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A pit alignment, Iron Age settlement and Roman cultivation trenches west of South Meadow Road, Upton, Northampton

by

GAVIN SPEED

with contributions by
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Summary

University of Leicester Archaeological Services (ULAS) carried out excavations to the west of South Meadow Road, Upton, Northampton in spring 2011. The earliest activity comprised linear field boundaries. These were succeeded by a pit alignment and an associated ditched boundary. A nearby oval enclosure, with a central roundhouse, and an attached annexe, produced most of the small pottery assemblage, which is dated to the later middle Iron Age. A system of parallel linear ditches of probable Roman date may have been part of a cultivation system. There were also remnant furrows of the pre-enclosure ridge and furrow field system.

Introduction

University of Leicester Archaeological Services (ULAS) carried out excavations to the west of South Meadow Road, Upton, Northampton in spring 2011 (NGR SP 70914 60940, Fig 1). Previous evaluation of the 5ha area had identified the presence of an enclosure of Iron Age date (Bartlett 2010; Browning 2010; RSK 2010) and excavation was undertaken as a planning requirement ahead of residential development. This article presents a summary of the results, whilst the full report is listed on the Online Access to the Index of Archaeological Investigations (OASIS) held by the Archaeological Data Service at the University of York, available at: http://oasis.ac.uk/ (OASIS ID – universi1-177102).

The site lay west of the Roman small town of Duston within a densely-settled Iron Age and Roman landscape (RSK 2010), and now sits on the western edge of urban Northampton (Figs 1, 2 and 14) in a relatively elevated position (112m aOD), with views over the Nene valley and surrounding undulating countryside to the south and west. The solid geology is predominantly Rutland Formation mudstone, with overlying drift geology of mid-Pleistocene diamicton till.

Aerial survey in 1996 identified the cropmarks of an enclosure (MNN129682) and a linear feature (MNN129687) within the development area with extensive prehistoric settlement cropmarks south of the site boundary (MNN129689). Geophysical survey also indicated the existence of linear features likely to relate to the previously identified cropmark enclosure (Bartlett 2010). The subsequent trial trench evaluation in April 2010 (Browning 2010) detected features including the western side of the enclosure ditch and a curving linear feature to the west of it. This area was selected for open area excavation in order to address the following national and regional research themes (English Heritage 2011; Cooper 2006; Knight *et al* 2012):

The study of settlement patterns in the Iron Age (Haselgrove *et al* 2001, 30);
The study of Iron Age buildings (Willis 2006, 111–112);
Linear monuments and other land divisions (Willis 2006, 132; Theme PR1, Topics 1,6,7 – English Heritage 2011; 11111.510 – SHAPE 2008; Objective 4C and 4F – Knight *et al* 2012: 65);
Landscape context of rural settlements (Theme PR1, Topic 6 – English Heritage 2011; 11111.310 – SHAPE 2008), and regional research objective (Objective 5H – Knight *et al* 2012: 65).

Summary of phasing

The open-area excavation covered approximately 1.2ha (Fig 3) and a subsequent negative watching brief was undertaken during groundworks to the east in May 2011.

The archaeological evidence indicated four broad phases of activity (Fig 4), suggested largely by stratigraphic relationships rather than finds data, as all the pottery was of broad Iron Age date, with the majority of the assemblage dated to the late middle Iron Age coming from the Phase B enclosure, roundhouse and annexe:

Phase A	consisted of Iron Age field boundaries;
Phase B	the field boundaries were succeeded by a pit alignment and boundary ditch, and a middle Iron Age enclosed settlement, with a central roundhouse and an attached annexe;
Phase C	saw the construction of a large parallel ditch and trench system, of probable Roman date and probably a cultivation system;
Phase D	comprised medieval and more recent ploughing.

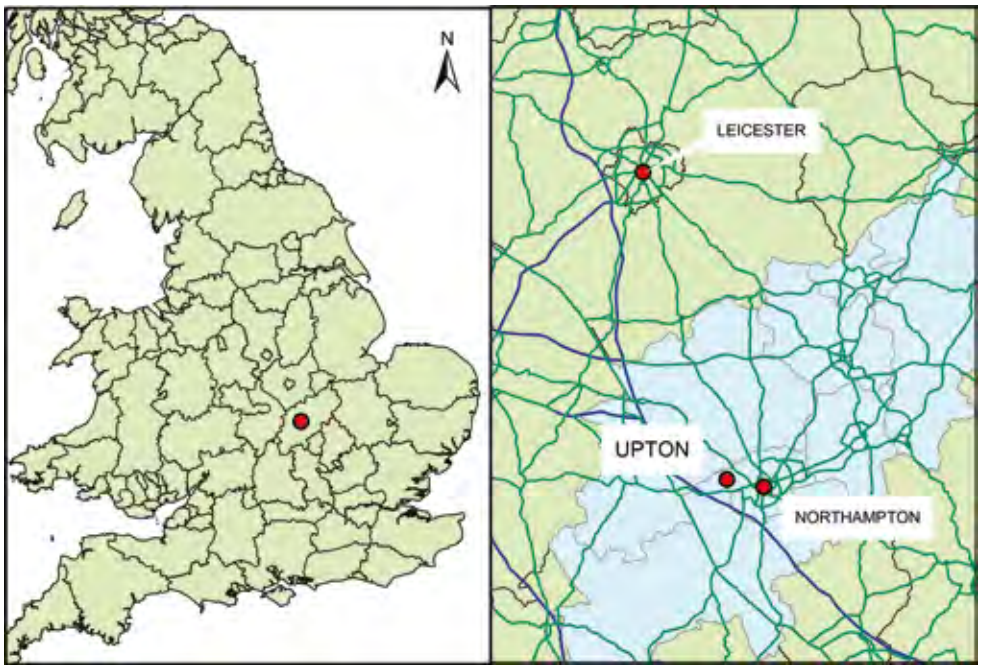

Fig 1 Location plan

Fig 2 Site location

Phase A: Field boundaries

The earliest archaeological features consisted of two ditches, 205 and 233, and a probably contemporary line of pits (Figs 4 and 5). Ditch 205 was at least 60m long, 0.48m wide, and aligned NW–SE. It had a clear northern terminal, but to the south it was progressively truncated by ploughing. Ditch 233 was aligned SW–NE, measuring at least 22m long and 0.25–0.30m wide but only 0.05m deep. To the east it was truncated by a modern sewer. Given that ditches 205 and 233 were positioned at right-angles to one-another and both terminated leaving a gap of 4m, it is likely that they were contemporary field boundaries, although no pottery was recovered from them.

The line of ditch 205 was continued north by a series of four pits 102, 101, 116 and 128 with pit 109 offset to the east. They all contained Iron Age pottery and a large amount of animal bone including cattle, sheep/goat, horse, and deer.

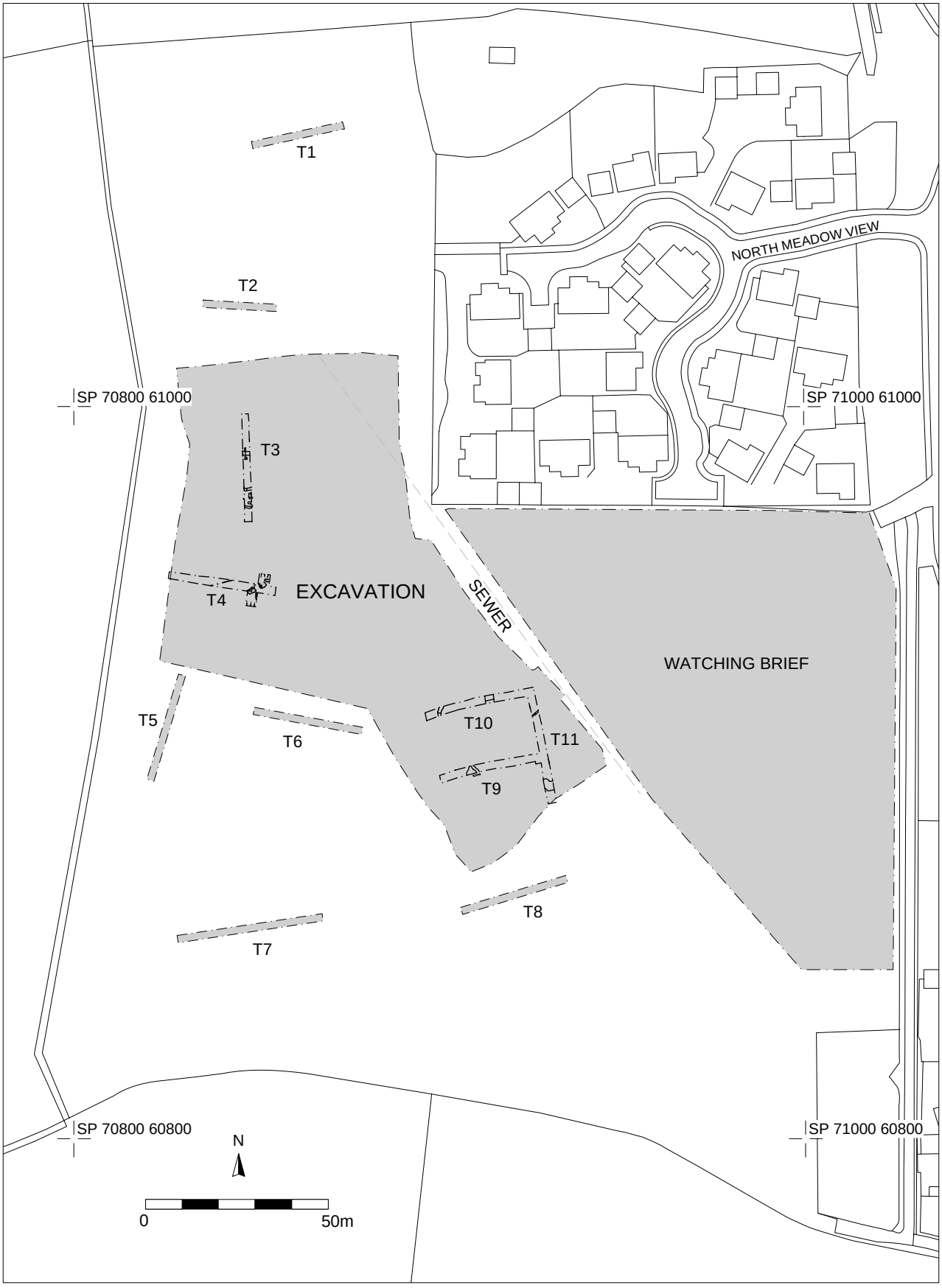

Fig 3 Areas of open area excavation, trial trenches (T), and watching brief area

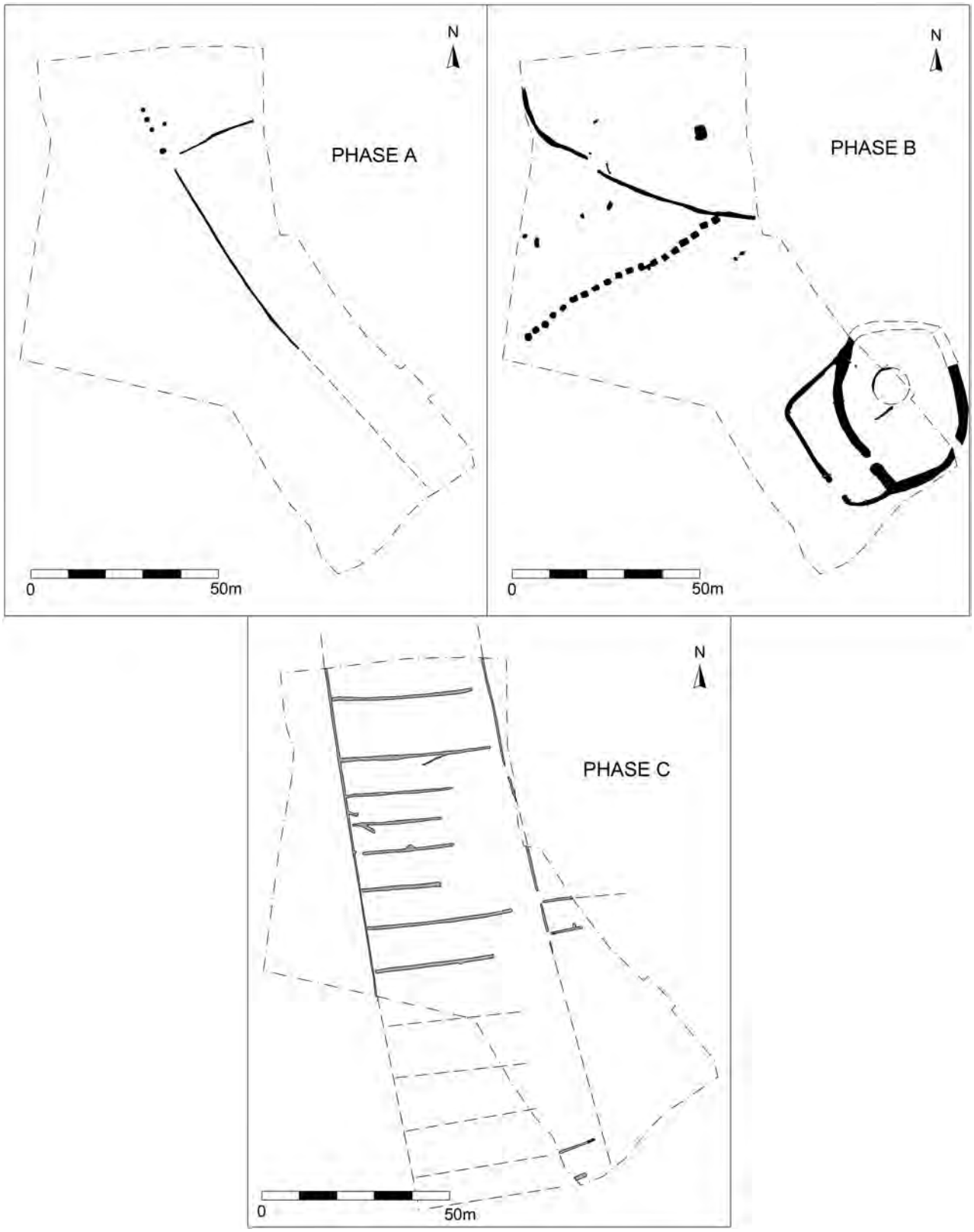

Fig 4 Phase plans

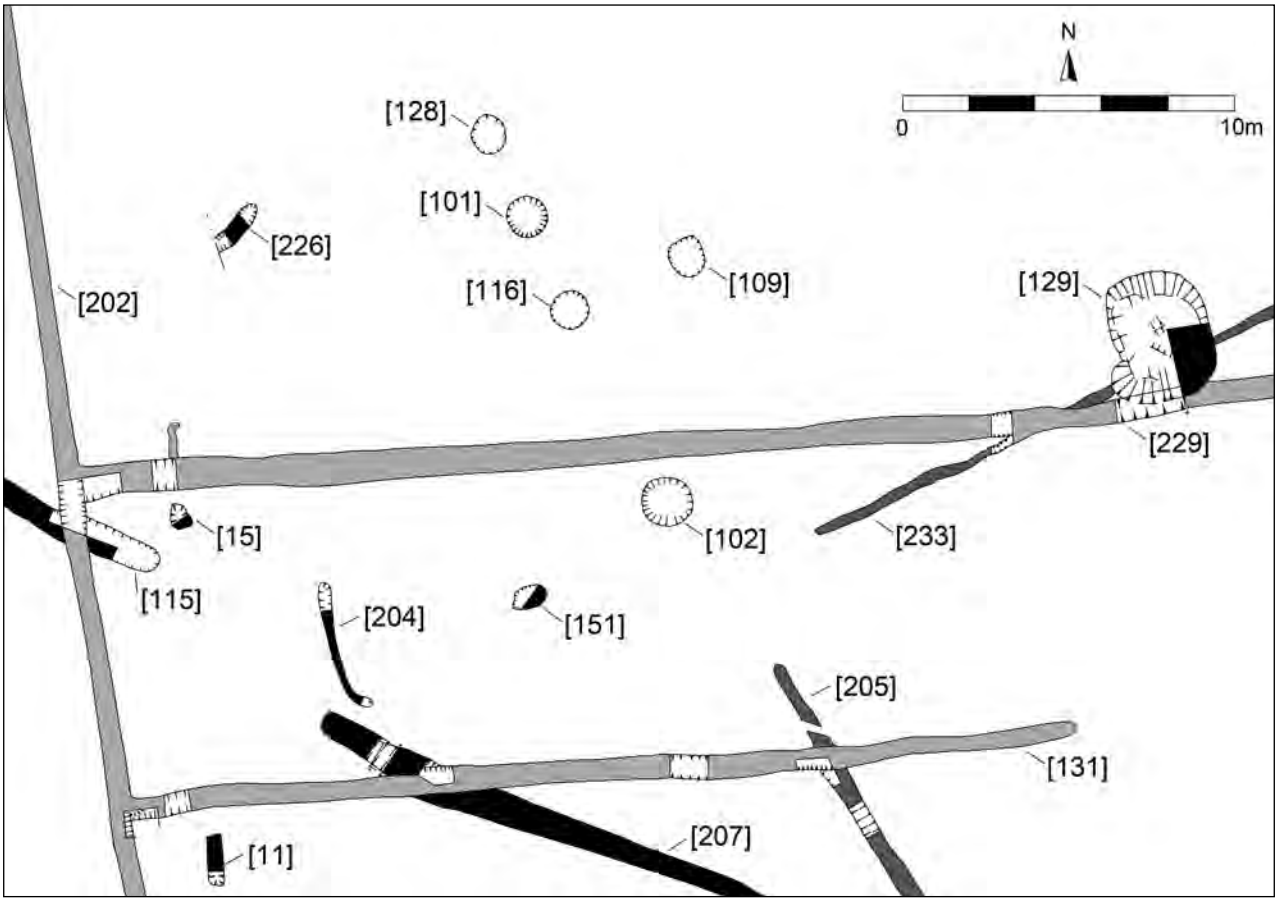

Fig 5 Plan of pits and ditches/gullies around the ditch terminals of 205 and 233, showing stratigraphic relationships with later boundary ditches and the and the parallel trench system

Phase B: Iron Age enclosed settlement and pit alignment

Part of an Iron Age enclosure with an outer annexe lay within the site. To the east, outside the excavated area, it was truncated by a modern sewer and was not observed during the watching brief (Figs 3, 4 and 6). Based on the aerial photography and geophysical survey the enclosure was likely to have been oval in plan, and enclosed *c* 1500m² (0.15ha), measuring 40m N–S by 30m E–W, not including the annexe.

The enclosure and annexe both had their entrances in the SW corner of the ditch circuits (Figs 6 and 9). The inner entrance was 2.45m wide and defined by a large ditch terminal, 37, with later recuts, 1 and 39. The ditch was 2.4–2.9m wide and 1.2–2.0m deep. The primary cut, 37, was largely truncated by the later recut, 39, but where visible had almost vertical sides and a flat base (Fig 7). Fill (38), however, contained no finds. Recut 39 had lower (40) and upper (41) fills, both of which contained Iron Age pottery and animal bone. The lower fill at the terminal also contained large numbers of sandstone fragments, perhaps evidence for a stone revetment.

The annexe was enclosed by a ditch, 9 and 26, of much smaller dimensions, up to 1.4m wide at the terminals and up to 0.78m deep. The outer entrance was 4.9m wide, and the upper fill (50) at the ditch terminal contained numerous fire-cracked pebbles, charcoal, and Iron Age pottery.

There were three features within the main enclosure: a possible roundhouse ring gully, 59, a linear gully, 5, and a small pit, 73, but it is quite likely that more discrete features such as postholes may not have survived the evident plough damage in this area. The curvilinear gully 59 was *c* 0.35m wide, and only 0.1m deep, with the fill (60) containing a single sherd of Iron Age pottery and some animal bone. To the east it was truncated by a modern sewer and it was truncated by ploughing to the S (Fig 8).

Linear gully 5, which may have been a beam-slot, was 5.8m long and up to 0.5m wide, and the fill (33) contained Iron Age pottery and animal bone. Pit 73, located close to the enclosure ditch, was 0.6m in diameter and 0.16m deep, and its fill (72) contained no finds.

An alignment of 20 pits was located 46m NW of the Iron Age enclosure (Figs 4 and 10). It ran for 61m, and was aligned NE–SW, following the slope of the hill down from *c* 112.3m to *c* 109.5m OD, and parallel to the north side of the enclosure. The alignment terminated at the NE end adjacent to ditch 207/115, a possibly contemporary, slightly curving feature running NW across the site for 100m with a 7m-wide gap midway along its length (Fig 5). Across the east half of the gap, angled to the north was a shallow gully 204, which may have been a beam slot

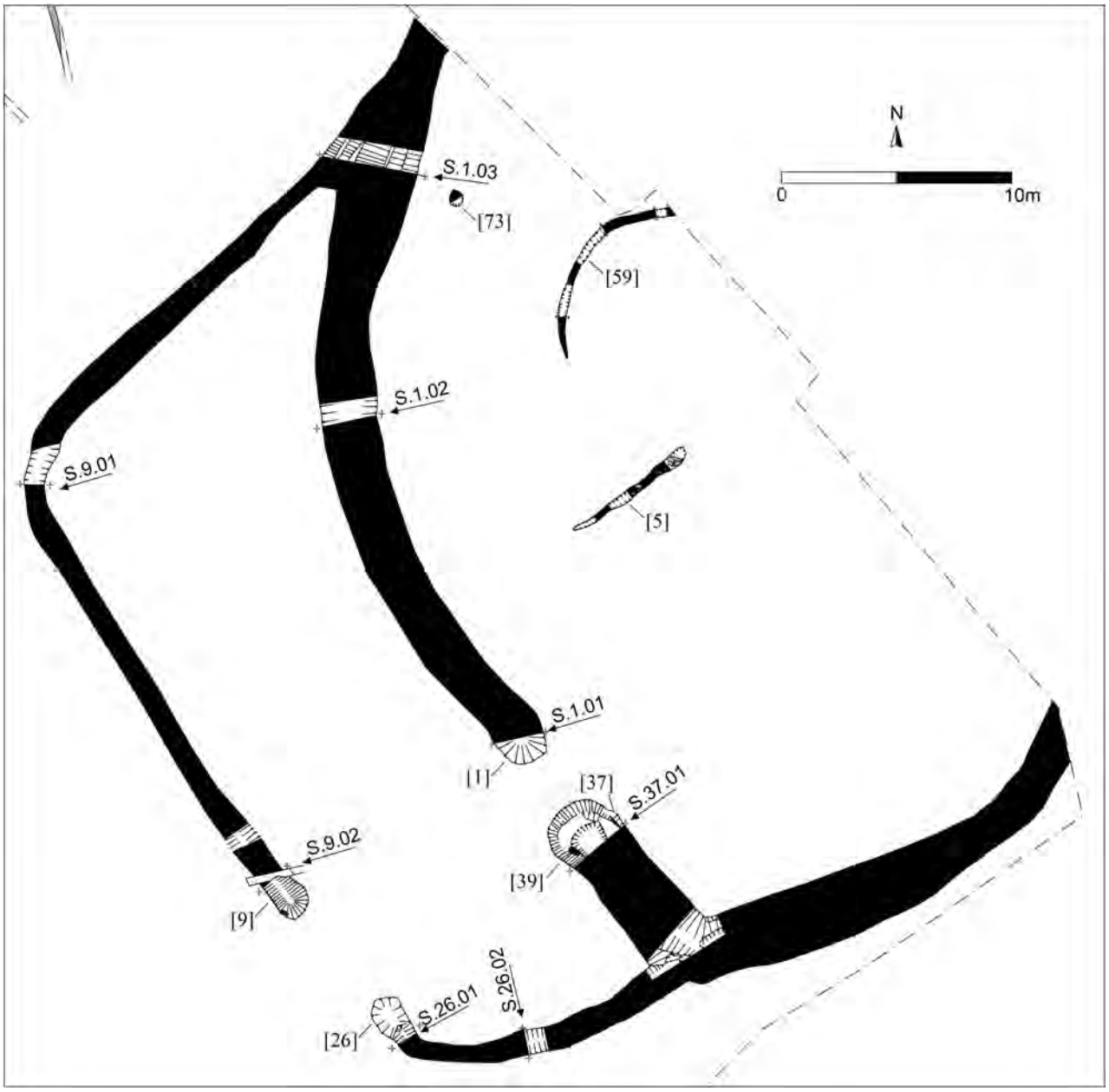

Fig 6 Plan of Iron Age enclosure

Fig 7 Enclosure ditch, southern terminal

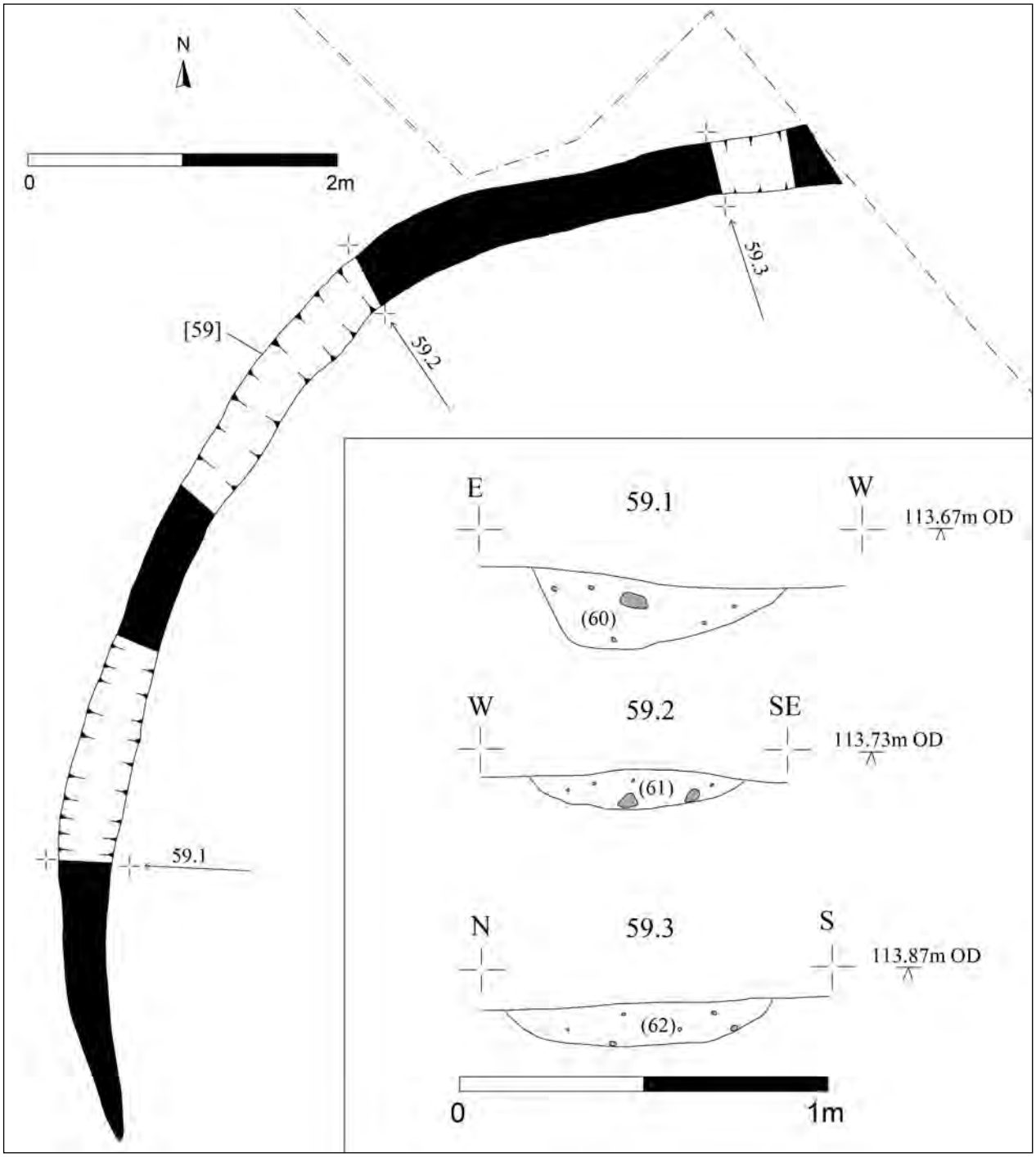

Fig 8 Plan and sections of roundhouse within the enclosure

for a gateway structure relating to stock control. Like the pit alignment, 207 was also cut by (and therefore earlier than) the cultivation trenches. The SW end of the pit alignment may have been a genuine terminal, although a deep furrow may have removed all trace of a pit with the alignment continuing beyond the limit of the excavation further to the SW. The pit alignment was not completely straight having a slight 'wiggle' in the middle section (Figs 10–13).

The pits had a consistent morphology, being square (6) or sub-rectangular (11) when less truncated, and sub-circular (3) when more heavily truncated. The less truncated pits indicate an average size of 2.00m by 1.65m and 1.0m deep. The gap between each pit was fairly consistent, with an average from each pit edge of 1.3m, and 3.3m from the centre. The profile of each pit was also relatively consistent, being steep-sided and near-vertical towards the flat base. Almost all the pits contained distinct primary and secondary fills and whilst an unusual proportion (75%) (Thomas 2008, 150) contained finds, these were all from the secondary fills comprising small sherds of mid to late Iron Age pottery and small amounts

Fig 9 View of enclosure and annexe looking NNE, with individuals standing in the annexe entrance (front) and enclosure entrance (behind)

of animal bone, probably resulting from rubbish disposal after the partially silted alignment had lost its primary purpose.

Numerous small pits and other gullies probably also belong to this phase. Of particular note was a large oval pit 129, measuring 3.9m by 2.9m and 1.3m deep (Fig 5). It is likely to have been a waterhole, and was later used for rubbish disposal as fills (103) and (130) contained over 100 sherds of Iron Age pottery, animal bone including antler, fire-cracked pebbles and lumps of vitrified clay indicative of high-temperature craft activity in the vicinity.

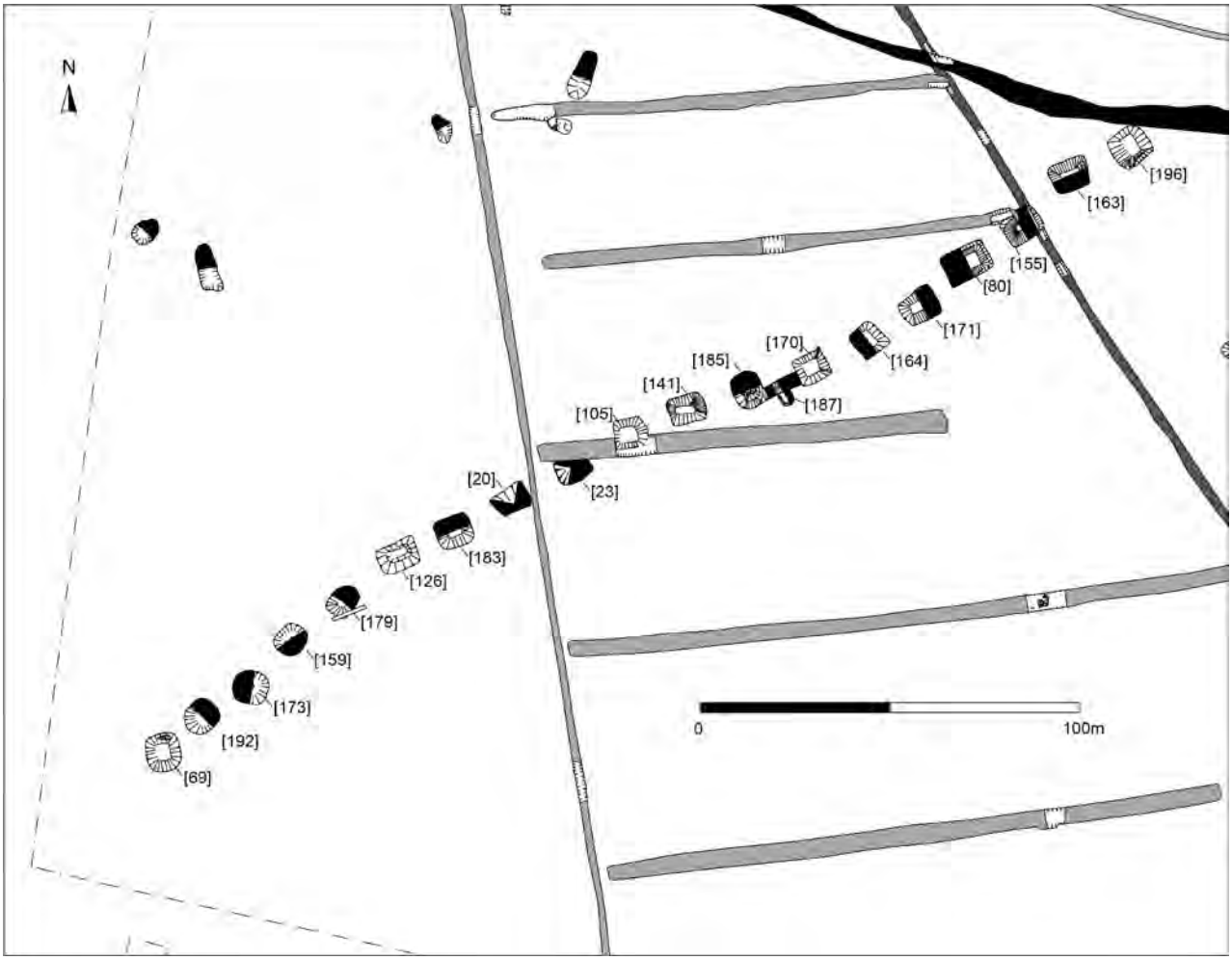

Fig 10 Plan of the pit alignment

Fig 11 View of pit alignment (left), looking south-west towards tributary of the Nene

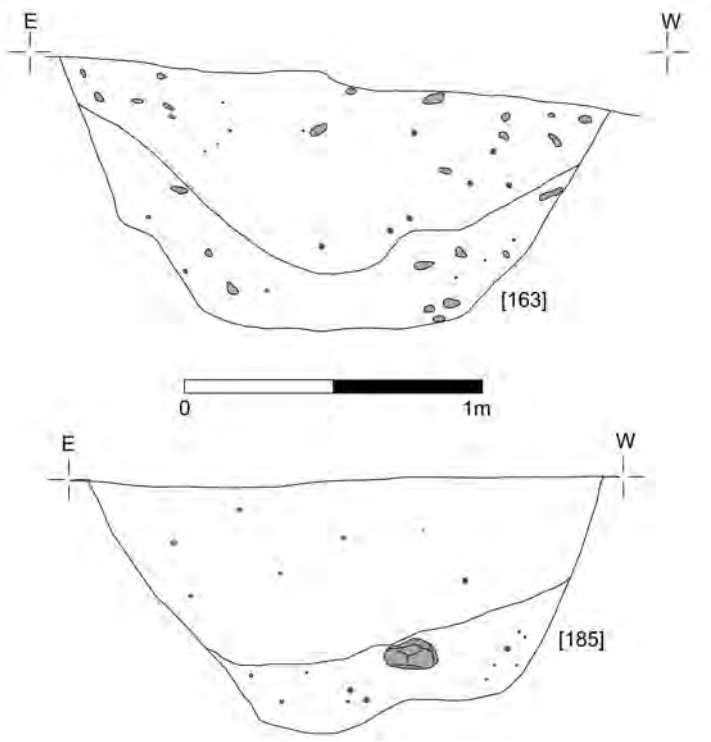

Fig 12 Sections of pits 163 and 185 in the pit alignment

Fig 13 Pit alignment from the air, looking north-east, and also showing the later parallel ditches

Pit 216 was oval and measured 2.45m by 1.10m and 0.28m deep. Secondary fill (218) contained a large amount of burnt clay that could indicate *in situ* burning and the collapse of a clay superstructure such as an oven. However, the archaeobotanical material from the pit did not support the idea that it was an oven for crop-processing.

Phase C: Parallel ditches and trenches

A series of at least eight parallel trenches extended over an area of 4200m² (Fig 14). The trenches were aligned E–W (up/downslope) and ranged in length from 21m to 40m. They were confined between two parallel ditches each aligned N–S: 202 to the west, at least 89m long, and 215 to the east. Six of the trenches terminated just before the western ditch 202, and the remaining two joined the ditch and appear to have been contemporary features. The eastern ends of the trenches did not appear to join the eastern ditch 215.

Most of the trenches were steep-sided (almost vertical) with flat bases (Fig 15). Two others had shallower sides (120 & 157), and may have suffered from more plough truncation. Most ditches had a homogeneous fill, and no postholes were located in the excavated slots, although in ditch 64, ironstone in the base of the trench may have been post-packing (Fig 15). The spacing of the trenches varied between 8m and 16m. The detection of the east ends of two parallel trenches in the far S of the excavated area, 30 and 48 (Fig 4), suggested that the system extended for at least another 60m in that direction whilst two more trenches 78 and 63 (Fig 14) projected east from the line of ditch 215, perhaps indicating the presence of another similar block of trenches to the east.

The fills of the trenches produced only 26 sherds of Iron Age pottery. Stratigraphically, the parallel trenches were later than the Iron Age pit alignment, with three of the ditches cutting pits within the alignment, and later than Iron Age boundary ditch 207. They were also demonstrably earlier than the medieval ridge and furrow which cut many of the ditches. Stylistically, these could be cultivation or irrigation trenches of Roman date and similar examples are known from Grendon and Wollaston in Northamptonshire (Brown and Meadows 2000).

Phase D: Later activity

The latest activity on the site, prior to the modern housing development, were the remnant furrows of a pre-enclosure ridge and furrow field system aligned NNE to SSW, covering the excavated area, with furrows spaced every 9–10m.

Iron Age pottery
by Elizabeth Johnson

Overview

The excavations produced a pottery assemblage of 542 sherds weighing 3.267kg, with an estimated vessel equivalent (EVEs) of 1.83. The low average sherd weight of 6g reflects the generally poor condition of the pottery with high levels of abrasion. The material was analysed

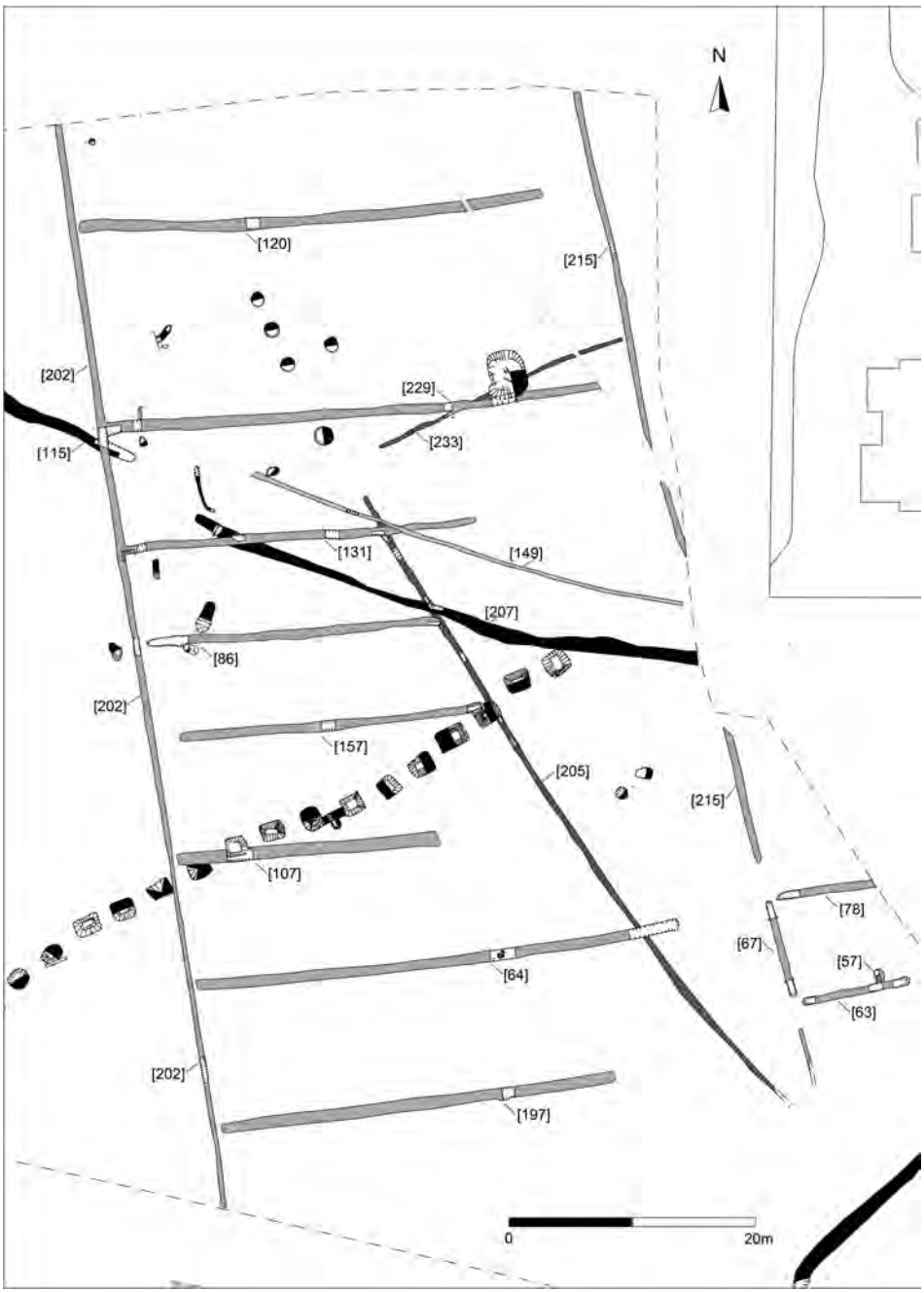

Fig 14 Plan of parallel trenches

by form and fabric with reference to Leicestershire Prehistoric Pottery Fabric series (Marsden 2011) and the series developed at Bancroft (Knight 1994). The assemblage fits broadly into the East Midlands Scored Ware tradition dating from the 4th or mid-3rd century BC to the early 1st century AD (Elsdon 1992), but comparisons with nearby sites at Twywell (Harding 1975) and Rushton (Jackson 1976) indicates a closer dating to the 2nd or early 1st centuries BC.

Form and Fabric

Shell-tempered fabrics are the most common, accounting for 57% of the assemblage by sherd count with the sand and shell-tempered fabrics incorporating grog contributing 32% and a sandy fabric making up the remaining 11%. The dominance of shell-tempered fabrics is typical of Iron Age material from Northamptonshire, as evidenced from sites such as Twywell, Weekley (Jackson and Dix 1987) and Mawsley (Johnson 2012). Most of the assemblage comprises plain body sherds alongside 25 jar rims, two handles and 59 body sherds with scored decoration. The rim forms comprise upright and upright flattened,

Fig 15 Parallel trench 64, with possible stone packing

flattened, slightly flared or out-curved and plain rim forms, probably from barrel-shaped or slack-shouldered jars, typical of East Midlands Scored Ware (Elsdon 1992, 83–85, fig 1.4–6). The first three rim types are present in fairly equal proportions, with plain rims occurring with least frequency.

Stratigraphic distribution

The pottery was concentrated in the Phase B enclosure ditch and internal features (40%, 213 sherds, 1379g) and other Phase B deposits produced another 44% (239 sherds, 1429g) including the large pit or waterhole 129, fills (103) and (130) which contained 20% (103 sherds, 622g) of the assemblage, with only small amounts from the upper fills of the Phase B pit alignment and the Phase C parallel trench system.

Discussion

It has been suggested that in Northamptonshire scored ware may have reached its high point during the later 2nd and 1st centuries BC, just before the introduction of wheel-thrown 'Belgic' style wares (Jackson and Dix 1987, 73–77). Whilst scored ware most probably continues into the 1st century AD elsewhere in the East Midlands, in the middle/upper Nene valley it appears to go out of use as soon as wheel-made 'Belgic' styles appear (Elsdon 1992, 88–90). This is supported by evidence from sites in Northamptonshire such as Aldwincle (Jackson 1977), Wakerley (Jackson and Ambrose 1978) and Weekley (Jackson and Dix 1987), where scored wares and late Iron Age wheel-thrown wares are replaced completely by 'Belgic' wares during the first half of the 1st century AD.

The proportion of scored sherds in the assemblage is not particularly high, and together with the complete lack of later Iron Age wheel-thrown wares or 'Belgic' wares supports the idea that the assemblage dates to the 2nd or early 1st centuries BC as suggested for comparable sites at Twywell and Rushton.

Animal bone

by Jennifer Browning

Assemblage condition

A total of 628 fragments of bone were recovered from the excavations although re-assemblage of conjoining fragments reduced the number to 510. The small number of bones from the Phases A and C and the lack of refinable pottery dating within the mid-Late Iron Age dictated that the material was treated as a single assemblage. Bone surfaces were generally in poor condition across the assemblage, inhibiting examination for butchery marks and pathologies, and the high proportion of undiagnostic specimens (86%) emphasises the degree of fragmentation. A small proportion (5%) was charred from cooking, or was calcined.

Species represented

The range of species recorded is presented below (Table 1).

Table 1: Species representation based on Number of Identified Specimens (NISP) in rank order

Taxa	No	%
Cattle	32	54
sheep/goat	13	22
Horse	11	19
Pig	2	3
red deer (antler only)	1*	2
Total identified	59	100
large mammal	217	
medium mammal	30	
indeterminate	117	
Total	**423***	

*Eighty-seven fragments of antler from the same context are counted as '1' to avoid skewing the results

Cattle bones occurred most frequently, followed by sheep/goat and horse. Poor preservation will undoubtedly have had an effect upon species representation, since larger bones are more likely to survive. Pigs are

particularly under-represented with only fragments from the maxilla and mandible present; it has been noted in other assemblages that cranial elements tend to be more resilient (Albarella 2006, 84). Whilst the small sample size for each species precludes a discussion of anatomical representation, the emphasis on robust limb bones, metapodials, teeth and mandibular fragments for cattle, sheep/goat and horse, can probably be attributed to preservational factors.

A large number of red deer antler fragments recovered from fill (103) of the waterhole pit 129 are from a minimum of one antler, possibly two. The antler was branched, indicating that it was from a mature animal several years old (Corbett and Harris 1991, 495). Some cut marks are apparent but there was no clear evidence for the removal of tines for working. Since the burr was not present, it was not possible to determine whether the antler was collected after being shed, or was from a hunted animal.

Ageing and butchery

A small number of fused cattle and horse epiphyses were present (cattle n=3 and horse n=1) but there were no sheep/goat, pig or deer bones with epiphyses. There were three age-able cattle mandibles from mature adults. Two sheep/goat mandibles were from animals slaughtered at *c* 2–4 years of age (O'Connor 2003, 162), while a third animal was younger. Cut marks were noted on a horse metapodial (36) and a large mammal shaft fragment (2), indicating skinning and filleting.

Stratigraphic distribution

The distribution of the assemblage by feature type across the site is presented below (Table 2)

Repeating the pattern of the ceramic refuse, the majority of the assemblage was recovered from the Phase B enclosure and associated pits, particularly from pits 109 and waterhole pit 129, a relatively high proportion of which was identifiable to species. In contrast, the Phase B pit alignment produced little bone, predominantly undiagnostic shaft fragments, indicating secondary deposition. Few faunal remains were found within gullies, suggesting that these were kept clean and were not intended for the disposal of domestic waste, whilst the Phase C cultivation trenches also contained very few bones, perhaps due to the distance from settlement.

Table 2: Distribution of assemblage by feature

Feature type	**No**	**%**
ditch	84	16
gully	14	3
pit	380	75
Cultivation trench	32	6
Total	**510**	**100**

Discussion

Although also poorly preserved, broad comparisons can be drawn with the assemblage from a nearby extensive Iron Age and Roman site at Upton, which was described as poor to moderately preserved and that fragmentation was high (Vann 2010, 45). Cattle were similarly the most common species in the Upton assemblage, followed by sheep and horse, with poor representation of pig (Vann 2010, 45).

Groups of antler are not infrequently found on Iron Age sites, for example a large cache of worked and unworked antler was found dumped in a ditch at Manor Farm, Humberstone, Leicestershire (Browning 2011), and this might support the suggestion that its presence at South Meadow Road, Upton was for object manufacture.

The assemblage adds further support to the current consensus that pit alignments were not intended for the disposal of domestic waste. A report on a nearby Iron Age pit alignment in Upton (Carlyle 2010) does not record any faunal remains.

Charred Plant Remains and Pollen Analysis

by Anita Radini

Forty-one soil samples were taken from features with the potential to contain charred plant remains. Additionally, palynological samples were taken from the cultivation trench system to see if it might relate to viticulture as previously recognised in the Nene valley at Wollaston (Brown and Meadows 2000).

The charred plant remains

Almost all of the samples available for analysis contained very small numbers of charcoal flecks, but only 16 produced identifiable plant remains, in very low concentrations.

Cereal grains were few in number and poorly preserved. The identifiable cereal grains were of glume wheat (*Triticum dicoccum/spelta*) and barley grains (*Hordeum vulgare*). The barley was the hulled form, but it was not possible to confirm if the grains were twisted due to their poor preservation. Occasional chaff fragments (glumes) were found and most were not identifiable to species level, being either emmer or spelt (*Triticum dicoccum/spelta*). No other food plants were recovered.

Weed seeds were mainly of plants of arable or disturbed ground. Seeds of large grasses including brome grass (*Bromus* spp.) were recovered in almost all the samples with plant remains. Brome grass is a very common weed in the late Iron Age and the Roman period. The second most common weed seeds belonged to goosefoots (*Chenopodium* spp.) and sorrels (*Rumex* spp.), which are weeds of crops and grow on disturbed ground. Other weeds were very few including vetch type (*Vicia* spp.), which can also grow as a grassland plant, and cleavers (*Galium aparine* L.), which is usually associated with autumn-sown cereals. A few grass stem fragments and seeds of smaller grasses were also present, perhaps from nearby vegetation and possibly used as fodder, or flooring

or roofing, or burnt as kindling. The occurrence of charred plant remains, mainly in the same Phase B pits as the pottery and animal bone, suggests that it results from domestic waste and food spillage.

Analysis of samples from pit 216, considered to be a collapsed oven structure, revealed very fragmentary charcoal and a small number of badly damaged charred grains of barley, small wild grasses seeds and no chaff was found.

The pollen

The analysis of the ten samples did not retrieve any grape-vine pollen (*Vitis vinifera* L.) to positively support the hypothesis that the cultivation trenches may have been connected with viticulture. However, this could be due to the conditions of preservation in the ground, as the organic matter present in the samples appeared very degraded and other pollen species, such as birch (*Betula* spp.), alder (*Alnus* spp.) and wild grasses (Poaceae), normally very common in pollen spectra, only occurred in very low numbers in the region for this period. Moreover, modern studies have shown that even underneath vines the pollen concentration can be low (Turner and Brown 2004), due mainly to the fact that vines produce far less pollen than cereals and this may have been a contributing factor to not detecting it in the samples from the cultivation trenches at Thistleton (Greig 2011, 23).

Discussion

Charred cereal remains were sparsely represented on the site and, overall, the archaeobotanical assemblage was very poor. The samples contained only a few identifiable charred grains of glume wheat and barley, in equal proportion, which suggests food waste or food spillage from domestic activity. It is also possible that the area of the site sampled was not concerned with cereal processing. The assemblage is very similar to that from contemporary sites at Mawsley, Northamptonshire (Monckton and Radini 2012) and Castle Donington, Leicestershire (Radini forthcoming) in terms of preservation and quantity of remains, and not atypical in the region (Monckton 2006).

Discussion

The enclosure

The South Meadow Road settlement sits within a densely settled Iron Age and Roman landscape in the Nene valley (Fig 16). The Phase B curvilinear enclosure, which appears to date to the 2nd or early 1st century BC, took in about 1500m², corresponding closely to the median size for this type of enclosure (1531m²) drawn from a wider study of Iron Age enclosed settlements in the East Midlands (Speed 2010, 39). Such enclosures are generally the smallest-type (Figs 16 and 17), below rectilinear and D-shaped forms (Speed 2010, 37–40) and tend to occur in areas that do not have large field systems. This reflects their location high on the valley sides and a function related to different farming practices, whilst enclosures in the valley bottom tended to be larger and rectilinear in form, for example at Pineham, 2km to the south (Figs 15–17).

The entrance to both the enclosure and annexe faced south-west, the same orientation as the pit alignment, and affording good views across the valley. The wider annexe entrance may have allowed livestock to be corralled inside, whilst the quantity of ironstone in the backfill of the enclosure ditch, especially at the terminals suggests that the internal bank may have had a revetment (Fig 19), and therefore it would have been more visible in the landscape. The majority of enclosed Iron Age settlements in the region have entrances aligned to the east (Speed 2010, 41), and when they do not, there are usually specific contextual reasons for it. In this case the reason could be topographical, related to visibility and access from downslope, whilst at Wollaston, for example, the enclosure settlements were built at regular intervals along a pre-existing ditch boundary (Ian Meadows pers comm). The entrance therefore either opened onto this 'route-way', or faced its neighbouring enclosure. A similar respect for pre-existing boundaries can also be seen at an enclosure in area 6 from Courteenhall (Buteux 2001; Buteux *et al* 2005).

The pit alignment

The 61m length of pit alignment ran downslope in a SW direction (Fig 20), the sub-rectangular pit form suggesting a late Bronze Age to Middle Iron Age date (Hingley 1989, 1–2). The slight 'wiggle' in the middle section could be evidence for 'gang-work' during the construction, as evidenced for example at Gretton in the Welland valley (Jackson 1974, 40).

Within Northamptonshire, 25 pit alignments were known in 1974 (Jackson 1974, 44), and by 2007, 144 had been mapped (Deegan 2007, 84). The closest excavated pit alignments to South Meadow Road lie 800m to the south at the Cross Valley Link Road (Carlyle 2010), and 1200m to the south-east at Upton (Walker and Maull 2010; Foard-Colby and Walker 2010) (Fig 19). The secondary fills of the Upton example were dated to 400–210 cal BC by radiocarbon determination, and although the orientation and pit spacing is similar to South Meadow, the pits are considered to have been square originally and far more regular in form.

The orientation of the South Meadow, Upton alignment would suggest that, as a boundary, it was intended to hit the tributary of the Nene at right-angles, a common occurrence (Hingley 1989; Thomas 2003, 83–84), and isolate the upper part of the valley. The juxtaposition of north-eastern terminal of the alignment with the line of ditch 207 may suggest a stock-control function. In contrast, the Upton and Cross Valley Link Road lengths are considered to be part of the same pit alignment running for 1.3km (Walker and Maull 2010, 21), indicating that the former swung west to run along the valley side to join the latter, rather than continuing downslope to the Nene.

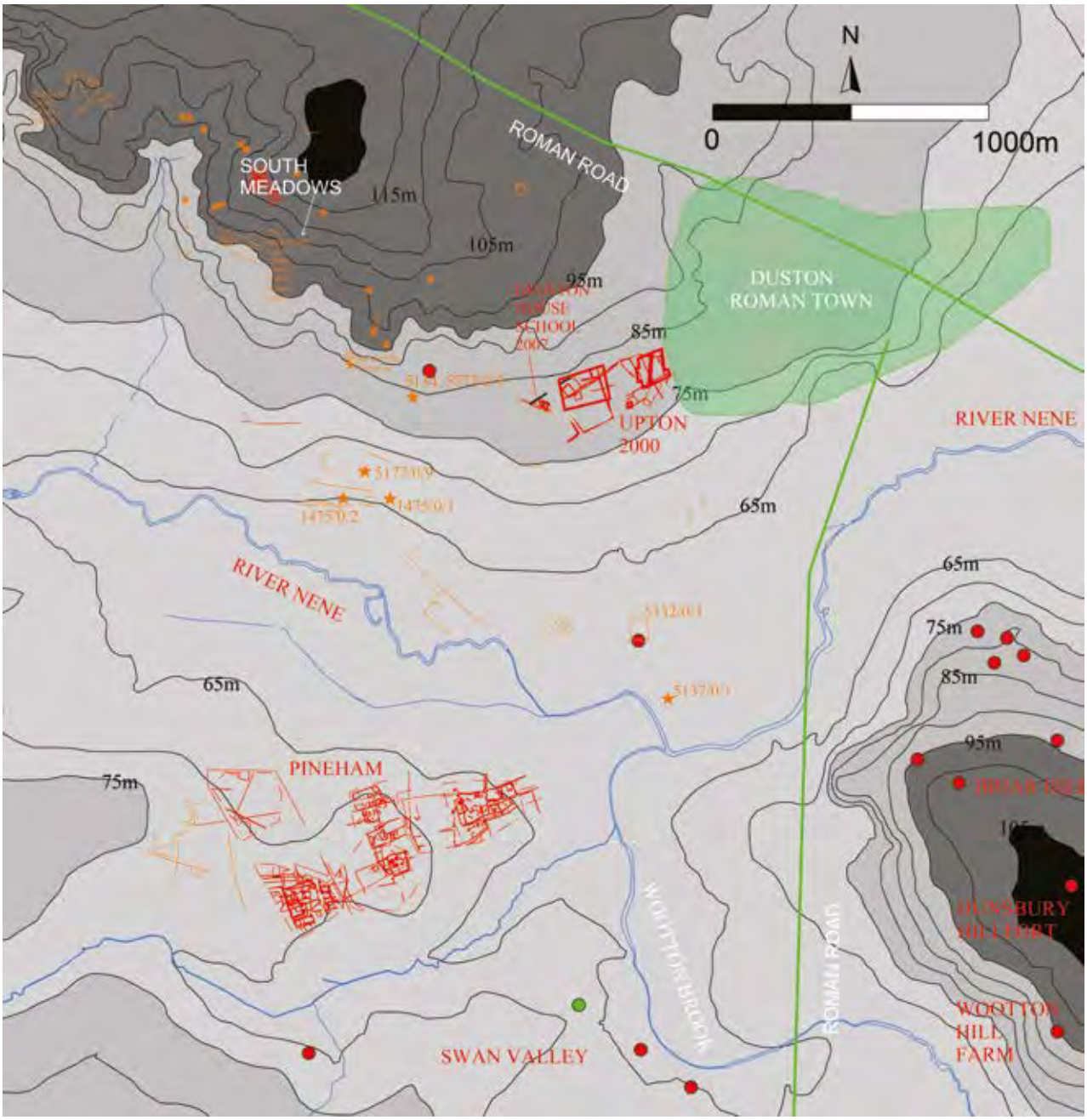

Fig 16 View of South Meadow, Upton within its landscape setting
(Red = excavated Iron Age settlements, orange = cropmarks, green = Roman)

The parallel trench system

Similar arrangements of parallel cultivation trenches have been found previously at a few other sites in the region, notably at Wollaston (Jackson 1991), Grendon (Jackson 1995, 11), Mawsley (Hull and Preston 2002) in Northamptonshire, and Thistleton in Rutland (Higgins 2011). At South Meadow, Upton the trench system extended over an area of 4200m², and if the two further parallel ditches to the south were also part of the same ditch system, the total area covered could have been at least *c* 8000m². Whilst the size is therefore comparable to those at Grendon and Wollaston (Table 3), the trench spacing at South Meadow is noticeably wider. Comparison with Roman vineyards excavated in Italy, where the spacing is just 2.7m (Arthur 1991, 76–77), emphasises the variation, but many factors relating to the angle of the sun's rays and the angle of slope, quite apart from the plants being cultivated, will have contributed to the spacing. Whilst the South Meadow trenches were south facing they appear to have been arranged obliquely across the shallow slope, which may have necessitated wider spacing. The trench profiles at all five sites are broadly similar, being steep-sided (almost vertical), with a flat base and 0.8m to 1.0m

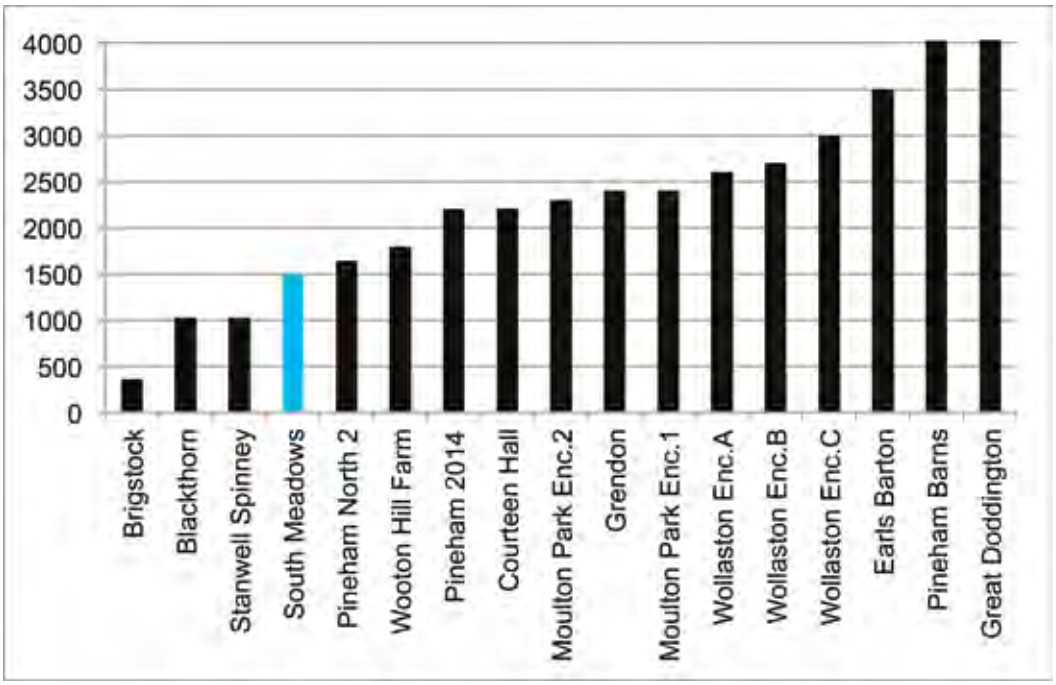

Fig 17 Column chart showing the enclosure size (in m^2) of South Meadow, Upton compared to other contemporary Nene Valley enclosed sites (data from Speed 2005)

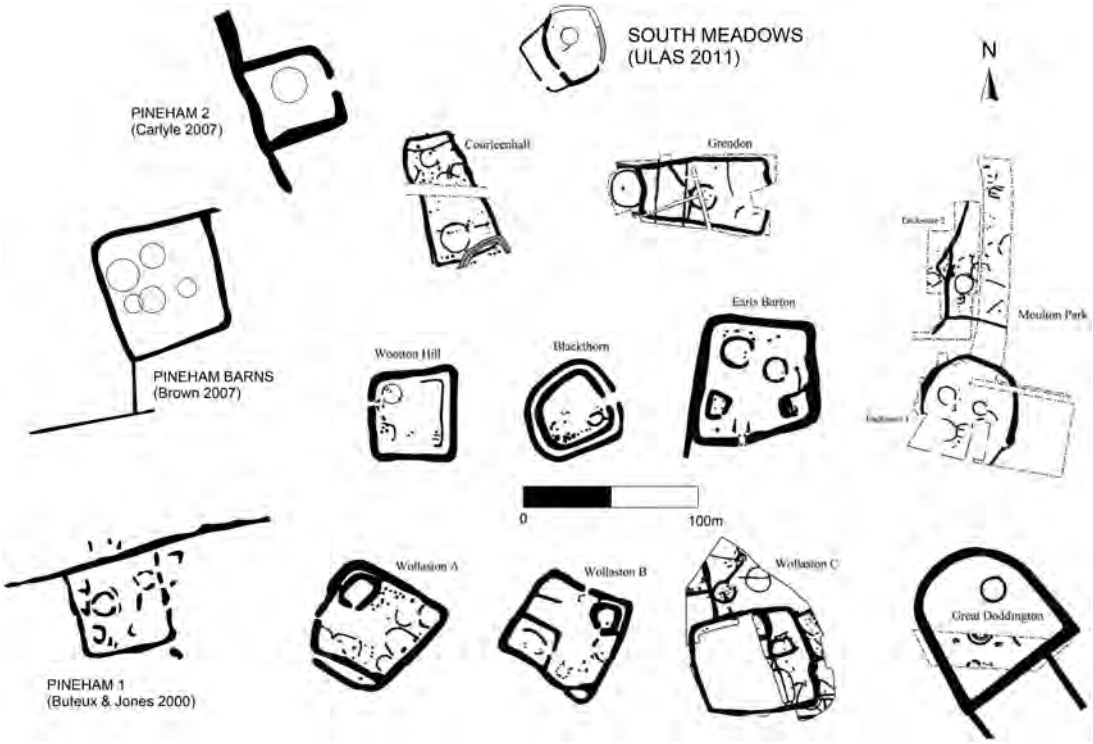

Fig18 South Meadow, Upton Iron Age enclosed settlement compared to others in the Nene Valley (drawn by author, after Speed 2005)

wide. The occurrence of postholes at Wollaston (Brown and Meadows 2000, 491) and stake-holes at Thistleton (Higgins 2011, 6) located randomly along the base of the trenches may add weight to the idea that the arrangement of ironstone in the base of one of the South Meadow trenches represents post-packing for superstructure to support the plants.

Table 3: Size of the parallel trench systems compared

Site	Area (ha)	No. of trenches	Trench width (m)	Spacing (m)
South Meadow, Upton	4.2	8	0.58–1.00	8–10
Grendon	4	27	0.8–1.0	3.0–3.7
Mawsley New Village	7.5	10	0.6–1.3	6.4
Thistleton, Rutland	0.9	13	0.7–1.0	3–4
Wollaston	7.5	35+	0.8	5–8

Fig 19 Enclosure ditch terminal with excavated backfill used as internal bank

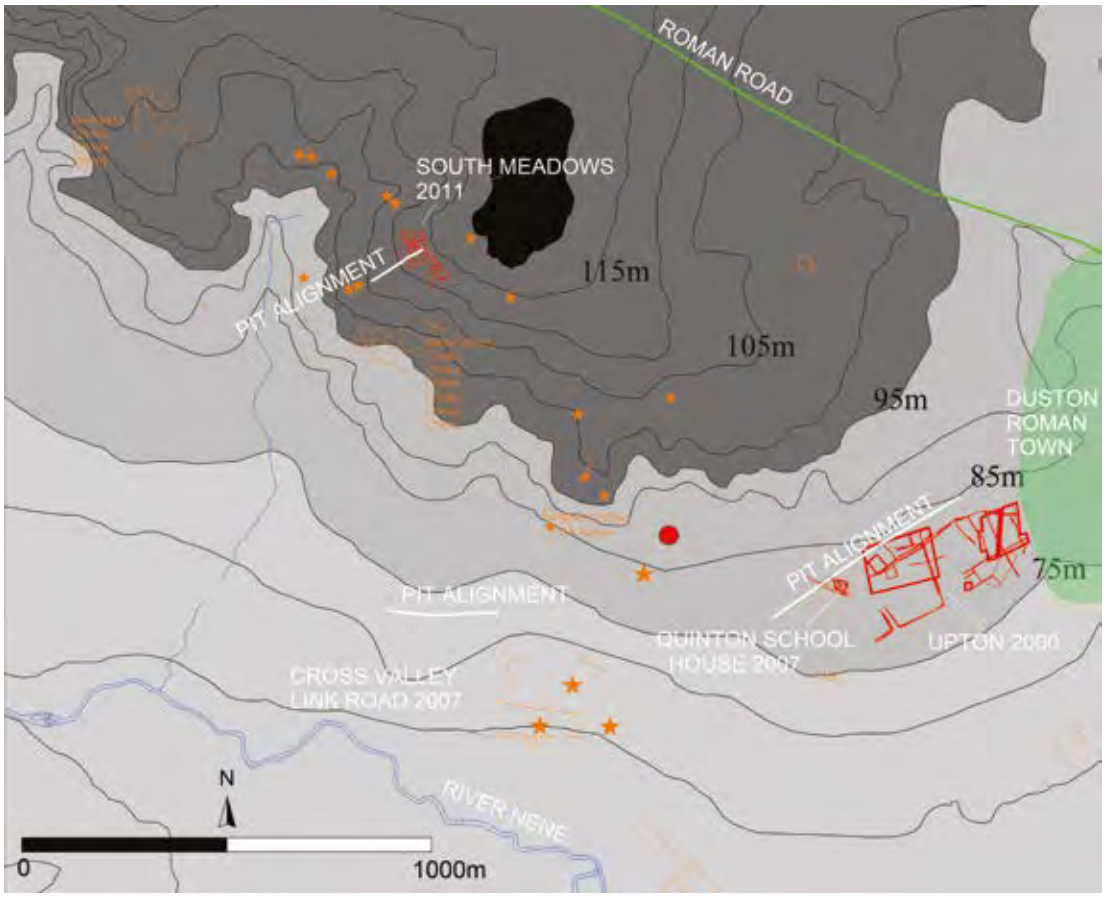

Fig 20: Landscape view showing nearby pit alignments in relation to South Meadow, Upton

The precise dating and function of these trench systems is not firmly established for all examples, but the compelling evidence from Wollaston, where vine pollen was identified indicated that it was a Roman vineyard (Brown and Meadows 2000). The low occurrence and possibly poor survival of vine pollen may dictate, as here, that viticulture cannot be demonstrated in many cases. The paucity of finds from these trenches, whilst supporting the idea that these represent cultivation trenches away from settlement, also makes dating uncertain as material will only result from manuring, as indicated at Thistleton, where abraded sherds of later 1st and 2nd century Roman pottery occurred (Higgins 2011, 10). The occurrence only of abraded Iron Age pottery in the trench fills at South Meadow may therefore simply reflect the lack of nearby Roman settlement.

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