by at least 50 coins (74%), most of which were struck between 350 and 402. Valentinianic issues (364–378) are particularly well represented and the assemblage also includes a significant number of Theodosian coins (388–402), that were the last Roman small-change issues supplied to Britain.

Table 3.51. Roman coins: summary.

Issue period	Date range	Coins#	Coins ‰
1	to AD 41	0	0
2	41-54	0	0
3	54-69	0	0
4	69-96	0	0
5	96-117	1	16.4
6	117-138	0	0
7	138-161	0	0
8	161-180	0	0
9	180-192	0	0
10	193-222	0	0
11	222-238	0	0
12	238-260	1	16.4
13	260-275	4	65.6
14	275-296	5	82.0
15	296-317	1	16.4
16	317-330	0	0
17	330-348	8	131.1
18	348-364	11	180.3
19	364-378	19	311.5
20	378-388	0	0
21	388-402	11	180.3
Sub-total		**61**	**1000**
	1st c.	1	
	Late 3rd c.	2	
	Late 3rd–4th c.	4	
Total		**68**	

The coin-loss profile of the Milton Roman coins is shown in chart form on Figure 3.19. Although it is important to bear in mind that the coins are presented in this chart (and also Table 3.51), according to their dates of production (i.e., when they were struck rather than when they could have been available to be used and lost), this method allows the main characteristics of the site's coin-using and coin-losing history to be observed, which then can be compared to assemblages from other Romano-British sites (Reece 1995). The bar

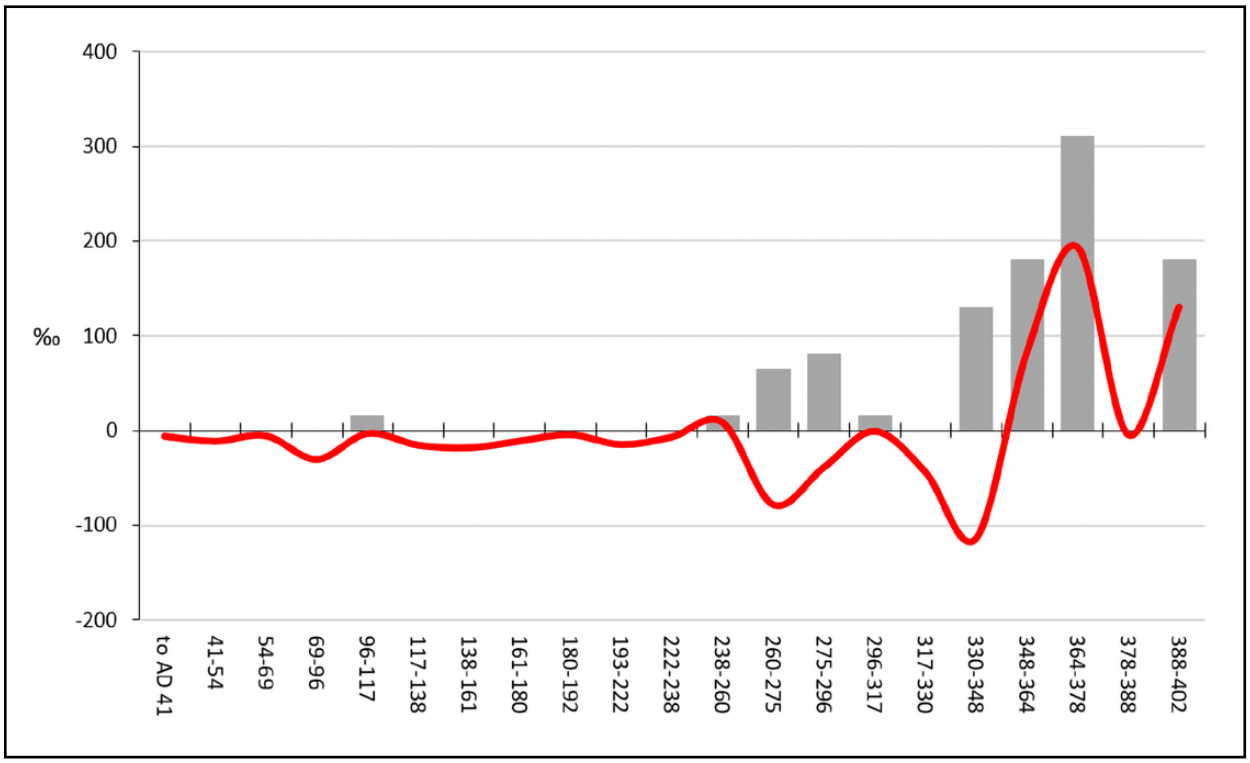

Figure 3.19. Roman coins from Milton (bar chart shows 'per-mill' values, line represents these values less the 'British Mean').

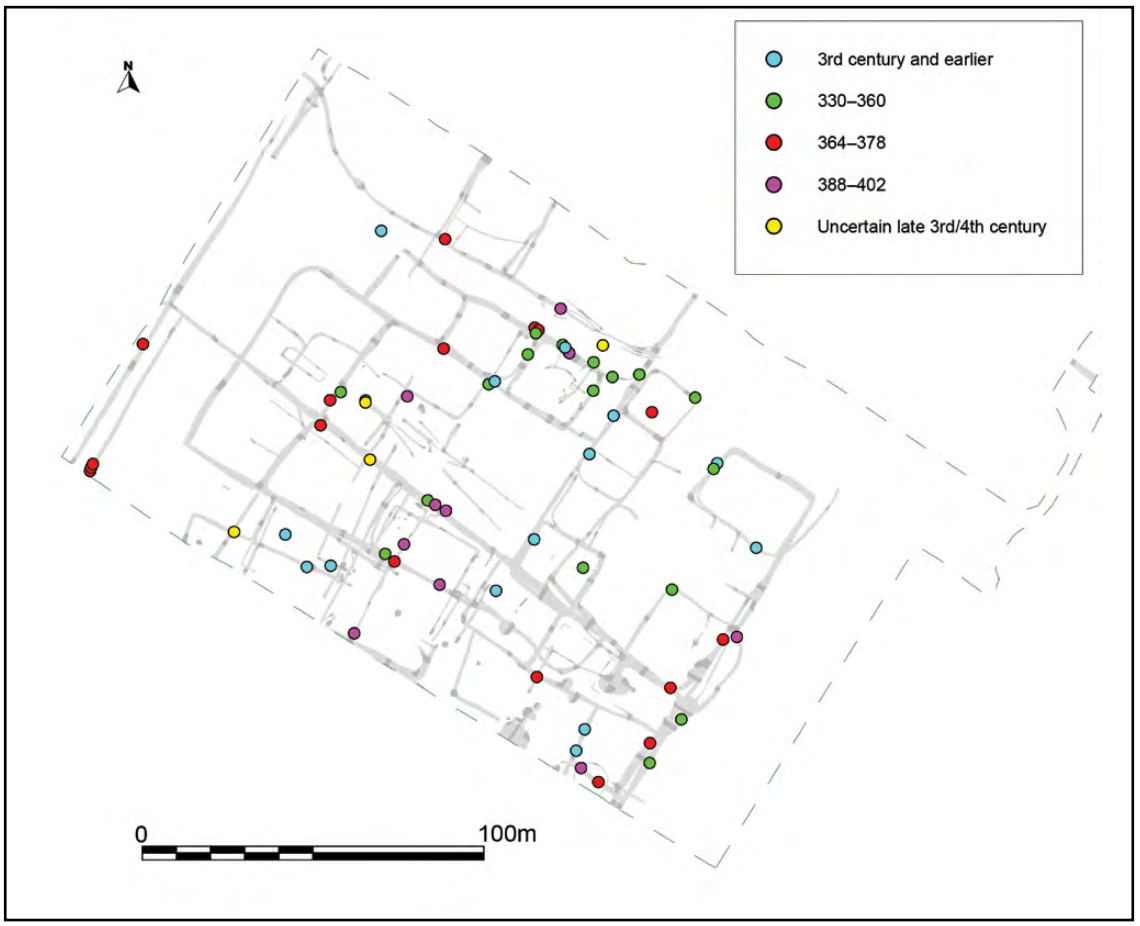

Figure 3.20. Distribution of Roman coins in relation to Roman features.

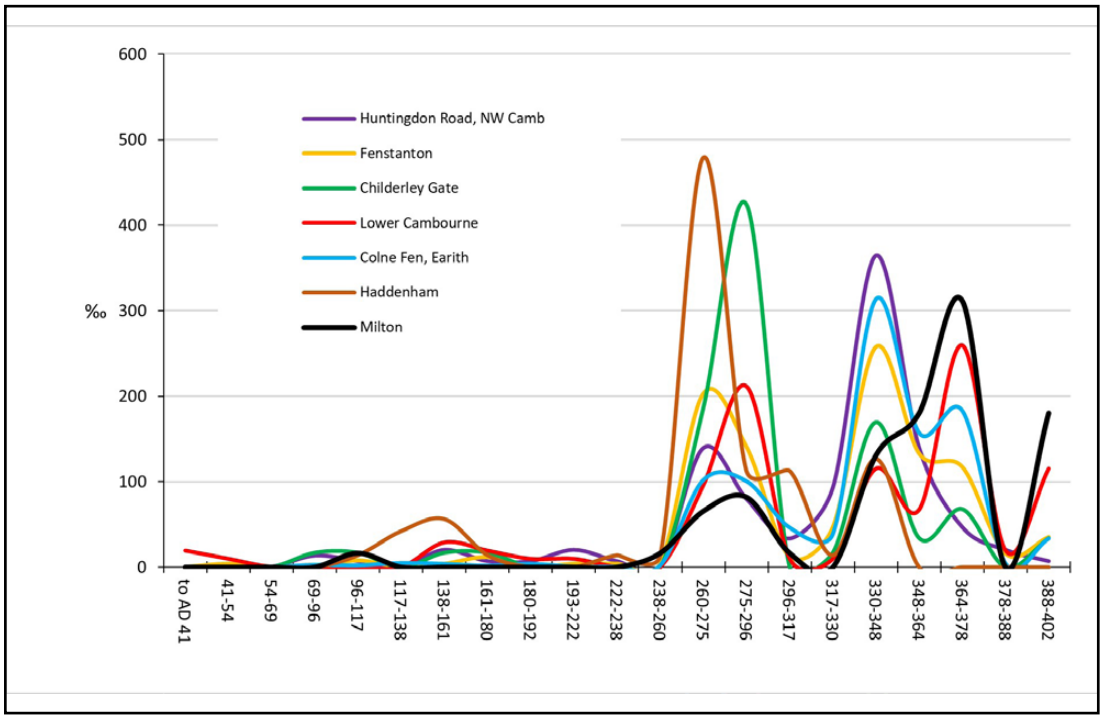

Figure 3.21. Roman coins from Milton and 6 other Romano-British rural settlements to the north and west of Cambridge ('per mill' values).

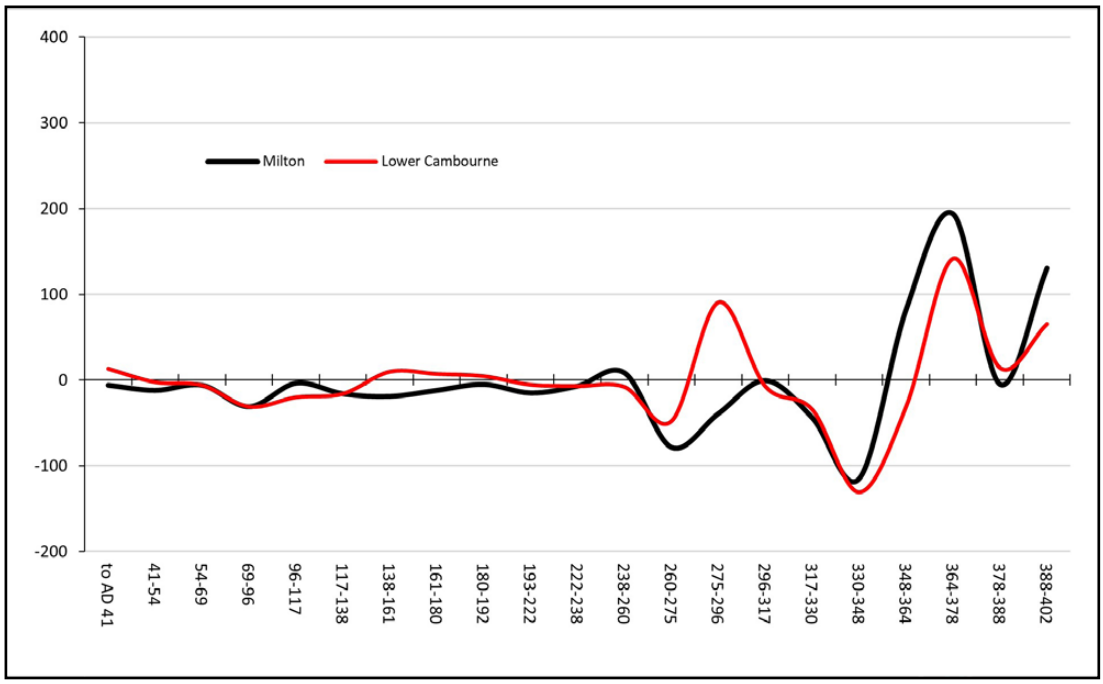

Figure 3.22. Profiles of Roman coins from Milton and Lower Cambourne ('per mill' values less the 'British Mean').

chart presents the Milton coins as 'coins-per-mill' (‰) values, while the line compares these to the so-called 'British Mean', indicating the extent to which coins from the site deviate from the Romano-British background of coin supply and circulation. This shows that Milton produced fewer Roman coins up to *c.*350 than the notionally average Romano-British site, including late-3rd century radiates and Constantinian issues of 330–348, but far more coins struck after 348, especially Valentinianic (364–378) and Theodosian (388–402) issues. The chart shows that the site's inhabitants do not appear to have used coins in a particularly significant way before the middle of the 4th century, after which much more intensive coin-loss occurred in the period from *c.*350 to the end of the Roman period *c.*400.

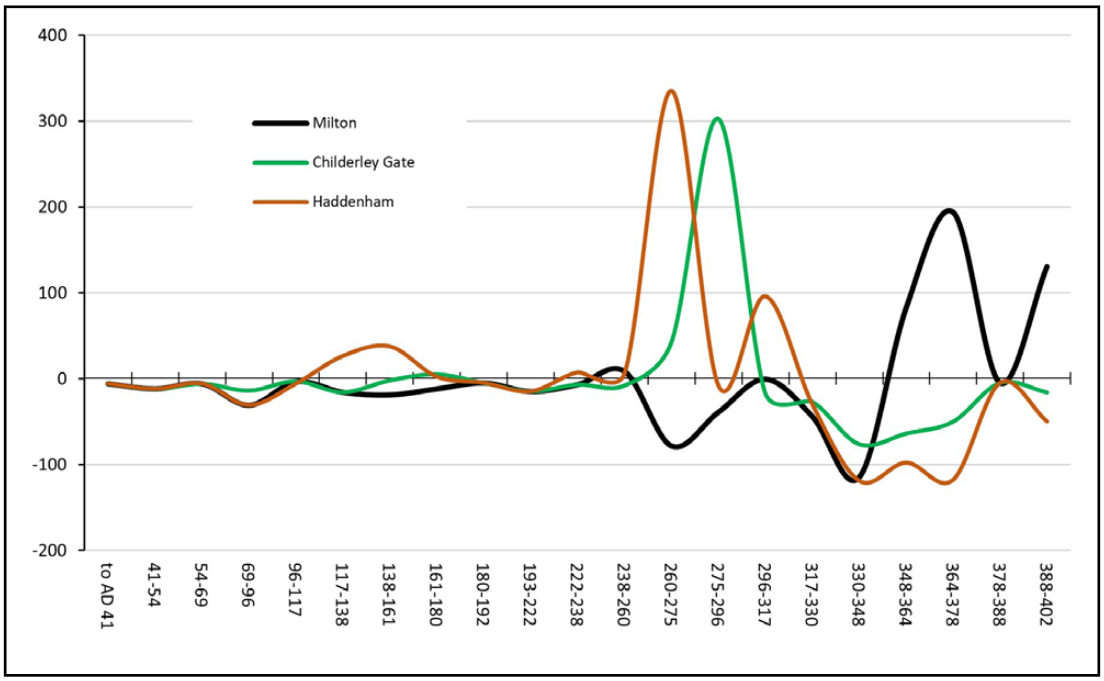

Figure 3.23. Profiles of Roman coins from Milton, Childerley Gate and Haddenham ('per mill' values less the 'British Mean').

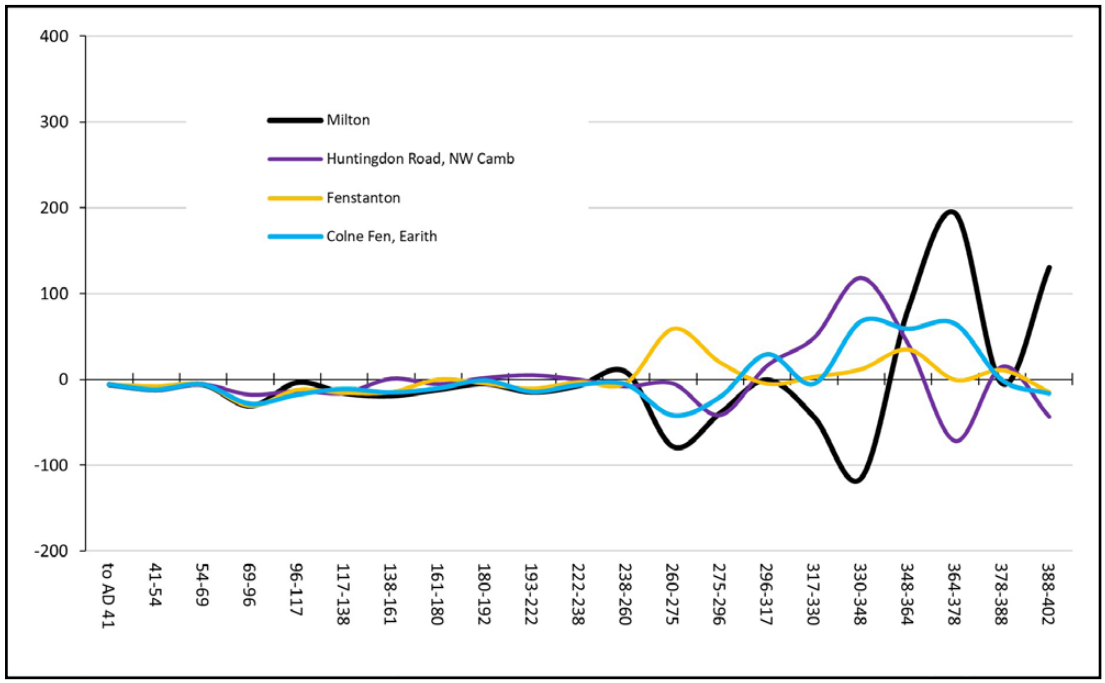

Figure 3.24. Profiles of Roman coins from Milton, Huntingdon Road (NW Cambridge), Fenstanton and Colne Fen, Earith ('per mill' values less the 'British Mean').

Fifty-seven of the 69 coins (83%) were recovered during the metal-detector survey conducted after the topsoil had been machine stripped, but the site also produced a group of ten coins from the fills of (mostly enclosure) ditches. The ditches are all dated to the late Roman period (Periods 3 and 4) and the nine identifiable coins indicate that this phase of occupation occurred no earlier than the mid- to late 4th century. The recovery of metal-detected coins from across the entire site and the fact that their find spots were often directly above or close to Romano-British ditches (Figure 3.20), suggests that these coins had not moved far from where they had been deposited (the iron small finds from late Roman contexts present a similar spatial distribution). The plot of detected coins indicates that issues of different periods had generally similar distributions, though there is some suggestion that perhaps Valentinianic issues (364–378) were more widely dispersed than either earlier Constantinian (330–364) or later Theodosian (388–402) coins.

A number of Romano-British rural sites are known from the Great Ouse valley to the north and west of Cambridge, although only a minority of these produced more than a handful of coins. Six sites with relatively large assemblages have been selected to compare to Milton, including 151 identified coins from Huntingdon Road, northwest of Cambridge (Guest forthcoming; Wells 2014); 256 coins from Fenstanton (Guest 2024); 59 coins from Childerley Gate (Guest 2008); 104 identified coins from Lower Cambourne (Wells 2009); 71 coins from Haddenham (Reece 2006); and 1882 from Colne Fen, Earith (Reece 2013). Figure 3.21 shows the Roman coins from Milton as well as these other rural settlements, illustrating how all sites in this part of the Cambridge hinterland, after low levels of coin loss up to the middle of the 3rd century, are dominated by late Roman coinage from the later 3rd century to the end of the 4th century, with significant peaks of coin loss 260–296, 330–348 and 364–378. This is a well-known feature of excavated site-finds in much of Britain and it is explained by the lower values of later Roman coins found on sites (often very small change) and their production in much larger quantities at the imperial mints (supplemented with locally-struck copies when the mints did not issue sufficient coinage, as happened on various occasions). While the relative absence of

Table 3.52. Catalogue of coins from Milton, arranged by small find (SF) number.

SF no.	Context	Feature	Period	Date	Denomination	Emperor/ issuer	Reverse	Mint mark	Mint	Reference
13	164	165	5	388-402	AE4	House of Theodosius	Victory advancing left	//[...]		
14	174	D14	4.1	364-378	AE2	House of Valentinian	SECVRITAS REIPVBLICAE	//[...]		
17				17th-18th c.	Jetton/Token	Uncertain	Uncertain			
19				364-378	AE2	House of Valentinian	Uncertain	//[...]		
20				69-96	Dupondius/As	Uncertain (1st century)	Uncertain			
21				293-296	Radiate	ALLECTUS	LAETITIA AVG	S/A// ML	London	RIC: 22
23				347-348	AE3	CONSTANS	VICTORIAE DD AVG QNN	//[...]		
25				330-335	AE3	House of Constantine	GLORIA EXERCITVS - 2 stds	//[...]		
27				353-360	AE3 copy	as House of Constantine	as FEL TEMP REPARATIO - falling horseman			
29				260-268	Radiate	GALLIENUS (sole reign)	VICTORIA AET	Z/-	Rome	RIC: 297
30				350-353	AE2 copy	as MAGNENTIUS	as VICTORIAE DD NN AVG ET CAE(S)	// AMB		
32				350-353	AE3 copy	as MAGNENTIUS	as VICTORIAE DD NN AVG ET CAE(S)	//[...]		
33				388-402	AE4	House of Theodosius	SALVS REIPVBLICAE	//[...]		
34				353-360	AE2 copy	as House of Constantine	as FEL TEMP REPARATIO - falling horseman	//PL		
35				260-402	AE3	Uncertain (late 3rd/4th century)	Uncertain			

Table 3.52. Catalogue of coins from Milton, arranged by small find (SF) number, continued.

SF no.	Context	Feature	Period	Date	Denomination	Emperor/issuer	Reverse	Mint mark	Mint	Reference
36				367-375	AE3	GRATIAN	GLORIA NOVI SAECVLI?	//[...]	Arles	
38				310-315	AE2	CONSTANTINE I	SOLI INVICTO COMITI	T/F// PTR	Trier	
46				364-378	AE2	VALENS	SECVRITAS REIPVBLICAE	// SCON	Arles	
47				364-378	AE2	House of Valentinian	GLORIA ROMANORVM	//[...]		
48				364-378	AE2	House of Valentinian	GLORIA ROMANORVM	//[...]		
52				260-296	Radiate	Uncertain (Radiate)	Uncertain			
56				388-402	AE4	House of Theodosius	VICTORIA AVGGG	//[...]		
58				251	Radiate	VOLUSIAN Caesar (Treb. Gallus)	Uncertain			
59				260-268	Radiate	GALLIENUS (sole reign)	SOLI CONS AVG - pegasus	//A	Rome	RIC: 283
66				335-337	AE3	CONSTANS	GLORIA EXERCITVS - 1 std	// TRP	Trier	LRBC I: 90
67				388-402	AE4	House of Theodosius	Uncertain			
79	349	EN1	4.3	364-378	AE2	House of Valentinian	SECVRITAS REIPVBLICAE	//[...]		
80	349	EN1	4.3	364-378	AE2	House of Valentinian	GLORIA ROMANORVM	//[...]		
81	349	EN1	4.3	353-360	AE3 copy	as House of Constantine	as FEL TEMP REPARATIO - falling horseman			
89				388-402	AE4	House of Theodosius	SALVS REIPVBLICAE	//[...]		
98				350-353	AE2	MAGNENTIUS	SALVS DD NN AVG ET CAES	//[...]		
99				330-340	AE4 copy	as CONSTANTINOPOLIS	as Victory on prow			
100				335-340	AE4 copy	as House of Constantine	as GLORIA EXERCITVS - 1 std			
101				367-375	AE2	GRATIAN	GLORIA NOVI SAECVLI	//[...]	Arles	
102				364-378	AE2	House of Valentinian	GLORIA ROMANORVM?	//[...]		
103				350-360	AE3	House of Constantine	FEL TEMP REPARATIO - falling horseman	//[...]		
104				364-378	AE2	House of Valentinian	SECVRITAS REIPVBLICAE	//[...]		

Table 3.52. Catalogue of coins from Milton, arranged by small find (SF) number, continued.

SF no.	Context	Feature	Period	Date	Denomination	Emperor/ issuer	Reverse	Mint mark	Mint	Reference
106				364-378	AE2	House of Valentinian	SECVRITAS REIPVBLICAE	//[...]		
107				388-402	AE4	House of Theodosius	SALVS REIPVBLICAE	//[...]		
108				260-268	Radiate	GALLIENUS (sole reign)	PAX AETERNA AVG	Δ/-	Rome	RIC: 254
109				98-117	Dupondius	TRAJAN	Uncertain			
110				330-335	AE3	VRBS ROMA	Wolf and twins	//[...]		
112				275-296	Radiate copy	Uncertain (Radiate)	Uncertain			
114				275-296	Radiate copy	Uncertain (Radiate)	Uncertain			
115				260-296	Radiate	Uncertain (Radiate)	Uncertain			
116				364-378	AE2	VALENS	GLORIA	//[...]		
117				388-402	AE4	ARCADIUS	VICTORIA AVGGG	//[...]		
118				388-402	AE4	ARCADIUS	VICTORIA AVGGG	//[...]		
119				347-348	AE3	House of Constantine	VICTORIAE DD AVG QNN	//[...]		
120				388-402	AE4	House of Theodosius	Victory advancing left	//[...]		
121				260-402	AE4	Uncertain (late 3rd/4th century)	Uncertain			
122				364-378	AE3	VALENS	SECVRITAS REIPVBLICAE	//[...]		
136				348-350	AE3	House of Constantine	FEL TEMP REPARATIO - phoenix on globe	//[...]		
137				364-378	AE2	House of Valentinian	GLORIA	//[...]		
185	649	EN18	3.3	388-402	AE4	House of Theodosius	VICTORIA AVGGG	//[...]		
188	767	EN10	4.1	364-378	AE2	House of Valentinian	SECVRITAS REIPVBLICAE	//[...]		
225				335-340	AE3	House of Constantine	GLORIA EXERCITVS - 1 std	//[...]		
230				364-378	AE2	House of Valentinian	SECVRITAS REIPVBLICAE	//[...]		
235				260-268	Radiate	GALLIENUS (sole reign)	FIDES MILITVM	//N?	Rome	
238				275-296	Radiate copy	Uncertain (Radiate)	Uncertain			

Table 3.52. Catalogue of coins from Milton, arranged by small find (SF) number, continued.

SF no.	Context	Feature	Period	Date	Denomination	Emperor/ issuer	Reverse	Mint mark	Mint	Reference
274				350-353	AE2	MAGNENTIUS	VICTORIAE DD NN AVG ET CAE	// AMB palm	Amien	LRBC I: 8
337				260-402	AE4	Uncertain (late 3rd/4th century)	Uncertain			
346				364-378	AE2	House of Valentinian	SECVRITAS REIPVBLICAE	//[...]		
347				353-360	AE3 copy	as House of Constantine	as FEL TEMP REPARATIO - falling horseman			
363	1216	EN19	3.1	364-378	AE2	House of Valentinian	SECVRITAS REIPVBLICAE	//[...]		
163i	626	D31	3.1	335-340	AE3	House of Constantine	GLORIA EXERCITVS - 1 std	//[...]		
163ii	626	D31	3.1	260-402	AE4 minim	Uncertain (late 3rd/4th century)	Uncertain			
US1	Unstrat.			388-402	AE4	House of Theodosius	VICTORIA AVGGG	//[...]		
US2	Unstrat.			269-296	Radiate copy	as VICTORINUS	VIRTVS left?			

higher value early coins does not mean that they were unavailable to be used at the site or in the immediate area at this time, more coins were in circulation from the 260s and 270s and these were lost and not recovered in far greater numbers at rural sites than had been the case previously.

Comparison of the Milton coins to the background of coinage supply (the so-called 'British Mean'), has demonstrated that the settlement experienced normal levels of coin loss from the 1st to mid-3rd centuries, far fewer than expected late 3rd-century radiates and early 4th-century issues, before the number of coins recovered increased considerably between *c*.350 and 400 (see Figure 3.19). A similar profile is exhibited by the 104 identified coins from the excavation at Lower Cambourne (Figure 3.22), especially during the 4th century (with some deviation in the second half of the 3rd century), suggesting perhaps that from *c*.300 these two settlements had access to the same pool of circulating coinage and, potentially, were part of a shared economic network.

It is apparent that the Milton and Lower Cambourne coin profiles are significantly different to those from other settlements in the area. For instance, radiates and radiate copies are far more common relatively-speaking from the sites at Haddenham and Childerley Gate (Figure 3.23), where 4th-century coinage was scare (the latest coins from Haddenham date to 330–348, suggesting this settlement was no longer occupied in the same way after this date, or its inhabitants were no longer using coins). Another unusual feature of the Milton assemblage is the recovery of 19 Valentinianic and 11 Theodosian coins, indicating that the settlement was occupied by a coin-using population up to the very end of the 4th century (and possibly later). This is similar to the pattern seen at Lower Cambourne, but very unlike Haddenham and Childerley Gate as well as the sites at Huntingdon Road (NW Cambridge), Fenstanton and Colne Fen where 4th-century coinage was common up to *c*.350 before a steep decline in coin loss during the second half of the 4th century (Figure 3.24).

Overall, the coin evidence suggests that Milton should be considered a relatively 'normal' site in this part of Romano-British countryside, but with several distinctive characteristics. The noticeably small quantity of late 3rd-century radiates suggests that coin use was a feature of everyday life later at this settlement than the other six included here. In fact, coin use at Milton only seems to have become more widespread sometime between 330 and 350, although unlike at the other six sites coinage remained part of life at the settlement until the very end of the Roman period. It is likely that the reasons for such different coin-using histories in the landscape around Cambridge reflect the divergent economic fortunes of these agricultural settlements, particularly in the second half of the 4th century.

Metal small finds

By Nicola Rogers

Introduction

The metal small finds assemblage from the site included a large element that was recovered unstratified (U/S) in the metal-detecting survey during topsoil stripping. This report concentrates upon the identified, dated and stratified finds, including a small number of items from unstratified contexts that are also datable. The majority of the datable finds are Roman, but medieval and post-medieval artefacts have also been recognised. The distribution of the iron objects from Roman contexts is shown in Figure 3.25 and that of Roman copper-alloy objects in Figure 3.26. All metal small finds, including unstratified pieces, are listed in Table 3.56 at the end of this report.

Roman

Tools and knives

Tools and knives (all of iron) from Roman contexts were few in number, comprising a probable tanged awl used in leather-working (no SF no., from context (1102), EN7, Period 4.2), possible tanged tool fragments (SF364 from context (1216), EN19, Period 3.1; SF140 from context (640), EN17, Period 3.2) and a possible knife blade fragment (SF173 from context (642), EN24, Period 2.3). An unstratified tanged awl (SF257) could be of Roman to medieval date.

Iron awl, tanged, with diamond-shaped section at working end. Length 85mm; width 4mm. No SF no., context (1102), EN7, Period 4.2.

An angle back knife (SF189) was found unstratified. This whittle tang knife has a straight back and an angled down tip, a form known from the Roman (Manning 1985, 115, Type 17) through to the medieval periods (Ottaway and Rogers 2002, 2752, Type A).

Iron whittle tang knife, back straight and in line with tang, appears to angle down to tip, straight cutting edge. Length 136mm; blade width 25mm. SF189, U/S.

Structural ironwork

Structural ironwork, primarily in the form of nails, makes up by far the largest element of the stratified and unstratified iron assemblage, with 71.5% of all the iron finds in the assemblage comprising or including one or more nails or nail fragments. A total of 79 individual nails and 86 nail fragments came from Roman contexts, with a single additional nail from the upper fill of Iron Age well [907]. There were no clear concentrations within individual deposits, and the overall numbers are small, but Table 3.53 below hints at a slightly greater level of nail use in structures and other wooden items in Periods 3 and 4. A total of 10 nails and 15 nail fragments, found in association with, or close by, infant burial [1329], dated to Period 4.2, could be the remains of coffin nails from that burial (SFs371, 373, 95, 383, 393).

Table 3.53. Nails and nail fragments from Roman contexts by period.

Period	Nails total	Nail fragments total
1	1	0
2.2	7	6
2.3	2	2
3.1	17	13
3.2	12	5
3.3	0	1
4.1	10	15
4.2	16	28
4.3	15	16
TOTAL	**80**	**86**

Apart from nails, only 25 iron objects were found in stratified deposits, many of which were too fragmentary to identify. Structural items, all of which came from Period 4 deposits, comprise a loop-headed spike (SF123 from context (507), EN1, Period 4.3), used to attach a ring to woodwork or masonry (Manning 1985, 129), a hinge pivot (SF277 from context (825), D9, Period 4.2) and two hinge strap fragments (SF295 from context (678), EN26, Period 4.1; SF183 from context (705), EN9, Period 4.3).

Iron loop-headed spike, incomplete, one end of shank broken and loop incomplete. Length 81.5mm; loop diameter 32mm. SF123, context (507), EN1, Period 4.3.

Iron hinge pivot, shank of sub-square section, end of arm broken off. Length 74.5mm; height 31.5mm. SF277, context (825), D9, Period 4.2.

Iron loop hinge strap fragment, looped terminal on same plane as strap which is incomplete. Length 57.5mm; width 21mm; loop diameter 20mm. SF183, context (705), EN9, Period 4.3.

Other miscellaneous iron objects from Roman contexts include a solid globular object with a central perforation (SF87 from context (404), EN1, Period 4.3) which may be a hanging weight, and numerous strip fragments, whose functions cannot now be ascertained (SF316 from

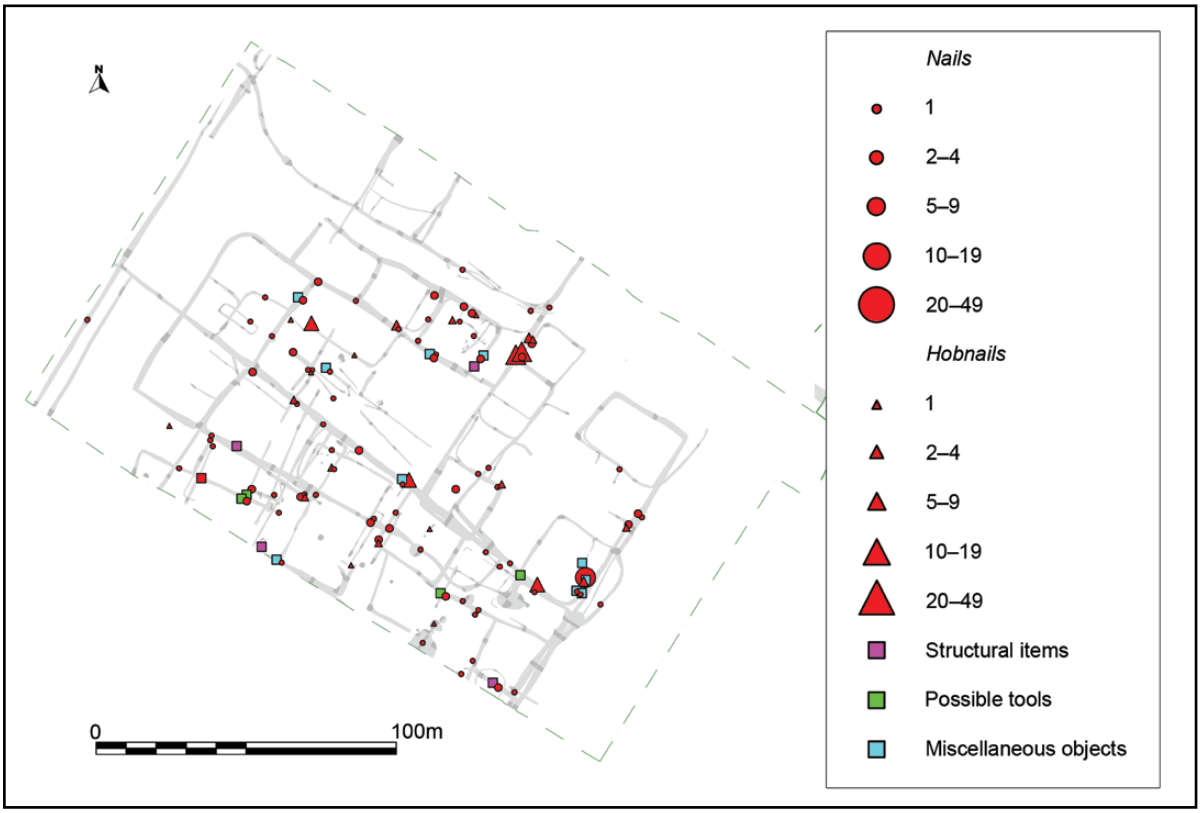

Figure 3.25. Distribution of iron objects from late Roman contexts.

Figure 3.26. Distribution of Roman copper-alloy objects.

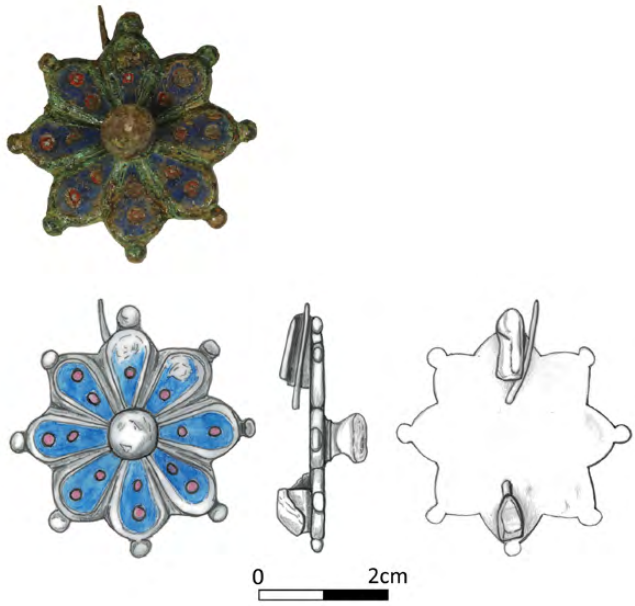

Figure 3.27. Copper-alloy plate brooch with red and blue enamel, SF255, unstratified.

context (1000), pit [999], Period 2.3; SF151 from context (412), EN15, Period 3.2; SF202 from context (703), EN17, Period 3.2; SF167 from context (644), Period 4.1; SF327 from context (1155), EN7, Period 4.2; SF97 from context (493), EN1, Period 4.3).

Iron ?weight, globular, centrally perforated. Diameter 46mm; weight 218g. SF87, context (404), EN1, Period 4.3.

Brooches

Two Roman copper-alloy brooches were found, both being unstratified. The most complete of these is the plate brooch (SF255), which has an octofoil form with a pronounced central boss, and red and blue enamel decoration. In his typology of these brooches, Mackreth noted that plate brooches with hinged pins were typically made in continental rather than British workshops (Mackreth 2011, 154). SF255 appears to fit into Mackreth's Plate Brooch Type 9 which is a form found in most parts of Britain including East Anglia, with examples recovered from 2nd- to 3rd-century AD deposits (Mackreth 2011, 174). Elsewhere, it has been noted that enamelling of brooches reached its peak in the 2nd century AD (McIntosh 2009, 16). SF24 is a Colchester Derivative bow brooch fragment with central ridge down the bow and a pierced catchplate, but it is missing its pin and part of the bilateral spring. Mackreth records that this form (Colchester Derivative Type 1.bc) has a distribution which favours the eastern side of England south of the Wash, and has been found in 1st- to 2nd-century AD contexts (Mackreth 2011, 53). A Roman brooch pin (SF113) was also unstratified.

Copper-alloy plate brooch, octofoil with circular projection at tip of each foil, central projecting boss with white enamel dot at tip, remains of hinged pin and ends of pin attachment and clasp. Each foil is decorated with blue enamel background and two red enamel filled dots. Diameter 35.5mm; thickness 2mm; boss height 7mm. SF255, U/S.

Copper-alloy bow brooch, pin lost, part of bilateral spring and remains of external chord survive, central ridge down bow, pin catchplate with two perforations.

Figure 3.28. Copper-alloy bow brooch of Colchester Derivative type, SF24, unstratified.

Length 37mm; spring width 19mm; catchplate width 9mm. SF24, U/S.

Bracelets

Other elements of jewellery that were found comprise seven incomplete or fragmentary bracelets, all of which came from Period 2–4 contexts (see Table 3.54; Figure 3.29–Figure 3.31). These bracelets mostly take simple forms such as bands or cable twist (SF161) and most have some form of decoration such as ring-and-dot (SF90) or horizontal grooves (SF368). The majority of the bracelets are incomplete and/or distorted, but both SF161 and SF319 retain enough of their original diameters to suggest that they might have been worn by children. As SF319 was found approximately 2m south of infant burial [1329], this bracelet could have been displaced from the burial, possibly by the recutting of enclosure ditch [1147]. Dr Hilary Cool has noted that the habit of wearing copper-alloy bracelets was not widespread until the 4th century AD (http://www.barbicanra.co.uk/assets/roman-bracelets.pdf) and there seems no reason to suggest that this was not also the case at Milton.

Table 3.54. Bracelets by period.

SF no.	Context no.	Feature	Period	Object
368	1275	EN24	2.3	Bracelet
203	792	EN28	3.2	Bracelet Fragment
161	460	D28	4.1	Bracelet Fragment
321	996	EN7	4.2	Bracelet Fragments
324	1054	EN7	4.2	Bracelet Fragment
319	1155	EN7	4.2	Bracelet
90	493	EN1	4.3	Bracelet Fragments

Figure 3.29. Copper-alloy bracelet SF368 from context (1275).

Copper-alloy bracelet, circular form of band now distorted, tapering to one end, other with flat perforated terminal for hook and eye clasp, horizontal grooved pattern at each end. Length 93mm; terminal width 3mm. SF368, context (1275), EN24, Period 2.3.

Copper-alloy bracelet fragment, both ends broken, 2 strand cable twist. Diameter 40mm; section diameter 3mm. SF161, context (460), D28, Period 4.1.

Figure 3.30. Copper-alloy bracelet fragment SF161 from context (460).

Copper-alloy bracelet, decorated with punched crescents all along the narrow band, one end broken, other end tapering and slightly bent up. Diameter 40mm; width 4mm. SF319, context (1155), EN7, Period 4.2.

Copper-alloy bracelet fragments x 2, from same band with stamped ring-and-dot pattern. Dimensions (larger): length 38mm; width 4mm. SF90, context (493), EN1, Period 4.3.

Figure 3.31. Other copper-alloy bracelet fragments.

Spoon

The copper-alloy dining spoon (SF125) is another item that was found unstratified (Figure 3.32). Parts of the bowl are missing, but it appears to have originally been oval. The bowl is offset from the long handle, which is made of twisted metal and has a pointed terminal, suitable for prising open oysters. Traces of white metal on both the handle and bowl suggest that the whole

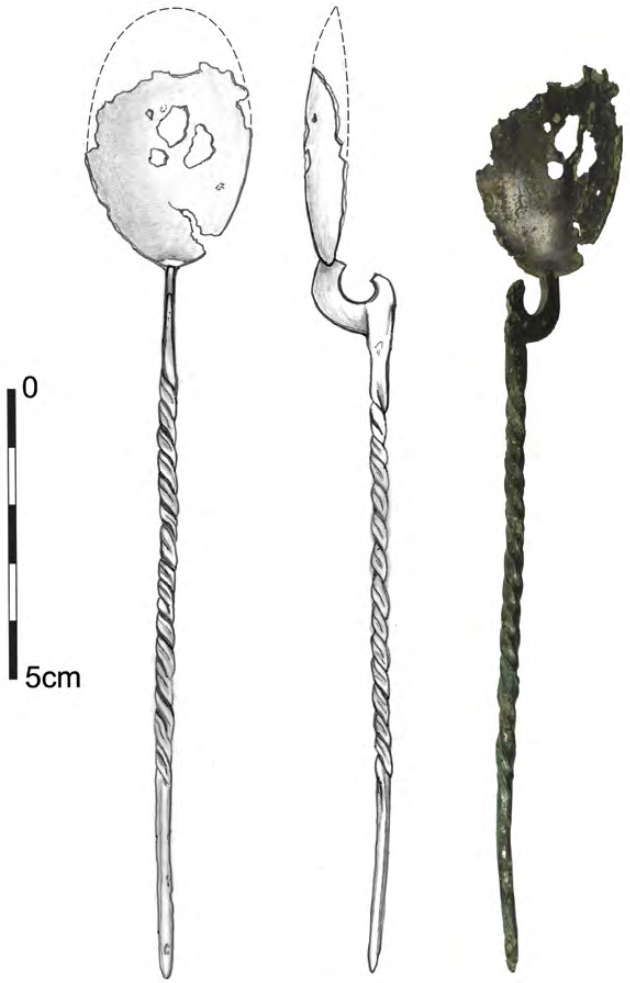

Figure 3.32. Copper-alloy dining spoon SF125, unstratified.

spoon would have been plated, possibly with silver. This form of spoon fits into Crummy's Type 2, which she notes was in production by the first half of the 2nd century AD (Crummy 1983, 69), but this form was long-lived, and has been described as the standard Roman spoon type of the 4th century AD (https://www.britishmuseum.org/collection/object/H_1981-0201-66?selectedImageId=1298250001).

Copper-alloy spoon, largely complete, but parts of the oval shaped bowl are broken away. The handle shaft is of twisted metal, with a pointed tip. There is a C-shaped offset from the handle to the bowl. There are traces of white metal plating, possibly silver on both the handle and bowl. Length 157mm; bowl width 29mm; handle section diameter 3mm. SF125, U/S.

Hobnails

Across the site, 185 hobnails from Roman nailed shoes were recovered. Of these 178 (96%) came from contexts of Periods 2–4. The greatest number of hobnails were found in Period 4 deposits, as Table 3.55 shows. It should be noted that the site total of hobnails, although seemingly large, is no more than the number that might be used on a single pair of shoes. For example, a total of 285 hobnails from a single pair of shoes were recovered from a grave in the mid- to late 2nd to late 4th-/early 5th-century AD cemetery at Hungate, York (Connelly and Malone 2024, 76, S47672.3).

Medieval and post-medieval objects

Table 3.55. Hobnails by period.

Period	Total of hobnails
2	4
3	34
4	140
5	4
Unphased/unstrat.	3
Total	**185**

Unstratified finds include a probable medieval copper-alloy buckle (SF139). This simple and delicate buckle complete with its attachment plates is not tightly datable but is similar to medieval examples (Egan and Pritchard 1991, 74, 308). A more fragmentary iron double-framed buckle (SF8) found in a Period 5 deposit (context (95), ditch recut [104]) could be of medieval or post-medieval date.

Copper-alloy buckle, complete apart from pin, oval frame with lip at pin rest, offset pin bar, both buckle plates remaining, one with rivet *in situ*. Length 29mm; width 12mm; thickness 3mm. SF139, U/S.

Copper-alloy buttons SF285 (unstratified) and SF43 (from subsoil, context (002), Period 6) are both likely to be of 19th- to 20th-century date.

Iron object SF9 from a Period 5 deposit (context 96, ditch [97]) appears to be a hinge fragment.

Table 3.56. All metal small finds ordered by material and context period.

Context	Feature	Period	SF no.	Material	Object
Iron					
910	907	1		Iron	Nail
227	226	2.2	16	Iron	Nail
577	576	2.2		Iron	Nail
579	578	2.2	131	Iron	Fragment
733	EN23	2.2		Iron	Nail
859	857	2.2	289	Iron	Hobnail
892	D35	2.2		Iron	Nail
904	D39	2.2		Iron	Nail fragment
978	977	2.2	313	Iron	Nail, nail fragments x4
1207	1205	2.2		Iron	Hobnail
1260	1261	2.2	381	Iron	Nail
1314	1312	2.2	370	Iron	Hobnail
1340	1335	2.2		Iron	Hobnail
1359	1358	2.2	387	Iron	Nail shank
1380	ST3	2.2	385	Iron	Nail
642	EN24	2.3	173	Iron	Possible knife blade fragment
1000	999	2.3	316	Iron	Perforated strip fragment
1058	D10	2.3	325	Iron	Nail
1143	F1	2.3		Iron	Nail
1275	EN24	2.3	367	Iron	Nail shank fragment
1292	D10	2.3	374	Iron	Nail fragment
394	D17	3.1	83	Iron	Nail
398	ST6	3.1	88	Iron	Nail
571	D32	3.1	134	Iron	Object, nail shank
609	D31	3.1	142	Iron	Nail
609	D31	3.1	143	Iron	Hobnail
626	D31	3.1	169	Iron	Nail, nail fragments x3
626	D31	3.1	170	Iron	Nail
626	D31	3.1	171	Iron	Bolt/nail
663	D7	3.1	176	Iron	Nail shank fragment
976	D8	3.1	93	Iron	Nails x2
1032	D5	3.1	376	Iron	Nail, nail shank
1081	EN13	3.1	380	Iron	Nail head, nail shank
1158	1151	3.1	328	Iron	Object
1158	1151	3.1	329	Iron	Nail
1168	EN13	3.1	330	Iron	Nail shank?
1168	EN13	3.1	331	Iron	Nail
1168	EN13	3.1	332	Iron	Hobnails x4
1210	1211	3.1	382	Iron	Nail
1215	EN19	3.1	362	Iron	Nail head?
1216	EN19	3.1	360	Iron	Nail shank fragment
1216	EN19	3.1	361	Iron	Nail
1216	EN19	3.1	364	Iron	Possible tanged tool fragment
1248	EN13	3.1	365	Iron	Nails x2
1248	EN13	3.1	366	Iron	Hobnails x2
1311	DIV3	3.1	369	Iron	Nail
1345	EN19	3.1	384	Iron	Nail
1363	EN19	3.1	386	Iron	Nail fragment
401	EN15	3.2	85	Iron	Nail
412	EN15	3.2	151	Iron	Perforated strip fragment, nail, nail shank
485	EN15	3.2	157	Iron	Slag
607	D30	3.2	144	Iron	Nail fragment
634	EN17	3.2	164	Iron	Nail shank
640	EN17	3.2	140	Iron	Possible tanged tool fragment
640	EN17	3.2	175	Iron	Fragment
640	EN17	3.2	296	Iron	Nails x2
640	EN17	3.2	293	Iron	Fragment
661	EN17	3.2	177	Iron	Nail
703	EN17	3.2	202	Iron	Strip fragment
873	EN14	3.2		Iron	Nail
984	EN28	3.2	311	Iron	Nail
984	EN28	3.2	312	Iron	Hobnails x14
1030	EN14	3.2	379	Iron	Nail
1060	EN28	3.2	322	Iron	Nail shank
1106	EN14	3.2	377	Iron	Nails x2
1166	D3a	3.2	309	Iron	Nail shank
1180	D3a	3.2	357	Iron	Nail
1400	EN15	3.2		Iron	Nail
585	DIV1	3.3	132	Iron	Hobnails x10
776	EN18	3.3	298	Iron	Hobnail
967	EN12	3.3	314	Iron	Hobnails x2, nail fragment
145	BD4	4.1	308	Iron	Nail
269	BD3	4.1	44	Iron	Nail

Table 3.56. All metal small finds ordered by material and context period, continued.

Context	Feature	Period	SF no.	Material	Object
287	ST1	4.1	49	Iron	Nail
287	ST1	4.1	50	Iron	Nail
345	EN2	4.1	74	Iron	Nail
345	EN2	4.1	75	Iron	Nail fragment
346	EN2	4.1	73	Iron	Hobnail, nail fragments x2
346	EN2	4.1	77	Iron	Nail
371	ST2	4.1	82	Iron	Hobnails x2
452	BD3	4.1	152	Iron	Hobnails x2
452	BD3	4.1	156	Iron	Hobnails x3
452	BD3	4.1	158	Iron	Nail fragment?
613	BD3	4.1	146	Iron	Hobnails x46
521	EN2	4.1	126	Iron	Nails x2
543	EN2	4.1	129	Iron	Nail shank
644	EN26	4.1	166	Iron	Nail shank
644	EN26	4.1	167	Iron	Strip fragment
669	BD5	4.1		Iron	Nail fragments x2
678	EN26	4.1	295	Iron	Hinge strap fragment
711	EN10	4.1	184	Iron	Hobnails x3, nail fragments x2
767	EN10	4.1		Iron	Nail shank
875	BD5	4.1	292	Iron	Hobnails x11, objects?, nail
875	BD5	4.1	300	Iron	Hobnails
891	EN10	4.1	303	Iron	Hobnails x3, nail, nail fragments x2
917	BD5	4.1	301	Iron	Nail shank
918	BD5	4.1	302	Iron	Nail shank
1056	BD5	4.1	326	Iron	Fragment
166	BD1	4.2	309	Iron	Nail
478	EN3	4.2	94	Iron	Nail head/stud
825	D9	4.2	277	Iron	Hinge pivot
825	D9	4.2	388	Iron	Nails, nail fragments
996	EN7	4.2	317	Iron	Nail head/stud
996	EN7	4.2	320	Iron	Nail shank
1102	EN7	4.2		Iron	Awl
1155	EN7	4.2	327	Iron	Strip fragment
1156	EN7	4.2		Iron	Nail shank
1307	1306	4.2	371	Iron	Hobnails x7, nails x9, nail fragments x9
1307	1306	4.2	373	Iron	Nail, nail shank
1307	1306	4.2	394	Iron	Object
1307	1306	4.2	395	Iron	Nail shanks x2
1330	1329	4.2	383	Iron	Nail shank
1330	1329	4.2	393	Iron	Nail shanks x2
1386	EN7	4.2	390	Iron	Nail
1448	EN7	4.2	391	Iron	Nail
325	EN4	4.3	147	Iron	Hobnails x15
326	EN4	4.3	149	Iron	Hobnails x33, nail, nail fragments x8
334	EN1	4.3	154	Iron	Nail, nail fragments x3
338	EN1	4.3	60	Iron	Hobnails x6
340	EN1	4.3	71	Iron	Nail
404	EN1	4.3	84	Iron	Nail
404	EN1	4.3	86	Iron	Nail
404	EN1	4.3	87	Iron	Miscellaneous object, hanging weight?
448	EN4	4.3	155	Iron	Hobnails x2, nails x2, nail fragment
493	EN1	4.3	97	Iron	Strip fragment, incl. nails x2 and nail fragment
507	EN1	4.3	123	Iron	Loop-headed spike
515	EN1	4.3	153	Iron	Nail
561	DIV1	4.3	128	Iron	Hobnail
593	EN9	4.3	133	Iron	Nails x2
696	EN9	4.3	165	Iron	Nail
705	EN9	4.3	183	Iron	Hinge strap fragment
789	EN9	4.3	206	Iron	Hobnails x4, nail fragment
1161	EN8	4.3	351	Iron	Object/nail fragment?
1161	EN8	4.3	352	Iron	Nail fragment
1161	EN8	4.3	353	Iron	Nail
1161	EN8	4.3	354	Iron	Nail
95	104	5	8	Iron	Buckle
96	97	5	9	Iron	Object, hinge fragment?
96	97	5	10	Iron	Nail fragments x2
203	204	5	310	Iron	Nail fragments x3
240	238	5	307	Iron	Nail

Table 3.56. All metal small finds ordered by material and context period, continued.

Context	Feature	Period	SF no.	Material	Object
587	586	5	297	Iron	Nail shank
698	697	5	181	Iron	Hobnails x2
700	699	5	180	Iron	Nail fragments x2
813	812	5	220	Iron	Sheet fragment
813	812	5		Iron	Nail shank
1050	1049	5	356	Iron	Hobnails x2, nail
1176	1175	5	333	Iron	Nails x2, nail fragment
1184	1182	5	358	Iron	Fragment
2	Subsoil	6		Iron	Horseshoe
692	691	6	179	Iron	Nail, nail fragments x2
755	754	Unphased	290	Iron	Nail fragments x3
757	756	Unphased	288	Iron	Hobnail fragment
757	756	Unphased	291	Iron	Nail shank fragment
5 3 3 [VOID]			127	Iron	Object
U/S				Iron, copper Alloy	Terminal?
U/S				Iron, copper Alloy	Terminal?
U/S			53	Iron	Nail
U/S			54	Iron	?Knife, nail fragment
U/S			55	Iron	Nail
U/S			57	Iron	Fragments
U/S			61	Iron	Sheet fragment
U/S			62	Iron	Tool
U/S			63	Iron	Nail
U/S			64	Iron	Nail
U/S			65	Iron	Nail shank
U/S			69	Iron	Buckle
U/S			78	Iron	Object
U/S			92	Iron	Pickaxe head
U/S			95	Iron	Staple?
U/S			124	Iron	Nail
U/S			189	Iron	Knife
U/S			190	Iron	Object
U/S			191	Iron	Nail
U/S			192	Iron	Nail shank
U/S			193	Iron	Nail shank
U/S			194	Iron	Nail
U/S			195	Iron	Object
U/S			196	Iron	Hobnail
U/S			197	Iron	Nail shank
U/S			198	Iron	Nail
U/S			199	Iron	Nail
U/S			200	Iron	Nail shanks
U/S			201	Iron	Nail
U/S			207	Iron	Nail shank?
U/S			208	Iron	Nail
U/S			209	Iron	Object
U/S			210	Iron	Nail shank?
U/S			211	Iron	Nail
U/S			212	Iron	Nail shank
U/S			213	Iron	Nail shank?
U/S			214	Iron	Nail
U/S			215	Iron	Nail
U/S			217	Iron	Nail shank
U/S			218	Iron	Nail
U/S			219	Iron	Nail
U/S			221	Iron	Nail shank
U/S			222	Iron	Nail
U/S			223	Iron	Object
U/S			224	Iron	Nail shank
U/S			226	Iron	Nail shank
U/S			227	Iron	Nail
U/S			228	Iron	Nail
U/S			229	Iron	Lump
U/S			231	Iron	Hinge strap?
U/S			232	Iron	Nail
U/S			233	Iron	Nail
U/S			234	Iron	Nail shank
U/S			236	Iron	Nail shank
U/S			237	Iron	Nail
U/S			239	Iron	Nail
U/S			240	Iron	Nail shank
U/S			241	Iron	Band fragments x2
U/S			242	Iron	Nail fragment
U/S			243	Iron	Nail shank
U/S			244	Iron	Nails

Table 3.56. All metal small finds ordered by material and context period, continued.

Context	Feature	Period	SF no.	Material	Object
U/S			245	Iron	Nail shank
U/S			246	Iron	Object
U/S			247	Iron	Nail
U/S			249	Iron	Strip fragment
U/S			250	Iron	Nail
U/S			251	Iron	Nail shank
U/S			252	Iron	Nail shank
U/S			253	Iron	Nail shank
U/S			254	Iron	Nail shank
U/S			256	Iron	Nail
U/S			257	Iron	Object
U/S			258	Iron	Bar
U/S			259	Iron	Nail shank
U/S			260	Iron	Nail shank
U/S			261	Iron	Band
U/S			262	Iron	Nail shank
U/S			263	Iron	Nail
U/S			264	Iron	Nail
U/S			265	Iron	Nail shank
U/S			266	Iron	Slag
U/S			267	Iron	Nail shank
U/S			268	Iron	Nail
U/S			269	Iron	Nail shank
U/S			270	Iron	Nails
U/S			271	Iron	Nail shank
U/S			272	Iron	Nail
U/S			273	Iron	Hobnail, Nail
U/S			275	Iron	Nail
U/S			276	Iron	Nail shank
U/S			278	Iron	Nail
U/S			279	Iron	Nail fragment
U/S			280	Iron	Nail
U/S			281	Iron	Nail fragments
U/S			282	Iron	Nail shank
U/S			283	Iron	Nail shank
U/S			336	Iron	Nail fragment
U/S			339	Iron	Knife blade?
U/S			340	Iron	Fragment
U/S			341	Iron	Nail shank
U/S			342	Iron	Nail shank
U/S			344	Iron	Nail
U/S			345	Iron	Nail
U/S			348	Iron	Nail shank

Context	Feature		SF no.	Material	Object
U/S			350	Iron	Nail
U/S			339	Iron	Knife blade?
U/S			340	Iron	Gragment
U/S			341	Iron	Nail shank
U/S			342	Iron	Nail shank
U/S			344	Iron	Nail
U/S			345	Iron	Nail
U/S			348	Iron	Nail shank
U/S			350	Iron	Nail
Copper alloy					
1275	EN24	2.3	368	Copper alloy	Bracelet
626	D31	3.1	172	Copper alloy	Fragment
792	EN28	3.2	203	Copper alloy	Bracelet fragment
460	D28	4.1	161	Copper alloy	Bracelet fragment
875	BD5	4.1	248	Copper alloy	Strip fragment
996	EN7	4.2	318	Copper alloy	Fragments
996	EN7	4.2	321	Copper alloy	Bracelet fragments
1054	EN7	4.2	324	Copper alloy	Bracelet fragment
1155	EN7	4.2	319	Copper alloy	Bracelet
1330	1329	4.2	392	Copper alloy	Fragment
493	EN1	4.3	90	Copper alloy	Bracelet fragments x2
2	Subsoil	6	43	Copper alloy	Button
2	Subsoil	6	334	Copper alloy	Bell fragment
U/S				Copper alloy	Sheet fragment
U/S			18	Copper alloy	Ring
U/S			22	Copper alloy	Object
U/S			24	Copper alloy	Brooch
U/S			26	Copper alloy	Buckle pin
U/S			37	Copper alloy	Buckle plate fragment?
U/S			39	Copper alloy	Strip/plate fragment
U/S			40	Copper alloy	Vessel fragment?
U/S			41	Copper alloy	Vessel fragment
U/S			105	Copper alloy	Fitting
U/S			113	Copper alloy	Brooch pin?
U/S			139	Copper alloy	Buckle
U/S			125	Copper alloy	Dining spoon
U/S			255	Copper alloy	Brooch
U/S			285	Copper alloy	Button

Table 3.56. All metal small finds ordered by material and context period, continued.

Context	Feature	Period	SF no.	Material	Object
Lead					
2	Subsoil	6	335	Lead alloy	Offcut
U/S				Lead alloy	Working waste fragment
U/S				Lead alloy	Disc
U/S			31	Lead alloy	Object
U/S			68	Lead alloy	Plug
U/S			138	Lead alloy	Weight
U/S			338	Lead alloy	Working waste fragment
U/S			341	Lead alloy	Working waste fragment

Conclusions

The undoubted highlights of this assemblage comprise the copper-alloy brooches, the spoon and the bracelets, although unfortunately only the bracelets were found in stratified contexts. The earliest dated object is the brooch SF24 which was current in the 1st to 2nd centuries AD, while the enamelled plate brooch SF255 is likely to date from the 2nd to 3rd centuries AD, and the spoon from the 2nd to 4th centuries AD. The bracelets appear likely to date from the 3rd to 4th centuries AD. While all of these objects could be broadly contemporary with periods of activity at the site, their presence in features associated primarily with enclosures for the keeping of livestock suggests that they must have strayed some distance from their original place of use. It seems very likely that they derive from the possible villa thought to have been located in the area, with the enclosures perhaps forming part of an associated estate. The exception to this may be bracelet SF319 which was found in close proximity to infant burial [1329] and may have been dislodged from it.

The ironwork adds little to the picture of Roman activity on the site, as so much of it comprises nails and unidentifiable fragments. Other items of structural ironwork such as hinge straps, a loop-headed spike and a hinge pivot were identified. The only tool from a Roman deposit was the leather-working awl (No SF. context (1102)).

Overall, the finds clearly indicate the presence of people on the site, and possible craft-working taking place, but the evidence is limited and must reflect the main activities of stock corralling and crop-raising in the area that was excavated. By their very nature, these activities need not have left many traces in terms of metal artefacts. Moreover, as the finds seem to derive almost exclusively from ditch and pit fills, it has not been possible to identify any working (or living areas) from this assemblage.

Miscellaneous material

By David Dungworth

A small amount of material collected during fieldwork was initially recorded as possible metalworking slag. This material was subsequently sent to the report author and it was examined visually and recorded following standard guidance (Historic England 2015). The assemblage comprises 716.5g of material of varied nature with no certain evidence for metalworking (Table 3.57). The most abundant material comprises fragments of concreted soil from (1285). This is a naturally occurring material and is not related to metalworking. The pumice fragments from (493) are likely to be ocean-rafted and collected from a beach. Small amounts of pumice are rare but regular finds on Iron Age and Roman sites. It may have been collected for use as an abrasive material (but with no certain link with metalworking). The iron objects are severely corroded (and hence collected during fieldwork as possibly slag) which obscures their form(s). The only vitrified material comprises fragments of clinker (vitrified coal ash). Clinker can form in a variety of coal fires (industrial and domestic) and is not diagnostic of any particular process.

Objects of antler and bone

By Ian Riddler

Introduction

An assemblage of nine objects and four fragments of waste was widely distributed across the site (Table 3.58; Figure 3.33–Figure 3.35). Where the objects can be dated, in particular the comb, folding knife clasp and needle cases, they belong to the late Roman period, and all of the material may fit into that time frame. The bone waste appears to relate to pin manufacture but, surprisingly perhaps, no bone pins were recovered. The antler waste, in contrast, reflects the manufacture of handles and is accompanied by a finished antler handle. Bone handles are also represented amidst the finished objects. The manufacture of handles in skeletal materials was clearly an important element of late Roman working practices in Cambridgeshire.

Four of the objects are made of antler and five of bone. Although antler working is attested within Cambridgeshire across the entire Roman period, it becomes more significant in the 4th century AD, with the manufacture of combs, handles and bracelets, amongst other objects.

Two of the object types hint, at least, at the onset of regionality in design. The double-sided composite comb

is matched by examples from Cambridgeshire and Bedfordshire and suggests that a simple, plain form of comb was preferred in this area. It is echoed by the bone folding clasp knife, produced in a design that is largely localised to Cambridgeshire. It may be significant, in this respect, that the bone needle cases are undecorated. A lack of decoration across surfaces characterises the assemblage as a whole.

Table 3.57. Miscellaneous material.

Context	Feature	Period	Sample	Description	Weight (g)
493	EN1	4.3		Pumice	48.9
737	D23	2.2	108	Iron object	24.5
790	EN9	4.3		Iron object	12.7
1054	EN7	4.2		UID (clinker?)	2.8
1069	EN7	4.2		Clinker	17.6

Working bone waste

Two fragments of worked bone waste may relate to pin manufacture. A section of midshaft from context (917) has been pared along its length and cut and fractured at either end. It represents an early stage in bone object manufacture, where narrow blocks of bone are separated from the midshaft, ready for further working. A second piece from context (918) is slightly longer and includes a lateral notch towards one end (Figure 3.34, No. 3). This may well represent an initial stage in bone pin manufacture, where a 'stock' is defined at one end of the waste piece, which is used to hold the fragment whilst the pin is cut and shaped. Bone pin manufacture is commonplace across most sites, of whatever type, during the Roman period (Greep 1995, 1135, Fig. 497), and the pins themselves are likewise found in great numbers, although not on this site. As an alternative, it is possible that the notched area was cut to roughly define the bowl of a bone spoon, with the remainder of the midshaft then cut to form the stem. Unfinished spoons tend not to follow this procedure however, and the stem is usually finished before the bowl (Rodrigues 2024, 294).

Section of cattle-sized long bone midshaft, natural outer surface on one side, bone channel on the other, pared along both parallel sides, fractured at one end, cut by knife at the other end. Two longitudinal knife marks on inner surface close to worked end. Polished throughout. Length 84.4mm; width: 16.4mm; thickness: 10.3mm. Context (917), BD5, Period 4.1.

Segment of cattle-sized long bone midshaft, notched laterally towards one end with pointed terminal of rectangular section beyond. Otherwise L-shaped in section; fractured at opposite end. Length: 92.6mm; width: 20.8mm; thickness: 14.6mm. Context (918), BD5, Period 4.1.

Antler waste

Two pieces of worked antler waste can be identified within the assemblage. One of them can be related to handle manufacture, whilst a second piece may have been a harness piece. A section of antler beam from context (957) has been hollowed throughout and cut roughly with a blade at either end. On one side it widens lightly towards a junction with a tine and the surface tissue has been removed in this area. This would have prevented it from being used as a simple one-piece handle of Greep's type A (Greep 1983, 375–6) and it is more likely that this piece was discarded as an unused offcut in the course of handle manufacture. In the first stage of manufacture the beam, burr, crown and tines would have been separated. The beam could then be cut into a number of segments, possibly after it had been hollowed. The straighter sections of beam, lying between the tines, could be trimmed to form handles and the remaining material, including this piece, would be discarded, even though it is a substantial piece of antler. Handles of this type, with prominent hollowed centres, were suitable for use with larger implements including agricultural tools, such as sickles, scythes, reaping hooks and pruning hooks, which have prominent tangs. Their most common use, however, may have been with large iron whittle-tang knives (Greep 1983, Fig. 261).

A second piece of antler waste from context (1102) consists of a short segment sawn from a large red deer antler tine, or possibly from a section of beam. The surface has been smoothed throughout and one end of the piece has been hollowed, to a depth of 33mm. The shape of the offcut, tapering lightly towards one end, is reminiscent of horse harness mounts (Greep 1995, 1127–30), but those mounts were not hollowed. It seems more likely that this is another fragment of waste material, stemming from a large tine, the straight section of which was hollowed throughout most of its length, with this end piece then sawn away and discarded. With that in mind, it appears to be a second offcut that can be related to antler handle manufacture.

Large hollowed segment of red deer antler beam, oval to circular in section, cut by blade at both ends. Hollowed throughout, surface tissue fractured away along part of one side, close to junction with tine. Length: 108.3mm; width: 31.2mm; thickness: 30.4mm. Context (917), BD5, Period 4.1.

Table 3.58. Antler and bone objects from Roman contexts, ordered by period and context.

SF no.	Context	Feature	Feature type	Period	Object	Extent	Material	Species	Bone
	834	EN29	Ditch	2.2	Tube	Fragmentary	Bone	Sheep or goat	Tibia midshaft
160	460	D28	Ditch	4.1	Folding clasp handle	Fragmentary	Bone	Cattle-sized	
	767	EN10	Ditch	4.1	Handle	Incomplete	Antler	Red deer	Antler tine
299	875	BD5	Ditch	4.1	Awl	Near complete	Bone	Horse	Tarsal
	917	BD5	Ditch	4.1	Worked bone waste	Fragment	Bone	Cattle-sized	Long bone midshaft
	917	BD5	Ditch	4.1	Worked antler waste	Piece	Antler	Red deer	Antler beam
	918	BD5	Ditch	4.1	Worked bone waste	Fragment	Bone	Cattle-sized	Long bone midshaft
320	996	EN7	Ditch	4.2	Comb, double-sided composite	Fragmentary	Antler	Red deer	
	1102	EN7	Ditch	4.2	Worked antler waste	Piece	Antler	Red deer	Antler tine
372	1307	1306	Pit	4.2	Needle case	Complete	Bone	Sheep or goat	Metacarpus
	620	EN9	Ditch	4.3	Pestle	Incomplete	Antler	Red deer	Burr and lower beam of antler
	666	EN9	Ditch	4.3	Needle case	Incomplete	Bone	Sheep or goat	Metatarsus
	1161	EN8	Ditch	4.3	Possible wallhook	Complete?	Antler	Red deer	Antler beam

Straight section of large, broad red deer tine, cleanly sawn at one end with a smoothed surface, some cortile tissue visible on one side. Sawn neatly at both ends and partially hollowed to a depth of 33mm. Length: 94.2mm; width: 35.2mm; thickness: 30.8mm. Context (1102), EN7, Period 4.2.

Antler handle

An incomplete handle from context (767) has been neatly sawn and trimmed from a straight section of antler tine, tapering lightly towards one end. It belongs to Greep's type 1 simple one-piece handles and would originally have accommodated a whittle tang. Iron staining suggests that the tang passed through most, if not all, of the handle. The relatively small size of the handle, with an overall length of 63mm, indicates that it would originally have been attached either to an awl, in the manner of an antler handle from Wroxeter (Mould 2000, Fig. 415.158), or to a small knife.

Incomplete antler handle, cut from a red deer antler tine, sawn at one end and tapering lightly to the opposite end, where the edge is curved inwards. Traces of iron staining on the inner surface. Polished over part of the outer surface. Length: 63.1mm; width: 23.8mm; thickness: 19.6mm. Context (767), EN10, Period 4.1.

Folding clasp handle

A folding clasp handle (SF160) consists of a section of bone, rectangular in section, that has been cut and shaped to provide curved sides set between broad, flat lateral mouldings, with an indented, curved suspension mount at one end (Figure 3.34, No. 5). It belongs to Greep's handle type C1.3, which is well-represented in Cambridgeshire and the east Midlands in particular, with examples known from Clipsham, Colne Fen, Grandford, Magiovinum, Somersham and Towcester (Greep 1983, Fig. 308; Riddler 2013, 360; Brown *et al.* 1983, Fig. 51.1). The group as a whole is defined by the presence of three broad lateral mouldings at one end and two at the other end, with a curved or pointed perforated terminal. It is likely that the manufacture of these handles was centred in this area of the country during the late Roman period, although unfinished examples have not yet been found. They were retrieved from late Roman contexts at both Colne Fen and

Figure 3.33. Distribution of Roman antler and bone objects.

Grandford, and Somersham has provided small finds of that date (Wiseman *et al.* 2021), and that appears to be the dating of the type as a whole.

Incomplete bone handle for a folding knife, rectangular in section with curved sides and a slot along one edge. Three flat lateral mouldings lead to a rounded terminal with a central perforation. Fractured at the opposite end across two flat lateral mouldings. Length: 58.7mm; width: 16.6mm; thickness: 7.4mm. SF160, context (460), D28, Period 4.1.

Bone tube

A fragmentary bone tube has been neatly cut from the lower part of a sheep or goat tibia to provide a near-circular section. It has fractured at the lower end. Bone tubes of similar dimensions with lateral perforations are regarded as whistles that could be end blown to provide a single note, suitable for use in hunting (Deschler-Erb 1998, 154). In this case, however, there is no sign of a perforation. Segments of imperforate bone tubes were fastened together to form more complex musical instruments (Lawson and Wardle 1991) but it is more likely that this example was part of a long, narrow handle for an implement, as suggested by Mikler for similar bone tubes from Mainz (Mikler 1997, 60).

Midshaft of a sheep or goat tibia, neatly trimmed to a near-circular section and cut laterally with a blade at one end. Fractured at the opposite end. Abraded surface, some polish visible. Length: 74.0mm; width: 12.4mm; thickness: 10.8mm. Context (834), EN29, Period 2.2.

Comb

An incomplete double-sided composite comb includes two end segments, two tooth segments and part of a connecting plate, originally secured by four iron rivets (Figure 3.34, No. 6). The connecting plate is flat with bevelled edges, and is undecorated. One of the end segments includes a perforation close to the back edge, which is lightly sinuous.

The comb belongs to a well-established type (Blaich 1999, type 1), known to have been in use over a relatively

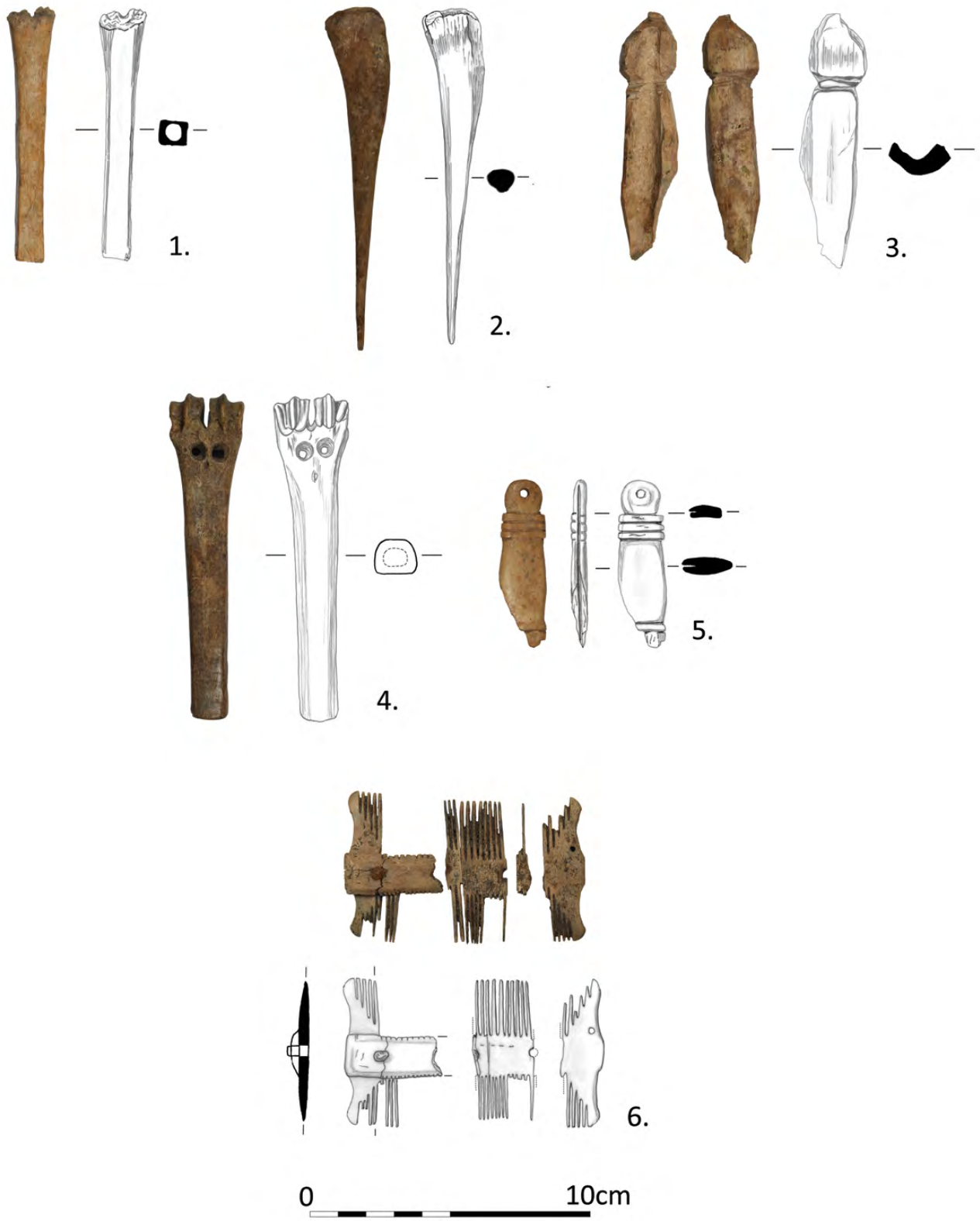

Figure 3.34. Roman antler and bone objects: 1 = bone needle case from context (666); 2 = Bone awl SF299 from context (875); 3 = worked bone waste from context (918); 4 = bone needle case SF372 from context (1307); 5 = folding clasp handle in bone, SF160 from context (460); 6 = double-sided composite antler comb SF320 from context (996).

short period of time, from *c.*AD 350–425 (Crummy and Henry 2024, 8–13). The simple profiling and lack of decoration recalls a comb from Somersham in Cambridgeshire, which is wider and extended to around 100mm in length, with four tooth segments. Further undecorated examples from Cambridgeshire include a comb with similar connecting plates from Foxton and another with connecting plates of rectangular section from St Neots (Riddler 2021; Price *et al.* 1997, Fig. 66.18; Crummy 2018, Fig 6.51.3104). It is likely that all of these undecorated combs originally had four tooth segments, secured on their edges with either four or five iron rivets, and with the end segments secured through their centres. They share a number of similarities of design and technology, and may have been produced in one or several workshops within Cambridgeshire. This simple, rudimentary form of late Roman comb can be seen also at Dunstable and occurs also with two comb fragments from Easton Maudit in Northamptonshire (Crummy 2004, Fig 8.1; Riddler 2023).

It has previously been suggested that late Roman combs were customarily produced in this basic format and that they could be decorated at the market in response to the demands of customers (Crummy 2001, 103; 2018, 194–5). More recently, however, with the benefit of a larger sample of combs, this idea has been replaced by an appreciation of 'copying, experimentation and devolution', with an important typology of late Roman combs now emerging (Crummy and Henry 2024, 31–4). Another alternative, which follows the situation envisaged for post-Roman England, is that specific forms, technology and decoration defined particular workshops and locations (Riddler *et al.* 2023, 190). It is interesting to note in this respect that the comb is undecorated, as are the needle cases, and the folding clasp knife handle is sparsely decorated with distinctive flat lateral mouldings. The late Roman antler and bone objects of Milton were sparsely decorated, if they were decorated at all.

Fragmentary antler double-sided composite comb, including two fragmentary end segments, one incomplete tooth segment and a fragment of another, as well as part of one connecting plate. Connecting plate is undecorated and has bevelled edges and terminal; pierced by an iron rivet and fractured across a rivet hole. Saw marks on both sides indicate five teeth per centimetre on one side and seven teeth per centimetre on the other side. Some of the teeth survive and are long (20mm for the coarse teeth and 18mm for the fine teeth). Both sets of teeth have blunt terminals and show traces of slight wear. End segments have simple curved profiled ends and one of them has a single perforation beyond the connecting plate. Length: 41.0mm; width: 50.5mm; thickness: 7.4mm. SF320, context (996), EN7, Period 4.2.

Needle cases

Two bone implements can be identified as needle cases of late Roman date (Figure 3.34, Nos 1 and 4). One of them (SF372) is complete and consists of a sheep or goat metacarpus with the proximal end sawn away and the midshaft trimmed to a near-square section. The distal end retains its condyles and includes two lateral perforations. A second needle case from context (666) has been cut from a sheep or goat metatarsus, the proximal end cut away with a blade and the lower part of the bone, which was probably unfused, has fractured. Neither of the objects has been decorated but they retain similar sections, with the upper part of the midshaft left open and the lower part, in one case at least, perforated laterally.

The identification of these objects as needle cases was established by radiographs taken of two examples from northern France, which showed that they contained iron needles (Thuet and Morel 2013). They are mainly distributed across southern and eastern England, with examples from Canterbury, Lankhills, Portchester, Silchester and Winchester establishing their late Roman date. Within Cambridgeshire the only other known example has come from Colne Fen (Riddler 2013, 416).

Complete bone needle case, cut from a sheep or goat metacarpus, with the proximal end sawn away. Midshaft has been trimmed and flattened on the anterior face, distal end is little modified, except for two blade-cut lateral perforations. Heavily polished across the midshaft, less so on the condyles. Length: 118.7mm; width: 27.9mm; thickness: 17.3mm. SF372, context (1307), Pit [1306], Period 4.2.

Incomplete bone needle case, cut from a sheep or goat metatarsus, the proximal end cut away with a blade and the midshaft lightly trimmed to a square section. Unfused, the lower part of the bone fractured away. Undecorated, highly polished throughout. Length: 89.5mm; width: 13.0mm; thickness: 12.3mm. Context (666), EN9, Period 4.3.

Possible wallhook

A section of red deer antler beam retains most of the trez tine but has been sawn laterally just above it (Figure 3.35). The lower part of the beam tapers lightly and has been faceted in part and one side of the beam has been smoothed throughout and perforated laterally at the base of the trez tine, the end of which has been cut away. The end result is a section of beam and tine that could be fastened to a surface through the perforation with the trez tine curved outwards and acting as a hook. This may well have been the function of the object. The top part of the trez tine has been cut away, possibly

Figure 3.35. Possible wallhook in red deer antler from context (1161).

to remove the pointed terminal. It is a very unusual object. It could be manufactured very quickly with the aid of a drill, a saw and a knife blade. It is unparalleled in Roman Britain but a similar section of beam and tine, also thought to have been secured to a surface, has come from Rosino de Vitriales, Zamorra in Spain, from a context of 2nd- to 3rd-century AD date (2024, 580).

Section of red deer antler including part of the beam and trez tine. Beam sliced on one side to flatten it and remove outer surface, also perforated laterally at the base of the trez tine. Sawn laterally above trez tine, tapered over lower part of beam with some modern damage. Upper part of trez tine cut away by knife. Length: 145.8mm; width: 172.3mm; thickness: 29.2mm. Context (1161), EN8, Period 4.3.

Horse tarsal awl

A near-complete bone awl (SF299) consists of a horse tarsal that has been lightly modified to shorten it and to provide a pointed terminal, the tip of which has fractured (Figure 3.34, No. 2). Horse tarsals could be transformed into awls merely with light modification at the tip and, as a result, they are commonly found from the middle Bronze Age onwards, with the latest examples occurring in Anglo-Saxon contexts. The earlier examples tend to be relatively short, whilst those found in late Iron Age and Roman contexts, as here, are often over 100mm in length. The bone sits well in the hand and the tapered terminal is usually quite thin, so that most of the damage that occurs with them is found at the tip. In some cases the terminal has been recut, but that is not the case here.

SF299. Near-complete bone awl, a horse tarsal lightly modified near the tip (which has fractured away) and polished throughout. Length: 123.3mm; width: 22.8mm; thickness: 15.1mm. Context (875), BD5, Period 4.1.

Pestle

An incomplete antler implement consists of a section of the lower part of the beam from a small red deer antler, cut and trimmed to a rounded terminal with part of the coronet retained. The upper part of the implement has been hollowed, allowing a handle to be attached to it. The extensive wear traces on the rounded surface suggest that it has been utilised as a pestle to grind powders, possibly for cosmetics. Similar objects have been identified at August (Riha 1986, 43; Deschler-Erb 1998, 157) but they remain a scarce commodity.

Following its use as a pestle, the object was utilised as a working surface, and numerous indentations are visible in one area on one side, all of them made by a small pointed implement of circular section, either a needle or an awl. Working surfaces of antler, and occasionally also of bone, are commonly seen during later prehistory, but are rarely found thereafter. Antler working surfaces commonly utilise a junction of the beam and the tine,

Table 3.59. Roman and post-medieval glass vessels.

Context	Feature	Period	SF no.	No.	Description	Date
1st-century AD vessel						
875	BD5	4.1	287	1	Ribbed (pillar-moulded) bowl, base fragment, opaque, very dark blue. Parts of ribs radiating out from centre. Two edges cut. Thickness: 4–5mm.	1C
1st- to early 3rd-century AD vessels						
618	D18	2.2	141	1	Prismatic bottle, body fragment, blue-green tint. Mould-blown. Thickness 2–5mm.	1-E3C
1178	P2	3.1	396	1	Square bottle, body and corner fragment, blue-green tint. Mould-blown. Thickness: 2–5mm.	1-E3C
174	D14	4.1	15	1	Conical/discoid unguent bottle, base fragment, blue-green tint. Base flattened, diameter c.50mm (not including heel). Thickness: 3–5mm.	1-E3C
1067	EN7	4.2	375	1	Hexagonal bottle/flask, body and corner fragment, colourless slight blue tint. Mould-blown, faint mould seam. Internal angle c.120°. One long edge grozed.	1-E3C
541	EN1	4.3	130	1	Prismatic bottle, body fragment, blue tint. Mould-blown. Thickness: 4mm.	1-E3C
4th- to 5th-century AD vessels						
640	EN17	3.2	135	2	Conical beaker, rim and body fragments, pale green tint, bubbly. Rim is fire-rounded and out-turned, diameter: c.65–70mm. Body fragment joins with heel (SF174).	M4-E5C
640	EN17	3.2	174	1	Conical beaker heel fragment from a concave, narrow base. Pale green tint, bubbly. Joins with body fragment (SF135). Thickness: >1–2mm.	M4-E5C
703	EN17	3.2	182	1	Beaker, body fragment, slight yellow tint, bubbly. Thickness: >1–1mm.	4/5C
Post-medieval vessels						
1176	1175	5		1	Neck fragment from a wine bottle, green tint. Weathering iridescent and flaking.	18/19C
2	Subsoil	6		1	Neck fragment from a wine bottle, green.	L19/E20C
2	Subsoil	6		1	Body fragment from a water/mineral bottle, colourless. Mould blown with straight seam and curved ridge plate seam.	L19C

because this provides a reasonably flat, wide surface. Comparable examples include a large red deer antler from a middle or late Iron Age context at Balksbury Camp in Hampshire that was probably used as a pick originally, with indentations occurring in two distinct working areas, and a red deer antler from Trumpington in Cambridgeshire, which had been utilised by an antler and bone worker and retained a large number of saw and knife marks (Wainwright and Davies 1995, 55, Fig. 54.32; Riddler 2018, 227, Fig. 4.61). The continuation of this practice into the late Roman period is unusual, as is the use of a smoothed and finished object, rather than a flat antler surface.

Incomplete antler implement, formed from the burr and lower beam of a small red deer antler. Burr has been heavily modified and is rounded throughout with part of the coronet surviving on one side. Beam surface is smoothed and polished throughout and flat on two sides. Hollowed to a depth of 81mm and cut laterally by a blade at the upper end. Highly polished. One side used subsequently as a working surface. Length: 115.4mm; width: 42.1mm; thickness: 35.5mm. Context (620), EN9, Period 4.3.

Glass

By Cecily Cropper

Introduction and quantification

Thirteen fragments were recovered, three of which are 18th-/19th-century in date. The remaining ten fragments, representing nine vessels, are Roman.

The Roman assemblage, whilst small in number and limited in range, is broad in date and reflects changes in forms, use, glass colour and composition. Changes in form are represented by a 1st-century AD ribbed bowl, 1st- to 3rd-century AD prismatic bottles and 4th- to 5th-century AD beakers with fire-rounded rims. The latter also represent changes in glass composition, sources and markets, partly also expressed in the reuse and recycling of early glass. The vessels are listed in Table 3.59 and the distribution of the Roman fragments is shown on Figure 3.36.

Figure 3.36. Distribution of Roman glass vessel fragments.

Figure 3.37. Fragment of ribbed (pillar-moulded) glass bowl datable to the 1st century AD. SF287. Context 875, BD5, Period 4.1.

Figure 3.38. Fragments of glass bottles of 1st- to early 3rd-century AD date.

Reuse of glass fragments

Notably, two of the ten Roman fragments show evidence of reuse, adding to a growing number of fragments being increasingly recognised within Romano-British glass assemblages as well as internationally. Circular vessel bases were worked more easily into discs, body fragments into tools, with an as yet unknown function, and coloured glass could be cut up into tesserae (Paynter and Jackson 2016, 4). Reworked pieces can be recognised by the scalloped edge formed by grozing or nibbling the glass edge away with a tool, as with the fragment of hexagonal bottle (SF375). The fragment of bowl however has been incised with a point, most likely a diamond, forming a score line that can be broken in the same way that window glass is cut (SF287).

Although reuse of this nature has been argued to be a later Romano-British phenomenon, it has been seen on British sites dating from the 2nd century AD onwards, although to a lesser extent (Swift 2014, 138). Further afield, reworked fragments from Augst, Switzerland, were found from contexts throughout the period of Roman occupation, from the mid-1st to the mid-3rd centuries AD (Fünfschilling 2015, 171). Both of the reworked fragments from Milton are from Period 4 contexts, supporting the argument for a later activity.

1st century AD

The fragment of very dark blue glass from a Phase 4 context is from a ribbed or pillar-moulded bowl, indicated by the tail-ends of the ribs radiating out from a flat, smooth centre (Figure 3.37). Comparable fragments were found at Colchester (Cool and Price 1995, 26, Fig. 2.6, in particular Nos. 103, 104, 108). Ribbed, or pillar-moulded, bowls were in use extensively during the first half of the 1st century AD, peaking in the middle of the century in Britain. The earlier more strongly coloured varieties, including this deep blue, declined during the second half of the 1st century AD (Cool and Price 1995, 16-17).

Pillar moulded bowls are produced in stages, the ribs formed first on a disc of hot glass which is then slumped over a form in the kiln, raised ridges uppermost (Taylor and Hill 2003). Characteristics of this technique are evidenced on the fragment of base by a shiny external, decorated surface and a matt internal surface which has been in contact with the form surface (Price *et al.* 2022, 45).

Ribbed (pillar-moulded) bowl, base fragment, opaque, very dark blue. Parts of ribs radiating out from centre. Two edges cut. Thickness: 4–5mm. 1st century AD. SF287, context (875), BD5, Period 4.1.

1st to early 3rd centuries AD

Three fragments of naturally-coloured blue-green glass are from mould-blown prismatic bottles in common use from the mid-1st century AD and into the early 3rd century AD (Figure 3.38 and Figure 3.39; Cool and Price 1995, 184-185). Conical unguent bottles with wide bases date from the 1st to the early 3rd centuries AD but are most common in the 2nd century (Cool 2021, 273-274, No. 930, Fig. 9.120). This date range is also true of hexagonal bottles/flasks which were in common use until the third quarter of the 2nd century AD (Price *et al.* 2022, 69).

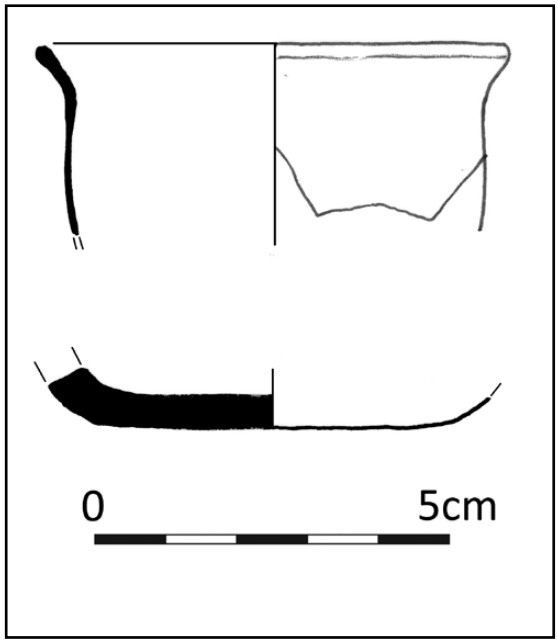

Figure 3.39. Roman glass vessels: SF135 (640), above; SF15 (174), below.

Conical/discoid unguent bottle, base fragment, blue-green tint. Base flattened, diameter *c.*50mm (not including heel). Thickness: 3–5mm. 1st to early 3rd century AD. SF15, context (174), D14, Period 4.1.

Prismatic bottle, body fragment, blue tint. Mould-blown. Thickness: 4mm. 1st to early 3rd century AD. SF130, context (541), EN1, Period 4.3.

Prismatic bottle, body fragment, blue-green tint. Mould-blown. Thickness 2–5mm. 1st to early 3rd century AD. SF141, context (618), D18, Period 2.2.

Square bottle, body and corner fragment, blue-green tint. Mould-blown. Thickness: 2–5mm. 1st to early 3rd century AD. SF396, context (1178), P2, Period 3.1.

Hexagonal bottle/flask, body and corner fragment, colourless slight blue tint. Mould-blown, faint mould seam. Internal angle *c.*120°. One long edge grozed. 1st to early 3rd century AD. SF375, context (1067), EN7, Period 4.2.

4th to 5th centuries AD

The conical beaker from context (640) has a fire-rounded rim (Figure 3.39 and Figure 3.40), a feature that begins to be seen in the mid-4th century AD and that continues into the early 5th, though in notably fewer numbers than the continuing form with a ground rim (Cool 1995, 13). Changes in glass composition in the early 4th century AD are reflected in the beaker fragments made of thin, bubbly glass that is of a weak-coloured green and yellow

Figure 3.40. Fragments of glass beakers of 4th- to 5th-century AD date.

tint (Cool, 2021, 255). Scientific analyses suggest that the yellow tint specifically, seen in the body fragment SF182, was the result of deliberate colour-branding in order to distinguish it from its competitors (Freestone *et al.* 2018, 183–184).

Conical beaker, rim and body fragments, pale green tint, bubbly. Rim is fire-rounded and out-turned, diameter: *c.*65–70mm. Body fragment joins with heel (SF174). Mid-4th to early 5th century AD. SF135, context (640), EN17, Period 3.2.

Conical beaker heel fragment from a concave, narrow base. Pale green tint, bubbly. Joins with body fragment (SF135). Thickness: >1–2mm. Mid-4th to early 5th century AD. SF174, context (640), EN17, Period 3.2.

Beaker, body fragment, slight yellow tint, bubbly. Thickness: >1–1mm. 4th/5th century AD. SF182, context (703), EN17, Period 3.2.

Post-medieval

Three bottle fragments were recovered from contexts of Periods 5 and 6.

Neck fragment from a wine bottle, green tint. Weathering iridescent and flaking. 18/19th century. Context (1176), furrow [1175], Period 5.

Neck fragment from a wine bottle, green. Late 19th/ early 20th century. Context (002), subsoil, Period 6.

Body fragment from a water/mineral bottle, colourless. Mould blown with straight seam and curved ridge plate seam. Late 19th century. Context (002), subsoil, Period 6.

Clay tobacco pipe

By Rebecca L. Trow

A small assemblage of clay tobacco pipe (Table 3.60) was recovered from the site, entirely comprising heavily abraded stem fragments. All pieces were found in the fills of ditches or furrows, including three pieces from fills associated with possible Roman ditches: (96), (996) and (1300). These latter are therefore presumably intrusive and may have derived from ploughing that disturbed the upper fills of these features. The three other pieces were all in the fills of medieval/post-medieval ditches/furrows. The highly abraded nature of the pipe fragments suggests that they are all in secondary contexts and were exposed to weathering for long periods before final deposition.

Table 3.60. The clay tobacco pipe assemblage.

Context	Feature	Period	Stem	Burnish	Bore (x/64")	Date range	Notes
45	D1c	3.2	1	N	7	C17th-EC18th	abraded
96	97	5	1	N	6	LC17th-LC18th	abraded
700	699	5	1	N	7	C17th-EC18th	abraded
996	EN7	4.2	1	N	5	C18th-C19th	abraded
1125	1124	5	1	N	5	C18th-C19th	abraded
1300	D3b	4.2	1	N	5	C18th-C19th	abraded

The poor quality of the assemblage and lack of bowl fragments or diagnostic features makes dating difficult. The stem bore sizes of the fragments range from 5/64" to 7/64" which suggests a date range of 17th to 19th centuries, with the larger 7/64" bores typically earlier. However, dating pipes from stem bores is unreliable and leaves a considerable margin for error since different makers continued using older moulds for different time periods (Oswald 1975; Higgins 2017).

Human bone

By Milena Grzybowska

Introduction and methods

Human bone comprised four complete/partial skeletons (Burial 1 and Burial 2, the latter including three individuals), four disarticulated bones (DHB1–4) and two rearticulated skeletal elements (DHB5 and 6), all of children under one year old and all from late Roman contexts (Periods 3 and 4). Burials were recognised as such during archaeological excavations, whereas the rearticulated and disarticulated remains were identified as human during the zooarchaeological analysis of animal bone.

The ages of foetal, perinatal and infant remains were estimated based of dental development (AlQahtani 2010) where possible, or based on fusion of bones and/or measurements of skull and post-cranial elements (Niel and Adalian 2023; Schaefer *et al.* 2009; Fazekas and Kósa 1978). Dental development is the most reliable age estimation method (less affected by suboptimal conditions), and use of bone metric data in age estimation may place any potential small-for-age individuals in the younger age category. Tentative (Vlak *et al.* 2008) estimation of sex was based on the width and depth of the sciatic notch of the pelvis (Schutkowski 1993).

The results of osteological and palaeopathological analysis are summarised in Table 3.61 at the end of this report. The distribution of human remains is shown on Figure 3.41.

Period 3: Burial 1

Burial 1 included fragmentary remains of a skull and torso of a perinate (±1 month before/after birth) (SK1), recovered from fill (836) of Ditch [835] in Enclosure 19 (Table 3.61). As the remains were identified as human during post-excavation works and comingled with animal bone, it is uncertain whether the excavated remains are a disturbed burial *in situ* or had been redeposited. The presence of various elements from the upper portion of body suggests that the body may have been at least partially articulated at the time of their primary deposition. None of the elements were measurable, limiting the resolution of age estimation. No pathological changes of bone were identified.

Period 3: disarticulated human remains

A disarticulated right humerus (DHB1) was identified from fill (1363) of Ditch [1361] (Table 3.61). Measurements of the humerus suggested the individual died at the 34th gestational week (Fazekas and Kósa 1978).

Period 4: Burial 2

Burial 2 comprised articulated skeletal remains of a minimum of three individuals deposited in the upper fill of Pit [1306]/[1329] (Table 3.61; Figure 3.42). Further skeletal elements that likely derived from Burial 2 included frontal (DHB5) and parietal (DHB6) bones,

attributed by the excavator to the tertiary fill (1305) of Ditch [1303], cut by Pit [1306]. As Burial 2 and the two disarticulated skeletal elements were recovered from the same archaeological intervention and from adjacent fills, all are henceforth considered Burial 2. Considering the clearly articulated state of the children at the time of deposition – directly observed at the time of excavation, and supported by the presence of multiple minuscule skeletal elements that would have been lost during any redeposition, these three children must have died around the same time, unless curated.

All three pelves showed wide and shallow sciatic notches, which according to the disputed (Vlak *et al.* 2008) Schutkowski's method (Schutkowski 1993), would have indicated a ?female sex of the individuals. Based on dental development, the individuals included two 1.5 months old (±1.5 months) individuals and definitely between 0–3 months of age (1.5 months old ±1.5 months, AlQahtani 2010). Age estimates based on linear regressions (Scheuer *et al.* 2009, 285) for long bone measurements, suggested that the remains were of children at their 39th–43rd gestational weeks. Similarly, dimensions of the basal portion of the skull (*pars basilaris*) indicated the presence of child around 40th gestational week (Scheuer *et al.* 2009, 11). Considering developmental and contextual data, the three children highly likely represent triplets that died at or relatively soon after birth. Any possible discrepancy between the dental age and that estimated on bone measurements may be explained by the typically smaller size of individuals from multiple pregnancies that would result in lower dimensions of bones for the age of the individuals.

Period 4: disarticulated human bone

Disarticulated left humerus (DHB3) was recovered from fill (336) of Ditch [335] forming Enclosure EN3 of Period 4.2 (Table 3.61). The humerus dimensions suggested that the child reached full term (≥40th gestational week) yet did not reach 1 month after birth (Schaefer *et al.* 2009). A disarticulated right ulna of a perinate was recovered from Ditch [337] of Enclosure EN1 of Phase 4.3. Both perinatal elements, DHB3 and DHB4, were found in the same archaeological intervention and

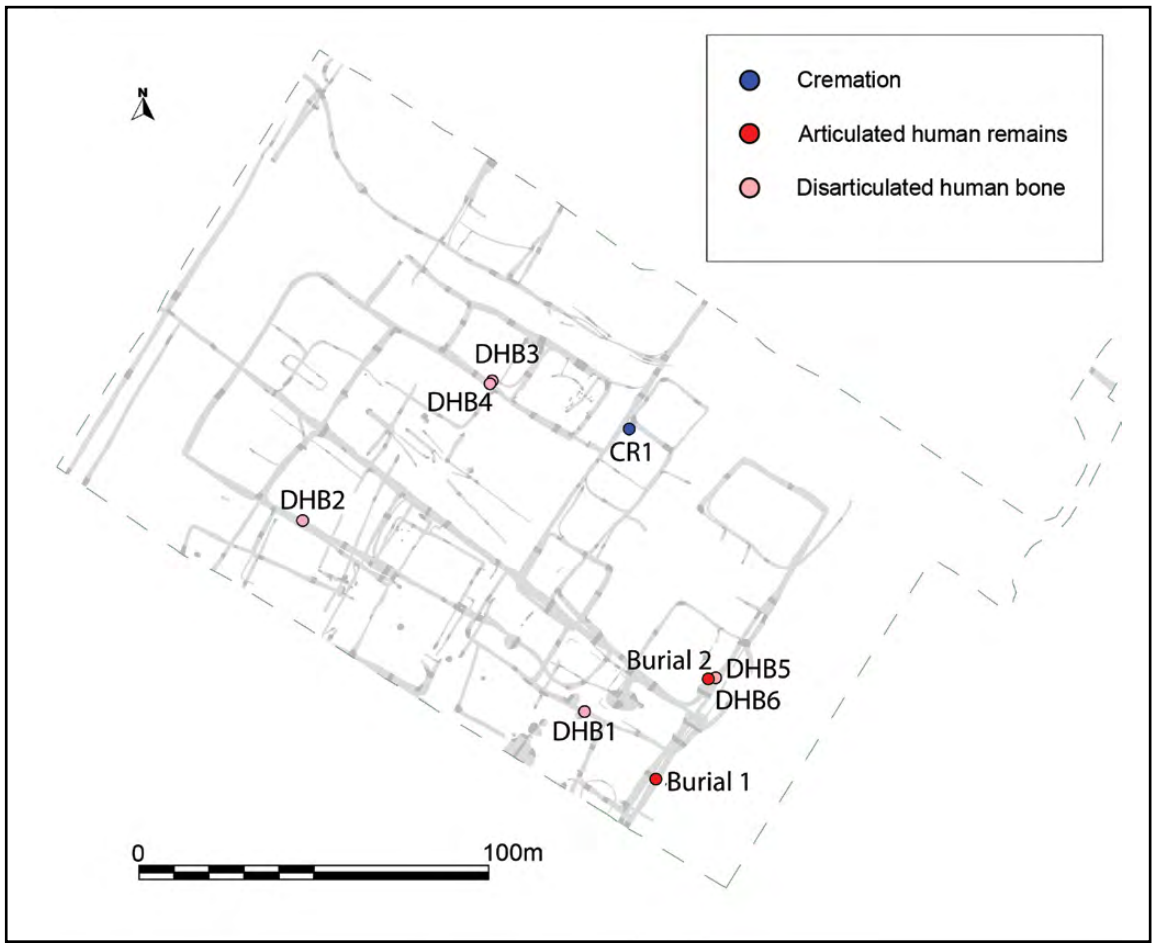

Figure 3.41. Distribution of human remains from Roman contexts.

from adjacent fills, and it is therefore likely that they derived from the same individual.

A small disarticulated fragment of a possibly human skull (DHB2) was recovered from fill (705) of Ditch [704] in Enclosure 9 (Table 3.61). The size and gracility of the bone suggested it likely derived from an infant. The endocranial aspect of skull showed abnormal digital impressions (APDI) and such vascular impressions, (ABVI) as well as new bone formation (PA), the latter displaying a mosaic of normal developmental and pathological features. The observed changes signal a prolonged increase of intra-cranial pressure

Period 4: cremated bone

A small amount of highly fragmented possibly human cremated bone was recovered from Posthole [556] (Table 3.61). The preserved fully calcined fragments were not identifiable to the skeletal element level.

Discussion

The site contained the skeletal remains of a minimum of five children, comprising one perinate (Burial 1) and one prematurely born or small-for-gestational-age (SGA) individual (DHB1) attributed to Period 3.1, and likely triplets (Burial 2) associated with Period 4.2. Interment of the deceased perinates/infants in an area of ditches intensely remodeled between Periods 3.1 and 4.3 resulted in their repeated disturbance, as attested by the presence of disarticulated human bone. This implies either little concern for their permanence or inefficiency of potential grave markings

DHB1, attributed to the 34th gestational week represents a premature (birth before the 37th gestational week) birth associated with a reduced chance of survival (Moser *et al.* 2007). Burial 1 and 2, as well as disarticulated bone, likely attest either stillbirths or neonatal deaths, the latter defined as occurring between live birth and the end of the first month of extrauterine life. The neonatal deaths are predominantly, yet not exclusively, caused by endogenous factors - an inherent weakness of the child. While no pathological changes of bone were identified for the likely triplets from Burial 2, multiple gestation births are known to have higher mortality when compared to singleton pregnancies in the modern period (Kalikkot Thekkeveedu *et al.* 2021), and such multiple pregnancies would carry even further risks in rural settings of the Roman period. Noted smaller size of one of the presumed triplets may be non-pathological or associated with a selective foetal growth restriction, which can lead to prematurity, and increased mortality and/or morbidity of the foetuses. Recovery of the skeletal remains of neonates from triple pregnancies is extremely rare, with the earliest known case comprising two stillbirths and a stillbirth/neonatal death from Stane Street, Baldock, Hertfordshire dated to AD 70–100 (HCC 2011). Should further biomolecular works confirm the co-deposited neonates from Milton as siblings, they may present the first reported case of triple neonatal deaths.

Figure 3.42. Human remains: Burial 2: right tibiae, [1306]/[1329], Phase 4.2 (Scale=1cm).

Animal bone

By Milena Grzybowska

Introduction

The animal bone assemblage comprised 10,702 recorded bone fragments (prior to refit or 'NF') weighing just under 300kg and including disarticulated and articulated specimens. Bone derived mostly from deposits dated to the late Roman period (Periods 2–4), with very small quantities recovered from the middle to late Iron Age (Period 1), the medieval/post-medieval period (Period 5) and the Modern period (Period 6). Most bone fragments were hand-collected, and a small proportion was recovered from samples (NF=589). Bone derived from ditches with small amounts from pits, pond, beam slots, postholes and a well.

Table 3.61. Human remains: all periods.

Period	Human remains number	Context, cut number	Group	Feature type	Body areas	Skeletal completeness %), preservation	Age/sex	Notes (measurements in mm)
3.1	DHB1	(1363) [1361]	EN19	D	Limbs	0-20, Good	Foetus, 34th gest. week	R humerus (UDp, UDd)
3.1	Burial 1 SK1	(836) [835]	EN19	D	Skull, torso, limbs	0-20, Good	Perinate	R clavicle, R rib, frontal (50%) vault only, (NF=3)
4.1	CR1	(557)<62> [556]		PH	?	0-20, Good	Unknown	Cremated, ?human
4.2	Burial 2, SK2, SK3, SK4	(1307) [1306], (1330) [1329]		P	Skull, limbs, torso:	Varied 40-80, Good	MNI=3 3 x neonate/ infant – between 40th gest. week and 1 month	Repeated skeletal elements: 3x L zygomatic, 3xL temporal squamae, 3x L pars supraoccipitalis, 3x R humeri, 3x R femora, 3x R tibiae, 2xR and 2xL ilia (of 3 individuals); bilateral carotico-clinoid foramen
4.2	?Burial 2: DHB5	(1305) [1303]	EN7	D	Skull	0-20	Perinate- early infant	L frontal with orbit
4.2	?Burial 2: DHB6	(1305) [1303]	EN7	D	Skull	0-20	Perinate-early infant	Parietal
4.2	DHB3	(336) [335]	EN3	D	Limbs	0-20, Good	Perinate, c.40th gest. week	L humerus
4.3	DHB4	(340) [337]	EN1	D	Limbs	0-20, Good	Perinate	R ulna
4.3	DHB2	(705) [704]	EN9	D	Skull	0-20, Good	?Human, infant	?R parietal, APDI, ABVI, ?PA

Methods

The methodology employed in this study follows the guidelines for best practice set out in Baker and Worley (2019). Where possible, bone fragments were identified to species, otherwise, attribution was made to broader taxonomic groups. Ribs, vertebrae (excluding the axis and atlas) and unidentifiable specimens were assigned to a size-class: 'large mammal' (cattle-size), 'medium mammal' (sheep-size), 'small mammal' (cat-size) and micromammal (rat-size). Identification of problematic taxa followed morphological criteria (Payne 1985; Halstead and Collins 2002; Prummel and Frisch 1986; Johnstone 2004). Identification of amphibians was attempted using Gleed-Owen's doctoral dissertation (Gleed-Owen 1998).

All refitted specimens were recorded and given a unique identification number (ID_{Bone}, $ID_{Uncountable}$, ID_{Teeth}). The preservation of countable bone (ID_{Bone}) was recorded using a zoning system devised by Dobney and Rielly (1988). Surface preservation of bone was scored using a five-stage system (poor, bad, moderate, good, and excellent). Incidence of burning and gnawing were

recorded along with characteristics of butchery marks. Completeness of elements was recorded using a five-stage system (5%, 25%., 50%, 75%, 100%) to document fragmentation of skeletal elements.

Species abundance was presented using the Number of Identified Specimens (NISP) and Minimum Number of Individuals (MNI). NISP count refers to the number of refitted specimens identified to an element and a taxon — thus a group of fragments derived from the same bone comprise one specimen. Body part frequencies utilised Minimum Number of Elements (MNE) and Minimum Animal Units (MAU). MNE and derived MAU were based on the Dobney and Rielly's zoning system (Dobney and Rielly 1988), and were calculated taking side and sex (pig only) into consideration. MNI was estimated on the basis of MAU and ageing and sexing results. For dentition, MNI was calculated from the greater number of the most abundant teeth combined with wear stage and side of the mandibular dentition. Epiphyseal fusion considered only countable bones. Tooth eruption and wear for cattle and pig were recorded using Grant's system (Grant 1982). Sheep/goat mandibular wear was assessed following Payne (Payne 1973, 1987). Bovid (cattle, sheep/goat) mandibular wear assessment was undertaken for mandibles (with two or more ageable teeth), single deciduous premolars and third molars. Horse age was calculated using crown-height measurements (Levine 1982). Epiphyseal fusion stages were recorded and ages assigned using Silver's timings for epiphyseal closure (Silver 1969).

Measurements of mature specimens were taken following the standards of von den Driesch, Davis and Popkin and colleagues (Driesch 1976; Davis 1992; Popkin *et al*. 2012). Size of horse was calculated utilising corrected factors for the determination of withers height (Johnstone 2004, 156: Table 3.5). Categories of Associated Bone Groups (ABG) and their definitions followed those proposed by Hambleton (2009) and included: 'skeleton', 'limb', 'skull', 'torso' and 'other'.

Size index scaling technique was utilised to present any changes in three separate dimensions (width, depth and length) in relation to standard means for cattle (cattle – Period II Elms Farm, Heybridge, Essex: Johnstone and Albarella 2002), sheep/goat (sample of modern unimproved Shetland ewes, Davis 1996) and equid (Mongolian ponies, Johnstone 2004). Log-ratios were calculated for pooled disarticulated and articulated elements. Comparing average logarithmic values between phases, work was conducted under the assumption of a constant male:female ratio between samples. Formulae for withers height estimation applied to dogs followed Clark (Clark 1995) and Harcourt (Harcourt, 1974), and for equids, May (May 1985).

Associated bone groups (ABG) here comprise skeletal remains of animals deposited in an articulated state or in a disarticulated state yet recognised as deriving from the same individual. Animals deposited in an articulated state may be identified as such during excavation process (here marked '*' in ABG tables) or during subsequent zooarchaeological analysis. ABGs were categorised as 'complete skeletons', 'partial skeletons', 'skull', 'torso' and 'limbs(s)'. Skulls were recorded as an ABG when a minimum of 50% of the skull was present.

Results: introduction

The assemblage comprised 6325 refitted specimens (NISP) (Table 3.62) recorded as disarticulated bones (NISP=5435) and seventy-six Associated Bone Groups (ABG) (NISP=890). All bone was analysed and recorded per refitted specimen (Table 3.62). A detailed quantification and dataset for the disarticulated (bone and loose teeth) and articulated animal bone assemblage is provided in a spreadsheet included in the digital archive for the site.

Period 2: ABG

Eleven Associated Bone Groups were ascribed to Periods 2.1–2.3. These comprised well-preserved complete or partial skeletons of domesticated species deposited in ditches (n=5), pits (n=4) and a beam slot (n=2) (Table 3.63). ABGs included skulls (n=2) and feet (n=1) of cattle (MNI=2), complete (n=1) and partial (n=2) skeletons as well as skulls (n=1) and feet (n=1) of sheep/goat (MNI=4), a skull of an equid (n=1) and a complete skeleton of a dog (n=1) (Table 3.63).

The basal fill (856) of Pit [855] contained exclusively ABGs, which included a partial skeleton of sheep/goat ABG52, and two cattle skulls ABG50 and ABG51. The cutmarks affecting ABG52 were associated with disarticulation and meat removal and attested processing of the sheep/goat carcass prior to its deposition.

Basal fill (250) of Ditch [251] contained a nearly complete skeleton of a large dog ABG67, whose withers height at 60cm (59.6–60.1cm) approached the upper end of the range estimated for contemporaneous dogs from Britain (23–72cm, Harcourt 1974).

ABG53 from Ditch [921], (922), comprised a complete skeleton of a subadult horned sheep not affected by gnawing, butchery or burning, which suggested an immediate burial of its articulated remains.

Table 3.62. Animal bone: NISP counts, all phases.

Material*	Cattle	Sheep/goat	Pig	Equid	Dog/wolf	Cat	Red deer	Domestic fowl	Rook	Wood mouse	Red/fallow deer	Leporid	Carnivore	Cattle/Red deer	Sheep/goat/roe deer	Small murinae	Small rodent	Large mammal	Medium mammal	Small mammal	Micromammal	Mammal	Corvid	Frog/toad	Anatid	Bird	Sand shark	Barnacle	Oyster	Unidentified
Period 1																														
Bone	3		1											1				6	7			25								
Periods 2.1–2.3																														
Bone	106	35	2	28	2	1	1					2		7	8	2	3	198	110	1	4	101		22	1	1			2	4
LT	10	7	1	3	1																1						1			
ABG_{NISP}	9	251		7	67														23											
Periods 3.1–3.3																														
Bone	355	133	13	41	11		1	3		1	1			13	16		3	644	168	3	3	162	1	16	1	5			1	2
LT	54	15	1	14																										
ABG_{NISP}	52	116		29	127				2										25											
Periods 4.1–4.3																														
Bone	655	198	28	71	23	1	2	1			2	1	2	20	32	1	1	1179	348	2	1	301		20		6		1	1	5
LT	47	31	2	19	4						1																			
ABG_{NISP}	125	10		4	16				3									24												
Period 5																														
Bone	3	1	3	1										1				19	6		1	1								
Period 6																														
Bone	1	1																	2											
$ALL_{exl.ABG}$	1234	421	51	177	41	2	4	4		1	4	3	2	42	56	3	4	2046	641	6	10	590	1	58	2	12	1	1	4	11

Table 3.63. Animal bone: Associated Bone Groups, Periods 2.1–2.3.

Period	Context	ABG no	Group	Feature type	Taxa	SC*(%)	Age	Skeletal areas	Taphonomy marks; pathology; comments	Associated animal bone	Proposed interpretation
2.2	850	46	D34	Ditch	Sheep/ goat	0-20	Adult 3-3.5y	Hindlimb (R)	None	Cattle, equid	Butchery waste
2.2	856	50		Pit	Cattle	0-20	Adult	Skull	None	ABG51, 52	Ritual, butchery waste
2.2	856	51		Pit	Cattle	0-20	Elderly	Skull	Frontal bone discontinuations	ABG50, 52	Ritual, butchery waste
2.2	856	52		Pit	Sheep/ goat	21-40	Adult	Skull, torso, hindlimbs	Butchery: multiple cuts of distal half of tibia	ABG50, 51	Ritual, feasting
2.2	922	53*	EN23	Ditch	Sheep	81-100	Subadult Teeth: D	Skull, torso, limbs	Horned	None	Burial
2.2	978	54a-b		Beam slot	Sheep	41-60	Subadult 16-24 months	Skull, torso feet x3	Butchery: chopped horncore; horned	Cattle, frog, small rodent	Foundation deposit/ butchery waste
2.3	250	67*	D2	Ditch	Dog	81-100	Adult	Skull, torso, limbs	WH: c.60cm	None	Burial
2.3	1000	36		Pit	Equid	0-20	Adult 9-10y	Skull	None	Cattle tooth	Butchery waste, ritual
2.3	1200	38	D11	Ditch	Sheep/ goat	0-20	Adult	Skull	None	Cattle, equid (gnawing)	Butchery waste
2.3	1292	41	D10	Ditch	Cattle	0-20	Subadult 1.5-2.5y	Foot (L)	None	Cattle	Butchery waste

The presence of partial remains of the skeleton of a 1–2 year old sheep ABG54, deposited within Beam slot [977], (978), along with a fragment of a cattle skull and foot, may signify a foundation deposit, whereas associated articulating remains of a small rodent and amphibians, most likely a common frog (*Rana temporaria*), may represent occupation/disuse related intrusions.

Cattle skull ABG51 showed three smooth-edged round discontinuations (up to 10x7.5mm) on parietal and temporal bones. These changes are increasingly interpreted as of developmental/congenital origin and have been proposed to have some association with yoking (Albarella 2015), which would suggest that ABG51 is the remnants of a working animal.

Period 2: disarticulated bone

Preservation

Disarticulated bone from Period 2.1–2.3 (NISP=665) showed mostly good surface preservation (Figure 3.43). Completeness of specimens varied, with nearly a third of material consisting of skeletal elements at least 50% complete, which presented a relatively low level of bone fragmentation.

Taphonomy

Among specimens identified to species/genus, cattle and equid bones (NISP=10 or 6.5%) showed butchery marks, scored mostly by large and fine blades, and attesting skinning (cattle), disarticulation (cattle) and defleshing (cattle, equid) (Figure 3.44). Heat-altered fragments were infrequent, with partially/completely charred specimens (2.0%) occurring more frequently than partially/completely calcined bone (0.7%). A large proportion of bones of each of the main domesticates showed gnaw marks (14.9%), attesting carnivore and rodent access to bone prior to burial.

Species distribution

Of disarticulated bone, 30.1% (NISP=200) were identified to species/genus level (Table 3.62). Among the remains of the main domesticates, cattle was the most frequently identified (60.4%), followed by sheep/goat (21.9%) including sheep, relatively frequent equid (horse/mule/donkey) (16.1%) including horse and a possible horse/donkey hybrid, and sporadic pig (1.6%) (Table 3.62 and Table 3.64). Further domesticated species comprised a dog and a cat. The relative proportions of size-classed mammals (64.3% classified as large) was consistent with the observed dominance of large over small bovids. Bird remains were sporadic and comprised domestic fowl and a duck/goose.

Wild taxa were represented by an antler of a red deer, and hare/rabbit, including hare. The antler was likely collected once shed and subsequently worked, while hare bone, showing oblique fresh bone fracture may attest poaching or predation by canids/felids.

The frequencies of microfauna within any assemblage are dependent on sampling strategy. Sporadically present, commensal taxa, classified as rat/mouse were recovered from pits [1249] and [1354]. These features, along with a further Beam slot [1205] housed frog/toad

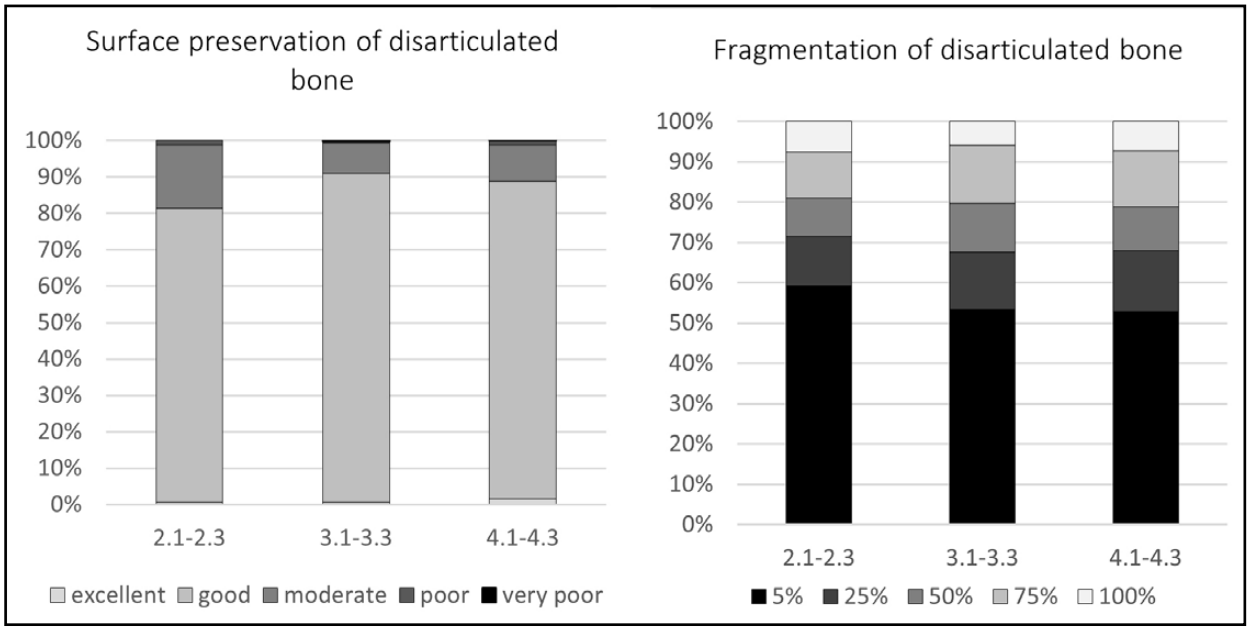

Figure 3.43. Animal bone: preservation of disarticulated and articulated bone, Roman period (Periods 2–4).

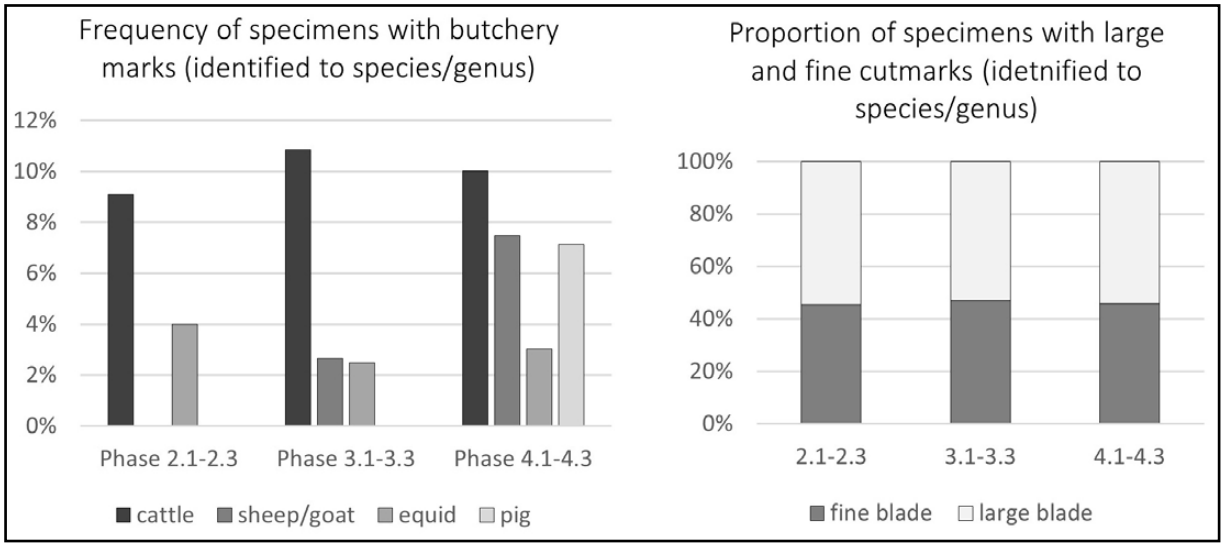

Figure 3.44. Animal bone: frequency of butchery marks on specimens identified to species/genus, Roman period (Periods 2–4).

Table 3.64. Animal bone: species distribution, Periods 2.1–2.3.

Common name	Scientific classification	NISP	MNI (elements and age -based)
Cattle	*Bos taurus*	116	10
Sheep/goat	*Ovis/Capra*	42	5
*Sheep	*Ovis aries*	*5	*2
Equid	*Equus* sp.	31	3
*Horse	*Equus caballus*	*6	*1
*?Horse/donkey hybrid	*?Equus caballus/asinus*	*1	*1
Pig	*Sus scrofa domesticus*	3	1
Dog/wolf	*Canis/Vulpes*	3	1
*Dog	*Canis familiaris*	*1	*1
Cat	*Felis catus*	1	1
Duck/goose	*Anatidae*	1	1
Red/fallow deer	*Cervidae*	1	1
Red deer	*Cervus elaphus*	*1	*1
Hare/rabbit	*Lepus/Oryctolagus*	2	1
*Hare	*Lepus europaeus*	*1	*1
Mouse/rat	*Murinae*	2	2
Frog/toad	*Anura*	22**	3
*Toad	*Bufo* sp.	1	1
*Frog	*Rana* sp.	3	2
Oyster	*Ostrea*	2	1

**- also included in higher order count, **- likely include ABGs*

remains. Most of relatively frequent amphibian bones (NISP=22), including frogs and a possible toad, may represent partial skeletons. Gnaw marks on anuran specimens recovered from pits, and the preponderance of adult specimens ([1249]) are consistent with a predation scenario rather than a pitfall, implying accumulation by diurnal predator(s) such as kestrel(s) and small mustelids (*e.g.* weasels).

Marine taxa comprised oysters and a single tooth of a sand shark, which likely derived from the local geology (pers. comm. Hannah Russ).

Body parts distribution

Periods 2.1–2.3 provided the NISP/MNI values allowing for skeletal elements distributions of moderate reliability for cattle and low for sheep/goat and equids. All body areas of cattle were present and distributed consistently with the expected preservation bias of bones of greater density (e.g. mandibles, metapodia and distal tibiae), except for overrepresented mid-portions of left hindlimbs (NISP=10) (Figure 3.45 and Figure 3.46). The skeletal elements distribution for sheep (Figure 3.45 and Figure 3.47) and equids (Figure 3.45 and Figure 3.48) was of low confidence for Period 2, yet the absence of small caprine elements likely reflected preservation and size bias of hand-collected material.

Age

Mandibular tooth wear and eruption datasets allowed for a tentative reconstruction of mortality profiles for bovids in Period 2. Most cattle were killed as adults and elderly, and occasionally during the first year and a half of life (Figure 3.49). This is consistent with a focus on exploitation of live cattle for traction and production of manure with a supplementary role of providing milk and meat. Sheep/goat mandibles derived mostly from young adult (3–4y) sheep, lambs (0.5–1y) and adults (4–6y) and other ages, which, considered alongside the epiphyseal fusion data (Figure 3.50), is consistent with a mixed-use pattern with a possible focus on meat. Equine teeth derived from young adult individuals (4–4.5y and 5–7y). Based on the epiphyseal fusion data, equid remains derived mostly from adult individuals, with occasional specimens (n=2) indicating the presence of horses younger than 3.5 years old (Figure 3.51). No evidence of local breeding of any of the species was found during Periods 2.1–2.3.

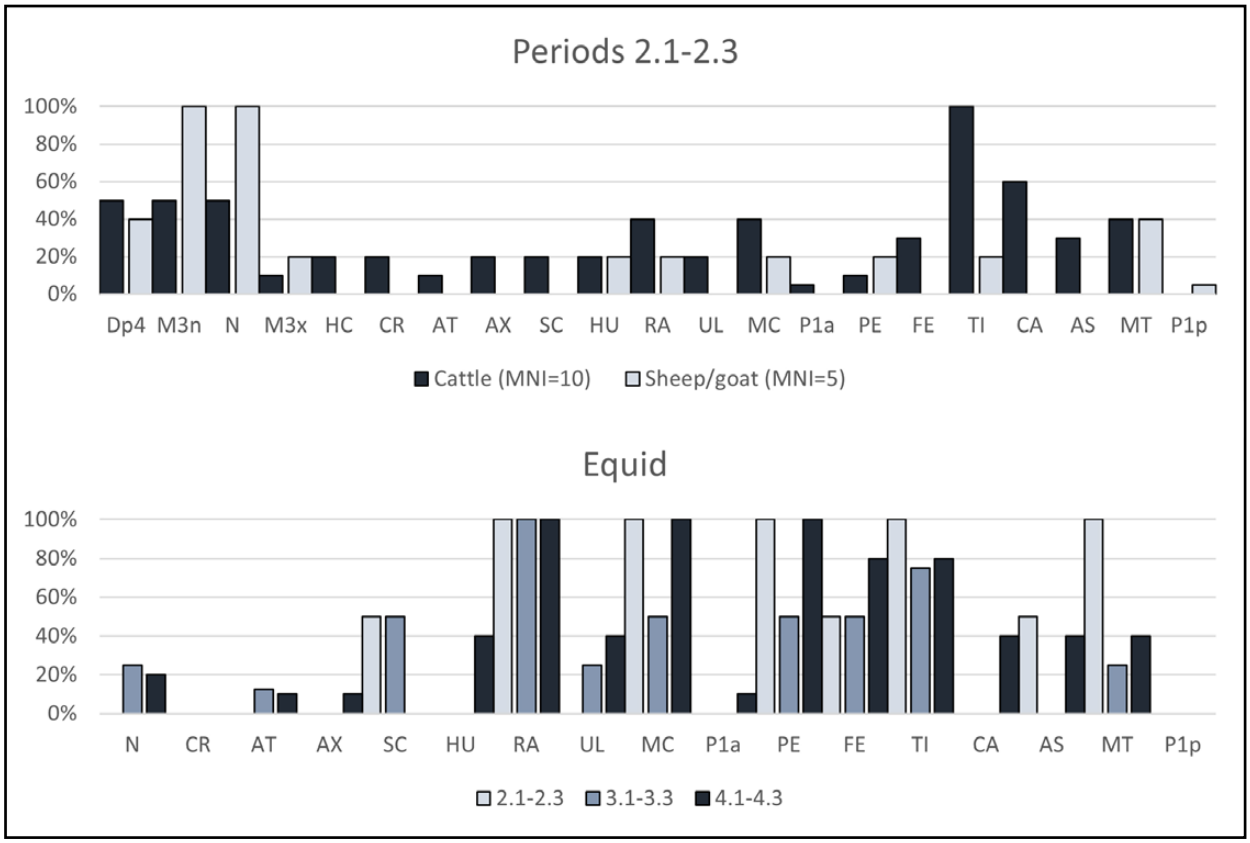

Figure 3.45. Disarticulated animal bone: skeletal element distribution, derived from the MNI figures as a percentage of the highest MNI: cattle, sheep/goat Periods 2.1-2.3 and equid (Roman Periods 2–4).

Body size

Log ratio values for cattle indicated presence of individuals of a wide size range, yet mostly larger than the standard late Iron Age counterparts (see methods section, above), indicating the presence of an improved stock (Figure 3.52, Periods 2.1–2.3). The log ratio values for sheep/goat are consistent with the presence of an improved breed (Figure 3.53, Periods 2.1–2.3).

Equids

Six equid (horse/mule/donkey) specimens from Period 2, including two deriving from horses (*Equus caballus* or *EQC*), allowed for calculation of equine withers heights (WH). Equids WH ranged from 1223.45mm to 1474.78mm, and averaged at 1365.87mm (Figure 3.54). The presence of two distinct (p=0.001) groups of equids was noted (Figure 3.54: scatterplot) - tall and short for the period (average Roman at 1312mm, 13hh) (Johnstone 2004, 410). While the lower two values are still within the range established for late Roman horses (Ameen *et al.* 2021), morphological characteristics of the small for period metacarpal (Figure 3.54: ID_{LT}1020 (1082)) suggested inclusion of donkeys or horse/donkey hybrid. The 'short' group, was also significantly smaller than Period 3 equids (p=0.006) and nearly significantly smaller than Period 4 (p=0.065) equids.

Dogs

Measurements of articulated remains of ABG67 indicated presence of a large dog, comparable to the height of a Golden Retriever (Figure 3.54).

Pathology

Pathological changes of bone provided evidence of oral, congenital/developmental and degenerative diseases, as well as those of infectious/traumatic origin. Bone changes were mostly observed on cattle mandibles and sporadically on hindlimbs of the same species and of equid.

Dental diseases: periodontal disease (PD) was frequently affecting adult cattle mandibles (1292 and 1390) (Crude Prevalence Rate, or CPR=25%). A single case of PD of sheep was identified in this phase in an adult individual (G, 4-6y, CPR=16.7%).

Developmental diseases: cortical defect of the cranial aspect of the right side of articulation facet for atlas was noted on cattle axis (ID1611 (1360), 2.2). Cortical defects are of unknown aetiology, but may relate to trauma sustained during development.

Infectious diseases: an incompletely preserved equid tibia showed an extensive and almost circumferential abnormal bone deposition on its proximal shaft (12cm in length x ≥min12mm in depth), suggestive of a severe periostitis (Figure 3.55: bracket) oran osteomyelitis, that could have been induced by trauma or infection.

Degenerative diseases

A single metatarsal showed slight exostoses at proximal articulation facet (ID1801, (192) 2.3), suggestive of increased load of the foot. Further, a proportion of cattle specimens presented marked asymmetry of condyles of metatarsals, likely associated with traction (Figure 3.73).

Period 3: ABG

Associated Bone Groups ascribed to Periods 3.1–3.3 comprised twenty-six well-preserved, complete or partial skeletons, recovered from ditches (n=24) and a posthole (n=2) (Table 3.65). ABGs of domesticated taxa included skulls (n=11) of cattle, in addition to partial skeletons (n=4), skulls (n=2), torso (n=2) and feet (n=1) of sheep/goats, as well as a skull (n=1), limbs (n=1) and torso (n=1) of equids, and a complete skeleton of a dog (n=1). ABGs of wild taxa comprised a wing of a rook (n=1) and limbs of frog/toad (n=1) (Table 3.65).

Fill (406) of Posthole [405] included a partial skeleton of a naturally polled adult sheep (ABG1) (Figure 3.56), along with skeletal elements of foetal sheep/goat (ABG2). The co-occurring ABGs most likely attest pregnancy/lambing mortality, and as such point towards their burial sometime between February and April, and attest their local breeding. Similarly, the perinatal remains of sheep ABG60 and ABG71 (MNI=2) deposited within Ditch [1399] provided further evidence of a likely lambing mortality and local breeding of the animal.

Fill (640) of Ditch [639] included a skull of naturally polled sheep ABG27 and a torso of sheep/goat likely representing same individual. The first cervical vertebra (axis) of ABG72 displayed carnivore pit marks (4.8mmx4.8mm, 5.3mmx3.9mm) (Figure 3.57), indicative of predatory behavior, likely by dog/wolf based on pit dimensions (Domínguez-Rodrigo and Piqueras 2003). A clear blue-green staining of a portion of vertebra of sheep/goat ABG72 implied the presence of a copper/copper-alloy object within the burial environment. Co-deposition of naturally polled sheep ABG27 with multiple disarticulated horncores attested the simultaneous presence of both types of sheep in Period 3.2.

Fill (684) of Ditch [797] contained a minimum of three large mammal skulls representing one equid ABG25 and two cattle ABG26 and ABG29 individuals. Cranial cutmarks evidencing disarticulation (ABG25, ABG26 and ABG29) and skinning (ABG25 and ABG29) and horncore

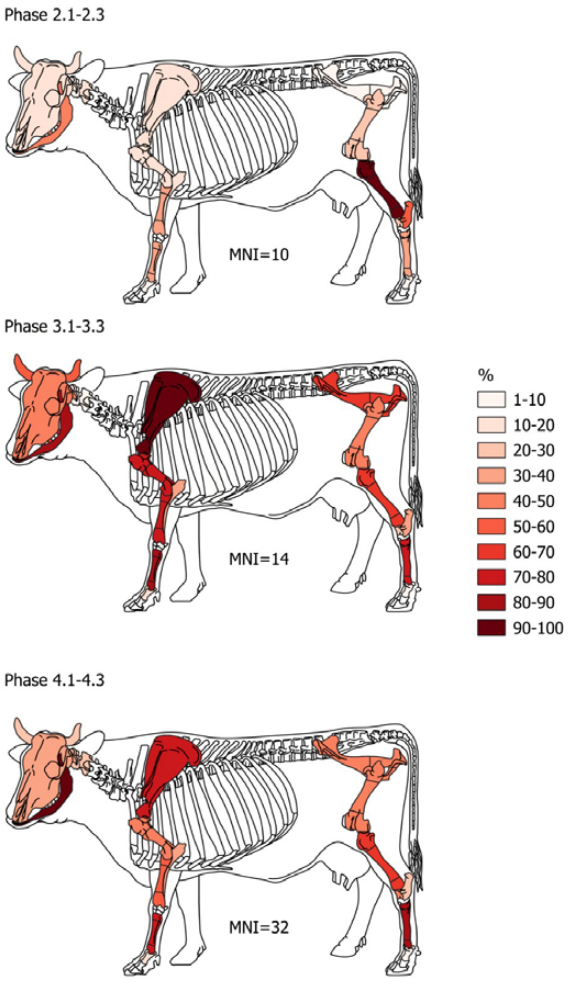

Figure 3.46. Disarticulated skeletal elements distribution of cattle, all Roman phases (Periods 2–4).

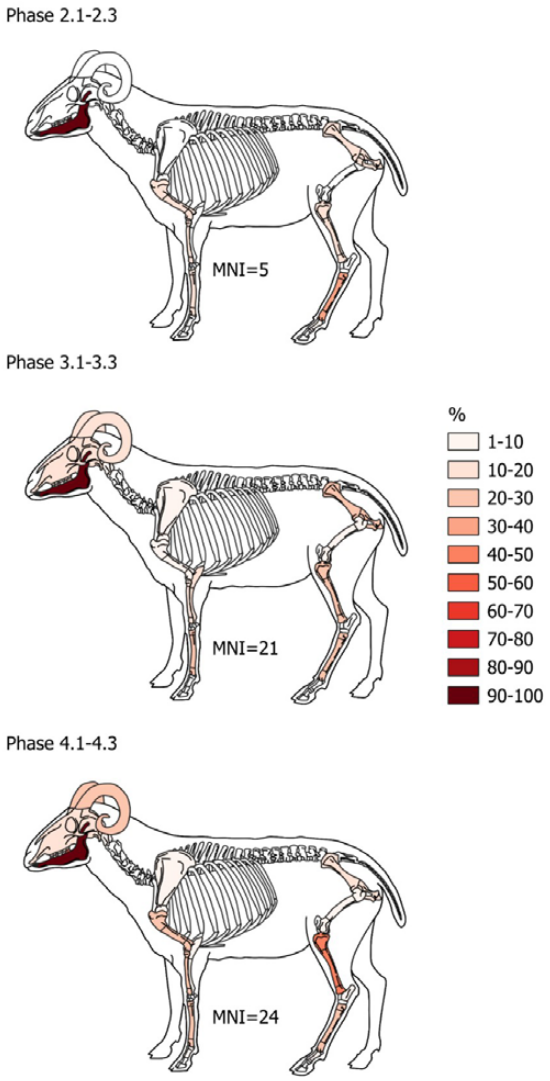

Figure 3.47. Disarticulated skeletal elements distribution of sheep/goat, all Roman phases (Periods 2–4).

removal (ABG29) (Figure 3.58 and Figure 3.68), along with multiple associated skeletal elements of varied processed and gnawed taxa, are strongly suggestive of their butchery waste character, and attested equine carcass utilisation within Period 3.2. Similarly, the accumulation within ditch fills of Enclosure EN17 of a large amount of associated (ABG25, ABG26, ABG27 and ABG29) and disarticulated bone with clear processing marks (disarticulation, skinning, charring) invite an interpretation of this material as butchery waste.

ABG59 comprised a hindlimb of a yearling and provides evidence of the presence of non-adult equids and potential fairly local breeding of the animal.

A complete skeleton of a large (WH: 50–56cm) dog ABG34, deposited at the base of Ditch [1179], was recovered alongside a few sporadic skeletal elements of equid and cattle. The articulated state of the dog is suggestive of an immediate opportunistic burial of the animal at the base of the then unsilted ditch [1179].

ABG55 comprised the left wing of a rook. Considering its association with a large amount of multitaxon butchery waste, which occasionally displayed gnaw marks, the corvid wing was likely an accidental inclusion.

Period 3: disarticulated bone

Preservation

Animal bone from Periods 3.1–3.3 comprised disarticulated (NISP=1681) and articulated bone (NISP=351). The bone showed mostly good surface preservation (Figure 3.43) and varied, but relatively low fragmentation, with a third of material consisting of skeletal elements over half complete.

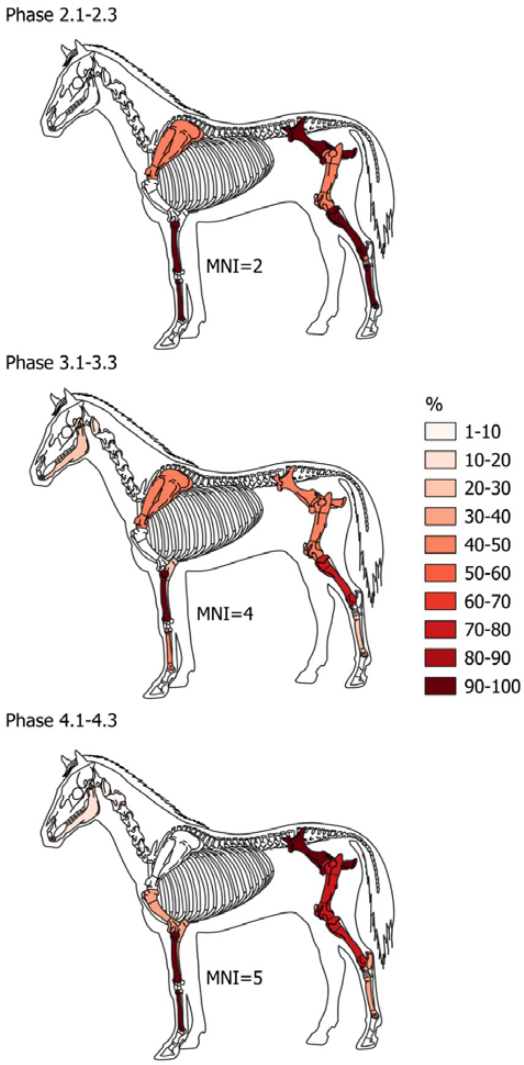

Figure 3.48. Disarticulated skeletal elements distribution of equids, all Roman phases (Periods 2–4).

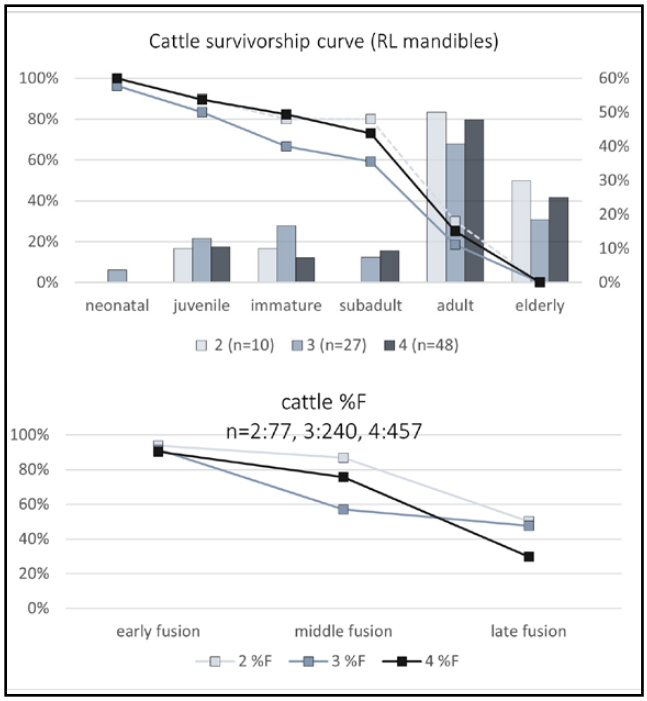

Figure 3.49. Animal bone: age of cattle, Roman period (Periods 2–4).

Taphonomy

Among specimens identified to species/genus, cattle, sheep/goat and equid bones (NISP=39 or 8.0%) showed butchery marks, scored by large and fine blades, as well as cleavers (Figure 3.44). Cutmarks attested defleshing (cattle), skinning (cattle) and disarticulation (cattle, sheep/goat and equid) of non-adult and adult animals. A negligible proportion (0.2%) of all disarticulated mammal bone (excl. loose teeth) was partially or completely charred, with no calcined bone identified. A large proportion of bone showed gnaw marks (15.8%), indicating carnivores (n=21) and rodent (n=1) access to bone prior to burial. Bone of all main domesticates was chewed, however, frequent carnivore gnaw marks affected sheep/goat disproportionately more often.

Species distribution

Of disarticulated bone, 38.1% (NISP=643) were identified to species/genus level (Table 3.62 and Table 3.66). Among the main domesticates, cattle was the most frequently present (65.3%), followed by sheep/goat (23.6%) including sheep, equid (8.8%) including horse, and infrequent pig (2.2%). Canid elements were occasional and those of chicken sporadic. The proportion of large mammals (79.3%) among size-classed specimens was consistent with the observed dominance of large over small bovids. Four humeri of dog (MNI=2: 2 right and 2 left), recovered from Ditch [211], attested co-occurrence of medium (WH:30.3cm) and large (WH:58.0cm) dogs. Birds included duck/goose (NISP=1), corvid (NISP=1) as well as unidentifiable specimens.

Red deer and red/fallow deer elements (NISP=2). A single piece of antler, recovered from tertiary fill (330) of Ditch [327] in Enclosure EN15, was cut and chopped off circa 150mm from a tine's root.

Wild species included wood mouse (NISP= 1), which apart from forests may explore arable fields, and disarticulated remains of frogs (NISP=16), all recovered from various ditches. A gnaw mark on the remains of a possible toad suggested a predation event, however, the abundance of bones of non-adults likely deriving from partial skeletons (Ditch [1033] of D5 and Ditch [614] of

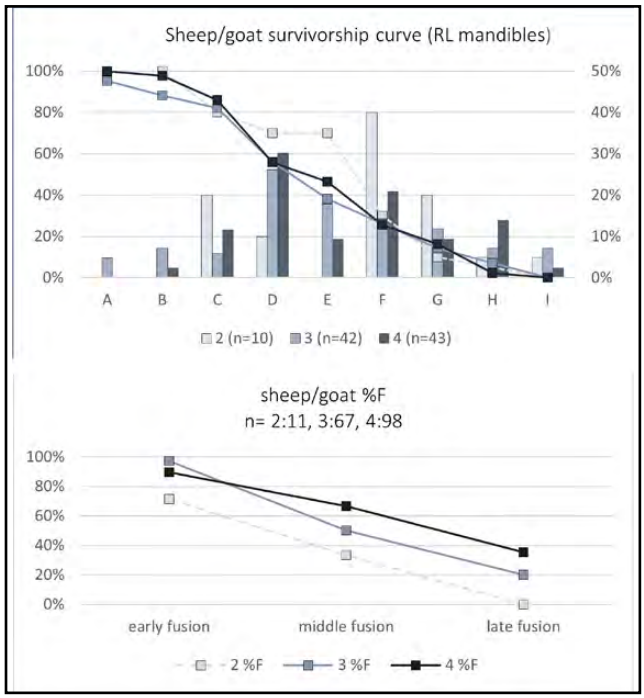

Figure 3.50. Animal bone: age of sheep/goat, Roman period (Periods 2–4).

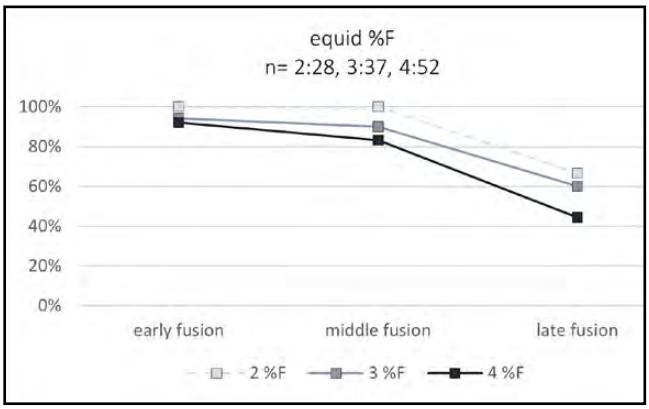

Figure 3.51. Animal bone: age of equids (Periods 2–4).

EN17) implied that most uncovered amphibians were victims of pitfalls.

Body parts distribution

Frequent cattle remains included all major skeletal elements, distributed consistently with the expected preservation bias, except for overrepresented scapulae and underrepresented upper cervical vertebrae (atlas and axis) (Figure 3.46 and Figure 3.59). All body areas of abundant sheep/goat were present, excluding small skeletal elements, which were unlikely to be picked by hand (Figure 3.47 and Figure 3.59). Considerably increased frequency of sheep mandibles may suggest that the secondary processing of the carcass occurred elsewhere. Most major skeletal areas of equid were identified among disarticulated bone, with the exception of humeri and skulls, the latter typically found as ABGs (Figure 3.48). Sporadic swine remains comprised mostly dense extremities (Figure 3.59).

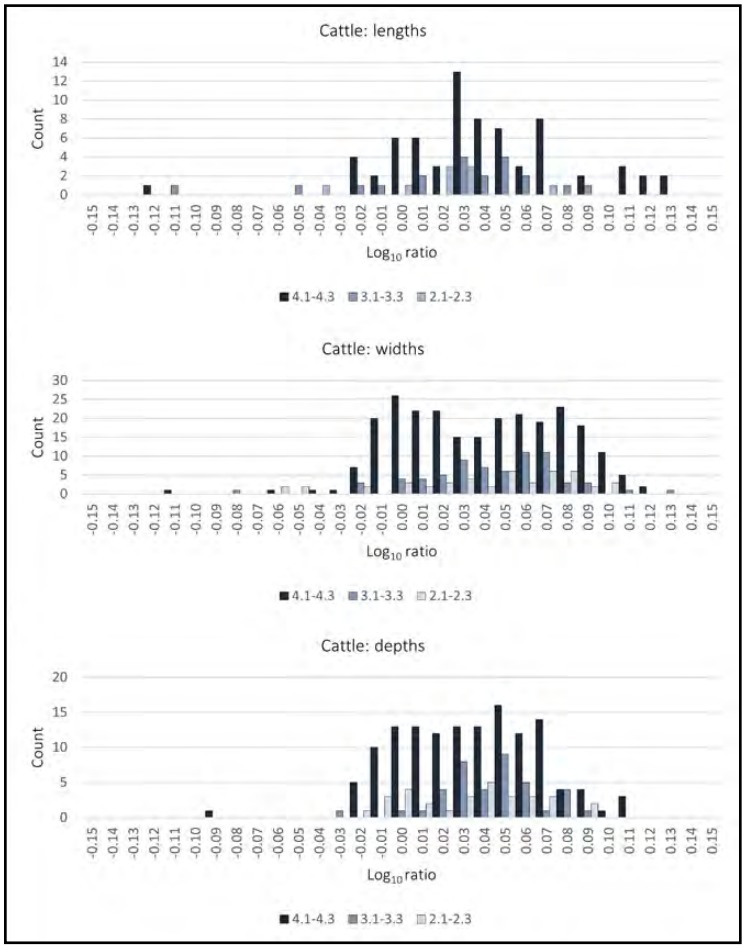

Figure 3.52. Animal bone, cattle: log ratio diagrams, pooled elements, Roman period (Periods 2–4).

Age

Mandibular tooth wear and eruption datasets allowed for a reliable reconstruction of mortality profiles for both bovids and sheep/goat (Figure 3.49 and Figure 3.50). Most cattle were killed as adults and elderly, with smaller amounts regularly killed prior to reaching the adulthood. Epiphyseal fusion pattern (Figure 3.49) suggested that cattle was killed at a slightly younger age than during the preceding Periods 2.1–2.3, which implied that alongside the main focus on traction and/or manure other products (meat and possibly milk) might have been of some, yet still limited, use. Most sheep/goat (60%) were killed prior to completion of their third year of life,

maintaining the primarily meat-focused sheep husbandry (Figure 3.50). The presence of neonatal bones confirmed local breeding of cattle and sheep in Periods 3.1–3.3. Adult and subadult pigs, including two sows/gilts were present. Equids were of varied age, including foals (n=1, <1y old, (1363)), yearlings (n=1, 1.5y), subadults (n=5, <3.5y,) and young and older adults (≤5y, 4y, 7.5y and 9–17y).

Body size

The remains of cattle and sheep were of a similar size individuals as those in the preceding Period 2 (Figure 3.52 and Figure 3.53) and no significant size difference between Roman phases were identified (Figure 3.60).

Equids

Five equid specimens, including two likely horses (ID592 (684) and ID1178 (1216)) from Period 3 allowed for calculation of the equine withers heights, which ranged from 1348.54mm to 1473.63mm, and averaged at 1414.85mm (Figure 3.61), falling into the higher end of the range of contemporary horses (Ameen *et al.* 2021).

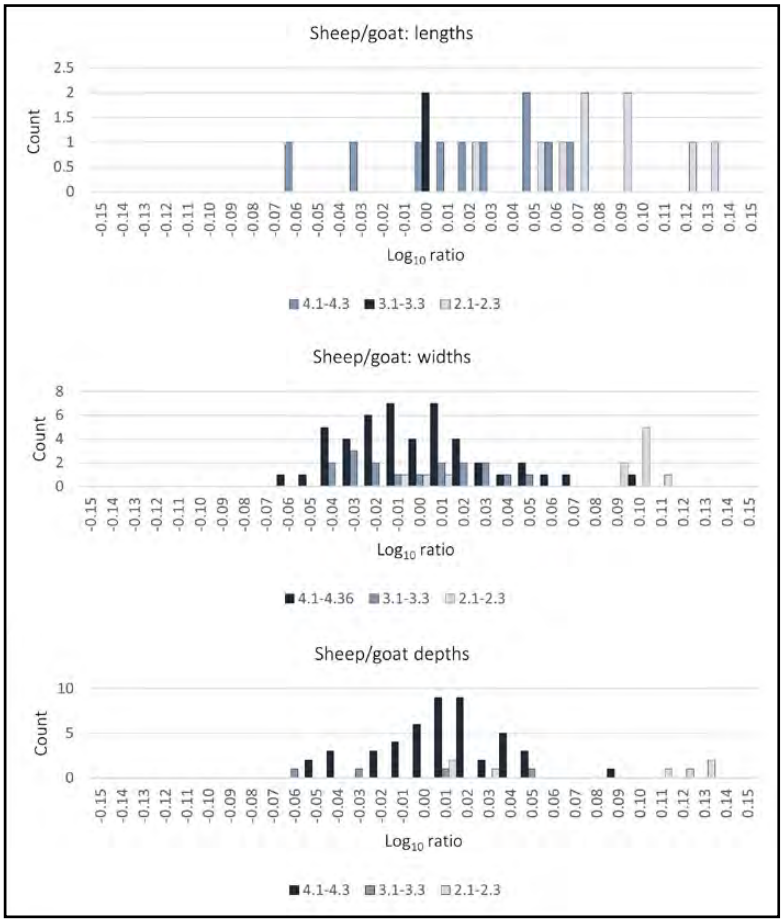

Figure 3.53. Animal bone, sheep/goat: log ratio diagrams, pooled elements, Roman period (Periods 2–4).

Dogs

Measurement of articulated dog ABG63 and three disarticulated specimens, indicated that canine withers heights ranged between 30.27cm to 58.04cm, and averaged at 48.68cm (Figure 3.55), indicating the predominance of large dogs with the occasional medium-size breed.

Pathology

Pathological changes of bone were limited to teeth of bovids and a single case of abnormality of cattle metapodia and attested the presence of oral, developmental, as well as degenerative diseases.

Dental diseases: periodontal disease (PD) was commonly observable on mandibles of adult (n=4) and elderly (n=2) cattle (485, 640, 803, 880, 1344 and 1362) (CPR=66.6%). Mandibles of sheep (330, 549, 640, 803 and 1149) of wide age-range (0.5y–1y up to 8–10y), including possibly as young as 0.5–1y old (?C, n=1), subadult (E, n=1.5, E/F, n=0.5), adult (G, n=2) and senile (I, n=1) individuals, were frequently affected by PD (CPR=50%), most commonly at P4/M1 position (640, 803, 1149) and sporadically at M1/M2 (640). Frequent occurrence of PD at P4/M1 position, is probably due to the discrepancy between the large size (mesio-distal dimension) of the deciduous fourth premolar (dP4) and the smaller size of the permanent fourth premolar (P4) it replaces (explanation first proposed by Levitan 1977). As a result, an unfilled periodontal pocket would serve as a trap for impacted food and would likely further lead to apical migration of pathogens and periodontal abscess formation. Further oral disorder included an abnormally uneven tooth wear, observed in sheep/goat (ID_{LT}511, (1441)), and an extreme wear of hypoconulid affecting the left third permanent molar of cattle (ID1509, (984)) (Figure 3.62), both occurring possibly due to malocclusion.

Developmental disorders: cattle metacarpal (ID1701 (1407)) showed a lytic lesion 11x9mm shallow on the proximal medial articulation facet of uncertain but possibly developmental origin.

Degenerative diseases: a proportion of cattle presented, likely a traction-related, marked asymmetry of condyles of metacarpals, but not of metatarsals (Figure 3.71).

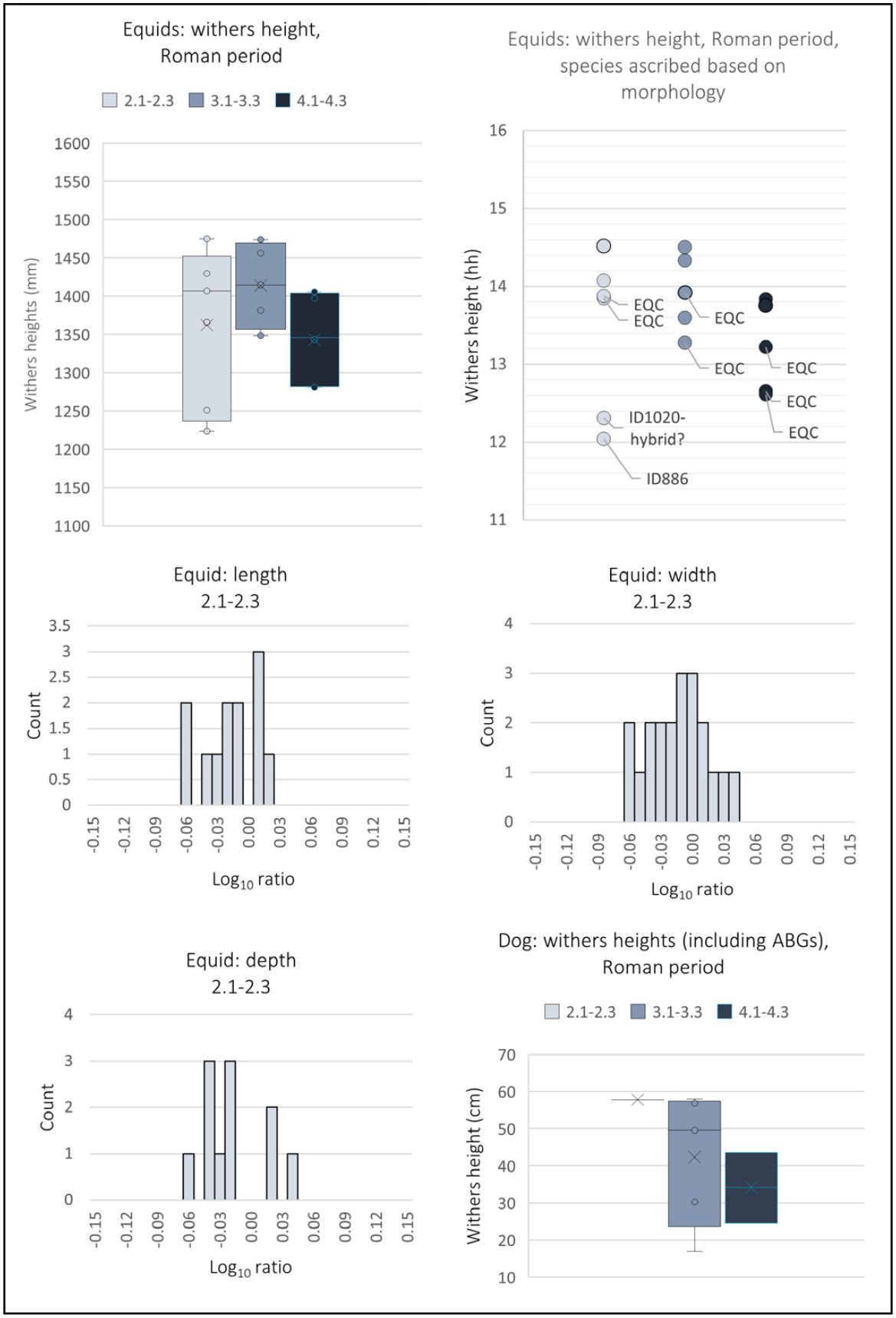

Figure 3.54. Animal bone: equid (EQC – horse) and dog withers heights Roman period (Periods 2–4), and measurements of equids, Periods 2.1-2.3.

Figure 3.55. Animal bone: possible infection of proximal shaft of right equid tibia (ID1127, (1159), 2.2) (scale=5cm- top, and 8cm – bottom with 1cm increments), Periods 2.1-2.3 (left: proximal view, right top: anterior, bottom: posterior).

Figure 3.56. Animal bone: naturally polled sheep skull of ABG1, Posthole [405], (406), ST6, Period 3.1 (scale=1cm).

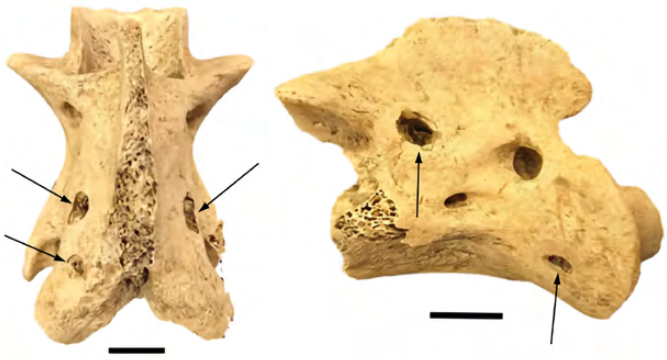

Figure 3.57. Animal bone: carnivore gnaw marks on cervical vertebra of sheep ABG72, Periods 3.1–3.3 (scale=1cm).

Figure 3.58. Animal bone: skinning marks of cattle skull ABG29, (684), Period 3.1 (scale =8cm with 1cm increments).

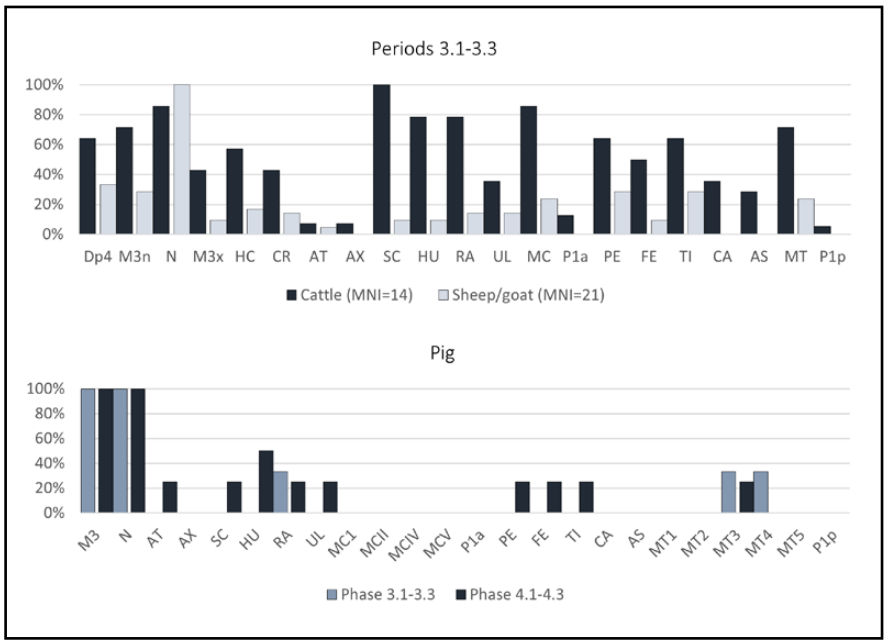

Figure 3.59. Animal bone: skeletal element distribution, derived from the MNI figures as a percentage of the highest MNI: cattle, sheep/goat, Period 3; and pig (Periods 3 and 4).

Table 3.65. Animal bone: Associated Bone Groups, Periods 3.1–3.3.

Period	Context	ABG no	Group	Feature type	Taxa	ABG completeness (%)	Age	ABG skeletal areas	Taphonomy marks, Pathology, Comments	Associated animal bone	Possible interpretation
3.1	406	1	ST6	PH	Sheep	21-40	Adult	Skull, R forelimb, L hindlimb	Naturally polled	ABG2	Burial (pregnancy or lambing mortality)/ foundation deposit
3.1	406	2	ST6	PH	Sheep/goat	21-40	Perinatal	R limbs	None	ABG1	Burial (pregnancy or lambing mortality)/ symbolic
3.1	719	30		D	Cattle	0-20	Adult	Skull	Red accretions	Sheep/goat	Butchery waste/ symbolic
3.1	828	44	EN13	D	Cattle	0-20	Adult	Skull	None	Sheep/goat (gnawed)	Butchery waste/ symbolic
3.1	852	47	D8	DT	Sheep	21-40	Adult	Skull, torso	Horned	None	Burial/ symbolic
3.1	982	55	EN11	D	Corvid (rook)	0-20	Adult	L wing	Rook	Equid, cattle, sheep/ goat, dog, micromammal (occasional butchery, sporadic carnivore gnawing)	Unintentional/ Processing waste
3.1	991	56	EN19	D	Equid	0-20	Adult	Torso	Late fusion - mixed	Cattle (gnawed)	Butchery waste/ symbolic
3.1	1032	73	D5	D	Amphibian	21-40	Non-adult	Limbs	None	Equid, cattle, sheep, domestic fowl, toad (gnawed)	Pitfall
3.1	1311	59	DIV3	D	Equid	0-20	<2y	R hindlimb	R hindlimb	Sheep/goat (gnawed)	Symbolic/ butchery waste
3.1	1149	33	EN11	D	Cattle	0-20	Subadult	Skull	Butchery: skinning cut on left frontal	Sheep, cattle, sheep/goat (sporadic butchery, and gnawing)	Butchery waste/ processing
3.1	1216	39	EN19	D	Cattle	0-20	Adult	Skull	Butchery: chopped of horncore	Horse, equid, cattle, sheep/ goat (sporadic butchery, some gnawing)	Butchery waste/ processing

Table 3.65. Animal bone: Associated Bone Groups, Periods 3.1–3.3, continued.

Period	Context	ABG no	Group	Feature type	Taxa	ABG completeness (%)	Age	ABG skeletal areas	Taphonomy marks, Pathology, Comments	Associated animal bone	Possible interpretation
3.1	1248	40	EN13	D	Sheep/goat	0-20	Adult	Skull	Butchery: sagittal chop through calvarium	Large mammal	Butchery waste/ processing
3.2	607	20	D30	D	Cattle	0-20	Adult	Skull	None	ABG21 (carnivore ganwing), sheep/goat	Butchery waste/ symbolic
3.2	607	21	D30	D	Cattle	0-20	Adult	Skull	Carnivore gnawing	ABG20, sheep/ goat	Butchery waste/ symbolic
3.2	684	25	EN17	D	Equid	0-20	3.5-4 y	Skull	Butchery: multiple shallow cuts left frontal; two cuts next to left OC (disarticulation, skinning)	ABG26, ABG29, horse, equid, cattle, sheep, sheep/goat, pig, bird (butchery, gnawing, sporadic charring)	Butchery waste/ processing
3.2	684	26	EN17	D	Cattle	0-20	Adult?	Skull	Butchery: two cuts next to right OC (disarticulation)	ABG25, ABG29, horse, equid, cattle, sheep, sheep/goat, pig, bird (butchery, gnawing, sporadic charring)	Butchery waste/ processing
3.2	684	29	EN17	D	Cattle	0-20	Adult?	Skull	Butchery: multiple multidirectional cutmarks on frontals and left horncore, and on OC (skinning, disarticulation)	ABG25, ABG26, horse, equid, cattle, sheep, sheep/goat, pig, bird (butchery, gnawing, sporadic charring)	Butchery waste/ processing

Table 3.65. Animal bone: Associated Bone Groups, Periods 3.1–3.3, continued.

Period	Context	ABG no	Group	Feature type	Taxa	ABG completeness (%)	Age	ABG skeletal areas	Taphonomy marks, Pathology, Comments	Associated animal bone	Possible interpretation
3.2	640	**28**	EN17	D	Sheep/goat	0-20	Adult	Torso	Likely same as ABG27	ABG27, equid, horned sheep, cattle, pig (butchery, frequent carnivore gnawing)	Food waste/ processing
3.2	1180	**34***	D3a	D	Dog	81-100	1y	Skull, torso, limbs	WH: c.50-56cm	Equid, cattle	Burial
3.2	1400	**60**	EN15	D	Sheep	21-40	Neonatal	Skull, torso, limbs	None	ABG71, ABG72, equid, cattle, pig, sheep/goat (sporadic gnawing)	Burial (pregnancy or lambing mortality)
3.2	1400	**71**	EN15	D	Sheep/goat	0-20	Perinatal	Forelimbs	None	ABG60, ABG72, equid, cattle, pig, sheep/goat (sporadic gnawing)	Burial (pregnancy or lambing mortality)
3.2	1400	**72**	EN15	D	Sheep/goat	0-20	Adult	Spine	Butchery: chop; Blue-green staining (highly likely copper) of a spine of a thoracic vertebra (spinuous process)	ABG60, ABG71, equid, cattle, pig, sheep/goat (sporadic gnawing)	Predatory behaviour/ butchery waste
3.3	561	**16**	DIV1	D	Cattle	0-20	Subadult/ adult	Skull	None	ABG17, dog, cattle (sporadic gnawing)	Butchery waste/ symbolic
3.3	561	**17**	DIV1	D	Cattle	0-20	Subadult?	Skull	None	ABG16, dog, cattle (sporadic gnawing)	Butchery waste/ symbolic
3.3	803	**43**	EN18	D	Cattle	0-20	Subadult	Skull	None	Cattle, sheep/ goat, dog (sporadic gnawing)	Butchery waste/ symbolic

Table 3.66. Animal bone: species distribution, Periods 3.1–3.3.

Common name	Scientific classification	NISP	MNI
Cattle	*Bos taurus*	409	14
Sheep/goat	*Ovis/Capra*	148	21
*Sheep	*Ovis aries*	*5	*10
Equid	*Equus* sp.	55	4
*Horse	*Equus caballus*	*5	*1
Pig	*Sus scrofa domesticus*	14	3
Dog/wolf	*Canis/Vulpes*	11	2
*Dog	*Canis familiaris*	*9	*2
Domestic fowl	*Gallus gallus domesticus*	3	1
Duck/goose	*Anatidae*	1	1
Corvids	*Corvidae*	1	1
Red/fallow deer	*Cervidae*	2	1
*Red deer	*Cervus elaphus*	*1	*1
Wood mouse	*Apodemus*	1	1
Frog/toad	*Anura*	16**	2
*Toad	*Bufo* sp.	*1	*1
Oyster	*Ostrea*	1	1

*- also included in higher order count, **- ?include ABGs

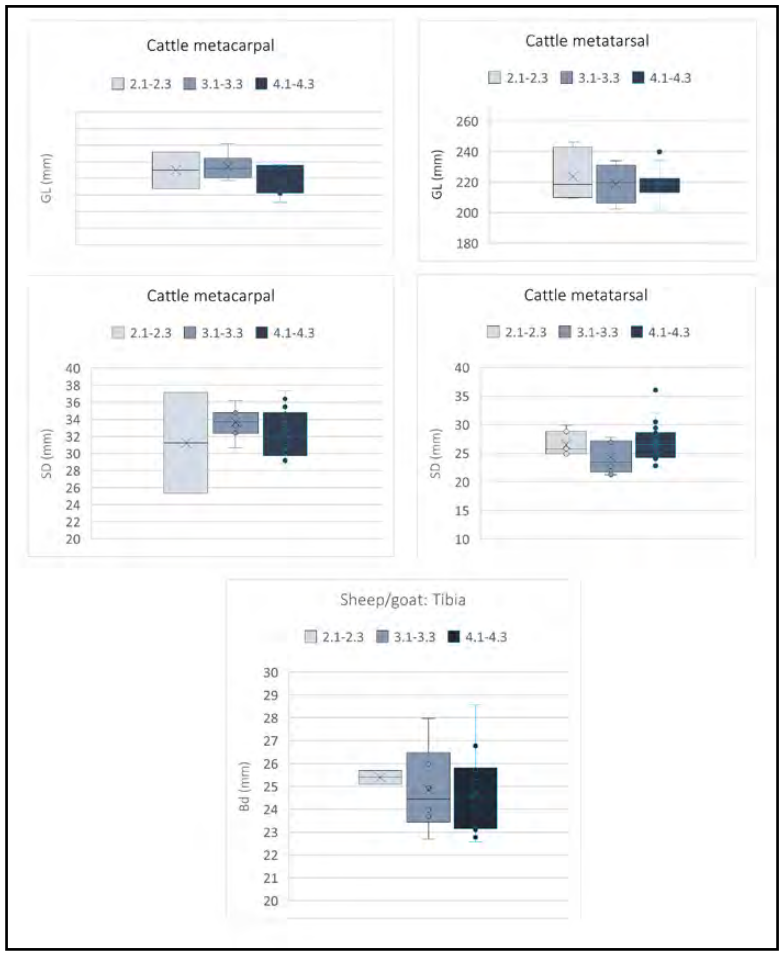

Figure 3.60. Animal bone: cattle and sheep measurements, Roman period (Periods 2–4).

Non-metric traits

A single case of a cattle's reduced hypoconulid of the left third permanent molar (243), may signal a limited introduction of a new cattle stock.

Period 4: ABG

Associated Bone Groups ascribed to Periods 4.1–4.3 comprised 37 well-preserved complete or partial skeletons, recovered from ditches (n=34.5) and pits (n=2.5) (Table 3.67). ABGs of domesticated taxa included skulls (n=13), torsos (n=3) and limbs (n=7) of cattle, in addition to partial skeletons (n=1), skulls (n=2), and limbs (n=2) of sheep/goats, as well as skulls (n=2) of equids. Dog remains included skulls (n=3), limbs (n=1) and partial skeletons (n=2). ABGs of wild taxa comprised a wing and legs of a rook (n=1) (Table 3.67).

Cattle left foot ABG62 and limbs ABG63, recovered from fill (279) of Ditch [278], derived from a minimum of two individuals. The degenerative changes of feet (Figure 3.63) and such of the hip socket (osteophytes) may be traction-related.

Partially preserved forelimbs and hindlimbs of cattle ABG69 showed evidence of hip osteoarthritis (OA) (eburnation, porosity, contour change and marginal osteophytes). Fairly complete large skeletal elements along with the absence of butchery marks may suggest that it represents a burial.

ABG58, comprising torso of cattle, was found within fill (1305) of Ditch [1304], in association with perinatal human skull, as well as fragments of skulls of cattle, sheep/goat, dog/wolf, and a bird bone. Cattle scapulae presented butchery and gnaw marks. Considering multiple elements of skull of varied taxa, including human and dog/wolf, ABG58 may represent remnants of feasting.

Period 4: disarticulated bone

Taphonomy

Among specimens identified to species/genus, cattle and sheep/goat and equid bones (NISP=79 or 8.9%) showed butchery marks, scored by large and fine blades, as well as cleavers (Figure 3.64 and Figure 3.65: right). Butchery techniques, apart from chops and cuts, included 'cut and break' (sheep/goat), knicks/scoops (equid tibia, cattle

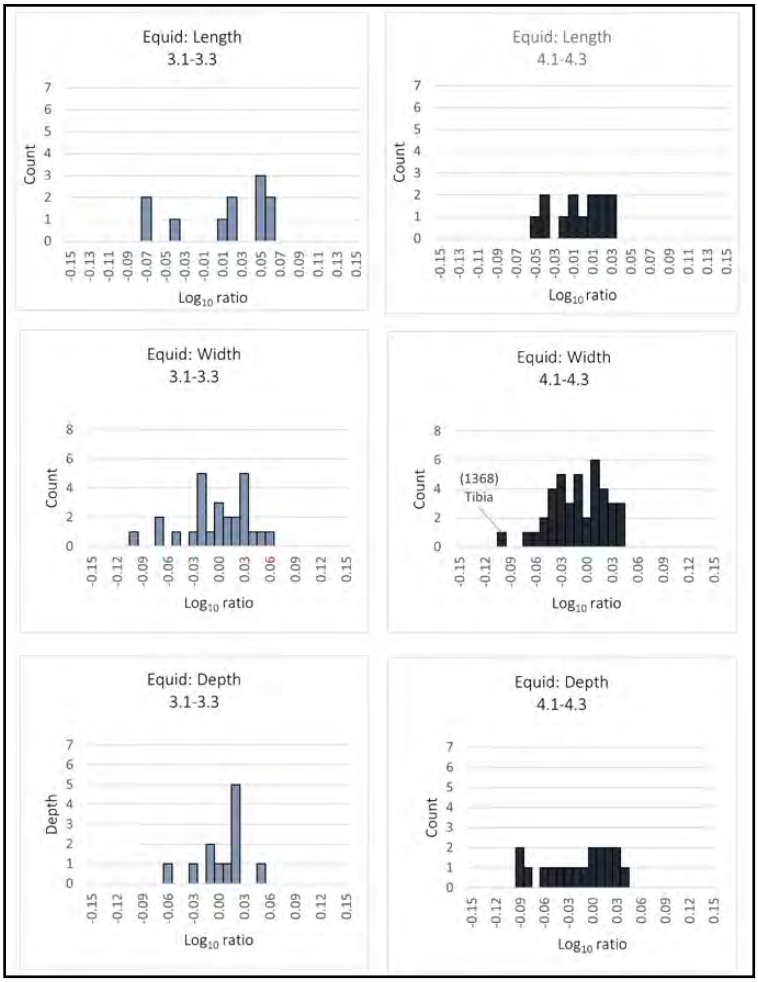

Figure 3.61. Animal bone: log scale index of equid measurements, pooled elements, Periods 3.1–3.3 and 4.1–4.3.

Figure 3.63. Animal bone: degenerative changes of foot, ABG62 (279), Period 4.1

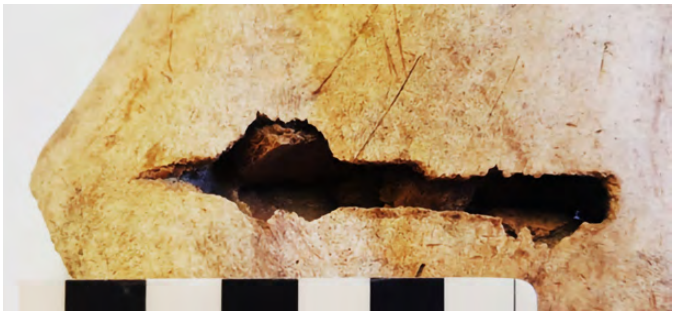

Figure 3.64. Animal bone: cutmarks on right cattle frontal bone of cattle (ID1263, (825), 4.2, L:68.25mm, W:6.25mm), showing shape of the blade, Periods 4.1–4.3 (scale=8cm with 1cm increments).

Figure 3.62. Animal bone: abnormal extreme wear of third molar of cattle (ID1509 (984)) suggestive of malocclusion, Period 3.2 (scale=1cm).

mandible and scapulae, large mammal femur) and piercing (cattle skull). Cutmarks attested defleshing (cattle, pig, horse and equid), skinning (cattle), disarticulation (cattle, sheep/goat) and tongue removal (cattle) of non-adult and/or adult animals (Table 3.63). Sagittal chop through large mammal vertebrae (Figure 3.65) (n=2) attested midline splitting of carcasses and professional butchery. A negligible proportion (0.7%) of all disarticulated mammal bone (excluding loose teeth) were partially or completely charred (0.3%) and partially/completely calcined (0.4%). Burnt specimens comprised mostly medium mammals. A large proportion of bone (identified to species/genus) showed gnaw marks (14.7%), including of carnivores (n=14) and likely sheep/goat (n=2) (fork-shaped marks) and pig (n=1). Bone affected comprised all main domesticates.

Species distribution

Of disarticulated bone, 36.0% (NISP=1083) were identified to species/genus level (Table 3.62). Among the main domesticates, cattle is by far the most frequently identified species (66.8%), followed by sheep/goat (21.8%), equid (8.6%) and pig (2.9%) (Table 3.62 and Table 3.63). Quantification of size-classed large and medium mammals (77.2% of LM) was consistent with the observed dominance of large over small bovids. Among the latter, sheep was most frequently

Figure 3.65. Animal bone: butchery marks. Left: mid-sagittal chop (dashed line, (668), scale=1cm); right: knicks/scoop marks (right: arrows, (390), scale=5cm), Periods 4.1–4.3.

identified, however the presence of goat was also noticed. Similarly, horse seemed to predominate among equids yet sporadic presence of possible donkey and hybrids was also noted. Carnivores identified included relatively frequent remains of dogs and a single feline bone.

Wild taxa were represented by worked antlers of red deer, a gnawed cervid metatarsus and a single element of a hare/rabbit. Skeletal remains of commensal species included isolated bones of rat/mouse recovered from ditches. Abundant amphibian bones derived from five contexts and may include partial skeletons (Ditch [627] of EN10 and Pit [1329]). Bird remains were sporadic, with a single femur identified as domestic fowl. Marine taxa present in Periods 4.1-4.3 comprised barnacles (pers. comm. Hannah Russ) and oysters.

Body parts distribution

Periods 4.1–4.3 provided a high NISP/MNI values for all main domesticates, allowing for a reliable skeletal elements distribution for large and small bovids and a tentative for equids. Cattle remains included all skeletal elements, distributed accordingly to the expected preservation bias (Figure 3.46 and Figure 3.66). All body areas of well-represented sheep/goat were present with exception of underrepresented scapulae and small skeletal elements, the latter likely due to size-bias in hand-collected material (Figure 3.44 and Figure 3.45). Equid was represented by most major skeletal areas except for of skulls recorded as ABGs, and absent scapulae (Figure 3.45). Sporadic swine remains comprised mostly dense extremities (Figure 3.59), yet, as with the previous Roman phase (Period 3), the confidence of swine skeletal elements distribution is low due to low NISP/MNI values.

Age

Mandibular tooth wear and eruption datasets allowed for a reliable reconstruction of mortality profiles for cattle and sheep in Periods 4.1–4.3 (Figure 3.49 and Figure 3.50). Similarly to previous phases, cattle were mostly killed as adults and elderly with a small proportion of individuals killed regularly up to and during the subadult age, implying traction/manure focus husbandry with auxiliary role of primary products (meat). Sheep/goat was killed most often between 1–2 years of life (30%), indicating meat focused pattern of sheep exploitation, yet individual of all ages were present. Epiphyseal fusion pattern differed from that of the preceding Periods 3.1–3.3 and from the mandibular data, perhaps implying more balanced exploitation of sheep, with the animals contributing also some milk, mutton and wool. Pig remains derived from neonatal (n=1), subadult (n=1) and adult individuals (n=4), including one boar and one sow. The presence of neonatal bones confirmed local breeding of cattle, sheep and pig in Period 4. Equine teeth derived from mostly from 3–6 years old individuals, occasional foal (n=1, 4m-1y4m, ID_B913 (1155) EQ) (Figure 3.67) as well as older beats (7–9 and over 11 years old). Epiphyseal fusion data confirmed the presence of horses younger than 3.5y (NISP=9), including foals/yearlings (≤1.5y (NISP=2) and <2y (NISP=4)), yet bones comprised mostly fused elements.

Body size

No significant differences in size of cattle and sheep from Periods 3.1–3.3 were identified (Figure 3.52, Figure 3.53 and Figure 3.59). A double peak seen in cattle log ratio values (Figure 3.52: Widths/Depths) may reflect sexual dimorphism of cattle and as such imply that bulls and cows were fairly equally represented. Scatterplot of

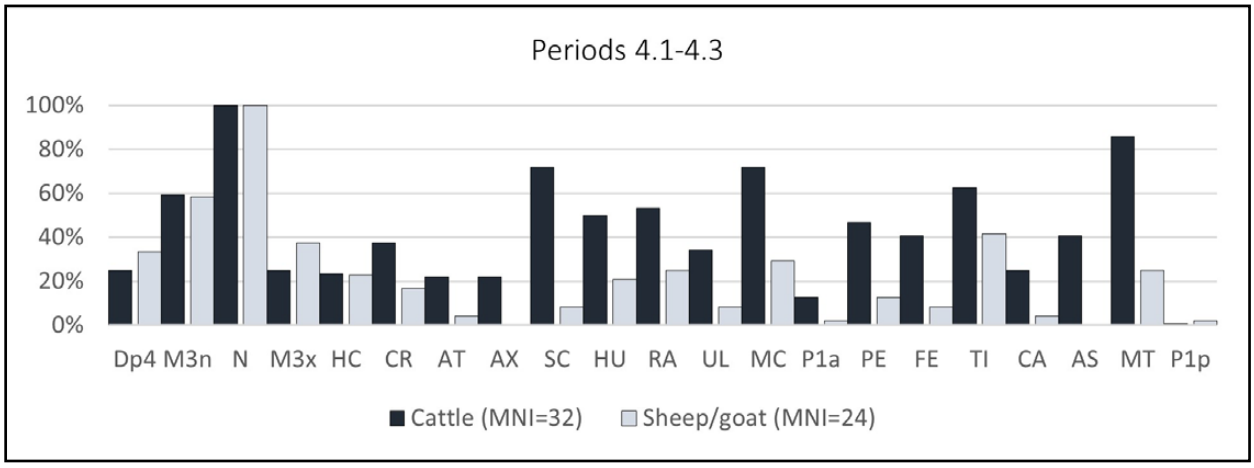

Figure 3.66. Animal bone: skeletal element distribution, derived from the MNI figures as a percentage of the highest MNI: cattle and sheep/goat, Period 4.

Figure 3.67. Animal bone: deciduous lower premolars of equid (IDB913), (1155), Period 4.2 (scale=8cm with 1cm increments).

measurements of cattle horncores (Figure 3.68) signal differences between Periods 2, 3 and 4, which may reflect demographic and/or breed dissimilarities.

Equids

Five equid specimens, including three likely horses (ID1342 (875), ID254 (325) and ID980 (1006)) from Period 4 allowed for calculation of withers heights, which ranged from 1280.81mm to 1405.90mm, and averaged at 1343.38mm (Figure 3.54). Specimens identified as possible horses fell into the lower half of the range for the LIA counterparts (Ameen *et al.* 2021).

Canids

Withers heights were estimated for one articulated dog (ABG6) and one disarticulated specimens, and ranged from 24.58cm to 43.67cm (Figure 3.54), attesting the presence of large and medium-size breeds.

Pathology

Pathological changes affected teeth and appendicular skeleton of bovids (sheep/cattle), the latter mostly affecting hindlimbs of cattle.

Dental diseases: periodontal disease (PD) was commonly affecting adult (n=5) and elderly (n=6) cattle mandibles (308, 345, 500, 741, 767, 772, 918, 972, 1155, 1330 and 1370) (CPR=55%), where occasionally was accentuated at P4/M1 (741 and 767) or M1/M2 (308) positions. Old adult and senile sheep mandibles (≥6y, wear stage H, n=2, and I, n=1) manifested PD (CPR= 20%), again, most frequently expressed at P4/M1 position (326, 344, 352 and 902) as a deep alveolar bone recession and widening associated with porosity and abnormal

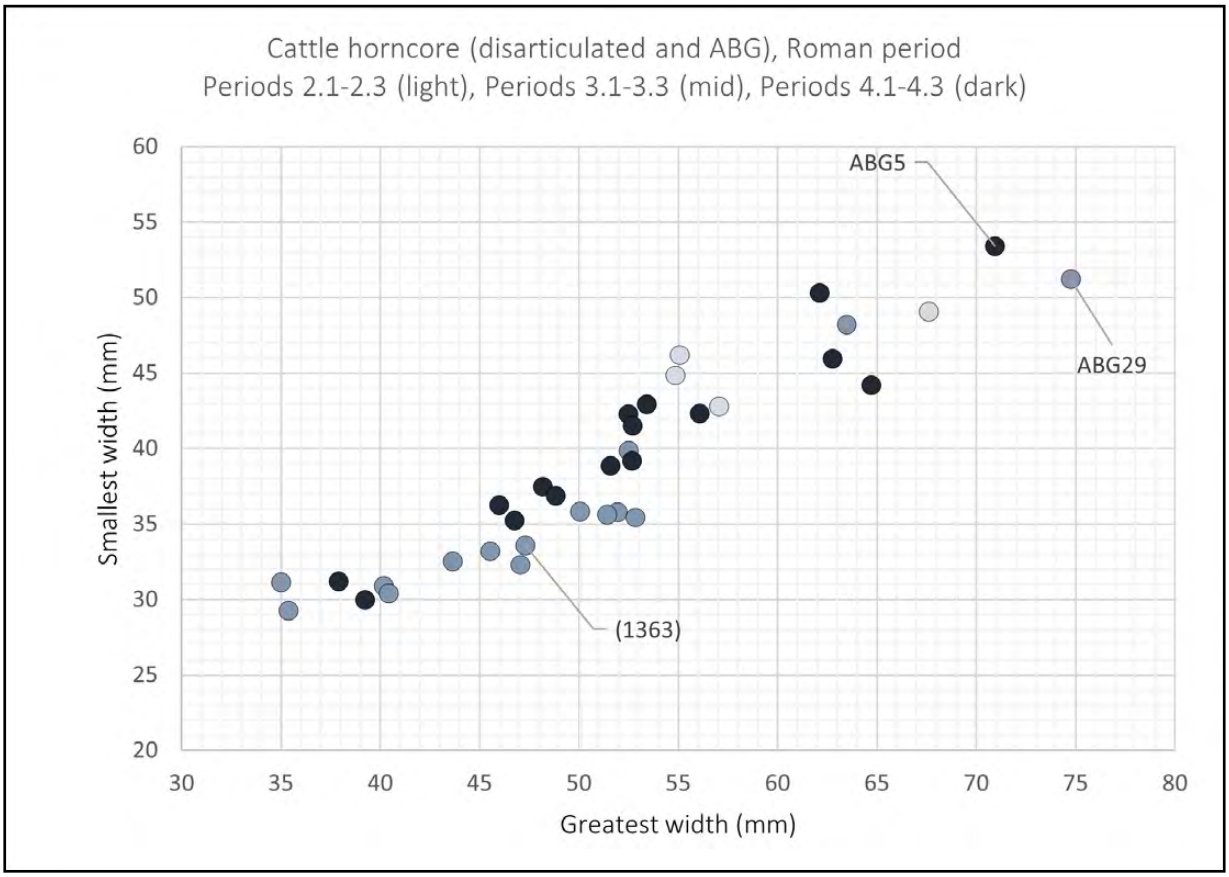

Figure 3.68. Animal bone: cattle horncore size, Roman period (Periods 2–4).

Table 3.67. Animal bone: Associated Bone Groups, Periods 4.1–4.3.

Period	Context	ABG no	Group	Feature type	Taxa	ABG completeness	Age	ABG skeletal areas	Taphonomy marks, Pathology, Comments	Associated animal bone	Possible interpretation
4.1	253	69	BD5	D	Cattle	21-40	Subadult/ adult	Limbs	OA of hip joint carnivore gnaw marks	LM, MM, M	Burial/ butchery waste
4.1	269	68	BD3	D	Dog/ wolf	0-20	Adult	Hindlimbs, torso	None	S, LM, MM	Burial, butchery waste
4.1	274	64	BD4	D	Cattle	0-20	Adult	Feet	None	ABG65, B, O	Butchery waste/ burial
4.1	274	65	BD4	D	Cattle	0-20	Adult	Skull	None	ABG64, B, O	Butchery waste/ burial
4.1	279	62	BD3	D	Cattle	0-20	Adult	L foot	Degenerative changes of feet	ABG63, B, LM, MM, sporadic butchery marks	Butchery waste/ burial
4.1	279	63?	BD3	D	Cattle	21-40	Adult?	Limbs	Pathology of hip sockets	ABG62, B, LM, MM, sporadic butchery marks	Butchery waste/ burial
4.1	308	7	ST1	D	Cattle	0-20	Non-adult	Foot	None	B, O, LM, M, butchery marks, mostly extremities	Primary butchery waste
4.1	537	15	EN2	D	Cattle	0-20	Non-adult	Skull	None	B, O, butchery marks, gnaw marks	Butchery waste
4.1	597	18	BD5	D	Cattle	0-20	Adult	Skull	None	ABG19	Special deposit/ butchery waste
4.1	597	19	BD5	D	Cattle	0-20	Adult	Skull	None	ABG18	Special deposit/ butchery waste
4.1	779	31	EN26	D	Cattle	0-20	Adult?	Skull	?Developmental frontal perforations	O	Special; deposit/ butchery waste
4.1	832	45	EN26	D	Cattle	0-20	Adult	Skull	None	B, EQ, O, LM, MM, butchery mark	Butchery waste
4.1	875	48	BD5	D	Equid	0-20	Adult?	Skull	None	ABG49, B, S, mostly extremities	Butchery waste/ special deposit
4.1	875	49	BD5	D	Sheep-goat	0-20	Adult?	Skull	Naturally polled	ABG48, B, S, mostly extremities	Butchery waste/ special deposit
4.1	891	66?	EN10	D	Corvid (rook)	0-20	Adult	Limbs	Rook	B, O	Butchery waste/ special deposit
4.1	1199	35	P1	P	Cattle	0-20	Adult?	Skull	None	B, O, S, EQ, gnaw marks	Butchery waste/ special deposit
4.2	263	74?	BD1	D	Dog/ wolf	0-20	Adult	Torso, R hindlimb	None	S(n), LM, M, butchery marks	Burial
4.2	478	3	EN3	D	Cattle	0-20	Adult?	Skull	None	O, RAN, gnaw marks	Butchery waste/ special deposit
4.2	483	6	BD2	P	Dog/ wolf	0-20	Adult?	Foot	None	B(cr), OCC, LM, MM	Butchery waste/ special deposit

Table 3.67. Animal bone: Associated Bone Groups, Periods 4.1–4.3, continued.

Period	Context	ABG no	Group	Feature type	Taxa	ABG completeness	Age	ABG skeletal areas	Taphonomy marks, Pathology, Comments	Associated animal bone	Possible interpretation
4.2	996	57?	EN7	D	Sheep-goat	0-20	Perinate	L limbs	Neonatal	B, EQ, O, OC=VA, LM, MM, gnaw marks, butchery marks	Discard of neonatal mortality
4.2	1298	42	0	P/D	Large mammal	0-20	Adult	Torso	None	B, EQ, OVA, Lmn, MM, gnaw marks	Butchery waste
4.2	1305	58	EN7	D	Cattle	0-20	Adult	Torso	Disarticulating and defleshing cutmarks	Human (perinate), skulls of B/O/CV, AVI; B scapulae with butchery marks and gnaw marks	Feasting remains associated with human burial/ butchery waste
4.3	115	61	EN4	D	Dog	0-20	Adult	Skull	None	LM, M	Special deposit
4.3	290	70	EN1	D	Sheep	0-20	Cranial sutures open	Skull	None	B, S, LM, gnaw marks, butchery marks	Butchery waste
4.3	314	8	EN1	D	Large mammal	0-20	Non-adult	Torso	None	B, AV, LM, MM, cooked	Butchery/ kitchen waste
4.3	350	9	EN1	D	Sheep/ goat	0-20	Perinatal?	Torso, forelimbs	Perinatal	B, LM, gnaw marks	Burial/discard of neonatal waste
4.3	325	10	EN4	D	Cattle	0-20	Adult?	Skull	None	LM, butchery marks	Special deposit/ butchery waste
4.3	338	11a	EN1	D	Cattle	0-20	Non adult	Hindlimb	None	ABG11b, ABG12, B, EQ, O, S, CAF, LM, MM, frequent butchery marks, gnaw marks	Butchery waste
4.3	338	11b	EN1	D	Cattle	0-20	Non-adult	Hindlimb	None	ABG11a, ABG12, B, EQ, O, S, CAF, LM, MM, frequent butchery marks, gnaw marks	Butchery waste
4.3	338	12	EN1	D	Dog	0-20	Adult	Skull	None	ABG11a, ABG11b, B, EQ, O, S, CAF, LM, MM, frequent butchery marks, gnaw marks	Butchery waste
4.3	489	4	EN1	D	Horse	0-20	4.5 y	Skull	PD and possible apical inflammation	ABG5 B, O, EQC, S, AV, LM, MM	Butchery waste
4.3	489	5	EN1	D	Cattle	0-20	Adult	Torso	Associated very large horncore	ABG4 B, O, EQC, S, AV, AMP LM, MM (butchery and gnaw marks)	Butchery waste
4.3	515	13	EN1	D	Cattle	0-20	Adult	Skull	Multiple cuts on horncores and frontal bone	ABG14, B, EQ, O, LM, mostly extremities, minimum three cattle skulls	Butchery waste
4.3	515	14	EN1	D	Cattle	0-20	Adult	Skull	None	ABG14, B, EQ, O, LM, mostly extremities, minimum three cattle skulls	Butchery waste

Table 3.67. Animal bone: Associated Bone Groups, Periods 4.1–4.3, continued.

Period	Context	ABG no	Group	Feature type	Taxa	ABG completeness	Age	ABG skeletal areas	Taphonomy marks, Pathology, Comments	Associated animal bone	Possible interpretation
4.3	620	22	EN9	D	Sheep/ goat	0-20	Adult	Hind leg	None	ABG23, B, O, neonatal B, butchery marks, frequent gnaw marks	Butchery waste
4.3	620	23	EN9	D	Cattle	0-20	Adult	Torso	Carnivore gnaw marks	ABG23, B, O, neonatal B, butchery marks, frequent gnaw marks	Butchery waste
4.3	636	24	EN9	D	Dog	0-20	Adult?	Skull	None	B, EQ, CAF, O, S, gnaw marks frequent, mostly extremities	Butchery waste
4.3	790	32	EN9	D	Cattle	0-20	Adult	Skull	Chop through occipital condyles and cuts above condyles	B, O, LM ,MM, c=butchery marks	Butchery waste

woven bone deposition (Figure 3.70). Abnormal uneven (IDLT152) and/or excessive (IDLT203) tooth wear was observed in swine mandibles (630, 705), in sheep/goat (IDLT511, (1441)) and cattle (129, ID1827, 4.3), signalling malocclusion or other aetiology Figure 3.70).

Non-specific inflammation: periostitis, an inflammation of periosteal bone manifested as new bone formation (NBF) was noted on multiple elements of varied taxa. NBF of mandible of swine (ID402 (338)) (NBF: 40x10mm buccally below P2-P4) (Figure 3.73) and cattle (342, ID198) were likely associated with a tooth growth. Further non-growth related and mostly active NBF affected cattle maxilla ((668) ID675) as well as on cattle astragalus (620), and the medial aspects of shafts of metacarpal and metatarsal (547).

Figure 3.69. Animal bone: periodontitis of left mandible at P4/M1 position, sheep (344) ID207, Period 4.1–4.3.

Figure 3.70. Animal bone: NBF on buccal aspect of swine mandible ID402 (338), Periods 4.1–4.3.

Developmental diseases: cortical defect observed in cattle affected articulation aspects of scapula (L glenoid) (3.5x3mm) (772), proximal metacarpal (767 and 507), proximal first phalanx (1133), and tarsal bone (*os centrotarsale*). Cortical defects are painless condition of developmental disorder of unknown aetiology.

Degenerative diseases: mediolateral broadening of distal metapodials, accompanied by a marked asymmetry of the distal condyles were observed in all phases (Periods 2–4). These sub-pathological changes are considered symptoms of draught work in cattle. To understand the asymmetry of metapodials, WCL and WCM measurements (widths of lateral and medial condyles) were expressed as a percentage of each other in order to quantify any potential asymmetry between the two condyles, following study of Elms Farm, Heybridge (Albarella and Johnstone 2015). The presence of markedly asymmetrical condyles was confirmed for all phases

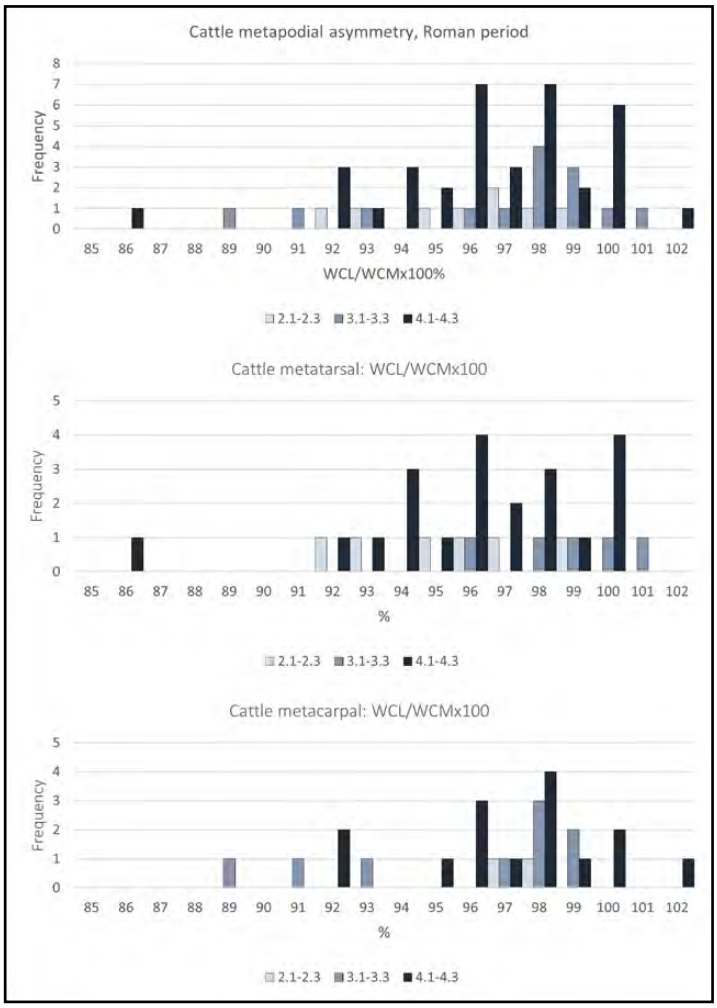

Figure 3.71. Animal bone, cattle: asymmetry of the distal condyles of the

Figure 3.72. Animal bone: degenerative changes of proximal metatarsal of cattle (1067), showing marginal osteophytes (arrows) and porosity, Periods 4.1-4.3. (344) ID207, Period 4.1–4.3.

Figure 3.73. Animal bone: osteoarthritis of femoral head of cattle ID1654 (1370), showing eburnation (circle), porosity and contour change (arrow), Period 4 (scale=1cm).

Table 3.68. Animal bone: species distribution in Periods 4.1–4.3.

Common name	Scientific classification	NISP	MNI
Cattle	*Bos taurus*	702	32
Sheep/goat	*Ovis/Capra*	229	24
*Sheep	*Ovis aries*	*31	*11
*Goat	*Capra hircus*	*1	*1
Equid	*Equus sp.*	90	5
*Horse	*Equus caballus*	*9	*3
*?Donkey	*?Equus asinus*	*2	*1
Pig	*Sus scrofa domesticus*	30	6
Dog/wolf	*Canis/Vulpes*	27	5
*Dog	*Canis familiaris*	*8	*3
Cat	*Felis catus*	1	1
Domestic fowl	*Gallus gallus domesticus*	1	1
Red/fallow deer	*Cervidae*	3	1
Red deer	*Cervus elaphus*	*2	*1
Hare/rabbit	*Lepus/Oryctolagus*	1	1
Oyster	*Ostrea*	1	1
Barnacle	*Cirripedia*	1	1
Mouse/rat	*Murinae*	1	1
Frog/toad	*Anura*	20**	1
*Frog	*Rana* sp.	*1	*1

**- also included in higher order count, **– likely include ABGs*

(median at 97%). When values were considered separately for forelimb and hindlimbs (Figure 3.70), Period 2 and Period 4, shown metatarsal values skewed to the left more than metacarpals values, whereas the opposite was true for Period 3. While the overall count of values is not high (n=36), these diachronic dissimilarities may signal a short-lived shift in cattle exploitation in Period 3.

Markedly pathological changes of the autopodia would have been likely symptomatic and these affected the skeletal elements of hindlimbs. Marginal osteophytes (MOP) and/or articular porosity (PO) were noted on proximal metatarsals (1067) (Figure 3.72) and femoral head (279: ?ABG63) of cattle, and enthesophytes of lateral condyle of proximal tibia of sheep/goat (620 of ABG22). Most advanced degenerative changes, specific to OA were noted on the left femoral head of cattle ((1370) and (991)) (Figure 3.73).

Metabolic diseases: among five observable disarticulated sheep horncores, one showed a marked depression on its medial side (326, ID156, 4.3). This disorder has been associated with nutritional and milking stress (Albarella 1995) and as such may signal difficulties, although not common, towards the end of Roman-period occupation of the site.

Period 5

Preservation

Disarticulated bone attributed to Period 5 derived from ditches (NISP:10) and a furrow (NISP:1) and cultivation channel (NISP=1). Bone was characterised by varied surface preservation and moderate fragmentation. Gnaw marks were identified on one fragment.

Species distribution

Identified species included cattle (NISP=3), pig (NISP=3), sheep/goat (NISP=1) and equid (NISP=1). The remaining bone were classified as large mammals (NISP=19), medium mammals (NISP=6), micromammal (NISP=1) and mammal (NISP=1). While pig seemed to play a very limited role during Roman and preceding periods, its economic value possibly increased during the subsequent Anglo-Saxon period. The very low bone count for Period 5 precluded any definitive conclusions, however the relatively high prevalence of pigs is consistent with the trend observed across Anglo-Saxon England, interpreted as the creation of entirely new settlements rather than the development of old ones (e.g. Albarella 2019,153-4).

Period 6

Preservation

Disarticulated bone attributed to Period 1 derived from fill of pit (NISP:1) and subsoil (NISP:1). Bone was characterised by good surface preservation and varied, mostly high fragmentation. No butchery, burning or gnaw marks were identified on any of the fragments.

Species distribution

Identified species included cattle (NISP=1), sheep/goat (NISP=1) and medium mammals (NISP=2).

Discussion and conclusions

Introduction

The analysis of animal bone assemblage from the Police Station site, Milton, Cambridgeshire, provided high resolution data for the late Roman period (mid-3rd to late 4th or ?5th centuries AD), allowing for characterisation of animal husbandry of that period. Overall good surface preservation and a relatively low fragmentation of bone allowed for a standard osteological, as well as metric and pathological analysis of the available material.

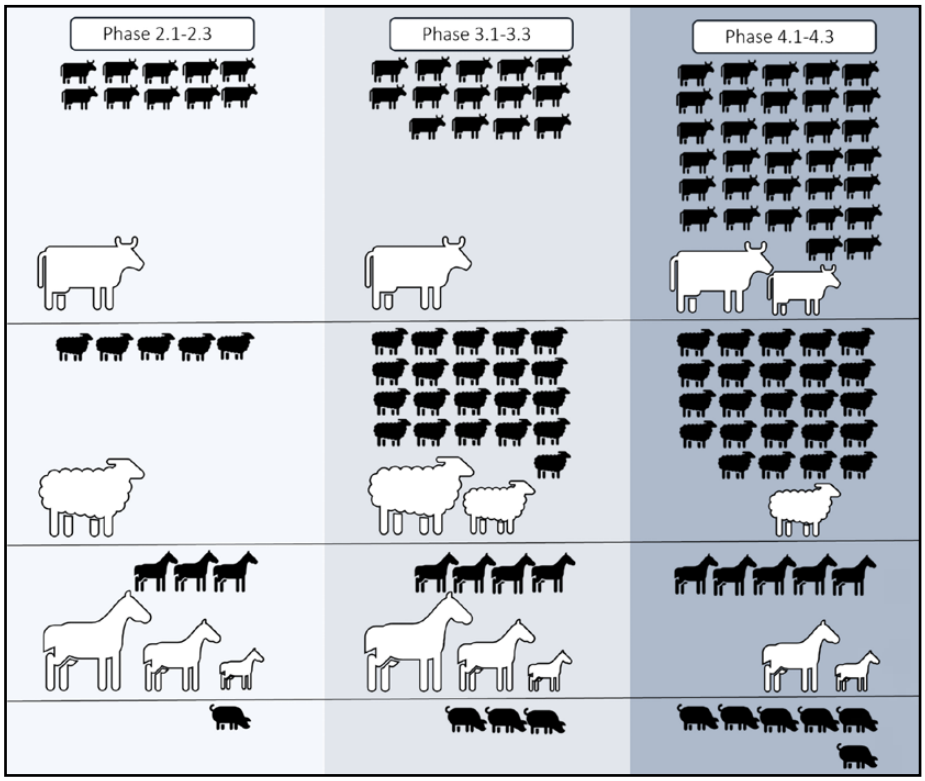

Figure 3.74. Minimum number of individuals (MNI – black) and body size (white) of main domesticates, Periods 2, 3 and 4.

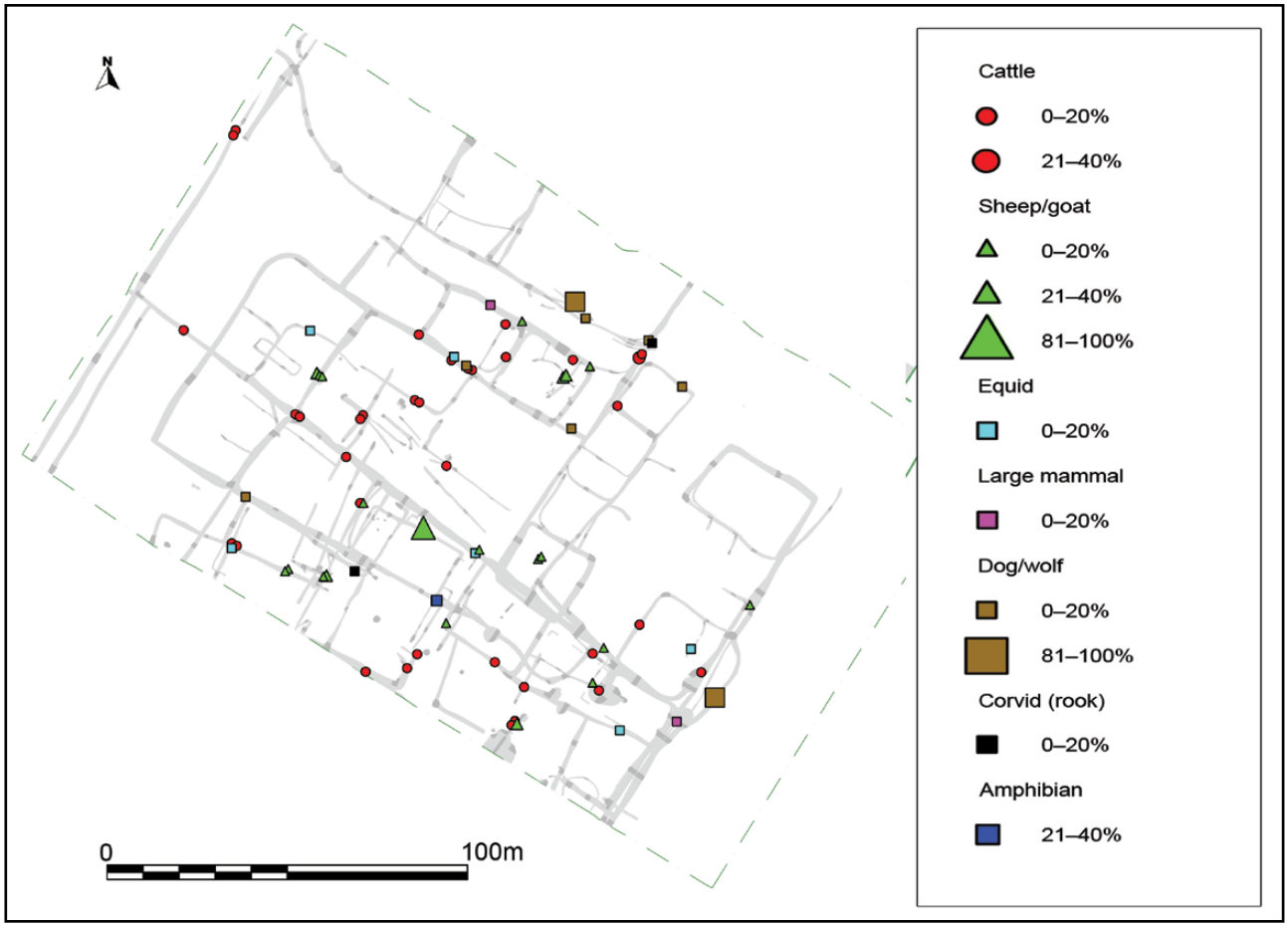

Figure 3.75. Distribution of animal bone groups from Roman contexts (Periods 2–4), by species and completeness.

Distribution of taxa

ABGs, interpreted here mostly as primary butchery waste, were non-randomly distributed across the site (Figure 3.75), indicating zonation of the associated activities. Predominant cattle ABGs are spread in two wide parallel zones in the southern and central/central-northern parts of the site, interspaced by a tighter cluster of articulating remains of sheep and horse, which further could be found in tighter clusters within the cattle zones. ABGs of dogs occupied peripheral locations, signaling dissimilar social status of this taxa compared to the livestock.

Husbandry

A three-fold increase in animal bone counts (NISP) in Period 3 (mid- to late 4th century AD) compared to Period 2 (mid-3rd to mid-4th centuries AD), followed by a further nearly two-fold increase in the subsequent Period 4 (late 4th to ?5th centuries AD), suggests significant increase of cattle and sheep numbers on the site during the later part of the late Roman period (Periods 3 and 4). Such intensification of animal husbandry would have reflected increased demands for primary and/or secondary animal products at a local, regional or national scale, addressing perhaps the changing needs of *Duroliponte* (Roman Cambridge) or the wider area.

Cattle

Cattle were by far the most dominant animal on site, with their remains consistently exceeding 60% of the main domesticated species (Figure 3.76). Period 2 included remains of improved cattle stock, which seem to be maintained, yet not improved further, during the subsequent Roman phases. Age profiles indicated local breeding (Periods 3 and 4) and a consistent focus on secondary products, such as traction and manure production. Exploitation of cattle as a draught animal was further corroborated by the observed pathological changes of feet and sub-pathological broadening and asymmetry of distal metapodia, and perhaps by smooth-lined discontinuations of cattle skulls (Period 2 and Period 4) possibly exacerbated by yoking to the back of the skull (Albarella 1995). The suspected intense use of draught cattle is consistent with the general trend observed on most Roman sites in the mid-2nd to mid-3rd centuries AD onwards (Albarella 2019). Interestingly, the nearby Milton Park and Ride site, dated to the Late Iron Age, showed very similar proportions of cattle, sheep and equids

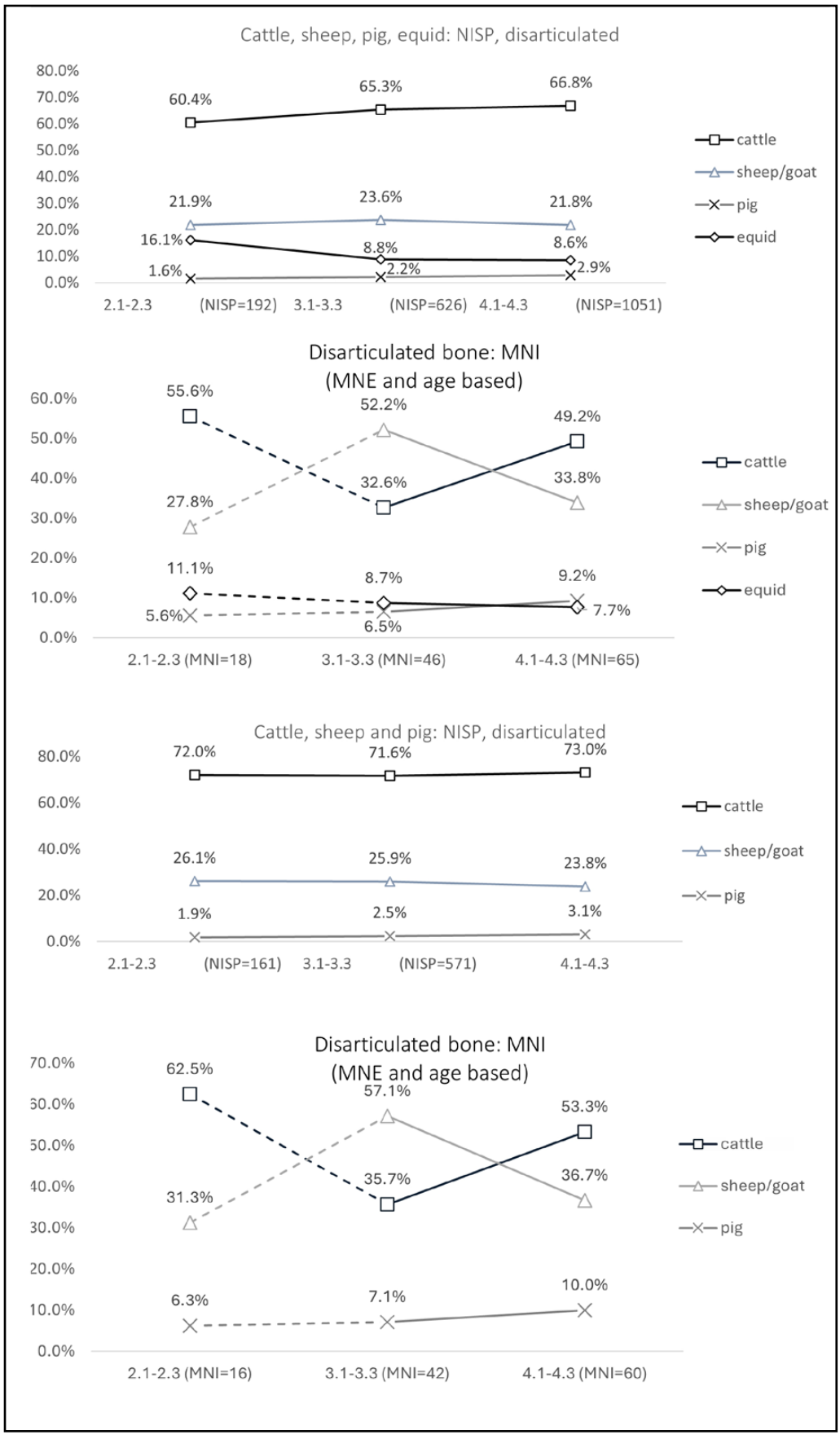

Figure 3.76. Animal bone: relative abundance of main domesticates (top: NISP-based; bottom: MNI-based) per phase, Roman period (Periods 2–4).

(Phillips 2010, 111: 61%, 18%, and 17%) to Period 2 of the Police Station site, suggesting maintained focus on large beasts. The sustained emphasis within this area on large bovids may be due to a higher susceptibility of sheep to water-borne disease, which would have surely posed a recurrent problem in low-lying Milton.

Multiple cattle and sheep were affected by periodontal disease (PD). Periodontitis is a multifactorial and polymicrobial infectious disease caused by a disruption of the interrelationship among the microorganisms inhabiting the oral cavity. PD damages the supporting tissue of the teeth and causes tooth loss and difficulty in rumination. The risk of developing PD increases with age and reduced quality (acidic, hardy) of forage, but has also been associated with individual immune response, among other factors. On site, over 30-point increase (25 to 66% for cattle, 16.7 to 50% for sheep) in recorded PD cases occurred at the time of the highest bovid herd expansion (Period 3) and therefore with an increased demand for pastures. This was followed by a 10/20 points (cattle/sheep) decrease of PD cases in the following Period 4, despite similar mortality profiles of all Roman phases. It may be of relevance that another form of a non-European modern periodontal disease has been associated with intensive forest clearance that introduces increased pathogenic load (after Grzeczka *et al.* 2023) and has been further noted to decline naturally over time after an initial outbreak (Döbereiner *et al.* 2004). Irrespective of the reason for the initially increased PD prevalence, it would be expected that a natural wasting and an earlier culling of affected individuals (practiced in modern herds) would have resulted in decreasing PD prevalence with time. Of note is also the changing age-range of the affected sheep, from a broad range including very young individuals (lambs to elderly) in Period 3, to a narrow range (adult and elderly) in Period 4.

Sheep

Relatively infrequent sheep/goat specimens (NISP consistently below 25%) (Figure 3.76), almost always identified as sheep where differentiation was possible, produced mortality profiles clearly distinct from those of large bovids, proving that cattle and sheep were reared for different purposes. Sheep was kept for a variety of reasons, but focused on prime meat throughout the Roman period, with possibly fluctuating supplementary role of milk, mutton, manure and wool. Sheep was bred on site, as attested by multiple perinatal remains representing natural lambing mortality, culling of lambs and/or a sacrifice. The mode of disposal of sheep remains seemed to gradually change from mostly articulated form, characterising Periods 2.1–2.3, towards mostly disarticulated form that was observed in Periods 4.1–4.3 (Table 3.62; Figure 3.77). Further possible evidence of changing perception of the animal was the initial (Period 2) association of sheep with a possible foundation offering deposit (ABG54 in beam slot (977)) signaling its distinct role, compared to other domesticates. In Period 2 sheep are represented by horned animals (ABG53, ABG54) and exclusively improved stock (Figure 3.53), whereas in subsequent phases there seem to be a wider variety of sizes, likely reflecting the presence of distinct breeds, which is further supported by co-occurring horned (ABG47) and naturally polled (ABG1) sheep in Period 3. Overall smaller dimensions of sheep remains confirmed for Period 3 and further in Period 4 (Figure 3.53), suggested decreased interest in stock improvement during that time. This co-occurred with oral (PD, discussed above) as well as cranial pathologies i.e. horncore depression, which signaled malnutrition and/or milking stress (Albarella 1995) in the last Period 4.

The NISP-based relative abundancies of cattle and sheep (disarticulated bone) indicated no significant change between phases. In contrast, the MNI-based relative abundancies (disarticulated bone) showed an increased proportion of sheep during Period 3 (Figure 3.76). The relative frequencies of MNIs calculated from pooled disarticulated bone and ABGs, confirmed this fluctuation thus implying a real, yet subtle, short-lived shift in small to large bovid species abundancies during Period 3. The change may reflect altered carcass processing practices (spatial and/or fragmentation shift), fluctuating stock numbers or product-focus shift. No change in sheep carcass processing was identified (Figure 3.77), but fragmentation of cattle bone in Period 3 was higher than in Period 2 and, to a lesser extent, than in Period 4, which inflated to some extent cattle NISP numbers in Period 3. Additionally, the dental wear of sheep in Period 3 (Figure 3.50), implied that the sheep was being killed at a slightly younger age than during Period 4.

The relative abundance of sheep extremities, particularly mandibles (Figure 3.77: denoted as 'N') suggests that most of the secondary processing of small bovids carcass might have occurred elsewhere, and perhaps signals export of meat on bone out of the site. In contrast, cattle seemed to have been thoroughly processed on site, to be either consumed locally or redistributed of the bone.

Pig remains occur at low quantities, which is consistent with Roman rural pattern, as high pork consumption is associated with military and urban sites, as well as a high-status dining. Increased abundance of pig remains in Period 4 (MNI-based), and the presence of adult and neonatal bones may suggest that pigs bred at site served to supply the said site types with livestock. The absence of articulated swine remains may be due to an

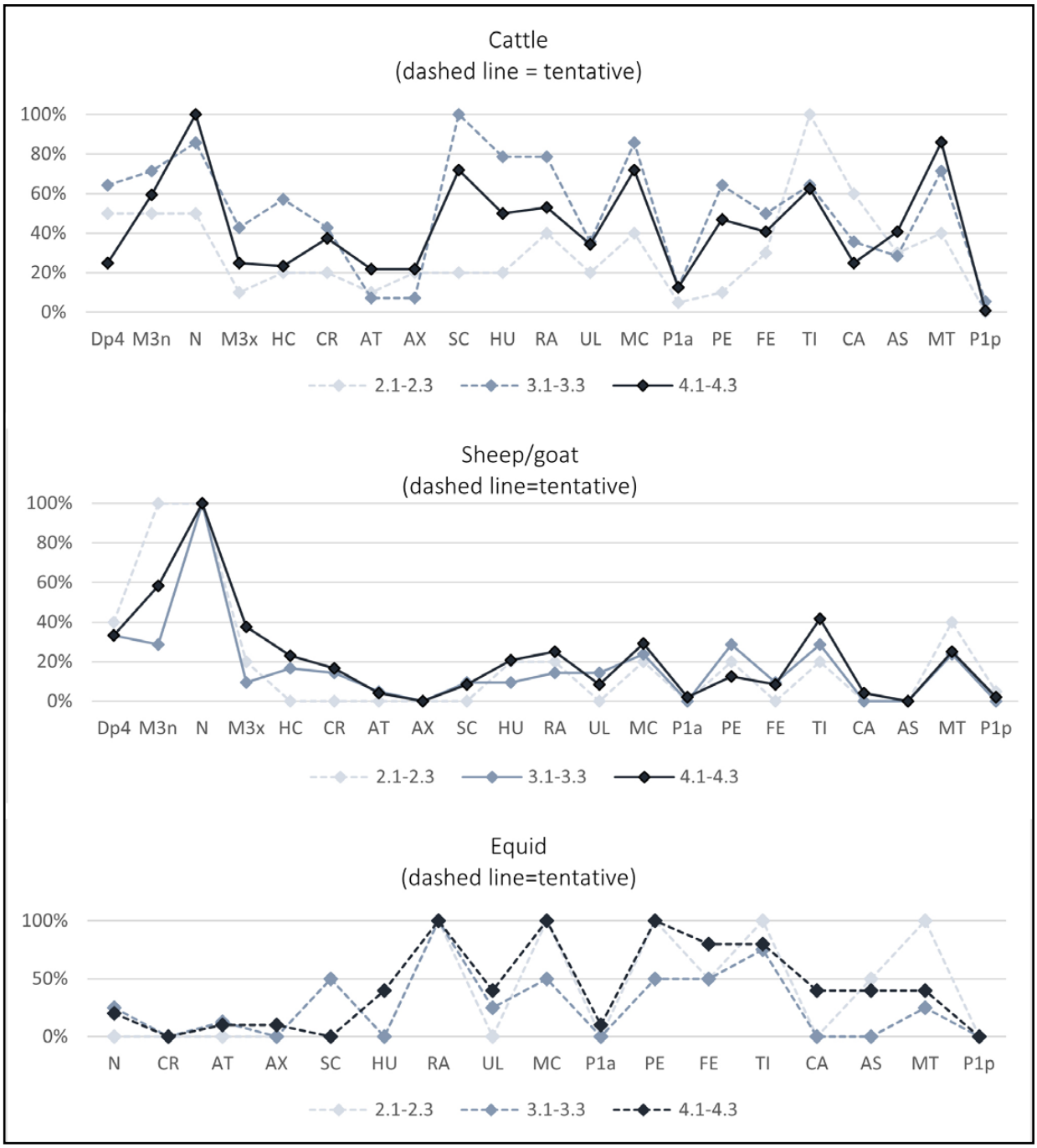

Figure 3.77. Animal bone skeletal elements distribution of main domesticates, Roman period (Periods 2–4).

exhaustive utilization of pork, considered a delicacy in Roman period.

While calculations of meat weight produced on site is unfeasible, as flawed with multiple and large assumptions, the relative proportion of excavated main domesticates clearly indicated that beef was the main meat produced on site. Based on the MNI estimates and the assumption that sheep meat yield constitutes roughly eleven per cent of the cattle's (Cool 2006, 81), the beef produced on site would exceed nineteen/six/fourteen-fold (Periods 2/3/4, respectively) the meat deriving from sheep. Similarly, assuming that a single pig produces three times more meat than sheep (*ibid.*), pork produced on site would amount to a roughly half (*c.*60/40%) of the weight of lamb/hogget/mutton in Period 2/3 respectively, and raised to over three quarters (*c.*80%) in Period 4. These are certainly only very rough estimates, based on the nineteenth-century military manual, which may not necessarily proximate the Roman processing patterns and are not corrected for the varying age profiles.

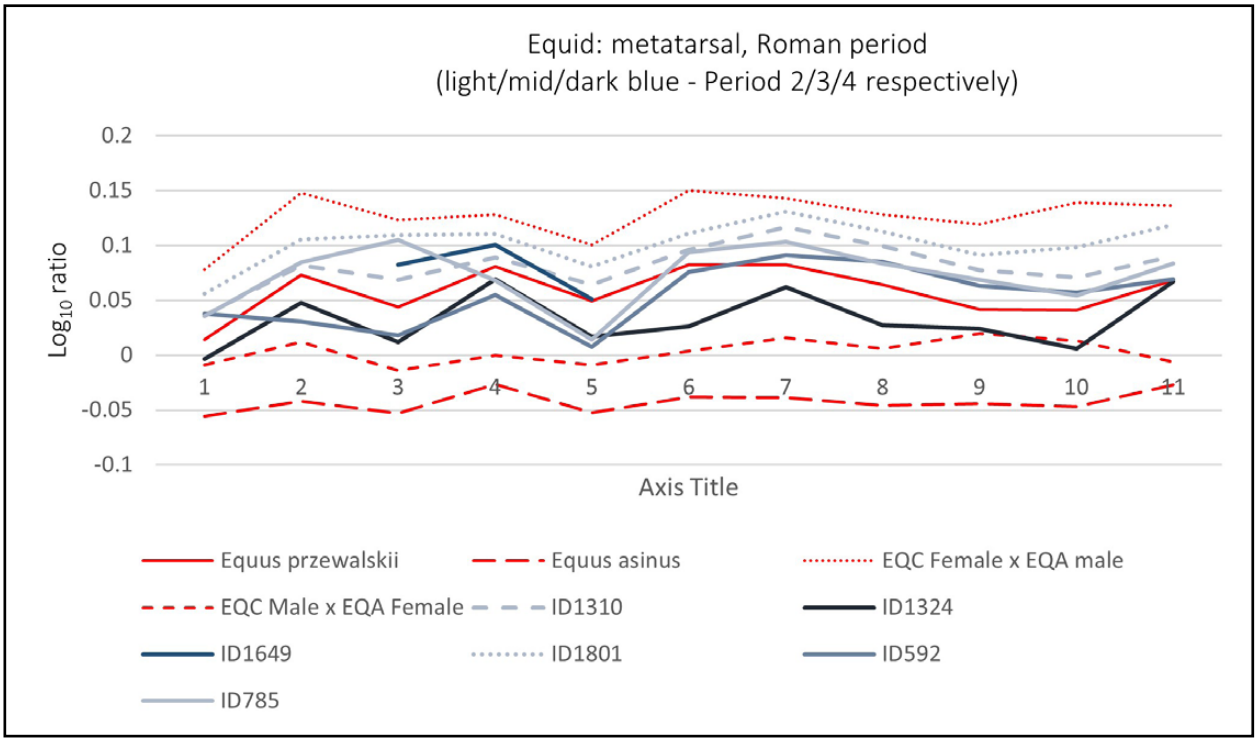

Figure 3.78. Animal bone: equid size (standard — Equus hemionus onager, after Eisenmann 1986).

Equids

Equine remains were relatively very frequent in Period 2 (16.1%) (average late Roman <5%, Albarella 2019, 125, Fig 6.12). In Period 3 equid frequencies halved (8.8%) and continued at this reduced level during the subsequent Period 4 (8.6%), yet still remaining high for the period (as above). Each Roman phase included horses of sizes falling into the higher end of the range established for the Late Roman period (Ameen *et al.* 2021, Figure 2), however, two significantly distinct groups were identified in Period 2 (Figure 3.54), strongly suggesting also the presence of short equids (ponies, donkeys and/or horse/donkey hybrids). While morphological differentiation of horse from mule/donkey is highly problematic, certain skeletal elements indeed presented features more commonly associated with hybrids. Wide range of dimensions of equid skeletal elements was attested through log-ratio scaling indices (Figure 3.54 and Figure 3.78) in both subsequent phases (Periods 3 and 4), corroborating inclusion of potential hybrids. Equids seem to have decreased in size towards the end of the Roman occupation (Period 4), confirming a trend identified countrywide (Johnstone 1996), and implying a decreased emphasis on stock improvement during that period.

The wide age range of equids along with the presence of foals is consistent withlocal breeding of horses in Periods 3 and 4, however, following Groot's criteria for identification of horse-breeding centres (Groot 2008, 81), the absence of evidence of neonatal horse and attested strong presence of young adults would argue against such conclusion. Horses would contribute to the farming economy by assisting with travel, transport as well as with moving cattle over long distances, as proposed previously for other lowland areas (after Smith *et al.* 2018, 91). Finally, horsemeat may have been sporadically consumed. Hippophagia was generally considered taboo in the Roman world, yet it has been previously suggested for some rural communities (e.g. Groot 2008, 19, after Smith *et al.* 2018, 91). The mode of discard of equid remains was similar to that of cattle. Equine bones were recovered mainly in a disarticulated state and occasionally showed defleshing and disarticulation marks (all three Roman phases), evidencing utilisation of equine carcass — either for human/animal consumption, or for glue/grease production in attempt to maximise the economic yield from horses. Further, the spatial distribution (Figure 3.75) and completeness (Figure 3.78) of equine ABGs differs from that of a dog, underlying reduced social status of the horse in comparison to the Iron Age.

Dogs

Dogs were the only domesticated species, whose preferred mode of discard in Periods 2 and 3 was burial (Table 3.62; Figure 3.79). In Period 4 canine remains were more frequently identified in a disarticulated state and partial ABGs, perhaps signaling a real shift in their treatment. Based on a very small sample, dog

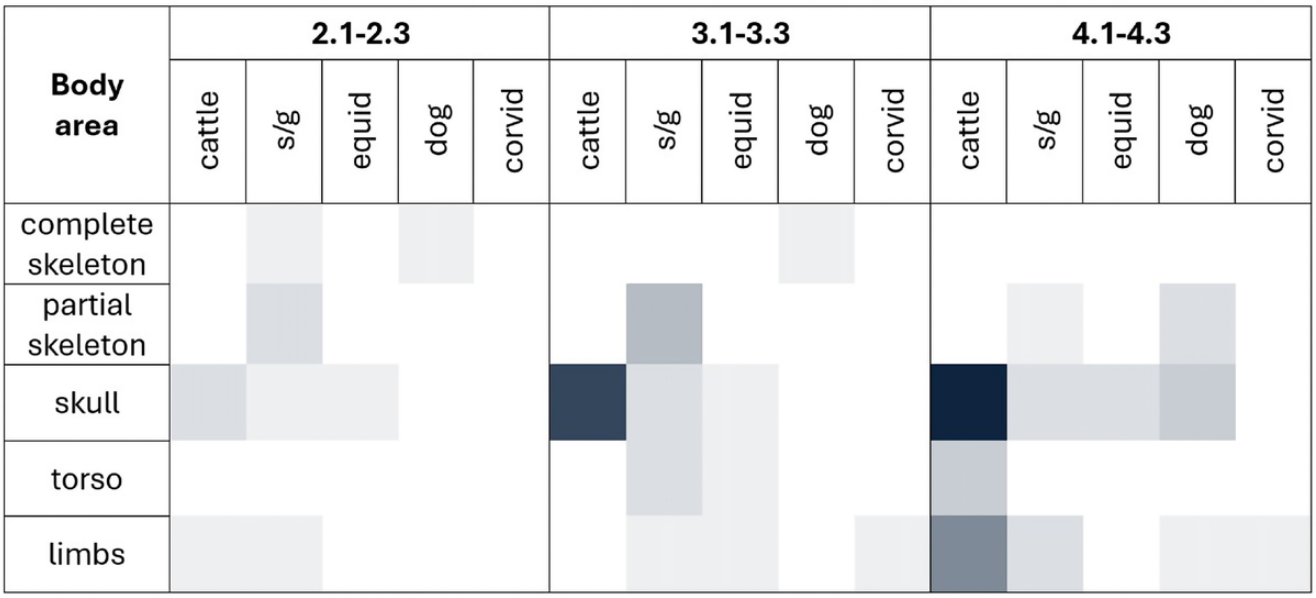

Figure 3.79. Animal bone: relative ABG distribution, Roman period (Periods 2–4).

sizes seemed to change with time, with average withers height decreasing from Period 2 (57cm), through Period 3 (48cm), to Period 4 (34cm), yet most frequently comprising large breeds (up to Golden retriever-size) and occasional small breeds (24.5cm, Corgie-size) in Periods 3 and 4, including stocky, small individuals with bowed legs. No evidence of antemortem or peri-mortem trauma was identified in any of the dog remains, corroborating their status as pets/status symbol (small breeds) or as working animals – a valuable asset to the local economy. The absence of evidence of processing of canine carcasses were consistent with distinct status of the species among the domesticated stock.

Birds

Among birds, sporadic disarticulated bones of domestic fowl, were found in Periods 3 and 4, and those of wild or domesticated duck-geese in Periods 1 and 2. One skeletal element of chicken was recovered in association with humerus of a human perinate ((1363), EN19), suggesting a possibly deliberate deposition, which aligns with evidence of a frequent association of chicken with funerary contexts during the later Roman period (Morris 2008, 196). Interpretation of this find was however clouded by further associated specimens that included a portion of skull (Figure 3.70: (1363)) and butchered elements of torso and forelimbs of cattle.

Wild species

Wild fauna was sporadic and included likely collected-once-shed red deer antlers, a single specimen of hare, suggestive sporadic poaching, corvids, anuran amphibians and marine species. Small proportion of pig and bird bones and the absence of consumption-related wild fauna remains argues against the occurrence of high-status dining on site.

Further species identified were frogs (Periods 2 and 4) and toad (Periods 2 and 3), possible victims of diurnal predators (Periods 2 and 4) and of pitfalls (Periods 3 and 4). While identification of anuran amphibians to species was not attempted, the most frequently identified common frog within the British Isles has predilection for open grass and herb cover, rather than woodland, which is consistent with the intensely managed enclosure of the excavated area.

A few specimens of oysters and barnacle were indicative of exploitation of marine oyster beds. Identified barnacle fragment, which would be brought in land stuck to other marine taxa, such as oysters, suggests that the explored oyster bed were naturally occurring rather than farmed (see Aitken, below).

Carcass processing

A negligible presence of heat-affected bone in Periods 3 and 4 signals either a preservation bias or that thermal processing took place outside the limits of the archaeological excavation. The low frequency of cutmarks identified attested skillful butchery practice with use of fine and large blades, as well as cleavers (Periods 3 and 4), and further hinted at specialised carcass processing, best evidenced in Period 4.

Marine shell

By Emma Aitken

Introduction and methodology

A total of 323 shell fragments, representing a minimum number of 231 individuals, were collected via hand excavation from the site of Cambridge Police Station, Milton. All shells have been tabulated by species and context in the previous assessment report (Aitken 2024a), with the results summarised here. The species and habitat information follow that of Barret and Younge (1958).

All marine shells that were hand collected by the on-site excavation team were hand washed and dried. Once dried, they were visually inspected for any marine shell diseases or conditions (epibionts) which were subsequently recorded, as shown in the tables in the assessment report. Full counts were made by identifying the left- and right-hand valves of each shell which then resulted in a final count of the minimum number of individuals (MNI) present.

Observations and results

Marine shells are found on many archaeological sites and they are an important factor in understanding the past environment as well as dietary trends of local people during that time. Species such as mussels (*Mytilus edulis*) and oyster (*Ostrea edulis*) are the two most common bivalve marine shell species that are typically found on archaeological sites (both coastal and inland) and make up the entire marine shell assemblage from this site. Mussels and oysters are a good source of much needed protein for the human diet and were also often used for making utensils, tools and jewellery and for tempering pottery (Lucey 2000; Serrand and Cummings 2014).

Bivalves consist primarily of two components where two valves articulate about a hinge to form a 'clam' (Campbell 2023). The dominant marine shell identified from this site is that of oyster (*Ostrea edulis*), a species that is commonly found in estuaries and on rocky shores. Of the 323 shell fragments identified on the site, 318 of them have been identified as oyster. All came from late Roman contexts (Periods 2–4), except for three oyster shell fragments from medieval/post-medieval features (Period 5). This shows that oyster was the dominant and preferred marine shell species for this site and suggests that it made up part of the local diet throughout the late Roman period.

Despite the moderately large number of oyster shells present, the number of epibionts (organisms which live on the shell or parasitise marine molluscs; Allen (ed.) 2017) recorded is quite low. Epibionts may leave traces on the shell such as single or multiple holes, calcareous tubes or scars. The most common epibiont present on the oyster shells is that of *Polydora ciliata*. *Polydora ciliata* is a burrowing polychaete that leaves behind small burrows/holes on the surface of the shell (Figure 3.80). The Period 4 assemblage contains a higher number of oyster shells that display *Polydora ciliata*. This might indicate that the shells were recovered from the same area where the parasites are prone to flourish. Another form of epibiont identified during this marine shell assessment is that of *Polyzoa*. Like *Polydora ciliata*, *Polyzoa* leaves a distinctive scar on the oyster shells that looks similar to lace in pattern (Figure 3.81). However, due to the sparsity of epibionts present on the shells, we were not able to determine where these oyster shells were recovered from. As this is an inland site, the shells would have been transported here from the coast and it is not possible to trace their origins.

Alongside the large number of oyster shells, only five fragments of mussel shells were identified. As the number of mussel shells is drastically smaller, it is likely that the mussels were accidentally brought in and harvested along with the oysters, and that the mussel shells did not augment the diet during the late Roman period.

Summary

Whilst there a large number of oyster shells were present on the site, their overall preservation is poor to moderate and many of the shells are laminating and fragile. There is potential to suggest that oysters were used to augment the local diet and were likely an additional source of protein for the inhabitants of the area during the late Roman period, as 94% of the oyster assemblage originates from deposits of this date (Periods 2–4). It seems that during the medieval/post-medieval period there was a decline in the use or consumption of marine shells as only three shells were dated to these periods and these may well have been residual, perhaps having derived from disturbance of underlying Roman layers.

Molluscan assemblage

By Emma Aitken

Introduction and methodology

A series of 180 environmental samples were processed from a variety of feature types and periods from the site of Cambridge Police Station, Milton. During the charred plant remains assessment and analysis of these samples the molluscan remains were identified

and quantified. Out of the 180 environmental samples, 176 contained terrestrial molluscs. The results have been tabulated in detail in the previous assessment report (Aitken 2024b) — the aim of which was to aid in our better understanding of the landscape history of the site — and are summarised here.

The bulk samples were processed following standard flotation procedures, using a 300µm sieve for the recovery of the flot and a 1mm sieve for the collection of the residue. Preliminary identifications of mollusc shells have been recorded following nomenclature according to Anderson (2005) and habitat preferences according to Kerney (1999) and Davies (2008) and are tabulated in the assessment report (Aitken 2024b).

Figure 3.80. Polydora ciliata on oyster shell.

Figure 3.81. Polyzoa on oyster shell.

Observations and results: introduction

The overall assessment results of the molluscan assemblages revealed that the environment in and around the main excavation area was made up of a well-established open landscape with areas of longer grass, shade and scrub. There is also evidence of fluctuations in the water table due to the presence of freshwater aquatic mollusc species. In nearly all of the samples the burrowing species Cecilioides acicula is present which suggests some post-depositional movement has taken place.

Period 1 (mid- to late Iron Age)

Three environmental samples were recovered from three features of the mid- to late Iron Age period (D13, pit [1203] and well [907]). All three samples contained the terrestrial open country species *Vallonia costata*. Other open country species were identified in these assemblages, including those of *Pupilla muscorum* and *Helicella itala*, whilst intermediate species *Trochulus hispidus* and *Cochlicopa* sp. (reflecting environments such as rough, long grass lands) were also recorded in the upper fill of well [907].

Period 2 (late Roman)

A total of 53 environmental samples from Period 2 (late Roman) contained terrestrial and aquatic molluscs. Thirty-seven of these samples came from ditches, with the two dominant species being that of the open country species *Vallonia costata* and *Helicella itala*. Sixteen of the ditch samples show that there were fluctuations in the water table due to the presence of *Anisus leucostoma* and *Galba truncatula*, which are species that favour areas of seasonal desiccation and flooding. All of the aforementioned ditches are located in the southern extents of the main excavation area, suggesting that there was more probability of seasonal flooding in this location. The remaining molluscan assemblages from Period 2 contain open country, intermediate, shade-loving and marsh species alongside a smaller number of freshwater aquatic species. The open country species include those of *Pupilla muscorum*, *Vertigo pygmaea*, *Vallonia costata*, *Vallonia excentrica*, and *Helicella itala*. The molluscs that represent intermediate

environments (such as rough, long grass lands) include those of *Trochulus hispidus*, *Cepaea* sp., and *Cochlicopa* sp., and the molluscs that are shade-loving species have been identified as *Carychium tridentatum*, *Aegopinella* sp., *Clausilla/Cochlodina* sp., and E*na/Merdigera* sp. The two marsh mollusc species *Succinea/Oxyloma* sp., and *Carychium minimum* were also identified in six of the environmental assemblages from Period 2.

Period 3 (late Roman)

Period 3 provided the largest assemblage of molluscan remains on the site. Here we see that over 87% of the molluscan remains from this period come from ditch features. Again, the open country species *Helicella itala* is present in approximately 85% of the assemblages, with all of the assemblages containing one or more species that prefer open country habitats. This suggests that the area was made up of a well-established open landscape with some small areas of longer grass, scrub, marsh land and some areas that were prone to seasonal flooding and desiccation. All of the aquatic mollusc species are those that are either associated with seasonal flooding or that favoured damp/wet ditches, including *Planorbis planorbis* which was present in sample 115 of ditch [808], EN12. *Planorbis planorbis* is found in all kinds of well-vegetated aquatic habitats, such as rivers, canals, ponds, but it is especially characteristic of shallow pools and swampy ditches that are liable to dry up in the summer (Kerney 1999). It is often found associate with *Galba truncatula* and *Anisus leucostoma* which were both present in sample 115.

Period 4 (late Roman)

The molluscan assemblages from Period 4 are very similar to those that were identified in Period 3, with all of the same open country, intermediate, shade-loving, marsh, and aquatic species present. Similarly with the assemblages from the Period 3, 38 out of the 49 samples from Period 4 all come from ditch features. Again, the dominant species are those that favour open country environments such as *Pupilla muscorum*, *Helicella itala* and *Vallonia* sp. (*Vallonia costata* and *Vallonia excentrica*).

Period 5 (medieval/post-medieval)

As we move into the medieval/post-medieval phase of the site we can see a slight increase in the number of different aquatic mollusc species. Throughout the earlier periods, the only aquatic species identified were *Anisus leucostoma*, *Galba truncatula*, and *Planorbis planorbis* whereas in sample 45 of ditch 382 the aquatic species *Bathyomphalus contortus* was identified. This species is often found in thick growths of weed in bright, running water, but it can also be found in stagnant drains/ditches (Kerney 1999). Sample 109 of ditch 780 contained several *Pisidium* type mollusc shells. *Pisidium* type mollusc shells are found across Britain and are found in most aquatic environments. A small number of the moving water species *Bithynia* sp. was identified in sample 47 of pit 380. These three assemblages are located from the centre of the site (near EN1) towards the southern edge (D40 and F1). This suggests that there was some moving water that ran down the site and towards the pond (F1). This may also explain the abundance of molluscs that are reflective of seasonal flooding and desiccation.

Discussion and conclusion

The molluscan assemblage from the Cambridge Police Station site is reflective of a well-established open landscape with areas of longer grass, scrub, marsh and waterlogging. The majority of species identified during this assessment are the typical species you would find associated with ditches and pits. What is noteworthy is that no molluscs were identified that would be indicative of woodland or areas of fast-moving water. The terrestrial molluscan assemblages throughout the late Roman and medieval/post-medieval periods change very little and are quite consistent throughout. In the earlier periods we see that there were some fluctuations in the water table due to the presence of *Anisus leucostoma* and *Galba truncatula.* From the medieval/post-medieval period onwards we then start to see a slight increase in the diversity of aquatic mollusc species present, such as *Bathyonphalus contortus*, *Bithynia* sp., and *Pisidium* type. All three of these aquatic species are often found in stagnant ditches or slow-moving water (Kerney 1999) and as these are located towards the southern edge of the site near the pond, their presence suggests during the medieval/post-medieval periods that there were some fluctuations in the water table that allowed a build-up of water to occur.

Charred plant remains and charcoal

By Emma Aitken

Introduction

A total of 180 environmental samples were initially assessed from an archaeological excavation that was carried out from March 2023 to September 2023 (Aitken 2024c). Of these 180 samples, 25 were selected for further detailed analysis of the charred plant remains and two were selected for charcoal analysis. The samples selected for analysis came from features dated to the late Iron Age (Period 1) and late Roman period (Periods 2–4) and were thought to have the highest potential to help address some of the project aims. In terms of charred plant remains, samples were selected

Table 3.69. Plant remains analysis: Period 1, late Iron Age.

Group No.		**ST4**
Feature type		**Ditch**
Cut		**1114**
Context		**1115**
Sample		**155**
Flot size (ml)		**21**
%Roots		**60**
Preservation level		**grain=p-m; chaff=p-m; seed=p-m**
Cereals	***Common name***	
Hordeum vulgare L. *sl* (grain)	barley	13
Triticum diccocum/spelta (grains)	hulled wheat	4
Triticum diccocum/spelta (glumes)		27
Triticum spelta (grains)	spelt wheat	6
Triticum spelta (glumes)		10
Triticum sp. (grain)	wheat	14
Cereal indet. (grains)	cereal	18
Cereal frags (spikelet forks)		3
Cereal frags (rachis frags)		2
Cereal frags (coleoptile)		2
Other food sources	***Common name***	
Vicia faba/Pisum sativum L.	celtic bean/pea	1
Avena sp. (grain)	oat (cultivated)	3
Other species	***Common name***	
Rumex crispus L. Type	curled dock	2
Vicia L./*Lathyrus* sp. L.	vetch/wild pea	2
Plantago lanceolota	ribwort plantain	1
Odontities vernus	red bartsia	1
Lolium/Festuca sp. L.	rye-grass/fescue	5
Lolium sp.	rye-grass	1
Festuca sp.	fescue	1
Avena L./*Bromus* L. sp.	oat/brome grass	4
Avena sp. (wild)	oat grass	5
Bromus sp. L.	brome grass	10

for analysis if it seemed likely that those assemblages would provide any useful information about the use of the features, the processing and consumption of plant foods, and the nature of the local environment. Two samples were selected for charcoal analysis, which it was hoped would aid our understanding of the use and exploitation of the local woodland resources for domestic fuel in the Roman period and also assist in addressing some of the research aims outlined in the WSI (Lavender 2023; Appendix IV) from the East of England Research Framework. These included: LIA-Rom 06: How can we increase our understanding of the Iron Age and Roman environment?; LIA-Rom 13: How can we increase our understanding of Late Iron Age and Roman farmsteads?; and LIA-Rom 14: How can we improve the environmental samples of late Iron Age and Roman farmsteads? (Research Framework Network 2019; Medlycott 2011; Evans 2019).

All identifiable charred plant remains from these samples were examined using a stereo-binocular microscope. The identifications follow the nomenclature of Stace (2019) for wild plants and Zohary *et al.* (2012) for cereals (Table 3.69–Table 3.72). For the charcoal analysis, charcoal fragments larger than 2mm in size were fractured to obtain clean sections on the tangential, transverse, and radial planes. Wood species identification was then undertaken using a high power GXML3030 binocular microscope (up to 600x) and by comparison with identification keys (Schweingruber 1990; Hather 2000) as well as comparison with a modern reference collection. These results are tabulated in Table 3.73.

The charred material was counted and recorded to exact numbers. The preservation of the charred plant remains is variable is and noted in Table 3.69–Table 3.72 using the following key: p = poor, m = moderate, and g = good. Where there was an abundance of such remains, the information provided has the potential to increase current understanding of cereal choices and agricultural regimes.

Observations and results: introduction

Analysis showed that compared to the number of cereal grains identified and recovered from the Iron Age (Period 1), the number of cereal grains identified from the late Roman period (Periods 2–4),) are higher in quantity, particularly in Period 2. This suggests that there was a change in the local crop processing regimes from the Iron Age to late Roman. The dominant cereal species identified was that of hulled wheat (emmer or spelt (*Triticum dicoccum/spelta*)) with barley (*Hordeum vulgare*) grains also being noted in large quantities but not in as high a volume as the hulled wheat grains. Hulled wheat was the preferred cereal species during the Iron Age and Roman periods. Alongside the cereal grains, there were very large numbers of hulled wheat glume fragments. This abundance of glume fragments suggests evidence of late-stage crop processing activities taking place throughout Period 2 and into Periods 3 and 4. From Periods 3 and 4, evidence relating to crop processing activities was seen in smaller volumes when compared to Period 2. Much of the late-stage crop processing evidence is found in the southern

extent of the site and can be linked with several quern stones that were hand-collected from the site (see Greasley, above).

Period 1 (mid- to late Iron Age)

Sample 155 from ditch 1114 (ST4; Period 1) was the only sample from the late Iron Age with enough charred plant remains for analysis (Table 3.69). It produced barley grains alongside hulled wheat glumes. Hulled wheat and barley were the two preferred cereal grains during this period. Ditch 1114 is in Structure 4 (ST4) which is situated in the southernmost edge of the site; it is possible that there is further archaeology relating to the late Iron Age period south of the site, outside the scope of this excavation. The number of hulled wheat glumes present in the assemblage suggests that some small-scale localised crop processing activities were taking place within Structure 4 during this period. The weed seeds identified are those that are often found alongside late-stage crop processing waste material — these are seeds collected up during the harvesting of the cereal grains and then cleaned out before the grains are used for food production. As these larger headed weed seeds are present, this assemblage is reflective of the stage after the first sieving process has taken place, when contaminants coarser than grain are removed, and what is left in the assemblage are grains, occasional rachis/awn fragments and weed seeds (Hillman 1984). The definitions of crop processing have also been expanded on by Wilkinson and Stevens, who broke down crop processing into eight stages, with the remains from the Roman period meeting the criteria for the sixth and seventh stages: medium-coarse sieving and fine-sieving of the remaining material (Wilkinson and Stevens 2003).

Period 2 (late Roman)

There is evidence for significant crop production in Period 2 (Table 3.70), representing a clear increase compared to Period 1. A total of 11 environmental samples were analysed from this period, with several samples producing large quantities of hulled wheat and spelt wheat (Triticum spelta) glumes. Sample 122 from ditch 837 (Enclosure 21; Period 2.2) produced an approximate count of 3048 hulled wheat glumes, 232 spelt wheat glumes, and 30 emmer wheat (Triticum dicoccum) glumes. The glume assemblage makes up over 94% of the total environmental assemblage from sample 122. This shows a clear concentration of late-stage crop processing activities taking place in the southern extent of the site.

A cluster of other results also suggests that this southern area of the site was the main production zone for crops and cereals. The environmental remains from samples 138 (D12; Period 2.2), 15 (EN24; Period 2.3), and 125 (pit [857]; Period 2.2) all show that late-stage crop processing was taking place in this area due to their high volumes of chaff elements—in particular hulled wheat glumes. Stone quern stone fragments were also found in the part of the site, indicating that some form of milling/flour production activities were taking place in this area (see Greasley, above).

Sample 15 from Enclosure 24 (Period 2.3) also produced the largest number of barley grains on site, possibly indicating that there were some small changes in agricultural regimes in Period 2.3, or that barley was the favoured grain species for the local site and that the hulled wheat grains were exported/used in larger quantities for food production, i.e. to make flour for bread. As spelt wheat was the preferred cereal species during the Roman period it stands to reason that spelt wheat grains are represented in lower numbers within the assemblages, as they may have already been ground down to make flour.

Sample 177 from oven 1335 (Period 2.2) in the south-west part of the site contained a large number of indeterminate cereal grains. Due to the poor preservation of the grains and evidence of abrasion and vitrification, it was not possible to identify these grains to species. The poor preservation of these grains may be the reason that they are present in such a high number in this assemblage. It is also possible that these grains may have been a bad/contaminated crop. Sample 177 of oven 1335 contained a large number of charcoal fragments which included fragments of oak (*Quercus* sp.) wood and birch (*Betula* sp.) wood (see Table 3.73). The use of oak in an oven is not unusual, due to the high burning qualities that oak has. Oak is not only used in domestic hearths but is also commonplace in funerary practices and metal working kilns.

Pit [1191] (Period 2.2), again in the southern part of the site, contained a relatively low number of charred glume fragments but did have a very large number of charred indeterminate cereal grains. As these grains were poorly preserved, abraded and showing signs of vitrification, it is likely that they were discarded before use. It is possible that the grains became unusable for to a variety of reasons such as rot, insect infestation, and poor storage. To kill off and prevent the spread of insect infestation, cereal remains were often burnt (van der Veen 2007). Some of the grains still had their rachis attached, which suggests that they never made it to the threshing/hulling stage of crop processing—possibly indicating that they were a bad batch or were accidentally burned.

The other three samples that were selected for analysis showed similar compositions to those discussed previously, but in a smaller volume (from beam slots

[977] and [1205] and pit [1249] of Period 2.2). It is likely that these features, all from the south part of the site, whilst still a part of the late-stage crop processing activities, were on the outskirts of such activity and were not used as the main storage/disposal features.

Period 3 (late Roman)

When compared with the chaff assemblages from Period 2, the Period 3 samples showed a decline in the number of glumes recovered which, whilst they were still high in quantity (Table 3.71), was significantly lower than the numbers identified in the Early Roman periods around Enclosure 21. Following the evidence that late-stage crop processing activities were taking place during the earlier periods, late-stage crop processing activities were indicated in and around Enclosure 19 (sample 121), and Enclosure 28 (sample 123). These features are in the southern area of the site which reinforces the conclusion that this area of the site was used for crop processing activities and production. Alongside the decrease in numbers of chaff elements, there was also a decrease in the number of barley grains present within the assemblages selected for further analysis when compared to those noted from the Early Roman period. This may suggest that the move from barley to spelt wheat as the preferred cereal species was becoming more deliberate.

Period 4 (late Roman)

Out of the 51 samples assessed from the Late Roman Period, seven were selected for further analysis (Table 3.72). Late-stage crop processing activities were indicated in and around Ditch 9 (Period 4.2) on the southern edge of the site (sample 118). The overall preservation of the cereal remains in the other samples was poor, with approximately 50% of their grain assemblages being made up of unidentifiable cereal grains. Whilst there is still some limited evidence of crop use in the northern/central area of the site, it is scaled down and suggests that this area was primarily used for domestic settlement activities rather than cereal production.

Sample 62 from posthole 556 (Period 4.1) was selected for charcoal analysis (Table 3.73). The results showed oak wood as the only species identified in the assemblage. As mentioned above, oak is generally the favoured wood species as it burns at a high temperature. The charcoal remains from this posthole looked to be a deliberate dump of hearth waste material rather than the original post being burnt in situ.

Discussion and conclusion

There are two different types of crop processing sites: consumer sites, where a site grows and harvests its own crops; and producer sites, where the inhabitants of are cultivators and may export part of their crop to the wider area. These definitions were first coined by Jones (1985) and later expanded by Van der Veen (2007). In relation to the comparisons drawn upon by Van der Veen, it appears that the crop production carried out on this site was done on a producer level, rather than a smaller-scale consumer level. This suggests that cereals were being cultivated and then exported to the wider area, rather than just being consumed by the local community. This is shown by the large quantities of cereal components (such as glumes) recovered and identified from the southern extent of the excavation area. The number of quern stones and worked stone fragments (see Greasley, above) also supports the suggestion that this area was used for large-scale crop processing activities and possibly milling.

As defined by Hillman (1984), late-stage crop processing is the stage after the first sieving process has taken place, when contaminants coarser than grain are removed, and what is left in the assemblage is grains, occasional rachis/awn fragments and weed seeds. The definitions of crop processing have also been expanded on by Wilkinson and Stevens (2003), where they have broken down crop processing into eight stages, with the remains from the Roman period on this site meeting the criteria for the sixth and seventh stages: medium-coarse sieving and fine-sieving of the remaining material. Barley and spelt wheat are the two most common grain species found that are associated with arable farming in Roman Britain (Van der Veen 2016) and are present in the environmental assemblages from Milton. Despite the moderately large quantities of barley grains in several of the environmental assemblages analyses, spelt wheat is the dominant cereal species. This is typical of the Roman period, as the dominance of spelt wheat and decline in emmer wheat in the Roman assemblages reflect the switch from emmer to spelt wheat following the introduction of spelt wheat. This change is generally dated to the middle Bronze Age in Southern Britain (Campbell and Straker 2003; Lambrick and Robinson 2009) and can also be an indicator of more extensive cultivation regimes (Van der Veen and O'Connor 1998).

Barley grains can be seen to have been used throughout late Roman Periods 2–4 on the site. In areas of the site where there is an increase in the number of barley grains, small clusters of worked stones (such as querns) have also been recovered. From the environmental evidence, an increase in the number of barley grains was seen through the middle of the site and towards the west. This is in contradiction to the location of hulled wheat grains and glumes—an abundance of these are shown in the south-east corner of the site. It is likely that the southern extent of the excavation is the

Table 3.70. Plant remains analysis: Period 2, late Roman.

Group No.		**D12**	**EN21**	**EN24**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
Feature type		**Ditch**	**Ditch**	**Ditch**	**Pit**	**Pit**	**Beam slot**	**Pit**	**Beam slot**	**Pit**	**Oven**	
Cut		**958**	**837**	**193**	**857**	**962**	**977**	**1191**	**1205**	**1249**	**1335**	
Context		**959**	**867**	**192**	**859**	**963**	**978**	**1192**	**1207**	**1251**	**1340**	**1339**
Period		**2.2**	**2.2**	**2.3**	**2.2**	**2.2**	**2.2**	**2.2**	**2.2**	**2.2**	**2.2**	**2.2**
Sample		**138**	**122**	**15**	**125**	**139**	**143**	**160**	**161**	**167**	**177**	**178**
Flot size (ml)		**13**	**27**	**65**	**10**	**10**	**25**	**14**	**12**	**25**	**205**	**5**
%Roots		**80**	**60**	**50**	**10**	**85**	**70**	**10**	**85**	**40**	**50**	**-**
Preservation level		**grains=p; chaff=p-m; seeds=p-m**	**grains=p-m; chaff=m; seeds=p-m**	**grains=p-m; chaff=p-m; seeds=m**	**grains=p-m; chaff=p; seeds=p-m**	**grains=p; chaff=p-m; seeds=m**	**grain=p-m; chaff=m; seed=p-m**	**grains=p-m; chaff=p-m; seeds=p-m**	**grains=p; chaff=p; seeds=m**	**grains=m-g; chaff=p-m; seeds=p-m**	**grains=p-m; chaff=m; seeds=m-g**	**grains=p; chaff=p; seeds=p**
Cereals	***Common name***											
Hordeum vulgare L. *sl* (grain)	barley	5	4	131	7	1	1	24	1	26	12	1
Triticum diccocum/spelta (grains)	hulled wheat	6	8	28	-	3	12	81	2	1	62	5
Triticum diccocum/spelta (glumes)		869	1524 (50% of flot analysed, total approx count = 3048)	139	441	5	15	20	-	1	75	1
Triticum spelta (grains)	spelt wheat	7	4	44	6	3	6	31	4	1	77	-
Triticum spelta (glumes)		105	232	12	8	4	24	6	-	1	32	-
Triticum diccocum (grains)	emmer wheat	3	2	1	2	-	-	10	-	-	10	-
Triticum diccocum (glumes)		70	30	3	1	-	5	1	-	-	5	-
Triticum turgidum/aestivum (grain)	free-threshing wheat	-	-	7	-	-	-	-	-	-	3	-
Triticum sp. (grain)	wheat	10	12	32	8	2	10	74	3	-	27	20
Cereal indet. (grains)	cereal	25	17	49	14	8	20	1499	2	3	193	4
Cereal frags (spikelet forks)		11	13		3	1	2	1	1	2	27	-
Cereal frags (rachis frags)		12	30	4	3	1	1	-	-	-	1	-

Table 3.70. Plant remains analysis: Period 2, late Roman, continued.

Group No.		D12	EN21	EN24	-	-	-	-	-	-	-	
Feature type		Ditch	Ditch	Ditch	Pit	Pit	Beam slot	Pit	Beam slot	Pit	Oven	
Cut		958	837	193	857	962	977	1191	1205	1249	1335	
Context		959	867	192	859	963	978	1192	1207	1251	1340	1339
Period		2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Sample		138	122	15	125	139	143	160	161	167	177	178
Flot size (ml)		13	27	65	10	10	25	14	12	25	205	5
%Roots		80	60	50	10	85	70	10	85	40	50	-
Preservation level		grains=p; chaff=p-m; seeds=p-m	grains=p-m; chaff=m; seeds=p-m	grains=p-m; chaff=p-m; seeds=m	grains=p-m; chaff=p; seeds=p-m	grains=p; chaff=p-m; seeds=m	grain=p-m; chaff=m; seed=p-m	grains=p-m; chaff=p-m; seeds=p-m	grains=p; chaff=p; seeds=m	grains=m-g; chaff=p-m; seeds=p-m	grains=p-m; chaff=m; seeds=m-g	grains=p; chaff=p; seeds=p
Cereals	***Common name***											
Cereal frags (culm node)		-	-	-	-	1	-	-	-	-	-	-
Cereal frags (coleoptile)		28	27	4	12	-	-	-	-	-	7	-
Other food sources	***Common name***											
Corylus avellana	hazelnut	-	-	-	-	1	1	2	-	-	-	-
Brassica spp. L.	brassica	-	-	-	-	-	-	-	1	-	1	-
Brassica rapa		-	-	-	-	1	-	-	-	-	-	-
Brassica nigra	black mustard	-	-	1	-	-	-	-	1	-	2	-
Vicia faba	celtic bean	-	-	1	-	-	-	-	-	-	-	-
Avena sp. (grain)	oat	-	5	-	2	-	-	-	-	-	4	-
Avena sp. (awn)		-	1	-	-		-	-	-	-	-	-
Other species	***Common name***											
Ranunculus acris/repens	buttercups	-	-	-	-	-	-	-	-	-	1	-
Chenopodium sp.	goosefoot	-	-	2	-	-	-	-	-	-	-	-
Montia sp.	blinks	-	2	-	-	-	-	-	-	-	-	-
Silene cf. *dioica*	red campion		-	-	-	1	-	-	-	1	-	-
Persicaria maculosa/lapathifolium	redshank/pale persicaria	-	-	1	-	-	-	-	-	-	-	1
Persicaria maculosa			-	-	-	-	-	-	1	-	1	-

Fallopia convolvulus (L.) À. Löve	black-bindweed	-	-	8	-	-	1	-	-	-	9	-
Rumex crispus L. Type	curled dock	3	1	2	-	1	-	1	-	-	12	-
Rumex acetosella	sheep's sorrel	1	-	-	4	4	-	1	3	3	3	-
Malva sp.	mallow	-	-	1	-	-	-	-	-	-	-	-
Raphanus raphanistrum (capsule)	wild raddish	-	1	3	-	-	-	-	-	-	-	-
Vicia L./*Lathyrus* sp. L.	vetch/wild pea	-	1	-	-	-	-	1	-	-	3	-
Vicia sp.	vetch	-	-	-	-	-	2	-	-	-	-	-
Medicago/Trifolium sp.	medick/clover	-	-	-	-	5	-	-	1	-	-	-
Medicago sp.	medicks	-	-	-	-	2	-	-	1	-	-	-
Trifolium sp.	clovers	-	-	-	-	6	-	-	2	-	-	-
Solanum sp.	nightshade	-	-	-	-	1	-	-	-	-	-	-
Plantago lanceolota	ribwort plantain	-	-	2	-	2	-	-	-	-	1	-
Odontities vernus	red bartsia	-	-	1	-	-	-	-	4	-	3	-
Carduus sp.	thistles	-	-	1	-	1	-	-	-	-	-	-
Anthemis cotula	stinking chamomile	-	2	87	2	1	-	1	4	-	1	-
Leucanthemum vulgare	oxeye daisy	-	-	-	-	-	-	-	1	-	-	-
Carex sp.	sedge	-	-	2	-	-	-	-	-	-	-	-
Lolium/Festuca sp. L.	rye-grass/fescue	5	30	-	3	1	-	2	2	2	-	-
Lolium sp.		-	5	-	-	-	-	-	-	-	1	-
Festuca sp.		-	12	-	-	-	-	-	-		1	-
Poa/Phleum sp.	meadow grass/cat's-tail	-	-	2	-	2	-	-	-	-	-	-
Avena L./*Bromus* L. sp.	oat/brome grass	6	15	40	1	-	1	2	-	1	21	-
Avena sp. (wild)	oat grass	1	6	21	2	-	1	1	-	-	1	-
Bromus sp. L.	brome grass	-	5	14	-	-	1	2	3	-	3	-
Triangular fragment		2	-	-	-	-	-	-	-	-	-	-

Table 3.71. Plant remains analysis: Period 3, late Roman.

Group No.		**D8**	**D31**	**EN18**	**EN18**	**EN19**	**EN28**
Feature type		**Ditch**	**Ditch**	**Ditch**	**Ditch**	**Ditch**	**Ditch**
Cut		**851**	**625**	**623**	**802**	**835**	**838**
Context		**852**	**626**	**624**	**803**	**836**	**868**
Period		**3.1**	**3.1**	**3.3**	**3.3**	**3.1**	**3.2**
Sample		**120**	**86**	**82**	**126**	**121**	**123**
Flot size (ml)		**2**	**18**	**85**	**35**	**10**	**7**
%Roots		**70**	**95**	**80**	**90**	**90**	**70**
Preservation level		**grains=p; chaff=p; seeds=p-m**	**grain=p; chaff=p-m; seeds=p-m**	**grains=p-m; chaff=p-m; seeds=p-m**	**grains=p; chaff=p; seeds=m**	**grains=p; chaff=p-m; seeds=p**	**grains=p-m; chaff=p-m; seeds=p-m**
Cereals	***Common name***						
Hordeum vulgare L. *sl* (grain)	barley	1	5	24	32	2	4
Triticum diccocum/spelta (grains)	hulled wheat	1	2	3	11	-	4
Triticum diccocum/spelta (glumes)		4	4	41	16	490	198
Triticum spelta (grains)	spelt wheat	3	4	8	8	-	9
Triticum spelta (glumes)		-	1	6	7	22	6
Triticum diccocum (grains)	emmer wheat	-	-	5	1	-	4
Triticum diccocum (glumes)		-	-	3	-	9	-
Triticum sp. (grain)	wheat	2	3	10	9	1	-
Cereal indet. (grains)	cereal	5	10	51	22	4	6
Cereal frags (spikelet forks)		-	-	5	-	-	-
Cereal frags (rachis frags)		-	-	3	-	2	3
Cereal frags (culm node)		-	-	3	-	-	-
Cereal frags (coleoptile)		-	-	2	-	9	-
Other food sources	***Common name***						
Corylus avellana	hazelnut	-	-	1	-	-	-
Brassica spp. L.	brassica	-	-	1	-	-	-
Avena sp. (grain)	oat	-	-	-	2	-	-
Other species	***Common name***						
Chenopodium sp.	goosefoot	-	-	6	6	-	-
Atriplex sp.	oraches	-	-	2	-	-	-
Stellaria cf. *holostea*		-	-	-	-	-	1
Persicaria maculosa		-	-	-	2	-	-
Polygonum aviculare	knotgrass	-	-	-	2	-	-
Fallopia convolvulus (L.) Á. Löve	black-bindweed	1	-	-	-	-	-
Rumex crispus L. Type	curled dock	-	-	3	1	-	1
Rumex acetosella	sheep's sorrel	-	2	4	2	2	-
Potentilla sp.	cinquefoils	1	-	-	-	-	-
Vicia L./*Lathyrus* sp. L.	vetch/wild pea	-	1	6	2	-	-
Medicago/Trifolium sp.	medick/clover	-	-	22	6	-	-
Medicago sp.	medicks	-	-	6	3	-	-
Trifolium sp.	clovers	-	-	3	3	-	-
Solanum sp.	nightshade	-	-	-	-	-	-
Lamiaceae family, cf. *Thymus* sp.	thyme	-	-	1	-	-	-
Plantago lanceolota	ribwort plantain	-	1	-	-	-	-
Odontities vernus	red bartsia	-	3	9	1	-	-

Table 3.71. Plant remains analysis: Period 3, late Roman, continued.

Group No.		D8	D31	EN18	EN18	EN19	EN28
Feature type		Ditch	Ditch	Ditch	Ditch	Ditch	Ditch
Cut		851	625	623	802	835	838
Context		852	626	624	803	836	868
Period		3.1	3.1	3.3	3.3	3.1	3.2
Sample		120	86	82	126	121	123
Flot size (ml)		2	18	85	35	10	7
%Roots		70	95	80	90	90	70
Preservation level		grains=p; chaff=p; seeds=p-m	grain=p; chaff=p-m; seeds=p-m	grains=p-m; chaff=p-m; seeds=p-m	grains=p; chaff=p; seeds=m	grains=p; chaff=p-m; seeds=p	grains=p-m; chaff=p-m; seeds=p-m
Carduus sp.	thistles	-	-	-	1	-	-
Anthemis cotula	stinking chamomile	-	3	14	19	1	1
Leucanthemum vulgare	oxeye daisy	-	-	3	9	-	-
Carex sp.	sedge	-	1	-	1	-	-
Lolium/Festuca sp. L.	rye-grass/fescue	-	-	3	-	-	1
Poa/Phleum sp.	meadow grass/ cat's-tail	-	-	3	1	-	-
Avena L./*Bromus* L. sp.	oat/brome grass	-	-	26	7	-	3
Avena sp. (wild)	oat grass	-	-	3	3	-	2
Bromus sp. L.	brome grass	-	-	5	3	1	2

Table 3.72. Plant remains analysis: Period 4, late Roman.

Group No.		D3b	D9	EN4		EN1	EN2	EN26
Feature type		Ditch	Ditch	Ditch	Ditch	Ditch	Ditch	Ditch
Cut		795	824	116	324	403	475	658
Context		796	825	114	326	404	476	659
Period		4.2	4.2	4.3	4.3	4.3	4.1	4.1
Sample		113	118	10	39	50	57	92
Flot size (ml)		15	20	12	9	15	10	25
%Roots		90	70	95	60	98	95	98
Preservation level		grains=p-m; chaff=p-m; seeds=p-m	grains=p-m; chaff=m; seeds=p-m	grains=p-m; chaff=p; seeds=p	grains=m; chaff=p-m; seeds=m	grains=p-m; chaff=m; seeds=p-m	grains=p-m; seeds=p-m	grains=p-m; chaff=p-m; seeds=p-m
Cereals	***Common name***							
Hordeum vulgare L. *sl* (grain)	barley	2	2	1	39	42	9	2
Hordeum vulgare L. *sl* (grain with husk)		-	-	-	-	2	-	-
Triticum diccocum/spelta (grains)	hulled wheat	2	-	2	2	3	1	2
Triticum diccocum/spelta (glumes)		29	773	5	9	-	-	2
Triticum spelta (grains)	spelt wheat	3	3	8	4	4	1	1
Triticum spelta (glumes)		2	49	-	1	-	-	1
Triticum diccocum (grains)	emmer wheat	-	1	-	2	-	-	2
Triticum diccocum (glumes)		-	19	-	1	-	-	-
Triticum turgidum/aestivum (grain)	free-threshing wheat	2	-	-	-	-	-	-
Triticum sp. (grain)	wheat	2	2	1	2	5	2	2
Cereal indet. (grains)	cereal	8	-	3	36	48	7	8
Cereal frags (rachis frags)		1	9	-	-	-	-	-

Table 3.72. Plant remains analysis: Period 4, late Roman, continued.

Group No.		D3b	D9	EN4		EN1	EN2	EN26
Feature type		Ditch	Ditch	Ditch	Ditch	Ditch	Ditch	Ditch
Cut		795	824	116	324	403	475	658
Context		796	825	114	326	404	476	659
Period		4.2	4.2	4.3	4.3	4.3	4.1	4.1
Sample		113	118	10	39	50	57	92
Flot size (ml)		15	20	12	9	15	10	25
%Roots		90	70	95	60	98	95	98
Preservation level		grains=p-m; chaff=p-m; seeds=p-m	grains=p-m; chaff=m; seeds=p-m	grains=p-m; chaff=p; seeds=p	grains=m; chaff=p-m; seeds=m	grains=p-m; chaff=m; seeds=p-m	grains=p-m; seeds=p-m	grains=p-m; chaff=p-m; seeds=p-m
Cereals	***Common name***							
Cereal frags (culm node)		-	-	-	-	1	-	-
Cereal frags (coleoptile)		-	15	-	2	1	-	-
Other food sources	***Common name***							
Corylus avellana	hazelnut	-	-	-	-	-	-	-
Brassica spp. L.	brassica	1	-	-	1	3	-	-
cf. *Brassica* spp,		-	-	-	3	-	1	-
Avena sp. (grain)	oat	-	-	-	-	-	-	2
Avena sp. (awn)		-	1	-	-	-	-	-
Other species	***Common name***							
Ranunculus acris/repens	buttercups	-	-	-	-	3	-	-
Chenopodium sp.	goosefoot	2	-	-	4	3	-	-
Stellaria sp.	stitchwort	2	-	-	-	-	-	-
Persicaria maculosa/lapathifolium	redshank/pale persicaria	1	-	-	4	-	-	-
Polygonum aviculare	knotgrass	-	-	-	6	4	-	-
Rumex crispus L. Type	curled dock	-	1	-	1	1	-	-
Rumex acetosella	sheep's sorrel	1	4	-	25	14	1	-
Viola sp.	violet	-	-	-	-	2	-	-
Raphanus raphanistrum (capsule)	wild raddish	-	-	-	-	3	-	-
Potentilla sp.	cinquefoils	-	-	-	-	1	-	-
Medicago/Trifolium sp.	medick/clover	5	1	-	5	11	8	-
Medicago sp.	medicks	-	-	-	2	1	2	-
Trifolium sp.	clovers	-	-	-	2	6	3	-
Odontities vernus	red bartsia	-	-	-	2	-	2	-
Carduus sp.	thistles	-	1	-	-	-	-	-
Anthemis cotula	stinking chamomile	6	5	2	24	21	6	-
Leucanthemum vulgare	oxeye daisy	1	1	-	-	5	1	-
Carex sp.	sedge	-	1	-	3	1	-	-
Lolium/Festuca sp. L.	rye-grass/ fescue	-	1	-	4	-	-	-
Lolium sp.		-	1	-	-	-	-	-
Festuca sp.		-	1	-	-	-	-	-
Poa/Phleum sp.	meadow grass/ cat's-tail	1	-	-	3	8	3	-
Avena L./*Bromus* L. sp.	oat/brome grass	7	10	3	6	2	2	3
Avena sp. (wild)	oat grass	-	-	2	-	-	-	-
Bromus sp. L.	brome grass	-	-	3	1	-	1	-
Immature acorn		-	-	-	-	1	-	-
Indet CPR		-	-	-	-	-	3	-

production area for crop processing, whereby the middle and western areas of the site can be classified as being related to domestic activities such as small-scale food consumption and general settlement areas.

The weed seed assemblages provide an indication of the use of a number of different environments during the Iron Age and Roman periods, such as lighter drier calcareous soils (as favoured by species such as red bartsia (*Odontities vernus*)), heavier clay soils (as shown by the presence of species such a stinking chamomile (*Anthemis cotula*)), more acidic sandier soils (as favoured by sheep's sorrel (*Rumex acetosella*)), and damper soils (as used by species such as curled dock (*Rumex crispus*)). The presence of low growing species, such as clover or medick (*Trifolium/ Medicago* sp.), may suggest a low harvesting height by sickle (Hillman 1981). This is a typical harvesting technique for Roman periods. Twining species identified in the assemblages also indicate that crop processing was taking place, as these species are often intertwined with the crop and so were harvested at the same time. These include such species as vetches/wild peas (*Vicia/Lathyrus* sp.) and black bindweed (*Fallopia convolvulus*).

Table 3.73. Charcoal analysis.

Feature type		Oven	Posthole
Cut		1335	556
Context		1340	557
Period		2.2	4.1
Sample		177	62
Quercus	Oak	X	X
Betula sp.	Birch	X	-
Fragments analysed	>4mm/>2mm	30/30	30/30
Overall fragment abundancy	>4mm/>2mm	*****/*****	*****/*****

Key: Present = X, Absent = -

Waterlogged wood

By Michael Bamforth

Introduction and methodology

Four pieces of wood were recovered from fill (908), towards the base of pit or well [907] of Period 1, and have been assigned to the Iron Age period. The wood was recorded on site by the author in September 2023, situated in waterlogged deposits which created the anaerobic conditions necessary for organic preservation. A catalogue of the assemblage is provided in Table 3.74 at the end of this report.

This document has been produced in accordance with Historic England guidelines for the treatment of Waterlogged Wood (Historic England 2010) and Waterlogged Organic Artefacts (Historic England 2018b). The system of categorisation and interrogation developed by Taylor (1998; 2001) and the condition scale developed by the Humber Wetlands project (Van de Noort *et al.* 1995, Table 15.1) have been adopted within this report. T3 and T4 were identified as oak (*Quercus* sp.) based on macroscopically visible characteristics. T1 was identified as alder (*Alnus* sp.) and T2 as ash (*Fraxinus* sp.) microscopically. Sub-samples were thin-sectioned to produce slides of the transverse, radial longitudinal and transverse longitudinal sections (cf. Gale and Cutler 2000) and viewed under a transmitted light microscope at x40, x100 and x400 magnification. Identifications follow anatomical guides (Schoch *et al.* 2004; Wheeler *et al.* 1989) and modern reference material.

Figure 3.82. Alder roundwood T1 with trimmed end.

Table 3.74. Waterlogged wood: catalogue.

Wood No.	Category	Cond-ition	ID	Bark / Sapwood / Heartwood / Pith	Worked?	Conver-sion	Ends	Notes	Length (mm)	Breadth (mm)	Thick (mm)	Orig dia. (mm)
T01	Round wood	4	Alder	BSHP	Y	Whole	Bottom (proximal end) trimmed from 1 dir. with multiple, slightly choppy, concave facets. Top (distal) end degraded	Lying in base of feature at 45° below T4. Several side branches probably trimmed	330	75	75	
T02	Round wood	4	Ash	SHP	Y	Whole	1 end trimmed from 2 dir. - 1 face is single large facet whilst the other has multiple, choppy facets. Other end degraded	Horizontal in base of feature, below T4	220	80	80	
T03	Timber	4	Oak	HP	Y	Outer surfaces roughly hewn and split away	Proximal end x-cut with axe from 1 dir. Crux with both distal ends degraded	Horizontal in base of feature, below T4. Triangular cross section. Moderate growth rate, *c.*25 annual rings	350	260	170	>200
T04	Timber	4	Oak	BSHP	Y	Outer surfaces roughly hewn and split away	Proximal end trimmed and split. Crux with 1 distal end trimmed and other degraded	Horizonal, towards base of feature, above T1, T2 and T3	550	340	185	>200

Range and variation

The assemblage is all in good condition. It consists of two pieces of roundwood (T1 alder and T2 ash) and two oak timbers (T3 and T4), all showing evidence of woodworking.

T1: Alder roundwood lying in the base of the feature at 45°, below T4 (Figure 3.82). The item remains in the round with some bark still present. The lower (proximal) end has been trimmed from one direction with multiple, slightly choppy, concave facets visible whilst the upper (distal) end has degraded. There are the scars of several side branches which have probably been trimmed. The item measures 330mm long with a maximum diameter of 75mm.

T2: Ash roundwood lying in the base of the feature, below T4. The item remains in the round, with no bark remaining. One end has been trimmed from two directions — one face is single large facet whilst the other has multiple, choppy facets. The opposing end is degraded. The item measures 220mm long with a maximum diameter of 80mm.

T3: Oak timber lying in the base of the feature, below T4. The outer surfaces have been roughly hewn and split away, creating a triangular cross section. The proximal end has been cross-cut with an axe from one direction. The distal end is a crux with the ends of both limb stumps having degraded away. The timber displays a moderate rate of growth with c.25 annual rings present. The timber measures 350 x 260 x 170mm and the trunk had an original diameter in excess of 200mm.

T4: Oak timber lying towards the base of the feature, above T1, T2 and T3. The outer surfaces have been roughly hewn and split away with some bark and sapwood remaining. The proximal end has been trimmed and split. The distal end is a crux with one end trimmed and the other degraded. The timber measures 550 x 340 x 185mm and the trunk had an original diameter in excess of 200mm.

Summary

The two pieces of roundwood, T1 and T2, may perhaps have been stakes either used to reinforce the sides of the feature or to aid access to the feature. The two oak timbers, T3 and T4, are relatively similar to one another, being large Y-shaped crux that have been heavily worked, including having their outer surfaces split and hewn away — distinctive and unusual working. Given their unusual shape it seems unlikely they were used as part of a lining or as a step, although this can't be ruled out. It is unclear why such large, heavy, awkwardly shaped items would have been used in such roles, although, for the same reasons, it is equally uncertain why such items would have been discarded in the base of a well.

The woodworking technology recorded — relatively simple splitting alongside hewing and trimming (probably with an axe), is typical of much of later prehistory and the historic period. All three species of tree are relatively common and are likely to have been growing in the vicinity of the site. Oak and alder both appear frequently in prehistoric waterlogged wood assemblage from the region. Ash appears less frequently, although is not uncommon.

Later prehistoric waterlogged remains have been encountered in the immediate vicinity. A two step, oak, log ladder was found leaning against the side of an Iron Age pit encountered at the adjacent Milton Park and Ride site (Bamforth 2010; Phillips 2015). The nearby Milton Landfill site produced a moderate sized waterlogged wood assemblage, predominantly recovered from Early Iron Age watering holes, two of which contained oak log ladders. An Early Bronze Age pit was lined with unusually heavy timbers and large pieces of debris in a fairly ad-hoc setting, including several large Y-shaped crux, appearing somewhat similar to T3 and T4 (Bamforth 2013; Phillips 2015).

Radiocarbon dating

By SUERC, summarised by Emma Aitken

Radiocarbon dating was undertaken in order to confirm the dates of Pit [1329], Ditch [639] (EN17), Well [907], and Oven [1335]. The samples were analysed during January 2025 at Scottish Universities Environmental Research Centre (SUERC), Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Glasgow, G75 0QF, Scotland. The methodology employed by SUERC Radiocarbon Laboratory is outlined in Dunbar *et al.* (2016). The uncalibrated dates are conventional radiocarbon ages. The radiocarbon ages were calibrated using the University of Oxford Radiocarbon Accelerator Unit calibration programme OxCal v4.4.2 (Bronk Ramsey 2009, Bronk Ramsey 2020) using the IntCal20 curve (Reimer *et al.* 2020) (Table 3.75). Carbon isotope (δ13C) data was recorded, and where collagen samples (animal and human bone) were submitted, nitrogen (δ15N) and sulphur (δ34S) isotope data was obtained (Table 3.76).

Table 3.75. Radiocarbon dating results.

Feature	Period	SUERC code	Laboratory code	Material	Radiocarbon age	Calibrated radiocarbon age 95.4% probability	Calibrated radiocarbon age 68.3% probability
Iron Age							
Context 910 Well 907	1	SUERC-129975	GU69569	Animal Bone: Cattle Mandible	2272 ± 23 yr BP	398 – 352 cal. BC (51.8%) 290 – 209 cal. BC (43.6%)	392 – 359 cal. BC (47.4%) 275 – 262 cal. BC (12.2%) 244 – 235 cal. BC (8.6%)
Roman							
Context 1340 Oven 1335 Sample 177	2.2	SUERC-129976	GU69570	Charred Plant Remains: Barley grain (*Hordeum vulgare*)	1830 ± 23 yr BP	129 – 250 cal. AD (90.4%) 295 – 311 cal. AD (5.0%)	172 – 182 cal. AD (4.4%) 203 – 247 cal. AD (69.9%)
Context 640 Ditch 639 EN17	3.2	SUERC-129974	GU69568	Animal Bone: Sheep Frontal Bone	1651 ± 25 yr BP	263 – 275 cal. AD (2.5%) 348 – 440 cal. AD (73.0%) 453 – 479 cal. AD (6.8%) 495 – 535 cal. AD (13.1%)	379 – 433 cal. AD (65.5%) 520 – 526 cal. AD (2.8%)
Context 1330 Pit 1329	4.2	SUERC-129970	GU69567	Animal Bone: Cattle Mandible	1730 ± 25 yr BP	250 – 296 cal. AD (32.6%) 309 – 405 cal. AD (62.8%)	255 – 285 cal. AD (25.0%) 325 – 378 cal. AD (43.3%)

Table 3.76. Isotope data.

Feature	Period	SUERC code	Laboratory code	Material	$\delta^{13}C$ (relative to VPDB, ‰)	$\delta^{15}N$ (relative to air, ‰)	$\delta^{34}S$ (relative to VCDT, ‰)	C/N ratio (Molar)	C/S ratio (Molar)	N/S ratio (Molar)
Iron Age										
Context 910 Well 907	1	SUERC-129975	GU69569	Animal Bone: Cattle Mandible	-21.6	6.6	-11.5	3.4	531	156
Roman										
Context 1340 Oven 1335 Sample 177	2.2	SUERC-129976	GU69570	Charred Plant Remains: Barley grain (*Hordeum vulgare*)	-24.2	-	-	-	-	-
Context 640 Ditch 639 EN17	3.2	SUERC-129974	GU69568	Animal Bone: Sheep Frontal Bone	-21.3	6.6	-18.1	3.3	627	193
Context 1330 Pit 1329	4.2	SUERC-129970	GU69567	Animal Bone: Cattle Mandible	-22.1	8.1	-14.3	3.3	557	166

Chapter 4

Summary and discussion

Introduction

A large open area archaeological excavation of 3.56ha was undertaken in 2023 prior to the construction of the new Cambridgeshire Southern Police Station to the west of the village of Milton, west of the A10 road and *c*.4.2km north-east of the historic core of Cambridge. The site lay on a low terrace of the Cam Valley (at 10–11m above Ordnance Datum), situated to the south of the Fens and approximately 1.75km west (at its closest point) of the north-east-flowing River Cam. The Roman road (Akeman Street, also known as Mere Way; Margary 1973, Road 23b) which ran north-east from Roman Cambridge into the Fens passed *c*.500m to the west of the site. Extensive archaeological fieldwork had previously been undertaken on sites adjacent to the Police Station site at Milton Landfill to the south, west and north-west and at Milton Park and Ride to the north (Figure 1.5; see above, pp. 3-11). These adjacent excavations identified Bronze Age and Iron Age settlement activity, as well as Roman features including ditches, planting trenches/lazybeds, a barrow with cremation and inhumation burials and building material that possibly derived from a nearby villa.

The main features revealed in the 2023 investigations reported here were ditches that formed part of an extensive and complex series of intercutting late Roman enclosures with associated features (Periods 2–4). Features and objects from several other periods were also recorded, which are summarised and discussed below in the following order:

- Neolithic to Bronze Age (residual worked flints)
- Middle to late Iron Age (Period 1)
- Early to middle Roman (residual finds)
- Late Roman, mid-3rd to late 4th or ?5th centuries AD (Periods 2–4)
- Medieval/post-medieval (Period 5)
- Modern (Period 6)

Neolithic to Bronze Age

No features of Bronze Age or earlier date were found in the excavation, but seven struck flint flakes were recovered, all residual in contexts dating to the Roman or post-medieval periods (see above, pp. 86-7). The flint was probably obtained from the nearby River Terrace deposits. The flakes had been detached from cores using hard, probably stone, hammers without abrading the platform edges of the cores in between detaching each flake. This flint-working strategy was in common usage from the middle Neolithic period onwards and it is likely that the flakes were associated with activity of some description during or after the late 4th millennium cal. BC.

These flints add to our picture of later prehistoric activity in the Milton area. A few residual worked flints of Mesolithic and Neolithic date have previously been found on adjacent sites (see above, p. 6), whilst late Neolithic to early Bronze Age remains, including cremations and a watering hole, have been recorded at Milton Landfill, short distances of *c*.300m to the north-west and *c*.550m to the south-west respectively of the Police Station site (see above, p. 6; Connor 1997; Phillips 2013; Phillips 2015). Evidence of middle to late Bronze Age activity has also been identified at Milton Landfill, *c*.400m to the south-west of the Police Station site, including field ditches, a post-built roundhouse, a four-post structure, post alignments, various other postholes and pits and a midden/buried soil deposit (see above, pp. 6-7; Connor 1998; Phillips 2013; 2015).

Middle to late Iron Age (Period 1)

A small amount of middle to late Iron Age pottery (242 sherds, 5078g) was found at the Police Station site, accounting for just over 3% of the total Iron Age to Roman pottery assemblage by sherd count (see above, pp. 58, 62). This comprised flint-tempered wares of probable middle to late Iron Age date (58 sherds,

1673g), black/brown (30 sherds, 326g) and grog-/shell-tempered wares (7 sherds, 80g) of probable late Iron Age date and grog-tempered wares of late Iron Age to early Roman date (147 sherds, 2999g). There was also a larger quantity of shell-tempered ware, which was used in the later Iron Age and throughout the Roman period. The Iron Age vessels noted were all jars, the general form being globular and neckless with plain, beaded, curved or flat-topped rims (Figure 3.2, Nos 1–3).

Four features were found which have been assigned to the middle to late Iron Age. These included a somewhat meandering linear ditch (D13) that ran north-west to south-east for at least 64m in the south-east part of the site. A single small sherd of shell-tempered ware of late Iron Age to Roman date was recovered from its fill.

Just 1.5m to the south of the meandering ditch D13, and possibly contemporary/associated with it, was the circular ring ditch/gully of an enclosure or structure (ST4) with an internal diameter of *c*.9.5m. Just three sherds (19g) of pottery were recovered from one of its fills (1115). These were in coarse sandy grey ware (CSGW) of Roman date. ST4 most likely represents the drip/drainage gully of a structure of Iron Age date, probably a roundhouse, although a Roman date for this structure/ditch cannot be ruled out entirely. The small quantity of Roman pottery recovered may be intrusive, or the gully may still have been filling up into the Roman period. It is comparable in size to an Iron Age ring ditch, presumably also representing a roundhouse, found immediately to the north at Milton Park and Ride (Phillips 2010, 22, Fig. 6, Pl. 3), which had a diameter of *c*.10m, and to several other examples found to the south at Milton Landfill (Reynolds 1994, 8, Fig. 5). No entranceway (i.e. a gap) was recorded in the ST4 gully, but the southern part of the feature extended beyond the limit of excavation. An environmental sample from the ST4 gully produced barley grains alongside hulled wheat glumes (see above, pp. 163). The number of hulled wheat glumes present in the assemblage suggested that some small-scale localised crop processing activities were taking place within or near to Structure 4 during this period.

In the north-east part of the site was an isolated very shallow pit [1203], 0.71 by 0.52m and surviving only 0.07m in depth, which included flint-tempered and black/brown ware pottery of middle to late Iron Age date as well as charcoal.

In the south part of the site, *c*.41m north-west of the western recorded limit of D13, was a vertical-sided sub-circular well [907], 1.41 by 1.36m and 1.2m deep. Its basal fill contained four preserved pieces of waterlogged wood, all with traces of woodworking (see above, pp. 171–3). The second fill had no finds, but the upper fill represented a dump of rubbish, presumably to level the surface after the well had fallen out of use. This upper fill included sherds of middle to late Iron Age flint-tempered pottery jars and a late Iron Age Black ware jar (Figure 3.2, Nos 1–3). A cattle mandible from the upper fill produced a middle Iron Age radiocarbon date of 398–209 cal. BC at 95.4% probability, supporting a middle to late Iron Age date for the feature and its infilling.

Comparisons to well [907] were found in excavations in the south-west part of Milton Landfill in 2007–9 (Phillips 2013; Phillips 2015), more than *c*.500m south-west of the Police Station site. Here an early Iron Age settlement (dated to *c*.600–350 cal. BC), possibly continuing into the middle Iron Age, included several large waterholes, one of which contained a partial log ladder radiocarbon dated to between 800–510 cal. BC at 95% confidence, whilst another waterhole contained another log ladder radiocarbon dated to 740–400 cal. BC at 95% confidence. A further waterhole which included a log ladder radiocarbon dated to 400–200 BC at 95% probability was excavated in 2007 at Milton Park and Ride, more than 150m to the north of the Police Station site (Phillips 2010; Phillips 2015).

The Iron Age features excavated at the Police Station site included part of the northern edge of a settlement, with at least one probable roundhouse represented. The majority of the settlement presumably lay further south in an area that has not yet been excavated. It is possibly significant that a postulated Roman villa may lie in this area.

Evidence for further settlements of early to late Iron Age date has been found on several adjacent sites excavated between *c*.200 and *c*.600m to the south, south-west, west and north-west at Milton Landfill and *c*.150m to the north at Milton Park and Ride (Figure 1.5; see above, pp. 7-8; Anon. 1995; Collins 2012; 2013; Connor 1997; 1998; 1999; Phillips 2010; 2013; 2015; Reynolds 1994). Each of these settlements comprised enclosures and related features and would probably have had at least one extended family living in them, as well as having areas for pastoral and possibly arable farming around their respective domestic and related areas.

For example, evidence for middle Iron Age activity, comprising five four-post structures, a north-west to south-east ditch and a dispersed scatter of other postholes and pits was uncovered in 2010–11 during excavations in the centre-west of Milton Landfill, west of the Police Station site (Collins 2012). Excavations in 1994 and 1995 in the south-east part of Milton Landfill, south of the Police Station site, disclosed a multi-phase Iron Age farming settlement (dated to the late Iron Age) with ring ditches, field boundary ditches, enclosures,

timber structures and gravel extraction pits (Connor 1997; Reynolds 1994, 8–10).

Excavations in 2007 at Milton Park and Ride, more than 150m to the north of the Police Station site, identified the southern edge of a substantial 'later' Iron Age (dated to *c*.350–*c*.50 BC) rural settlement with evidence of a roundhouse, post-built structures, pits, a waterhole, a trackway and ditched fields (Phillips 2010; 2015). This settlement did not appear to continue into the southern part of the site where this area was examined by trial trenching (Figure 1.5; adjacent to the Police Station site) and the main part of it presumably lay further north beyond Butt Lane. There were two further phases of reorganisation of this settlement, which by the late Iron Age was represented by a large rectangular enclosure containing an internal sub-enclosure and surrounded by several waterholes.

The peripheral middle to late Iron Age settlement remains found at the Police Station site and the relatively dense settlement activity of this date found in the immediate vicinity fit well with the wider pattern noted for Cambridgeshire. The regional research framework for the East of England, which includes Cambridgeshire, has noted that a large number of middle Iron Age settlements have recently been excavated in the region (Brudenell 2018; cf. Smith 2016b, 195). Excavations for various major infrastructure projects have revealed farmsteads spaced between *c*.300m and *c*.500m apart, indicating developed and densely occupied settlement landscapes. During the late Iron Age the number of settlements/farmsteads in the region appears to have increased further (Evans 2019; Smith 2016b, 148–51, 195, 205, 206, Figs 5.15, 5.58).

Early to middle Roman

No certain early to middle Roman features were found at the Police Station site, suggesting it may have been occupied by an agricultural field or fields at this time. There were, however, some residual finds of this period, which presumably derived from a settlement of this date in the vicinity. This settlement may have lain in the area of a postulated late Roman villa to the south/south-east of the site (Figure 1.5).

For example, whilst there were no specific early to mid-Roman pottery groups, pottery of this date was present, typically occurring alongside later Roman material (see above, p. 62). The early to mid-Roman pottery comprised 49 sherds of samian ware, representing a minimum of 35 vessels, most of which dated to the mid-2nd to mid-3rd centuries AD, a few sherds of amphorae, as well as early shell-tempered wares and several other wares. Early coins included a dupondius or an as probably struck for a Flavian emperor (datable to AD 69–96) and a dupondius of Trajan (AD 98–117) (see above, p. 96, Table 3.52). There was also a copper-alloy bow brooch of Colchester Derivative type, datable to the 1st to 2nd centuries AD (see above, pp. 106-7). A small assemblage of glass vessels included a fragment of a strongly-coloured, dark blue ribbed, or pillar-moulded, bowl of 1st-century AD date, found in the fill of a Period 4 ditch fill (see above, pp. 121-2). This glass fragment had been cut for reuse. There were also fragments of five 1st- to early 3rd-century AD bottles.

Little activity of secure early to middle Roman date was recorded on the adjacent excavations at Milton Landfill or Milton Park and Ride (Figure 1.5; see above, pp. 9-10), however, excavations at Milton Landfill in 1998 and 2010–13, *c*.350m to the west of the Police Station site, revealed an extensive area of cultivation trenches/lazybeds on the east side of the Roman road running north-east from Cambridge (Figure 1.5; see above, pp. 9-10; Collins 2012; 2013; Connor 1999). In this area more than 50 closely-spaced (2 to 3m apart) cultivation trenches were identified, aligned approximately parallel to the Roman road and spanning an area at least 200m east–west by *c*.105m north–south. The northern and southern boundaries of the cultivation trench area were marked by ditches and there was a probable trackway, *c*.8m wide, running along the north side towards the Roman road. These cultivation trenches produced only a little pottery of middle Iron Age and late Iron Age/early Roman date, but evidence from other sites indicates that lazybeds were an early Roman phenomenon and many seem to have gone out of use by the mid-2nd century AD (Wiseman *et al.* 2020; cf. Smith 2016, 183). Lazybeds appear to be almost exclusive to central eastern England, with several other examples known from north and west of Cambridge (Smith 2016b, 183, 204–5, Fig. 5.42; Evans 2019; Wiseman *et al.* 2020). There is little environmental evidence from lazybeds, but what little there is suggest that the majority were perhaps associated with growing horticultural crops, such as cabbages, turnips or carrots, although an extensive system from Wollaston (Northants.), which had associated postholes, was very likely used for growing vines, a theory supported by the presence of grape pollen from the site (Brown *et al.* 2001; Atkins and Meadows 2024).

The Milton lazybeds indicate agricultural use of this area, certainly alongside the road, from early in the Roman period, although associated settlement(s) of this date have not yet been found. Hundreds of pits found in excavations along the west side of Milton Landfill a short distance east of the Roman road almost certainly represented gravel pits related to the construction of the road (see above, pp. 9-10; Connor 1998; Collins 2012; 2013; Phillips 2013). Several of these pits included residual Iron Age pottery and a few also produced Roman sherds.

Late Roman, mid-3rd to late 4th or 5th centuries AD (Periods 2–4)

Introduction: the dating of the Roman phases of the site

The main features found on the Police Station site were a complex and extensive series of intercutting Roman enclosures with associated boundary ditches, trackways, small timber structures, pits and other features, such as waterholes or wells, a pond and an oven (for an overall plan of Roman features, see Figure 2.6). These Roman features have been assigned to three periods (Periods 2–4), which have each been divided into three sub-phases, as Periods 2.1, 2.2, 2.3, 3.1, etc., on the basis of stratigraphy and spatial analysis. It should be noted, however, that the repeated recutting of numerous Roman ditches on similar, sometimes slightly varying, alignments, the lack of directly observable relationships between many features, the presence of various isolated features and the lack of a surviving sequence of occupation layers between the natural deposit and the post-medieval plough soil, means that there is a necessary degree of uncertainty in this phasing.

Pottery, coins, other finds and radiocarbon dates demonstrates that these features principally date to late in the Roman period, between the mid-3rd and the late 4th centuries AD, perhaps even extending into the 5th century AD. It is possible that a few isolated Roman features, and/or some of those that lay early in the stratigraphic sequence, might in fact date to earlier in the Roman period, but on the basis of the available evidence no Roman features can certainly be assigned a date prior to the mid-3rd century AD.

The bulk of the Roman pottery from the site — a significant assemblage of nearly 7000 sherds, weighing about 140kg — dates to after the mid-2nd century AD, with a strong emphasis on the 3rd and 4th centuries AD (see above, pp. 52-80). There were no specific early to mid-Roman period pottery groups, but there was pottery of this date in the assemblage, typically occurring alongside later Roman material (see above, pp. 62, 177).

Sixty-eight copper-alloy Roman coins were found on the site (see above, pp. 96-104). Ten of these were excavated from enclosure ditch fills, but the majority were recovered from a metal-detecting survey that took place during topsoil stripping, but prior to excavation. Most of the metal-detected coins were, however, recorded directly on the sites of subsequently excavated Roman enclosure or boundary ditches and undoubtedly derived from their uppermost fills. Only two of the coins predated the mid-3rd century AD. At least 12 coins were datable to the second half of the 3rd century AD, whilst the bulk of the assemblage — at least 50 coins (74% of the total) — belonged to the 4th century AD and was mostly struck between AD 350 and 402. Valentinianic issues (AD 364–378) were particularly well represented and there was also a significant number of Theodosian coins (AD 388–402), which were the last Roman small-change issues supplied to Britain. A comparison of the Milton coin assemblage to the average pattern of coin loss established for other British sites indicates that relative coin loss (and hence presumably use) at Milton was lower than average up to *c.*AD 350, but considerably higher than average after 348, especially for the periods of the Valentinianic and Theodosian issues. This appears to be unusual, as coin loss declined notably during the second half of the 4th century at several other nearby Cambridgeshire sites (see above, p. 103), although a similar 'late' pattern of coin loss was seen at a Roman rural site at Lower Cambourne, *c.*15km to the west-south-west of Milton (Wells 2009; Wright *et al.* 2009). Some other villa/villa estate sites in the region — such as the villa farm complex at Rectory Farm near Godmanchester and the probable villa estate excavated for the A14 road improvement scheme south of Godmanchester — do, however, show 4th-century peaks in coin use, with Valentinianiac issues well represented and small numbers of Theodosian coins also present (Lyons 2019, 177–9; Atkins and Douthwaite 2024; Humphreys and Bowsher 2024).

Other diagnostically late Roman finds from the Police Station site included a few fragments of copper-alloy bracelets (see above, p. 107); a double-sided composite antler comb, datable to *c.*350–425 (see above, pp. 116, 118); a folding knife clasp handle in bone (see above, pp. 115-16); two bone needle cases (see above, p. 118); and fragments of two 4th- to 5th-century AD glass beakers with fire-rounded rims (see above, p. 123).

Three radiocarbon dates from features of Periods 2–4 support their late Roman dating (see above, pp. 173-4). A charred barley grain from the fill of an isolated oven, [1335], assigned to Period 2.2, in the south-west part of the site produced a radiocarbon date of 129–311 cal. AD at 95.4% probability, 129–250 cal. AD at 90.4% probability and 203–247 cal. AD at 69.9% probability. This suggests that the oven dated to the first half of the 3rd century AD. An animal bone (sheep frontal bone) from the fill of the central part of the south ditch of EN17 of Period 3.2 gave a radiocarbon date of 263–535 cal. AD at 95.4% probability, 348–535 cal. AD at 92.9% probability, 348–440 cal. AD at 73.0% probability and 379–433 cal. AD at 65.5% probability. This strongly suggests that the EN17 ditch was filled in the mid-4th century AD or later and probably in the late 4th to early 5th century. A cattle mandible from the fill of an oval pit, [1306]=[1329] of Period 4.2, which contained the remains of three infant burials (very likely triplets) and was cut partly into the

inner side of the south-east ditch of EN7 assigned to the same period, produced a radiocarbon date of 250–405 cal. AD at 95.4% probability and 309–405 at 62.8% probability, clearly indicating a late Roman, probably 4th-century, date.

Period 2, mid-3rd to mid-4th centuries AD

The first Roman period (Period 2) has been divided into three sub-phases: Periods 2.1, 2.2 and 2.3, which are summarised in turn below. Throughout Period 2 activity appeared to concentrate along the southern edge of the site, indicating that the focus of occupation lay in this area and presumably extended further south beyond the limit of excavation.

The first identified Roman sub-phase (Period 2.1) contains just two features situated in the south-east part of the site: a probably rectangular ditched enclosure (EN20; three of its sides were recorded), measuring approximately 25m north-west to south-east by at least 16.5m north-east to south-west internally, with a pit apparently lying in the east part of this enclosure. Both of these features were cut by features in Period 2.2.

Period 2.2 is the main sub-phase of Period 2. Several of its constituent features cut those of Period 2.1 or were cut by those of Period 2.3, however, many features assigned to Period 2.2 had no observed stratigraphic relationships with features of Periods 2.1 and 2.3 and could potentially belong elsewhere in Period 2 or even earlier or later in the Roman period. Features in Period 2.2 include the ditches of five probable rectilinear enclosures (EN21, EN22, EN23, EN25, EN29), two possible associated trackways and many other ditches which presumably formed parts of an extensive network of enclosures, trackways, structures and/or field ditches, but are typically too disturbed and interrupted by ditches of later phases for firm interpretations of them to be made. The complete skeleton of a subadult horned sheep was buried in the north-east ditch of enclosure EN23.

A few possible small timber structures of very simple type were assigned to Period 2.2. Structure 3 (ST3) was located in the western-central part of the site and is one of the westernmost features in Period 2. It was defined by a sub-rectangular ditch, *c.*14m north-west to south-east by *c.*3.5m north-east to south-west. This ditch was 0.4 to 0.5m wide and 0.1 to 0.2m deep. ST3 is tentatively identified as a timber beam slot building, which may have housed both humans and livestock. No internal partitions were noted. In the north-west corner of enclosure EN23, in the central southern part of the site, was a small cluster of five possible postholes (ST7), three of which formed a straight line. ST7 presumably represented another simple structure of some kind. In addition, short lengths of contemporary possible beam slots, [977] and [979], 2.3 and 0.76m long respectively, were found just east of the centre of the site, south of EN25. These might represent part of a small timber structure of uncertain form. Another possible beam slot [1205], 3.2m long, was recorded *c.*12.5m further south-west.

Remains of definite Roman timber buildings are rarely recovered in archaeological excavations in Cambridgeshire (Evans 2019), although they are actually quite well represented in much of this county and the surrounding region in comparison to some other parts of England (cf. Smith 2016a, Fig. 3.8; Smith 2016b, 167–71, Table 5.3, Fig. 5.30). The lack of recovered Roman timber buildings is presumably because such buildings were typically of sill-beam construction, with shallow footings that are easily damaged by ploughing and perhaps also by machine-stripping prior to excavation (Evans 2019). One Cambridgeshire site where many timber buildings were found was Camp Ground near Earith, a nucleated Fenland port settlement near the River Great Ouse, *c.*17.8km north-west of the Police Station site. A remarkable 62 timber buildings were recorded at Camp Ground, including examples of platform, beam-slot and post-built type (Evans *et al.* 2013, 236–77).

Another feature of note assigned to Period 2.2 was an isolated oven, [1335]. This was located in the south-west part of the site, apparently outside any known enclosure, but it has been radiocarbon dated to the first half of the 3rd century AD. The oven was keyhole-shaped, 2.64m in overall length, aligned north-west to south-east, with a chamber at the north-west end and a stokehole to the south-east. It is uncertain what the oven was used for, although its fills contained a notable amount of charred cereal grains and a large number of charcoal fragments which included fragments of oak (*Quercus* sp.) wood and birch (*Betula* sp.) wood.

Several pits have also been assigned to Period 2.2 including an apparent group/concentration in the south-east part of the site. Some of these may have been watering holes and others rubbish or gravel extraction pits. Further north, just west of the centre of the site, lay a possible watering hole or well, [603], 2.4 by 2.4m and 1.1m deep.

Period 2.3 comprises features cut through features of Period 2.2, or which otherwise appear in plan to be later than those of Period 2.2, but are themselves typically cut by features of Period 3. There are, again, uncertainties in the phasing and some features may belong in earlier or later phases. Period 2.3 contained at least one enclosure, EN24, on the south-western edge of the site, as well as several short ditch fragments,

which probably include parts of further enclosures and/or trackways, the plans of which have largely been obscured and cut away by later features. One of these ditches, D10, included a burial of a large dog. A notable feature assigned to Period 2.3 was a possible pond, F1, in the south part of the site, near a concentration of pits from Period 2.2. F1 extended beyond the limit of excavation to the south-west, but it was 9m by at least 6m. It was at least 1.73m deep, although its base was not reached due to safety reasons.

Period 3, mid- to late 4th century AD

Period 3 has been divided into three sub-phases, Periods 3.1, 3.2 and 3.3, which are described in turn below. The Period 3 ditches are significantly less disturbed than those of Period 2 and from Period 3.1 onwards the layout of enclosures on the site is much clearer. The Period 3 enclosures typically cut across the lines of Period 2 features, but there was also some continuity as several of the lines established by enclosures and ditches in Period 2 were followed by, or influenced, the layout of enclosures and ditches in Period 3. In Period 2 the enclosures, ditches and other features appeared to concentrate along the southern edge of the site, but in Period 3 the focus of activity extended further northwards, encompassing the southern and central parts of the site.

In Period 3.1, an interconnected series of enclosures was constructed, replacing an earlier and less clearly defined series of enclosures from Period 2. Four rectilinear enclosures (EN11, EN13, EN16 and EN19) were assigned to Period 3.1, along with several associated ditches. The largest of these enclosures was EN16. This lay in the west part of the site and was 60m north-east to south-west by *c*.25–28m north-west to south-east. It had two internal dividing ditches. In the south-east part of the site, fragmentary human remains, comprising a skull and torso of a perinate (±1 month before/after birth), were found in a fill of the south-east ditch of EN19. A single humerus of a human perinate was also recorded from a fill of the north-east ditch of the same enclosure (EN19), but *c*.27m further north-west. An upper fill of the south-west ditch of EN19 included a copper-alloy coin of the House of Valentinian, datable to AD 364–78. To the north of the centre of the site were several small features, recorded variously as postholes, pits, beam slots and ditches, which may together represent parts of some sort of timber structure (ST6) of at least 6 by 6m. Ditches [534] and D17, situated *c*.4 and *c*.7m to the north and north-west of ST6 respectively, might also form parts of this possible structure. A large pit, P2, at least 6.2 by 6.0m and at least 0.8m deep, has also been assigned to Period 3.1. This pit is situated in the area bounded to the south-west by EN11, to the north-west by EN13 and to north-east by EN19. It had a ramp, *c*.1.3m wide, in the south-east leading down to the base and may have been a waterhole.

During Period 3.2 at least five further enclosures were constructed (EN14, EN15, EN17, EN27 and EN28), which replaced several of the enclosures in use during Period 3.1 on similar or slightly differing lines. One of these, EN15, was a major rectilinear enclosure in the central part of the site and seemingly formed the central and main enclosure during Period 3.2. It was slightly trapezoidal, narrower towards the north-west than to the south-west. It measured *c*.69m internally north-west to south-east by *c*.35m north-east to south-west at its north-west end and by *c*.41m north-east to south-west at its south-east end. The ditch had a typical width of 1 to 2m, with the most substantial and deepest sections located on its north-west side, e.g. [408], which was 2.76m wide and 0.72m deep. Two ditches within the enclosure appeared to define internal sub-divisions or structures that controlled the movement of livestock. Two more enclosures (EN12 and EN18) were added to the existing layout in Period 3.3 and two new internal dividing ditches were cut within EN15.

Period 4, late 4th to ?5th centuries AD

During Period 4, the general layout of the Period 3 enclosure system was retained, with new enclosures and boundary ditches constructed, often recutting or following/extending the same or similar lines as ditches from Period 3. There appears to have been much greater continuity between Periods 3 and 4 than between Periods 2 and 3. Several features of Period 3 may have continued in use into Period 4, whilst others may have gone out of use and/or been partially or completely replaced. In Period 4, enclosures were concentrated in the central part of the site and, in apparent contrast to Periods 2 and 3, several clear enclosures were now constructed in the north-central part of the site. This perhaps represented a northwards extension of the focus of activity on the site, continuing a trend evident from Periods 2 to 3. Period 4 has been divided into three sub-phases: Periods 4.1, 4.2 and 4.3, which are described in turn below.

At least four enclosures (EN2, EN5, EN10 and EN26) were established in Period 4.1. One of these, EN2, lay just north of the centre of the site on the north-east side of EN15, the central enclosure of Period 3.2, which may have continued in use into Period 4. Inside the north-east part of EN2 lay a curving ditch, ST2, at least 10m in length, possibly representing the north-east quarter of a circular gully. Ditch ST2 had a width of 0.5 to 0.6m and a depth of about 0.28 to 0.30m. If the ditch was circular, it would have a projected diameter of *c*.13m and might represent a drip/drainage gully of a structure within EN2. This may have been an agricultural structure

of some sort, or perhaps a threshing area, or simply a drainage gully around a hayrick or fodder storage (Evans and Lucas 2020, 346–8; for Roman circular structures in the surrounding region, including 4th-century examples, see Smith 2016a, 47–51, Figs 3.4–3.7; Smith 2016b, 168, Fig. 5.29).

Immediately to the north-west of EN2 was Structure 1 (ST1). This comprised a north-east to south-east aligned ditch, at least 14.9m long and typically 0.65m wide and 0.21m deep, with a short return (*c*.2.7m long, up to 1.35m wide and 0.39m deep) to the south-east at its north-east end. A posthole, [309], lay in the terminus of the south-east return. ST1 might have formed part of another enclosure or perhaps represented slots of a timber structure.

BD5 is a major boundary ditch assigned to Period 4.1. It ran south-east across the site for *c*.170m from the north-western limit of excavation before turning at a right angle and apparently discharging into a large contemporary drainage pit or waterhole, P1, *c*.7m to the south-west, which was *c*.5.6 by 4.9m and up to 1.21m deep. BD5 cut through various Period 3 enclosure ditches, including the south-west ditch of EN15, which shared almost the exact same line as BD5. BD5 may have represented the extension of a pre-existing Period 3 boundary line further across the site in Period 4. Another major boundary ditch of the same phase, BD4, ran next to and approximately parallel to the north-western edge of the site for *c*.120m. It had a width of 1.2 to 2m and a depth of 0.2 to 0.5m. BD4 may possibly have been a replacement of a pre-existing boundary as ditch [147] of Period 2.3 and D27 of Period 3.1 ran parallel to and very close to the northern part of its line.

In Period 4.2 two new enclosures were cut (EN3 and EN7). The south-eastern side of EN7, together with contemporary ditch D3b further south, were recuts of the major and repeatedly redefined Roman boundary along the south-east side of the site, which had been in place from at least Period 2.2 onwards. No Roman features were recorded east of this boundary. A poignant discovery was a burial of three infants of the same age, almost certainly triplets (see above, pp. 124-6), in an oval pit, [1306]=[1329], cut into the inner (west) side of the south-east ditch of EN7. The fill of the pit included iron nails, perhaps from a coffin(s) or box(es) in which one or more of the burials were placed. A cattle mandible from the fill of the pit gave a late Roman, probably 4th-century, radiocarbon date. If these were triplets, they would be only the second set recorded from Roman Britain. The other known example of triplets, in this case stillbirths/neonates, dated to the late 1st century AD and was recovered from the Roman small town of Baldock, Hertfordshire (HCC 2011). In order to confirm whether the co-deposited neonates from the Police Station site were triplets, aDNA, enamel peptide and isotope analysis could be undertaken on these remains. Further analysis such as a study of the histology of the teeth could also be carried out to understand these burials to a greater extent, but these analyses are beyond the scope of this present publication.

Apart from these and the remains of a few more infants in ditch fills of Periods 3 and 4 (see above, pp. 124-6) no other human burials were noted on the site. A barrow which contained inhumations and cremations of Roman date was found *c*.200m or more to the south of the site in evaluation trenches at Milton Landfill 1995 (CHER no. CB15701; cf. Bray and Reynolds 1997, 1, 26). This barrow was perhaps the formal burial location for the occupants of the site.

Two further boundary ditches (BD1 and BD2) were also cut in the north part of the site in Period 4.2. BD2 ran north-east from and along the line of EN15 of Period 3.2 for at least 52m. It extended beyond the north-east limit of excavation and represented a recut of an earlier ditch (BD3) of Period 4.1. BD1 extended north-west from BD2 for at least 131m and continued beyond the north-west limit of excavation. It likely formed a boundary for an agricultural field to the north of the site.

In Period 4.3 five well-preserved rectilinear ditched enclosures were constructed (EN1, EN4, EN6, EN8 and EN9). These included EN1, which was a major and clearly defined feature in the north-west part of the site. This was rectangular, *c*.69m north-west to south-east by *c*.18 to 19m north-east to south-west, and it appeared to form part of the north-east side of the system of enclosures on the site. Its ditch was 1.2 to 1.6m wide and 0.4 to 0.8m deep. EN1 represented a replacement/redefinition of EN2 of Period 4.1 and EN3 of Period 4.2, following similar lines to these, but combining their former areas into a single larger enclosure. Three copper-alloy Roman coins were recovered from a single upper fill of the north-east ditch of EN1 at its junction with the south-east ditch of EN3 (the same fill extended into the top of the adjacent EN3 ditch). These comprised two coins of the House of Valentinian, datable to AD 364–78, and one copy of the House of Constantine, datable to AD 353-360.

Agricultural production

The compartmentalised layout of the late Roman enclosures indicated that corralling of livestock was a significant activity at the site. This theory was supported by a large and well-preserved late Roman animal bone assemblage (see above, pp. 126-58). Contexts of Periods 2–4 produced a total of 74 associated bone groups (ABG) and the number of identified specimens (NISP) from these periods, based on the count of

Table 4.1. Animal bones: NISP counts and minimum number of individuals of the main domesticates from late Roman contexts of Periods 2–4.

Period	Cattle	Sheep/goat	Pig	Equid
NISP counts				
2–4	65.7% (1227)	22.4% (419)	2.5% (47)	9.4% (176)
2	60.4% (116)	21.9% (42)	1.6% (3)	16.1% (31)
3	65.3% (409)	23.6% (148)	2.2% (14)	8.8% (55)
4	66.8% (702)	21.8% (229)	2.9% (30)	8.6% (90)
MNI counts				
2	10	5, inc. 2 sheep	1	3, inc.3 1 horse and 1 ?horse/donkey hybrid
3	14	21, inc. 10 sheep	3	4, inc. 1 horse
4	32	24, inc. 11 sheep and 1 goat	6	5, inc. 3 horse and 1 ?donkey.

refitted disarticulated bones, was 5352. Many of the disarticulated bones were assigned to the non-specific large mammal (i.e. cattle sized) and to a somewhat lesser extent the medium mammal (i.e. sheep/goat sized) categories and there were also several dog/wolf bones, as well as a few bones of cat, domestic fowl and various wild animals. The relative proportions of the disarticulated bones clearly identifiable as one of the main domesticates are summarised in Table 4.1 by NISP counts. Table 4.1 also presents the minimum number of individuals (MNI) of each of the main domesticates for Periods 2–4.

The NISP and MNI counts indicate the presence of a significant number of domesticated animals on the site during the late Roman period and also suggest that the number of these animals increased substantially in Period 3 when compared to Period 2, and peaked in Period 4 in the late 4th century AD. The relative proportions of the animals remained fairly similar over time: cattle were by far the most common, followed by sheep/goat, with a very small amount of pig and a small but notable amount of equid. The age profiles of the cattle indicated a consistent focus on secondary products, such as traction and manure production. The exploitation of cattle as draught animals was further corroborated by the observed pathological changes of feet and sub-pathological broadening and asymmetry of distal metapodia, and perhaps by smooth-lined discontinuations of cattle skulls possibly exacerbated by yoking to the back of the skull. The main purpose of the most common domestic animal (cattle) on the site was, therefore, to support arable agricultural production on a fairly large scale. The cattle would also have provided meat and milk/cheese, but probably for fairly local consumption rather than for export as they were not primarily being raised for these products. Different mortality patterns were identified for the smaller numbers of sheep/goat, indicating a focus on meat provision, probably with supplementary provision of milk and wool, most likely for local consumption/use. Some of the equids may also have been used as traction animals, especially the possible donkeys and hybrids. There is evidence for local breeding of cattle, sheep(/goat) and possibly equids in Periods 3 and 4

Cheese production at the site is indicated by fragments of four cheese presses or strainers (ceramic vessels with holes drilled in their bases), two from the ditch of EN18 of Period 3.3 on the southern edge of the site and two from EN1 of Period 4.3 in the northern part of the centre of the site; however, the aforementioned animal bone assemblage suggests that cheese would probably have been produced on a relatively small scale for local consumption rather than for export.

Analysis of charred plant remains from 25 environmental samples recovered from the Police Station site showed a high quantity of cereal grains from late Roman contexts (Periods 2–4), particularly those of Period 2 (see above, pp. 161-71). The dominant cereal species identified was that of hulled wheat, i.e. emmer or spelt (*Triticum dicoccum/spelta*), with spelt more common than emmer when precisely identifiable. Barley (*Hordeum vulgare*) grains were also noted in large quantities but not in as high a volume as the hulled wheat grains. Alongside the cereal grains, there were very large numbers of hulled wheat glume fragments, with spelt again more common than emmer when precisely identifiable. This abundance of glume fragments provides evidence

that late-stage crop processing activities took place throughout Period 2 and into Periods 3 and 4, although as with the cereal grains, smaller volumes of glume fragments were recovered from contexts of Periods 3 and 4 compared to those of Period 2. As defined by Hillman (1984), late-stage crop processing is the stage after the first sieving process has taken place, when contaminants coarser than grain are removed, and what is left in the assemblage is grains, occasional rachis/awn fragments and weed seeds. The remains from the Police Station site met the criteria for the sixth and seventh stages of processing: medium-coarse sieving and fine-sieving of the remaining material.

Much of the late-stage crop processing evidence was found in the southern part of the site. For example, Sample 122 from Enclosure 21 of Period 2.2 produced an approximate count of 3048 hulled wheat glumes, 232 spelt wheat glumes, and 30 emmer wheat glumes. Twining species identified in the assemblages also indicated that crop processing was taking place, as these species were often intertwined with the crop and so were harvested at the same time. These include such species as vetches/wild peas (*Vicia/Lathyrus* sp.) and black bindweed (*Fallopia convolvulus*). In sum, the charred plant remains assemblage indicated that the crop production carried out on this site was done on a producer level, rather than on a smaller-scale consumer level (cf. Van der Veen 2007). This suggests that cereals were being cultivated and then exported to a wider area, rather than just being consumed by the local community.

The bulk samples from the 2021–2 evaluation trenches dug across the Police Station site also demonstrated frequent processing, use and carbonisation of cereal crops at the site during the later Roman period (Clarke and Newton 2022). The carbonised cereal remains recorded in the evaluation samples were principally spelt wheat, but with evidence for other crops, including barley, oats, flax and pulses. This material was widely distributed across a range of archaeological features, although there was an apparent concentration in the central, southern and eastern portions of the site. Notably large deposits of carbonised material including spelt wheat chaff and germinated wheat grains were recovered from Trial Trench 25 in the south-eastern corner of the site, suggesting a focal point for cereal processing activities, such as proximity to a corndryer/malt drying kiln, although no such feature was recorded here in the 2023 excavation.

Further evidence of crop processing at the site, in this case the grinding of grain into flour, was indicated by 21 fragments of probable rotary querns and 24 more possible quern fragments (see above, pp. 87-96). All of these quern fragments were in very abraded condition, with none representing more than 10–15% of the original artefact, and all had high degrees of wear on their grinding surfaces. Of the 21 probable rotary quern fragments, 19 were in a medium-coarse moderately well sorted sandstone (likely Millstone Grit from a source in or near the Peak District), one was in a greyish medium-fine grained well sorted sandstone and one in puddingstone (likely from Hertfordshire). Most of the possible quern fragments were also likely in Millstone Grit, but there were six joining fragments of lava from a continental source, most probably from near Mayen on the Middle Rhine in Germany. More quern fragments were recovered from contexts of Period 3 (six probable and two possible fragments) compared to Period 2 (two probable and two possible fragments), with the greatest number deriving from contexts of Period 4 (13 probable and 14 possible fragments), although we should bear in mind the possibility that some fragments may have been residual from earlier activity. The querns were concentrated in ditches in the southern part of the site, perhaps indicating that grain was ground in this area where the charred plant remains also indicated that crop processing was principally occurring. A further 15 fragments of rotary querns or millstones in Millstone Grit were recorded in Roman ditches in the evaluation trial trenches dug on the site in 2021–2 (Clarke and Newton 2022, 39). These fragments were identified in eight different trial trenches, principally concentrated in the central and southern parts of the site. It is unclear whether the surplus grain produced at the site would have been exported ground or unground (or as a mixture of both). If grain was exported unground, the querns may possibly have been used to make flour for bread for local consumption.

Two whetstones and two sharpening stones were also found in the southern part of the site (see above, pp. 88-9) and were perhaps used to sharpen tools used for agricultural purposes.

Non-agricultural craft production

Minimal evidence for non-agricultural craft production was recovered from the Police Station site. No clear evidence for metal working was found. A few fragments of possible kiln furniture in burnt clay, including kiln bars, kiln plates and luting, came from contexts of Periods 2–4 (see above, pp. 85-6). These may derive from pottery kilns, perhaps relating to the local Horningsea pottery industry. A few burnt pieces of ceramic building material may represent seconds from a nearby Horningsea industry kiln (see above, pp. 81, 85). There was also a possible loom weight or kiln bar fragment in burnt clay, which if a loom weight would indicate some local textile production (see above, pp. 85–6). An iron leather-working awl was recorded in a Period 4 enclosure ditch fill (see above, p. 104), whilst a bone awl also came

from a Period 4 ditch fill (see above, pp. 119-20). A few iron knives were recovered from Roman contexts (see above, p. 104), as well as some bone and antler handles from knives or awls (see above, pp. 115-16). Knives could of course have been used for various purposes, including for agricultural, domestic or craft activities. Two bone needle cases for iron needles also came from Period 4 contexts. These rarely identified items indicate sewing, most likely of a domestic nature.

Small-scale bone and antler working is evidenced by two pieces of worked bone waste and two pieces of antler waste, three of which came from fills of the same part of BD5 of Period 4.1, with the fourth (a piece of antler waste) from the fill of EN7 of Period 4.2 (see above, pp. 114-15). The bone waste appears to relate to pin manufacture (although no bone pins were recovered from the site), whilst the antler waste reflects the manufacture of handles (a finished antler handle was present in a fill of EN10 of Period 4.1). Bone and antler working for the manufacture of combs, handles, bracelets and other objects is well attested in Cambridgeshire during the late Roman period.

Other finds from the site

The large pottery assemblage from the Police Station site was consistent with and similar to those recovered from other late Roman rural sites in the surrounding region (see above, pp. 52-80). Local wares dominated the Police Station assemblage. Imported wares formed only 1% of the total by sherd count and regionally-traded wares, mainly from the relatively nearby Lower Nene Valley industry, formed 11%. The main vessel form was jars, which accounted for around half of the total. The mortaria and cheese presses or strainers indicated food preparation, whilst the bowls and dishes, which comprised over a quarter of the vessels, together with the cups, flagons and 'Castor' boxes, related to consumption. Overall, the assemblage suggested basic, utilitarian occupation and activity with a domestic element focused on the southern and central parts of the site. A few vessels may, however, provide evidence for higher-status habitation in the vicinity. These are a costrel-like vessel (in an oxidised ware), which is an unusual and reasonably rare type, from Ditch 3a of Period 3.2 in the eastern part of the site, a face flagon in an oxidised ware, possibly Hadham ware, from EN10 in the south part of the site, a face flagon in probable Hadham oxidised ware and another possible face flagon or jar in an oxidised ware, both from EN1 of Period 4.3 in the north central part of the site, and a fragment of a possible face flagon or jar in an oxidised ware from D31 of Period 3.1 in the centre of the site.

A fairly large assemblage of 68 Roman coins was recovered from the Police Station site, a quantity perhaps more in keeping with a villa site rather than a farmstead. Coin use at the site seems only to have become widespread at a relatively late date, sometime between AD 330 and 350, instead of the late 3rd century AD as is typical on other nearby rural sites (see above, pp. 96-104). In apparent contrast to most other local rural sites, coin use continued on a considerable scale into the late 4th century AD and down to the end of the Roman period, a trend also evident at some other villa sites in the region (see below, p. 188).

The Roman ironwork from the site included dozens of nails and nail fragments, as well as 185 hobnails, a few structural pieces, tools and knives and various unidentifiable fragments (see above, pp. 104-13). This adds little to the picture of Roman activity, apart from indicating significant habitation, and is perhaps consistent with what we might expect from a working agricultural rural site.

Roman copper-alloy objects included a well-preserved plate brooch of octofoil form with a pronounced central boss and red and blue enamel decoration, probably datable to the 2nd to 3rd centuries AD, several late Roman bracelet fragments and a dining spoon of 2nd- to 4th-century date, which may originally have been silver plated. Whilst by no means exceptional, these objects possibly indicate 'higher-status' occupation in the vicinity of the site and some may have been worn or used by the inhabitants of a postulated adjacent Roman villa (see below).

Several bone and antler objects were recovered from the site (contexts of Periods 2 and 4), mostly of a fairly utilitarian nature, such as handles and needle cases, but also including a simple, undecorated, double-sided composite antler comb of a well-established local type, datable to *c.*AD 350-425 (see above, pp. 113-21). This comb would presumably have been used for grooming or styling a person's hair or beard, or for hygiene (delousing) (cf. Böhme 2023, 983). An antler pestle was also recovered, which may have been used to grind powders, possibly for cosmetics and a possible wallhook in antler was a very unusual find. A small assemblage of glass vessels included fragments of two 4th- to 5th-century AD beakers.

Interpretation of the site

The late Roman features found on the Police Station site clearly represented a late Roman intensive agricultural working area where activities related to the surplus production of grain took place, namely large-scale crop processing and the penning/keeping and breeding of considerable amounts of domestic animals, principally cattle that were employed for traction, e.g. ploughing and transport. This working area may well have formed

part of a villa estate and there is evidence from the site and its vicinity that a villa possibly lay nearby, most likely in the unexcavated area immediately to the south (see Figure 1.5, Figure 4.1 and Figure 4.2).

Roman villas in Britain can be defined as rural houses of Roman aspect, key diagnostic features of which are the use of stone or brick/tile, rectilinear plan, tessellated pavements or mosaics and bath facilities (Mattingly 2006, 370), as well as underfloor heating (represented by hypocausts with box-flue tiles carrying heat up the walls), colourfully painted plaster walls, *opus signinum* floors and glass windows (Rippon 2018, Table 5.1). Identifying what constitutes a villa is not always straightforward as there is a continuum of rural buildings ranging from timber farmsteads with thatched roofs, through highly Romanised farmsteads with some features of a villa (e.g. an added bathhouse), to palatial stone-built country houses (Rippon 2018, 140–1). There are further complications in that some Roman-style buildings may be ancillary to the main house, whilst other buildings often regarded as villas may actually have been religious sanctuaries, e.g. Great Witcombe and possibly Chedworth in Gloucestershire (Henig and King 2022, 6–7; Walters and Ryder 2022). Most villas were to some extent luxury houses, displaying the wealth and 'culture' of the owner and providing them with comfort and a place to host guests. The majority were doubtless centres of agricultural estates, which will typically have formed the basis of the owner's wealth, although in some cases wealth may have been principally derived from industry, from imperial service, or from landholdings elsewhere in the Empire (Allen and Smith 2016, 37; Henig and King 2022, 6–7; Mattingly 2006, 372–3).

One-hundred-and-sixteen fragments, 11.1kg, of ceramic building material of probable Roman date were found at the Police Station site (see above, pp. 80-5). These were nearly all products of the local Horningsea industry and likely dated from the mid-2nd to mid-3rd centuries AD. A range of forms were present — tegulae, imbrices, Roman brick and flue tiles — including material probably derived from a hypocaust structure in the near vicinity. This implies the presence of a nearby Roman-style building, potentially part of a villa. There were also some burnt pieces which possibly represent seconds from a nearby kiln. The ceramic building material was generally scattered in late Roman ditch fills across the site, with a concentration in the southern and central parts of the site. Eleven fragments (746g) came from contexts of Period 2 and 27 fragments (1205g) from contexts of Period 3. The vast majority (52 fragments, 6802g) came from late 4th- to ?5th-century contexts of Period 4, perhaps implying destruction or renovation of a nearby building at this time. A further 26 fragments (2348g) derived from medieval/post-medieval contexts or were unstratified.

An additional 57 fragments (6618g) of Roman ceramic building material were found in the evaluation trenches dug on the site in 2021–2 (Clarke and Newton 2022, 36–9). These concentrated in the southern half of the site and comprised principally tegulae/roof tiles, with two fragments of box-flue tiles and three of bessalis bricks also present.

Several fragments of stone were also recovered from Roman contexts in the 2023 excavation, including two stone roof tiles (one with a nail hole) and a possible flagstone, all in micaceous siltstone to fine sandstone from enclosure ditch fills of Period 4 (see above, p. 89). This material could perhaps have been obtained locally, having been deposited through ancient river activity. There were also two pieces of apparently roughly-shaped masonry in a light cream-buff fossiliferous limestone, which would probably have been imported to the site from further afield, perhaps from the East Midlands/north-west Cambridgeshire (cf. the Barnack stone used to construct Roman Cambridge's walls in the 4th century AD). Both these pieces came from fills of the ditch forming the west side (near the north-west corner) of EN15 of Period 3.2 in the centre-west part of the site. The larger piece weighed 26.8kg with dimensions of 390x254x124mm (the smaller was 3.1kg with dimensions of 162x157x115mm), suggesting that they may have derived from a nearby building with substantial walls or foundations of stone. A fragment of another worked fossiliferous limestone block, likely also derived from a nearby substantial structure, was recorded in the fill of a Roman ditch in the south-east part of the site in one of the trial trenches dug in 2021–2 (Clarke and Newton 2022, 39–40). This fragment had a regular right-angled corner, a weight of 1430g, a thickness of 50mm and other dimensions >150mm. In addition, four fragments (399g) of mortar were found in late Roman contexts in the 2023 excavation (Periods 2–4). These were possibly floor underlay mortars, again implying a building of note in the vicinity (see above, p. 86).

An excavation *c.*200m to the south of the subject site, at Milton Landfill in 1994, revealed four phases of Roman activity, which appear not yet to have been more precisely dated (Figure 1.5; Reynolds 1994, 10–12; CHER no. 11669). The first of these (Phase 4) comprised boundary ditches (including at least one possible large rectangular enclosure), which were recut on slightly different alignments in a subsequent phase (Phase 5). The ditches from these two phases were thought to be part of an estate associated with a Roman villa as roof tile, box tile and worked stone, perhaps representing destruction/reconstruction material from a villa or

Figure 4.1. Reconstruction drawing showing the Milton Police Station site and its surroundings during the 4th century AD, looking south towards the postulated villa (by Ada Lewkowicz).

Figure 4.2. Reconstruction drawing showing the landscape around the Milton Police Station site and the postulated adjacent villa (lower left) in the 4th century AD, looking south-west along the line of the Roman road leading to Cambridge. The walled settlement of Cambridge is visible in the background and the River Cam can be seen upper left (by Ada Lewkowicz).

stone building, was found in the fills of the ditches in the northern part of the site. The most likely location for this possible villa would perhaps be in the unexcavated area north of the 1994 excavation at Milton Landfill and south of the Police Station site. A series of north-west to south-east ditches that ran at right angles to the Roman road (Akeman Street) were subsequently cut (Phase 6). These silted up and in a final Roman phase (Phase 7) a timber barn associated with an oven/corndryer, pits and a pond was constructed in the north part of the site.

In 1995 evaluation trenches at Milton Landfill adjacent to and west of the 1994 site confirmed that the Roman boundary ditches extended into the northern part of this area (Figure 1.5; Anon. 1995; Bray and Reynolds 1997, Fig. 2; CHER no. 11669; cf. Phillips 2013, Fig. 24). In the northernmost trench (Trench I), three inhumation burials were found, the fills of which included small fragments of Roman pottery. A barrow containing three cremations and 15 inhumations appears to have been found *c.*50m further south-east in Trench IV (CHER no. CB15701; cf. Bray and Reynolds 1997, 1, 26). Most of the barrow burials lacked grave goods, but two small jars were found in a box containing a cremation and a whole pot was placed in one of the graves, which also contained a fragment of a bone pin. The burials were thought to span the 2nd and 4th centuries AD.

Other adjacent excavations at Milton Landfill to the south-west, west and north-west of the Police Station site (Figure 1.5; see above, pp. 9-10; Collins 2012; 2013; Connor 1998; 1999; Phillips 2013) and at Milton Park and Ride to the north (Figure 1.5; see above, p. 10; Phillips 2010) produced few Roman features and were presumably mainly occupied by fields during the Roman period, where the crops processed at the Police Station site were probably grown and livestock likely grazed. The molluscan assemblage from the Police Station site is certainly reflective of a well-established open landscape during the late Roman period (Periods 2–4) with areas of longer grass, scrub, marsh and waterlogging in the vicinity (see above, pp. 159-61). No molluscs were identified that were indicative of woodland or fast-moving water.

Other villas in the local area

Many probable and possible Roman villas are known from the area around Cambridge, to the east, south and west of Milton and to the south of the Fens (Figure 4.3 where Milton is possible villa/villa estate No. 1). It should be borne in mind, however, that villas were just one type of rural site and that non-villa farmsteads were much more common and widespread in the region (Allen and Smith 2016; Evans and Lucas 2020; Smith 2016b, 160, 192–212). Smith (2016b, 201, 206, cf. 207; cf. Lucas 2001, 153) has suggested that an apparent general decline in farming settlement numbers around Cambridge in the later Roman period perhaps reflected a centralisation of the landscape into larger villa estates. The intensive late Roman occupation on the Police Station site may well represent part of one of these villa estates, indicating that this centralisation perhaps occurred here in the mid-3rd century AD, with activity particularly prevalent on the site during the mid- to late 4th century, possibly extending into the 5th century.

As discussed in greater detail below, many of the other villas in the surrounding region appear either to have been constructed in or remained in use into the 3rd and 4th centuries AD (Rippon 2018, 138–67, Fig. 5.6), indicating that villas formed an apparently fairly typical part of the settlement pattern in the vicinity of the Police Station site at the time of its late Roman occupation. Some of these, such as the villa farm complex at Rectory Farm near Godmanchester (Figure 4.3, No. 15; Lyons 2019), seem to have developed gradually from the early to mid-Roman period before apparently peaking in the 3rd and 4th centuries AD. Others, such as the probable villa estate excavated for the A14 road improvement scheme south of Godmanchester (Figure 4.3, No. 16; Atkins and Douthwaite 2024), may have been constructed/imposed in the late Roman period. On the basis of coins, occupation at some other villa sites, such as the two aforementioned examples from near Godmanchester, appears to have continued on a significant scale into the late 4th century AD, certainly into the Valentinianiac period (AD 364–78). The notable group of Theodosian coins (AD 388–402) from the Police Station site may indicate considerable activity at an unusually late date, but small numbers of Theodosian coins are also known from other villa sites in the area (Lyons 2019, 177–9; Humphreys and Bowsher 2024). This suggests that some villas continued in use down to the end of the Roman period and possibly into the 5th century AD.

A villa was found in excavations in 1951–2, 1965–6 and 1995 on the site of King's Hedges Primary School, north-east of Arbury Road, just *c.*1.75km to the south-west of the Police Station site and *c.*2.25km north-east of Roman Cambridge, a short distance east of the Roman road running north-east from that town (Figure 4.3, No. 2; Alexander *et al.* 1968; Lisboa 1995; CHER no. 05421). The King's Hedges villa appears to have had two main phases comprising a stone rectangular aisled hall (cf. Rippon 2018, 150, 156, Table 5.2, Fig. 157) constructed in the 2nd or 3rd century AD that was converted into a larger winged house with ten rooms in the 4th century AD. A disturbed mosaic floor set on *opus signinum* was found in the building of the first phase, whilst three of the rooms of the 4th-century AD building had hypocausts and mosaic floors. Destruction

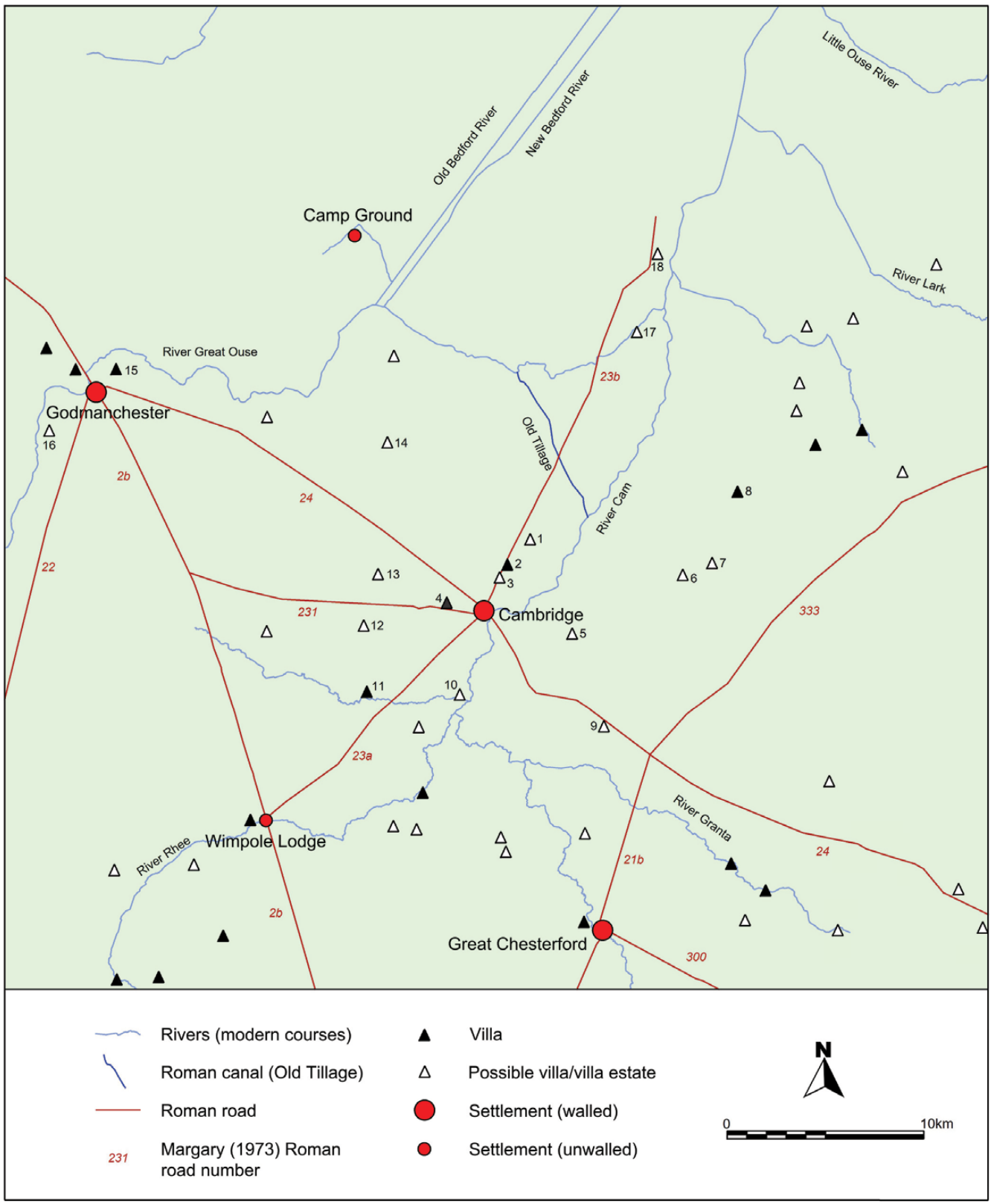

Figure 4.3. Plan of the region around the Milton Police Station site, showing Roman roads, settlements, villas and possible villas. Sites named in the text: 1 Milton (Police Station and Landfill sites); 2 King's Hedges; 3 Arbury Road; 4 North West Cambridge development, Site VII; 5 Hinton Fields; 6 Bottisham; 7 near Swaffham Bulbeck; 8 near Reach; 9 near Babraham; 10 Tartar's Well; 11 near Comberton; 12 near Hardwick; 13 near Madingley; 14 near Longstanton; 15 Rectory Farm; 16 A14 Cambridge to Huntingdon improvement, Targeted Excavation Areas 19–20; 17 Tiled House Farm; 18 near Ely.

debris apparently derived from both phases of the villa included painted wall plaster, roof and box-flue tiles and carved limestone embellishments.

Another stone building was recorded in 1952–3 just *c*.800m south-west of the King's Hedges villa (*c*.2.5km south-west of the Milton Police Station site and *c*.1.4km north-east of Roman Cambridge), south-west of Arbury Road and immediately to the east of the Roman road that ran north-east from Cambridge (Figure 4.3, No. 3; Frend 1955). This was a rectangular structure divided into two or possibly three rooms, with an additional room/annex, perhaps an addition, on the southern side. The presumably stone walls had been robbed, but their chalk and mortar foundations survived. Building/destruction debris from the site included roof and box-flue tiles, colourfully painted wall plaster, window glass and 'ragstone' roof slates. Finds suggested a 4th-century AD date of construction and occupation. Further stone foundations were found between about 14 and 17m to the south-east, suggesting that the rectangular building may have formed part of a larger possible villa building or complex.

A probable villa complex was found in the final stages of the recent excavation at the North West Cambridge development, Site VII, which lay immediately west/north-west of the Madingley Road Park and Ride, *c*.1.8km west of Roman Cambridge and *c*.5km to the south-west of the Police Station site (Figure 4.3, No. 4; Evans and Lucas 2020, 19, 345, 430, Figs 1.4, 1.10). This probable villa was represented by a notably large aisled hall, *c*.26m long and 13m wide, with a porch on one of its long sides. The hall was defined by wall footings, as well as internal postholes which survived more than 1m deep and 1.2m in diameter. A range of high-status building material, presumably derived from the building, was recovered from the site, including many fragments of ceramic box-flue tiles, pilae and roof tiles, Collyweston stone roof slates from Northamptonshire, a possible antifex, stone and tile tesserae, *opus signinum*, fragments of colourfully painted wall plaster, and late Roman cylinder blown window glass, along with metalwork and a relatively large amount of pottery (Evans and Newman 2010, 9, 111–19, 147, Fig. 47; Cessford 2015, 56–64). The preliminary reports on the finds from the site are suggestive of a 3rd- to late 4th-century AD date, but the final publication is still awaited. In addition, a considerable amount of Roman building material (stone roof slates, ceramic roof and hypocaust tiles, stone tesserae and painted wall plaster) was found concentrated *c*.700m further north at Site IV, suggesting the presence of another villa and/or bath building in the vicinity (Evans and Newman 2010, 27–31; Cessford and Evans 2014, 325–37), although no remains of such a building were identified during the excavation of this area (Cessford and Evans 2014, 111). Smaller timber aisled halls, not necessarily of villa status, are also known from various other sites in Cambridgeshire, as at Vicar's Farm, *c*.1km west of Roman Cambridge (Evans and Lucas 2020, 345, 433, n.1, Fig. 6.2; cf. Smith 2016a, 66–9, Fig. 3.8).

About 5.5km south-east of Roman Cambridge and *c*.6.6km south-south-east of the Police Station site, a possible Roman villa was partially excavated in 1978–86 at Hinton Fields west of Teversham (Figure 4.3, No. 5; CHER no. 05099). Here, a timber structure of 2nd-century AD date was replaced in the late 3rd century AD by a larger building represented by flint wall foundations (with dressed stones on at least one angle) into which timber uprights had been set. Pottery and coins indicate that occupation of the later building probably continued to the end of the Roman period. Roof and floor tiles and plaster were recovered from the site as well as tesserae in three colours, which presumably derived from a disturbed mosaic.

Archaeological work south-east of Tunbridge Lane in Bottisham, 10km east of Cambridge and *c*.7.5km east-south-east of the Police Station site, produced evidence of a possible villa on or near the site (Figure 4.3, No. 6; Newton 2016; Hayward and Meckseper 2022). Excavations in 2006–7 revealed a first phase (Phase 1) of occupation datable to the early 3rd century AD or earlier that comprised three buildings on the southern limit of excavation, two of which had fairly substantial masonry foundations (Newton 2016). Destruction debris from contexts of Phases 1 and 2 included many ceramic roof tiles, as well as a few box-flue tiles, bessalis and pedalis bricks, a few fragments of red-painted plaster and *opus signinum* and a fragment of Purbeck marble. The buildings were succeeded by a series of enclosure systems that appear to have been repeatedly remodelled on at least three different occasions between the early 3rd and 4th centuries AD (Phases 2–4). Another excavation in 2016, immediately south of the 2006–7 excavations, revealed three more buildings (Buildings 1–3) with foundations of mortared brick and large blocks of Barnack stone from north-west Cambridgeshire, 60km distant (Hayward and Meckseper 2022) — Barnack stone was used in the construction of other Roman higher-status rural farmsteads and villas throughout Cambridgeshire would presumably have been distributed by waterways (especially the Car Dyke). These three buildings apparently dated to the 3rd century AD and went out of use/were destroyed in the late 3rd to early 4th centuries AD, although a system of enclosures to their west subsequently continued in use. Building 1 was a double-apsidal building with traces of floors in *opus signinum* and herring-bone brick. It was possibly intended to be a bath-house, but appears not to have been completed as such and may have been put to some other use. Building 2 was a simpler two-roomed

structure with a collapsed clay tile roof. Building 3 was a complex structure with at least three rooms. Its demolition debris indicated that two of the rooms had walls lined with box-flue tiles. It is unclear whether any of the various buildings found at Bottisham formed part of a main villa building, or if they were ancilliary buildings on a villa estate. Another possibility is that they formed part of a high-status farmstead with no traditional main villa building.

Less than 2km to the east-north-east of the Bottisham site, another Roman building, possibly a villa, was tentatively indicated by finds of roof tiles, a box-flue tile and *opus signinum*, as well as Roman pottery made during fieldwalking south of Swaffham Bulbeck in the 1980s (Figure 4.3, No. 7; CHER nos 06634 and 11546). A large rectilinear enclosure and other features are visible in aerial photographs of the same area.

In 1892 a Roman villa was excavated between Swaffham Prior and Reach (Cambs.), *c*.13.5km north-east of Roman Cambridge and *c*.10.5km east-north-east of the Milton Police Station site (Figure 4.3, No. 8; Atkinson 1895; CHER no. 06809). This appears to be a courtyard-corridor villa (cf. Rippon 2018, 156, Table 5.2, Fig. 5.7), of which eight rooms were recorded in excavation (further parts of the villa are visible in aerial photographs). Two of the rooms had plain red tessellated pavements and two adjacent rooms had hypocausts. The building had three apses and destruction debris from the site included roof tiles and painted wall plaster in yellow, black and red.

Possible, although on present evidence not particularly convincing, traces of a Roman villa have been recorded north of Babraham, *c*.8.2km south-east of Roman Cambridge and *c*.10.2km south-south-east of the Police Station site, where rectangular cropmark enclosures and building outlines, as well as finds of Roman pottery and tiles have been recovered (Figure 4.3, No. 9; CHER no. 06244).

Debris from another possible villa was recorded in 1917–18 at a location known as 'Tartar's Well', south of Grantchester, *c*.4.5km south-south-west of Roman Cambridge and *c*.8.7km south-south-west of the Police Station site (Figure 4.3, No. 10; Porter and Porter 1921; *University of Cambridge Museum of Archaeology and of Ethnology Thirty-fourth Annual Report of the Antiquarian Committee to the Senate with List of Accessions for the Years 1917 and 1918*, reprinted, with corrections, from the *Cambridge University Reporter* 1919; CHER no. 04509). Here part of a Roman Doric column of Northamptonshire oolite was said to have been encountered 1.2m below the surface, along with many Roman bricks, roof and box-flue tiles, painted plaster and concrete flooring in the surrounding soil. Other Roman remains were found in the vicinity.

Parts of a probable villa were recorded south of Comberton in 1842, *c*.7.4km south-west of Roman Cambridge and *c*.11.5km south-west of the Police Station site (Figure 4.3, No. 11; Babington 1883, 22–4; CHER no. 03462). This was represented by several rooms of a building with substantial walls said to be of Ketton stone, chalk-marl and large flints, surviving at least 0.9m wide and 1m in height. Within these rooms were tile piers of hypocausts. A hexagonal room, 3m in diameter, with walls 0.6m wide, was also found on the site, but was destroyed before a plan of the other rooms was made. The site produced flue-tiles, colourfully painted wall plaster and various Roman coins and other finds.

Another possible villa was identified in aerial photos of a field south-east of Hardwick, *c*.6km west of Roman Cambridge and *c*.9.4km of the Police Station site (Figure 4.3, No. 12; CHER no. MCB21423). This was evidenced by enclosures with internal features thought to indicate rooms or structures. An apparently large assemblage of Roman material, including painted wall plaster, box-flue tiles and pottery, was found in 1968 whilst ploughing a field west of Madingley, *c*.5.4km west-north-west of Roman Cambridge and *c*.7.8km west-south-west of the Police Station site (Figure 4.3, No. 13; CHER no. MCB16509). This may indicate the site of a Roman building, possibly a villa.

A possible winged corridor villa has also been identified in a geophysical survey just north of Longstanton, *c*.9km north-west of Roman Cambridge and *c*.8.5km north-west of the Milton Police Station site (Figure 4.3, No. 14; Magnitude Surveys 2019; CHER no. 08298). This possible villa was *c*.100m south of an apparently Roman settlement of *c*.4.5ha represented by numerous well-organised, cellular enclosures, with areas of fired/burnt activities and pits, arranged along a *c*.440m long trackway with various spurs.

At Rectory Farm, *c*.1km north-east of Godmanchester and *c*.22km north-west of the Police Station site (Figure 4.3, No. 15; Lyons 2019), a Roman villa farm complex was excavated in 1988–95. It developed in three identifiable phases. The initial phase dated to the late 1st to 2nd century AD and consisted of an aisled building (Building 1) associated with minor structures and a pond, together with long ditched enclosures, and a mixed inhumation and cremation cemetery. In the 3rd century AD, Building 1 was reused to house crop-processing activities and was paired with a new aisled building (Building 3), the corners of the two being linked by a fence. Building 1 was also joined by a corridor to a long hall with impressive stone-built

footings, which may have been residential (Building 2). Another substantial timber-framed building, probably a barn (Building 4) lay within a developing field system to the south, while a granary lay in its own enclosure closer to the main buildings. The latest building in the sequence was constructed in the mid- to late 3rd century AD and comprised a high-status rectangular hall-type structure, with underfloor heating (Building 5). At its rear were three substantial wells which contained fragments of colourfully painted wall plaster, tesserae and a large column capital in Lincolnshire limestone. The buildings remained in use throughout the 4th century AD, with the coin sequence from the site (55 coins in total) peaking in the Valentinianic period (AD 364–78; 16 examples, 30% of the identifiable coins) and two coins dating to the very end of the Roman period (388–402).

Part of a probable villa estate was recorded in recent archaeological excavations prior to construction of the A14 Cambridge to Huntingdon improvement, on the east side of the River Great Ouse, *c*.3km south-west of Godmanchester and *c*.25km west-north-west of the Police Station site (Figure 4.3, No. 16; Atkins and Douthwaite 2024, Targeted Excavation Areas 19–20, Settlement 2). Here, a complex middle Roman farmstead, which had Iron Age and early Roman predecessors, underwent major redevelopment during the late Roman period, probably around the late 3rd century AD, when a substantial double-ditched sub-rectangular enclosure was constructed, measuring over 300 by 230m in size. Only the periphery of the interior was examined, but the extent, layout and the quality of the artefacts recovered suggested that it was a villa, owned or managed by someone with significant local social standing. The main villa building was presumed to lie within the unexcavated central part of the enclosure, although a range of other peripheral structures were noted, including a smithy. There were also two late Roman pottery kilns and indirect evidence for lead, iron, copper-alloy, bone, jet, wood and textile working. The large Roman coin assemblage from the site (404 coins) indicated that activity peaked in the 4th century AD (Humphreys and Bowsher 2024) and that the villa/villa estate continued in use into the later fourth century, after which the main enclosure was abandoned, although minor occupation may have continued into the early fifth century.

Several other likely or possible villas are known elsewhere in southern Cambridgeshire and adjacent areas, as shown on Figure 4.3, although some of these may have been shrines or other structures (plotted based on information from the Cambridgeshire, Bedfordshire, Essex, Hertfordshire and Suffolk Historic Environment Records; supposed villa sites without any convincing evidence of a villa presented, or which appear likely to be shrines, have not been plotted). As can be seen from Figure 4.3, villas appear to be widespread in the surrounding region, perhaps favouring locations near rivers and Roman roads and the south-eastern Fen edge.

To the north of the Police Station site, the Fens appear to be essentially devoid of villas (Figure 4.3; Mattingly 2006, Fig. 13; Rippon 2018, Fig. 5.6). A possible villa estate at Tiled House Farm south-east of Stretham (Cambs.) in the Fens is indicated only by apparent outbuildings around a rectilinear enclosure and various other rectilinear enclosures visible on aerial photographs (Figure 4.3, No. 17; CHER no. 06916). Another possible villa or other substantial structure may be represented by a collection of finds, including painted wall plaster, box and roof tiles, Roman pottery and 4th-century coins found south of Ely (Cambs.) (Figure 4.3, No. 18; CHER no. MCB16084), whilst occasional pieces of Roman tile, presumably derived from buildings, have been observed at a few other sites in the southern Fens (see CHER records). The apparent paucity of villas in the Fens may well relate to state ownership of much of this land either in the form of an imperial estate or alternatively as *ager publicus* with native Britons allowed occupancy in return for rents and taxes levied in terms of products that the state required (cf. Mattingly 2006, 384–6, cf. 353–4; Upex 2008, 176–210; Smith 2016b, 193–4; Rippon 2018, 140; Upex 2022, 50–1, 60–2). State ownership of the Fens is perhaps supported by other evidence such as major engineering works like the Lincolnshire Car Dyke and the Old Tillage canal (see below) and the construction of massive stone buildings which may have housed state officials at Stonea (Cambs.) in the central Fens and at Castor (Cambs.) just west of the Fens. Some, such as Evans *et al.* (2017a, 4, 126–31, 142; cf. Taylor 2000b; Evans *et al.* 2013, 13–15), have argued against the idea of state ownership of the Fens, suggesting or implying that they were instead under civilian administration by one or more *civitas* and that the lack of villas in this area can be explained by other means.

Transport links in the Milton and Cambridge area: roads and waterways

The Police Station site had excellent access to the Roman road network, through which it could potentially be well connected to major settlements in the region and beyond (Figure 4.3). The site is located just *c*.500m east of the north-east to south-west aligned Roman road known as Akeman Street or Mere Way (Margary 1973, Road 23b). This road began (as Margary 1973, Road 23a) at Wimpole Lodge (Cambs.), where it branched off Ermine Street, a major Roman south–north road running from London to Lincoln and York. From Wimpole Lodge, Akeman Street ran north-east

for *c.*15km to Roman Cambridge before continuing past the Police Station site at Milton and running into the Fens, where its precise course becomes uncertain. If it continued north-east on the same approximate line it would have passed through Ely, perhaps terminating at Littleport, or more likely continuing to meet the east–west road known as the Fen Causeway (Margary 1973, Roads 25 and 38) at or near Denver (Norfolk), *c.*45.7km north-east of Cambridge. The regional capital of the Catuvellauni at *Verulamium* could be reached from Cambridge by following Akeman Street to Ermine Street and then progressing south past Braughing (Herts.) where a branch road (Margary 1973, Road 21a) could be followed south-west direct to *Verulamium*.

The other main Roman road in the general vicinity of the Police Station site was the north-west to south-east aligned road known as the *Via Devana* (Margary 1973, Road 24). This also branched off Ermine Street at Godmanchester (Cambs.), *c.*23.3km north of Wimpole Lodge, before running south-east for *c.*22.5km along the southern edge of the Fens to Cambridge, where it formed a crossroads with Akeman Street. The *Via Devana* continued south-east of Cambridge towards a road junction at Wixoe in Suffolk (Atkins and Clarke 2018) and probably provided a route to the major Roman town of Colchester in Essex. Closer to Cambridge, at Worsted Lodge Farm (Cambs.), the *Via Devana* also linked with another road that ran south through Great Chesterford (Essex) and provided another connection to Ermine Street at Braughing (Herts.) (Margary 1973, Road 21b), and probably also with a road that ran north-east to Thetford (Norfolk) along the line of the Icknield Way (Margary 1973, Road 333).

The early 3rd-century AD Antonine Itinerary, *Iter* V, briefly describes a route running from *Icinos* (Caistor St Edmund, Norfolk) to *Duroliponte* (Cambridge), perhaps implying another as yet unidentified main Roman road running east/north-east from the vicinity of Cambridge (Rivet and Smith 1979, 162–4, Fig. 14; cf. Mattingly 2006, Fig. 11). Another probable Roman road (Margary 1973, Road 231) may have run west from Cambridge to join Ermine Street north of Cambourne (Cambs.).

The Police Station site also had good potential access to waterways which ultimately pass into the Wash and the North Sea beyond. The north-east-flowing River Cam runs *c.*1.75km to the east-south-east of the site at its closest point, *c.*6km downstream of Roman Cambridge as the modern river flows. The Cam continues into the Fens and joins the main modern channel of the River Great Ouse (the fifth-longest river in Britain) south of Ely, the combined waters eventually discharging into the Wash near King's Lynn (Norfolk), *c.*64km from Cambridge. The Fenland courses of the Cam and especially the Great Ouse appear, however, to have been different in the Roman period, having changed over time as a result of silting and flooding episodes and artificial redirections (cf. Evans *et al.* 2013, Figs 1.1, 1.2, 1.9, 4.53; Evans *et al.* 2017a, 7, Fig. 3.22). The Cam is navigable for punts, small boats and other vessels of shallow draft.

The Old Tillage was an artificial Roman canal, *c.*8km in length, that ran north-north-west from the River Cam just south of Waterbeach (Cambs.), at a point *c.*3km east-north-east of the Police Station site, to join what is now the River Great Ouse (the Old West River) at Lockspit Hall, north-east of Cottenham (Cambs.). In Roman times the part of the Great Ouse into which the Old Tillage ran appears to have been a west-flowing tributary, with the main lower course of this river running well to the west and perhaps joining the River Nene rather than the Cam (cf. Evans *et al.* 2013, Figs 1.9, 4.53; Evans *et al.* 2017a, Fig. 3.22). It was previously thought that the Old Tillage was part of an essentially continuous canal with the Lincolnshire Car Dyke, which ran from the Nene at Peterborough to Lincoln, but it has recently been proposed that they were separate and distinct systems (Evans *et al.* 2017a, x, 6–7, 143, Fig. 2.1). Further possible stretches of artificial Roman canals (perhaps parts of the Car Dyke) have, however, been noted in Cambridgeshire that might link the Old Tillage and/or the Great Ouse near Earith to the Nene at Peterborough (Evans 2013, 11–13, Fig. 4.53). The Old Tillage and the Car Dyke may have been official projects, commissioned by the Roman state and possibly constructed by or with advice from the Roman military/Roman state (cf. Evans *et al.* 2013, 13).

Excavations at the southern end of the Old Tillage, near Waterbeach, revealed that the canal was constructed in the early Antonine period, probably around the mid-2nd century AD (*c.*AD 140–50), with the main period of usage apparently being the mid-2nd to 3rd centuries AD (Evans *et al.* 2017a, 7, 27–31, 142). It appears to have been abandoned and allowed to silt up in the mid- to late 4th century AD, although there is evidence from other sites that parts of the canal may have continued in use into the Anglo-Saxon period (Evans *et al.* 2017a, 7–8, 31, 143). At Waterbeach, the Old Tillage had a width of *c.*22–24m and a depth of *c.*4m with gently sloping sides, including artificial earth banks 7m wide and 1.5m high (Evans *et al.* 2017a, 25, 27, 122, Figs 2.3, 5.8). It was suitable for use by barges (e.g. Fen lighters), large punts, or other boats of shallow draft and transport was probably its primary function (Evans *et al.* 2013, 13; Evans *et al.* 2017a, 8, 122).

At Waterbeach, deposits from the Old Tillage as well as from a nearby warehouse produced evidence of the grain weevil *Oryzaephilus surinamensis*, which has been found at large grain stores in military sites, towns and high-status rural sites, but rarely on ordinary

Roman rural settlements (Evans *et al.* 2017a, 27, 122). The presence of this beetle indicates large-scale grain storage nearby, suggesting that the Old Tillage was used for the transport of grain and possibly flour (Evans *et al.* 2017a, 27, 122).

A significant Roman inland barge-port settlement was excavated at Camp Ground, Colne Fen, near Earith (Cambs.), *c.*17.8km north-west of the Police Station site (Evans *et al.* 2013). This site was situated alongside natural watercourses and possibly an artificial canal of Roman date (potentially part of the Roman Car Dyke) that ran south into the River Great Ouse, not far from the point at which the former tributary of the Great Ouse into which the Old Tillage ran joined the main course of the river (Evans 2013, 5, 12–13, Figs 1.1, 1.2, 4.53; cf. Evans *et al.* 2017a, Fig. 3.22). The settlement at Camp Ground was occupied throughout the Roman period. It appears to have functioned as a port for shipping agricultural products from at least the early 2nd century AD onwards when a large possible warehouse complex and mill and at least one granary were constructed in a formally-surveyed area in the eastern part of the settlement (Evans *et al.* 2013, 423, 432). The peak of occupation, as indicated by the number of timber buildings recovered and by the quantity of datable pottery, was in the late 2nd to early 4th centuries (barge channels were constructed in the northern part of the settlement at this time), but coins and other evidence demonstrate significant occupation continued through the mid- to late 4th century (Evans *et al.* 2013, 423–30). Animal bones found at the site were predominantly of cattle with a notable proportion of sheep. Body-part representation indicates that some of these animals were being exported as dressed carcasses (Evans 2013, 430, 432). The nearby site of Langdale Hale to the south had evidence for intensive flour production in the form of several large mills as well as many fragments of millstones and querns. Much of this flour may have been shipped via Camp Ground (Evans *et al.* 2013, 176, 432). Evidence for crop processing activity was also found at Knobb's Farm, *c.*1km to the north of Camp Ground (Wiseman *et al.* 2021, 120). It is unclear whether Camp Ground played any role in the potential shipping of grain or other agricultural products from the Police Station site or elsewhere in the Cambridge region via the Old Tillage, but it was clearly an important port for its surrounding area.

The use of waterways for shipping products to and from the Cambridge area is also indicated by other evidence. For example, as noted below, the construction of Roman Cambridge's 4th-century defences required an estimated 10,000 cubic metres of Barnack stone to be transported, presumably via waterway, from a source *c.*65km away near the River Nene in north-west Cambridgeshire (Taylor 2000a, 82; Evans *et al.* 2017a, 123). Horningsea ware pottery, which dates from the Flavian period (late 1st century AD) to the late 4th century AD, also appears to have been partly distributed by waterway (Evans *et al.* 2017a, 79–82, 142). The kilns producing this ware lay on either side of the River Cam, stretching from the east side of Milton northwards to Waterbeach, the majority clustering within a 1km radius of the south end of the Old Tillage (Evans *et al.* 2017a, Fig. 3.1). Horningsea ware has a restricted regional distribution, essentially encompassing much of central Cambridgeshire, with the River Cam and/or Akeman Street evidently facilitating its distribution into the eastern Fens and perhaps also to the central Fen islands (Evans *et al.* 2017a, 80–2, 120, 142, Fig. 3.22). The Old Tillage played a surprisingly limited role in the movement of Horningsea ware as it forms only a small minority of the pottery at Camp Ground (Anderson 2013, 304, Table 4.3), whilst the ware appears to be largely absent from the north-western Fens (Evans *et al.* 2017a, 80–2, 120, 142, Fig. 3.22). Horningsea ware seems to have been dispersed west and south of Cambridge via roads.

Roman Cambridge: a probable distribution centre for agricultural products from the surrounding area

Based on the distribution of late Iron Age coins and other evidence, the Milton Police Station site probably lay in the north-east part of the Roman *civitas* of (i.e. territory of the people known as) the Catuvellauni, not far from the boundaries with the *civitates* of the Iceni to the north-east and the Trinovantes to the south-east, with the *civitas* of the Corieltavi lying further to the north-west beyond the River Nene (Mattingly 2006, 382–5; Morris 2013, 43–8, Figs 7 and 8; Rippon 2018, 101–2, 136–7, 197–8, 335–7). As discussed above, much of the Fens to the north of the site may have been owned by the Roman state and it is possible that some other areas around the Fen edge were also outside *civitas* control (cf. Mattingly 2006, 358–9, Fig. 10). The Roman administrative centre and main authorised market of the Catuvellauni was the chartered town (*municipium*) of *Verulamium* (St Albans, Herts.), the third largest town in Roman Britain by walled area (Mattingly 2006, 260–1, Table 9). St Albans, however, lay *c.*64.5km to the south-west of the Police Station site and even further if travelling by road. It seems likely, therefore that the Roman nucleated settlement/small town of Cambridge, which lay just *c.*4.2km to the south-west of the Police Station site, may have played a more significant role in the distribution of agricultural products from the Milton/Cambridge area, as well as perhaps also having some minor administrative functions for its locality (cf. Mattingly 2006, 286–7).

Roman Cambridge was situated at the junction of two main Roman roads (known as the *Via Devana* and Akeman Street/Mere Way, see above), on high ground

(Castle Hill) immediately north-west of the point where one of these roads (the *Via Devana*) crossed the River Cam (for details, see: Burnham and Wacher 1990, 246; Alexander and Pullinger 2000; Taylor 2000a; Evans and Ten Harkel 2010; Evans *et al.* 2017a, 4, 122–6, 142; Evans *et al.* 2017b, Chapter 10; Rippon 2018, 119, 123–4, Fig. 4.6, Appendix 5, 42; Evans 2019; Smith and Fulford 2019, 118–21; Evans and Lucas 2020, 25–94). Cambridge has convincingly been identified as *Duroliponte*, which is listed as a place on the early 3rd-century *Antonine Itinerary*, *Iter* V (Rivet and Smith 1979, 162, 208, 351–2, Fig. 14).

Interpretation of Roman Cambridge is greatly hampered by the generally small scale of archaeological investigations in the central part of the settlement and by the destruction of much of its archaeology with little record during 20th-century development (Evans and Ten Harkel 2010, 57–8; Evans and Lucas 2020, 32, 83). The site was apparently a significant late Iron Age settlement with sub-circular enclosures and imported pottery and this occupation appears to have continued into the mid- to late 1st century AD (Evans and Ten Harkel 2010, 54–5; Evans *et al.* 2017b, 29; Evans and Lucas 2020, 85). In the late 1st century AD a probable rectangular enclosure with a substantial ditch (3.6m wide and 1.5m deep) was constructed along the south-west side of the *Via Devana*. This enclosure (levelled by the early 2nd century) has been interpreted as a possible fort (Alexander and Pullinger 2000, 27–32; Taylor 2000a, 77), but may alternatively have defined a religious area occupied later in the Roman period by a shrine and ritual shafts, or had some other purpose (Evans *et al.* 2017a, 126; Evans 2017b, 30–1; Evans and Lucas 2020, 85).

The main development of Roman Cambridge appears to have taken place from perhaps the early 2nd century AD, if not already by the mid- to late 1st century AD, when gravelled lanes were laid out, perhaps in a grid (although there appears to be a lack of convincing published evidence for some of these lanes, cf. Evans and Lucas 2020, 83), and small timber buildings were constructed which had gravelled yards, ovens, hearths, rubbish pits, wells and latrines indicating domestic accommodation. Many fragments (weighing 105kg) of applied clay render with reed-lathe and rolled chevron impressions, derived from the walls of an early Roman timber building or buildings, were found in the fill of a well at Kettle's Yard in 2015 (Evans and Lucas 2020, 45–8, Fig. 2.17, 2.18). No examples have yet been found of strip buildings (i.e. shops and workshops) and there is only limited evidence for manufacturing in the form of bone pin production (Gardiner *et al.* 2000, 87, 90, Pl. XXII; Taylor 2000a, 80, 83) and a single pottery kiln (a second kiln does not seem to have been used for pottery production, cf. Evans *et al.* 2017b, 2, 22–3; there is also a little evidence for iron working and pottery production in central Cambridge beyond the Castle Hill settlement, cf. Alexander *et al.* 2004, 87, 92; Evans and Lucas 2020, 62, 68, 83). There appears to have been at least one major stone building, possibly a *mansio*, which had a room with a hypocaust associated with *opus signinum* flooring and painted wall plaster (Taylor 2000a, 77; Evans *et al.* 2017b, 1; Rippon 2018, Appendix 5, 42). There was also a significant religious focus by the crossroads in the centre of the settlement represented by a shrine in the form of a pit/cellar, 8.2 by 5m and 2m deep, with vertical timber-revetted sides, a flat bottom and a presumed timber superstructure. The shrine was built in the late 2nd century AD and destroyed by burning in the early 3rd century AD when the pit/cellar was filled with deposits indicating religious activity and a mass of pottery indicating high-status feasting. There were also many 3rd- and 4th-century AD shafts (perhaps initially dug as wells, cf. Evans and Lucas 2000, 48) between 2.5 and 6m deep with possible ritual deposits including dog and infant burials.

In the 4th century AD an area of at least 9 ha was defended by a wall of Barnack stone with an associated bank and ditch. Alexander and Pullinger (2000) date the construction of Cambridge's defences to the early 4th century AD, but Evans *et al.* (2017a, 123) have reviewed the relevant pottery assemblages and suggest a date in the second half of the 4th century AD is more likely. The wall was a major undertaking requiring the transportation (presumably via waterway) of an estimated 10,000 cubic metres of Barnack stone from a source *c.*65km away near the River Nene in north-west Cambridgeshire (Taylor 2000a, 82; Evans *et al.* 2017a, 123). Such a building project was in all likelihood carried out by the state. Timber buildings continued to be erected into the 4th century AD. Several cemeteries and burials have been found on the roads leading out of Cambridge (Taylor 2000d; Evans and Newman 2010, 147–50; Medlycott (ed.) 2011, 39; Smith and Fulford 2019, 120; Evans and Lucas 2020), including many burials of late 3rd- to 4th-century AD date to the east at Jesus Lane, where the estimated burial population may have been upwards of 750–1000 (Alexander *et al.* 2004, 92). There is also dense rural settlement in the immediately surrounding area (Evans *et al.* 2008; Evans and Newman 2010; Evans *et al.* 2017a, 125; Evans 2019; Evans and Lucas 2020).

Roman Cambridge is often classified as a small town (cf. Frere 1978, 13; Taylor 2000a; Mattingly 2006, 498, Fig. 11; Smith 2016b, Fig. 5.60; Rippon 2018, 123, Fig. 4.6; Evans and Lucas 2020, 25, 83–6), although some have questioned its urban status on the basis of its lack of strip buildings and the composition of its pottery assemblages (Evans and Ten Harkel 2010, 53, 57; Evans *et al.* 2017a, 125, 142). Smith and Fulford (2019, 133–4,

141–2) have also argued that the major towns in Roman Britain (e.g. London, Colchester, *Verulamium*) stood well apart from the wide range of nucleated roadside settlements and that none of these lesser settlements, including Cambridge, should be regarded as urban or as towns. In this view, such nucleated settlements were *vici* —villages — essentially large agriculturally self-sufficient settlements which typically played roles in state supply networks of agricultural products (as collection and distribution points) and in official communications networks, as reflected in the widespread occurrence of *mansiones* at these sites (Smith and Fulford 2019, 140–2). The provision of defences at some nucleated settlements, such as Cambridge, in the mid- to late Roman period may primarily have been to provide secure places where grain could be collected and redistributed.

Smith and Fulford (2019, 142) downplay the extent to which nucleated settlements served as markets beyond meeting the needs of those using the road system, however, despite the lack of direct evidence, we should not rule out the possibility that Cambridge was in fact also an important marketing centre for the surrounding area, perhaps principally involving trade in items such as agricultural products and pottery, as well as other goods and services. Although not necessarily supporting this view, Cambridge has a remarkably high concentration of small finds and especially pottery compared to surrounding rural sites (Evans and Ten Harkel 2010, 56–7, Table 8; Evans and Lucas 2020, 37, 86–91; cf. Smith and Fulford 2019, 129, Table 2), whilst an oculist's stamp found at the site doubtless belonged to an itinerant specialist (Gardiner *et al.* 2000, 88; Mattingly 2006, 498). The settlement was clearly also an important religious centre for the locality, which may have encouraged marketing activities to serve visitors (Taylor 2000a, 78–80; Evans *et al.* 2017a, 125–6; cf. Mattingly 2006, 290). Evans and Lucas (2020, 86) have also pointed out that Roman Cambridge was surrounded not by relatively open fields, where farming may have occurred to support and employ its many residents, but by dense rural agricultural settlements, which could themselves have supported *Duroliponte*'s needs. This suggests that many of the inhabitants of Roman Cambridge need not have been engaged in agricultural work.

Consumption centres for agricultural products from the Milton/Cambridge region

Significant questions, yet to be fully addressed in this discussion, are: where were the surplus grain and other agricultural products from Milton Police Station and other rural sites in the Cambridge region being consumed? And how did they reach their ultimate destinations? The main consumption centres for such products were probably Roman military sites and major towns in Britain and perhaps also in adjacent continental regions of the Empire. As discussed above, the nucleated settlement/small town at Cambridge may or may not have been essentially agriculturally self-sufficient, but its needs could easily have been met by the dense network of farms in its vicinity. Cambridge is unlikely to have been a major consumption centre for agricultural products from the wider surrounding region, although it doubtless played an important role in their distribution through state supply networks and marketing.

Some agricultural products from southern and eastern England, including the Cambridge region, were almost certainly shipped up the east coast to Roman military sites in northern England. During the early 3rd to late 3rd/early 4th centuries AD the fortified supply base of South Shields, at the mouth of the River Tyne by the east end of Hadrian's Wall, contained granaries with an estimated storage capacity of 3,356 tonnes. This was equivalent to the amount of wheat needed by the army on the Wall and in the outpost forts, excluding dependants, for about six months (Bidwell and Speak 1994, 29–30; Bidwell 2017, 290–1, Fig. 7.6). Much of the grain held in these granaries was presumably shipped in from southern and eastern England.

Certain types of pottery also indicate maritime supply up the east coast of England. These wares may have piggy-backed on supply networks for other more essential, but primarily archaeologically undetectable, cargoes such as agricultural products and salt. For example, Black-burnished ware 2 and other coarse wares produced around the Thames Estuary reached the eastern end of Hadrian's Wall (and prior to that the Antonine Wall in Scotland) in large quantities in the mid-2nd to 3rd centuries AD (Bidwell 2017, 292–3, 297). Vast quantities of Nene Valley colour-coated ware (mainly beakers) produced in the Lower Nene Valley near Water Newton (Cambs.) also reached northern military sites between the late 2nd/early 3rd to 4th centuries AD (Bidwell 2017, 293–7; Evans *et al.* 2017a, 111–19). The distribution of Nene Valley ware suggests that it was transported to the North by ship and unloaded at ports such as York and South Shields, until the second half of the 4th century AD, when the ware seems to have been distributed to the North principally by road (Evans *et al.* 2017a, 118–20). Horningsea ware from the Cambridge area is extremely rare in northern England, although occasional pieces have been found at South Shields, Wallsend and Newcastle-upon-Tyne near the eastern end of Hadrian's Wall (Evans *et al.* 2017a, 111). Horningsea ware does not, however, appear to have been marketed or used to any significant degree outside central Cambridgeshire (see above), so this is not necessarily evidence against the supply of

agricultural products from the Cambridge area to the northern military sites.

In the mid-/late 3rd and 4th centuries AD, agricultural products from southern and eastern England may increasingly have been distributed to Roman military, as well as urban, sites in southern and eastern England and on the near Continent. One of the reasons for this was a substantial reduction in the British garrison from the mid-3rd century AD onwards. The number of troops in Britain was reduced from an estimated 55,000 in about AD 210, most of which were based in northern England, down to roughly 18,000 in about AD 390 (Breeze 1984; James 1984; Mattingly 2006, 238–47; Morris 2010, 53, 102, 128, Table 4.1; cf. Bidwell 2017, 302, 304–5). A larger proportion of the British garrison was probably also stationed in southern and eastern England towards the end of the Roman period. In addition, from the second half of the 3rd century AD onwards there was large-scale raiding and settlement (as *laeti* and *foederati*) of parts of the north-western continental Empire by barbarians from across the Rhine as well as an apparently widespread abandonment of villas and other rural settlements in several of the affected areas (Morris 2010, 139–41). This meant that during the late Roman period some military and urban centres in the north-western continental Empire may have been partly dependent on supplies from southern and eastern Britain, which for most of this period was comparatively peaceful and secure with rich villa estates developing in many areas. Towards the end of the Roman period, maritime supply routes may, to some extent, have been disrupted by barbarian peoples like the Saxons from northern Germany, who are recorded as having raided Britain from the late 4th century AD onwards (Morris 2010, 139–40; Morris 2015, 425–7). Such raids perhaps led to greater reliance on transport by road and via defended ports, such as shore forts.

Medieval/post-medieval (Period 5) and modern periods (Period 6)

No features or finds of Anglo-Saxon date were recorded on the Police Station site, but a large number of ditches and/or furrows ran north-east to south-west across the site and related to the use of this area as an agricultural field (or fields) in the medieval/post-medieval periods (Period 5). The majority of these ditches/furrows cut Roman features of Periods 2–4 and their fills were sealed by the post-medieval/modern subsoil and topsoil. Their alignment is similar to that of the Roman features, perhaps indicating the enduring influence of the line of the Roman road that ran north-east from Cambridge on adjacent field and property boundaries. The line of this road still survives *c*.500m to the west of the site, where it is now known as Mere Way or Akeman Street. The similarity of alignment could, however, also indicate that Roman fields continued in use in some form after the Roman period and influenced later medieval open field systems. A recent wide-ranging survey indicated that in the Central Zone of England, which includes Cambridgeshire, 70% of excavated late Roman field systems shared a common orientation with overlying historic landscapes as depicted on 19th-century Ordnance Survey maps (Rippon *et al*. 2015; Rippon 2018).

The fills of the Period 5 features included residual Roman material, as well as small quantities of medieval and post-medieval material, indicating a low level of occupation in the locality after the end of the Roman period. Just three abraded medieval sherds were recovered from the site. These comprised a single sherd of Cambridgeshire Sgraffito ware, datable to 1350–1500, intrusive in the fill of a Roman ditch, and two sherds of Hedingham Ware (including a fragment of a glazed jug), datable to the mid-12th to 14th centuries, from ditches/furrows of Period 5 (see above, p. 80). Thirty sherds (433g) of post-medieval pottery of 16th- to 19th-/20th-century date were recovered, with nothing specifically pre-dating the 19th century, virtually all from ditches or furrows of Period 5 or from subsoil (Period 6). Twenty-seven fragments (1033g) of post-Roman ceramic building material produced in the Ely region, probably in the 14th to 17th centuries, were also recorded from Period 5 features (see above, pp. 80-4). There was, in addition, a probable medieval copper-alloy buckle, an iron buckle of medieval or post-medieval date, some copper-alloy buttons of 19th- to 20th-century date (see above, p. 108) and fragments of three 18th- to 19th-/early 20th-century glass bottles (see above, p. 123). A small number of features of very recent date were assigned to Period 6. These comprised a pit, a manhole, a geo-tech pit and another intrusion.

Milton is recorded in historical sources in relation to land grants and exchanges from the 970s onwards (Wright and Lewis (eds) 1989, 179), indicating that the settlement was in existence by the late Anglo-Saxon period. Archaeological evidence for Anglo-Saxon activity in the area is, however, limited. A bronze wrist clasp apparently of Anglo-Saxon date was found during the 1995 excavation at Milton Landfill, over 200m south of the Police station site (Bray and Reynolds 1996, 2). A 9th-century gilded silver pin was also 'found at Milton' *c*.1984 (CHER no. MCB27492).

Excavations in 2007 at Milton Park and Ride (Phillips 2010, 31–2), immediately to the north of the Police Station site, produced the foundations of a medieval windmill on the northern limit of excavation, the fills of which included pottery of 13th- and 14th-century date. Remains of ridge and furrow cultivation of medieval or

post-medieval date have been recorded in the various excavations around the Police Station site, as at Milton Park and Ride to the north (Phillips 2010, 32–3) and on Milton Landfill to the south and west (Connor 1997, 27; Connor 1998, 23–5; Connor 1999, 20–1; Collins 2012, 4; Collins 2013, 4; Phillips 2013, 29). A sherd of medieval Ely ware was found in 2006 during fieldwalking on the Milton Park and Ride site (Cooper 2007, 15–16) and a small amount of medieval pottery was retrieved in 1990 during fieldwalking on the Milton Landfill site (CHER no. 10211C). Medieval features and finds are otherwise rare in the immediate vicinity of the subject site, suggesting that during this period it lay in an area principally comprised of agricultural fields. Post-medieval features revealed through excavations immediately around the Police Station site, as at Milton Park and Ride to the north (Phillips 2010, 33) and on Milton Landfill to the south and west (Bray and Reynolds 1997, 5; Connor 1997, 27–9; Connor 1998, 23–5; Connor 1999, 20–1; Collins 2012, 4; Collins 2013, 4; Phillips 2013, 29), also principally related to agricultural activity, such as land drainage and ploughing.

Historical records indicate that by the late 16th century, and probably by 1300, Milton parish was mostly divided between arable open fields occupying its western four fifths, including the area of the site (which lay in an area known as South field), and the fen pastures to the east (for full details, see Wright and Lewis (eds) 1989, 182–6). The large arable fields were divided into selions in separate ownership, averaging two-thirds to three-quarters of an acre in size. In 1800 Samuel Knight (owner of the Milton manorial estate) and the rector obtained without opposition an inclosure Act. The allotments were set out that year, the award being executed in 1802. South field was mostly divided into ten smaller allotments. The first edition Ordnance Survey 1:10,560 map of 1886 shows the site in an area of fields south of Butt Lane and north and east of the Thirteenth Public Drain.

Significance of results

The excavation has contributed to several of the regional research agendas for the late Iron Age and Roman period set out in the *East of England Research Framework* (Research Framework Network 2019; cf. Medlycott (ed.) 2011; Evans 2019) and listed in Chapter 1 (above, p. 11). The principal contribution of the fieldwork was to add to our understanding of the function/economy and chronology of Roman estate-centres (LIA-Rom 08). The main features identified on the site seemingly formed part of a late Roman villa estate. These features and the associated finds/environmental samples/animal bones indicated a clear focus on intensive agricultural production, with activities related to the surplus production of grain, namely large-scale crop processing and the penning/keeping and breeding of considerable amounts of domestic animals, principally cattle that were employed for traction, e.g. ploughing and transport. Intensive occupation of the site seems to have begun in the mid-3rd century AD, perhaps indicating that the villa estate was established at this time. Activity was particularly prevalent on the site at a notably late date during the mid- to late 4th century AD and possibly extending into the 5th century, suggesting that the operation of this probable villa estate may have peaked very late in the Roman period and continued down to *c*.AD 400 and perhaps beyond. The objects recovered, and a handful of small timber buildings, were primarily of a basic, utilitarian nature, consistent with a working area frequented by individuals of relatively low status. A few finds, including a dining spoon and a relatively sizeable coin assemblage, did, however, suggest 'higher-status' occupation in the vicinity of the site and some of these objects may have been used by the inhabitants of a postulated adjacent Roman villa.

No part of a main villa building was found in the excavation, but loose ceramic roof and hypocaust tiles and building stone found in late Roman ditch fills across the site may derive from the renovation and/or destruction of a possible villa in the near vicinity. Whilst the excavation results do not contribute directly to a better understanding of the region's villas (LIA-Rom 07), in conjunction with similar Roman building material from an earlier excavation, *c*.200m to the south, these findings suggest a villa perhaps lay a short distance south of the Police Station site. The excavation results also help to set this possible villa into the wider context of its probable agricultural estate.

The excavation contributed to our understanding of the Roman environment in the region (LIA-Rom 06). The charred plant remains recovered from environmental samples from late Roman contexts at the site suggested intensive arable farming in the immediate surroundings, whilst the large animal bone assemblage demonstrated the raising and breeding of considerable numbers of domestic animals, particularly cattle and to a lesser extent sheep and horses/equids. The molluscan assemblage also reflected a well-established open landscape during the late Roman period with areas of longer grass, scrub, marsh and waterlogging in the vicinity, but contained no molluscs indicative of woodland or fast-moving water.

Traces of a handful of small late Roman timber buildings were recorded in the form of beam slots and postholes, adding to our fairly limited knowledge of such buildings from the region, which have often been heavily damaged or entirely removed by later ploughing (LIA-Rom 20).

As suggested in regional research agenda LIA-Rom 19, metal-detecting was used at the Police Station site prior to the main archaeological excavation and this added considerably to the quantity of Roman metalwork recovered. It was noticeable that most of the metal objects from the site were retrieved by use of the metal detector, with far fewer found during hand excavation.

As suggested in regional research agenda LIA-Rom 18, this publication has also included plans showing the distributions across the site of different categories and types of Roman artefacts (see Chapter 3). These plans have allowed the authors and specialists to analyse distributions and propose locational patterns for related activity. In general, finds appear to be scattered as rubbish in ditch fills across the site, with concentrations of material typically evident in the southern and central parts of the site, perhaps reflecting greater density of occupation and activity in or near these areas.

Concluding remarks

There was some activity on the site in the middle Neolithic period or later (a scatter of worked flints) indicating the presence of early farming communities in the area. The earliest archaeological structural features dated to the middle to late Iron Age and comprised a ditch, a circular gully, which was likely a drip gully for a roundhouse, a pit and a well containing waterlogged wood (Period 1). These features probably represented a peripheral part of a settlement. A scatter of pottery and a few other objects of early to middle Roman date were recorded as residual finds in late Roman features and presumably derived from a contemporary settlement in the vicinity of, but beyond, the excavated area.

The main features revealed in the excavation were ditches that formed part of an extensive and complex series of intercutting Roman enclosures with associated boundary ditches, trackways, structures, pits and other features, such as waterholes or wells, a pond and an oven (Periods 2–4). Radiocarbon dating, pottery, coins and other finds demonstrated that these features dated to late in the Roman period, probably beginning in the mid-3rd century AD (Period 2), with activity on the site apparently peaking in the mid- to late 4th century AD and possibly extending into the 5th century AD (Periods 3 and 4). They clearly represented a late Roman intensive agricultural working area where activities related to the surplus production of grain took place, namely large-scale crop processing and the penning/keeping and breeding of considerable amounts of domestic animals, principally cattle that were employed for traction, e.g. ploughing and transport. This working area may well have formed part of a villa estate and there was evidence from the site and its vicinity that a villa possibly lay nearby, most likely in the unexcavated area immediately to the south.

The site may, therefore, have formed part of one of many late Roman villa estates known from the area around Cambridge and to the south of the Fens. It was evidently involved in the production of crops on a considerable scale for export and was well connected to potential distribution and consumption centres by waterways, such as the River Cam, which lay just 1.75km to the east of the site, and an artificial Roman canal (the Old Tillage/Car Dyke), which ran north-north-west from the River Cam near Waterbeach (*c*.3km east-north-east of the site) to a former tributary of the River Great Ouse. The Roman road (Akeman Street, also known as Mere Way) which ran north-east from Cambridge into the Fens passed just *c*.500m to the west of the site. The nearby Roman nucleated settlement/'small town' of Cambridge may well have served as a distribution centre for surplus agricultural products from the surrounding area via state supply and marketing networks. The main consumption centres for such products were probably Roman military sites and major towns in Britain and likely also in adjacent continental regions of the Empire.

The late Roman agricultural working area/probable villa estate at the Police Station site appears to have gone out of use around the end of the Roman period, *c*.AD 400 or shortly after. The enclosure and boundary ditches were all filled up at about this date, or in the following decades, either through gradual silting up following the abandonment of the site, or by deliberate infilling as a result of a reorganisation of land tenure and land use (perhaps marking a shift to larger open fields or landscape abandonment), potentially associated with the end of the Roman villa estate.

The disuse of the site at the end of the Roman period probably related to the wider political, military and economic circumstances at this time. In AD 406 or 407 the British army proclaimed Constantine III emperor, likely in response to a huge barbarian invasion across the frozen Rhine which not only threatened Britain directly, but probably disrupted Britain's exports upon which the wealth of the province heavily depended (Thompson 1977; Fulford 2004, 324; Birley 2005, 457–9; Morris 2010, 138–9). In AD 407 Constantine left Britain with the field army, won over the remnants of the army in Germany and Gaul and secured much of Gaul and Spain. In AD 409, in the absence of Constantine and much of the field army, the people in Britain threw off Roman rule and freed their cities from barbarian invaders. Constantine was defeated by his co-emperor Honorius's forces in AD 410/411. When Honorius regained control of the Gallic provinces in AD 411 he was unable, or unwilling, to reunite Britain with the Empire (Thompson 1977; Birley 2005, 455–65; Ward-Perkins 2005; Mattingly 2006, 530; Morris 2010, 139). These events had a catastrophic effect on Britain's

connections with the Empire. State payments to Britain were no longer made and army pay ceased. The final bronze and silver coins had been shipped to Britain in AD 402 and the last gold coins in AD 406 (Casey 1994, 46–8; Abdy 2002, 56; Reece 2002, 36, 59–62). In the wake of this a dramatic economic collapse followed and the villa estate system, of which the Police Station site at Milton was probably a part, likely broke down.

No features or finds of Anglo-Saxon date were recorded in the excavation, but a large number of parallel ditches and/or furrows were recorded that related to the use of this area as an agricultural field in the medieval/post-medieval periods (Period 5). This opens up important questions about how the landscape was used during the post-Roman period and into the Anglo-Saxon period. Did woodland regenerate or were fields still tilled or given over to grazing. The infilling of the ditches suggests that land divisions, and potentially ownership or tenure, were deliberately changed as new systems of control, governance, coercion and military dominance took hold as the island split into numerous small militarised kingdoms ruled by tyrants/usurpers, as alluded to by Gildas (Gildas *De Excidio et Conquestu Britanniae*; Esmonde Cleary 1989; Wickham 2005, 306–10; Mattingly 2006, 529–39).

List of abbreviations

aOD	above Ordnance Datum
APABE	Advisory Panel on the Archaeology of Burials in England
BAJR	British Archaeological Jobs Resource
BAR	British Archaeological Report
CHER	Cambridgeshire Historic Environment Record
CHET	Cambridgeshire Historic Environment Team
CIfA	Chartered Institute for Archaeologists
CMOS	Complementary metal-oxide-semiconductor
DBA	Desk-based assessment
GNSS	Ordnance Survey Active Global Navigation Satellite System network
ISO	International Organization for Standardization
MHCLG	Ministry of Housing, Communities and Local Government
MOLA	Museum of London Archaeology
MoLAS	Museum of London Archaeology Service (now MOLA)
RTK	Real Time Kinematic
UAV	Unmanned aerial vehicle
WSI	Written scheme of investigation

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