ROMAN RURAL SETTLEMENT AT NEWPORT PAGNELL, MILTON KEYNES

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In 2006, Northamptonshire Archaeology excavated the remains of a late Iron Age and Roman rural settlement on land adjacent to the former Rocla Pipeworks near Newport Pagnell, Milton Keynes. The original settlement, dated to the first half of the 1st century AD, comprised successive roundhouses and an associated ditch system, set beside a boundary ditch. By the later 1st century there was a new ditched enclosure, still respecting the boundary, which probably contained a rectangular timber building, perhaps directly replacing the roundhouses. By the late 2nd century a second rectangular enclosure had been added, probably also containing a timber building. Both enclosures were refurbished and modified through the 3rd and 4th centuries, and survived in a reduced form until the end of the 4th century. The economy of the settlement appears to have been predominately pastoral, with cattle dominant, although there was some evidence for the processing and utilisation of cereal crops, and small-scale bronze working was also carried out. In the 5th or 6th centuries, a sunken-featured building was constructed immediately outside one of the Roman enclosures. In the medieval period the land formed part of an open field system of ridge and furrow.

INTRODUCTION

Between March and May 2006, Northamptonshire Archaeology excavated the site of a late Iron Age and Roman rural settlement on land adjacent to the former Rocla Pipeworks near Newport Pagnell, Milton Keynes (site centred on NGR: SP 856 431; Fig 1). The work was commissioned by WSP Environmental Ltd, acting on behalf of Gladedale (South East) Ltd, and was carried out prior to residential development as part of the Milton Keynes Northern Extension Area. The excavation was preceded by an evaluation stage, comprising fieldwalking and geophysical surveys, undertaken in November and December 2005 (Butler, Holmes and Morris 2005), followed by trial trench excavation in January 2006.

The results of excavation were presented in a client report (Morris 2007), available in the site archive, through the Milton Keynes Historic Environment Record and online through the Archaeology Data Service (ADS). The client report contains the complete specialist reports, including tabulated data and full bibliographies, which have been omitted from this publication. While the client report forms the basis for the published report, the opportunity has also been taken to correct some inadvertent numbering errors within the original report. The accession number for the site archive, issued by Buckinghamshire County Museum, is NPR 05 (2006.4).

Site background

The development area was situated west of the M1 motorway and north of Wolverton Road, *c*1.5km to the south-west of Newport Pagnell town centre (Fig 1). It comprised the site of the former Rocla Pipeworks and two adjacent arable fields, Field 1 to the north, and Field 2 to the east (Fig 2). The site of the pipeworks had been terraced into the hillside, removing any archaeological remains, so this area was excluded from the evaluation. Fields 1 and 2 were approximately 8.27ha in extent, and the excavated late Iron Age and Roman settlement lay within Field 1.

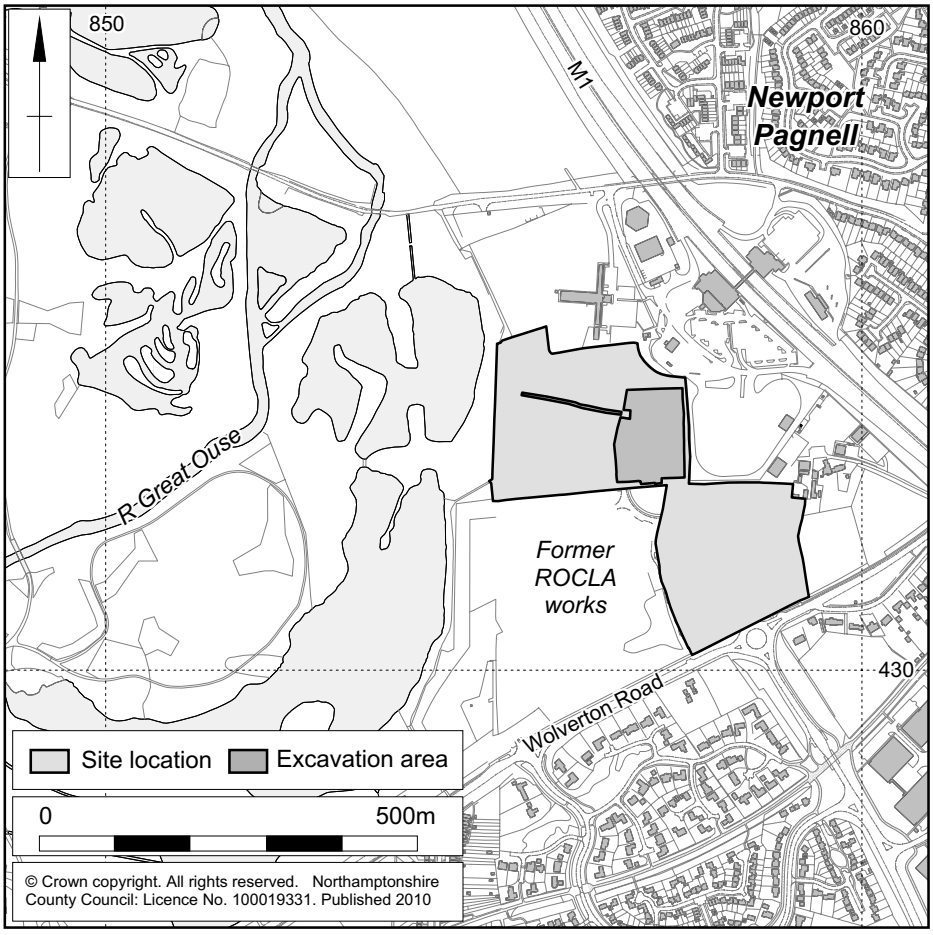

FIGURE 1 Site location

The site was situated on a broad, generally flat plateau of high ground, at *c*67m AOD, on the eastern side of the valley of the river Great Ouse. The underlying rocks are Middle Jurassic rubbly limestones of the Cornbrash Formation (Great Oolite Series) overlain by glacial tills of the Middle Pleistocene Anglian Glaciation.

Prior to the current investigation, no archaeological work had been undertaken on the site, and no known sites of archaeological interest were recorded within the development area in the Milton Keynes Historic Environment Record (HER). However, the surrounding landscape contains a wealth of archaeological sites, dating from the prehistoric to post-medieval periods, and relevant sites in the vicinity are considered in the discussion.

Excavation methodology

The excavated area measured 110m north to south by 80m east to west, with a 4 × 160m corridor to the west; a total area of *c*0.98ha (Fig 2). It was stripped under archaeological supervision using two 360º tracked mechanical excavators and 30-tonne dumpers. Ground level was reduced to the top of the natural substrate to expose the cut features. The surface was cleaned and the features were excavated by hand (Fig 3). Major settlement features in the northern part of Field 1 continued to the north beyond the excavated area, so the core of

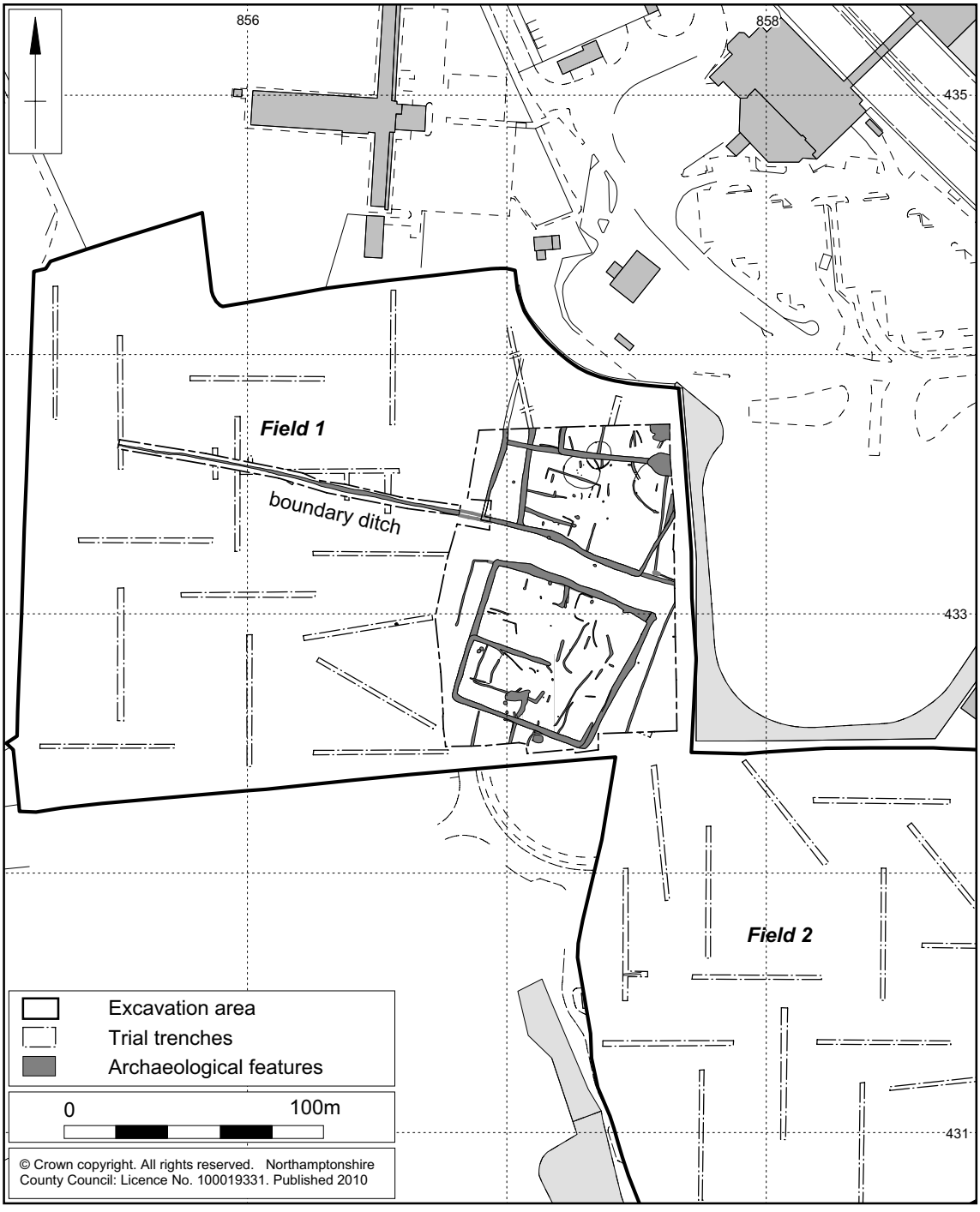

FIGURE 2 General plan of trial trenches and excavated area

FIGURE 3 General view of southern enclosure, looking north-east

the settlement was not fully excavated, while to the south only a few minor ditch systems continued beyond the excavated area. Unless stated otherwise, all features were filled with mid brown or greyish-brown silty clay.

PREHISTORIC ACTIVITY

The earliest evidence for human activity was a scatter of 47 worked flints, recovered as residual finds from Iron Age and Roman features, or as unstratified finds from the topsoil and subsoil. The assemblage includes a leaf arrowhead and a barbed and tanged arrowhead, two cores, five blades, two serrated blades, three end scrapers and a discoidal scraper, indicating an early Neolithic to early Bronze Age date, and attesting to intermittent activity in the area at this time. A single residual sherd of late Bronze Age/early Iron Age pottery was also recovered.

THE LATE IRON AGE/EARLY ROMAN SETTLEMENT (EARLY-MID 1ST CENTURY AD)

The earliest features lay towards the north, and are dated by the pottery to the early to mid-1st century AD (Fig 4). The sequence is uncertain, but a boundary ditch may have been the primary feature. Beside it, within a small ditched enclosure, were remnants of two ring gullies, which probably enclosed successive roundhouses, a scatter of post-holes and two further lengths of gully and two pits.

The boundary ditch

A boundary ditch, 1812/1912 and 5304/06, aligned

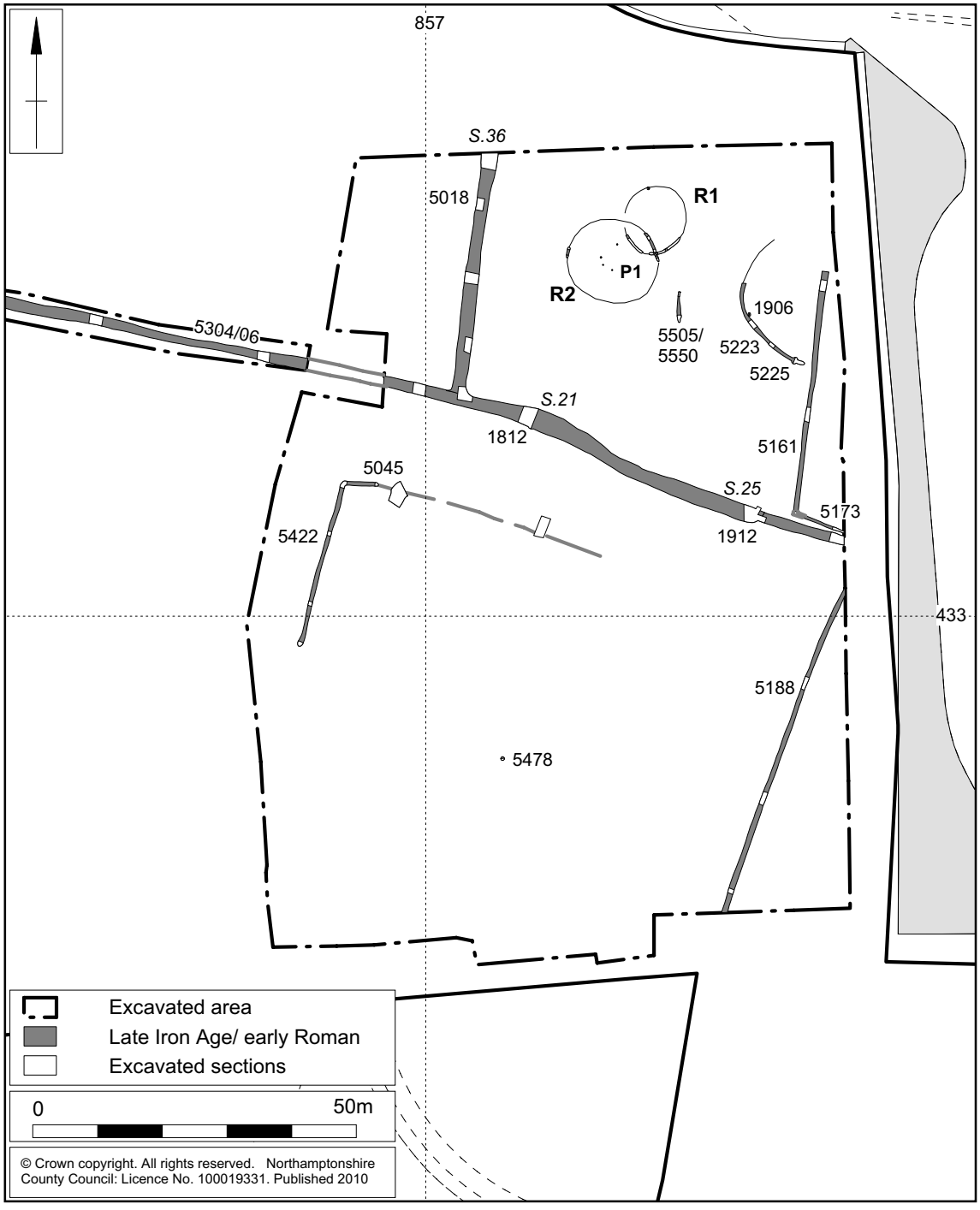

FIGURE 4 The late Iron Age/early Roman settlement (1st century AD)

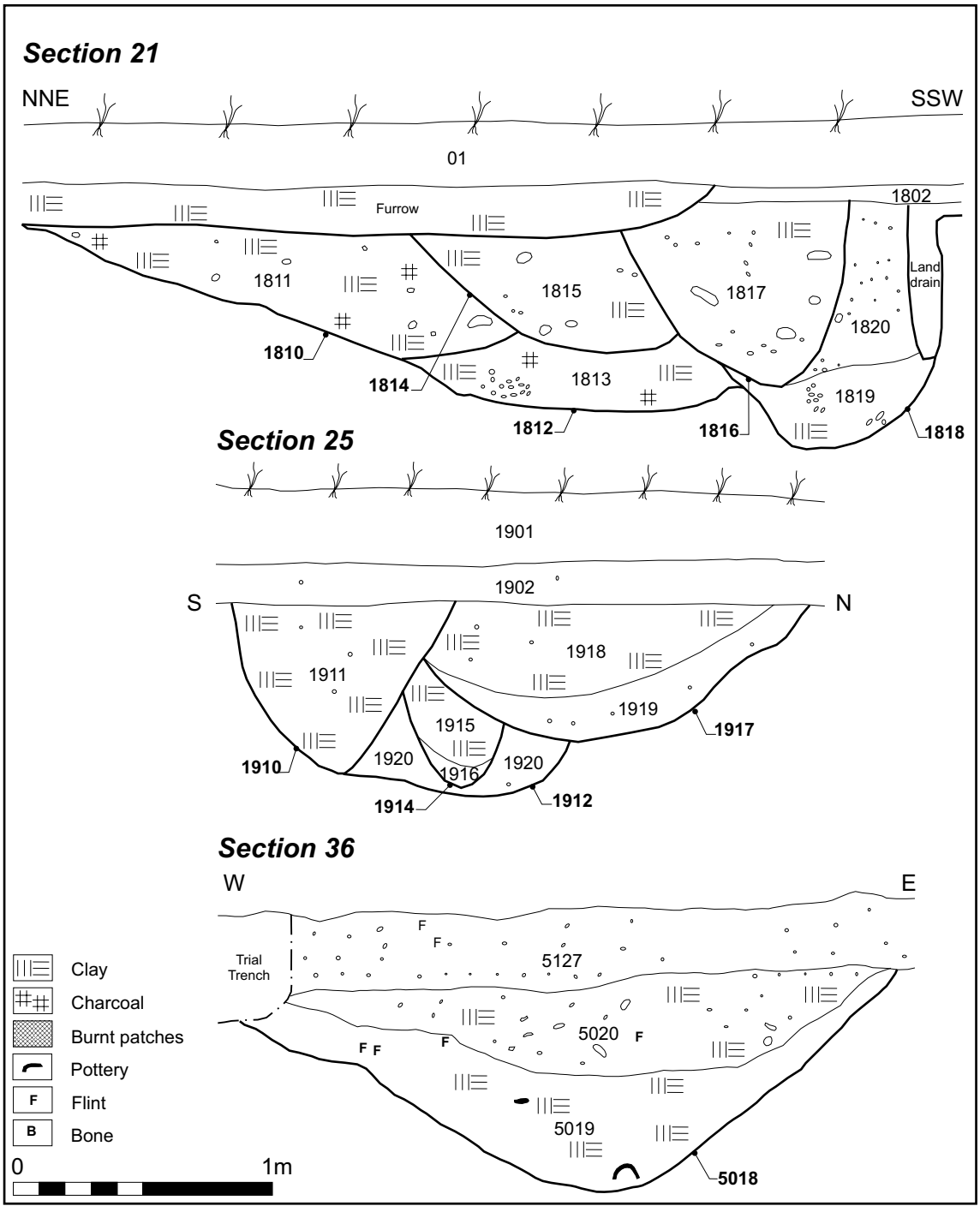

FIGURE 5 Sections of linear boundary ditch, 1812 and 1912, and enclosure ditch, 5018

east to west, was recorded for a distance of over 160m (Figs 2 and 4). Towards the eastern edge of the site the primary ditch was up to 1.7m wide by 0.75m deep, with a broad, U-shaped profile (Fig 5, Sections 21 and 25, 1812 and 1912). It gradually diminished in size on the scarp slope to the west, where the ditch had been re-cut along its northern edge, and terminated on this slope.

The extent of later recutting within the main area of excavation indicates the importance of this ditch as a primary landscape division, but also made it difficult to date its origin. It is suggested that the boundary either shortly predated or was contemporary with the roundhouses. Its alignment dictated the location and alignment of the Iron Age and Roman enclosures.

The roundhouses and associated features

Approximately one third of the southern arc of a ring gully, R1, *c*10m in diameter, survived. A terminal to the east defined the south side of an eastern entrance. The gully was U-shaped, and 0.28-0.34m wide by 0.15m deep.

Only two short lengths survived of a later ring gully, R2. This would have had a diameter of *c*14m, and a terminal to the east marked the northern side of an eastern entrance. Near the centre of R2 were four postholes, P1, 0.17-0.40m diameter and up to 0.22m deep.

To the south-east of the possible roundhouses was a short linear gully, 5505, which had been recut, 5550. Further east was a small, steep-sided pit, 5225, 0.90m diameter by 0.25m deep, filled with yellowish-brown loam and containing limestone fragments and cobbles, some of which were burnt. The pit was cut by a curving gully, 5223, the fill of which contained occasional charcoal flecks and charred cereal grains. At its southern terminal were several fragments of fired clay, one of which contained a wattle impression and may have come from the superstructure of an oven or kiln. A small oval pit, 1906, was adjacent to the eastern side of the gully.

Other ditch systems

To the east of the ring gullies and other features, ditch 5161 formed an eastern boundary to the settlement. It was 0.90m wide by 0.38m deep, and its southern end joined a narrow ditch or gully, 5173, running eastward, parallel to the northern edge of the main boundary ditch. The southern arm of the enclosure was formed by a narrow, steep-sided recut of the boundary ditch (Fig 5, Section 21, 1818 and Section 25, 1914). To the west, ditch 5018 formed the western boundary, although it was more substantial than the eastern ditch, at up to 2.4m wide by 0.65m deep (Fig 5, Section 36, ditch 5018). At the northern end of this ditch, its primary fill, 5019, contained a deposit of pottery including three near complete vessels (Fig 11, 1–3), dated to *c*AD 25–60. The late Iron Age settlement was at least 55m square, occupying 0.30ha or more.

To the south of the main boundary, ditch 5188 extended more than 60m southward. It had a U-shaped profile, 0.78m wide by 0.31m deep. Within the southern area an isolated pit, 5478, 0.5m diameter by 0.25m deep, contained pottery dated to the 1st century AD. There was no evidence for any other settlement in this area. To the west an L-shaped ditch, 5045, ran parallel to and *c*14m to the south of the main boundary ditch (Fig 9, Section 41), and then turned through a right angle and continued southward for 26m, 5422.

The Roman Settlement; The Northern Enclosure (Late 1st to Early 2nd Century AD)

Enclosure 1 was created in the late 1st century AD, probably as a direct replacement of the late Iron Age domestic focus. In its final form, the enclosure was 65m wide and at least 55m long, enclosing an area in excess of 0.36ha and continuing northwards for an unknown distance (Fig 6). The boundary ditch probably continued to form a land boundary even if partially silted by this time, and may also have been marked by an above-ground feature, such as a bank or hedge.

The enclosure ditch

The southern arm of the enclosure was formed by a further recut of the boundary ditch (Fig 5, Section 21, 1810 and Section 25, 1917). This was a broad shallow ditch, 1.5-2.0m wide by 0.50-0.65m deep. To the west the late Iron Age enclosure ditch may initially have been retained, but the western arm was later relocated westward, 5039, to broaden the enclosure by 8-12m. The eastern arm, 5177, overlay its late Iron Age predecessor, but on a slightly different alignment. The ditches were 1.5-2.1m wide by 0.50-0.75m deep, with U or V-shaped profiles.

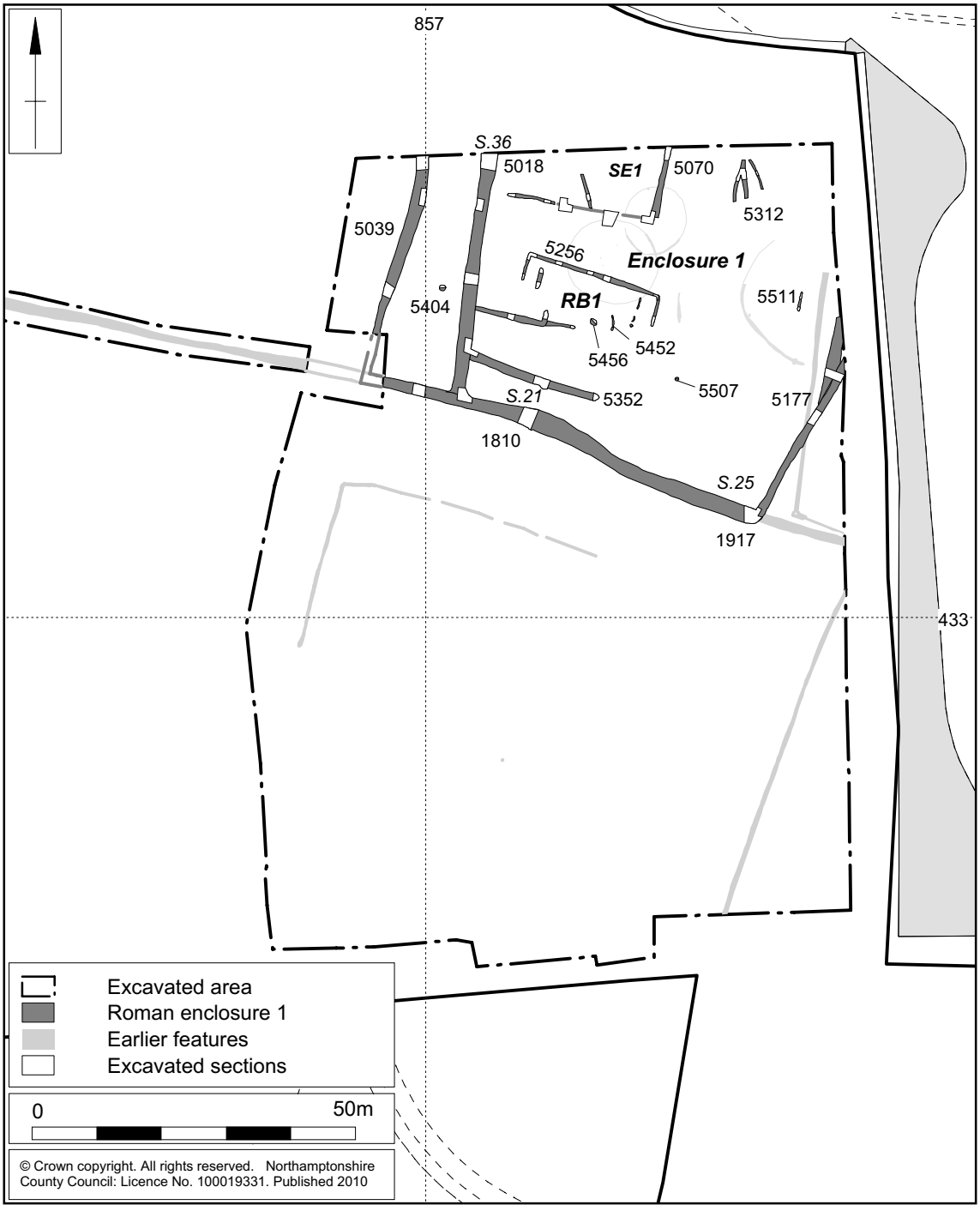

FIGURE 6 The early Roman enclosure (late 1st-2nd century AD)

Possible rectangular building 1 (RB1)
In the south-west corner of the enclosure, two ditches, 5352 and 5394, 0.5-1.3m wide by up to 0.25m deep, extended eastward from ditch 5018 for up to 20m, defining two narrow bays. To the north of these ditches, gully 5256 was 21m long and had short returns at either end extending *c*4m to the south. It had a U-shaped profile and was 0.70m wide by up to 0.27m deep. Within this area was a short gully or slot to the west, and two lengths of gully and a posthole to the east, 2.0-2.5m from either end of the enclosing gully. It is suggested that these features were elements of a rectangular timber building, the gully being either a slot for a sill beam or a drainage gully around the eaves. A curving slot, 5452, and a pit, 5456, lay to the south, outside the building. The building would have been 16-21m long and 4-5m wide, and could be seen as a direct replacement for the late Iron Age roundhouses.

Sub-enclosure 1 (SE1)
To the north an L-shaped ditch, 5070, probably formed a square sub-enclosure 26m wide in the north-western corner of Enclosure 1. The ditch had a U-shaped profile, 0.65m wide by up to 0.25m deep, and the upper fill on the eastern arm contained sherds of late 1st- to early 2nd-century Roman pottery (Fig 11, 4). Within the sub-enclosure was a short gully.

Other internal features
To the east of SE1 were the truncated remnants of three gullies, including 5312, which produced a small pottery assemblage. A narrow slot, 5511, 2.0m long, lay on the eastern side of the enclosure. The only feature within the western end of the enclosure was a small pit, 5404.

The Southern Enclosure (Late 2nd to Early 3rd Century AD)

By the late 2nd century Enclosure 2 had been constructed to the south of Enclosure 1, and became a centre of domestic activity in the 3rd century (Fig 7). It measured 55m north to south by 53-61m wide, enclosing an area of 0.31ha.

The enclosure ditch
The enclosure ditch appeared to form a continuous circuit, with no evident openings for entrances, although these may have been lost through recutting. The original ditch, 5136, was largely truncated by a recut, 5124, but would have been around 1.5m wide and 0.8m deep (Fig 9, Section 61).

Possible rectangular building 2 (RB2)
A timber building may have stood in the south-western quarter of the new enclosure, within a rectangular enclosure, 27m long by 14m wide with an 8m wide entrance at the eastern end, formed by ditch 5243, with a V-shaped profile, 0.7-1.4m wide by 0.15-0.60m deep. Its fills of dark grey silty clay loam near the eastern entrance were typically darker than elsewhere. Pottery from the primary fill dates from the 2nd to 3rd centuries AD, with mid 3rd- to 4th-century pottery in the upper fill. A few small fragments of iron sheet and nails were also recovered, along with two fragments of millstone.

There was a short length of gully, 5248, within the enclosure, but no structural evidence survived. However, the concentration of finds in the surrounding ditches supports the suggestion that a building, perhaps of similar size to that in Enclosure 1, had stood within this area, and may have marked either an expansion of settlement or a relocation of the main domestic focus to the new enclosure.

Other internal features
Between the main enclosure ditch to the west and enclosure RB2 were two pits, 1.4-1.6m diameter by 0.14-0.40m deep. Branching from the northern side of the main enclosure ditch was a short length of ditch, 5434, which had been recut on at least two occasions, 5435-36. Two late 3rd-century coins were recovered from the recuts. In the north-east corner of the enclosure were lengths of shallow curving gully, 5474 and 5542, perhaps defining small and temporary sub-enclosures. In the south-east corner of the enclosure were two slightly sinuous gullies, 5321 and 5319.

External features
To the south of Enclosure 2, a ditch, 5234, 1.4m wide by 0.32m deep, continued southward, indicating that related boundary systems continued beyond the excavated area.

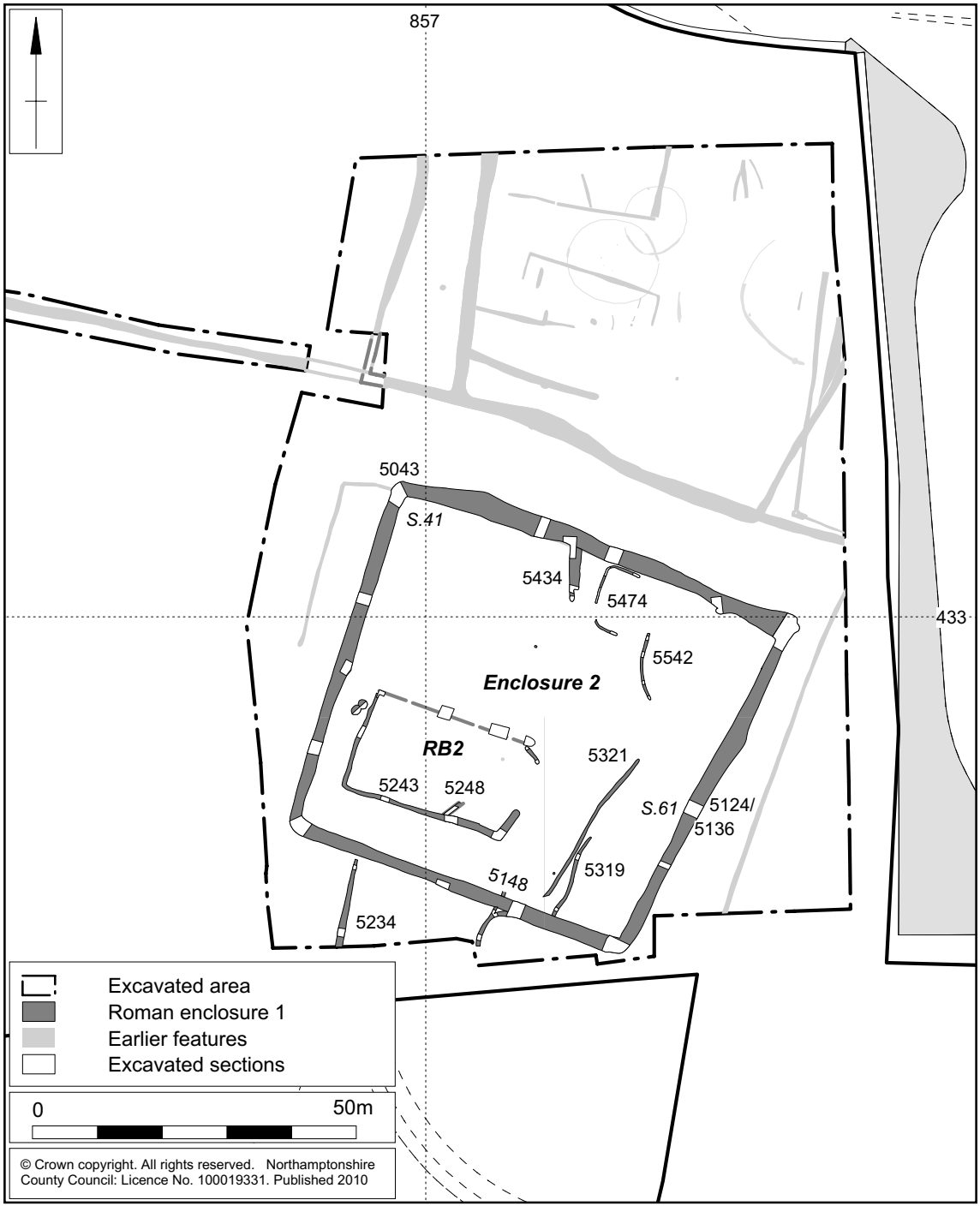

FIGURE 7 The southern enclosure (late 2nd-3rd century AD)

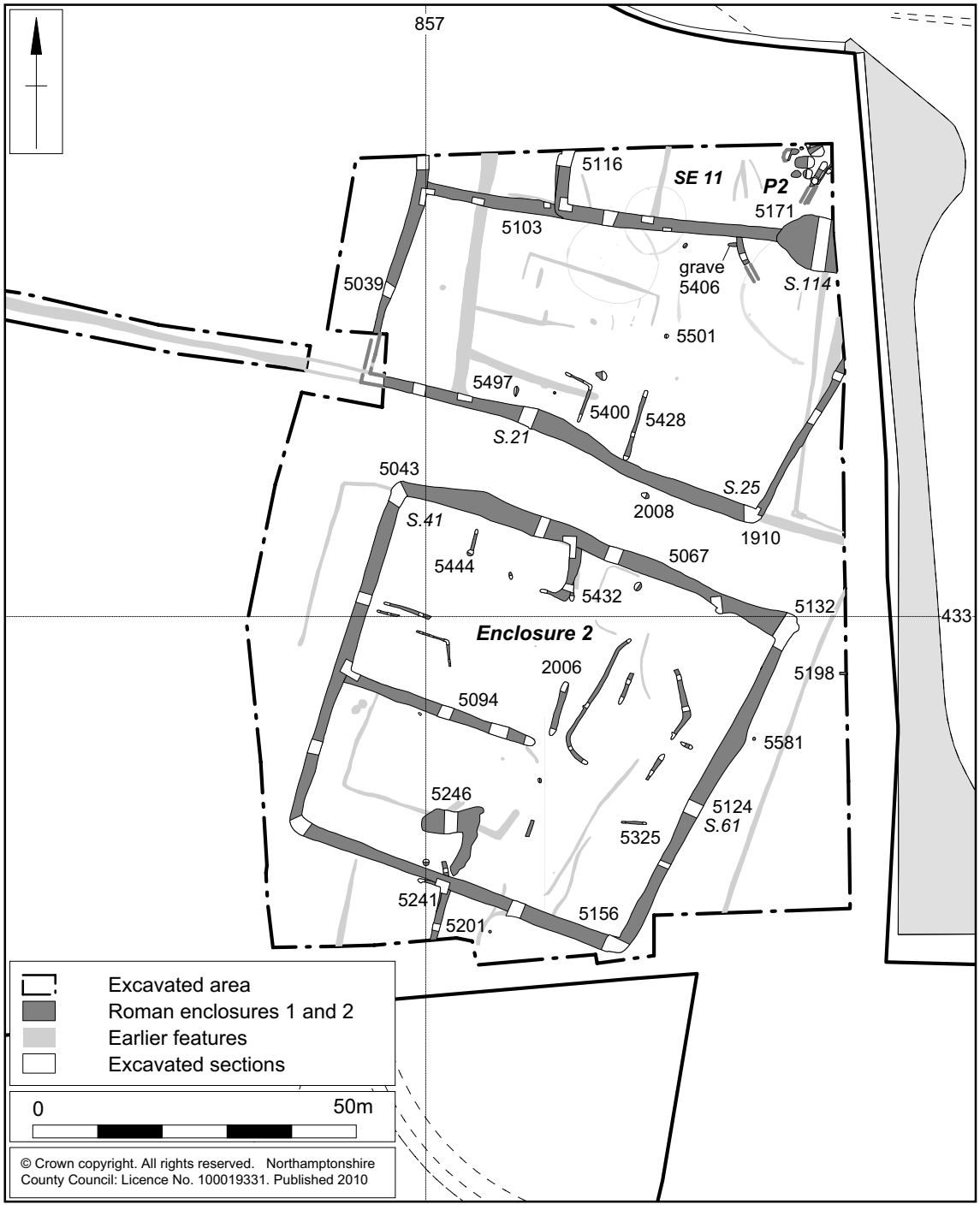

FIGURE 8 Refurbishment of the enclosures (mid/late 3rd-4th century AD)

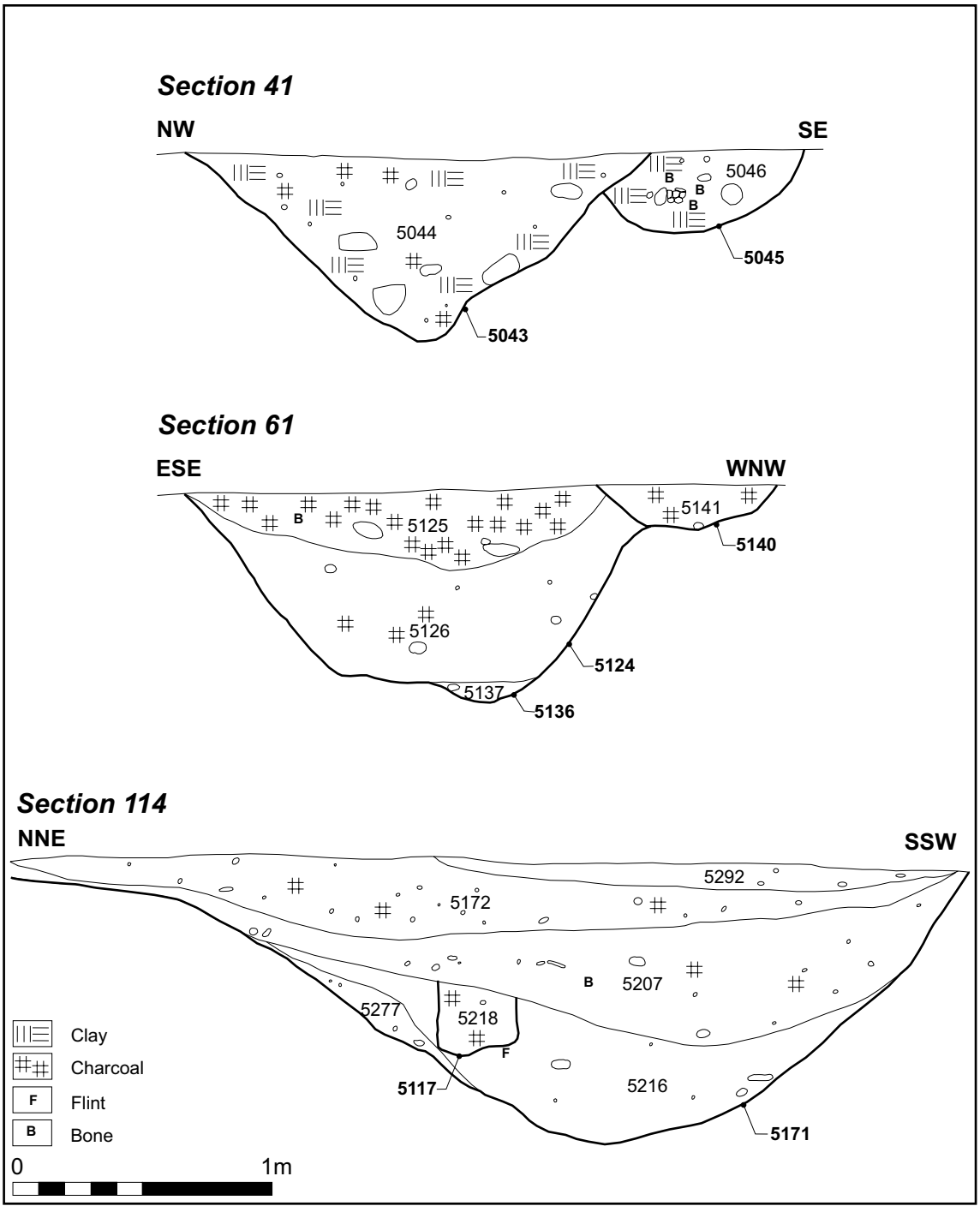

FIGURE 9 Sections of enclosure ditches, 5126/5124 and 5043, and the watering hole, 5171

Refurbishment of the Enclosures (Mid/Late 3rd To Early 4th Century AD)

During the mid/late 3rd century to early 4th century AD the settlement was refurbished, the enclosure ditch was recut and the internal areas rearranged (Fig 8).

Enclosure 1

The northern enclosure ditch was recut. At the south-eastern corner, the new ditch, 1910, was narrow and steep-sided, 0.85-1.10m wide by 0.65m deep (Fig 5, Section 25), but elsewhere it was broader, at up to 1.7m wide. The fill of the ditch, 5039, on the western side of the enclosure contained a substantial assemblage of cattle bone, including a skull and other material derived from primary butchery waste.

The southern end of the enclosure, measuring 65m by 30-40m north-south, was now separated from the northern area by ditch 5103, 1.6m wide by up to 0.6m deep. This extended the full width of the enclosure and at its eastern end was a large pit or watering hole, 5171. At a slightly later date, the ditch was again recut, and to the west it then turned sharply to the north, 5116, perhaps reducing in size the northern half of the enclosure. Close to the southern boundary of the enclosure were an L-shaped gully, 5400, and a straight gully, 5428, which may belong to this phase.

The watering hole 5171

Pit, 5171, over 9m long by 8m wide and 2.2m deep, has been interpreted as a watering hole. It had steeply sloping sides but a shelving slope to the north (Fig 9, Section 114). A small pit, 5217, had been cut into the surface of the primary silts, 5216, suggesting a period of stability, and it may be at this level that the feature functioned as a watering hole. Its location at one end of a boundary ditch might suggest the provision of access from the adjacent enclosures. The secondary fill, 5207, contained a substantial assemblage of mid 3rd- to 4th-century Roman pottery (Fig 11, 5-9), while the dark grey to black silty clay fill, 5172, of the subsidence hollow also contained mid 3rd- to 4th-century pottery and four coins of a similar date. Other finds from these silts include a copper alloy buckle plate and strap end, iron nails, hobnails, a whetstone, a fragment of quern, a large number of cattle bones from butchery waste and some horse bone.

Pit cluster (P2)

To the north of the watering hole were a tight cluster of pits and two short lengths of gully, which produced a mixed assemblage of domestic debris and cattle bone. The smaller pits were 0.60-0.84m in diameter and 0.25-0.40m deep, and the largest was 2.9m long, 1.8m wide and 0.56m deep. The pits contained pottery dating from the mid 3rd to 4th centuries and a number of metal objects, including two iron knives, a fragment of iron plate, iron nails, a finger ring and a plate and rod fragment. A quantity of cattle bone was also recovered, including an ox skull that displays cut marks from skinning. One of the gullies contained a fragment of human mandible. The material from these pits suggests the existence of an area of domestic activity to the north, beyond the excavated area.

Grave 5406

West of the watering hole was a grave, 5406, aligned west to east, 1.6m long by 0.5m wide and 0.15m deep, its eastern end cut by a gully. It contained the poorly preserved remains of an adult male, over 40 years old, extended and supine with the head to the west. This individual had heavily worn teeth and had suffered with anaemia, perhaps brought on by parasitic infection, disease or lead ingestion.

Enclosure 2

The enclosure ditch

On the northern and eastern sides of the enclosure was a broad steep-sided and flat-bottomed recut of the ditch (Fig 9, Section 61, 5124), up to 2.2m wide by 0.84m deep. At the north-western corner and along the western arm the ditch had a V-shaped profile and measured up to 1.8m wide by 0.7m deep (Fig 9, Section 41, 5043).

On the eastern side of the enclosure the upper fill of the ditch contained a large quantity and range of finds including sherds of mid to late 4th-century pottery (Fig 11, 12 &14); 3rd- and 4th-century coins; iron and copper objects; and debris from bronze casting and lead working. A quantity of sheep, pig and cattle bone was also recovered from the upper fills, along with charred cereal grains.

Internal features

A substantial ditch, 5094, 1.5-1.8m wide by up to 0.72m deep, formed a major internal subdivision. The north-western quadrant of the enclosure, *c*27m square, was partly bounded to the east by a ditch, 5432, branching from the northern arm of the enclosure, and a length of gully, 2006. Within this area were four small slots or gullies, and a small pit, 5444. The pit contained a large quantity of burnt cereal grains (wheat, oats and barley), derived either from storage waste or processing. Fragments of fired clay may have come from an associated oven, and a large plate of fired clay came from the nearby north-western corner of the enclosure ditch, 5043.

In the south-western quadrant, the gully enclosing the possible building had at least partly fallen out of use, as it was partially sealed by a layer of gravel, cobbles and limestone, 5246. Sherds of 3rd- to 4th-century pottery, iron nails and an iron plate fragment were recovered from the layer, which may have accumulated within an area of excessive wear, perhaps related to access to an adjacent timber building. From the gravel layer, a gully extended southwards to the enclosure ditch, where there was a small pit and a short length of gully.

The eastern half of the enclosure was open, and contained several fragmentary lengths of gully.

External features

East of Enclosure 2 was a single shallow posthole, 5581, and a short length of gully, 5198. To the north, between the two enclosures, was an oval pit, 2008. A new boundary ditch, 5241, ran southward from the southern arm of Enclosure 2, and its recut, 5201, had a broad U-shaped profile, 1.1m wide by 0.28m deep.

The Decline of the Roman Settlement (Late 4th Century AD)

By the mid to late 4th century the settlement was in decline, with only the southern and northern extremities still in active use (Fig 10). The settlement was abandoned about the end of the 4th century, possibly even in the early 5th century. Although there was a Saxon sunken-featured building to the immediate south of Enclosure 2, this does not imply continuity of occupation.

Enclosure 1

Towards the end of the 4th century a large part of the northern enclosure appears to have fallen out of use, although the corner of the new enclosure established in the late 3rd/early 4th centuries was retained and recut, 1804 and 5012: this was broad and flat-bottomed, up to 2.2m wide by 0.45-0.65m deep. Its fills contained 4th-century pottery and a number of late 4th-century coins: other finds include animal bone, iron nails, hob nails and a fragment of glass. Two fragmentary lengths of gully, 5329 and 5485, lay to the south. The watering hole, 5171, had largely silted up, being reduced to a shallow, boggy hollow by this time. The area of the pit group north of the watering hole appears to have become equally boggy, with a layer of dark brown to black silty clay, 5187, accumulating in a hollow over the pits.

Enclosure 2

In the south enclosure, only the southern half, measuring 56m east to west by 23m north to south, was still in use during the latter half of the 4th century, (Fig 10). Lengths of the enclosure ditch were recut and there was a new terminal to the south-east, 5159. The fills of these final recuts contained late 4th-century pottery, ceramic building material, iron nails, a copper alloy stud, a fragment of window glass and a small amount of fired clay. In addition, a large quantity of animal bone recovered from the northern ditch, 5088, contained sheep bone elements identified as trimming waste, from the removal of heads, feet and hooves during primary butchering. The same deposit also yielded cattle and horse bones. This indicates that the rearing of livestock and associated butchery and processing continued into this period of use.

Evidence for the exploitation of wild game and wildfowl was provided by a hare femur, an ulna of a tufted duck and a shed antler from a mature red deer stag, which may have been collected for craft working. All were recovered from the ditch at the south-west corner of the enclosure, 5029.

Within the enclosure was an L-shaped gully, 5380, which formed a small sub-enclosure, perhaps a livestock pen, measuring 15 × 11m Beyond this was a scatter of postholes, gullies and a pit, 5005, which contained 4th-century pottery, fired clay, a fragment of ceramic building material, a fragment of quern and animal bone.

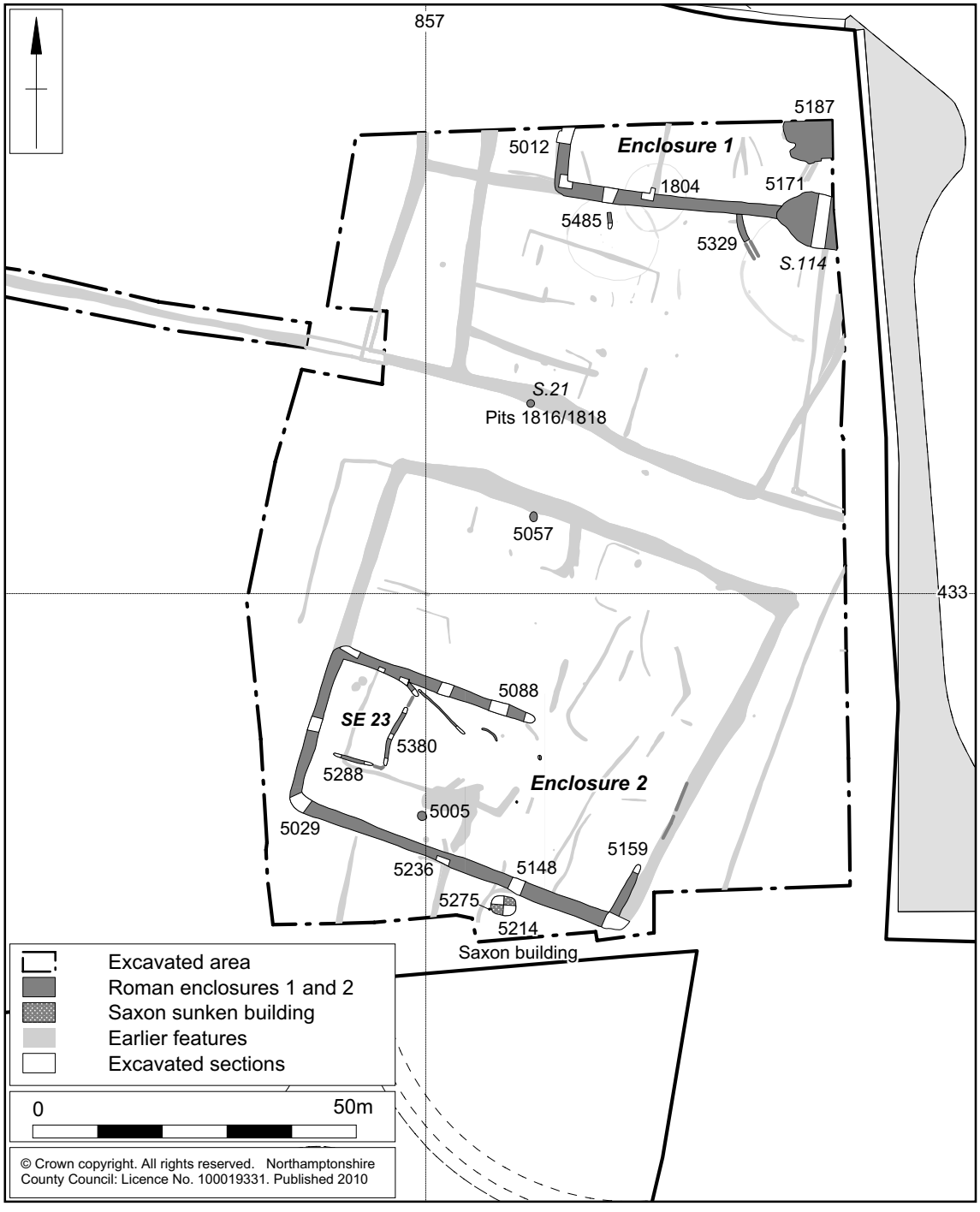

FIGURE 10 The decline of the settlement (late 4th century)

External features

Between the two enclosures were three pits. Two, 1816 and 1818, cut the southern ditch of Enclosure 1 (Fig 5, Section 21, 1818 and 1816). To the south a pit, 5057, cut the former northern arm of Enclosure 2. It was steep-sided, 1.6m long by 0.4m deep, and contained two late 3rd-century coins, a complete copper alloy bracelet with a grooved pattern and zoomorphic terminals (Fig 13), fragments of a copper alloy notched decorated bracelet, an iron knife, a lead weight and an iron plate and nails. The presence of pits cutting the enclosure ditches may suggest that activity continued in these areas even once the enclosure ditches had largely silted up.

Saxon Settlement

Immediately south of Enclosure 2 was a Saxon sunken-featured building, 5214 (Fig 10). The shallow pit was sub-rectangular, 3.9m long, 2.8m wide and 0.20m deep. Its primary fill contained charcoal, three sherds of early/middle Saxon pottery, probably from the same vessel, and a piece of worked antler. The upper fill contained limestone fragments and a few residual sherds of Roman pottery. A single circular posthole, 5275, adjacent to the south-west corner, contained a worn fragment of millstone, perhaps residual from the Roman activity.

The Medieval Field System

Medieval plough furrows crossed the site from east to west. They were 2.0-3.0m wide and up to 0.15m deep, with a centre-to-centre spacing of 9.5m. The furrows deepened and broadened towards the eastern edge of the site, indicating the location of a possible headland. A fragment of a medieval rowel spur was recovered from one of the furrows.

The Roman Pottery by Ed McSloy

Introduction

The assemblage of late Iron Age/early Roman and later Roman pottery comprises 2,303 sherds, weighing 43,970g. The condition of the pottery was variable: a few ditch and pit groups (ditch 5018, late Iron Age enclosure; ditch 5236, the final use of Enclosure 2; and the watering hole, 5171), produced substantially complete vessels. More typically, pottery groups from the enclosure ditch fills or other linear features tended to be small in quantity and well broken-up. Average sherd weight is reasonably high for a Roman assemblage, at 19.1g (29.01 estimated rim equivalents). Surface preservation was not especially good, some later colour-coated wares suffering partial or full loss of surface slip.

Pottery was recovered from 193 contexts (approximately 150 features or sections through linear features). Most of the pottery, 83.9% by sherd count, derived from linear features (ditches and gullies), with the bulk of the remainder (14.1%) from pits.

The pottery was sorted into fabrics and quantified. Where this could be determined, usually from rim sherds, vessel form was noted and rim EVEs (Estimated Vessel Equivalents) recorded. In the interests of continuity, fabric nomenclature is adapted from that developed by Marney (1989) and utilised for subsequent publications of pottery from the Milton Keynes area. Fabrics are, in addition, matched against the National Roman Fabric Reference Collection codes (Tomber and Dore 1998). All fabrics are well documented elsewhere and no attempt is made to duplicate descriptions.

Assemblage composition

Late prehistoric to 1st century AD

A single hand-built, fine flint-tempered sherd was recovered as a residual find from ditch 5048. The use of crushed, burnt flint as tempering in this region is most commonly associated with the transitional period between the late Bronze Age and earlier Iron Age periods (Slowikowski 2005, 106). If such a date is correct, this sherd is the sole evidence for activity of this period from the site.

Pottery of late Iron Age/early Roman type amounted to 319 sherds (4,735g), of which 33 sherds were residual in later Roman contexts. Typically for groups of this date, two fabrics (grog-tempered type 46 and shelly type 1.1) dominate, with mixed-inclusion types 45 and 46qr as a minor component. A distinction has been made here between the shell-tempered wares present in the earlier groups and material typical of the later Roman assemblage, which was uniformly wheelthrown, measurably finer and fired to a more uniform colour. The source for all material of this

date is likely to be local. Shell-tempered wares may come from a variety of sources which are likely to include Harrold, Bedfordshire (Brown 1994). Forms conform to types associated with the area equating with Thompson's north-west zone 8 (Thompson 1982): among grogged ware these consist of wheelthrown necked jars or bowls (Fig 11, 1) with rippled neck (Thompson type B2-4) and a single carinated bowl/cup of Thompson type E1-3 (Fig 11, 2). Typical among shelly wares are lid-seated/channel-rim forms (Fig 11, 4), characteristically with diagonal slashed decoration (Thompson type C5-2).

Roman

Pottery of Roman date amounted to 1,983 sherds, weighing 39,227g. Imported continental material was restricted to a small group of Central Gaulish samian, a single Central Gaulish black-slipped ware beaker sherd and a single sherd from a Baetican (southern Spanish) amphora. All this material dates to before the mid-3rd century AD and is considered residual.

British finewares are dominated by products from the Lower Nene Valley, and larger quantities of Oxfordshire wares. The relative importance of the two ware types reflects geographical as well as chronological factors; the apparent 4th-century focus of the assemblage. A few earlier (probably 3rd-century) Oxfordshire products occur, consisting of white and orange wares in forms imitating samian types (Fig 11, 7-8). Red or brown colour-coated wares include bowls of various types (Fig 12, 10-11) together with a single flagon (C14). Necked (C75-80), wall-sided, (C81, C83) and imitation Drag. 38 (C51) bowl forms are most common, suggesting that most material dates to after *c*AD 325 or 350 (Young 1977). Oxfordshire wares account for the majority of mortaria from the site, with Lower Nene valley types making up the remainder. A single mid/late 3rd century mortarium, of Young's M18 class, is present. The remainder, in white, white-slipped or red/brown slipped fabrics, consist of standard later Roman types comprising flanged (M22, C100, WC7) or wall-sided (C97) forms.

Lower Nene valley products occur primarily as colour-coated wares, with some white/creamwares. Two sherds of Lower Nene valley mortaria were recovered, including a rim-sherd of characteristic reeded-rim form (Howe *et al* 1980, no. 102). Among finewares there is little overlap of forms with Oxfordshire products: the Lower Nene component primarily comprises beakers, 'castor boxes', and 'coarseware' classes – plain-rimmed dishes, wide-mouthed jars/bowls and flanged bowls. Beakers are predominantly late funnel-necked forms, including a good example of a pentice-moulded type (Fig 12, 13) of 4th-century date (*ibid* 1980, 20-2). The range of forms, in particular the preponderance of 'coarseware' types, is further evidence for a 4th-century emphasis to the assemblage.

Small quantities of Hadham wares are present among larger 4th-century groups. Identifiable forms are restricted to necked bowl-jars; forms most characteristic of the repertoire typifying the expansion of this ware type from the beginning of the 4th century.

Typically for the region, coarsewares comprise material in differing traditions from more or less local sources. Most numerous among coarsewares are fossil-shell tempered wares, originating largely or entirely from Harrold, north Bedfordshire. Such wares account for 38% of the Roman assemblage. Evidence from the Milton Keynes area suggests increasing dominance from the mid-4th century. This corresponds with a wider expansion of the ware type seen through Harrold products reaching western Britain for the first time, perhaps as late as the 360s. Forms comprise medium-mouthed necked jars, and wide-mouthed flanged or flat-rimmed bowls, with fewer large storage jars and plain-rimmed dishes. The range is consistent with the late production of the ware as demonstrated by investigations at the kiln sites (Brown 1994, 64–78). Most common, accounting for 50.2% of all identified forms of this ware type (by EVEs) are necked jars with undercut hooked rims (Fig 11, 6). Mid/late 4th-century dating is typically applied to this form type based on their occurrence in kiln deposits of this date (*ibid* 1994, 72–8) as well as contemporary consumption sites (Brodribb *et al* 1971, 68).

Soft pink grog-tempered wares are well represented in the assemblage. A local origin, long suspected based on the abundance of the type from the Milton Keynes area (Booth and Green 1989; Marney 1989, 64–9), is demonstrated by discovery of kilns from Stowe Park, Buckinghamshire (Booth 1999). Typically for the region, forms consist of wide-mouthed necked jars/bowls and large storage jars.

Local reduced sandy wares, types 3 and 9, together make up 22.2% (by count). With the exception of a single flagon, forms are utilitarian, consisting of necked jars, flanged bowls and plain-rimmed dishes. Bowls and dishes mostly follow late Black Burnished ware 1 forms, suggesting that most of this material post dates *c*AD 250/75.

Non-local coarsewares are few in number, consisting of two sherds of Dorset Black-Burnished ware (BB1) and a single sherd of Lower Nene valley greyware. The source for the burnished greywares, present in mid/late 4th century groups, is uncertain. An East Midlands source is sometimes asserted for this ware type, although Oxfordshire would seem equally likely. A more substantial group of material (fabric 14) comprising grey or black-firing wares distinguished by a pale grey core is as identifiable as products of the Upper Nene valley. Kilns producing such material are known from Ecton, Northamptonshire (Johnston 1969). Identifiable forms are restricted to jars, some with multiple neck cordons which can be characteristic of the type. Further material, consisting of gritty whiteware sherds and a buff-firing vessel with painted lattice decoration may also derive from the Upper Nene valley, an area known to produce a diverse range of wares during the Roman period.

Previously published pottery groups, selected from larger assemblages from the Milton Keynes area (Marney 1989), form the basis for ceramic phases set out below.

Ceramic Phase 1: 1st century AD

The majority of this material was associated with ditches in the northern part of the site. Most occurs as small groups of sherds in grogged or coarse shell-tempered fabrics. A larger group of 131 sherds, which included substantially complete vessels (Fig 11, 1-3), derived from ditch 5018.

A date of *c*AD 25–60 is considered likely for this group and probably the bulk of the remaining assemblage. Lid-seated jar forms with slashed rims, suggest dating to the middle years of the 1st century (Friendship Taylor 1999, 13). Near absence of 'developed' (sandier) fabrics and of certain forms including butt-beaker/girth beaker copies makes a later date unlikely.

Ceramic Phase 2: late 1st to 2nd century

Few contexts could be ascribed to the period with certainty, although residual samian and amphora sherds are of this date. Two gullies, 5070 and 5312, in the northern part of Enclosure 1, produced small groups (6 and 22 sherds respectively) most likely of this date. Fabrics consist of grogged types including 'developed', mixed inclusion types, wheel-thrown shelly-tempered material and coarse reduced sandy wares. Identifiable forms include wheel-thrown lid-seated jars in shelly ware (Fig 11, 4).

Ceramic Phase 3: mid/later 3rd centuries

The secondary fill, 5207, of watering hole 5171, produced the only large group certainly of this date. The northern arm of Enclosure 2, ditch 5067, might be of comparable date as its lower fill produced large, unworn and joining sherds from an Oxfordshire whiteware mortarium (M18), dateable to *c*AD 240–300 (Young 1977, 70). The upper fill of the watering hole included a sherd of Oxfordshire red colour-coated ware, probably indicating a date after AD 270–300.

Among the 72 sherds recovered from watering hole 5171, Harrold shell-tempered ware is most numerous, with vessels in this fabric and an Oxfordshire whiteware bowl substantially complete and possibly representing losses in use. Local greywares, fabrics 3 and 9, are poorly represented and forms restricted to a single plain-rimmed dish. Harrold products include jars (Fig 11, 5) with well-defined necks and a wide-mouthed bowl (Fig 11, 6), comparable with examples of 3rd-century date from the kiln site (Brown 1994, 64–8). Third-century dating, perhaps tending to the second half of that century, is suggested by the one Lower Nene valley colour-coated ware vessel present in this group (Fig 11, 9), a bowl form copying samian Drag. 35/36 (Howe *et al* 1980, 24; Perrin 1999, 102). Significantly, Oxfordshire red/brown colour-coated wares are absent from this group. Oxfordshire products which do occur consist of a whiteware bowl (Fig 11, 7), loosely in imitation of samian form Drag. 37 (Young type W54) and a burnished orange-firing bowl (Fig 11, 8) imitating samian form Drag. 18/31 (Young's type O41). A date of *c*AD 100–300 has been suggested for both types by Young (1977, 107; 196).

Ceramic Phase 4: mid/late 4th century

Later Roman dating was appropriate for the majority of dateable contexts, particularly from the

area of the southern enclosure. Aspects of the assemblage viewed overall suggest a clear emphasis within the second half of the 4th century. Strongly indicative of this is the abundance of Harrold shell-tempered wares, which by all measures, is close to the figure from previously dated groups of mid/later 4th century AD (Marney 1989, 47–57). Relative quantities of local greywares, pink grogged ware and traded wares also correspond closely with previously published material.

A sample of vessels from Ceramic Phase 4 is illustrated (Fig 11, 10-16). The groups were associated with the southern enclosure and also an area to the north near the watering hole 5171, for which dating in the middle or later years of the 4th century is evident from the presence of certain fabrics or vessel forms. Compositionally, the groups fit the model for mid/later 4th century dating as described above. There is no clear evidence for activity extending to the final years of the 4th or into the 5th century, as might be supplied from certain vessel forms among Lower Nene valley or Hadham wares. However, the rarity of such forms in much larger assemblages means that continuance up to this period should not be excluded as a possibility.

Specific date markers are provided by Oxfordshire products: C75-8 necked bowls and rosette-stamped form C83, and by Harrold ware jars with undercut, hooked rims, which are represented in all contexts. Vessels present in other ware types, notably Lower Nene valley colour-coated ware 'coarseware' forms, Hadham bowl-jars, pink grogged large storage jars, as well as Oxfordshire and Lower Nene valley mortaria, all are consistent with the dating offered.

Discussion

In terms of composition the later Roman (and earlier) groups compare closely with previously published material from the area (Marney 1989, 1994: Parminter 1996). The earliest stratified material, 'Belgic' grogged and shelly wares of probable mid 1st-century AD date, are associated with ditches in the north of the site. A dearth of stratified 2nd and earlier 3rd-century material suggests hiatus or shift of activity at this time. Limited evidence for activity in the second half of the 3rd century occurs in the north-east area of the site. The larger part of the assemblage, including most or all material associated with the southern enclosure, dates to the period after *c*AD 300/325.

The total figure for finewares/specialist wares, elsewhere taken as an indicator of relative status (Booth 1991), is 14.9% by sherd count. Equivalent figures for large later Roman groups from the Milton Keynes area, which incorporate some material from Bancroft villa (Marney 1989, 1994) are consistently and markedly higher, between approximately 22%, rising to over 40% for a late 4th/early 5th century group from Bancroft. A midden group from Bancroft, at 1911 sherds roughly equivalent to the entire assemblage described here and contemporary, produced a figure of 25% for fine or specialist wares (Marney 1994, 504–5). Based on this evidence the pottery seems to be indicative of lower status, consistent with a smaller agricultural community. A breakdown of forms illustrates a typically utilitarian Roman assemblage, dominated by jars (63.2% of EVEs), followed by bowls (22.4%), dishes (5.6%) and beakers (4.6%). Flagons and mortaria contribute 1.3% and 2.9% respectively, figures which could be seen as reflecting lower status.

Catalogue of illustrated pottery (Figs 11 and 12)

Ceramic Phase 1

1 Bowl/jar with neck cordons, wheel-thrown, burnished, Fabric 46
Ditch 5018, primary fill 5019, late Iron Age enclosure

2 Carinated necked cup/small bowl, wheel-thrown, burnished, Fabric 46
Ditch 5018, primary fill 5019, late Iron Age enclosure

3 Channel-rim jar, slashed decoration to rim outer, handmade, Fabric 1.1
Ditch 5018, primary fill 5019, late Iron Age enclosure

Ceramic Phase 2

4 Channel-rim jar, wheel-thrown, Fabric 1
Gully 5070, Fill 5073, Enclosure 1

Ceramic Phase 3

5 Necked jar with out-curved rim, Fabric 1.2
Watering hole 5171, Fill 5207, Enclosure 1

6 Wide-mouthed bowl with flanged rim, Fabric 1.2
Watering hole 5171, Fill 5207, Enclosure 1

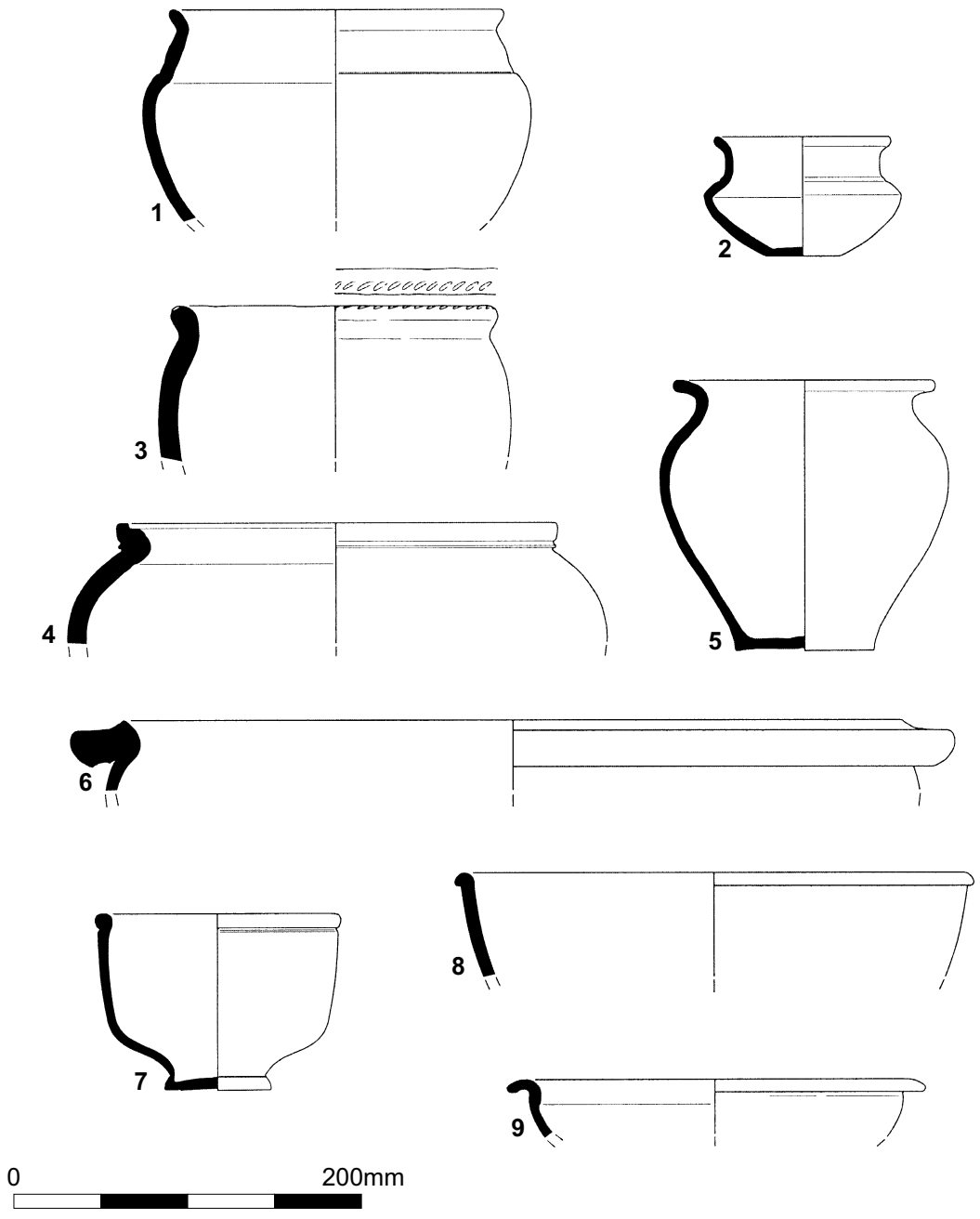

FIGURE 11 Late Iron Age to early Roman, 1-3, and Roman pottery, 4-9

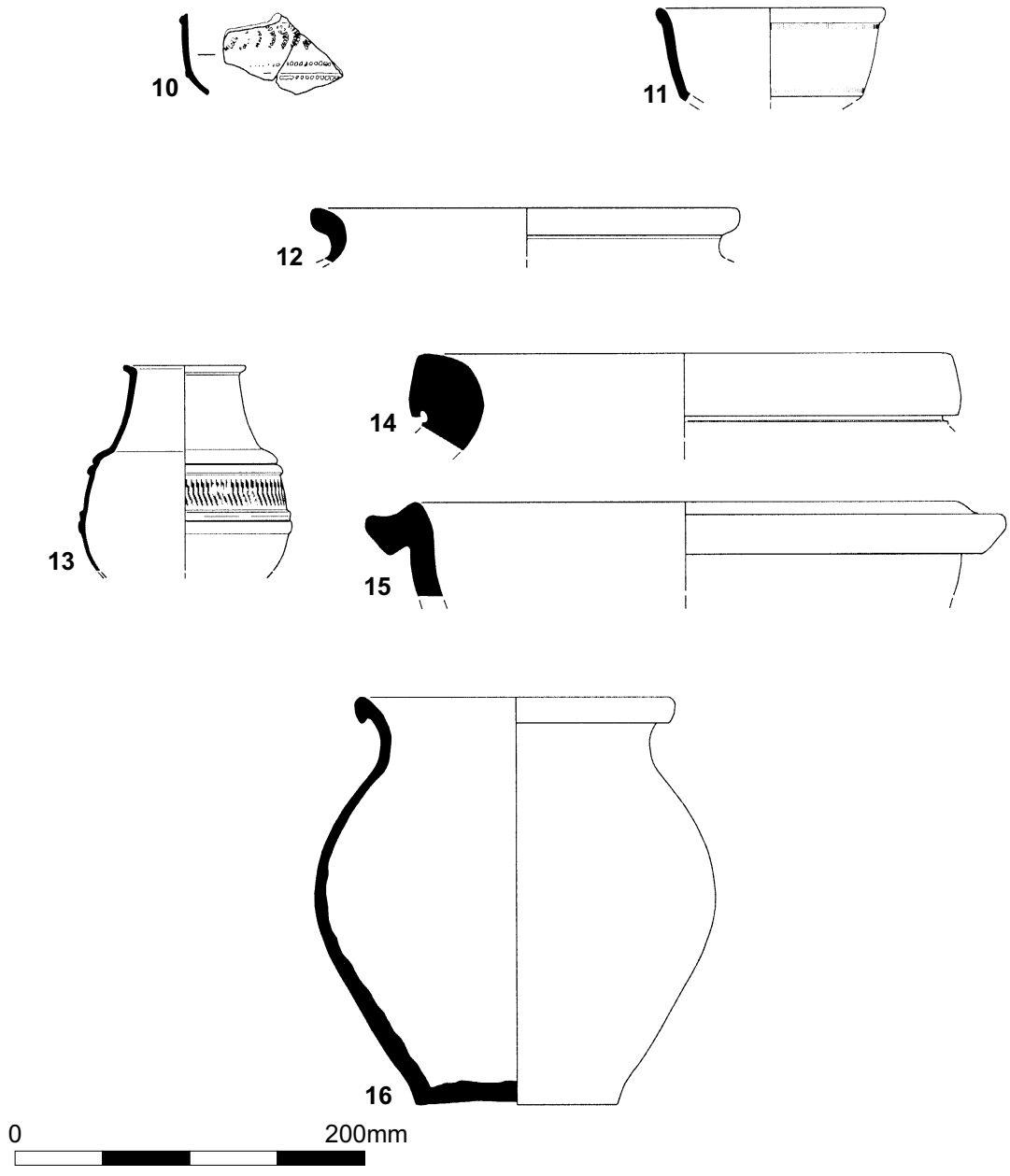

FIGURE 12 Late Roman pottery, 10-16

7 Bowl imitating Drag. 37 (Young type W54), Fabric 18c
Watering hole 5171, Fill 5207, Enclosure 1
8 Bowl imitating Drag. 31 (Young type O41), Fabric 35
Watering hole 5171, Fill 5207, Enclosure 1
9 Bowl imitating Drag. 36, Fabric 6 (LNVCC orange fabric)
Watering hole 5171, Fill 5207, Enclosure 1

Ceramic Phase 4

10 Wall-sided bowl with stamped rosette decoration (Young C78), Fabric 24
Ditch 5159, Fill 5160, Enclosure 2, western arm
11 Wall-sided bowl with rouletted decoration (Young C81), Fabric 24
Ditch 5148, Fill 5149, Enclosure 2, southern arm
12 Wide-mouthed jar, Fabric 6
Ditch 5132, Fill 5133, Enclosure 2, north-east corner
13 'Pentice-moulded' beaker, Fabric 6
Gully 5485, Fill 5486, Enclosure 1, gully
14 Large storage jar, Fabric 2
Ditch 5132, Fill 5133, Enclosure 2, north-east corner
15 Wide-mouthed, flanged bowl, Fabric 1.2
Ditch 5248, Fill 5249, Enclosure 2, gully within RB2
16 Necked jar with hooked, undercut triangular rim. Rilled body, Fabric 1.2
Ditch 5236, Fill 5149, Enclosure 2 final phase

Other Finds by Tora Hylton

A small number of objects can be dated to the earlier Roman period, but most of the Roman finds date to the 3rd and 4th centuries AD. The majority came from Roman deposits, although a small number were residual in furrows and the topsoil. A metal detector was used to maximise the recovery of metal objects. A full descriptive catalogue is retained in the archive.

Costume and jewellery

There are four items of jewellery. Two bracelets were recovered from a small pit, 5057, together with two late 3rd-century coins, a knife and a lead weight. The complete bracelet is penannular, 67mm in diameter, with opposing zoomorphic terminals

Figure 13 Roman copper alloy zoomorphic bracelet (67mm diameter)

(Fig 13). The eyes are defined by shallow recesses and the open mouth by V-shaped notches. Although stylistically different from bracelets with flattened terminals, these heads probably represent those of serpents or snakes. Two transverse grooves separate the terminals from the rest of the hoop, which is ornamented with close-set oblique grooves resembling imitation cabling. Stylistically, this piece displays similar characteristics to chip-carved examples of the 3rd and 4th centuries; a similar example has been recovered from Cirencester (Cool 1979, fig 2, B). Representations of snakes and serpents on items of jewellery are common during the Roman period, specifically in the 3rd and 4th centuries, symbolising health and healing, rebirth and the spirits of the departed (Johns 1998/2000).

The other bracelet, which would have measured *c*60mm in diameter, comprised two small fragments manufactured from rectangular-sectioned strip ornamented with transverse notches. Bracelets of this type are relatively common and similar examples have been recovered from 4th-century deposits at Bancroft villa (Hylton and Zeepvat 1994, fig 141, 73), a cemetery deposit in Colchester (Crummy 1983, fig 43, 1657) and at Gadebridge Park villa (Neal and Butcher 1974, fig 60, 153).

A finger ring from pit group P2 in Enclosure 1 is a plain iron example, comprising part of a fine circular-sectioned hoop which widens out towards a flat, plain bezel. It displays similarities to Henig's Type III as illustrated by Manning (1985, plate 33, J4). Rings of this type are usually furnished with an intaglio setting, but in this case it is missing. Iron finger rings were popular during the 1st and 2nd centuries.

There is also an annular copper alloy finger ring, from ditch 5124 in Enclosure 2. The hoop is small and has been made from a fine, flat-sectioned strip, 17mm internal diameter. A finger ring of this size would probably have been for a child. The bezel is flanked on either side by a small panel of transverse notches and resembles an example from a grave deposit in Colchester dating to *c*320–450AD (Crummy 1983, fig 50, 1765).

Hob nails

Five iron hob nails from shoes all have hollow domed heads, 8-10mm in diameter, and square-sectioned shanks up to 15mm long.

Toiletry equipment

A possible mixing-palette from watering hole 5171 comprises a flat, rectangular piece of fine-grained micaceous limestone, with the upper surface and one of the edges displaying signs of extreme wear. Such slabs of stone are known to have been used to mix cosmetics or medicines. On the underside is a short V-shaped groove, possibly a scalpel/knife point sharpening groove. Palettes with worn edges, like this example, are thought to have been used to sharpen scalpels, and similar examples have been recovered from Colchester (Crummy 1983, 57 and fig 61, 1865 & 1867).

Building equipment

There is little to characterise the nature of the buildings that may have been present. A holdfast was recovered from layer 5187, overlying pit group P2 in the northern enclosure, together with a fragment of iron plate and three nails. Although incomplete, it has a square-sectioned shank with sub-circular rove and would have been used for joining two pieces of wood together.

Twenty-three nails were found. Twelve are incomplete and include headless shanks measuring up to 72mm long. Of the identifiable nails there are three different types, classified according to Manning's type-series (1985, 134ff). Most are Manning's Type 1B (6) with flat sub-circular heads and 40-87mm long; the majority clustered between 52-60mm. There are two nails with triangular heads (Manning Type 2), 75-100mm long; this type is relatively common, their size and head shape suggest that they would have been driven into timbers (Manning 1985, 135). There are three nails with T-shaped heads (Manning Type 3); 64-80mm long, also for use with timber.

Household equipment

There is a dearth of household related items, suggesting either reuse or that the principal domestic focus lay outside the area of excavation.

A swivel and loop came from the ditch of Enclosure 1, and comprises a circular-sectioned oval loop with concave sides: one end is flattened and furnished with a large eye through which passes the swivel. The swivel has a large flat head, tapered circular sectioned shank looped at the terminal (Manning 1985, 138 and plate 64, S4). Similar examples have been recovered from Fishbourne (Cunliffe 1971, fig 57, 23, 24).

Part of a copper alloy spoon was recovered from a medieval furrow. The bowl is missing: all that remains is part of the tapered, square-sectioned shank with a cranked moulding below the bowl, which is likely to have been a fiddle or lute shaped, dating the spoon to the 2nd or 3rd century.

A decorative copper alloy strip from the watering hole, 5171, is parallel-sided and ornamented with a repoussé motif of marginally placed dots on each of the long sides. The piece has been folded twice and has been perforated, twice at one end and six times at random.

A lead weight from pit 5057 is heavily corroded, conical and measures 12mm across and 12mm high.

Tools

An awl from watering hole 5171 has a square, cross-sectioned shank tapering towards each of the terminals. It resembles Manning's Type 4b (1985, 40), the most common form.

A spindle-whorl from gully 5329 has been made from the body sherd of a large shell-gritted jar (Milton Keynes Fabric 1), with the edges pared down to form a circular whorl measuring *c*55mm diameter, with a central waisted perforation.

Two complete knives conform to Manning types

(1985, figs 28-29). The knife from pit 5221 is *c*200mm long; the back of the blade curves to the tip and the cutting-edge is horizontal then curves to the tip (Manning Type 14). Knives of this type are generally considered to be for general-purpose use. The knife from pit 5057 is *c*170mm long; the back of the blade arches up from the tang, which is furnished with a terminal knop, then falls to the tip: the cutting-edge is horizontal with a slight concavity, then curves to the tip (Manning Type 18b).

Roman Coins by Ian Meadows

The 32 Roman coins recovered from the site are characterised by their generally poor preservation, probably reflecting the local ground conditions. Eight came from furrow fills, topsoil or were unstratified: the rest generally came from the upper feature fills; in some instances probably the fill of the subsidence hollow.

The lack of precise identification of many coins is a reflection of the lack of surviving surface detail or the presence of significant corrosion deposits. The chronological distribution is typical of many rural assemblages, being predominantly post 250AD and tailing off before the end of the 4th century. The coins span the period in which 80% of the coin loss recorded in Britain occurs (Reece 2002, 145).

The coins for which a mint could be identified were from Arles (4) or Trier (3); issues from these mints generally make up the bulk of coin in circulation in the Midlands. The single coin of Carausius from the enigmatic C mint is less relevant to understanding money supply to the site.

Comparison with the large assemblage recovered from Bancroft villa showed a similar distribution with few coins (3%) dating to before 259; a similar distribution was also observed at Stanton Low. That the coins include issues of the third quarter of the 4th century suggests continued activity on the site. No coins date to after 378, although this is a generally poorly represented period in the coin record, making up only 5.5% of the British mean described by Reece (*op. cit*.).

The Querns *by Andy Chapman*

Six small fragments of worked stone are probably from broken-up rotary querns or millstones. The largest of the fragments, from ditch 5156 in Enclosure 2, is only 115mm long, and comes from the upper stone of a lava quern, 24mm thick and with an estimated diameter of *c*500mm. The top surface is worn smooth, while on the heavily worn grinding surface there is the junction of two zones of tooled parallel grooves, at variable intervals of 9-15mm. Lava querns were imported either as blanks or as finished stones from the Eifel region near the German/Belgium border throughout the Roman, Saxon and medieval periods, with the Mayen area the largest production centre in the Roman period (Mangartz 2006).

The other five pieces, none larger than 82mm long, are all sandstone, probably Millstone Grit from the Peak District. Three of the pieces are 22-30mm thick, with smoothed grinding surfaces, and probably come from flat rotary querns; one of these is from the watering hole 5171. The other two pieces, from a ditch in Enclosure 2 and a posthole adjacent to the Saxon sunken-featured building, are 37mm and 31mm thick. An original edge indicates a diameter of *c*1.0m, suggesting that both of these thicker stones had come from mechanically or animal-powered mills.

Ceramic Building Material by Tora Hylton

A total of 115 fragments, 13.9kg, of tile were recovered. Small quantities came from 1st and 2nd-century deposits (2.5% by weight) and 2nd- and 3rd-century deposits (11.5%), while the largest amount was recovered from 3rd- and 4th-century deposits (53.5%) and 4th-century deposits (27.5%) in Enclosures 1 and 2. In addition, small quantities were recovered from furrows (5%). There do not appear to be any specific concentrations of tile, suggesting that it is just background scatter. Much of the assemblage is fragmentary and displays signs of abrasion, indicating that it had probably been lying around for some time prior to deposition.

The bulk of the material comprises small identifiable fragments (65%), which can be divided into three broad functional groups: roofing tile, hypocaust tile and structural tile. The remaining 35% comprises small highly abraded fragments that are difficult to identify with any certainty.

Examination of the fabrics (by eye) indicates that four main fabric types are represented, although there may be slight variations within each type, which correspond with those recorded at the

nearby Stanton Low villa (Woodfield and Johnson 1989, 247), and those recorded for sites in Milton Keynes (Zeepvat 1987, 118–125). The four fabric types comprise shell-tempered, sandy with both grey and buff-orange cores, and grog-tempered.

Roof tile

There are 20 identifiable fragments of roof tile, 26.6% of the total assemblage by weight. Fifteen fragments of *tegulae* are present, in shelly, sandy and grog-tempered fabrics, shelly being the predominant type. There are slight variations in the shape and thickness of the tiles, illustrating subtle differences in manufacturing technique, like knife-trimming, hand smoothing etc. One fragment is furnished with a curved, finger-tip impressed groove: it is probable that this is part of a signature mark, a common feature on *tegulae*. There are five fragments from *imbreces*; the survival rate of this type of tile appears to be low, perhaps due to its shape and its thin walls (*c*5mm). These too occur in shelly, sandy and grog-tempered fabrics.

Structural tile

Structural tile makes up 15.3% of the assemblage. There is a single *pila* tile, 30mm thick, used to create the pillars supporting the floor suspended above a hypocaust. There are also some fragments of tile up to *c*45-50mm thick, which are probably what have been termed "sub-floor" tile, used to directly support the suspended floor. Fragments with similar dimensions to both types were recovered from Bancroft (Zeepvat 1987, 24 & 123).

Hypocaust tile

There are 24 fragments of box flue tile. They occur in all fabric types, but sandy fabrics predominate. All examples are furnished with horizontal, diagonal or curved combing, been executed with a 7, 9 or 11 pronged tool. Three fragments, including one which has been knife trimmed, are furnished with a combed 'X', a motif occurring on similar tiles from Stanton Low (Woodfield and Johnson 1989, fig 50, 48-50). Two fragments have mortar adhering to the keying lines, indicating that they had been used prior to deposition. One small fragment is roller stamped.

Miscellaneous

One other piece of tile worthy of note is a small buff coloured fragment, which retains worn patches of a dark brown colour coat on its exterior surface, like an example from Stanton Low (Woodfield 1989, fig 47, 12). Numerous sites in the Midlands have produced evidence for the use of coloured paints on roof tiles, including Bancroft (Zeepvat 1987, 119,) and Wootton Fields villa, Northampton (Chapman *et al* 2005, 102–3).

Metalworking Debris by Andy Chapman

Bronze working

A small quantity of bronze-working debris, weighing 21g, was recovered from the final fill of ditch 5132, at the north-east corner of Enclosure 2, which is dated to the 4th century AD. There are three small body sherds and a plain rounded rim sherd from one or more crucibles. The sherds are 5-7mm thick in a fine sandy fabric, light grey in colour, with dribbles of copper alloy dross on the outside of the rim sherd. They are not heavily vitrified, perhaps suggesting only minimal usage. While there is not enough surviving to define the exact form of the crucible, the sherds are broadly consistent with the smaller Roman crucibles, which are slightly globular cups around 45-70mm deep (EH 2001, fig 22).

There is also a single small fragment from a clay investment mould, 26mm long by 23mm wide, as used in the lost-wax casting process. As these moulds were necessarily broken up to retrieve the casting, it is rarely possible to recover the form of the cast objects. The surviving fragment is in a fine sandy fabric containing small quartz inclusions. It is largely grey, but with an outer surface oxidised to a light orange-brown. There are parts of two adjacent shallow impressions on the inner surface of the mould, which would be consistent with either a brooch or of the range of horse harness fittings, both of which were a common feature of bronze casting at this time.

The ditch containing the bronze working debris lay at the very north-eastern corner of the southern enclosure, and the working area from which it came probably lay nearby. In examples of Iron Age bronze working, including settlement sites at Coton Park, Rugby (Chapman forthcoming) and at Tattenhoe Park, Milton Keynes (Chapman 2006), the debris came from restricted areas at the periphery of the settlements, indicating that this was an activity kept away from the domestic areas

and probably within a specific workshop area. While the same cannot be stated so clearly in this example, it appears that the bronze working was either taking place within the corner of the enclosure, or perhaps even immediately outside the enclosure to the east.

Other metalworking

Ditch 5208 contained a single lump of material, *c*50mm in diameter and weighing 295g, which is of such a high density that it evidently has a high lead content. The lump has a deeply convoluted external surface that appears to have formed during cooling from a liquid state, and on one side there is a deep hollow still partially filled with dark grey silt. The piece is presumably indicative of lead working, with this perhaps the debris from an accidental spillage of molten lead.

Human Bone by Teresa Hawtin

Burial 5406, located in the 3rd/4th-century Enclosure 1, had been affected by later disturbance, and was highly fragmented with the lower legs truncated. Areas of erosion of the surface of the bone could have masked pathological conditions. The individual was a mid-old adult male, probably aged above 40 years, although accurate age estimation was hindered by the lack of several characteristic elements, and the absence of complete long bones meant that no stature estimation could be attempted.

Various common dental pathologies were recorded, including caries, calculus and slight linear enamel hypoplasia, but none were unusual for the period. The maxillary teeth display an extreme amount of wear, and many of the teeth were worn down to the roots, with very little, if any, of the crowns remaining. The mandibular teeth were less severely affected. The extreme dental attrition suggests a gritty, unrefined diet, and the extreme attrition is also likely to have contributed to the formation of the dental caries identified.

Very little joint degeneration is visible, being restricted to the lower spine in the form of porosity, lipping and Schmorl's nodes. Spinal trauma was suggested by an unusual articulation facet at the base of the spinous process of a thoracic vertebra and lipping of the articulation processes on the right-hand side of several thoracic vertebrae. However, the low degree of joint degeneration suggests that this individual was not involved in frequent heavy manual labour.

Cribra orbitalia was present, in the form of porotic lesions in the roofs of both orbits. This condition is thought to be associated with anaemia, although Roberts and Cox (2003, 140) state that, during the Roman period, "It is unlikely that this represents low iron intake as meat played a significant part of the diet for most at this time." Parasitic infection, disease and lead ingestion may have been contributing factors to anaemia (Roberts & Manchester 2005: 228). Few late Roman inhumations have been found in the Milton Keynes area. Those that have been found include sites such as Bancroft, Wavendon Gate and a cemetery at the Roman town of *Magiovinium*.

A Human Mandible by Philip L Armitage

A fragment of the right side of a lower human jawbone was recovered from a gully, 5190, in the north-eastern part of Enclosure 1. The jawbone contained the first and second teeth erupted and in wear. The third molar was lost in antiquity (post-mortem), but in life would have been just breaking through the roof of its crypt. The dental wear patterns, based on attrition in the molar teeth suggest that the age at death was 17–25 years.

Animal Bone by Philip L Armitage

A total of 2,119 animal bones were analysed. Of these, 1,148 (54.2%) are identified to species and part of the skeleton, and 971 (45.8%) remain unidentified owing to the high degree of fragmentation/absence of surviving diagnostic features. For the purposes of quantification (establishing NISP values) pieces/fragments of bone recognized as deriving from the same bone element were counted as a single unit. Of the identified specimens, 1,134 (98.8%) are from mammalian species, 9 (0.8%) from bird species, and 5 (0.4%) from amphibian species. No fish bones are present in the samples submitted for analysis. The species represented are listed as follows:

Mammals:

cattle *Bos* (domestic)
sheep *Ovis* (domestic)
goat *Capra* (domestic)
pig *Sus* (domestic)
horse *Equus caballus* (domestic)

dog *Canis* (domestic)
red deer *Cervus elaphus*
brown hare *Lepus capensis*
water vole *Arvicola terrestris*
bank vole *Clethrionomys glareolus*
field vole *Microtus agrestis*
common shrew *Sorex araneus*

Birds:
domestic fowl *Gallus gallus* (domestic)
tufted duck *Aythya fuligula*
raven *Corvus corax*

Amphibians:
Common frog *Rana temporaria*

Apart from three bird bones of indeterminate species, the unidentified specimens are all believed to be mammalian, with small "scrappy" fragments from sieved samples making up by far the greatest proportion. However, the sieved samples also yielded small mammal and amphibian specimens.

Condition of the bone
The preservation of the animal bone across the site is good, although many of the specimens from the ditches and gullies do exhibit signs of root etching and many have become brittle.

Apart from a group of ten very "scrappy" calcined bone fragments and two burnt/blackened mammal bone fragments, there are only three other burnt bones from the site: one sheep humerus (burnt/blackened), one pig ulna (charred) and one cattle femur (charred).

The incidence of dog gnawed bone is much higher. While such bone may have been scavenged, it seems likely that dogs were also being fed food scraps, including (apparently) dismembered portions of horses. Apart from a noticeable "concentration" of dog-gnawed bone in the watering hole 5171, such bone was scattered throughout the site in ditches, gullies and pit fills, with no apparent overall recognisable disposal pattern.

Body part representation
All parts of the head, body and legs (cranial, axial and limb-bone elements) are represented and for the meat-yielding species indicate the presence in the excavated deposits of primary and secondary butchering debris, as well as discarded kitchen /table tertiary butchering waste/food scraps. Two groups of articulated bone elements, both from later Roman deposits, are noteworthy as representing the products of carcass reduction (secondary butchering). In ditch 1814, an articulated series of neck vertebrae of an adult sheep comprise an atlas, axis, and four cervical vertebrae, plus two associated thoracic vertebrae. In ditch 5043, Enclosure 2, three articulated lumbar vertebra are from a sub adult ox. In addition, Iron Age ring gully R1 yielded elements from part of the foreleg of an ox, see below.

Mention should also be made of an unusual assemblage of sheep bone elements from ditch 5088, Enclosure 2, which comprises the following:

Two skulls: one naturally polled (female?) and one horned male yearling,
Sixteen mandibles: eight of the sheep represented by these lower jawbones were aged 6 to 12 months at time of death and one was aged 1 to 2 years,
Nineteen metacarpal bones and 18 metatarsal bones: with fused and unfused distal epiphyses,
Seventeen phalanges: twelve first, four second and a single hoof core.

Together, these elements probably represent trimming waste (removal of heads and feet/hooves) resulting from the primary butchering process. The same deposit also yielded 12 cattle bones and three horse bones, including a mandible.

Ageing & sexing
Determinations were made of the ages at death of the major domestic species based on dental eruption and wear. Age was also determined for three of the adult horses, all from later Roman deposits,

Feature/Deposit	*Element*	*Estimated age (years)*
Ditch 5067	skull/maxilla	7 to 8 years (presence of a canine tooth identifies horse as male)
Pit 5171	mandible	11 to 12 years
Ditch 5177	maxilla	8 to 9 years

from height measurements taken on their maxillary and mandibular teeth, as follows:

In addition to these three horses aged on their dentition, there is a young foal aged under 15-18 months at time of death, represented by a radius shaft with both the proximal and distal epiphyses unfused/detached, recovered from late Roman ditch at the south-western corner of Enclosure 2.

There is a single female domestic fowl, represented by an unspurred tarsometatarsus, from a late Roman pit 5057, which produced a range of other finds.

Size

Measurements taken on selected mammal and bird bone elements are held in the site archive. From GL measurements on long-bones, estimates of the withers heights were made for horses, cattle, sheep, and pigs.

Iron Age

Only a very small amount of bone of Iron Age date was recovered and it would be imprudent to attempt to reconstruct the economy or diet on such limited evidence. However, mention should be made of the disposal in the ring gully R1 of the articulated elements of the foreleg of an ox, represented by a metacarpal bone, two first phalanges, two second phalanges and a single hoof core, and a cattle skull.

Early and later Roman

The preponderance of cattle bones from Roman deposits indicates that these animals formed the principal stock in the local farming economy (and diet) at that period. Based on the evidence of the recovered horned skulls and the measurements taken on the post-cranial bone elements, the majority of the cattle were sturdy medium-horned animals. Although interpretation of the kill-off pattern indicated by analysis of the lower jawbones is not straightforward, there does appear to be evidence of the killing of a high proportion of calves and prime young animals (aged 1 to 3 years) for their meat, as well as the slaughtering of older cattle (mostly 5 to 8 year olds, plus a few elderly beasts) representing surplus/"worn out" breeding/milking cows and plough oxen. Utilisation of the slaughtered cattle as a source of hides is evidenced by knife (skinning) cut marks across the frontal bone of a skull (adult medium-horned ox) from pit group, P2, in the north-eastern corner of the site.

The presence of at least one foal points to the possibility of the local breeding of horses. Although the equid bones indicate that small pony-sized animals were being kept at the farmstead, there were also apparently larger sized/taller horses, with withers heights up to 14 hands, whose greater stature would have proved a considerable advantage to the farmers when riding such animals during the rounding up and movement of the cattle and sheep (Luff 1982, 136).

In the local livestock economy sheep were second to cattle in importance. Based on the kill-off pattern established for the mandibles, flocks apparently were kept primarily as meat (and milk?) producers rather than for their wool, as evidenced by the high proportion of animals slaughtered as lambs and prime young sheep. The few older sheep probably represent the killing of "worn out" breeding/milking ewes and surplus rams. At least one female goat was kept, as evidenced by an isolated horn core. Perhaps this animal was also being kept for its milk and only consumed at the end of a productive life.

Relatively low numbers of pigs and very few domestic fowl appear to have been kept, and there is virtually no evidence for the exploitation of wild game or wildfowl, except for the isolated hare femur and a single ulna of a tufted duck. There is an antler of a mature (8th to 10th head) stag from ditch 5029. However, this red deer antler had been shed and does not derive from a hunted animal and therefore is not evidence of the consumption of venison. It may have been collected with the intention of utilising it as a raw material in craft working. For whatever reason, this objective was never realised and the antler was eventually discarded in an intact condition.

It is worth noting that the red deer antler associated with the Saxon sunken-featured building is recognised as the waste from antler working (see below). The paucity/virtual absence of deer bones from Roman deposits appears to be a common feature of Roman farmstead sites and is in marked contrast to Roman villa sites throughout Britain where consumption of venison (and other game species) appears to have been prevalent.

With reference to the other species represented at the site, the food refuse, which was thrown into the ditches and gullies, seems to have attracted such scavengers as ravens. This was evidenced by the part remains of a wing (represented by a radius

and ulna) and an isolated ulna from ditch 5132, at the north-east corner of Enclosure 2.

The small fauna recovered from the sieved samples provide insight into the site environments. Water voles are found in well-vegetated habitats along the banks of rivers, ponds and ditches; field voles exhibit a preference for rough, ungrazed grassland as their habitat; while bank voles favour the thick cover provided by scrub or deciduous woodland.

Saxon

Although the deposits associated with the Saxon sunken-featured building, 5214, yielded comparatively small quantities of animal bones, considered overall the combined Saxon assemblage indicates a preponderance of sheep over cattle, the reverse of the later Roman situation. This increase in sheep at the expense of cattle appears to be a widespread trend recorded on many Anglo-Saxon sites and is "evidence of the beginnings of the medieval reversion to a sheep economy" (King 1978, 227). Pigs apparently continued to be of minor importance in the local livestock economy, and in the deposits examined there is a noticeable absence of domestic fowl.

Antler-working activity is indicated by the presence of a chopped red deer antler. The presence of common shrew in the same deposits suggests thick grassland and/or bushy scrub, the preferred natural habitats of this species, in the immediate vicinity.

Charred Plant Macrofossils

by Val Fryer

Forty-nine bulk soil samples were taken from a range of late Iron Age and Roman features, including ditches, gullies, pits and a watering hole. They were processed using standard methods and the dried flots were scanned for plant macrofossils and other remains under a binocular microscope. Thirteen samples contained only rare charcoal fragments and/or other materials and two contained no residues. Modern contaminants, including fibrous roots, straw/chaff, seeds and arthropods were present throughout and formed the major component of most assemblages. Preservation was generally very poor, most of the grains being severely puffed and distorted, probably as a result of combustion at very high temperatures.

Oat (*Avena* sp.), barley (*Hordeum* sp.) and wheat (*Triticum* sp.) grains were recorded. Of the wheat grains, most were of an elongated 'drop-form' shape, typical of spelt (*T. spelta*) or emmer (*T. dicoccum*). Chaff was extremely rare, but single spelt wheat glume bases were recorded from six samples and a possible emmer glume base was noted within a fill of watering hole 5171. Weed seeds were very rare, most occurring as single specimens within an assemblage. All were of common segetal and grassland species including stinking mayweed (*Anthemis cotula*), brome (*Bromus* sp.), medick/clover/trefoil (*Medicago/Trifolium/Lotus* sp.), grasses (Poaceae), dock (*Rumex* sp.) and vetch/vetchling (*Vicia/Lathyrus* sp.). Onion couch (*Arrhenatherum* sp.) type tuber fragments were also recorded.

Charcoal/charred wood fragments were noted at varying densities throughout. Other plant macrofossils were rare, but included a fragment of possible hazel (*Corylus avellana*) nutshell, a sedge (*Carex* sp.) fruit and indeterminate culm nodes, seeds and tuber fragments. Fragments of black porous and tarry material recorded within many of the assemblages are probable residues of the combustion of organic remains (including cereal grains) at very high temperatures.

Twenty-four of the samples were taken from the fills of ditches, where the assemblages are particularly sparse. Cereals and seeds are present, but at a very low density and, in most instances, even charcoal fragments are infrequent. There is no evidence of any primary deposition of material, and it would appear most likely that the macrofossils recorded are present as a constituent of scattered or windblown detritus, some or all of which was accidentally incorporated within the feature fills. Two samples taken from watering hole 5171 contain a slightly higher than average density of material, which may possibly be derived from a small deposit of refuse.

Only one sample, from the fill of pit 5444 in Enclosure 2, appeared to contain a definite assemblage of cereal processing/storage waste. In this, cereal grains are abundant, and segetal weed seeds are also common, particularly those of a similar size to the grains (for example brome, cornflower (*Centaurea* sp.), black bindweed (*Fallopia convolvulus*) and wild radish (*Raphanus raphanistrum*). This, and the virtual absence of cereal chaff, may indicate that the assemblage is derived from either waste from the final stage of

processing (*i.e*. the hand picking of seeds not removed by winnowing) or from a small quantity of stored grain. However, it should be noted that the remains are very heavily burnt and combustion may have destroyed many of the more delicate macrofossils (*i.e*. chaff and smaller weed seeds) present within the original assemblage. The abundance of stinking mayweed seeds probably indicates that some cereals were being grown on heavy clay soils. This is commonly seen within assemblages of Roman date where clay land areas were being newly cultivated as a result of the advent of heavier and more technically advanced ploughs.

Mollusca by Michael J Allen

A column sample, comprising 13 sub-samples (each weighing 1500g), was taken from a sequence of deposits in watering hole 5171. Shell numbers were low but were of sufficient quantity to allow the general character and nature of the environment within and around the watering hole to be determined. All interpretations are general and are presented with caution in view of the small assemblage size.

Although only 69 shells were recovered from the 13 samples, no shade-loving species were present. The entire assemblage (*Pupilla muscorum, Vertigo pygmaea, Vallonia costata, V. excentrica* and *Trichia hispida*) is, not surprisingly, typical of open country environments, and this is the environment into which the feature was cut and subsequently infilled. With the exception of the amphibious species *Lymnaea truncatula* that occurs in two samples, there are no freshwater or aquatic species present. This does not refute the interpretation of the feature holding water, just that there were no suitable local aquatic habitats from which snails could migrate. The gleying and sorted, fine-grained sedimentary nature of the fills certainly indicate deposition and settling in water and of fluctuating groundwater tables. The presence of water is also confirmed by the presence of a number of ostracod valves, especially in the lower fills.

The lack of any shade-loving species which might inhabit and dwell in the feature, as seen at the Bronze Age wells of Wilsford Shaft, Wiltshire (Bell 1989), and medieval well at Lewes Priory, East Sussex (Allen 1997), suggests a long and established open landscape. Although shell numbers are low, the lack of any other aquatic or amphibious species (e.g. Planorbids) is surprising and we can tentatively indicate dry grassland rather than a floodplain prone to seasonal flooding. The presence of the amphibious species (cf. Robinson 1988) *Lymnaea truncatula* may infer that such damper habitats existed not far away.

Anglo-Saxon Pottery by Paul Blinkhorn

Three sherds of early/middle Anglo-Saxon (*c* AD450–850) hand-built pottery, weighing 45g, came from the primary fill of the sunken-featured building. They comprised a rimsherd and two body sherds, probably from the same vessel, a small jar with an upright and slightly everted rim, with a rim diameter of *c*200mm.

The fabric is brown with black surfaces, with the outer surface being lightly and evenly burnished. It is tempered with moderate calcite-cemented sandstone lumps up to 3mm, with most inclusions being 'free' quartz grains of around 1mm diameter. There are rare organic voids up to 20mm, which appear to be the remains of burnt-out fine grasses. The clay is also slightly micaceous. It is a fabric which is typical of Anglo-Saxon sites in the area, such as Pennyland (Blinkhorn 1993, 246–7). It appears to have no chronological significance other than to date the vessels to the early/middle Saxon period. Undecorated, hand-built Anglo-Saxon pottery is impossible to date other than to within the broad early to middle Anglo-Saxon period.

Finds of small assemblages of Anglo-Saxon pottery at Romano-British sites are becoming increasingly commonplace in the region, although in most cases it is impossible to say if this represents continuity or re-occupation. One site that has produced strong evidence of continuity is the temple-mausoleum complex at Bancroft. There, an assemblage of 192 sherds of Anglo-Saxon pottery included decorated sherds that are unlikely to be much later than the mid 5th century (Blinkhorn 1994, 513), and the Anglo-Saxon occupation appears to have ended before the close of the 5th century.

Discussion

The late Iron Age/early Roman settlement

The absence of any earlier material indicates that the origin of the settlement lay in the late Iron

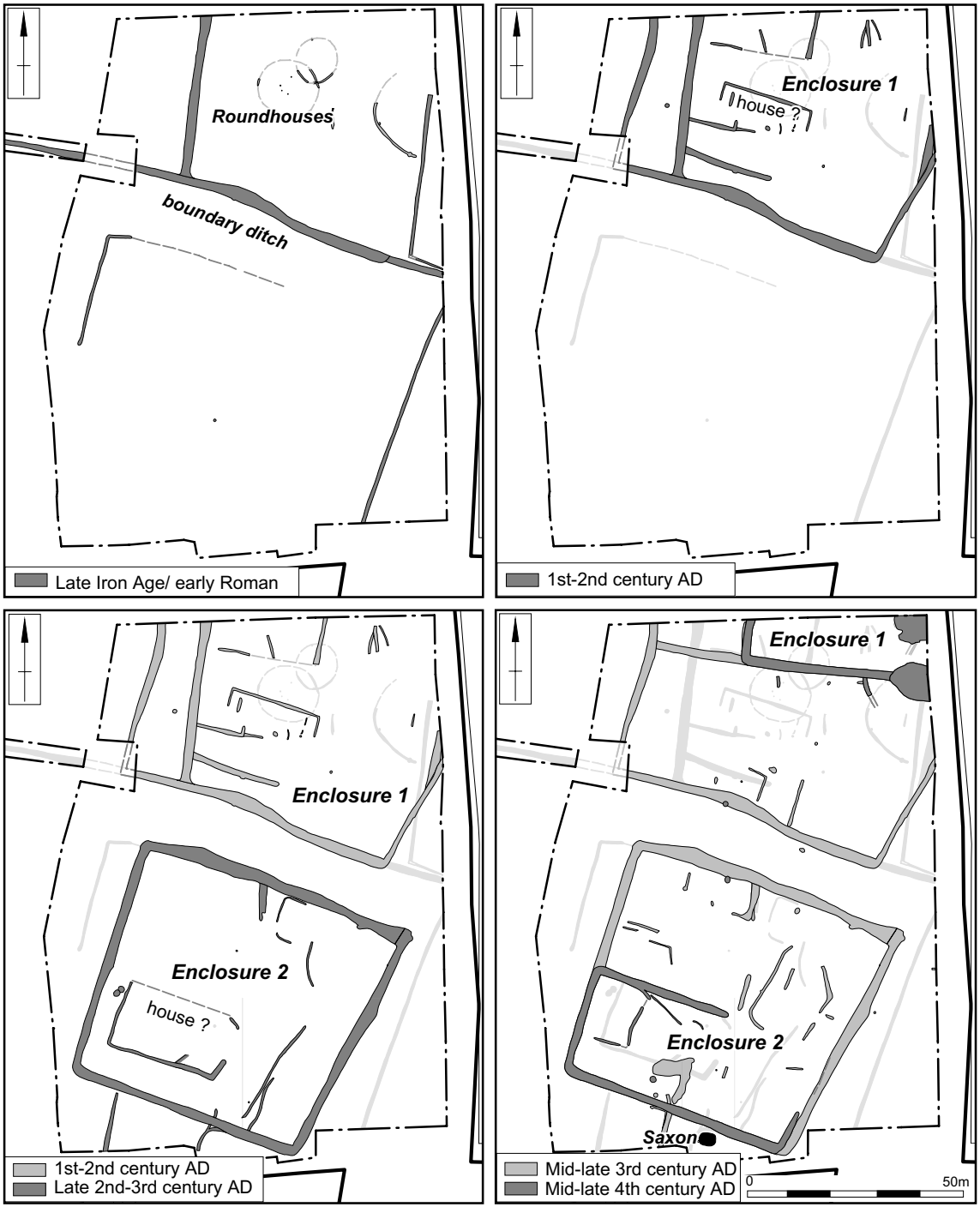

FIGURE 14 The development of the settlement

Age to Roman transitional period, the early decades of the 1st century AD (Ceramic Phase 1: AD25–60). It is possible that the east-west boundary ditch was contemporary with, or even predated the late Iron Age settlement, forming a primary land division respected by the new settlement (Fig 14). Remains of successive roundhouses survived, along with a few lengths of gully, and it is possible that other structures may have lain further to the north. At some stage, the late Iron Age settlement was enclosed, the southern side of the enclosure utilising the linear boundary ditch. The environmental samples from the ditches contained material from open-country grass species, indicating the presence of pasture for grazing animal stock.

Nearby contemporary settlements include Stanton Low (Woodfield & Johnson 1989), 1.5km to the west in the Great Ouse valley. A small middle Iron Age settlement in Gayhurst Quarry (Chapman 2007), lay 1.5km to the north on the southern bank of the Great Ouse, and the presence of an early Roman cremation suggested that later settlement had lain on the slopes to the south. The settlement at Newport Pagnell can therefore be seen as one of many dispersed farmsteads that lay on the slopes overlooking the Great Ouse, with light soils and access to the river margins providing favourable conditions for both pastoral and arable farming. The development of similar enclosures was seen at Monkston Park, exploiting the Ouzel floodplain, suggesting the aim was to maximise productivity from the land available for both crops and livestock (Bull and Davis 2006).

The Roman settlement

Late 1st to early 2nd centuries AD

By the late 1st century AD the settlement had been substantially reorganised to create a Romanised farmstead (Fig 14). A new ditched enclosure was formed, and a rectilinear gully in the centre of the enclosure may have surrounded a rectangular house, replacing the earlier roundhouses. The presence of substantial quantities of butchered cattle bone indicates that a major part of the economy of the settlement was based on rearing and processing cattle for market, although smaller quantities of sheep were also present, along with some horse.

Late 2nd to 3rd centuries AD

By the late 2nd century, a second enclosure had been added to the settlement (Fig 14). This was of similar size to the northern enclosure, and a timber building may have stood in the southern part of the enclosure, either adding to the domestic core or perhaps replacing the building in the northern enclosure.

Mid/late 3rd to 4th centuries AD

During the mid to late 3rd century both enclosures were refurbished, displaying the same, if not a greater level of activity. The cattle bone assemblages from this period indicate that rearing cattle and processing animals through slaughter and skinning was still a major aspect of the settlement economy. A large watering hole was a new feature in the northern enclosure, and the domestic focus in the northern area may have lain further to the north, beyond the excavated area. An inhumation burial near the watering hole was presumably on the periphery of the occupation area (Fig 14).

The southern enclosure also displayed evidence of occupation and related activities. Charred cereal grains and fired clay, probably from kilns or ovens, came from the north-west corner of the enclosure. From the fills at the north-eastern corner of this enclosure came fragments of a crucible and an investment mould for bronze casting, indicating small-scale metalworking was taking place on the periphery of the settlement.

The late 4th century AD

By the late 4th century only the northern end of the northern enclosure and the southern end of the southern enclosures were still in use, and were abandoned towards the end of the 4th century or possibly in the early 5th century (Fig 14). Up to abandonment the settlement economy had continued to be based on the rearing of livestock.

Landscape and environment

Environmental evidence portrays a local landscape dominated by dry, open grassland throughout the late Iron Age and Roman periods. This would be suited to the rearing of livestock, and the animal bone evidence has indicated that intensive cattle rearing was carried out on the site throughout the Roman period. Much of the bone assemblage came from calves and prime young animals slaughtered for their meat, with cut marks indicating that

primary and secondary butchering/skinning was being undertaken, while a proportion of the bone would have been discarded kitchen and table debris from tertiary butchering waste/food scraps. The number of dog-gnawed animal bones, especially from the watering hole deposits, attests to the processing taking place within the settlement. The recovered knives were perhaps used for butchery, and an iron awl for leather working suggests that animal hides may have been processed on site. Cattle may have also been kept for dairy products.

The horse remains, which included foals, suggest local horse breeding as an additional agricultural industry. Sheep were of secondary importance, and were apparently kept primarily as meat and possibly milk producers rather than for their wool, as evidenced by the high proportion of animals slaughtered as lambs and prime young sheep.

Settlement

It is unclear whether these enclosures could be described as a farmstead or were part of a larger organised centre, such as a villa estate. The refurbishments of the enclosures were restricted to the areas where they were originally sited, suggesting the land was under strict organisational control and ownership: a similar development of enclosures was seen at Monkston Park (Bull and Davis 2006).

The growth and development of the site may correspond to the growth of local urban markets, such as the Roman town of *Lactodurum* (Towcester), which lay *c* 20km to the north, along Watling Street. It was a well-established urban centre by the end of the 1st century AD and continued at least to the end of the 4th century (RCHM 1982). Similarly, the Roman town of *Magiovinium* (Dropshort Farm) lay on Watling Street, *c*15km to the south.

There is little to characterise the nature of the buildings, but the lack of stone and the discovery of a small number of iron structural fittings, including a single holdfast and 23 nails, indicates that they were timber-built. A moderate quantity of ceramic building material was recovered, roofing tile, hypocaust tile and structural tile, corresponding with material recorded at the nearby Stanton Low villa, but the assemblage is fragmentary and displays signs of abrasion, indicating that it had been lying around for some time prior to deposition. The occasional fragment of window glass was also retrieved.

Domestic material

The coins from the site dated mainly from the late 3rd to the 4th century AD, and relate to the later phases of occupation. The coin distribution in the northern enclosure corresponds to the general concentration of finds in the northern part of the site, indicating that in the later life of the settlement the main centre of activity lay further to the north. In the southern enclosure the coins appear to be concentrated in the north-east corner. There were only a few personal finds; two bracelets and two finger rings, one of which may be a child's, a possible mixing-palette used for cosmetics or medicines, and a fragment of a spoon. However, the range of pottery types and fabrics, with a dearth of fineware, suggests that the settlement was of quite a low status and may have been part of, or was subject to a local villa estate/landowner.

Saxon and medieval

The presence of a sunken-featured building close to the southern edge of the site adds to the corpus of early Saxon settlement evidence in the Milton Keynes area. However, it is unknown whether this was an isolated structure, or if it represented the northern end of a more extensive settlement, destroyed by the construction of the Rocla Pipeworks. The medieval furrows were the truncated remnant of ridge and furrow cultivation which would have formed part of the open field system pertaining to Newport Pagnell.

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References

Allen, M J 1997 Land Molluscs, *in* Lyne 1997, 163–167

Ashbee, P, Bell, M & Proudfoot, E 1989 *Wilsford Shaft: excavations 1960–62*, London, Historic Buildings and Monuments Commission for England: English Heritage Archaeological Report **11**

Bell, M 1989 Landsnails, *in* Ashbee *et al* 1989, 99–103

Blinkhorn, P W 1993 Early and Middle Saxon Pottery from Pennyland and Hartigans, *in* Williams 1993, 246–264

Blinkhorn, P W 1994 Early Saxon Pottery, *in* Williams & Zeepvat 1994, 512–4

Blinkhorn, P W forthcoming Anglo-Saxon pottery from the Whitehall Villa, Nether Heyford, Northamptonshire

Booth, P M & Green, S 1989 The Nature and Distribution of Certain Grog Tempered Vessels, *J Roman Pottery Stud,* **2**, 77–84

Booth, P M 1991 Inter-site comparisons between pottery assemblages in Roman Warwickshire: ceramic indicators of site status, *J Roman Pottery Stud*, **4**, 1–10

Booth, P M 1999 Pink Grogged ware again, *Study Group for Roman Pottery Newsletter* **27**, 2–3

Brown, A 1994 A Romano-British shell-tempered pottery and tile manufacturing site at Harrold, Bedfordshire, *Bedfordshire Archaeol J* **21**, 19–107

Brodribb, A C C, Hands, A R & Walker, D R 1971 *Excavations at Shakenoak Farm, near Wilcote, Oxfordshire* **1**, privately published

Brothwell, D & Higgs, E (eds) 1971 *Science in Archaeology: A Survey of Progress and Research*, Thames and Hudson (London)

Bull, R & Davis, S 2006 *Becoming Roman. Excavation of a Late Iron Age to Romano-British landscape at Monkston Park, Milton Keynes*, MoLAS Archaeol. Studies Series, **16,** Museum of London Archaeol. Service

Butler, A, Holmes, M & Morris, S 2005 *Archaeological Fieldwalking and Geophysical Surveys at the Northern Expansion Area (NEA) Milton Keynes (Event no: 01015) December 2005*, Northamptonshire Archaeol. rep. **05/152**

Chapman, A, Thorne, A & Upson-Smith, T 2005 A Roman villa and an Anglo-Saxon burial at Wootton Fields, Northampton, *Northamptonshire Archaeol* **33,** 79–112

Chapman, A 2006 The crucibles, *in* E Taylor, 2006

Chapman, A 2007 A Bronze Age barrow cemetery and later boundaries, pit alignments and enclosures at Gayhurst Quarry, Newport Pagnell, Buckinghamshire, *Recs Bucks.* **47(2),** 81–211

Chapman, A forthcoming *An Iron Age settlement at Coton Park, Rugby, Warwickshire*, Northamptonshire Archaeol. report

Cool, H E M 1979 An Inscription on a pair of Silver Bracelets from Castlethorpe, *Britannia* **10**, 165–8

Crummy, N, 1983 *The Roman small finds from excavations in Colchester*, Colchester Archaeol. Reps **2** (Colchester)

Cunliffe, B 1971 *Excavations at Fishbourne, Vol II: The Finds*, Society of Antiquaries

Dawson, M 2005 *An Iron Age Settlement at Salford, Bedfordshire*, Bedfordshire Archaeol Monog **6**

Egan, G 1991 Buckles, *in* Egan & Pritchard 1991, 50–123

Egan, G & Pritchard, F 1991 *Dress Accessories c 1150 – c 1450; Medieval Finds from Excavations in London*, Museum of London, **3**

EH 2001 *Archaeometallurgy*, Centre for Archaeology Guidelines **1**. English Heritage

Evans, J G 1972 *Land Snails in Archaeology*, Seminar Press (London)

Ford, S & Taylor, K 2001 Iron Age and Roman settlements, with prehistoric and Saxon features, at Fenny Lock, Milton Keynes, Buckinghamshire, *Recs Bucks.* **41**, 79–123.

Howe, M D, Mackreth, D F & Perrin, J R 1980 *Roman Pottery from the Nene Valley: a Guide,* Peterborough City Mus Occ Paper **2**

Hylton, T & Zeepvat, R J 1994 Objects of copper-alloy, silver and gold, *in* Williams & Zeepvat 1994, 303–21

Jackson, R P J & Potter, T W 1996 *Excavations at Stonea, Cambridgeshire 1980–85*, Brit. Mus. Press

Johns, C 1996 Bracelets, *in* Jackson and Potter 1996, 334

Johns, C 1998/2000 (Unpublished) *Roman Iconography: A Brief Introductory Guide*

Johnston, D E 1969 Romano-British Pottery Kilns near Northampton, *Antiq J* **49**, 75–97

Kerney, M P 1999 *Atlas of the Land and Freshwater Molluscs of Britain and Ireland*, The Conchological Society of Great Britain and

Ireland (Colchester)
King, A 1978 A comparative survey of bone assemblages from Roman sites in Britain, *Inst. Archaeol. Bull.* **15**, 207–232
Luff, R M 1982 *A Zooarchaeological Study of the Roman North-western Provinces*, Brit. Archaeol. Reps **S137**
Lyne, M 1997 *Lewes Priory, excavations by Richard Lewis 1969–82,* Lewes Priory Trust
Mangartz, F 2006 Prehistoric to medieval quernstone production in the Bellerberg Volcano lava stream near Mayen, Germany, *Quern Study Group Newsletter* **7**
Manning, W H 1985 *Catalogue of the Romano-British Iron tools, fittings and weapons in the British Museum*, British Museum
Marney, P T 1989 *Roman and Belgic Pottery From Excavations in Milton Keynes 1972–82*, Buckinghamshire Archaeol Soc Monog Ser. **2** (Aylesbury)
Marney, P T 1994 Roman Coarse Pottery from the Villa, *in* Williams & Zeepvat 1994, 425–507
Morris, S 2007 *Roman rural settlement at Newport Pagnell, Milton Keynes, Buckinghamshire,* Northamptonshire Archaeol. rep. **07/52**
Murphy, P & French, C (eds) 1988 *The exploitation of the wetland,* Brit. Archaeol. Reps **186**, 101–112 (Oxford)
Neal, D S & Butcher, S A 1974 Miscellaneous Objects of Bronze, *in* Neal 1974, 128–150
Neal, D S 1974 *The Excavation of the Roman Villa in Gadebridge Park, Hemel Hempstead 1963–8*, Society of Antiquaries
Parminter, Y 1996 The Roman Coarse Pottery, *in* Williams *et al* 1996, 176–193
Perrin, J R 1999 *Roman Pottery from excavations at and near to the Roman Small Town of Durobrivae, Water Newton, Cambridgeshire, 1956–58, J Roman Pottery Stud* **8**
Reece, R 2002 *The coinage of Roman Britain*, Tempus
Roberts, C & Cox, M 2003 *Health and Disease in Britain from Prehistory to the Present Day*, Sutton Publishing (Stroud)
Roberts, C & Manchester, K 2005 *The Archaeology of Disease* (3rd ed.) Sutton Publishing (Stroud)
Robinson, M 1988 Molluscan evidence for pasture and meadowland on the floodplain of the upper Thames basin, *in* Murphy & French 1988, 101–112
RCHME 1982 *An Inventory of the Historical Monuments in the County of Northamptonshire, Volume 4: Archaeological sites in South-west Northamptonshire,* Royal Commission on Historical Monuments (England)
Slowikowski, A 2005 The Pottery, *in* Dawson 2005, 95–117
Taylor, E 2006 *An assessment report for archaeological excavation at Tattenhoe Park, Milton Keynes, Buckinghamshire*, Northamptonshire Archaeol. rep. **06/57**
Thompson, I 1982 *Grog-tempered Belgic Pottery of South-Eastern England,* Brit. Archaeol. Reps **108** (Oxford)
Tomber, R & Dore, J 1998 *The National Roman Fabric Reference Collection: a handbook,* Museum of London Archaeology Service
TVAS 1994 *The excavation of part of the Wolverton Turn Enclosure at Wolverton Training Ground and Conference Centre, Wolverton Mill, near Stony Stratford, Milton Keynes, Buckinghamshire, 1994*, Thames Valley Archaeol. Services interim report
Ward-Perkins, J B 1940 *London Museum Medieval Catalogue* (reprinted 1993)
Williams, R J 1993 *Pennyland and Hartigans*, Buckinghamshire Archaeol Soc Monog Ser. **4** (Aylesbury)
Williams, R J & Zeepvat, R J 1994 *Bancroft: A Late Bronze Age/Iron Age Settlement, Roman Villa and Temple Mausoleum: Finds and Environmental Evidence*, Buckinghamshire Archaeol Soc Monog Ser.**7** (Aylesbury)
Williams, R J, Hart, P J & Williams, A T L 1996 *Wavendon Gate: A Late Iron Age and Roman Settlement in Milton Keynes*, Buckinghamshire Archaeol Soc Monog Ser. **10** (Aylesbury)
Woodfield, C & Johnson, C 1989 A Roman Site at Stanton Low, on the Great Ouse, Buckinghamshire, Excavated by Margaret Jones, 1957–58, *Archaeol J* **146,** 135–278
WSP Environmental Ltd 2006 *Specification for Archaeological Excavation at the Northern Expansion Area (NEA) Milton Keynes*, WSP Environmental Ltd
Young, C J 1977 *Oxfordshire Roman pottery*, Brit. Archaeol. Reps **43** (Oxford)
Zeepvat, R J 1987 Romano-British settlement in the Upper Ouse and Ouzel valleys, *in* Mynard 1987, 6–18