Middle Bronze Age and Roman field systems: Excavations at Monks Farm (Phase 2), Grove, Oxfordshire

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with contributions by Paul Booth, Lee G. Broderick, Lisa Brown, Sharon Cook, Mike Donnelly and Ruth Shaffrey

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SUMMARY

A second phase of excavation at Monks Farm, Grove, in areas to the north of those covered by a previous phase of excavation, have revealed continuations of the middle Bronze Age field system partially exposed in the earlier excavation, as well as parts of a Roman field system.[1]

The middle Bronze Age features exposed in the second phase of excavation include a continuation of the trackway revealed in Phase 1, the corner of a second trackway, and a related series of rectilinear field boundaries. A penannular gully set within the corner of one of the fields defined by these boundaries appears to have been a focus of middle Bronze Age occupation. The middle Bronze Age features provide significant new evidence for the establishment of field systems along the Upper Greensand and Gault at the foot of the Berkshire Downs in the middle Bronze Age, and for settlement within such field systems. Radiocarbon dates suggest that the example at Monks Farm dates from the 15th to the 13th centuries cal BC.

The Roman field system included an unusual field containing a series of closely set parallel gullies. Whilst this arrangement can be compared to 'lazybeds' perhaps used elsewhere for irrigation related to horticulture, it is suggested that here they may have been used for drainage.

The prehistoric and Roman features were overlain by the truncated remains of ridge and furrow and more recent land drains.

[1] K. Brady, C. Hayden, and R. Early, 'A Bronze Age Field System and Enclosure, and Bronze Age and Roman Burials at Monks Farm, Grove, Oxfordshire', *Oxoniensia*, 82 (2017), pp. 201-61.

INTRODUCTION

A second phase of excavation at Monks Farm, Grove, to the north of a previous phase of excavation has revealed a continuation of the middle Bronze Age field system partially exposed in the Phase 1 excavations (comprising a rectilinear system of trackways and field boundaries, within which a penannular gully was set) as well as a rectilinear Roman field system (including an unusual arrangement of ditches which can be compared with lazybeds), and traces of more recent ridge and furrow. The present report describes the results of the second phase of excavations (Phase 2) and also reviews the evidence from the Phase 1 excavations in light of the new findings.

Location, geology and topography (Fig. 1)

The site (centred on NGR SU 40521 90846) lies to the north of Grove, to the west of Station Road (the A338), and was bounded to the east by Bellinger's Garage, to the north and west by farmland, and to the south by the area covered by the Phase 1 excavations (Fig. 1). The Letcombe Brook runs along the western edge of the site and drains into the River Ock to the north-east. Prior to the excavation the area consisted of a single, quite flat, arable field, around 73m aOD, which was prone to waterlogging.

The underlying geology consists of mudstone bedrock which forms part of the Gault Formation overlain by superficial deposits of Northmoor sands and gravels. The geology of the Vale of the White Horse consists of quite narrow, east-west aligned bands, comprising the chalk of the Berkshire Downs and a narrow band of the Upper Greensand Formation to the south of the site, the Gault Formation upon which the site lies, and the Ampthill and Kimmeridge Clay Formations to the north, leading up to the Corallian Ridge.

The sequence of archaeological investigations (Fig. 2)

The excavations were carried out by Oxford Archaeology (OA) in September and October 2016, prior to the construction of a housing development. The site itself and the surroundings have been subject to several phases of archaeological investigation (Fig. 2). The Phase 1 excavations covered the field immediately to the south of the Phase 2 excavations. This area had previously been subject to an evaluation carried out by Foundations Archaeology in 2001.[2] The area covered by the Phase 2 excavations described here, had been subject to evaluation by Wessex Archaeology in 2013.[3] The field immediately to the north of the Phase 2 excavations ('Williams Land', which lies to the south of Williams Grand Prix Engineering Ltd) was subject to evaluation by OA in 2015, and was under excavation at the time of writing.[4] The area to the west of the Phase 1 and 2 investigations has recently been subject to evaluation by Cotswold Archaeology.[5]

The results of the 2013 Wessex Archaeology evaluation, and of the Phase 1 investigations to the south, provided the basis for a Design Brief, issued by Hugh Coddington, principle archaeologist for Oxfordshire County Council, to satisfy the planning conditions for the housing development. This brief specified that three areas, centred upon six of the evaluation trenches, were to be subject to strip, map and sample excavation. The three areas were all irregular, but had the following approximate dimensions: Area 1 - 58m by 20m (area: 769m^2); Area 2 - 56m by 25m (area: 1052m^2); and Area 3 – 69m by 64-82m (area: 5569m^2).

Methodology

The excavation was carried out following a written scheme of investigation drawn up by OA.[6] The excavated areas were stripped by a mechanical excavator with a

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[2] Foundations Archaeology, 'Land at Monk's Farm, Grove: Archaeological Evaluation Report', unpublished report (2001); Foundations Archaeology, 'Land West of Station Road, Grove: Archaeological Statement', unpublished report no. 772 (2012).

[3] Wessex Archaeology, 'Land West of Bellinger's Garage, Grove, Oxfordshire: Archaeological Evaluation Report', unpublished report (2014).

[4] G. Thacker and J. Boothroyd, 'Land at Williams Holdings, Grove, Oxfordshire: Archaeological Evaluation Report', unpublished Oxford Archaeology report (2015).

[5] Cotswold Archaeology, 'Land north of Grove, Oxfordshire: Archaeological Evaluation', unpublished report (2016).

[6] Oxford Archaeology, 'Monks Farm, Phase 1B, Grove, Oxfordshire: Written Scheme of Investigation for an Archaeological Excavation', unpublished report (2014).

toothless bucket under archaeological supervision to the level at which significant archaeological remains appeared. The features revealed were then cleaned and sampled by hand excavation in order to establish their character and date. Minimum samples of 50% (by volume) of pits and postholes were excavated; ditches were sectioned as was appropriate to their intersections and layout. All contexts were recorded using a single content system, and were planned digitally using a Total Station Theodolite. Hand drawn plans and sections of individual interventions and discrete features were drawn at a scale of 1:20, and black and white slide and colour digital photographic records were made. Environmental samples, usually of 40 litres or 100% of the deposit, were taken from features which were thought likely to contain significant material.

The Archive

The site archive will be deposited with the Oxfordshire Museum Service under accession code 2016.73.

Archaeological background

The evaluations and excavations carried out in and around the site (Fig. 2) provide information of varying degrees of certainty about the archaeological context of the site.

The Phase 1 excavations The most important results were obtained by the Phase 1 excavations, to the south of the Phase 2 site.[7] Small quantities of worked flint suggested only limited activity in the Mesolithic, the Neolithic and the late Neolithic/ early Bronze Age. The majority of the prehistoric activity dated from the middle Bronze Age and was associated with a small assemblage of Deverel-Rimbury pottery. Activity in this period was represented by a probable enclosure (only the entrance of which was excavated) which was succeeded by a field system. One of a pair of pits found at the entrance to the enclosure contained a large assemblage of pottery, including a decorated globular urn, as well as fragments of cattle skull, mandible and vertebrae (including an axis vertebra which had been chopped through) and can be seen as a special deposit. To the west of the enclosure, a waterhole and a number of pits were found. These features contained the largest assemblages of finds from the site. It is, however, unclear if they were contemporary with the enclosure or the probably later field system. Two middle Bronze Age cremation burials were also found, one with fragments of a Bucket Urn. Radiocarbon dates suggest that they could have been of similar date: 1400-1220 cal BC (95.4%; 3043±29 BP, SUERC-55340) and 1380-1120 cal BC (95.4%; 3004±29 BP, SUERC-55336).

Little evidence for Roman activity was found, although an inhumation burial and a cremation burial with hobnails have radiocarbon dates which indicate that they date from cal AD 120-260 (93.8%; 1821±26 BP, SUERC-55335) and cal AD 110-250 (91.3%; 1834±29 BP, SUERC-55341) respectively.

Later activity was evidence only by the truncated remains of ridge and furrow and post-medieval land drains.

7 Brady *et al*., 'A Bronze Age Field System'.

Evaluations in surrounding areas (Fig. 2) The evaluations which have been carried out to the north and west of the site have produced results which are also relevant to the understanding of the Phase 2 excavations (Fig. 2). It is, however, worth recalling the limitations of evaluations. Not surprisingly, neither of the evaluations related to the Phase 1 and Phase 2 excavations suggested the existence of an extensive middle Bronze Age field system, or indeed of any middle Bronze Age activity. The middle Bronze Age features revealed by the excavations generally contained very few finds, and there was thus only a small chance that the limited excavation involved in the evaluations would have been able to identify and date such features. Both evaluations, in fact, recovered only very small assemblages of pottery, and much of what was recovered lacked diagnostic features and could be dated only broadly on the basis of fabrics. These limitations may also have affected the results of the evaluations to the north and west, and it is possible that they give only a partial and perhaps imprecisely dated picture.

The only evidence for activity in the middle Bronze Age identified by these evaluations was a ditch in the Williams Land area to the north of the Phase 2 excavations. Numerous features, especially ditches, found in the evaluations remain undated, and given that the Phase 2 excavations suggest that the middle Bronze Age trackways and field system extends into the Williams Land area, it is likely that some of these undated features date from the middle Bronze Age.

The evaluations to the north and west both suggest activity in the Iron Age. In the area to the north, the available evidence suggests activity in the middle to late Iron Age. The evidence from the west, however, also suggests that activity began in the early Iron Age and continued into the Roman period. The identification of a number of features as ring gullies in the eastern part of this evaluation suggests that there may be a focus of Iron Age settlement in that area. Very little evidence for activity in the Iron Age was found in the Phase 2 excavations described here.

The evidence for Roman activity is more consistent. In the Williams Land area to the north, a concentration of Roman finds, suggesting the possible existence of a farmstead, was found near the centre of the evaluation. Like the Roman finds from the Phase 2 excavations, the Roman pottery suggests activity in the late Roman period. In contrast, the evaluation to the west found evidence, including postholes, pits, ditches

and perhaps also stone structures, which suggested activity throughout the Roman period.

Other archaeological investigations around Grove Beyond these evaluations, the area around Grove has seen little archaeological work, and, compared to areas of the Vale of White Horse to the east and the Berkshire Downs to the south, the area remains remarkably blank on archaeological distribution maps. The results of the evaluations carried out between Drayton, Steventon and East Hanney,[8] however, suggest that this is likely to reflect more an absence of fieldwork than a real absence of sites. The evaluations identified a small number of unstratified earlier prehistoric finds, including Peterborough Ware and Beaker sherds, a polished stone axehead fragment and worked flint, extensive evidence for middle Bronze Age field systems and perhaps for a subrectangular enclosure which may have been a focus for occupation. Activity in the early Iron Age was evidenced by pottery from just two sites, but eleven sites, consisting of subrectangular enclosures and settlements, had evidence of middle Iron Age activity. Evidence for late Iron Age activity was again scarce, but twelves sites produced evidence for Roman settlements, field systems and burials. Activity in the Anglo-Saxon period was represented only by small quantities of pottery, the only features from this period being two ditches perhaps used to rob stone from a Roman wall.

Beyond these evaluations, the excavations of Roman and Anglo-Saxon sites in Wantage are also worthy of note.[9] The Roman settlement in Wantage may have been related to Roman road which ran through Wantage and Grove, close to the route of the A338, towards Frilford, which would have run past the Monks Farm site a short distance to the east.[10]

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8 C. M. Hearne, 2000 'Archaeological Evaluation in the Vale of White Horse, near Abingdon, 1992-99' *Oxoniensia*, 65 (2000), pp. 7-12.

9 N. Holbrook and A. Thomas, 'The Roman and Early Anglo-Saxon Settlement at Wantage, Oxfordshire: Excavations at Mill Street, 1993-4', *Oxonienisa*, 61 (1996), pp. 109-79; A. Barber and N. Holbrook, 'A Romano-British settlement to the rear of Denchworth Road, Wantage, Oxfordshire: evaluation and excavation in 1996 and 1998', *Oxoniensia*, 66 (2001), pp. 289-35.

10 Holbrook and Thomas, The Roman and Early Anglo-Saxon Settlement at Wantage; G. Lambrick, 'Some old roads of North Berkshire', *Oxoniensia*, 34 (1969), pp. 78-93.

DISCUSSION

Pre-middle Bronze Age features (Figs 3-4)

The earliest features at Monks Farm which can be dated with any confidence date from the middle Bronze Age. A small number of features, mostly in Area 2, were, however, stratigraphically earlier than the middle Bronze Age features. The only finds recovered from these features were a small number of pieces of worked flint from one of the ditches. They are, therefore, dated only stratigraphically, and could date from the middle Bronze Age or an earlier period.

The features include a small number of pits and tree-throw holes, but the only features which can be seen as forming a coherent pattern were a series of ditches in Areas 2 and 3. The ditches in Area 2 might have defined a short length of trackway and perhaps related field boundaries (Fig. 3). Although field systems dating from the early Bronze Age have been identified elsewhere in southern England,[11] their floruit lies in the middle and late Bronze Age.[12] It thus seems likely that if the stratigraphically early ditches were related to a field system, it dated from an earlier phase of the middle Bronze Age, preceding the field system described below, but perhaps contemporary with the enclosure found in the Phase 1 excavations. Field system ditches (including the more certainly dated middle Bronze Age field system ditches at Monks Farm) are often associated with small quantities of finds, and the absence of finds from the stratigraphically early ditches is quite consistent with this interpretation.

The arrangement of the ditches in Area 3 (Fig. 4) – consisting of parallel ditches at the south which might have defined a trackway which widened to the north – can be paralleled at the Elliott site, Fengate, Cambs, in which a middle Bronze Age trackway

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[11] eg J. Martin, J. Schuster, and A. J. Barclay, 'Evidence of an Early Bronze Age Field System and Spelt Wheat Growing, Together with an Anglo-Saxon Sunken Featured Building, at Monkton Road, Minster in Thanet', *Archaeologia Cantiana*, 132 (2012), pp. 43-52; L. Ladle and A. Woodward, *Excavations at Bestwall Quarry, Wareham 1992-2005: The Prehistoric Landscape* (Dorchester, 2009); see also C. Evans, E. Beadsmoore, M. Brudenell, and G. Lucas, *Fengate Revisited: Further Fen-edge Excavations, Bronze Age Fieldsystems and Settlement and the Wyman Abbott/Leeds Archives* (Cambridge, 2009).

[12] G. Lambrick and M. Robinson, *The Thames through Time: The Archaeology of the Gravel Terraces of the Upper and Middle Thames. Volume 3: The Thames Valley in Late Prehistory, 1500 BC-AD 50* (Oxford, 2009), pp. 73-83.

leading towards the fen edge widens in a similar fashion.[13] In detail, however, there are few other similarities between the two sites (in their location and associated finds, for example). Furthermore, the ditches in Area 3 can again be dated only on the basis of the fact that they were cut by a Roman pit. Their date is, therefore, uncertain, and more detailed discussion is difficult.

Tree-throw holes and clearance

A total of 20 more or less irregular features identified as tree-throw holes were found (as well as five ambiguous features which might have been tree-throw holes or pits). Three of these features (1074, 2004 and 2148: Figs 3 and 8) stratigraphically preceded the middle Bronze Age field system. Tree-throw holes may be the product of purely natural tree falls, but can also derive from deliberate tree clearance, if trees are pulled over following ring barking.[14] It is possible, then, that these early tree-throw holes derive from clearance of the area prior to the setting out of the field system (although since the dating evidence is purely stratigraphic, there is no indication of how long the period between any such clearance and the establishment of the field system might have been). Evidence from waterholes related to middle and late Bronze Age field systems generally suggests that they lay within open landscapes, and pollen sequences from elsewhere in the Upper Thames Valley – at Sidlings Copse and Daisy Banks Fen – both suggest that the major phase of clearance began in the early Bronze Age.[15]

Stratigraphic relationships also show, however, that a few of the tree-throw holes were much later in date - a few post-dating the Roman field system, and others, the medieval/post-medieval furrows.

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[13] Evans *et al*., *Fengate Revisited,* chap. 3.

[14] T. Morigi, D. Schreve, M. White, G. Hey, P. Garwood, A. Barclay, P. Bradley, and M. Robinson, *The Thames through Time: The Archaeology of the Gravel Terraces of the Upper and Middle Thames, Early Prehistory to 1500 BC* (Oxford, 2011), pp. 183-5.

[15] S. P. Day, 'Post-glacial Vegetational History of the Oxford Region', *New Phytologist*, 119 (3) (1991), pp. 445-70; R. Preece and S. Day, 'Special Paper: Comparison of Post-Glacial Molluscan and Vegetational Successions from a Radiocarbon-Dated Tufa Sequence in Oxfordshire', *Journal of Biogeography* 21 (5) (1994), pp. 463-78; A. G. Parker, 'The Pollen and Sediments of Daisy Banks Fen', in A. Barclay and C. Halpin (eds.), *Excavations at Barrow Hills, Radley, Oxfordshire, Volume 1: the Neolithic and Bronze Age Monument Complex* (Oxford, 1999), pp. 254-67; G. Lambrick and M. Robinson, *The Thames through Time*, pp. 34-8.

The middle Bronze Age (Figs 5-8)

The Phase 2 excavations revealed a continuation of the trackway partially exposed in the Phase 1 excavations, the corner of a second trackway, and a number of field boundaries aligned at right angles to the trackways. Although the areas excavated are limited, when combined, the results of the Phase 1 and Phase 2 excavations now suggest the existence of a quite regular, rectilinear pattern of trackways and fields, covering an area of at least 250m by 200m, and clearly continuing beyond the areas covered by the excavations (Fig. 5).

Within this field system, two foci of activity (or more precisely, of deposition) have been revealed. One, a possible enclosure, was identified in the Phase 1 excavations; the other, a penannular gully, was found in the Phase 2 excavations (Fig. 6). Although penannular gullies are more often a feature of middle Iron Age and later settlement in the Upper Thames Valley,[16] a number of parallels for this structure both within the Thames Valley and elsewhere are discussed below. Radiocarbon dates suggest that the penannular gully dates from the 14th century cal BC or the first half of the 13th century, although it is possible that the field system as a whole was in used for a longer period, within the 15th to 13th centuries.

The quantity and range of finds recovered from the Phase 2 excavations was more limited than that from Phase 1. Small assemblages of pottery, including sherds from Deverel-Rimbury Globular and Barrel or Bucket Urns, worked flint, animal bone and charred plant remains were, however, recovered from features in all three areas. The largest assemblages from the Phase 2 excavations were recovered from ditches adjacent to the penannular gully (although the penannular gully itself contained only limited, very fragmented finds). Overall, the patterning in the distribution of finds is similar to that revealed in the Phase 1 excavations, notably in the greater density of pottery near to (but not necessarily in) apparent foci of activity (such as the enclosure and the penannular gully), and a wider spread of fragments of animal bone. The Phase 2 excavations also draw attention to some potentially significant patterning in the distribution of charred plant remains.

[16] A. Mudd, 'The Excavation of a Late Bronze Age/Early Iron Age Site at Eight Acre Field, Radley', *Oxoniensia*, 60 (1995), p. 57; Lambrick and Robinson, *Thames through Time*, pp.102, 133-7.

The location of the field system The combined evidence from the Phase 1 and 2 excavations adds to a body of evidence for the existence of middle and late Bronze Age field systems distributed along the Gault Clay and Upper Greensand at the foot of the Berkshire Downs, predominantly on the Northmoor (First) Gravel Terrace but also on the Summertown-Radley (Second) Terrace (Table 1). The currently available evidence indicates that these field systems date predominantly from the middle Bronze Age, although a possible example dating from the late Bronze Age has been found at Great Western Park, Didcot. It is noticeable that the other possibly late Bronze Age example, at Eight Acre Field, Radley, lies further north than the other sites, on the Kimmeridge Clay (on the Northmoor (First) Gravel Terrace).[17] Whether this marks a significant pattern, representing expansion in the late Bronze Age, is unclear, but it is perhaps worth noting that the middle Bronze Age enclosures at Corporation Farm, Abingdon, also lay on the Northmoor Terrace on Kimmeridge Clay and did not lie within a wider field system.[18]

The overall distribution of field systems might, in part, be explained by the fact that the Upper Greensand is related to a band of agriculturally good soils.[19] Whilst the coincidence between the Upper Greensand and the Gault Clay and the occurrence of middle Bronze Age field systems is striking, the distribution of soils cannot completely explain the distribution of field systems in the Upper Thames. There are also large areas of good quality soils, from an agricultural point of view, further up the Thames in areas where field systems were not laid out. Furthermore, the field system at Monks Farm actually lay to the north of the best soils (as they were mapped in the 20th century), albeit still in an area of good soil.[20]

Whatever the case, the possible existence of late Bronze Age field systems at Great Western Park, Didcot and at Eight Acre Field, Radley, shows that the process of

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[17] The date of the Eight Acre Field field system is not entirely clear. Both middle and late Bronze Age sherds were recovered in very small quantities, and radiocarbon dates were obtained on oak with an unknown age offset. The presence of late Bronze Age pottery suggests that the field system was in use in that period, even if it began earlier.

[18] A possible enclosure, again not clearly associated with a field system, recently identified by the Abingdon Road at Drayton lay on the Ampthill Clay (on alluvial sands and gravels) might provide further evidence for the general restriction of field systems to the Upper Greensand and Gault Formations, and unenclosed land, associated with isolated enclosures to the north: R. Kennedy and R. Massey, 'Bronze Age Activity and Roman Settlement at Abingdon Road, Drayton', *Oxonienisa*, 82 (2017), pp. 263-97.

[19] Ministry of Agriculture, Food and Fisheries, *Agricultural Land Classification of England and Wales* (1975); Natural England, *Agricultural Land Classification, 1:250,000 London and South-East Region* (2010).

[20] see Lambrick and Robinson *Thames through Time*, p.22 for a discussion of changes in soils.

enclosure was ongoing, and thus that even within the Vale of White Horse populations in different areas could have been living in quite different landscapes. Unfortunately, with the exception of the possible late Bronze Age example at Great Western Park, Didcot, radiocarbon dates have not been obtained from any of the other field systems in the Upper Thames Valley, and it is, therefore, not possible to follow the process in more detail.

The form of the field system Although the extent of excavation was again limited, the combined results of the Phase 1 and 2 excavations give a much clearer view of the overall layout of the middle Bronze Age field system than the Phase 1 excavations had made possible (Fig. 5). Overall, the field system and trackways appear to have been laid out on a quite regular rectilinear pattern, which can be described as coaxial (rather than aggregate or agglomerative).[21] The long trackway first recognised in the Phase 1 excavations can be traced in the Phase 2 trenches, and together they show that it ran in a straight line over a total distance of at least 220m. A number of field boundaries running either at right angles to this trackway or parallel to it were identified in both the Phase 1 and 2 excavations. The clearest is the field boundary (201) in Area 2 of the Phase 2 excavations which runs up to the long trackway (Fig. 6), but even isolated stretches of ditches identified in Areas 1, 2 and 4 of the Phase 1 excavations follow the same rectilinear pattern. It is perhaps worth noting that, with the exception of the ditches associated with the enclosure (in Area 5 of the Phase 1 excavations), all of the ditches dated to the middle Bronze Age on the basis of associated pottery follow this rectilinear arrangement. The trackway corner in Area 3 of the Phase 1 excavations ran parallel and then perpendicular to the long trackway (Fig. 7). The position of this trackway corner suggests that the layout of the field system was not entirely regular (as few middle Bronze Age field systems were) but it does conform to the rectilinear pattern.[22]

The limited areas of excavation at Monks Farm suggest that there may have been some regularity in the spacing of the field boundaries (Fig. 5). Three of the boundaries running at right angles to the long trackway (from north to south: in Phase 2 Area 2, Phase 2 Area 1 and Phase 1 Area 5) were spaced at intervals of around 50m. A ditch parallel to the long trackway found in Phase 1 Area 5 suggests that the fields may have been around 40m wide. The apparent absence of a corresponding boundary 50m further north (which should have been revealed in Phase 2 Area 3) shows that this

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21 see D. T. Yates, *Land, Power and Prestige: Bronze Age Field Systems in Southern England* (Oxford, 2007), chap. 2, for discussion of terminology and the layout of field systems.

22 Such trackway corners are a quite common feature of middle Bronze Age field systems. Other examples occur, for example, at Appleford Sidings and Terminal 5, Heathrow: P. Booth and A. Simmonds, *Appleford's Earliest Farmers: Archaeological Work at Appleford Sidings, Oxfordshire, 1993-2000* (Oxford, 2009); Framework Archaeology, *Landscape Evolution in the Middle Thames Valley: Heathrow Terminal 5 Excavations, Volume 2* (Oxford and Salisbury, 2010).

regularity was limited in extent. Elsewhere, middle Bronze Age field sizes vary considerably,[23] but the size suggested at Monks Farm is within the range of those recorded on more extensive sites elsewhere (including the nearest extensively excavated example at Appleford Sidings).[24]

The relation between the field system and the enclosure: changes in land use in the middle Bronze Age The possibility of chronological differences between the field systems laid out on the Upper Greensand and Gault Clay, predominantly but not entirely in the middle Bronze Age, and the limited evidence for field systems on the Ampthill/Kimmeridge Clay, perhaps dating from the late Bronze Age, may provide one indication of the processes involved in the laying out of field systems. The relationship between the enclosure found in Area 5 of the Phase 1 excavations and the wider field system at Monks Farm may provide another.

The fact that the field system seems to have been laid out following a quite regular rectilinear pattern makes the distinction between it and the enclosure found in the Phase 1 Area 5 excavations more clearly defined than it had been following the Phase 1 excavations. The ditches related to the enclosure generally did not follow the alignment of the field system ditches. Whilst this might simply be an indication that it formed an irregular element within the wider rectilinear system (which might be paralleled at Weir Bank Stud Farm, Bray and perhaps Corporation Farm, Abingdon),[25] the fact that one of the field system ditches cut through one of the Phase 2 enclosure ditches indicates that the enclosure preceded the field system.

Unfortunately, the details of the implied sequence are unclear. Whilst the enclosure appears to have preceded the field system, it is not clear if the field system replaced the enclosure or should be seen as having incorporated it. The regular layout

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[23] Ladle and Woodward, *Excavations at Bestwall Quarry*, table 120

[24] Booth and Simmonds, *Appleford's Earliest Farmers.*

[25] I. Barnes and R. M. J. Cleal, 'Neolithic and Bronze Age Settlement at Weir Bank Stud Farm Bray', in I. Barnes, W. A. Boismier, R. M. J. Cleal, A. Fitzpatrick, and M. M. Roberts (eds.), *Early settlement in Berkshire: Mesolithic-Roman Occupation Sites in the Thames and Kennet Valleys* (Salisbury, 1995), pp. 1-51; A. Barclay, G. Lambrick, J. Moore, and M. Robinson*, Lines in the Landscape: Cursus Monuments in the Upper Thames Valley: Excavations at the Drayton and Lechlade Cursuses* (Oxford, 2003).

of the field system and the difference in its alignment relative to the enclosure suggest, at least, that the field system should not be seen as having grown from the enclosure.

Whilst the details might remain uncertain, the sequence is of some interest, suggesting that the wider enclosure of the landscape was preceded by a phase when activity was centred upon an isolated enclosure.[26] A wide range of differing middle Bronze Age enclosures which were not associated with field systems have been identified in the Upper and Middle Thames Valley, including a complex example (consisting of several enclosures combined) at Corporation Farm, a circular example at All Soul's Farm, Wexham, a U-shaped example at Great Western Park, Didcot, L-shaped examples at Cotswold Community and Latton Lands, and perhaps also a single isolated length of ditch on the Banbury Flood Alleviation Scheme.[27] The limited areas of excavation at Monks Farm mean that both the form of the enclosure and the range of associated features are unclear, and it is, therefore difficult to know which of these kinds of sites might provide the best parallel (or indeed if it was different in character). The range of features associated with enclosures elsewhere is varied, some such as the Wexham and Banbury enclosures having very few associated features, but others were associated with roundhouses, other post-built structures, waterholes, and pits.

Although overall many details remain vague, the sequence at Monks Farm raises the possibility that the occupation there began in a form which was comparable to that in other areas of the Thames Valley in which field systems were never established in the Bronze Age. Although none of the other field systems investigated in the Upper Thames Valley appears to provide a parallel for this sequence of activity,[28] Monks Farm may begin to provide to a picture of the complex processes involved in changing patterns of land use in the middle and late Bronze Age. Clearly, more

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[26] cf. A. Fleming, *The Dartmoor Reaves: Investigating Prehistoric Land Divisions* (Oxford, 2008).

[27] see Brady *et al.*, 'A Bronze Age Field System', for references, to which Great Western Park and a possible enclosure at Drayton should be added: A. Davies, C. Hayden, S. Lawrence, and R. Masefield, *Excavations at Great Western Park, Didcot, Part 2: Later Prehistoric and Roman Settlement and Society*, (in prep.); R. Kennedy and R. Massey, 'Bronze Age Activity and Roman Settlement at Abingdon Road, Drayton', *Oxonienisa*, 82 (2017), pp. 263-97.

[28] A parallel may, however, be offered by the Settlement 4 enclosure and Farmstead 3 at Terminal 5, Heathrow: Framework Archaeology, *Landscape Evolution*, pp. 148 and 152. Elsewhere, sequences vary. Dartmoor, for example, can provide examples of enclosures preceding and being added to the reaves: Fleming, *Dartmoor Reaves*.

extensive and better dated evidence is needed before any such process can be examined with more clarity.

Field systems and settlement The regularity and scale of coaxial field systems (especially of long boundaries, of which the long trackway might provide an example) are two of the features which support the suggestion that, rather than developing piecemeal (as aggregate systems may have done) coaxial systems were laid out, perhaps over quite brief periods, following an overarching plan.[29] Given the extent of some examples, it is clear that any such overarching plan would have in some way involved a community (or at least relationships between different households), whether it was imposed by an elite or was a product of more egalitarian cooperation.[30]

One striking feature of middle Bronze Age landscapes, however, to which Bradley and others have drawn attention, is the contrast between the scale of the field systems and the scale of the associated evidence for settlement.[31] Where structural evidence for settlement (consisting of roundhouses and related structures) has been found, it often indicates highly dispersed settlements, consisting of no more than one or two houses. And in the rare cases where radiocarbon dates are available in sufficient numbers – as at Bestwall Quarry in Dorset, Peacehaven in East Sussex, and late Bronze Age Great Western Park, Didcot – the settlements appear to have been occupied for quite short periods, possibly only a single generation (but more certainly no more than three or four generations).[32] The picture is, however, complicated by the fact that field systems in some areas seem to lack evidence for structures such as roundhouses. Because of the large areas excavated, Heathrow Terminal 5 and

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[29] See, for example Fleming, *Dartmoor Reaves* (although his interpretation has been challenged: R. Johnston, 'Pattern without a plan: rethinking the Bronze Age coaxial field systems on Dartmoor, south-west England', *Oxford Journal of Archaeology*, 24 (1) (2005), pp. 1-21), and Evans *et al*., *Fengate Revisited*.

[30] Yates, *Land, Power and Prestige*, chap. 12.

[31] R. Bradley, *The Prehistory of Britain and Ireland* (Cambridge, 2007); see also Fleming, *Dartmoor Reaves*.

[32] Ladle and Woodward, *Bestwall Quarry*; D. Hart, *Around the Ancient Track: Archaeological Excavations for the Brighton and Hove Waste Treatment Works and Adjacent Housing at Peacehaven, East Sussex* (Portslade, 2015); Hayden, *et al.*, *Great Western Park.*

surrounding sites are perhaps the most striking examples, but it is also noticeable that no such evidence was found in the extensive excavations at Appleford Sidings.[33]

Whilst it is also true that we lack comparable evidence for the longevity of the field systems themselves, overall it appears that the fixed points in the landscape were provided by the field systems and that the location of settlement was more mobile, albeit perhaps at a generational level.

The longevity of the field system The radiocarbon dates from Monks Farm do not, unfortunately, provide a clear picture of the longevity of the field system. One of the dates is significantly earlier than the other five, and it is unclear whether the outlying sample was simply residual material or if it derives from a longer period of activity which was inadequately sampled. It is important to stress that the total number of dates - two from a ditch associated with the penannular gully, two from a field system ditch and two from cremation burials - provide only a very limited sample of the overall chronology of the site. Furthermore, although the limited number of dates means that the estimated duration of activity should be taken only as a minimum because it may be not cover the full chronological span of activity on the site, it will also mean that the confidence interval associated with the estimate will remain quite wide (and thus that upper end of the estimated range will be a maximum). Further dates could, therefore, both increase the estimated span (by encompassing earlier and later activity not covered by the six dates) and decrease the estimated span (by making the estimate more precise).

It must also be borne in mind that the agricultural activity associated with the field system need not have generated dateable material. It is possible, then, that the dates relate only activities, such as domestic occupation, which generated dateable material rather than to primary use of the field system.

The question of how long the field system at Monks Farm might have remained in use is also complicated by the possibility that the boundaries marked by the ditches were also defined by hedges (as many ditched boundaries in the Oxfordshire

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[33] Lambrick and Robinson, *Thames through Time,* pp. 101-105; Framework Archaeology, *Landscape Evolution*; A. B. Powell, A. Barclay, L. Mepham, and C. J. Stevens, *Imperial College Sports Grounds and RMC Land, Harlington: The Development of Prehistoric and Later Communities in the Colne Valley and on the Heathrow Terraces* (Salisbury, 2015); Booth and Simmonds, *Appleford's Earliest Farmers*.

countryside are today). It is thus possible that the field boundaries were still marked long after the ditches had filled. The ditches themselves were all quite shallow features, almost always less than 0.4m deep and sometimes no more than 0.1m (see Table 6), and arguably, even with a bank, to form an effective barrier to the movement of livestock some additional feature, such as a hedge, or perhaps a turf wall, would have been required.

Despite these problems, the dates nonetheless provide the only means of estimating the duration of middle Bronze Age activity.

A first model including all of the dates suggests that middle Bronze Age activity probably occurred over a period of between 150 and 250 years. A second model which excludes the outlying date suggests a much shorted period of up to 80 years.

Hamilton's analysis of radiocarbon dates from enclosure ditches at Iron Age sites in east central Britain suggested that enclosure ditches there were probably recut every 30 to 40 years.[34] Some of the trackway ditches at Monks Farm had been recut. In one case, it was clear that the recut had almost completely obscured the original cut, and it is possible that other ditches had been recut or cleaned in ways which left no archaeological trace. It is suggested below that some of the counterintuitive stratigraphic relationships between the penannular gully (210), the adjacent field boundary (201) and the ditch which connected the two (207) – which imply that the field boundary ditch was the latest feature despite the fact that the connecting ditch extended precisely from the penannular gully to the field boundary – might be the product of cleaning or recutting of the ditches. Based on Hamilton's figures, the presence of evidence for single recuts could be taken to imply that the ditches were open for only 60–80 years and is thus consistent with the first radiocarbon model. Whilst it is possible that the ditches were cleaned out and maintained over a longer period, the lack of any further evidence for recutting suggests that the ditches were not exceptionally long-lived features.

Overall, then, whilst the field system could have remained in use for a longer period, what evidence there is at Monks Farm is more consistent with a quite short period of use, covering perhaps no more than 80 years.

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[34] D. Hamilton, 'The Use of Radiocarbon and Bayesian Modelling to (Re)Write Later Iron Age Settlement Histories in East-Central Britain' (2010), unpublished PhD thesis, University of Leicester.

It is also worth noting that none of the recuts identified implies any significant modification of the field system, so whilst the limited extent of the excavations was not conducive to the elucidation of the development of the field system, the available evidence is consistent with it having maintained the same form throughout its life.

The distribution of activity within the field system As at other excavated field systems, the Monks Farm excavations provide two kinds of evidence for the way in which activities were distributed throughout the field system: structural evidence (such as the penannular gully found in Area 2 of the Phase 2 excavations) and artefactual evidence.

The penannular gully (Fig. 6) As has been noted above, structural evidence for occupation within field systems in the Upper and Middle Thames Valley is scarce. The penannular gully revealed in Area 2 is, therefore, of particular interest, and may throw some light on the scarcity of evidence for structures such as roundhouses elsewhere (Fig. 6).

Although evidence for such structures associated with field systems is scarce, there are a number of parallels for the penannular gully both in the Thames Valley, where, however, they generally date from the late Bronze Age, and elsewhere in southern England, where there are middle Bronze Age examples (Table 2). Within the Thames Valley, the probably late Bronze Age penannular gully associated with a field system at Eight Acre Field, Radley is the closest geographically. Another, poorly dated example was found on the East-West Link Road in Banbury.[35] It was associated with possibly contemporaneous ditches, but the excavation was too limited in extent to show whether they formed part of a field system. There are other late Bronze Age examples not associated with field systems in the middle Thames Valley at Knight's Farm, Burghfield (forming complete rings), and further upstream in the Upper Thames Valley at Shorncote Quarry, Gloucestershire.

[35] T. G. Allen, Archaeological discoveries on the Banbury East-West Link Road, Oxoniensia, 54 (1989), pp. 25-44

Elsewhere, the closest parallel for the example at Monks Farm is provided by a middle Bronze Age penannular gully at the Newark Road site, Fengate, Cambridgeshire. Like the Monks Farm example, the Fengate structure lay within a field system and was connected to it by a short ditch, which Pryor suggests may have been used to drain the eaves drip gully into the field boundary ditch.[36] A small number of further middle Bronze Age examples associated with a field system have been excavated at Bestwall Quarry, Wareham, Dorset.[37]

Despite their wide geographical and chronological range, these examples share a number of similarities. Apart from an exceptional small example at Knight's Farm, all were between about 8m and 12m in diameter, with Monks Farm falling at the low end of this range. The gullies are all quite slight features, generally around 0.5m wide and 0.25m or less deep. It is also notable that where clear evidence for entrances through the gully survives, in a number of cases it lies in the south-east, like the porches associated with post-built roundhouses.[38] At Knight's Farm and Mucking, however, it is equally striking that the rings were complete (and lacked entrances).

The association of some of these examples with other features, especially postholes, is of particular interest since it provides evidence that they were associated with roundhouses. The Fengate gully and Roundhouse 1 at Bestwall Quarry provide perhaps the best examples of associated post-rings. Although the ring was complete, the larger of the examples at Knight's Farm was also associated with postholes which could have formed a post-ring.

In other cases, including Monks Farm, although the ring gullies were associated with small number of postholes and pits, there were no clear post-rings. It is not clear whether these ring gullies contained roundhouses constructed in another fashion, or were not associated with roundhouses and were used in some other way.

This question is complicated by several considerations. Ellison suggested that middle Bronze Age circular and oval structures might include residential and ancillary

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[36] F. Pryor, *Excavations at Fengate, Peterborough, England: The Third Report* (Toronto, 1980), p. 53.

[37] A further possible example was found at Peacehaven, Sussex. Although it lay near middle Bronze Age post-built structures within a field system, it was not itself associated with any dateable finds, and the excavators suggest that it was associated with a late Neolithic/early Bronze Age barrow: Hart, *Around the Ancient Track*. It is perhaps also worth noting an incomplete gully associated with a middle Bronze Age post-built roundhouse at Shearplace Hill, Dorset: P. Rahtz and A. M. ApSimon, 'Excavations at Shearplace Hill, Sydling St. Nicholas Dorset, England.', *Proceedings of the Prehistoric Society*, 28 (1962), pp. 289-328.

[38] Brück, J, 1999 'Houses, Lifecycles and Deposition on Middle Bronze Age Settlements in Southern England', *Proceedings of the Prehistoric Society*, 65, fig. 5.

structures as well as animal shelters and weaving huts.[39] To this possible variation must be added the possibility that some such structures were only temporarily, perhaps seasonally occupied, perhaps by varied groups of occupants and perhaps in relation to a varied set of activities.[40] Given that some of this potential range of structures might have been related to different activities, it might be expected that they would be associated with different kinds of finds (as Ellison suggested). Many of them may, however, have been residential structures, and despite some differences in the associated activities, they may nonetheless share similar ranges of 'domestic' refuse.[41]

The finds assemblages associated with the ring gullies listed in Table 3 are quite varied. Most were associated with pottery, but the sizes of the assemblages vary considerably. Other categories of finds include animal bone and worked flint at several sites, and only rarely other types including fired clay and burnt stone. Overall, there does not seem to be any clear distinction between the finds assemblages from gullies associated with evidence for post-built roundhouses and those without such evidence.

The distribution of finds The distribution of finds from the second phase of excavation at Monks Farm provides further evidence for some of the patterns identified in the Phase 1 excavations, and also provide an opportunity to look at patterns of deposition in more detail.

Overall, the range and quantity of finds recovered from the Phase 2 excavations was smaller than that recovered during Phase 1 (Fig. 9; Table 3). Small assemblages

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[39] Ellison, A, Towards a Socio-economic Model for the Middle Bronze Age in Southern England, in I. Hodder, G. L. Isaac, and N. Hammond (eds.), *Pattern of the Past: Studies in Honour of David Clarke* (Cambridge, 1981), pp. 419-20.

[40] G. Hey, C. Bell, C. Dennis, and M. Robinson, *Yarnton: Neolithic and Bronze Age Settlement and Landscape, Results of Excavations 1990-98* (Oxford, 2016), p. 166.

[41] Brück's analysis of finds from a range of middle Bronze Age structures provided only limited support for Ellison's distinction between types associated with residential and ancillary structures: Brück, 'Houses, Lifecycles and Deposition', p. 151, fig. 3.

of pottery, animal bone, worked flint and charred grain, chaff and weed seeds were, however, recovered from contexts spread widely across the site.

Overall quantities of finds (Fig. 9) Simple examination of the quantities of finds which occur across the sites clearly marks out two foci of deposition (Fig. 9). The largest assemblages of finds were recovered from the Phase 1 enclosure and nearby features to the west. Although overall the quantities of finds are much smaller than those associated with the Phase 1 enclosure, the ditches adjacent to the penannular gully (field boundary 201 and the connecting ditch 207) formed a second focus for deposition with larger quantities of finds (especially charred plant remains but also pottery) than generally occurred elsewhere in the field system.

As was discussed in more detail in the Phase 1 report, in the case of one of the pits at the entrance to the Phase 1 enclosure, the large quantities of finds may reflect the deliberate deposition of specific objects.[42] No comparable deposits were found in the Phase 2 excavations, and the finds assemblages could therefore be seen as more prosaically discarded waste.

The overall quantities of finds also suggest that there may have been differences in the way in which pottery and animal bone were treated. As was noted in the Phase 1 report, the proportions of animal bone seem to vary in a consistent way across the site. Pottery forms a much larger proportion of the finds (generally between 50% and 75% by number of fragments relative to animal bone) in the main foci of activity and associated features (both the Phase 1 enclosure and related features and in the penannular gully and related features) than it does in the field system ditches and trackways (where pottery generally formed less than 25% of the fragments).

One other striking feature of the overall finds distribution which was also stressed in the Phase 1 report is that the main concentrations of finds occur adjacent to, rather than directly in, what might be presumed to be the main foci of activity. In the case of the Phase 1 enclosure, the largest quantities of finds were recovered from features

[42] The pit contained 6.8kg of pottery, including an elaborately decorated Bucket Urn, and 0.8kg of animal bone including fragments of cattle skull, mandible and vertebrae including an axis vertebra which had been chopped through.

outside the enclosure, a short distance to the west.[43] A similar pattern occurs in the case of the penannular gully. The largest quantities of finds were recovered from interventions in the field boundary ditch (201) and the connecting ditch (207) immediately adjacent to the penannular gully rather than from the gully itself.

This pattern suggests that material derived from activities associated with the penannular gully and enclosure were ultimately discarded short distances away from the locations where the activity took place, and is consistent with patterns in ethnographic data which suggest that the longer a site is occupied, the more likely it is that waste will be managed in a way that leads to deposition in areas away from the main foci of occupation.[44] Hayden and Cannon's study of refuse disposal in communities in the Mayan highlands provides a good example, in which refuse provisionally discarded in surface contexts in the home compound was eventually gathered up and deposited elsewhere in out of the way contexts such as pits and ravines or by the roadside.[45]

Hayden and Cannon make useful distinctions between what they call 'clutter refuse', 'micro refuse' and 'casual refuse'. Clutter refuse consists of larger items which, whilst they might be provisionally discarded near the location where they were generated, will eventually become a hindrance and will, as a result, be removed and deposited elsewhere. Micro refuse, in contrast, consists of small items which evade cleaning, and which are likely to remain close to the location at which they were generated. Casual refuse consists of larger items which do not, however, come to form a hindrance, and which are not, therefore, systematically disposed of. In their study casual waste includes ashes, but also, notably animal bone, which in some cases was disposed of simply by being thrown into a yard for dogs to take away and consume.[46] One factor Hayden and Cannon do not discuss, but which may be relevant to the patterns of deposition at Monks Farm, is the dispersal of material after it has been

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[43] It is not clear whether these features were contemporary with the enclosure or with the subsequent field system, but the occurrence of quite rich finds assemblages in both the enclosure ditch and in the later field system ditches in the same area suggests that the area of the enclosure remained a focus of deposition throughout both phases.

[44] P. Murray, 'Discard Location: The Ethnographic Data', *American Antiquity*, 45 (1980), pp. 490-502.

[45] B. Hayden and A. Cannon, 'Where the Garbage Goes: Refuse Disposal in the Maya Highlands', *Journal of Anthropological Archaeology*, 2 (1983), pp. 117-63.

[46] It is worth stressing that Hayden and Cannon's framework us focused on practical considerations and places little emphasis on the culturally specific cultural values which might be placed on particular categories of waste.

deposited, which may lead to small fragments of material being widely dispersed around and away from the main foci of deposition.

Fragment size (Fig. 10) Examination of the average sizes of sherds and fragments of animal bone (Fig. 10), and the quantities of charred plant remains, provides some support for the idea that the features to the west of the Phase 1 enclosure and the field system ditch adjacent to the penannular enclosure contained dumps of clutter refuse (particularly of animal bone and charred plant remains), whilst the penannular gully perhaps contained micro refuse, and the field system and trackway ditches generally contained only occasional small, stray fragments. They also, however, underline the differences in the treatment of pottery and animal bone, suggesting that pottery might have been treated as casual refuse.

Animal bone provides perhaps the clearest pattern. Overall, a contrast can be drawn between areas with relatively large fragments of animal bone (generally on average over 10g per fragment) and areas with smaller fragments (less than 5g per fragment on average, but often less than 2g). The features containing larger fragments included the Phase 1 enclosure ditch and the possibly associated features to the west, but also the field system ditch (201) adjacent to the penannular gully. The penannular gully itself, contained only small fragments of animal bone, and the connecting ditch (207) none at all. Most of the field system and trackway ditches also contained only small fragments of animal bone. It is, however, noticeable that large fragments of animal bone also occurred in field system and trackway ditches in Area 4 of the Phase 1 excavations. Although these fragments did not form part of large assemblages, their presence suggests that larger deposits of animal bone might have existed in field system ditches nearby.

In the case of the pottery, it is again possible to distinguish two groups, one associated with the large sherds (over 25g per sherd on average) and the other with smaller sherds (less than 16g per sherd). Large sherds, however, occurred only in the features to the west of the Phase 1 enclosure (and in the special deposit in the pits at the entrance to the enclosure). The sherds in these areas were nearly as large as those which derive from an urn associated with a cremation burial which presumably broke

in situ. Smaller sherds were recovered from the penannular gully and the adjacent connecting ditch (207), and from some of the trackway and field system ditches. Many of the field system and trackway ditches, however, contained no pottery at all.

The pattern in the deposition of charred plant remains appears to follow that of animal bone, although in this case rather than fragment size, it is the size of the groups of charred plant remains which is involved (Table 3). Like the animal bone, the largest groups of charred plant remains were recovered from a pit (1529) amongst the features to the west of the penannular gully, from a pit at the entrance to the enclosure, and from the ditches (201 and 207) adjacent to the penannular gully (although the assemblage from the western pit was far larger than the others). Smaller assemblages of charred plant remains were, however, also recovered from both the penannular gully and occasionally from the trackway and field system ditches.

Overall, then, analysis of fragment size reinforces the distinction between the patterns in the deposition of animal bone and of pottery. The deposits containing large fragments of animal bone – in Area 5 and in the field system ditch (201) adjacent to the penannular gully – could be seen as reflecting the deposition of clutter waste in locations short distances away from the main foci of activity (although there are also indications that other similar deposits might exist at other points in the field system). The smaller fragments of animal bone associated with the penannular gully could be seen as micro refuse which has evaded attempts at cleaning. It seems more likely that the small fragments of animal bone from the field system and trackway ditches, in contrast, are stray fragments which have been dispersed, perhaps by scavengers, from the main deposits of clutter refuse.

The charred plant remains appear to follow a similar pattern. Large deposits of charred plant remains appear to have been cleared away and deposited in the same areas as the large fragments of animal bone. The smaller groups of charred plant remains from the penannular gully can again be seen as micro refuse, whilst the very rare examples from the field system and trackway ditches could again be seen as stray items which have been dispersed from the main deposits of clutter refuse.

The pottery, in contrast, is much less widely dispersed. Although the very largest sherds occur in features to the west of the penannular enclosure, overall there is little variation in the average size of sherds across the site, and pottery is much less widely dispersed than animal bone. Unlike the animal bone, there is little evidence that the

pottery was collected up and deposited away from the main foci of activity. Discarded pottery could, then, be seen as forming casual waste, which remained closer to the location where it was initially discarded.

It is perhaps worth noting that the differences in the deposition of pottery and of animal bone and charred plant remains could be seen as opposing food remains (and by-products) to artefacts (which in the case of pottery may have been used to store, prepare and consume the food).[47]

Three zones of deposition In terms of deposition, then, three zones can be distinguished.

The first consists of the main areas of occupation where most activity may have been carried out which are characterised by the presence of micro refuse (small fragments of animal bone and small quantities of charred plant remains) and casual refuse (pottery). At Monks Farm this zone is represented only by the penannular gully (210), although it might by argued that a second similar zone existed within the Phase 1 enclosure (which, however, either was not marked by features or which lay outside the excavated area).

The second zone consists of areas where clutter refuse, consisting of large fragments of animal bone and large deposits of charred plant remains, was finally deposited. Although pottery does not seem to have been collected up for deposition as systematically as animal bone, some pottery (especially large sherds) was also deposited in this zone. The features to the west of the Phase 1 enclosure in Area 5 as well as the enclosure ditch itself, and the field system ditch (201) adjacent to the penannular gully (and perhaps also the connecting ditch, 207) fall into this zone, although there are also hints that similar deposits might exist elsewhere within the field system.

The third zone consists of other areas where only rare stray items, perhaps derived from dispersal of the main deposits of finds in zone 2, occur. At Monks Farm this zone is represented by most of the field system and trackway ditches.

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[47] It might, then, be possible to elaborate on the possible significance of this distinction in something like the way Lévi-Strauss elaborated his culinary triangle: C. Lévi-Strauss, *The Origin of Table Manners* (trans J. And D. Weightman, 1979), pp. 478-95.

Numbers of contexts and assemblage diversity (Fig. 11) As was stressed in the Phase 1 report, the total quantities of finds may give a misleading impression of the distribution of activity since in part they are likely to reflect the size of the features in which the finds were deposited. In the case of Monks Farm, the large assemblages of finds from the features to the west of the Phase 1 enclosure are likely to partly reflect the presence of a number of deep features, including a waterhole and pits, in that part of the site. The features in revealed in the Phase 2 excavations were all much shallower, and it is not surprising that they contained smaller assemblages of finds.[48]

Some of the difficulties in using overall quantities of finds can be overcome by quantifying the finds in other ways.[49] The approach which has been used here allows the comparison of patterns of deposition in groups of contexts, and uses only presence/absence data. It is based upon the idea that the assemblages recovered from particular contexts are the product of random selection from a parent population. A process such as that described by Hayden and Cannon in which clutter refuse is collected from primary surface contexts and deposited elsewhere may involve a more or less random process of selection (unless material is specifically selected for deposition in special deposits, such as those in the pit at the entrance to the Phase 1 enclosure). Much of the variation in the quantities of finds in particular assemblages may, as a result, reflect this random process of selection rather than any significant differences in the activities which generated the waste. There may still, however, be meaningful patterning in the assemblages which reflect both the parent population and the process of selection from it.

The method involves plotting out the number of contexts in which each category of find occurs against the mean numbers of different categories of finds which occur in those contexts (which provides a measure of assemblage diversity; Fig. 11). This

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48 The types of features may also be relevant. Postholes, pits and ditches may be left open for very different lengths of time, and may be cleaned out and filled in quite different ways, providing very different opportunities for finds to become incorporated.

49 see, for example, S. Kent, 'The Archaeological Visibility of Storage: Delineating Storage from Trash Areas', *American Antiquity*, 64 (1) (1999), pp. 79-94; A. Cannon, 'The Quantification of Artifactual Assemblages: Some Implications for Behavioral Inferences', *American Antiquity*, 48 (1983), pp. 785-92.; Hayden and Cannon, 'Where the Garbage Goes.'

form of analysis thus requires groups of assemblages, and is based on the idea that if a number of different assemblages of different sizes are selected randomly from a parent population, the types which occur most frequently in the parent population are likely to occur in the largest number of assemblages, including those with both many and very few other types of material, whilst the items which are rarest in the parent population are most likely occur (if enough samples are taken) in the largest assemblages which are likely also to be the most diverse.

If the number of contexts with a type is plotted on the Y-axis against the mean number of associated types on the X-axis (Fig. 11), then most of the types should fall on a diagonal, descending from the top right to the bottom left. The types at the top right are those which occur in the largest number of contexts which thus tend to occur in both the most and least diverse assemblages (and thus overall have a low mean number of associated types). These are the types which probably occurred most frequently in the parent population (if selection was random). The types which occur least often in the parent population are likely to occur only in a small number of contexts, and in the largest, and hence most diverse assemblages. They should, therefore, have a high mean number of associated types, and will be plotted at the bottom left of the chart. Overall, then, the charts show the most common materials at the top left and the rarest at the bottom right, but the finds are quantified by the number of contexts they occur in and the number of other types they occur with, rather than by weight or number of fragments.

For this analysis, the finds assemblages have been divided into several groups which examination of the overall frequencies of finds suggested might be significantly different. These groups consist of:

- the penannular gully (210)
- ditches adjacent to the penannular gully (207 and 210)
- the Phase 1 Area 5 enclosure ditches and the pits at its entrance
- the features of the west of the Phase 1 enclosure in Area 5
- other Phase 1 trackway and field system ditches
- other Phase 2 trackway and field system ditches

The results of the analysis are also clearly dependent upon the way in which the finds are classified. Ideally, for artefacts this classification would perhaps be based upon functional types. Given, however, that much of the material consists of items

such as sherds which cannot even be attributed to a specific form let alone a specific function, the analysis here has been carried out using broad categories of material (pottery, animal bone, worked flint and charred plant remains separated into grain, chaff and weeds). Worked flint has been included even though much of it may be residual since it may provide a useful index of the way in which residual material was incorporated into deposits. Charred plant remains were separated into grain, chaff and weeds since it was hoped that this separation might provide an indication of where grain was processed and consumed. In fact, these three categories are very highly correlated.

The analysis reveals a number of contrasting patterns (Fig. 11) which broadly support the division into three zones of deposition suggested above.

With the important exception of the penannular gully (210), and the flint from the Phase 2 excavations, which are discussed further below, the finds almost all fall onto the expected diagonal. The ordering of particular types of finds along the diagonal, however, varies. Whilst charred plant remains almost always fall at the bottom right (or were absent), the position of animal bone and pottery varies, reflecting the differences in the way in which they were deposited which have already been noted. In the field system and trackway ditches, animal bone falls at the top left, indicating that it was the most widely distributed material. Pottery, in contrast, falls either at the bottom right (indicating that it was the least widely occurring material) or was absent.

In the areas where deposition seems to have been focused – the ditches adjacent to the penannular gully, the Phase 1 enclosure and the features to the west of the enclosure – pottery falls at the top left, indicating that it was one of the most widely distributed types. There are differences, however, in the position of animal bone. In the case of the ditches adjacent to the penannular enclosure animal bone falls near the middle of the diagonal, indicating that was less widely distributed than pottery; for the features in Area 5, in contrast, animal bone falls close to pottery at the top left. The contrast in the position of animal bone is a matter of degree and could just reflect random differences in the process of selection for deposition. It is, however, more likely that it reflects the fact that animal bone was genuinely less frequent in the population from which the finds in the ditches adjacent to the penannular gully were drawn.

Whatever the case, an equally important point here, is that the differences between the distributions for the field system and trackway ditches (in which pottery is scarce or absent), and the distribution from Area 5 and adjacent to the penannular gully (in which pottery is amongst the most widely distributed category) suggest that it is unlikely that the two sets of finds were derived from the same parent population by the same process. The fact that the animal bone in the field system and trackway ditches consists only of small fragments suggests that dispersal of this material, perhaps by scavengers who would preferentially move bone from the main foci of deposition, might be the most plausible explanation.

The position of worked flint in the Phase 2 trackways and field boundaries and in the ditches adjacent to the penannular gully also clearly falls outside the expected pattern. In both groups of features, flint falls towards the bottom left hand side of the diagram, indicating that although it is rare, flint tends not to occur in the most diverse assemblages (as would be expected), but with few other types of material. The pattern thus indicates that flint was deposited on its own, rather than with other types of material.[50] It thus seems clear that in these areas, flint was deposited in a quite different way to the other categories of material. The most obvious explanation for this pattern is that the flint was residual (as the probably Mesolithic and late Neolithic/early Bronze Age pieces indicate). Although little of the worked flint from the Phase 2 excavations may have been contemporary with the middle Bronze Age occupation, it is, however, perhaps worth noting that the Mayan communities studied by Hayden and Cannon used industrial glass to make tools (in the same ways that stone was used), and that the sharp debris was, not surprisingly, regarded as particularly hazardous, and was cleared away immediately.[51] It is, therefore, possible that flint debris might have treated quite differently from the other materials, and was deposited separately. The results for the Phase 1 excavations, however, do not indicate a similar difference between flint and other kinds of materials, and it therefore seems more likely that the pattern from the Phase 2 features reflects the fact that the flint was residual.

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[50] In a similar analysis of the contents of Iron Age pits at Great Western Park, human remains occurred in a similar position to the flint from the Phase 2 excavations at Monks Farm, indicating, again, not surprisingly that the human remains were being deposited separately from the other categories of material.

[51] Hayden and Cannon, 'Where the Garbage Goes', p. 133.

Perhaps the most important pattern, however, is the contrast between the penannular gully and the other areas. Unlike the other areas, the finds from the penannular gully are all clustered quite closely together (rather than falling on the usual diagonal), indicating that all of the categories of finds were distributed in quite similar ways. Furthermore, charred plant remains were much more widely distributed in the penannular gully than they were in other parts of the site. In the penannular gully, charred grain is separated from chaff and weed seeds, and is placed close to the commonest types – animal bone and pottery – near to the top of the diagram. In other areas, charred grain forms one of the least widely distributed categories and is placed near chaff and weed seeds in the bottom right of the diagrams. The exceptional position for grain is probably in part a reflection of the greater proportion of contexts associated with the penannular gully from which samples for charred plant remains were taken. The number of samples, however, is partly a reflection the of presence of charred plant remains, and it is unlikely that levels of sampling completely explains the difference. It is notable that a similar analysis of finds from post-built late Bronze Age roundhouses at Great Western Park, Didcot, revealed a pattern in which charred plant remains were the most widely distributed category of finds (in contrast to the Iron Age roundhouses in which charred plant remains were scarce).

The clustering of the different categories of finds from the penannular gully indicates that they were more evenly distributed (in terms of the number of contexts in which each occurred) in the gully than might have been expected. In spatial terms there were no clear concentrations of finds. None of the interventions contained exceptionally large quantities of finds – not even the ends to the ring gully adjacent to the entrance, one of which (2275) contained no finds, whilst the other contained two sherds of pottery. Some other interventions also contained no finds.

The relatively even distribution of small quantities of sometimes fragmented finds seems quite consistent with the idea that the finds consist of micro and casual refuse, largely comprising debris which escaped collection for deposition elsewhere. Overall, the evidence thus seems consistent with the idea that the penannular gully was associated with a domestic structure of some kind, which the available evidence

suggests was involved in the preparation and consumption of food (and notably, in contrast to the enclosure, grain).[52]

The more specific details of how such a structure might have been used are less clear. The absence of structural evidence could indicate the presence of a relatively slight structure. That, and the small number of potentially associated features could be taken to indicate that rather than having been occupied year round, any structure was occupied less permanently, perhaps seasonally or in relation to specific times of the year (such as the harvest or ploughing).

The middle Bronze Age: conclusions Despite their limited extent, the excavations at Monks Farm provide a number of potentially significant contributions to our knowledge of the middle Bronze Age. They add to the evidence which shows that field systems were laid out in many areas along the Upper Greensand and Gault Clay at the foot of the Berkshire Downs in the middle Bronze Age. If the Phase 1 enclosure did predate the field system, they may also provide evidence for the processes involved in the changes in land use in the middle Bronze Age. The enclosure may represent a first phase of establishing 'permanent' foci of activity in a perhaps already substantially cleared landscape, which was followed by the laying out of a field system. It is possible, however, that rather than being an isolated feature, the enclosure was associated with the stratigraphically early features in Area 2 of the Phase 2 excavations. This possibility suggests that the enclosure could have been associated with a wider structuring of the landscape.

The penannular gully may also provide evidence for forms of settlement associated with field systems which has wider significance. It is a striking fact that almost all of the clearest evidence for post-built round and oval structures in the Upper Thames Valley has been found in areas without evidence for field systems, at sites such as Yarnton, Cotswold Community, Latton Lands, Eysey Manor and perhaps Corporation Farm (although the possible roundhouse at Corporation Farm is less

[52] It is perhaps worth noting that if a structure had existed within the penannular gully, then the walls of the structure would have separated the gully from activity within the structure and the debris it generated. It might be expected that such debris would mostly occur near the entrance to the structure - and hence at the ends of the penannular gully. The fact that no such pattern is apparent may reflect the fact that the finds in the gully actually derive from activities which were carried out around the structure, or simply that waste from the structure was provisionally discarded around the gully.

clearly defined than those at the other sites).[53] With the possible exception of a post-built roundhouse found within a field system at Great Western Park, Didcot (the date of which has still to be confirmed), there is no evidence for similar structures within the field systems distributed along the Upper Greensand and Gault Clay. It is also notable that post-built structures are absent from the extensive areas of middle Bronze Age field systems which have been excavated at Terminal 5, Heathrow and at nearby sites such as Imperial College Sports Ground/RMC Land, Harlington (where an arc of six postholes provided the only possible evidence for a roundhouse).[54] In the absence of structural evidence, concentrations of artefacts and the layout of field and enclosure boundaries have been presumed to indicate the location of otherwise undetectable houses.[55]

Why this curious contrast in the distribution of evidence for roundhouses and field systems should exist is unclear. The analysis of the distribution of artefacts at Monks Farm, especially in relation to the penannular gully, does, however, provide some support for the idea that foci of activity, perhaps related to roundhouses or similar structures, can be identified from the distribution of artefacts, although it also suggests that much of the debris generated by 'domestic' activity may have been collected up and deposited near, rather than directly in, such structures.

The Monks Farm penannular gully may, however, also provide an explanation for the absence of structural evidence elsewhere. The absence of structural evidence such as postholes for the existence of a roundhouse within the penannular gully at Monks Farm suggests that any such structure was constructed in a way which left little archaeological trace (as is true of middle Iron Age structures also associated with ring gullies).[56] If the gully had not been cut or had not survived, the site would have provided no evidence for the existence of a structure beyond a nearby concentration

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[53] Hey *et al*., *Yarnton: Neolithic and Bronze Age*; K. Powell, A. Smith, and G. Laws, *Evolution of a Farming Community in the Upper Thames Valley: Excavation of a Prehistoric, Roman and Post-Roman Landscape at Cotswold Community, Gloucestershire and Wiltshire* (Oxford, 2010); J. Pine, 'Eysey Manor, Cricklade, Wiltshire, Phase 4: a Post-excavation Assessment', unpublished report, Thames Valley Archaeological Services (2011); Barclay *et al*., *Lines in the landscape.*

[54] An absence of structural evidence for occupation within field systems has also been noted elsewhere, eg Evans *et al*., *Fengate Revisited*.

[55] For example: Framework Archaeology, *Landscape Evolution*; Powell, *et al. Imperial College Sports Grounds*.

[56] See Mingies Ditch for an example where exceptional preservation proves the existence of such structures: T. G. Allen and M. A. Robinson, *The Prehistoric Landscape and Iron Age Enclosed Settlement at Mingies Ditch, Hardwick-with-Yelford, Oxon* (Oxford, 1993).

of finds and a small scatter of undated pits and postholes. Whilst comparable gullies have been found at a number of other middle and late Bronze Age sites, they are not a common feature of roundhouses in those periods. Any structures constructed in a similar way but without associated gullies would not necessarily leave any archaeologically detectable trace. The Monks Farm penannular gully could, then, be used to make a case which would support Evans' suggestion regarding field systems round the Fens that houses were constructed in a way which left no archaeological trace. It is, however, worth bearing in mind other possibilities. On Dartmoor, for example, as well as occurring within fields, there are areas where hut rings are grouped outside areas enclosed by reaves. It is possible that the main foci of settlement in the upper Thames Valley were situated outside of the field systems (which might have been 'occupied' seasonally for the harvest, for example, or by only a few individuals – herdsmen for example).

Between the middle Bronze Age and the Roman period (Fig. 12)

Evidence for activity on the site between the middle Bronze Age and the Roman period was very limited. A few residual early Iron Age sherds were recovered from a Roman ditch, and a single isolated pit (1024: Fig. 8) contained pottery which might date from the late Iron Age or early Roman period. The stratigraphic relationships of a number of ditches in Area 2 suggest that they date from the period between the middle Bronze Age and the Roman period (Fig. 12). No finds were recovered from these features. The ditches need not all have been contemporaneous and do not, overall, form a coherent pattern. Perhaps the most plausible suggestion is that they were related to a phase of late Iron Age or earlier Roman activity which preceded the more clearly defined Roman field system discussed in the next section.

It is perhaps worth noting that the absence of evidence for field boundaries in the Iron Age is consistent with the evidence from elsewhere in the Upper Thames (and much of Britain). The occurrence of a small number of early Iron Age sherds suggests that the area had not been entirely abandoned in this period, and the lack of evidence for field boundaries could therefore be taken to provide evidence for a pattern of land use which contrasted with that in the middle Bronze Age and Roman periods. A

similar argument might be made in relation to the lack of similar evidence for the Anglo-Saxon period up to the establishment of the open fields marked by the ridge and furrow discussed below.

The Roman field system (Fig. 13)

Activity in the Roman period was evidenced by a quite strictly rectilinear field system (Fig. 13). The area excavated is too small to give a clear indication of the overall layout of the fields, but the spacing of the boundaries suggest that a strip bounded by north-south-aligned boundaries around 100m apart might have been divided by east-west boundaries around 30 to 35m wide.

The most striking feature of the field system is the close spacing, at intervals of 5m to 10m, of the east-west ditches within one of these possible fields in Area 2. These closely spaced ditches were notably narrower (0.4–0.5m) than the ditches to the north and south (0.8–1.0m; see Table 10), and it seems possible that rather than marking field boundaries they were used to irrigate or drain the field. A possible parallel is presented by systems known as 'lazybeds' which are characterised by the presence of narrow, closely spaced parallel gullies.[57] Smith *et al.* note that they are not a common feature in the Roman landscape, and that most examples lie within the eastern part of their central belt, in a zone running from Buckinghamshire to Cambridgeshire. If the ditches at Monks Farm were related to such a system, it would extend the distribution only slightly further to the west. Lazybeds may have been used to irrigate or drain plots used for horticulture or viticulture.[58] Given the tendency of the Monks Farm site to become waterlogged, it seems likely in the case of Monks Farm that the ditches were intended to improve the drainage of the area. A horticultural use could explain why they cover only a restricted area. The charred plant remains recovered from the site do not give any clear indication of what the associated crops might have been.

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[57] A. Smith, M. Allen, T. Brindle, and M. Fulford, *The Rural Settlement of Roman Britain* (London, 2016), pp. 183, 204-5.

[58] Smith *et al.*, *Rural Settlement*; R. Patten, Bronze Age and Romano-British activity at Eye Quarry, Peterborough, Phase 3, unpubl, report, Cambridge Archaeological Unit (2004), p. 52.

The layout of the Roman field system ditches shows that they cannot all have belonged to a single phase. Whilst the stratigraphic evidence is insufficient to give a clear picture of how the field system developed over time, the changes appear to have been limited. The alignment of the system remained consistent throughout, and the main changes appear to have involved the slight relocation of boundary ditches.

Only a small assemblage of pottery was recovered from the Roman field system, and many of the groups cannot be dated very closely. Overall, however, the pottery suggests that the field system dates from the late Roman period, and some indicates a late 4th-century date. This chronology suggests that the field-system post-dated the Roman burials found in the Phase 1 excavations, which have radiocarbon dates with ranges extending from the 1st century to the middle of the 3rd century: cal AD 110–250 (91.3%; 1834±29 BP, SUERC-55341) and cal AD 120–260 (93.8%; 1821±26 BP, SUERC-55335).

The chronology is, however, consistent with the results of the evaluation carried out on Williams Land to the north of the excavation. A concentration of finds near the centre of the Williams Land evaluation suggested that a focus of activity, perhaps a farmstead, might have existed in that area. The Roman finds from the Phase 2 excavations were concentrated near the northern edge of Area 3, adjacent to the Williams Land site. The evaluation to the west of the Phase 2 site, however, found evidence including what may be stone building foundations, pits and postholes which suggested activity throughout the Roman period. It is, therefore, possible that the focus of Roman activity was both larger and more long-lived than the Phase 2 excavations and the Williams Land evaluation suggest.

The medieval and post-medieval periods: ridge and furrow (Fig. 14)

In the medieval period, and up to the beginning of the 19th century, the Phase 1 and 2 excavations would both have lain within Grove's North Field, and the only evidence for activity after the Roman period was provided by furrows – the truncated remains of ridge and furrow which can still be seen in surrounding fields – and by a

system of more recent land drains (Fig. 14).[59] The spacing of the features identified as furrows was uneven, the intervals between them varying from 8m to 20m. A certain degree of variation in the width of strip fields is evident in enclosure maps,[60] and whilst this variation is consistent with wider patterns,[61] it might also reflect the fact that some furrows have not survived or that the location of the strips was modified over time, perhaps preserving earlier furrows below later ridges.

A small assemblage of finds was recovered from the fills of the furrows. Not surprisingly, since they post-date the furrows, they are all of quite recent date, consistent with the fact that furrows may have gone out of use following the 1803 act of enclosure which covered Wantage and Grove.

ARCHAEOLOGICAL DESCRIPTION (FIG. 15)

PRE-MIDDLE BRONZE AGE FEATURES (FIGS 3-4 AND 16)

A small number of features were found – all but two in Area 2 – which were cut by ditches assigned to the middle Bronze Age. The only find recovered from these stratigraphically early features was a side and end scraper, probably dating from the late Neolithic/early Bronze Age, from ditch 206. This single find, alone, is insufficient to date even this ditch, and aside from the fact that they must have predated the middle Bronze Age activity described in the next section, the date of these stratigraphically early features is unknown.

The features belonging to this phase include a small number of isolated features – four pits and three tree-throw holes – but also a series of ditches. The ditches do not form a very coherent pattern, and they cannot be assigned a date on the basis of their layout or form. The ditches at the southern end of Area 2 could, however, be seen as forming part of a trackway and perhaps associated field boundaries. They might, then,

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[59] B. Afton, 'The Manmade Landscape: The Impact of Enclosure in the Wantage Area of Old Berkshire', nd, <nof.designation.co.uk/dev/bro_site/downloads/TheManmadeLandscape/TheManmadeLandscape.pdf>, fig. 4.2

[60] Afton, 'Manmade Landscape', fig. 3.2

[61] At Great Western Park, Didcot, the furrows lay at intervals of around 8m and 16m.

derive from an earlier phase of middle Bronze Age activity which was replaced, on a different alignment, by the middle Bronze Age features described below.

Pre-middle Bronze Age ditches in Area 2 (Fig. 3)

The possible trackway at the southern end of Area 2 was defined by four ditches (221, 205, 206 and 219). The roughly N-S aligned trackway would have been around 4m wide, and could be traced for around 15m, from a point near the southern edge of Area 2, up to a possibly related E-W aligned ditch (218). This ditch (218) extended at right angles from the possible trackway for a distance of around 8m. If it was contemporary with the trackway it might have formed a boundary related to a field running off the trackway. The northern ditch (219) defining the western side of the possible trackway turned slightly to the east at its northern end, adjacent to ditch 218, perhaps indicating that the trackway ended here.

The eastern side of the trackway was defined by two ditches (205 and 206) with slightly differing alignments. The later of these two ditches (206) lay roughly parallel to the eastern side of the trackway (defined by ditches 221 and 219). It is possible that the slightly differently aligned earlier ditch (205) was not related to the trackway.

Just two of these ditches were cut by middle Bronze Age ditches: ditches 219 and 218 were both cut by a large SW-NE aligned middle Bronze Age ditch (201). The remaining ditches (221, 205 and 206) have been assigned to this phase on the basis of their spatial relationships with ditches 219 and 218. These three ditches were, however, all cut by probably Roman ditches (200 and 202).

One of the western trackway ditches (219) cut an earlier ditch (220) which extended for a short distance to the edge of the excavation. Although this earlier ditch (220) lay roughly perpendicular to ditch 219, the two intersected close to the point at which ditch 219 turned to the east, and the alignment of the earlier ditch (220) does not correspond to that of any of the other possibly early ditches.

The area to the south of Area 2 was not covered by the Phase 1 excavations, and there is, therefore, no indication of whether or not the possible trackway might have continued in that direction.

A pair of features – ditches 223 and 2285 – which lie further north might provide an indication that the trackway or related boundaries continued further in that

direction. Both of these ditches were cut by middle Bronze Age ditches – ditch 223 by the middle Bronze Age penannular gully (210: see below) and ditch 2285 by a SE-NW aligned middle Bronze Age ditch (212). The relationship between these two early northern features and those to the south is, however, far from certain. Ditch 223 consisted of just a short (1.5m long), slightly curved ditch or elongated pit which lay slightly further to the east than the trackway ditches to the south. Ditch 2285 consisted of a short length of ditch forming a right-angled corner (with segments 3m and 2m long). The alignment of these segments does, however, match those of the early features in the south. It is also noticeable that this ditch was cut by a middle Bronze Age trackway, and although it was only 0.19m deep, it was presumably filled in by the time the trackway came into use.

The dimensions of these ditches are summarised in Table 4.[62] All of the ditches were small, shallow features, most of them less than 0.15m deep, and only a few of them were more than 0.5m wide (Fig. 16). All had more or less regular bowl-shaped profiles, and were filled with greyish- or reddish-brown silty clays.

As mentioned above, the only find recovered from these features was a side and end scraper from ditch 206.

Pre-middle Bronze Age pits and tree-throw holes (Figs 3-4 and 8)

Only a small number of other features can be assigned to this phase on the basis of stratigraphic relationships: three small pits (2071, 2041 and 2052) and two more or less irregular features identified as tree-throw holes (2148 and 2004) in Area 2 (Fig. 3), a single pit (3255) in Area 3 (Fig. 4), and a further tree-throw hole (1074) in Area 1 (Fig. 8). One of these pits (2052) was cut by ditches 205 and 206, and thus must predate the pre-middle Bronze Age trackway. Another (2071), an elongated pit or perhaps a short ditch, ran across the possible trackway, and thus probably either pre- or post-dated the trackway. This pit, and the remaining example (2041), were cut by

[62] Here, as in the other tables, where more than one intervention was cut across a feature, the median of the recorded dimensions has been given, rather than the mean. The median has been used since it is less affected than the mean by outlying measurements (such as are often obtained at the ends of ditches), and gives a better indication of the typical dimensions of the features.

the SW-NE aligned middle Bronze Age ditch (201). The early pit (3255) in Area 3 was cut by a middle Bronze Age trackway ditch (316).

Although the pits varied considerably in width, they were again all shallow features (Table 4) with more or less regular bowl-shaped profiles. The fills consisted predominantly of grey brown silty clays. They contained no finds.

The two pre-middle Bronze Age tree-throw holes in Area 2 (2148 and 2004) were both cut by the large SW-NE aligned middle Bronze Age ditch (201); the example (1074) in Area 3 was cut by another middle Bronze Age ditch (1072).

Undated stratigraphically early features in Area 3 (Figs 4 and 15)

A pair of stratigraphically early ditches (301 and 302) were also found in Area 3 (Fig. 4). The features may again have been related to a trackway, the alignment of which differed from those of all of the other phases of activity – middle Bronze Age, Roman and post-medieval – in that area of the site. The stratigraphically early features in Area 3 were, however, cut only by post-medieval ditches and land drains and by a Roman pit (3139). The only finds recovered from these possibly early features were two flint flakes and some burnt, unworked flint. They can thus be dated only to the Roman period or earlier.

The two early ditches ran roughly parallel, if slightly sinuous, courses, around 8m apart, for 20m from the edge of the excavation. Beyond this point, the eastern ditch (301), turned to the west for around 16m before returning to its SSW-NNE alignment for a further 14m. A third, possibly related ditch (3207), with irregular edges, ran for 7m from the southern edge of the excavation, adjacent to the western ditch (301).

Like most of the ditches on the site, all of the stratigraphically early ditches in Area 3 were slight, shallow features, all less than 0.2m deep and around 0.5m or less wide (Table 5; Fig. 15). In most sections, they were bowl-shaped in profile, but in a few cases, they had distinct straight, sloping sides and flat bases. The fills consisted of slightly varying grey-brown sandy or silty clays.

THE MIDDLE BRONZE AGE (FIGS 5-8 AND 16-17)

Although the limited excavation areas allow only a partial view, enough has now been revealed to indicate the existence of a middle Bronze Age field system, laid out with a quite consistent alignment across both the Phase 1 and Phase 2 excavations, within which a number of distinct elements can be identified (Fig. 5).

These elements include a long NW-SE aligned trackway, identified in all of the Phase 2 excavation areas and in Area 5 of the Phase 1 excavations. This long trackway forms a backbone to which a number of other elements can be related.

At the northern end of Area 3 a second trackway was identified (Fig. 7). At its northern end, this trackway was aligned parallel to the long trackway, but at its southern end, it turned at right-angles, to run towards the long trackway (although the point where they met lay outside the excavation area).

Perhaps the most interesting elements were found in Area 2 (Fig. 6). There, a long field boundary ran up to the long trackway at right angles. Within the corner formed by the field boundary and the trackway, a penannular gully was found. The penannular gully was connected to the field boundary by a short ditch. A number of postholes and pits were found within and around the penannular gully. Although these features do not appear to have been related to any identifiable structure (such as a roundhouse), the penannular gully and nearby stretches of the field boundary were a focus for the deposition of pottery and charred plant remains.

In Area 1, in addition to the trackway, two further ditches aligned at right angles to the trackway and perhaps defining field boundaries were found (Fig. 8).

Further elements which can be related to this field system were found in the Phase 1 excavations. These elements include further field boundaries sharing the same alignment as those in the Phase 2 excavations (Fig. 5). The enclosure which was the focus for the deposition of pottery and animal bone may, however, have preceded the field system.[63]

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[63] Brady *et al*., 'A Bronze Age Field System'.

Chronology (Fig. 19)

Pairs of radiocarbon dates have been obtained from the long field boundary (201) in Area 2 and from the ditch (207) which connects this boundary to the penannular gully. These dates …. (Fig. 20).

A small number of other features can be attributed to the same phase on the basis of the Deverel-Rimbury pottery recovered from them. Pottery occurred in only small quantities and was not widely distributed across the site, so the number of features which can be dated in this way is small. The main focus for the deposition of pottery was the penannular gully (210) in Area 2, the nearby stretch of the long field boundary (210) and the short ditch which connected the two. Even in this area, the groups of pottery were small, the largest group containing only 16 sherds (Table 7). A small group of four sherds was, however, also recovered from the trackway corner (ditch 316) and from an isolated pit (3003) in Area 3. No pottery was recovered from the long trackway during the Phase 2 excavations, but a single sherd was recovered from this trackway where it was exposed in Area 5 of the Phase 1 excavations.

The remaining features assigned to this period have been dated on the basis of their spatial relationships with the features dated by ceramics and radiocarbon dates.

The long trackway (Fig. 5)

The long trackway was revealed in all of the Phase 2 excavation areas and in Area 5 of the Phase 1 excavations.[64] Overall, these excavations allow its straight course to be traced over a distance of 220m, although clearly it continued to both the north and the south beyond the excavations. The evaluation trenches dug to the north on Williams Land do not, however, provide any very clear indication that the trackway continued much further in that direction.[65]

The width of the trackway varied slightly along its length. It was widest in Area 3 (4.1 to 4.8m), narrowed in Area 3 (to 3.0 to 3.7m), and then widened again slightly in Area 1 (4.0m). It was around 4.5m wide in the Phase 1 excavations.

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64 Brady *et al*., 'A Bronze Age Field System'.

65 Thacker and Boothroyd, 'Land at Williams Holdings'. If the trackway had continued in a straight line it might have been identified at the western end of Trench 14 or perhaps in Trench 9 on the Williams Land site. Neither of these trenches contained ditches which appeared to share the alignment of the trackway, although one ditch on a different alignment in Trench 19 appeared to date from the middle Bronze Age.

In Area 2 there were a number of breaks in the ditch defining the western side of the trackway (Fig. 6). A short stretch of unexcavated ditch extending from the south-eastern side of the excavation may have formed part of the western trackway ditch. There was a 4.7m wide gap between the end of this ditch and the field boundary ditch (201) which ran up to the eastern side of the trackway. This gap may have formed an entrance into one of the fields defined by the field boundary.

To the north of the field boundary ditch (201), the eastern side of the trackway was represented by only a short stretch of ditch (224: 3m long). The intersection of these two ditches (201 and 224) was obscured by a later ditch (208). To the north of the short ditch was a gap, around 3.5m wide (again partly obscured by a later ditch: 213) which may have formed an entrance into a second field and the penannular gully (210: see below). The curious obstruction of the entrance to the penannular gully, and the possible relationships between the features involved, are discussed further below.

Near the north-western edge of Area 2, there was a third gap just 0.7m wide between the eastern trackway ditch (2281) and a second feature (2279) which only just protruded into the excavation and which could have been either the beginning of a further length of ditch or of a perhaps unrelated pit. The eastern ditch was particularly shallow in this area (especially ditch 2281: Table 6) and it is possible that this small gap was merely the product of truncation.

The only signs of recutting were found in the eastern trackway ditch in Areas 3 and 2. In Area 3, the later cut (3169) had almost completely obscured the earlier (3171; Fig. 7). In Area 2, however, the later cut (211b) was smaller than the earlier (212; Fig. 6). In Area 2, the later cut of the eastern ditch (211b) veered to the east for just over 1m at a point which lay opposite one of the gaps in the other side of the trackway. This short stretch of ditch provides one of the few possible indications of change over time in the middle Bronze Age field system.

In profile, the ditches were either bowl-shaped or had shallow sloping sides and flat or slightly concave bases (Fig. 17). The ditches were all shallow features (Table 6), generally less than 0.3m deep, and sometimes just 0.1m deep. There was, however, some variation in their width. In many places, the ditches were just 0.5–0.6m wide, but the eastern ditch in Area 2 was notably wider (0.9–1.0m) than the western ditch, and both the eastern and western ditches were wider in Area 1 (1.2–1.3m) than in

other areas. In both cases, the wider stretches were also slight deeper than those elsewhere, and these differences could merely be a product of different degrees of truncation. It is, however, also possible that they reflect differences in the original forms of the ditches which might have been related to differences in the use of the adjacent land. It is possible, for example, that the western trackway ditch in Area 2, dividing the trackway from the penannular gully did not require a boundary as substantial as that which divided the eastern side of the trackway from the field to the east. The differences are, however, quite small.

The fills varied. Most consisted of grey-brown silty clays, but a number included high proportions of gravel.

The only find recovered from the long trackway was a sheep/goat tooth which was found in ditch 212 in Area 2.

The trackway corner in Area 3 (Figs 7 and 16)

Parallel ditches defining the right-angled corner of what appears to have been a second trackway were found in the north-west corner of Area 3 (Fig. 7). Although only about 13m of this trackway was exposed, its width varied from 3.2m along its NW-SE-aligned side to 4.8m on its SW-NE side. It clearly continued in both directions beyond the edge of the excavation, but there were no clear indications in the evaluation trenches to the north that it continued far to the north-west. To the north-east it may well have run up to the long trackway described above. Its SW-NE side was aligned at right angles to the long trackway (and its NW-SE side parallel to it).

The inner ditch had been partially recut or extended. The initial cut (316) was L-shaped, and ended just short of the northern edge of the excavation; the second cut (317) extended from the corner along the SW-NE aligned side beyond the end of the first cut (up to a Roman ditch which ran along the edge of the excavation).

The inner and outer ditches varied notably in size (Table 6; Fig. 16). The outer ditch (315) was comparable in size to the larger ditches forming the long trackway (0.75m wide and 0.38m deep). The two cuts forming the inner ditch, however, were

wider and deeper, the first cut (316) having a median width of 1.58m and a median depth of 0.48m, and the second cut (317) a width of 1.16m and a depth of 0.60m. The differences are again slight, but given the proximity of the features they cannot easily be explained by truncation, suggesting that other explanations are required.

Alongside the small assemblage of middle Bronze Age pottery (four sherds/48g) mentioned above, the only finds recovered from the trackway corner were a few pieces of worked flint, two grains of charred cereal (which could not be identified), one charred *Gallium aparine* seed, and four fragments of animal bone. Almost all of these finds came from the north-west end of ditch 316, although the flint was distributed more widely.

Field boundary ditches (Fig. 5)

Field boundary ditches which were related to the long trackway were identified with some certainty in Area 2 (Fig. 6) and, with less certainty, in Area 1 (Fig. 8). In both areas these boundaries lay at right angles to the long trackway.

The field boundary (201) in Area 2 consisted of a shallow ditch with a bowl-shaped profile which ran from the south-western edge of the excavation in a very slightly curved line for 41.5m up to the long trackway (Figs 6 and 17). Near its south-western end, the ditch became shallower towards a point which seemed to consist of two terminals, separated by a very shallow gap just 0.2m wide. Both of these terminals were cut by an otherwise undated pit (2140).

A further two short stretches of ditch (2061 and 2084) in Area 2 ran parallel to ditch 201, one (2061) 1.5m to the north-west and the other (2084), a further 1m in the same direction. The only finds recovered from them were a few pieces of flint from ditch 2061, and although they were both cut by a Roman ditch, the only reason for thinking that they might have dated from the middle Bronze Age is the fact that they lie parallel to ditch 201. It is, however, not clear what purpose such short stretches of ditch might have served.

Two short stretches of ditch in Area 1 (1072 and 1042) also lay roughly at right angles to the long trackway and might also have been field boundaries (Fig. 8). They were not, however, aligned with each other, and, lacking any finds, there must be some doubt about whether they were related to the other middle Bronze Age features.

One of them (1042) had an asymmetric profile, with a steep northern side, a pointed base and a more gradually sloping southern side, which differs from the other middle Bronze Age features. The other (1072) had a more typical bowl-shaped profile.

The field boundaries in both Areas 1 and 2 were shallow features, 0.35m or less deep, similar in size to many of the other middle Bronze Age ditches (Table 6). One of the boundaries in Area 1 (1072), measuring 1.28m wide, was amongst the widest middle Bronze Age features.

The fills of the field boundary ditches differed more in colour than the fills of the long trackway ditch. Many consisted of grey-brown silty clay deposits similar to those in the trackway ditches, but others were lighter grey silty clay deposits which may have been affected by leaching.

There was a marked contrast in the distribution of the finds in the field boundary ditches. The interventions cut across ditch 201, especially those close to the penannular gully, contained some of the largest groups of finds recovered from middle Bronze Age features whilst the other field boundary ditches contained very few finds.

The largest group of finds was recovered from intervention 2122, which was cut across ditch 201 just a metre to the south-west of the point where the field boundary ditch (201) was connected to the penannular gully. The finds from this intervention included 16 sherds of pottery (314g), five fragments of animal bone, and a small assemblage of charred grain, chaff and weed seeds. Intervention 2088, which lay at the point where ditch 201 met the short ditch (207) which connected the field boundary to the penannular gully (210: see below), also contained one of the largest groups of middle Bronze Age pottery (13 sherds, 194g). Intervention 2146, which lay around 10m further along the ditch to the south-west also contained a couple of sherds and a fragment of animal bone. The other interventions cut through this ditch, at greater distances from the penannular gully, contained only a few pieces of worked flint and another small fragment of animal bone. It therefore seems likely that the pattern of deposition was related to its proximity to the penannular gully, and the material recovered from the ditch may consist of debris derived from activity related to the penannular gully.

The only finds recovered from the other field boundary ditches were a small group of animal bone fragments (none identifiable) from ditch 1046 in Area 1 and some worked flint from ditch 2060 in Area 2.

The layout of the fields and trackways (Fig. 5)

Alongside the field boundary ditches revealed in the Phase 2 excavations, a number of further boundaries were found during the Phase 1 excavations (Fig. 5). Although the areas excavated are too small to give a detailed picture of the overall layout of the site in the middle Bronze Age, together these boundaries do provide some indications of the way in which the landscape was organised (see above).

There may have been some regularity in the spacing of the field boundaries which lie at right angles to the long trackway. The distance between the long field boundary in Area 2 and the possible boundaries in Area 1 was around 50m, and that from the Area 1 boundaries to the next, in Area 5 of the Phase 1 excavations, was around 55m. These distances are broadly comparable to some of these recorded at Appleford Sidings.[66] If this pattern had been repeated to the north, however, a further field boundary would have been expected to lie near the south-eastern edge of Area 3, where no trace of such boundary was found. There may, instead, have been a longer field between the Area 2 field boundary and the trackway corner in Area 3 (the existence of which clearly suggests a certain degree of irregularity in this area).

A second NW-SE aligned boundary, parallel to the long trackway, was found in Area 5 of the Phase 1 excavations around 40m to the west of the trackway. This boundary did not continue in Area 3 of the Phase 2 excavations. Combined with the long field boundary in Area 2, it might, however, suggest that a field measuring around 50m by 40m lay between Areas 2 and 3 of the Phase 2 excavations and Area 5 of the Phase 1 excavations, with another field measuring around 55m by 40 to the south, largely falling with Area 5 of the Phase 1 excavations.

A third NW-SE aligned boundary was identified in Area 4 of the Phase 1 excavations, which lay a further 80m to the west. It is possible that this defined further rectangular fields, but this boundary lies near the western limit of the excavations, and aside from a possible continuation of the Phase 2 Area 1 boundary in

[66] Booth and Simmonds, *Appleford's Earliest Farmers.*

Area 1 of the Phase 1 excavations, no other middle Bronze Age boundaries could be traced in this area.

Within this framework of trackways and field boundaries, two foci of activity have been identified. One was the possible enclosure partially excavated in the Phase 1 excavations and described in the previous report; the second was the penannular gully revealed during the Phase 2 excavations.

The penannular gully (210) and possibly related features (Figs 6 and 18)

The penannular gully (210) in Area 2 consisted of a shallow gully defining a roughly circular area, 7.9m by 7.3m across, with an opening 4.4m wide on the south-eastern side (Fig. 6). It was connected to the long field boundary (201) by a short stretch of ditch (207).

The relationships between these features are difficult to interpret in detail. The short connecting ditch (207) cut the penannular gully (210), and was in turn cut by the long field boundary (201). It could, therefore, be argued that the penannular gully had not been placed in the corner of a field defined by the trackway and the long field boundary ditch, but rather the field boundary was cut in relation to the penannular gully, perhaps when the penannular gully had already gone out of use. The positioning of the long field boundary across the entrance into the penannular gully, albeit over 2.5 m to the south could be seen as supporting this idea. This arrangement would have meant that the only way to gain entrance to the penannular gully was from the gap in the trackway to the north-east of the penannular gully. Furthermore, there is another stretch of ditch (2196) to the south of the penannular gully which follows the same alignment as the connecting ditch (207), and it is possible that these two ditches (207 and 2196) defined an earlier boundary which preceded the long field boundary (201).

The fact, however, that the connecting ditch extends precisely from the gully to the field boundary suggests that it was planned in relation to both of them, and an alternative interpretation would suggest that the stratigraphic relationships between the penannular gully, the connecting ditch and the long field boundary reflects the dates at which they were last cleaned out, rather than the date at which they were cut. No clear recuts were identified in any of these ditches, but this interpretation would be more consistent with the results of the radiocarbon dating, and would allow all of the

features to have been roughly contemporaneous.

If the penannular gully (210) functioned as an eaves-drip gully, as has been suggested for similar features at Bestwall Quarry, Dorset and Fengate,[67] then the connecting ditch (207) could have been cut to drain water away into the larger field boundary ditch (201). The depths of the three ditches are consistent with this idea, the penannular gully being shallowest and the field boundary ditch the deepest, although the differences are slight (Fig. 18; Table 6; penannular gully: 0.20m deep; connecting ditch: 0.26m deep; field boundary: 0.35m deep).

Both the penannular gully (210) and the connecting ditch (217) had shallow, bowl-shaped profiles, with dimensions comparable to those of the smaller trackway and field boundary ditches (Fig. 18; Table 6). Like most of the middle Bronze Age features, the fills consisted predominantly of grey-brown silty clay deposits, although the exact shade varied considerably.

Small groups of finds were recovered from most of the interventions cut across the penannular gully (Table 7). Although the assemblages of finds were similar in composition to those recovered from the short connecting ditch (207) and from nearby interventions across field boundary ditch 201, the quantities of finds from the penannular gully were smaller than those recovered from the ditches (Fig. 9). The nearby interventions across field boundary ditch 201 contained up to 16 sherds (314g) of pottery, and a group of 29 charred cereal grains with an almost equal number of pieces of charred chaff and weed seeds. The interventions across the connecting ditch (207) contained up to 10 sherds (70g) and a similar group of charred plant remains. The largest assemblage from the interventions across the penannular gully, in contrast, contained only six sherds (13g) and groups of only two or three charred grains (with similar numbers of pieces of charred chaff and weed seeds). Animal bone appears to have been more evenly distributed, but the quantities recovered were in all cases very small. Overall, the pattern is consistent with the suggestion that debris generated by activity associated with the penannular gully was deposited short distances away from the penannular gully.

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[67] Ladle and Woodward, *Bestwall Quarry*; Pryor, *Fengate, Third Report*.

Pits and postholes within and around with the penannular gully (Fig. 6)

A number of pits and postholes were found both within and around the penannular gully (Fig. 6). None of the postholes contained a post-pipe, and pits and postholes have been distinguished purely on the basis of their diameter (postholes having diameters less than 0.6m, and pits diameters of 0.6m or more; Table 8).

None of these features contained any finds, and their locations are the only reason for suggesting that they might date from the middle Bronze Age. A number of undated pits and postholes were found in other areas (see below), and whilst there does seem to have been a higher density of such features in and around the penannular gully, it is quite possible that at least some of these features in fact date from other periods.

The location of some of these features, however, suggests that they were related to the ring ditch. Two of the postholes (2235 and 2245) lay on either side of the entrance to the penannular gully and another two (2266 and 2321) lay immediately adjacent to the outer edge of the gully. The postholes do not, however, appear to define any recognisable structure (such as a roundhouse). The remaining three postholes (2182, 2323 and 2237) all lay within the ring ditch, one in the southern half, and two close together in the northern. If the penannular gully was associated with a roundhouse, it was not constructed using large posts.

Two of the pits (2116 and 2319) also lay close to the outer edge of the penannular gully, and another two (2261 and 2270) lay immediately adjacent to its inside edge (indicating that if they were contemporary with the penannular gully, the wall of any associated roundhouse would have to have been set back a short distance from the gully).

It is also noticeable that the remaining two pits (2206 and 2204) lay close to the entrance into the penannular gully, and would have obstructed the entrance into the penannular gully if they and the nearby field boundary and trackway ditches were all contemporaneous.

A further pair of postholes was found (2296 and 2298) around 5m to the west of the penannular gully.

All of the postholes and pits were shallow features (Table 8), none of the postholes measuring more than 0.15m deep, and none of these pits more than 0.32.

Some of them were very slight features, the shallowest posthole measuring only 0.04m deep and the shallowest pit only 0.08m.

The fills again consisted almost entirely of grey-brown silty clay deposits. The only notable exception was the lower fill of pit 2206 which consisted of a lighter grey clay deposit.

Pit 3003

The only other feature which could be dated to the middle Bronze Age was an isolated pit (3003) in Area 3 (Fig. 7). The small shallow pit was oval in plan with a bowl-shaped profile (Table 8). It contained a single fill of dark grey-brown silty clay from which four sherds possibly from a jar or urn, a small group of worked flint, and four fragments of animal bone, including a pig ulna, a sheep/goat tooth and micromammal bones were recovered.

BETWEEN THE MIDDLE BRONZE AGE AND THE ROMAN PERIOD (FIG. 12)

Several lengths of ditch in the northern half of Area 2 lay stratigraphically between the middle Bronze Age and Roman features (Fig. 12). No finds were recovered from any of these ditches, and their alignments do not clearly associate them with either the middle Bronze Age or Roman phases of activity. They do not form any particularly clearly defined pattern. Aside from their stratigraphic relationships there is, then, no indication of their date, and it is difficult to form any interpretation of their intended purpose.

Near the eastern side of Area 2, two of these ditches lay on the same alignment. The first (208) extended across the long middle Bronze Age trackway. It cut two middle Bronze Age ditches (201 and 224) and was cut by a Roman ditch (213). The second (211a) cut one of the other long middle Bronze Age trackway ditches (211b), but continued the course of ditch 208 to the north. These two ditches lay roughly at right angles to the Roman ditches described below and might have been related to an early phase of Roman activity, although neither was completely straight (as the Roman ditches in this area were).

Towards the western side of Area 2, another ditch (215) cut across the penannular gully (210) but was cut by two Roman ditches (2208 and 213). To the south of this ditch, two further short segments of ditch might have represented continuations. One (209) also cut the penannular gully (210), and the second (216) cut one of the pre-middle Bronze Age ditches (219) and was cut by a Roman ditch (217).

All of the ditches were again shallow features, all but one being less than 0.2m deep (Table 9) and 0.7m or less wide. Ditch 209, however, was both deeper and wider than the other features, and might be classified as a long ovoid pit rather than a ditch. Ditch 215 also widened markedly where it met the north-western edge of the excavation.

In most of the interventions the ditches had bowl-shaped profiles, although in some cases they were asymmetrical, with one side sloping much more gradually than the other, in one case irregular, and in another had a ridge in the bottom.

The Iron Age (Fig. 8)

The only feature which might date from the Iron Age was a pit (1024) in Area 1 (Fig. 8). This pit contained a single exceptional combed or striated sherd in its primary fills. The date of this sherd is uncertain but it may date from the late Iron Age or early Roman period (see Brown below). The pit itself was ovate in plan, with quite steeply sloping sides, expanding outwards towards the top. It measured 1.5m across and was 0.74m deep. It contained no other finds.

The only other evidence for activity in the Iron Age is provided by four conjoining sherds from a red-finished early Iron Age bowl. These sherds were recovered from a shallow Roman ditch (313; see below; Fig. 13) which also contained Roman pottery (and which cut earlier Roman ditch 314), and were clearly residual.

THE ROMAN PERIOD (FIGS 13 AND 19)

Activity in the Roman period was evidenced by quite strictly rectilinear arrangement of ditched defining a field system, perhaps including a trackway (Fig. 13). In Area 2, this field system was characterised by the presence of a number of

shallow, quite closely-spaced parallel gullies, some of which continued into Area 1. The close spacing of the Area 2 ditches is an unusual feature for a Roman field system, and the strips defined are much narrower than Roman fields would normally be. This unusual feature is discussed further above, where the possibility that the closely spaced ditches might have been related to a 'lazybed' system is discussed.[68]

There are slight differences in the size of the ditches (Fig. 19; Table 10) which suggest that rather than all of the Roman ditches having been used to define field boundaries, a distinction can be made between slightly larger ditches which defined large fields and perhaps a trackway, and smaller ditches which, in some cases, lay within the fields and were perhaps used for drainage.

In Area 3 there is evidence which indicates that the field system was renewed, but not fundamentally altered by the cutting of new ditches. The finds from the ditches and the stratigraphic relations between them are not, however, sufficient to indicate clearly how the system developed over time, and it is all treated here as deriving from a single phase of activity.

Chronology

The unusual form of the Roman field system and its very regular layout initially suggested that it might, in fact, have been a system of recent land drains which contained residual Roman finds (preceding the more obvious system described below). The association of Roman finds with the rectilinear system of ditches is however, very close, and the absence of later material (which does occur in the later field drains) very marked (Table 11). It therefore seems likely that this system of ditches dates from the Roman period.

Finds of Roman pottery were concentrated in Area 3, and the only large assemblage occurred in ditch 312 (Table 11). This ditch also contained a dozen fragments of ceramic building material, largely consisting of small fragments but including some that can be identified as deriving from a Roman imbrex or ridge tile, and a small number of fragments of iron nails. The remaining pottery assemblages all

[68] It is possible that the three even more closely spaced, undated gullies found in the north-east of Area 5 in the Phase 1 excavations might be a continuation of this arrangement. They lay roughly parallel to the features discovered in Areas 1 and 2 of the Phase 2 excavations. A further gully, found in the north-west of Area 5 in the Phase 1 excavations, again on the same alignment, was cut by a middle Bronze Age ditch, and it is, therefore, also possible that the gullies found during the Phase 1 excavations were earlier in date.

consist of fewer than seven sherds, and several contained only a single sherd. Roman pottery was, however, recovered from two of the ditches in Area 2, and three other ditches and two pits in Area 3. The remaining ditches have been assigned to this period on the basis of their alignments – either parallel or perpendicular to the ditches containing Roman finds.

Whilst there is little doubt that they belong to the Roman period, the small assemblages of Roman pottery do not provide a very firm basis for more precise dating. The large group from ditch 312 includes some sherds which date from the second half of the 4th century, suggesting that the system might date from late in the Roman period. The remaining material from the other ditches generally suggest dates in the 2nd century or later, and at least do not contradict the late date suggested by the assemblage from ditch 312.

The size and layout of the ditches (Figs 3 and 19)

None of the Roman ditches was very large, but there were slight differences in size which might distinguish field boundary ditches from smaller drainage or irrigation ditches within the fields (Figs 3 and 19; Table 10).

The distinction in size was most clear in Area 2, where two of the east-west aligned ditches (200 and 203), situated around 30m apart, were around twice as wide (0.8m to 1.0m) as the other east-west aligned ditches (0.4m–0.5m wide) which were situated at intervals of between 5m and 10m. The differences in the depth of these ditches (Table 10) was less marked than that in width, although one of the wider ditches (200) was notably deeper than the others. There were no obvious differences in the profiles of the wide and narrow ditches. Both usually had rounded, bowl-shaped profiles (Fig. 19).

The differences in the dimensions of the ditches in Area 3 were less consistent. One of the wide ditches in Area 2 (213) continued into Area 3 (as ditch 303). Another wide east-west aligned ditch (312) was found around 35m to the north (approximately mirroring the spacing of the wide ditches in Area 2). There was no clear indication that the area between the latter two ditches had been filled with narrower ditches comparable to those in Area 2, although two narrow ditches (306 and 311) did run

east-west between them (ditch 311 turning at right angles at its eastern end to run up to ditch 311).

A third large, east-west aligned ditch (313) was found near the northern edge of the site, 6.5–8.0m to the north of ditch 312. This ditch was a recut of an earlier ditch (314), the full width of which was not preserved. It is possible that these ditches defined a trackway, but two stratigraphically earlier, north-south aligned ditches (308 and 309) cut across the trackway, and it is possible that the presence of the three parallel east-west aligned ditches (312, 313 and 314) near the northern edge of the site reflects recutting and slight modifications to the field system.

Lengths of three north-south aligned wide ditches (3155, 309/321 and 304) were also found in Area 3. In two cases, the wide ditches lay adjacent and parallel to narrower ditches (wide ditch 3155 lying next to two narrow ditches: 3141 and 3145, one of which probably continued as ditch 3203; and wide ditch 309 lying next to narrow ditch 308). In these cases, it seems likely that the multiplication of ditches in approximately the same location reflects the renewal of the field system in slightly different locations. The differences in the size of these ditches does, however, suggest that width does not provide an infallible means of distinguishing field boundaries from drainage or irrigation gullies.

It is possible that three of the north-south aligned ditches (308, 309/321 and 304/318) also defined a trackway around 10m wide. Again, however, the possible trackway was cut through by two east-west aligned ditches (306 and 311), and it seems more likely that multiplication of ditches here also reflects the relocation of some of the boundaries.

Whilst there is thus evidence that not all of the Roman ditches were contemporaneous, the stratigraphic relations between them are insufficient to provide a coherent picture of the overall development. The three north-south aligned ditches (308, 309/321 and 304) which might have defined a trackway all cut through the two narrow east-west ditches (306 and 311), but were in turn cut but the larger east-west aligned ditches at the northern edge of the Area 3 (312 and 313). There is no indication, then, of which of the north-south aligned ditches was earliest. In the north-western corner of Area 3, however, the wide ditch 3155 cut through an east-west aligned ditch (320) which cut the narrower north-south aligned ditches (3141 and 3145).

Finds from the Roman ditches (Table 11)

The quantities of finds from the Roman ditches were not, overall, very large, and, not surprisingly, they tended to occur in the largest features (Table 11). By far the largest concentration of finds was recovered from ditch 312 near the northern edge of Area 3. All three of the interventions along this ditch contained large assemblages of finds (compared to the other Roman ditches) consisting of pottery, ceramic building material (including a fragment of imbrex or ridge tile), fragments of iron from nails and an unidentified T-shaped object, animal bone and charred grain, chaff and weed seeds. Where it could be identified, most of the animal bone was from cattle and horse, but small quantities of sheep/goat, pig, dog domestic fowl and frog/toad bone were also recovered.

The other ditches contained only small numbers of sherds, small groups of animal bone and occasionally also charred grain and other plant remains.

Overall, the finds occurred predominantly in features near the northern edge of Area 3. Alongside the large groups from ditch 312, small groups of finds were recovered from ditches 313 and 314 (at the very northern edge of Area 3), from ditch 3155 (in the north-western corner), although there was also a large (for this site) group of animal bone from ditch 304. The only Roman finds from Area 2 were two sherds from ditch 200. No Roman finds were recovered from Area 1.

Roman pits

The only other features which can be attributed to the Roman period with any certainty were two pits, both in Area 3. One of these pits (3121) was circular in plan and had almost vertical sides and a flat base. It was 0.72m deep and 0.97m wide. It contained five layers of fill, the lowermost of which (3125) contained two large sherds (175g) of pottery. The second layer contained five small sherds (9g), a small group of residual worked flint and a fragment of animal bone.

The other pit (3139) was a much wider, shallower ovate feature, with steep sides and a flat base, 2.65m by 1.33m wide and 0.27m deep. The only finds recovered from its single fill were three sherds of Roman pottery (14g).

Posthole group 300 (Fig. 13)

A short alignment of five postholes, 5m long, was found in Area 3 (with two postholes at its southern end). None of the postholes contained any finds, and the date of the alignment is, therefore, unknown. It lay roughly parallel to both the Roman ditches and the recent land drains, and could date from either period.

LATER FEATURES (FIG. 14)

Furrows

A number of north-south aligned furrows were identified running across Area 1 and 2 (Fig. 14). These were all wide and shallow features, usually between 1m and 2m wide, and less than 0.2m deep, and often less than 0.1m. They have been interpreted as the truncated remains of ridge and furrow marking the location of strip fields associated with the village of Grove. They were rather unevenly spaced at intervals of between just 8m and 20m (ignoring adjacent examples), suggesting either that some were truncated ditches rather than furrows, or that the location of the strip fields was altered at some point, preserving earlier furrows below later accumulations of soil.

The furrows contained very few finds, but what was recovered – fragments of clay tobacco pipe, an unidentified copper alloy coin, an unidentified fragment of iron, and a fragment of possibly Roman brick – was either residual or consistent with a quite recent date, and gives little clue as the longevity of the ridge and furrow.

Land drains

A rectilinear system of east-west aligned land drains, extending from a large north-south aligned ditch, extended across Area 3, and further land drains were found in Area 1 (Fig. 14). Alongside ceramic pipes forming the drains, the associated ditches

also contained an assortment of recent finds, including 19th-century pottery, glass, metalwork, and fragments of brick and tile, as well as residual earlier finds (including small quantities of Roman and prehistoric pottery and worked flint).

TREE-THROW HOLES

A total of 20 features, more or less irregular in plan and profile, were identified as tree-throw holes (and a further five more ambiguous features could not be clearly identified as either tree-throw holes or pits). A single cattle tooth from one of the ambiguous features (2058) was the only find recovered from these features (Fig. 12).

Their chronology can, therefore, be defined only on the basis of their stratigraphic relationships. Three of the tree-throw holes (1074, 2004 and 2148; Figs 3 and 8) predate the middle Bronze Age field system, and six other examples predate the Roman features (1060, 1066, 1070, 2134 and 3025; Figs 3, 7-8 and 12) and the possibly late Iron Age pit (1022). The uncertain example (2058) containing the cattle tooth post-dated the middle Bronze Age field system (Fig. 12), and other examples post-date the Roman features (2092; Fig. 14) and the more recent furrows (2212 and 2218; Fig. 14).

Whilst stratigraphy gives only a very limited indication of their date, it is sufficient to show that the tree-throw holes date from several different periods.

UNDATED FEATURES

A small number of other features including 16 pits, nine postholes and three ditches which contained no artefacts and could not be assigned to a phase on the basis of their alignment or location remain undated. Details of these features are contained in the site archive.

RADIOCARBON DATES (FIG. 20)

A series of four radiocarbon dates were obtained: two from samples in the connecting ditch (207) and two from the adjacent field system ditch (201). The aims of the dating programme were to obtain absolute dates for the penannular gully (210), to see how it was related to the wider development of roundhouses and settlement in

the Upper Thames Valley, to determine whether it was contemporary with the field system, and to examine using Bayesian modelling as it is realised in OxCal,[69] insofar as is possible with four dates, what the dates suggested about how long the penannular gully and field system were in use. Details of the samples and results are shown in Table 12.

Samples, contexts and methods

Material suitable for dating was, unfortunately, limited. Although charred plant remains and animal bone occurred in a number of interventions cut across the penannular gully, the quantities of plant remains were small and the animal bone fragmented. Given the presence of Roman activity across the site, it was though possible that these small quantities could include intrusive Roman material. There were only two larger deposits of charred grain, chaff and weeds, one in the major field boundary ditch (201) which ran to the south-east of the penannular gully, and another in the connecting ditch (207) which ran between the penannular gully and the field system ditch (201). It has been argued that the connecting ditch (207) was likely to have been contemporary with the use of the penannular gully (although it could have been cut after the penannular gully had been in use for some time). In the absence of material from the penannular gully itself, the sample from the connecting ditch has, therefore, been used to date activity related to the penannular gully.

The two deposits included 29 and 27 fragments of charred grain (as well as chaff and weed seeds; see Table 19) and, although not large, were the only deposits which it could be argued probably did not consist of residual material. Both samples consisted of a charred cereal grains some of which could be identified as wheat and some of which could not be precisely identified. To provide a test for the presence of residual material, second samples of different material from the same contexts were also dated. They consisted of charcoal from unidentified smalls twigs in the case of the field system ditch (201) and oak roundwood and small twigs of diffuse porous (shrub) charcoal in the case of the connecting ditch.

Both samples came from the uppermost of two fills (2124 in the case of the field boundary ditch and 2127 in the case of the connecting ditch; see Fig. 9) and both

[69] 1 C. Bronk Ramsey, 'Bayesian analysis of radiocarbon dates', *Radiocarbon*, 51/1 (2009), pp 337-60.

must, therefore, post-date the cutting of the ditch by at least a short period. It has been suggested above that the ditches may have been cleaned out or recut. Whilst the dated samples must therefore post-date the cutting of the ditches by at least a short period, they both appear to derive from activity contemporaneous with the 'use' of the features.

All of the dates were measured by the Scottish Universities Environmental Research Centre AMS facility, using methods described by Dunbar *et al.* and have been calibrated using the IntCal 13 calibration data using OxCal v.4.3.2.[70]

Results and modelling

All four results fall within the 15th to 13th centuries cal BC, and are thus consistent with the middle Bronze Age date indicated by the pottery. They are shown with the dates from two middle Bronze Age cremation burials obtained during the Phase 1 excavations in Fig. 20. The interpretation of the results does, however, raise some issues. The date on the oak and shrub charcoal from the connecting ditch (207) falls in the 15th century cal BC, and is noticeably earlier than all of the others dates (which fall in the 14th and 13th centuries). This discrepancy is confirmed by chi-squared tests. The two dates from the connecting ditch fail a chi-squared test and thus are unlikely to have been of the same age.[71] All of the other dates, in contrast, pass a chi-squared test, indicating that the connecting ditch, the field system ditch and the cremation burials could all have been contemporary.[72]

The radiocarbon dates thus appear to suggest that much of the middle Bronze Age activity was focused within a restricted period within the 14th and the 13th centuries, but the oak and shrub charcoal indicates earlier activity, probably within the 15th century.

The significance of this difference in date can be interpreted in several ways. One possibility - that there was a difference between the age of the oak and shrub charcoal

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[70] E Dunbar, G T Cook, P Naysmith, B G Tripney, and S Xu, AMS 14C Dating at the Scottish Universities Environmental Research Centre (SUERC) Radiocarbon Dating Laboratory, *Radiocarbon*, 58/1, pp 9-23; C. Bronk Ramsey, 'Bayesian analysis of radiocarbon dates', *Radiocarbon* 51 (1) (2009), pp 337-60; P. J. Reimer, E. Bard, A. Bayliss, J. W. Beck, P. G. Blackwell, C. B. Ramsey, C. E. Buck, H. Cheng, R. L. Edwards, and M. Friedrich, 'IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP', *Radiocarbon*, 55 (4) (2013), pp 1869-87.

[71] T=22.219 (%% 3.8), df=1. G. K. Ward and S. R. Wilson, 'Procedures for Comparing and Combining Radiocarbon Age Determinations: A Critique', *Archaeometry*, 20 (1) (1978), pp 19-31.

[72] T=3.6(5% 9.5), df=4; Ward and Wilson, Comparing Radiocarbon Age Determinations.

and the charred grain when they were charred - is unlikely to account for the difference given that the charcoal consists of small twig fragments. The oak and shrub charcoal could, then, either be residual and derive from an earlier phase of activity (perhaps associated with the stratigraphically early features described above) or simply derive from an earlier part of the middle Bronze Age activity.

Since the interpretation of the oak and shrub charcoal sample (SUERC-77110) from the connecting ditch is uncertain, two separate models have been constructed - one including this and all of the other samples and another including this sample only as an outlier (which has not effect upon the model).

The first model The first model (Fig. 20) accepts that all of the dates derive from a single phase of activity, and thus attempts to refine the date range suggested by the dates by placing all of the radiocarbon dates into a single phase, constrained by boundaries. The structure of the model is shown in Figure 20a. This model suggests that activity probably began probably in the 15th century cal BC or the end of the 16th century and probably ended in the 13th century or the first half of the 12th century. Overall, it suggests that activity associated with the field system (including the cremation burials and the penannular gully) may have occurred over a period of between 150 and 250 years. The set of six dates is clearly too small a sample to give a precise estimate of the duration of the activity associated with this set of features. Whilst a larger sample might be able to provide a more precise estimate and would clearly have a better chance of containing samples from the throughout the period of activity, it is unlikely that it would indicate a shorter period of activity (unless it showed more clearly that the oak and shrub charcoal formed an exceptional outlier). The fact that this small sample suggests activity over a period of probably at least 150 years (and more certainly of at least 60 years) suggests that the middle Bronze Age activity occurred over a number of generations.

The second model The second model (Fig. 20) excludes the inconsistent date on oak and shrub charcoal from the connecting ditch but includes all of the other dates. This model suggests that activity began in the 14th century or the very end of the 13th century and ended in the 13th century. Most strikingly however, it suggests that the activity could have been quite brief, probably extending over a period of no more than

80 years (and more certainly less than 150 years). These figures are estimates of the maximum length of the period of activity, and are at least consistent with the complex having been in use for no more than one or two generations.

Discussion

Clearly, again, the six dates are too small a sample to make it possible to have much confidence that they truly reflect the whole of the period in which the site was in use, and the fact that one of the results has such an effect upon the estimate of the overall duration of activity makes interpretation particularly difficult. Five of the six dates are compatible with the idea that activity was quite brief, perhaps spanning no more than one or two generations, but the sixth date suggests that the activity might have been spread over as significantly longer period of over 150 years.

It has been argued above that much of the debris deposited in the connecting ditch (207) and the adjacent field system ditch (210) probably derived from activity associated with the penannular gully. The consistency in the two dates from the field system ditch (201) and one of the dates from the connecting ditch (207) could reflect the fact that the dated samples all derive from a relatively brief episode of activity associated with the penannular gully. The earlier date could reflect the fact that activity associated with the field system occurred over a longer period. This would imply that the penannular gully was added to the field system some time after it was first laid out.

The relationship of the cremation burials to this possible sequence is of some interest. Table 20 shows the probabilities that the dates occurred in particular orders. (The figures indicate the probability that the dates listed in the top row occurred after the dates listed in the left-hand column.) Given the similarities in most of the dates, not surprisingly, many of these probabilities are close to 0.5. This is true for one of the cremation burials (1011). There are, however, reasonable probabilities (from 0.83 to 0.69) that the other cremation burial (1005) post-dated the other features. Thus whilst it seems likely that the first cremation burial (1011) was deposited whilst the penannular gully was in use, the other burial may have been deposited near the end of, or after, that period. If the penannular gully was related to a house, it is possible then that the last cremation burial (1005) marked the death that brought an end to the occupation of the house.

Contemporaneous sites

As well as providing some possible insights into the development of the site, the dates also allow us to begin to place the site within a wider context. Unfortunately, the majority of the middle Bronze Age radiocarbon dates from the Upper Thames Valley are associated with either burials or waterholes. Yarnton is the only other site in the Upper Thames Valley where radiocarbon dates from contexts associated directly with middle Bronze Age houses are available, and there are no other sites with dates directly associated with field system ditches. Whilst the limited numbers of relevant dates from other sites means that we are very far from being able to construct a detailed chronology of developments within the middle Bronze Age, the limited comparisons which are possible are of some interest, albeit largely because they show that different patterns of settlement and land use existed in different parts of the Upper Thames Valley at the same time.

Yarnton provides the most extensive evidence for house forms in the Upper Thames Valley, including a sequence which runs through the Bronze Age, beginning with small circular post-built structures (with diameters of 4 to 6m) in the early Bronze Age and including oval post-built structures in the middle Bronze Age. Radiocarbon dates show that two of the small roundhouses, at least, predate Monks Farm, but dates from two of the oval structures (1363 and 1875) indicate that they were very close in date to the penannular gully at Monks Farm. Whilst some of the structures at Yarnton could be seen as small variants of the typical roundhouse (consisting of a circle of postholes associated with a porch), more typical examples first appear there in the late Bronze Age where they are best represented at Cassington Quarry Western Extension (probably dating from the 11th century cal BC).

Yarnton lies in an area in which field systems were not laid out in the Bronze Age, and the difference in house forms may be related to different patterns of land use. Further evidence for such contrasts might be provided by an L-shaped ‘enclosure’ at Cotswold Community. This feature (14273) was not associated with any other structures. It was, however, constructed in an area where field systems were not laid in the Bronze Age, and a radiocarbon date suggests it may have been close in date to the penannular gully at Monks Farm. There is clearly much other less precisely dated

evidence which indicates differences in forms of occupation and land use in different parts of the Thames Valley. In these two cases, however, it is possible to show that the differences are not chronological.

THE FINDS

FLINT by MIKE DONNELLY

The excavations yielded a small assemblage of 106 struck flints, numerous natural fragments and 45 pieces of burnt unworked flint weighing 163g (Table 13). The assemblage was very incoherent with a genuine lack of diagnostic tools, cores and core debitage. Several blade forms were present, all as residual finds in later features, and these indicate a limited early prehistoric presence. There was an almost total lack of flintwork that could be contemporary with the middle Bronze Age activity on site. The bulk of the assemblage was made up of fine shatter from sampled ditch fills and may very well be largely mechanical or natural in origin.

The artefacts were catalogued according to OA South's standard system of broad artefact/debitage type, general condition was noted, and dating was attempted where possible.[73] Additional information on the condition (rolled, abraded, fresh and degree of cortication), and the state of the artefacts (burnt, broken, or visibly utilised) was also recorded. Retouched pieces were classified according to standard morphological descriptions.[74] Technological attribute analysis was undertaken and included the

[73] H. Anderson-Whymark, 'The worked flint', in T. G. Allen, A. Barclay, A.-M. Cromarty, H. Anderson-Whymark, A. Parker, M. Robinson, and G. Jones, *Opening the Wood, Making the Land. The Archaeology of a Middle Thames Landscape: The Eton College Rowing Lake Project and the Maidenhead, Windsor and Eton Flood Alleviation Scheme, Volume 1: Mesolithic to Early Bronze Age* (Oxford, 2013), pp. 513-26; P. Bradley, 'The Worked Flint', in Barclay *et al*., *Barrow Hills*, pp. 211-27.

[74] H. M. Bamford, *Briar Hill: Excavation 1974-1978* (Northampton, 1985); F. Healy, *The Anglo-Saxon Cemetery at Spong Hill, North Elmham: Occupation during the Seventh to Second Millennia BC* (Gressenhall, 1988); Bradley, 'The Worked Flint'.

recording of butt and termination type, flake type, hammer mode, and the presence of platform edge abrasion.[75]

Provenance

The vast bulk of the assemblage was recovered from sampled ditch fills (93%) including a sizeable quantity from the penannular gully (32%). Only a very tiny quantity was recovered from contemporaneous features, including just one tool from a tree-throw hole and a small collection of six flints – four flakes, a blade and a piece of waste – which were scattered over four different pits. The lack of contemporary flintwork from Bronze Age pits is surprising given the easy availability of flint in Oxfordshire including in the local Northmoor gravels.[76] Burnt flint was present in seven contexts but never exceeded 64g in total weight (from one of the fills of field system ditch 201) or 25 in fragments count (from one of the fills of the connecting ditch, 207).

Raw material and condition

The assemblage was in moderately good condition with only one rolled piece and a slight dominance of fresh material (47%) over lightly edge damaged pieces (34%). Flints usually displayed low (59%) or moderate (41%) levels of cortication and were generally of good quality but did include pieces taken from thermal fragments including one remarkable piercer on a pot-lid fracture. Thermal surfaces accounted for 25% of cortex types and there was also 25% with weathered cortex, as well as 19% with weathered chalk and 12.5% with unmodified chalk cortex. The remaining pieces were either rolled (6%) or had indeterminate cortex (12.5%). This indicates that most of the flint was recovered from secondary sources. Some of the flint did display thermal/re-used surfaces that may indicate later prehistoric scavenging of flint.

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[75] J. Tixier, M. L. Inizan, H. Roche, and M. Dauvois, *Préhistoire de la Pierre Taillée. I Terminologie et Technologie* (1980); P. Harding, 'The Worked Flint', in J C Richards, *The Stonehenge Environs Project* (London, 1990); K. Ohnuma and C. Bergman, 'Experimental Studies in the Determination of Flaking Mode', *Bulletin of the Institute of Archaeology, London*, 19 (1982), pp. 161-70; A. Saville, 'On the Measurement of Struck Flakes and Flake Tools', *Lithics*, 1 (1980), pp. 16-20.

[76] A. J. Newell, *Morphology and Quaternary Geology of the Thames Floodplain around Oxford*, British Geological Survey Open Report, OR/08/030 (2007).

The assemblage

The assemblage had a fairly high blade index of 29% indicating that at least a part of the assemblage relates to early prehistoric activity.[77] Cores were absent from the assemblage and only one core maintenance piece – a crested bladelet – was recovered. This piece was also clearly early prehistoric in date. Only three tools were recovered, although this represents a high percentage (8%) of the small assemblage of 37 significant pieces. The tools consisted of a backed blade, possibly used as a knife, a D-shaped side-and-end scraper and a piercer on a thermal blank. None of these tools are truly diagnostic. However, the backed blade/knife was more likely to be early prehistoric with a Mesolithic or a far less likely late Upper Palaeolithic date. The D-shaped scraper was likely to belong to a later Neolithic or early Bronze Age assemblage while the piercer on a thermal blank was quite typical of later prehistoric expedient knapping strategies and may be contemporary with at least some of the middle Bronze Age features.

The blade forms recovered included several soft hammer-struck examples with platform abrasion. These are clearly a product of an intentional blade reduction strategy rather than being accidental blade forms in a later prehistoric industry. The flakes in the assemblage are quite varied but only one or two could be seen as typifying later prehistoric strategies.

The assemblage did not contain any sizeable assemblages of culturally related pieces. All of the larger assemblages largely consisted of fine shatter (recovered in environmental samples). It is difficult to unequivocally identity this material as being the result of human action. Later prehistoric knapping strategies were very basic in their platform preparation, and microflakes derived from such activity display few obvious characteristics of human agency. Distinguishing human shatter from mechanical can, as a result, be very difficult. Most of these larger assemblages do, however, contain at least one or two genuine larger pieces, and knapping debris is not entirely unexpected.

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[77] S. Ford, 'Chronological and Functional Aspects of Flint Assemblages, in A. G. Brown and M. R. Edmonds (eds.) *Lithic Analysis and Later British Prehistory: Some Problems and Approaches*, BAR Brit. Ser. 162 (1987) pp. 67-81.

Discussion

The flint assemblage provides few clear indications of the character of past human activities on the site. The very sparse assemblage does, however, indicate limited early prehistoric activity. This was more clearly evidenced in the flint from the first phase of excavations. The flint also indicates very limited activity in the late Neolithic-early Bronze Age and the middle Bronze Age.

Although it has been suggested that the burning and crushing of flint may have been practised here in order to produce temper for pot production, none of the contexts that yielded burnt flint appear to have been related to this activity, and were most probably waste from standard domestic activities such as cooking/heating water. In any event, the detritus from everyday activities would probably generate enough burnt flint to provide for temper rather than there being any form of specialised industrial process.[78]

Perhaps of most interest is the lack of flint cores and flake debitage tools dating to the later prehistoric period (in which flintwork can often account for a significant component of any artefactual assemblage). This is readily apparent in regions with easy access to flint such as Kent or Sussex, but here, the short distance required or minimal effort needed to find suitable nodules may have been impediment enough for flint to only form a minor component of any tool inventory. This may provide an indication of the regard in which flint was held in the middle Bronze Age and later periods, and provides a counter to arguments that Iron Age flintworking was commonly practised.[79]

PREHISTORIC POTTERY by LISA BROWN

A small collection of 74 sherds of prehistoric pottery weighing 1034g was recovered from the fills of eight ditches and two pits. With the exception of one certain and two probable Iron Age vessel fragments, the assemblage belongs to the Bronze Age. The most closely dateable forms of this period belong to the middle

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[78] see Brown in Brady *et al*., 'A Bronze Age Field System'.

[79] J. Humphrey and R. Young, 'Flint Use in Later Bronze Age and Iron Age England - Still a Fiction?', *Lithics*, 20 (1999), pp. 57-61.

Bronze Age Deverel-Rimbury tradition of southern England (*c* 1600–1100 BC), and resemble the pottery assemblage from the Phase 1 excavations to the south.[80]

The pottery is in moderate to poor condition: some 35% of the sherds were recorded as highly abraded. A single 50g fragment of a decorated globular urn was found in an unabraded state in ditch 207.

Methodology

Fabrics were identified with the aid of a hand lens and binocular microscope at 20x and 10x magnification, and were classified using an alpha-numeric dominant inclusion code, further subdivided by the size and frequency of the inclusions, following the guidelines of the Prehistoric Ceramics Research Group.[81] The pottery was recorded by context group. All fragments were counted and weighed, and refits were noted. The following characteristics were entered in separate fields: fabric, form, surface treatment, decoration, degree of abrasion, type and position of residue and date. Degrees of abrasion were based on three broad categories: (3) high - surface survival minimum, breaks heavily eroded; (2) moderate - surface somewhat preserved but clearly worn; (1) slight - little indication of wear apparent.

Fabrics

Nine fabrics within four ware groups were identified. All except one newly identified fabric (QU3) correspond to fabrics identified within the Phase 1 assemblage. The new fabric is represented by a single sherd and is probably of Iron Age date.

Predominantly flint inclusions

FL1 Lightly sanded, slightly micaceous clay additionally containing common ferrous inclusions (red and black) and occasional unwedged argillaceous lumps.

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80 Brady *et al*., 'A Bronze Age Field System'.

81 Prehistoric Ceramics Research Group, *The Study of Prehistoric Pottery. General Policies and Guidelines for Analysis and Publication*, PCRG Occasional Papers 1 and 2, 3rd edn (2010).

Tempered with common ill-assorted calcined white/grey flint pieces measuring 0.5-5mm and rare dark grey grog (45 sherds/705g).

FL2 Clay matrix similar to FL1 but may have a slightly soapy texture and flint temper is better sorted and somewhat smaller at 0.5–3mm. The distinction between FL1 and FL2 is not always clear and the two are on a continuum (4 sherds/66g).

FL3 Very lightly sanded, slightly micaceous clay incorporating sparse ferrous inclusions (black and red) and common to abundant well-sorted white/grey flint pieces typically 0.5–2mm in size, generally <2mm. Surfaces generally smoothed or burnished and vessels thin-walled (16 sherds/200g).

FL4 Very fine micaceous sand, rare ferrous inclusions, spare to moderate scatter of small white/grey flint pieces, generally 2mm and smaller. The texture is somewhat soapy (1 sherd/1g).

Predominantly quartz sand inclusions

QU1 Moderately fine, abundant rounded quartz sand and visible glauconite pellets. Fires to uniform dark grey throughout (4 sherds/27g – single vessel)

QU2 Abundant rounded quartz sand of medium grade, and common ferrous inclusions. Date uncertain, possibly later prehistoric or Roman (not represented in the Phase 2 assemblage)

QU3 Very fine micaceous glauconitic silty clay with sparse inclusions of weathered mudstone (1 sherd/12g)

Predominantly shelly inclusions

SH1 Fine smooth clay with minimal sand content, incorporating sparse inclusions of platey fossil shell (1 sherd/10g)

Predominantly grog-inclusions

G1 Smooth fine clay with ferrous inclusions, small grey/brown grog lumps and sparse calcined flint pieces <2mm (2 sherds/13g)

Flint-tempered fabrics account for almost 90% of the total assemblage by sherd count. They have been divided into four subgroups which exhibit a degree of overlap. They all contain naturally occurring well-rounded quartz sand within a slightly micaceous clay matrix, sometimes rare inclusions of dark grey grog, and consistently include black and red ferrous inclusions in varying densities, suggesting that the clays were procured from a single, probably near-local, ferrous-rich source. The site is situated just to the north of the chalk scarp that runs along the Berkshire Downs, the likely source of the flint, which could have been collected as nodules, and calcined, crushed and graded as temper depending on the vessel type and function. The coarsest and most poorly sorted fillers (FL1 and FL2) were used for larger, thick-walled vessels, and finer, well-graded flint temper (FL3–4) for smaller, sometimes decorated vessels.

The coarsest variety (FL1) dominates both the flint-tempered and total site assemblage, accounting for 61% of the pottery by sherd count and 66% by weight. A high average sherd weight of 16g and the greater wall thickness for this fabric group indicates that, although the only diagnostic sherds belong to a large flat base from ditch 210, this group represents large middle Bronze Age forms – probably Bucket or Barrel urns of the type recovered during the Phase 1 excavations.[82]

Fabric FL2 is represented by only four sherds (66g) belonging to a fairly large vessel of uncertain form with a slight carination. Some 200g (16 sherds) of the finer fabric FL3 were found in Area 2. Discounting a single residual sherd in this fabric from Roman ditch 217, this group was recovered from secure middle Bronze Age ditches (201, 207 and 210). Only a single small weathered and residual fragment of the fine, soapy fabric FL4 was identified. It was found in a soil sample taken from the fill (3011) of post-medieval ditch 305.

Other fabrics are uncommon, accounting for only 10% of the assemblage. These include four conjoining sherds (27g) of a single early Iron Age red-finished bowl in glauconitic sandy ware QU1, which was residual in Roman ditch 313. A single body sherd from Roman ditch 309 in fabric QU3 containing fragments of weathered mudstone closely resembles the dominant early-middle Iron Age fabric recovered

[82] Brown, in Brady *et al*., 'A Bronze Age Field System'.

from Great Western Park, Didcot.[83] The current site is located on Gault Formation mudstone, so the fabric was probably locally sourced, and is likely to be Iron Age. Two small featureless grog-tempered sherds (G1), both from penannular gully 210 (one weighing only 3g), are not in themselves closely dateable, but their general appearance suggests a Bronze Age rather than a later date. The single shell-tempered sherd (SH1) from pit 1024 is horizontally combed or striated, and although not closely dateable, on balance this specific treatment more closely resembles late Iron Age or early Roman than, for example, early Iron Age 'furrowed bowls'.

Form and decoration (Fig. 21)

The number of classifiable forms is limited to four vessel fragments. The large coarseware base from penannular ditch 210 probably belonged to a Bucket or Barrel Urn. Field boundary ditch 201 yielded fragments of one certain and one probable Globular Urn, both in FL3. One is a simple undecorated example with a slightly incurving wall and roughly smoothed surface (Fig. 21, no. 1). The other is a very small fragment decorated with faintly incised diagonal lines on a slightly constricted neck (Fig. 21, no. 2), a motif typically seen on Globular Urns.[84] A third probable Globular Urn fragment in FL3 (Fig. 21, no. 3) was recovered from ditch 207, which linked field boundary ditch 201 and penannular gully 210. This particularly ornate fragment is well-smoothed and divided into zones by five horizontal lines, with diagonally tooled lines above the uppermost, and stab marks between two others. The sherd may have been deliberately selected and deposited in this ditch, judging by its unusually unabraded condition and by the possibly significant character of the feature, but this is speculative.

The range of vessel forms utilised at the settlement includes at least two of the classes of Deverel-Rimbury urns (Bucket/Barrel and Globular) described by Ellison and summarised by Gibson.[85]

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[83] Brown, in Hayden *et al*., *Great Western Park*.

[84] Ellison, 'Towards a Socio-economic Model'; A. Gibson, *Prehistoric Pottery in Britain and Ireland* (Stroud, 2002), p. 106.

[85] A. Ellison, 'Pottery and Settlements of the Later Bronze Age in Southern England', unpublished PhD thesis, Univ. Cambridge (1975); Gibson, *Prehistoric Pottery*, p. 105.

Although no features were reliably dated to the Iron Age, the residual and highly abraded red-finished early Iron Age bowl from Roman ditch 313 (Fig. 21, no. 4) probably originated from a nearby settlement.

The pottery in context

The significant features that produced prehistoric pottery are summarised in Table 14. Quantities are very small in all cases, but the fabrics and forms identified enhance the range seen in the combined assemblages from the current site and the Phase 1 excavations.

Prehistoric pottery: discussion

In summary, this very small collection of pottery adds to the somewhat larger pottery assemblage from the Phase 1 excavations, and was recovered from features that probably represent contemporaneous elements of the same field system. This period was characterised in the Oxfordshire region, as elsewhere in southern Britain, by an increase in permanent settlement activity and the division of the landscape through the construction of field systems and land boundaries. The way in which pottery was produced, used and discarded all reflect these wider social changes. The large coarseware urns were probably utilised as stationary storage vessels since their size and weight would have made them unsuitable for frequent movement, and they are often found in settings that indicate a non-funerary association, as at this site. The smaller Globular Urns could have served a range of functions, and those with complex ornamentation were obviously designed to be noticed.

ROMAN POTTERY by PAUL BOOTH

The excavation produced a small assemblage of Roman pottery comprising 104 sherds (1126g, 0.83 REs). This was fully recorded on an Excel spreadsheet using the Oxford Archaeology (OA) system for later prehistoric and Roman pottery (Booth 2014), with sherds assigned to subgroups or individual fabrics/wares within major

ware classes.[86] Quantification of wares within individual context groups was by sherd count and weight. Vessel types were quantified by rim equivalents (REs) and by a more subjective vessel count (MV) based on rim sherds. Details of decoration were recorded, as well as evidence of use and reuse where identifiable. A further 11 sherds of Roman date were recovered in the evaluation phase of the project.[87] These have not been re-examined but are consistent in character with the excavation assemblage.

The pottery is in moderate condition. The mean sherd weight (10.8g) indicates a fairly fragmented assemblage, and the surface condition of sherds was variable, ranging from good to heavily eroded in a few cases. The assemblage includes material that may date from the 2nd century onwards, but the majority of the pottery is probably or certainly of late Roman date.

Fabrics/wares and forms

The Roman fabrics are listed and quantified in Table 15, within the series of major ware groups defined by the OA system on the basis of significant common characteristics. Summary fabric descriptions or labels are given. Fuller descriptions can be found in the project archive and/or in the handbook to the National Roman Pottery Fabric Reference Collection.[88] Fabric codes from the latter are cross referenced in the table in bold. Attribution of sherds to ware groups or to individual fabrics was on the basis of macroscopic inspection, with use of a binocular microscope at x10 or x20 magnification as required.

The majority of the pottery was from local or regional sources, four tiny fragments of Central Gaulish samian ware (from a single vessel) being the only imported material. The dominant reduced coarse ware fabrics – R10 and R30 – are probable or certain Oxford products, but general fabric codes are used because the rather undiagnostic character of these fabrics means that attribution to an Oxford source cannot always be certain; material from other (unknown) local sources using

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[86] P. Booth, 'Oxford Archaeology Roman Pottery Recording System: An Introduction', unpubl. OA document, revised (2014).

[87] Wessex Archaeology, 'Land West of Bellinger's Garage'.

[88] R. Tomber and J. Dore, *The National Roman Fabric Reference Collection: A Handbook*, Museum of London Archaeology Services Monograph No 2 (1998).

similar clays in the same tradition would not be distinguishable macroscopically. Most of the coarse sand-tempered wares of the R20 group, however, reflect sources located south of the Oxford industry, including possible products of the kilns at Compton, Berkshire (fabric R23).[89] Shell-tempered wares were another significant component of the assemblage, and included characteristic late Roman 'Harrold type' products (fabric C11).[90] It is possible that more of the sherds recorded as fabric C10 were also from this source, but products of a more local shell-tempered tradition are widespread in the region in the middle Roman period, and the small fragments lacked diagnostic features such as horizontal rilling of the surfaces characteristic of C11. Amongst the other coarse wares, oxidised sherds from the north Wiltshire industry (O30) were notable. A small sherd of pink grogged ware (fabric O81) is close to the southern limit of the distribution of this fabric[91] and the sherd of fabric O24 towards its western limit.

Fine wares consisted entirely of Oxford or probable Oxford colour-coated ware, and included examples of Young types C45, C51 and C75, of which only C51 was represented by a rim.[92] Other rim sherds were from rather undistinctive jars or probable jars (7) in fabrics R30, B30, C10 and C11, and from dishes. All three of the latter were of a distinctive late Roman form with slightly incurving sides and broad oblique burnished line decoration. This form is associated with the Oxford production site at Blackbird Leys[93] and the two examples in fabric R30 might have come from that site, but there are other sources as well, and the third example here is in the possible Compton fabric R23.

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89 W. K. Hardy, 'Romano-British Pottery Kilns between Compton and Aldworth, Berkshire', *Trans Newbury and District Field Club*, 7 (1937), pp. 211-16; W. E. Harris, 'The Later Romano-British Kiln in Compton, Berkshire', *Berkshire Archaeol J,* 39 (1935), pp. 93-5.

90 A. Brown, 'A Romano-British Shell-gritted Pottery and Tile Manufacturing Site at Harrold, Beds', *Bedfordshire Archaeol*, 21 (1994), pp. 19-107.

91 J. Timby, 'Pottery', in A. Barber and N. Holbrook, 'A Romano-British Settlement to the Rear of Denchworth Road', p. 315.

92 C. J. Young, *The Roman Pottery Industry of the Oxford region*, Brit Archaeol Rep Brit Ser 43 (1977).

93 S. Westlake and P. Booth, *Roman Pottery Production at Blackbird Leys, Oxford: the illustrated vessels* (2007), www.thehumanjourney/publications/downloads

Context and chronology

One Roman sherd (18g) came from a post-medieval context in Area 1, and three sherds (9g) came from Area 2. The rest of the pottery was from Area 3, but only 68 sherds (752g) were in contexts assigned to the Roman period. Nine of these sherds (195g) were from pit fills and the rest from ditches. Inevitably most of the context groups were too small to allow close dating or other characterisation, but a number of ditch fill contexts, mostly in ditch 312 but also in one case in ditch 309, can all be dated to the late Roman period, and for all except one of these (with a broad mid 3rd-4th century date), a date in the second half of the 4th century is very likely. This is based on the presence of Harrold type shell-tempered ware, supported by other distinctive late Roman markers such as Overwey fabric O24 (a rilled body sherd) and the Oxford type C75 bowl, the latter dated after AD 325.[94] The date of the distinctive curving-sided dishes is less clear, though they cannot be earlier than the 4th century. A variant of this type with applied bosses is considered by Lyne to be potentially of early 5th-century date, with Oxfordshire examples attributed by him to the Compton kilns.[95] The Blackbird Leys evidence (above) suggests, however, that the parent form is most likely to originate rather earlier in the 4th century, and it may be doubted that the variant with bosses was exclusively of 5th-century date.

The late Roman emphasis of the assemblage is also seen in the slightly larger collection of pottery from the evaluation of the site immediately adjacent to the north, including at least a few groups for which a date in the second half of the 4th century is likely.[96] This trend is evident in other rural settlement assemblages in the near vicinity, for example at East Hanney, where fabrics such as C11 and F51 were sufficiently well-represented to indicate at least some activity after *c* AD 350,[97] and at

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94 Young, *The Roman Pottery Industry*, p. 166

95 M. Lyne, The end of the Saxon Shore fort system in Britain: new evidence from Richborough, Pevensey and Portchester, in N. Gudea (ed.), *Roman Frontier Studies: Proceedings of the XVIIth International Congress of Roman Frontier Studies, Zalau* (1999), pp. 285-6, 290-1, figs 4 and 5; M. Lyne, *Late Roman Handmade Grog-tempered Ware Producing Industries in South East Britain*, Archaeopress Roman Archaeology 12 (2015), pp. 97-9.

96 E. Biddulph, 'Roman pottery', in Thacker and Boothroyd, 'Land at Williams Holdings', pp. 52-5.

97 Oxford Archaeology, 'Abingdon Reservoir Proposal, Abingdon, Oxon – 1998. SU 430925. Archaeological evaluation report', unpublished report (1998); Hearne, 'Archaeological Evaluation in the Vale of the White Horse', pp. 9-10.

villas such as Chilton[98] and Barton Court Farm[99], as well as at the nearby probable minor nucleated settlement at Wantage.[100] The presence of late Roman shell-tempered ware, by no means present in all rural assemblages in the region, is a common factor at all of these sites, alongside the more obvious late Roman Oxford fine wares. The assemblage is unfortunately too small to allow comparative analysis[101] that might shed more light on the particular character of the settlement from which it was derived.

THE CERAMIC BUILDING MATERIAL by RUTH SHAFFREY

A total of 70 fragments of ceramic building material with a mean fragment weight of 38g was recovered from a range of features. All the material has been recorded into an Excel spreadsheet, which can be found in the project archive, and has been summarised in Table 16.

Roman

The Roman ceramic building material recovered from Roman contexts (Table 17) include fragments of imbrex tile, box flue tile and flat tile. Four imbrex tile fragments, possibly from the same tile, were found in ditch 312. A single piece of box flue tile and other flat tile fragments were found in the same ditch. The box flue tile retains coarse waved combing with seven lines. Most of the ceramic building material is made from a dark orange fine-grained silty fabric with no obvious sand or a fine-grained sandy fabric with occasional ferruginous inclusions. Undiagnostic fragments were not examined in detail.

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98 J. Timby, 'Pottery', in J. Pine and S. Preston, *An Iron Age Round House and Roman Villa at Chilton Fields, Oxfordshire,* Thames Valley Archaeological Services Monograph 21 (2015), pp. 42-5.

99 D. Miles, D. Hofdahl, and J. Moore, 'The pottery', in D. Miles (ed.), *Archaeology at Barton Court Farm, Abingdon, Oxon: An Investigation of Late Neolithic, Iron Age, Romano-British and Saxon settlements*, CBA Res Rep 50 (1986), fiche 7:A1-7:G6.

100 J. Timby, 'The pottery', in Holbrook and Thomas, 'The Roman and Early Anglo-Saxon Settlement at Wantage', p. 136; J. Timby, 'Pottery', in Barber and Holbrook, 'A Romano-British Settlement to the Rear of Denchworth Road', p. 313.

101 cf eg P. Booth, 'Quantifying Status: Some Pottery Data from the Upper Thames Valley', *J Roman Pottery Stud* 11 (2004), pp. 39-52.

The ceramic building material is fragmentary in nature and although there are hints of the existence of a hypocaust and a ceramic roof, it is not enough to indicate the presence of such features on site.

Post-Roman and residual Roman

Of the 70 fragments, 58 were recovered from medieval, post-medieval or unphased features (Table 17). This material includes residual Roman ceramic building material in the form of bricks (furrow 1015; land drain 305), imbrex (land drain 319) and flat tile, but most of these fragments are small and very little can be determined about their form. Of the material from post-Roman contexts, there are also fragments of medieval peg tile (land drain 305) and undiagnostic fragments.

SMALL FINDS

The only small finds recovered from the site are a probably quite recent unidentified copper alloy coin, fragments of iron largely derived from nails, three fragments of clay tobacco pipe stem, and two fragments of glass. Many of these finds are of relatively recent date and derive from the land drains and furrows.

The copper alloy coin was recovered from a furrow (1015) in Area 1. It is too corroded to be identified, and its measurements – 28.4mm across, 1mm thick – and weight of 8g do not obviously match those of any British coinage of the last few centuries.

The remaining metalwork consists almost entirely of fragments of iron nails of varying size. Such fragments were recovered from Roman ditches (306 and 312), a furrow (1015) and land drains (305, 307 and 319). One fragment was recovered from one of the ditches (315) defining the middle Bronze Age trackway ditches in Area 3. This nail fragment came from intervention 3117 which lay immediately adjacent to the point where the middle Bronze Age ditch (312, 315) was cut by a Roman ditch (314) and it is likely that the nail was intrusive. A T-shaped fragment from an unidentified iron object was also recovered from Roman ditch 312.

The two small fragments of glass - one of brown glass, decorated with fine grooves filled with translucent white glass, the other of blue-green glass, probably from a bottle, were both recovered from land drains (305 and 319).

The three small fragments of clay pipe stem were recovered from furrow 1015 in Area 1.

ENVIRONMENTAL AND ECONOMIC EVIDENCE

ANIMAL BONE by LEE G. BRODERICK

The Phase 2 excavations recovered only a small assemblage of animal bone which, however, complements that recovered from the Phase 1 excavations.[102] Unlike the Phase 1 assemblage the largest component from the Phase 2 excavations was dated to the Roman period, although Bronze Age and post-medieval material was also present. It has been reported in greater detail in the site archive.

The middle Bronze Age

A total of 55 specimens were recovered from middle Bronze Age contexts (Table 18). These include 27 specimens which were identified to species or category (such as 'medium mammal') level, using Oxford Archaeology's reference collection as well as standard identification guides and a diagnostic zone system.[103] Domestic cattle (*Bos taurus taurus*), caprines (sheep [*Ovis aries*] and/or goat [*Capra hircus*]) and pig (*Sus scrofa domesticus*) are all present. Such a small assemblage adds little to our understanding of the Bronze Age in this area, although it augments the larger assemblage recovered from the Phase 1 excavations.[104]

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[102] L Strid, 'Animal Bone', in Brady *et al.*, 'A Bronze Age Field System'.

[103] D. Serjeantson, 'Animal Bone,' in S. Needham and T. Spence (eds.), *Runnymede Bridge Research Excavations, Volume 2: Refuse and Disposal at Area 16 East, Runnymede* (London, 1996), pp. 194–223.

[104] Strid, 'Animal Bone', in Brady, *et al.*, 'A Bronze Age Field System'.

The Roman Period

Although 68% of the assemblage came from contexts dated to the Roman period (NSP=271), the specimens are very fragmentary: 226 specimens could only be identified as far as a size category (199 large mammals, for example). Of those that could be identified to species horse (*Equus caballus*) was present in addition to those species recorded from the Bronze Age contexts.

Eight out of twelve horse specimens came from a single context (3028, a fill of the large ditch 312, at the northern edge of Area 3), which also contained two cattle specimens. These eight specimens consist of metapodials and phalanges as well as a single radius. Horse head and hoof assemblages are known from the Iron Age in Britain and are usually interpreted as having been displayed with the head mounted on a stick and the hide still attached to the head and hooves. The presence of the radius here might argue against the rest of the specimens still being attached to a hide, but it is, nevertheless, possible that they come from the same individual and were semi-articulated at the time of deposition. In general, however, horse appears to have been far more common the Upper Thames Valley than it was elsewhere in Britain at this time.[105] A metacarpal from this group had a GL of 220mm,[106] giving a withers height of 1409mm or 13.8 hands,[107] which is typical of British horses of this period.[108] Another horse specimen – a humerus – exhibits multiple superficial chop marks along the shaft and distal end of the bone (which is fused).

Two of the twelve cattle specimens recovered from this phase show signs of having been gnawed by canids, suggesting that dogs may have also been present on the site.

Also present in this Roman assemblage were domestic fowl (*Gallus gallus*) and goose (cf *Anser anser*).

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105 L. Strid, 'Animal Bone', in Hayden *et al.*, *Great Western Park;* L. Strid, 'Animal Bone,' in P. Booth *Gill Mill* (in. prep.)

106 A. von Den Driesch, *A Guide to the Measurement of Animal Bones from Archaeological Sites* (Cambridge, Mass., 1976).

107 E. May, 'Widerristhöhe und Langknochenmaße bei Pferden - ein immer noch aktuelles Problem', *Zeitschrift für Säugetierkunde*, 50, (1985), pp. 368–82.

108 C. J. Johnstone, *A Biometric Study of Equids in the Roman World* (York, 2004).

The post-medieval period

Four horse specimens were also present in the small post-medieval component of the assemblage. Two of these, along with the pig specimen, had been gnawed by canids and it is possible that the horse, in particular, may have been butchered specifically for feeding to dogs, something that was not uncommon at this time.

CHARRED PLANT REMAINS by SHARON COOK

Nineteen bulk soil samples were taken, of which seventeen are reported here. The remaining two samples were from post-medieval contexts and do not form part of this analysis. The samples details are shown in Tables 19 and 20. The recorded samples varied in size from 6 to 40 litres, although most were 30–40 litres, and came mainly from middle Bronze Age and Roman pit and ditch fills.

Methodology

The samples were processed at Oxford Archaeology using a modified Siraf-type water separation machine. The flots were collected in a 250µm mesh, and heavy residues in a 500µm mesh. The residue fractions were sorted by eye while the flot material was sorted using a low power (x10–x40) binocular microscope for cereal grains and chaff, smaller seeds and other quantifiable remains. Identifications were carried out using standard morphological criteria for the cereals, and by comparison with modern reference material.[109] Wild plant seed identifications were made with reference to modern reference material and published keys and illustrations.[110] Classification and nomenclature of plant material follows Stace.[111]

Results

Tables 19 and 20 list the plant remains identified from each sample. The majority of the flot volume consists of modern roots with only a small proportion of burnt

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109 S. Jacomet, *Identification of Cereal Remains from Archaeological Sites*, 2nd edn (2006).

110 R. T. J. Cappers, R. M. Bekker and J. E. A. Jans, *Digitale Zandenatlas Van Nederland* (2006); R. T. J. Cappers, and R. M. Bekker, *A Manual for the Identification of Plant Seeds and Fruits* (2013).

111 C. Stace, *New Flora of the British Isles*, 3rd edn (Cambridge, 2010).

material present. Charcoal in all samples is small with the majority of fragments less than 2mm in diameter and is not suitable for wood species identification. The general condition of charred remains is poor with the majority of material being fragmentary and heavily burned. Cereal fragments smaller than 2mm have not been quantified for this reason.

Land snails are common within all samples but especially in sample 114 which contains over five hundred individuals, *Cecilioides acicula*, a modern burrowing snail, is present in almost every sample.

The middle Bronze Age (Table 19)

Five samples originated within the fills of the middle Bronze Age penannular ditch (210). These samples contained very little identifiable material. All charred grain was fragmented and could not be identified further. It is likely that the presence of this material is a result of secondary deposition.

Two samples derive from a field boundary ditch (201) and the short ditch (207) which connected this boundary to the penannular gully in Area 2. These samples contain the richest Bronze Age assemblages from this site, but again the condition of the remains is poor and fragmentary with the chaff fragments especially being particularly small. This is also likely to be the result of secondary deposition although the larger quantity of material may indicate a position close to the focus of the settlement.

Two further samples, taken from the inner of the two ditches (316) defining the trackway corner in Area 3, contained only occasional charred plant remains and small charcoal fragments.

A single sample from middle Bronze Age pit 3003 also contained very little material. As preservation within pit fills is often better than that observed within ditch fills, it again seems likely that the remains were accidental, secondary inclusions.

The Roman period (Table 20)

Five samples were taken from the fills of the (for this site) deep Roman pit 3121 in Area 3. The upper fill of the feature (sample 103) contains the majority of the charred material with smaller quantities appearing in each preceding fill. As with the Bronze Age samples preservation is poor and the material badly fragmented.

Two samples are from Roman ditch fills in Area 3. While one of these samples, from ditch 303, is almost without charred material, the other, from ditch 312, produced a fairly large quantity of charred material including both grain and chaff, consisting mainly of fragmented wheat glume bases. It also contained large quantities of charred wild plant seeds. The majority of the weed seeds are less that 1mm in size and many are in poor condition and consequently remain unidentified. Of the seeds which were identifiable, the majority are typically found in arable fields or waste ground including stinking chamomile (*Anthemis cotula*), knotweed (Polygonaceae), docks (*Rumex* spp.), stitchwort/chickweed (*Stellaria* sp.) and goosefoots (*Chenopodium* sp.) with other seeds such as spike rush and sedges (Cyperaceae) suggesting the burning of weeds from damp ground.

Discussion

The paucity of charred plant remains from middle Bronze Age contexts in the Phase 2 excavations contrasts with the more frequent and diverse material recovered during the Phase 1 excavations, although even there the evidence for arable agriculture was limited.[112] The lack of charred seeds within the penannular gully is, however, perhaps to be expected since any charred material within this feature is likely to have been incidentally incorporated from floor sweepings or wind-blown material. Field boundary and trackway ditches located some way from settlement activity are also unlikely to contain dumps of charred remains, although the quantities of finds recovered from the ditches in Area 2 near to the penannular gully do suggest the incorporation of some domestic waste within these features.

Where charred seeds have been recovered it has unfortunately not been possible to identify the cereal grains to taxon but it would seem likely that these are either emmer (*Triticum dicoccum*) and/or spelt wheat (*Triticum spelta*) due to the presence of glume

[112] S. Boardman, 'Charred Plant Remains and Wood Charcoal' in Brady, *et al*., 'A Bronze Age Field System'.

wheat chaff fragments. This is in contrast with the Phase 1 excavations[113] and the evaluation at Williams Holdings.[114] In the former, barley (*Hordeum* sp., including six-row barley *H. vulgare*) and oats (*Avena* sp.) were both present, in addition to glume wheat (including emmer), large legume and a range of edible wild plants. Although there were two small fragments of hazelnut shell in samples from the current excavation, evidence for other wild plant foods was absent.

The few wild plant seeds are from common weeds of cultivation which are frequently seen both within the margins of cultivated fields and other disturbed ground, in both damp and dry conditions, but with relatively few seeds it is not clear that these were burnt as crop processing waste. Previously it has been suggested that grassy material, possibly collected for animal fodder or bedding, had been burnt.[115] The species identified in this phase of excavation are largely the same as those noted from the previous evaluation and excavation which indicated the presence of rough ground and grassland in the vicinity of the settlement during the middle Bronze Age.

Only one of the Roman samples, from ditch 312, contained a significant quantity of charred plant remains, although most grain and glume bases were fragmented and identifiable only as emmer/spelt. Where further speciation was possible spelt wheat (*Triticum spelta*) was identified, which is typical for Roman arable cultivation. The presence of both grain and chaff suggests the burning of a crop rather than processed grain or processing waste; the abundant small-sized weed seeds suggests that the crop had not been cleaned.

The small quantity of oats (*Avena* sp.) noted within the sample from ditch 312 may represent a crop contaminant rather than a cultivar. This is likely to be the case for the majority of wild species noted within the Roman samples, which, with the exception of the rich sample from ditch 312, are similar to those observed within the Bronze Age samples and may have grown on cultivated or other disturbed ground.

The sample from ditch 312 includes a much wider range of plant remains than the other samples and includes a number of taxa such as sedges and rushes that have a preference for damp ground. Stinking chamomile (*Anthemis cotula*) is more

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113 Ibid.

114 S. Cook, 'The Charred Plant Remains', in Thacker and Boothroyd, 'Land at Williams Holdings'.

115 Boardman, 'Charred Plant Remains and Wood Charcoal'.

frequently found on damp, heavy clay or clay loam soils and its presence together with seeds from other plants of damp ground may indicate cultivation of the damper heavier soils located to the west and south of the site during this period. It must always be remembered, however, that many wild species considered to be weeds have a wide range of tolerance and may be found in areas which would not be considered optimum.

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Table 1: Summary of geological context of middle and late Bronze Age field systems in the Upper Thames Valley[1]

Site	***Superficial geology***	***Bedrock geology***	***Period***	***References***
Monks Farm and Williams Land, Grove	Northmoor Sand & Gravel	Gault formation	MBA	This report; Brady, K, C. Hayden, and R. Early, 'A Bronze Age field system and enclosure, and Bronze Age and Roman burials at Monks Farm, Grove, Oxfordshire', *Oxoniensia* 82 (2017), pp 201-61; G. Thacker and J. Boothroyd, 'Land at Williams Holdings, Grove, Oxfordshire: Archaeological Evaluation Report', unpublished Oxford Archaeology report (2015)
Between Steventon and East Hanney (sites not precisely located)	?Summertown-Radley Sand & Gravel x 2; Northmoor or Summertown Radley Sand & Gravel	?Gault formation x 2; Ampthill/Kimmeridge Clay formation x 1	MBA	C. M. Hearne, 'Archaeological evaluation in the Vale of White Horse, near Abingdon, 1992-99', *Oxoniensia* 65 (2000), pp 7-12
Great Western Park, Didcot, Phase 2	Head - clay, silt, sand & gravel	Upper Greensand formation	MBA	A. Davies, C. Hayden, S. Lawrence, and R. Masefield, *Excavations at Great Western Park, Didcot, Part 2: later prehistoric and Roman settlement and society*, (in prep.)
Great Western Park, Didcot, Phase 1	Head - clay, silt, sand & gravel	Upper Greensand formation	LBA	C. Hayden, A. Simmonds, S. Lawrence, R. Masefield, and K. Wheaton, *Great Western Park, Didcot, Oxon: excavations, 2010-2012*, (in prep.)
Didcot Power Station	Summertown-Radley Sand & Gravel	Gault formation	M/ LBA?	G. Lambrick and M. Robinson, *The Thames through Time: The Archaeology of the Gravel Terraces of the Upper and Middle Thames. Volume 3: The Thames Valley in Late Prehistory, 1500 BC-AD 50* (Oxford, 2009), pp. 79-81; A. Boyle, A. Dodd, D. Miles, and A. Mudd, *Two Oxfordshire Anglo-Saxon Cemeteries: Berinsfield and Didcot* (Oxford, 1995)
Wallingford Road, Didcot	(not recorded by BGS -sandy clay)	Upper Greensand formation/ Gault formation	MBA	I. Ruben and S. Ford, 'Archaeological excavations at Wallingford Road, Didcot, South Oxfordshire, 1991', *Oxoniensia*, 57 (1992), pp. 1-28
Bridge Farm, Sutton Courtenay	Northmoor Sand & Gravel	Gault formation	M/ LBA	Oxford Archaeology, 'Bridge Farm, Sutton Courtenay, Oxfordshire: post-excavation assessment' (2017), unpubl. report
Appleford Sidings	Northmoor Sand & Gravel	Gault formation	MBA	P. Booth and A. Simmonds, *Appleford's Earliest Farmers: Archaeological Work at Appleford Sidings, Oxfordshire, 1993-2000* (Oxford, 2009)
Bradford's Brook/ New Barn Farm, Cholsey	Northmoor Sand & Gravel	West Melbury Marly Chalk Formation	M/ LBA?	A. Barclay, A. M. Cromarty, G. Lambrick, and M. Robinson, *The Archaeology of the Wallingford Bypass, 1986-92: Late Bronze Age Ritual and Habitation on a Thames Eyot at Whitecross Farm, Wallingford* (Oxford, 2005); M. Dodd, New Barn Farm, Cholsey, Oxfordshire: Archaeological Evaluation Report, unpublished Oxford Archaeology report (2016)

[1] In addition to the sites listed in the Table, Yates cites two further coaxial field systems dated only as 'prehistoric' at Sheephouse Farm and Meadow Farm, as well as a major late Bronze Age boundary slighting earlier field systems at Fullamoor Farm, Clifton Hampden. The features at the latter site were exposed over only a very limited area. D. T. Yates, *Land, Power and Prestige: Bronze Age Field Systems in Southern England* (Oxford, 2007); P. Booth, A. Boyle, and G. Keevill, 'A Romano-British Kiln Site at Lower Farm, Nuneham Courtenay, and Other Sites on the Didcot to Oxford and Wootton to Abingdon Water Mains, Oxfordshire', *Oxoniensia*, 58 (1993), pp. 87-217.

Site	*Superficial geology*	*Bedrock geology*	*Period*	*References*
Northfield Farm, Long Wittenham	Northmoor Sand & Gravel	Gault formation	M/ LBA?	R. Thomas, 'A Bronze Age Field System at Northfield Farm?', *Oxoniensia*, 45 (1980), pp. 310-11; M. Gray, 'Northfield Farm, Long Wittenham', *Oxoniensia*, 42 (1977), pp. 1-29
?Ashville Trading Estate, Abingdon	Summertown-Radley Sand & Gravel	Ampthill/Kimmeridge Clay formation	MBA	M. Parrington, *The Excavation of an Iron Age Settlement, Bronze Age Ring-ditches and Roman Features at Ashville Trading Estate, Abingdon (Oxfordshire), 1974-76* (Oxford, 1978), p. 10; cited by D. T. Yates, *Land, Power and Prestige: Bronze Age Field Systems in Southern England* (Oxford, 2007)
Eight Acre Field, Radley	Northmoor Sand & Gravel	Kimmeridge Clay	LBA?	A. Mudd, 'The Excavation of a Late Bronze Age/Early Iron Age Site at Eight Acre Field, Radley', *Oxoniensia*, 60 (1995), pp. 21-65
Dorchester	Summertown-Radley Sand & Gravel	Gault formation	MBA	R. Bradley and R. Chambers, 'A New Study of the Cursus Complex at Dorchester on Thames', *Oxford Journal of Archaeology*, 7 (1988), pp. 271-89.
Mount Farm, Berinsfield	Summertown-Radley Sand & Gravel	Gault formation	MBA	G. Lambrick, *Neolithic to Saxon Social and Environmental Change at Mount Farm, Berinsfield, Dorchester-on-Thames* (Oxford, 2010)
East-West Link Road, Banbury	(none recorded)	Mudstone	MBA ?	Allen, T G, 1989 Archaeological discoveries on the Banbury East-West Link Road, *Oxoniensia* **54**, 25-44

Table 2: Summary of middle and late Bronze Age ring penannular and ring gullies in the Upper Thames Valley and other areas[2]

Site (feature no.)	Diameter (m)	Width of gully (m)	Depth (m)	Entrance width (m)	Entrance direction	Reference	Period
Monks Farm	7.9	0.60	0.20	4.4	SE	This report	MBA
East-West Link Road, Banbury (205/208)	10 x 8	0.74	0.48	> *c* 4	W	T. G. Allen, Archaeological discoveries on the Banbury East-West Link Road, *Oxoniensia,* 54 (1989), pp. 25-44	M or LBA
Knight's Farm (147)	12	1.1	0.55	-	-	R. Bradley, S. Lobb, J. Richards, and M. Robinson, 'Two Late Bronze Age Settlements on the Kennet Gravels: Excavations at Aldermaston Wharf and Knight's Farm, Burghfield, Berkshire', *Proceedings of the Prehistoric Society*, 46 (1980), pp. 217-95	LBA

[2] A further possible example exists at Holne Moor, Devon, and ambiguous examples, which might relate to houses or barrows, have been found at two sites in Sussex: the Bexhill to Hastings Link Road, dated to the MBA, and at Peacehaven, where the date of the penannular gully is uncertain: A. Fleming, *The Dartmoor reaves: investigating prehistoric land division*, (2008); M. Donnelly, C. Champness, J. Boothroyd, and A. Davies (in prep.), 'The Bexhill to Hastings Link Road: Post-excavation Assessment and Updated Project Design', (unpubl. report, Oxford Archaeology); D. Hart, *Around the Ancient Track: Archaeological Excavations for the Brighton and Hove Waste Treatment Works and adjacent housing at Peacehaven, East Sussex* (Portslade, 2015)

Site (feature no.)	Diameter (m)	Width of gully (m)	Depth (m)	Entrance width (m)	Entrance direction	Reference	Period
Knight's Farm (193)	3	0.7	0.24	-	-		LBA
Eight Acre Field (109, 126 & 149)	9.5	0.25-0.80	0.40-0.53	>2.4 & *c* 1.0? (Possibly 2 entrances)	SE & NW	A. Mudd, 'The Excavation of a Late Bronze Age/Early Iron Age Site at Eight Acre Field, Radley', *Oxoniensia*, 60 (1995), pp. 21-65	LBA
Shorncote Quarry (305)	10.7	0.45	0.25	9m? And 1m? (just over semicircle survived)	SW & N?	A. Brossler, G. Gocher, G. Laws, and M. Roberts, 'Shorncote Quarry: Excavations of a Late Prehistoric Landscape in the Upper Thames Valley, 1997 and 1998', *Transactions of the Bristol and Gloucestershire Archaeological Society*, 120 (2002), p. 42	LBA
Shorncote Quarry (1010)	12	0.5	0.15	(Only partially within excavation)	?	C. M. Hearne and M. J. Heaton, 'Excavations at a Late Bronze Age Settlement in the Upper Thames Valley at Shorncote Quarry near Cirencester, 1992', *Transactions of the Bristol and Gloucestershire Archaeological Society*, 112 (1994), p. 32	LBA
Shorncote Quarry (368)	11.3	0.45	0.15	3.5	NE	C. M. Hearne and N. Adams, 'Excavation of an Extensive Late Bronze-Age Settlement at Shorncote Quarry, near Cirencester, 1995-6', *Transactions of the Bristol and Gloucestershire Archaeological Society*, 117 (1999), pp. 50-2	LBA
Shorncote Quarry (1550)	11.5	0.38	0.14	(Only partially survived)	-		LBA
Mucking (RH 5)	12	0.5	0.23-0.40	-	-	C. Evans, G. Appleby, and S. Lucy, *Lives in Land. Mucking Excavations by Margaret and Tom Jones, 1965-1978; Prehistory, Context and Summary* (Cambridge, 2015)	LBA
Stansted (MTCP) RH 1 (partial gullies also associated with RHs 2-5 and 7, and with LTCP RH 11)	11.3	*c.* 0.4	-	9.6	SE	Framework Archaeology, *From Hunter-Gatherers to Huntsmen: A History of the Stansted Landscape* (Oxford and Salisbury, 2008), p. 40	MBA
Newark Road, Fengate	9.25	0.25-0.40	0.05-0.15	2.1	E	F. Pryor, *Excavations at Fengate, Peterborough, England: The Third Report* (Toronto, 1980), pp. 53-61	MBA
Bestwall Quarry, Wareham (House 1)	10.6 x 9.0	0.50	0.26	?	E	L. Ladle and A. Woodward, *Excavations at Bestwall Quarry, Wareham, 1992-2005: The Prehistoric Landscape* (Dorchester, 2009)	MBA
Bestwall Quarry, Wareham (House 2)	10.2	0.57	0.16		N, S & SE?		MBA
Bestwall Quarry, Wareham (House 7)	10.0	0.59	0.13		SE		MBA

Table 3: Summary of finds from Phase 1 and Phase 2 excavations (largest groups of finds are marked in bold; large groups in bold italics)

			Pot		***Flint***			***Animal bone***		***CPR***			***Other finds***
Excavation phase	***Area***	***Feature group***	***No. sherds***	***Weight (g)***	***Worked (no.)***	***Burnt unworked (no.)***	***Natural***	***No. frags***	***Weight (g)***	***Grain***	***Chaff***	***Weeds***	
Area 1 enclosure and nearby features													
Phase 1	*5*	*Area 5 western features total*	**119**	3274	18	8		**113**	1178	**244**	**59**	**216**	bone bead/ spacer, 1/9g fired clay oven/ hearth wall or floor
Phase 1	*5*	*Pits in entrance to enclosure total*	**306**	8406	14	1		**99**	1021	***36***	18	**168**	
Phase 1	*5*	*Area 5 enclosure ditches total*	**65**	1032				***26***	294				
Area 2 penannular gully and adjacent features													
Phase 2	*2*	*Area 2, Field boundary 201 total*	***31***	520	2	4	1	7	60	***29***	14	10	
Phase 2	*2*	*Connecting ditch 207 total*	14	185		25		9	1	***27***	11	15	
Phase 2	*2*	*Penannular gully 210 total*	13	125	49*	4	21	20	11	14	3	4	
Field system and trackway ditches													
Phase 1	*4*	*Area 4 total*	14	125				**53**	787				
Phase 1	*5*	*Area 5 total*	2	28				9	87				

			Pot		Flint			Animal bone		CPR			Other finds
Excavation phase	**Area**	**Feature group**	**No. sherds**	**Weight (g)**	**Worked (no.)**	**Burnt unworked (no.)**	**Natural**	**No. frags**	**Weight (g)**	**Grain**	**Chaff**	**Weeds**	
Phase 1	*1 & 2*	*Areas 1 & 2 total*						3	15				
Phase 2	*3*	*Trackway corner total*	4	48	3		4	4	11	2			
Phase 2	*1*	*Field boundary 1042*						14	22				
Phase 2	*2*	*Long trackway 212*						1	2				
Phase 2	*2*	*Field boundary ? 2060*			1								
Other pits and postholes													
Phase 2	*3*	*Pit 3003*	4	66	1			2	12	1			
Phase 1	*2*	*Area 2 pits and postholes total*	9	32		2							1 saddle quern
Cremation burial													
Phase 1	*2*	*Area 2 cremation burials total*	***35***	1277	1	3							

** includes 40 chips from sieving*

Table 4: Dimensions of pre-middle Bronze Age features

Ditch	***Width (median, m)***	***Depth (median, m)***
Area 2		
Southern 'trackway'		
221	0.20	0.06
219	0.23	0.14
205	0.33	0.15
206	0.55	0.14
E-W boundary		
218	0.38	0.08
Western ditch		
220	0.96	0.24
Northern ditches		
223	0.55	0.08
2285	0.82	0.19
Other features in Area 2		
pit 2071	1.00 x>2.30	0.22

Ditch	*Width (median, m)*	*Depth (median, m)*
pit 2041	0.51	0.22
pit 2052	0.30	0.11
TTH 2148	0.80	0.20
TTH 2004	>1.1	0.20
Area 1		
TTH 1074	2.00	0.35
Area 3		
pit 3255	0.42	0.32

Table 5: Summary of dimensions of stratigraphically early ditches in Area 3

Ditch	***Width (median, m)***	***Depth (median, m)***	***Length (m)***
3207	0.39	0.08	7
302	0.45	0.14	20
301	0.52	0.19	49

Table 6: Summary of dimensions of middle Bronze Age features

Feature	***Width (median, m)***	***Depth (median, m)***
Long trackway		
Area 3 west	0.63	0.23
Area 3 east cut 2	0.84	0.36
Area 3 east cut 1	0.50	0.30
Area 2 west (N)	0.80	0.16
Area 2 west (central)	0.52	0.10
Area 2 west (S)	0.53	0.11
Area 2 east cut 2 (211b)	1.01	0.15
Area 2 east cut 1 (212)	0.89	0.31
Area 1 west	1.23	0.23
Area 1 east	1.33	0.30
Trackway overall	0.80	0.21
Area 3 trackway corner		
Inner ditch cut 2	1.16	0.60
Inner ditch cut 1	1.58	0.48
Outer ditch	0.75	0.38

Feature	*Width (median, m)*	*Depth (median, m)*
Field boundary ditches		
Area 2 (201)	0.95	0.35
Area 1 (1042)	0.63	0.20
Area 1 (1072)	1.28	0.35
Penannular gully 210	0.60	0.20
Connecting ditch (207)	0.60	0.26

Table 7: Summary of finds from middle Bronze Age features

	Cut	Context	Pottery		Worked flint	Burnt unworked flint	CPR			Animal bone		Other
			No. Sherds	Weight (g)	No. pieces (no. sieved chips)	No. pieces	Cereals	Cereals chaff	Weeds	No. frags	Weight (g)	
Area 1												
Field boundary 1042	**1046**	**1047**								14	22	
Area 2												
Penannular gully 210	**2188**	**2190**	2	89								
	2172	**2174**	6	13						1	2	
	2166	**2167**			5 (29)		3		1	2	-	
	2166	**2168**					2	1	2			
	2251	**2250**	1	3						14	9	
	2267	**2268**			4 (11)		2	1	1			
	2267	**2269**				2	3	1		3	-	
	2255	**2257**										
	2221	**2222**	4	20			4					

	Cut	Context	Pottery		Worked flint	Burnt unworked flint	CPR			Animal bone		Other
			No. Sherds	Weight (g)	No. pieces (no. sieved chips)	No. pieces	Cereals	Cereals chaff	Weeds	No. frags	Weight (g)	
Connecting ditch 207	**2125**	**2126**	1	37								
	2125	**2127**	10	70		25	27	11	15	9	1	
	2191	**2193**	3	78								
Field boundary 201	**2023**	**2024**				1				1	2	
	2037	**2038**			1							
	2088	**2089**	12	161								
	2088	**2098**	1	33								
	2122	**2124**	16	314		3	29	14	10	5	-	
	2146	**2147**	2	12						1	58	
	2138	**2139**			1							
Field boundary? 2060	**2060**	**2061**			X							
Long trackway 212	**2225**	**2234**								1	2	

	Cut	Context	Pottery		Worked flint	Burnt unworked flint	CPR			Animal bone		Other
			No. Sherds	Weight (g)	No. pieces (no. sieved chips)	No. pieces	Cereals	Cereals chaff	Weeds	No. frags	Weight (g)	
Area 3												
Trackway corner												
Inner ditch cut 1316	**3282**	**3283**	4	48			2		1	2	11	
	3282	**3284**			1							
	3282	**3298**										
Outer ditch 315	**3109**	**3110**			2							
	3112	**3113**								1	0	
	3117	**3118**										Fe nail
	3149									1	9	
Pit	**3003**	**3004**	4	66	1		1			2	12	

Table 8: Summary of dimensions of middle Bronze Age pits and postholes

Location	***Feature***	***Width (m)***	***Depth (m)***
Features near the penannular ring ditch			
Postholes at entrance to ring ditch	2235	0.54	0.12
	2245	0.25	0.11
Postholes inside ring ditch	2182	0.13	0.15
	2237	0.28	0.14
	2323	0.32	0.14
Postholes outside ring ditch	2266	0.34	0.04
	2321	0.41	0.13
Other postholes near the ring ditch	2296	0.48	0.11
	2298	0.46	0.09
Pits near entrance	2204	0.60	0.21
	2206	1.43	0.29
Pits outside ring ditch	2116	0.70	0.08

Location	*Feature*	*Width (m)*	*Depth (m)*
	2319	0.88	0.32
Pits inside ring ditch	2261	0.72	0.12
	2270	0.60	0.25
Area 3 pit	3003	1.10	0.20

Table 9: Summary of dimensions of features dating from between the middle Bronze Age and Roman periods

Ditch	***Width (median, m)***	***Depth (median, m)***	***Length (m)***
East			
208	0.46	0.15	4
211a	0.70	0.19	7
West			
215	0.49	0.12	14
209	0.65	0.36	3.2
216	0.35	0.12	6.5

Table 10: Summary of dimensions of Roman ditches (wide ditches in bold)

East-west aligned ditches			**North-south aligned**		
Ditch	Width (median, m)	Depth (median, m)	Ditch	Width (median, m)	Depth (median, m)
Area 1					
1044	0.60	0.11	1036	0.44	0.12
1058	0.62	0.10	**1056**	**1.26**	**0.30**
			1007	0.36	0.06
Area 2					
213 (=303)	**0.80**	**0.17**			
2208	0.43	0.11			
217	0.46	0.11			
202	0.51	0.16			
200	**0.97**	**0.27**			
203 (2033)	0.25	0.12	**203 (2035)**	**0.82**	**0.13**
Area 3					
303 (=213)	**0.76**	**0.17**	**3155**	**0.83**	**0.28**
306	0.60	0.20	3141 (=3203?)	0.39	0.12
311	0.57	0.17	3203 (=3141?)	0.70	0.24
312	**1.01**	**0.37**	3145	0.30	0.06

East-west aligned ditches			**North-south aligned**		
Ditch	Width (median, m)	Depth (median, m)	Ditch	Width (median, m)	Depth (median, m)
313	**0.83**	**0.38**	308	0.68	0.29
314	(> 0.7)	0.43	**309 (= 321)**	**1.18**	**0.35**
320	0.48	0.26	**321 (=309)**	**0.90**	**0.18**
			304 (=318)	**1.18**	**0.30**
			318 (=304)	0.73	0.18

Table 11: Summary of finds from Roman features

	Pottery			Other artefacts	Animal bone			CPR		
	No. sherds	Weight (g)	Date		No. frags	Weight (g)	Species	Grain	Chaff	Weeds
Area 2										
217	1	19	(residual MBA)							
200	2	9	2nd C+?							
Area 3										
303 (=213)	1	3	2nd C+					2	1	0
312	61	485	2nd C, 240+, 350+	12 frags/633g CBM, inc. imbrex/ridge tile, 4 Fe nail frags, 1 T-shaped Fe fragment	185	2998	Cattle, horse, sheep/ goat, pig, goose?, domestic fowl, frog, large mammal, medium mammal, micromammal	286	193	167
313	3	38	2nd C+, EIA		1	2	Medium mammal			
314					15	936	Horse, cattle, large mammal			
3155	1	43	2nd C+		2	60	Cattle			
309 (= 321)	5	50	1st-2nd C, 240+, MIA-LIA							
304 (=318)					58	326	Horse, large mammal, indet.			

	Pottery		Other artefacts	Animal bone			CPR		
	No. sherds	Weight (g)	Date	No. frags	Weight (g)	Species	Grain	Chaff	Weeds
Pit 3121	7	184	2nd-3rdC	1	18	Large mammal	72	14	15
Pit 3139	3	14	2nd C+						

Table 12: Radiocarbon dates from the connecting ditch (207), adjacent field system ditch (201) and cremation burials

Lab code	*Feature*	*Context no.*	*Material*	*Sample*	*Radiocarbon age BP*	*δ13C relative to VPDB*	*Calibrated age (95.4% certainty)*	*First model age (95.4% certainty)*	*Agreement index*	*Second model age (95.4% certainty)*	*Agreement index*
	Start							1660-1370	(Amodel 94.8)	-1470-1260	(Amodel 105)
SUERC-77108 (GU46289)	Boundary ditch 201	2124	Charred grain : Triticum sp. and indet.	101	3073 ± 23	-23.9 ‰	1410-1270	1420-1270	99.2	1390-1260	87.6
SUERC-77109 (GU46290)	Boundary ditch 201	2124	Charcoal : indeterminate twig	101	3037 ± 24	-26.3 ‰	1400-1210	1420-12701220	99.2	1390-1230	114.2
SUERC-77110 (GU46291)	Connecting ditch 201	2127	Charred grain : Triticum sp. and indet.	102	3036 ± 24	-23.4 ‰	1400-1210	1400-1220	99.6	1390-1230	114.2
SUERC-77114 (GU46292)	Connecting ditch 201	2127	Charcoal : oak roundwood+diffuse porous	102	3196 ± 24	-25.2 ‰	1510-1420	1510-1410	99.1	(p = 3.7)	
SUERC-55340 (GU35016)	Cremation burial 1011	1012	Cremated bone : Human long bone fragments		3043 ± 29	-21.2 ‰	1400-1210	1400-1190	99.1	1390-1230	114.6
SUERC-55336 (GU35015)	Cremation burial 1005	1006	Cremated bone : Human femur shaft		3004±29	-17.7 ‰	1380-1120	1400-1190	98.8	1390-1210	90.0
	End							1380-1060		1380-1130	

Table 13: Summary of worked flint

Category type	***No.***
Flake	20
Blade	4
Bladelet	4
Blade index	*28.57% (8/28)*
Irregular waste	6
Sieved chip	68
Crested bladelet	1
Piercer	1
Scraper side and end	1
Backed blade	1
Total	*105*
No. burnt (%)	3/105 (2.86%)
No. broken (%)	10/37 (27.03%)
No. retouched (%)	3/37 (8.10%)

Table 14: Summary of prehistoric pottery from significant features

Feature	No. sherds / Weight (g)	Mean sherd weight	Fabrics	Form and decoration	Comment
Ditch 201	31/520	17g	FL1; FL3	Globular Urn (x2) 1 decorated	Fig. 20, nos 1 and 2
Ditch 207	14/185	13g	FL1; FL3	Globular Urn (decorated)	Fig. 20, no.3
Ditch 210	13/125	10g	FL1; FL3; G1	Base of ?Bucket/Barrel Urn	
Pit 3003	4/66	17g	FL2	Jar/Urn?	Carinated
Pit 1024	1/10	10g	SH1	Rilled/combed sherd	Undated – possibly late Iron Age

Table 15: Late Iron Age and Roman pottery fabric codes and descriptions

Ware Code	*Description*	*No. sherds*	*Weight (g)*
Samian ware			
S30	Central Gaulish samian ware (incl **LEZ SA 2)**	4	5
Fine wares			
F50	Uncertain red-brown colour-coated ware, probable Oxford ware (cf **OXF RS)**	1	2
F51	Oxford colour-coated ware (**OXF RS)**	6	81
FO	Oxidised probable Oxford fabric (F51) but with no surviving colour coat (cf **OXF RS)**	**3**	42
White wares			
W10	Fine white fabrics (general)	2	4
White-slipped wares (except mortaria)			
Q21	Oxford (Young 1977) fabric WC (**OXF WS**).	1	2
Oxidised 'coarse' wares			
O10	Fine oxidised coarse ware fabrics (general)	2	6
O20	Sandy oxidised coarse ware fabrics (general)	3	6
O24	Sandy oxidised 'Portchester D type' Overwey white/buff ware (**OVW WH)**	1	15
O30	Fine/medium sandy oxidised fabrics, North Wiltshire	3	173
O80	Coarse tempered (usually grog) oxidised fabrics, equivalent to R90	1	2
O81	Pink grogged ware (**PNK GT**).	1	4
Reduced 'coarse' wares			

Ware Code	*Description*	*No. sherds*	*Weight (g)*
R10	Fine reduced ‘coarse ware’ fabrics (general)	17	218
R20	Sandy reduced coarse ware fabrics (general)	4	21
R23	Compton? Rounded quartz grains of variable size, often glassy. Sometimes partly oxidised	3	59
R24	Hard coarse abundant sand-tempered with sparse Fe oxides	4	24
R30	Medium/fine sandy reduced coarse ware fabrics (general)	19	312
R90	Coarse tempered (usually grog-tempered) reduced fabrics, eg Young 1977, 202 fabric 1	1	14
Black-burnished wares			
B11	Dorset BB1 (**DOR BB 1)**	2	14
B30	Black-burnished type/imitation fabric. Regional?	1	9
Calcareous wares etc			
C10	Shell-tempered fabrics (general)	12	63
C11	Southern shell-tempered ware, probably Harrold (incl **HAR SH**)	12	46
C20	Limestone-tempered fabrics	1	4
TOTAL		104	1126

Table 16: Quantification of ceramic building material

Form	***Count***	***Weight (g)***
Box/flue	1	394
Brick	3	304
Flat	2	221
Flat/indeterminate	13	380
Imbrex	2	394
Indeterminate	37	428
Peg	12	515
Grand Total	70	2636

Table 17: Quantification of ceramic building material type by phase

Form	*Roman*	*Med/post-med*	*Post-med*	*Unphased*	*Grand Total*
Box/flue	1				1
Brick		2	1		3
Flat	1		1		2
Flat/indeterminate	3		10		13
Imbrex	1		1		2
Indeterminate	6		31		37
Peg tile			8	4	12
Grand Total	**12**	**2**	**52**	**4**	**70**

Table 18: Number of Identified SPecimens (NISP) and Number of SPecimens (NSP) from each phase on the site

	Middle Bronze Age	Roman	Post-medieval	Undated
domestic cattle		**12**		**1**
domestic cattle?	**1**	1		**1**
caprine	**4**	**2**	**1**	
pig	**1**	1	**1**	
horse		**12**	**4**	
horse?		1		**1**
mouse	**3**			
bank vole/field vole/common vole	**3**			
micro mammal	6	5		
medium mammal	7	22		
large mammal	2	199	18	14
Total Mammal	27	255	24	17
common frog/common toad		2		
common frog		1		
Total Amphibian	0	3	0	0
goose		1		
domestic fowl		1		
Total Bird	0	2	0	0
Total NISP	27	260	24	17
Total NSP	55	271	26	41

Table 19: Summary of charred plant remains from middle Bronze Age features

Sample no.		101	102	108	109	110	111	112	115	116	113
Context		2124	2127	2222	2269	2268	2168	2167	3283	3284	3004
Intervention		2122	2125	2221	2267	2267	2166	2166	3282	3282	3003
Feature		201	207	210	210	210	210	210	316	316	3003
Description		Field boundary ditch	Connecting ditch	Penannular gully	Penannular gully	Penannular gully	Penannular gully	Penannular gully	Trackway corner ditch	Trackway corner ditch	Pit Fill
Area		2	2	2	2	2	2	2	3	3	3
Processed soil volume (L)		20	10	40	40	40	40	40	40	30	35
Flot Volume (ml)		10	10	25	35	20	40	25	40	30	30
Cereal grain											
cf. Triticum sp.	wheat	2*	2*					1*			1*
Cerealia	indet cereal	27*	25*	4*	3*	2*	2*	2*	2*		2*
Avena/Bromus	oat/brome		1								
Chaff											
Triticum dicoccum/ spelta	emmer/spelt glume base	14*	11*			1*	1*				1*
Wild Species											
Vicia/ Lathyrus sp. >2 mm	vetch/vetchling/ tare, etc	5	2*								

Vicia/ Lathyrus sp. <2 mm	vetch/vetchling/ tare, etc	2*	6*			2*	1*		
Euphorbia helioscopia	sun spurge					2#	1#		
Polygonaceae various	knotweed family		1						
Persicaria lapathifolia	pale persicaria		1						
Caryophyllaceae	pink family	1*							
Amaranthaceae	goosefoot family		2*						
Anagallis arvensis	scarlet pimpernel								5#
Galium aparine	cleavers							1	
cf Galium aparine	cleavers		1*						
cf Carex sp.	sedges	1*	1*						
Poaceae	grass seeds (various)	1			1*				
Other									
Corylus avellana	hazelnut shell						1*		1*
Indet.	seed/fruit		2*			1*			1*

* Fragmented

Probably Modern

Table 20: Summary of charred plant remains from Roman contexts

Sample no.		103	104	105	106	107	114	117
Context		3122	3123	3124	3125	3126	3253	3022
Intervention		3121	3121	3121	3121	3121	3252	3021
Feature		3121	3121	3121	3121	3121	312	303
Description		Upper Pit Fill	Secondary Pit Fill	Secondary Pit Fill	Secondary Pit Fill	Basal Pit Fill	Field boundary ditch	Field boundary ditch
Area		3	3	3	3	3	3	3
Processed soil volume (L)		9	7	6	10	9	40	40
Flot Volume (ml)		5	<5	<5	<5	<5	100	25
Cereal grain								
Triticum sp.	wheat						23	
cf. Triticum sp.	wheat	7*					29*	
Cerealia	indet cereal	58*	1*	5*		1*	234*	2*
cf. Avena sp.	oat						4*	
Avena/Bromus	oat/brome						8*	
Chaff								
Triticum dicoccum/ spelta	emmer/spelt glume base	14*					184*	1*
Triticum spelta	spelt glume base						9*	
Avena sp.	Oat awns						4*	

Cerealia	Indet detached embryos	1		5
Wild Species				
Ranunculus sp.	buttercups			1
Fabaceae	pea family (small)			27*
Vicia/Lathyrus sp. >2 mm	vetch/vetchling/tare, etc	1*	1*	2*
Vicia/Lathyrus sp. <2 mm	vetch/vetchling/tare, etc	5*		
Trifolium/Medicago	clovers/medicks			3
Trifolium pratense	red clover			3
Brassica sp.	cabbage family			1
Polygonaceae various	knotweed family			8*
cf. Rumex conglomeratus	clustered dock			2
cf. Rumex palustris	marsh dock			4
Stellaria sp.	stitchworts			6
Chenopodium sp.	goosefoots			1*
cf. Solanaceae	nightshade family			1*
Anthemis cotula	stinking chamomile			21
cf. Anthemis cotula	stinking chamomile			2*
Tripleurospermum sp.	mayweeds			5
cf Juncus	rush family			4*

cf. Luzula sylvatica	great woodrush			14
Cyperaceae	sedge family			3*
Eleocharis sp.	spike rushes			2
Carex sp.	sedges			4
cf. Carex spicata	spiked sedge			1
Poaceae	grass seeds (various)	6*	1*	25
cf. Poaceae	grass seeds (small)			6*
Other				
Indet.	seed/fruit	1*	1*	88*
Indet	other plant parts			2*

* Fragmented

Probably Modern

Fig. 1: Site location plan, showing location of field work in the area around Monk's Farm

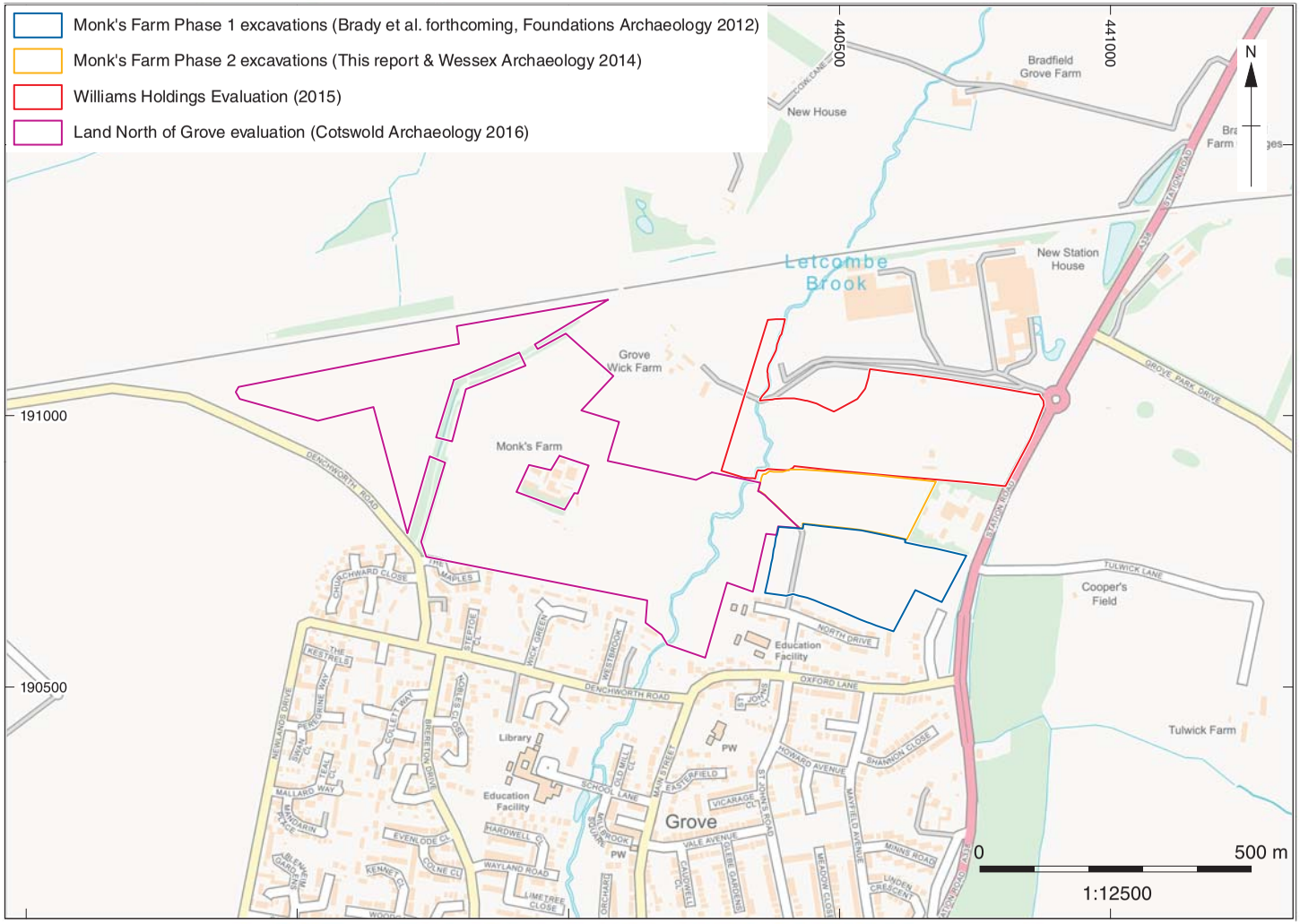

Figure 2a: Excavation areas (part 1)

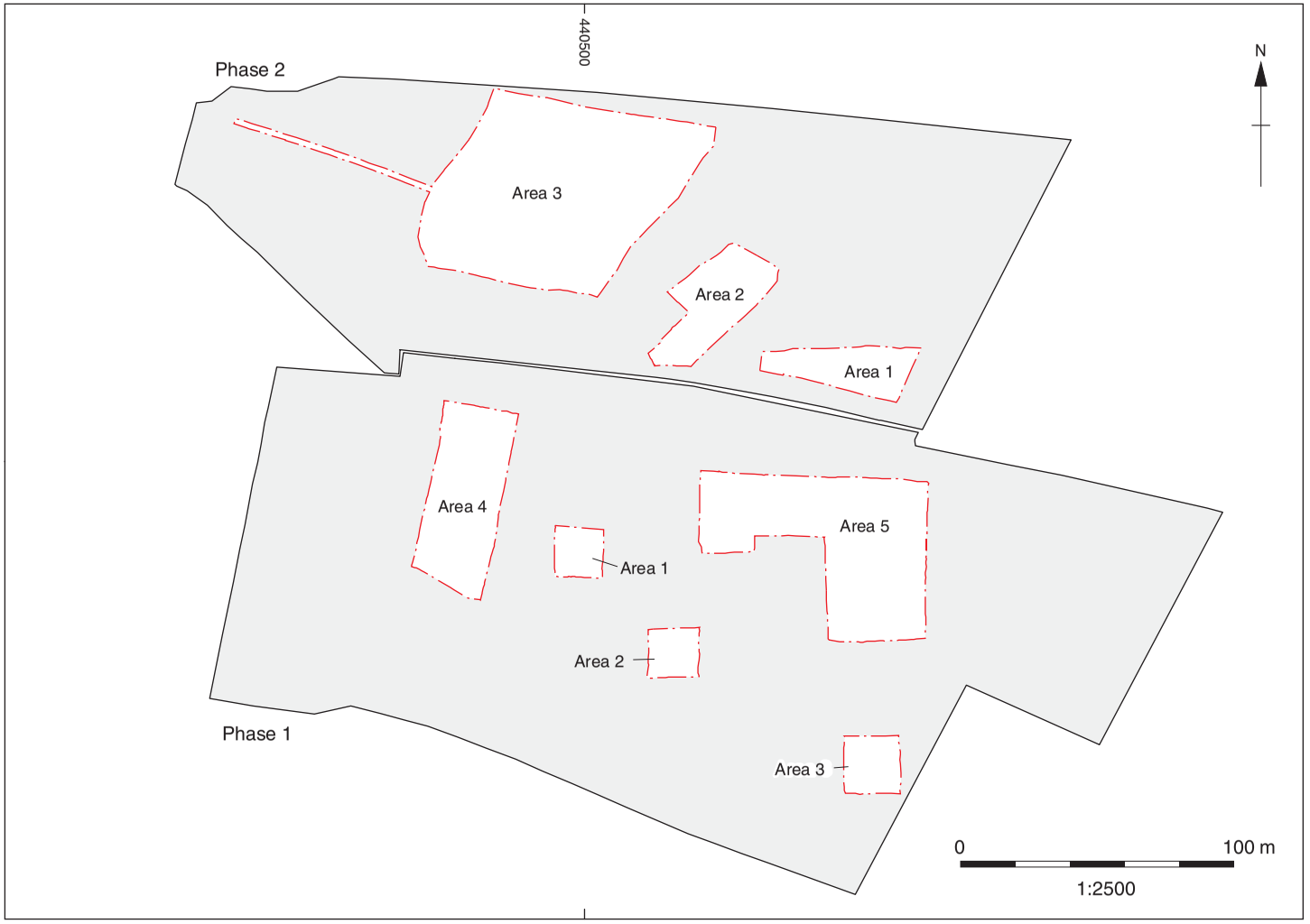

Figure 2a: Excavation areas (part 2)

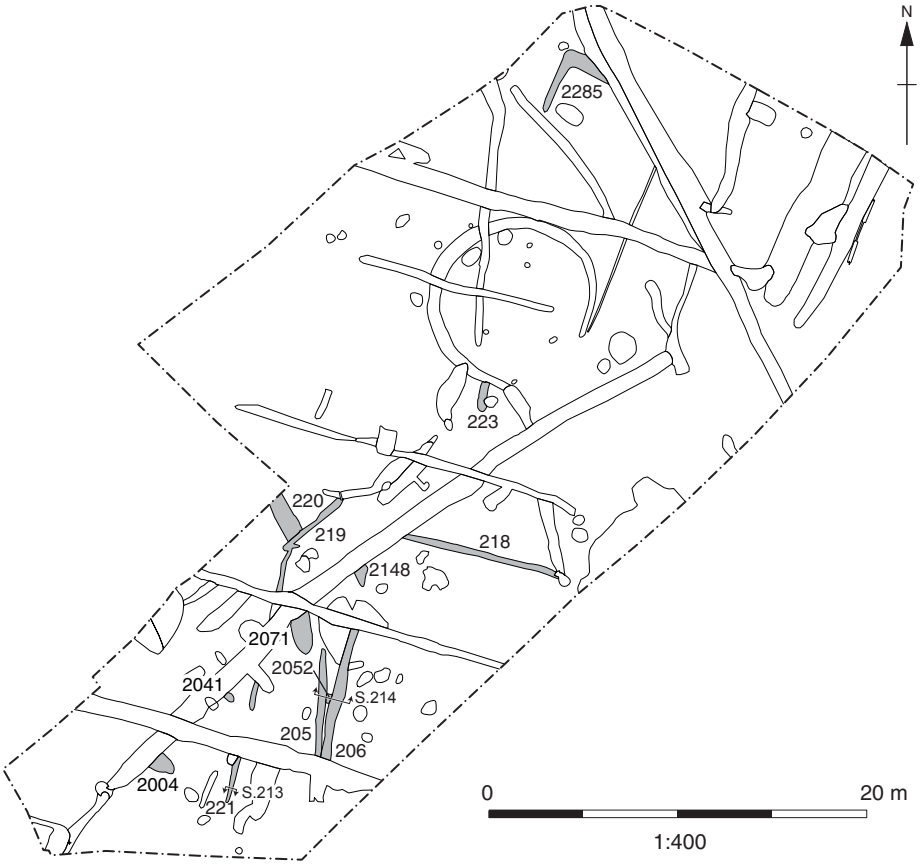

Figure 3: Stratigraphically early features in Area 2

Figure 4: Stratigraphically early features in Area 3

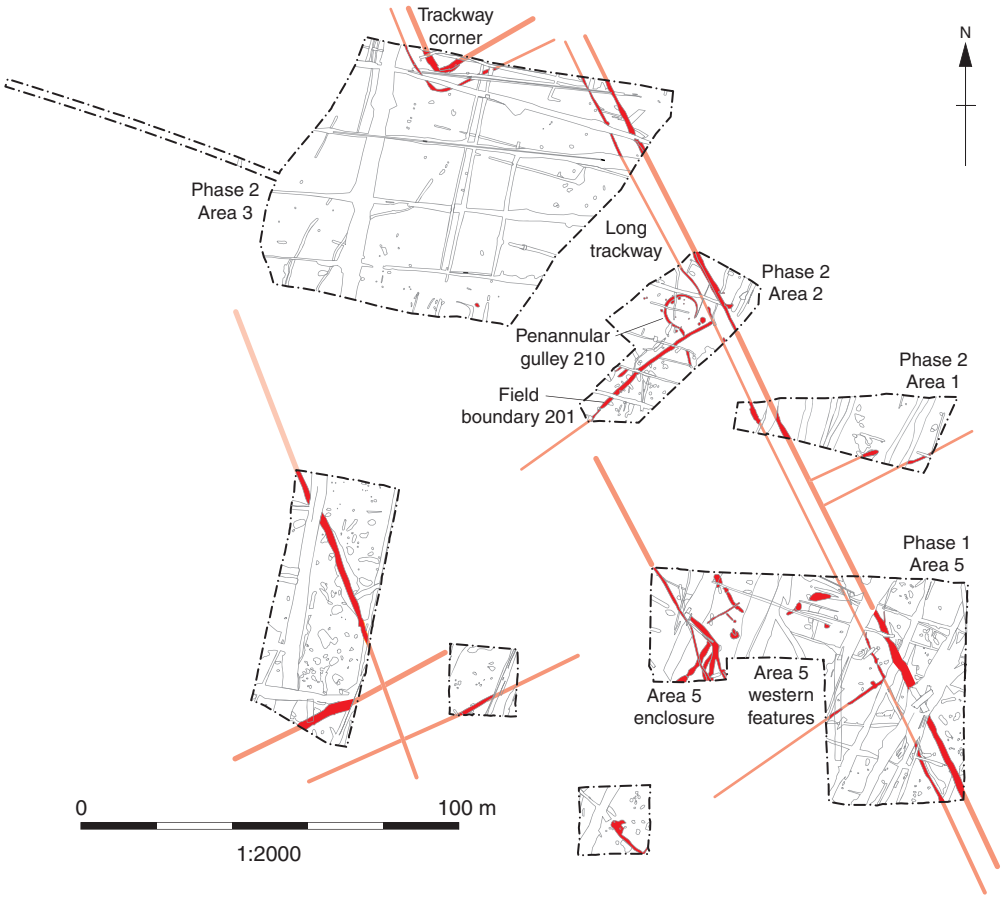

Figure 5: Overall plan of middle Bronze Age features in the Phase 1 and Phase 2 excavations

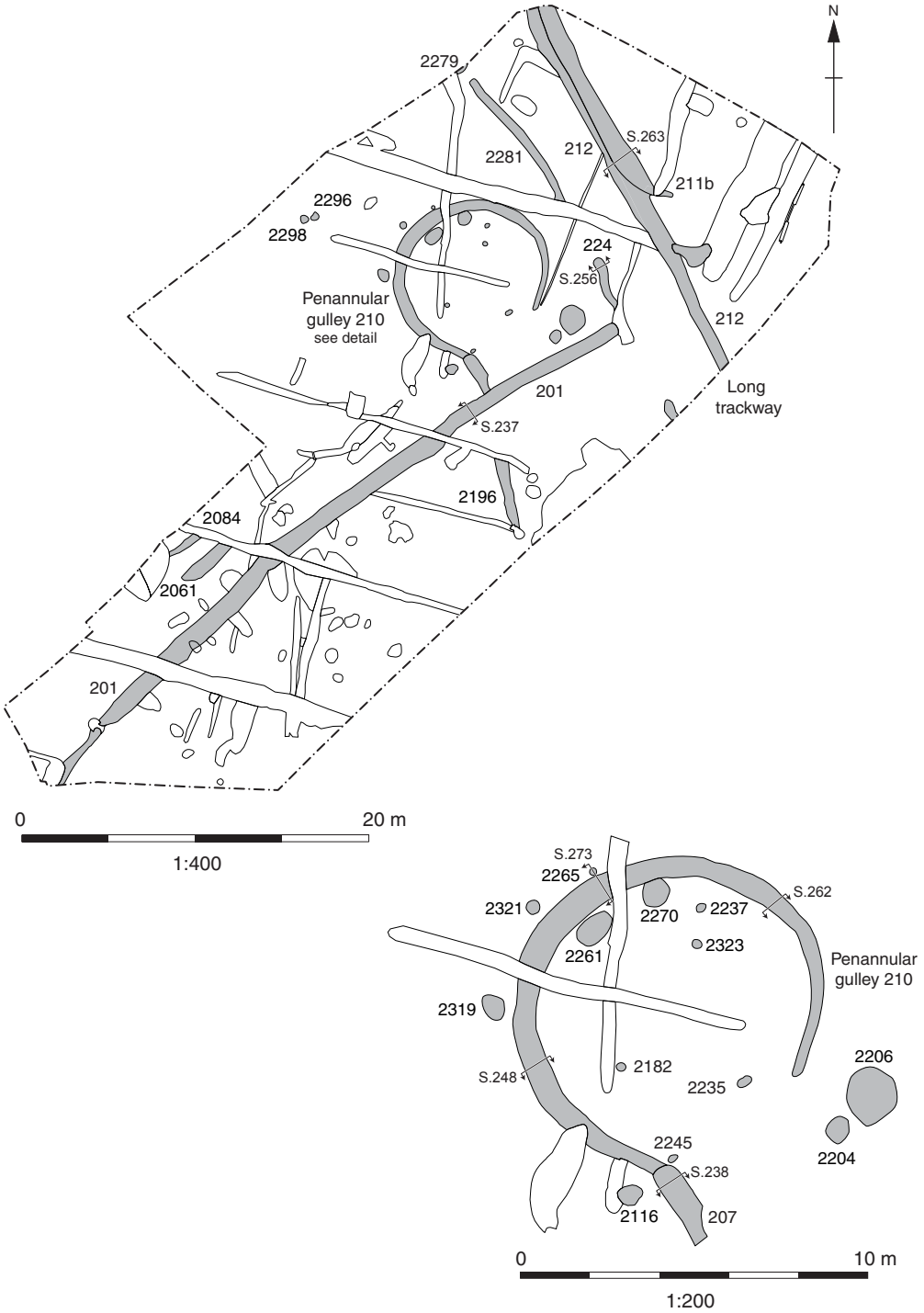

Figure 6: Middle Bronze Age features, including the penannular gully (210) in Area 2

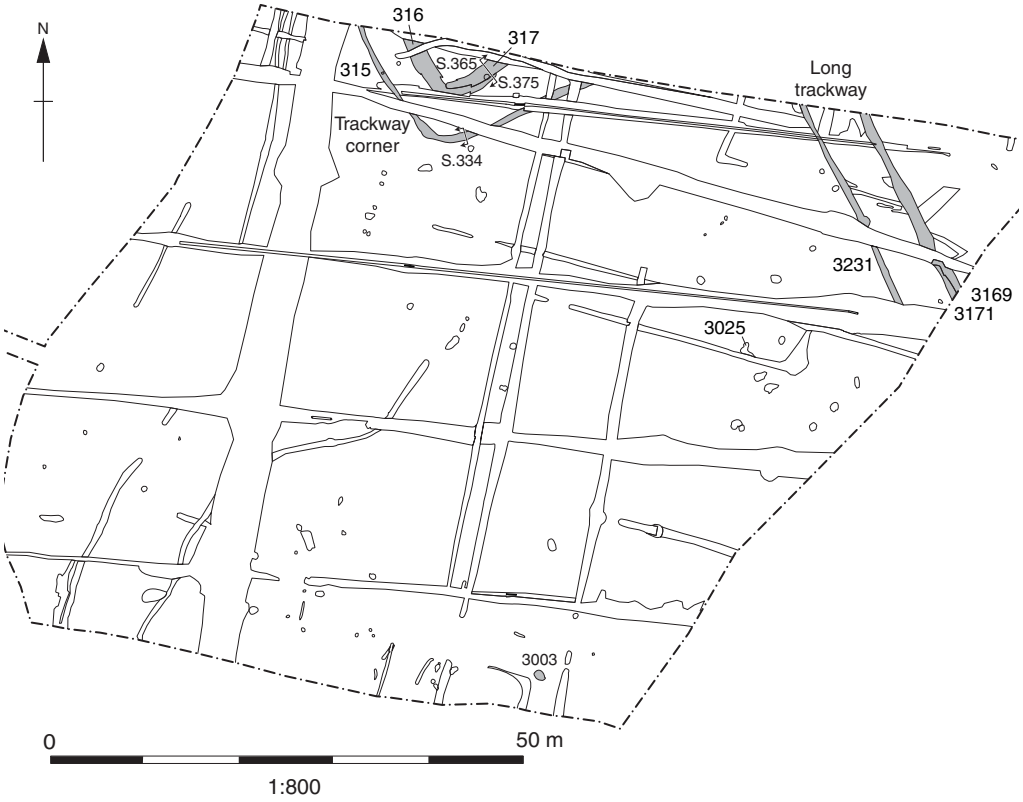

Figure 7: Middle Bronze Age features in Area 3

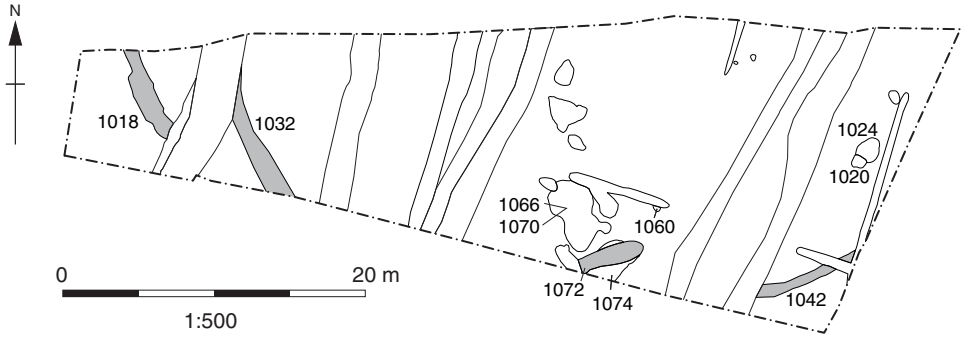

Figure 8: Middle Bronze Age features in Area 1

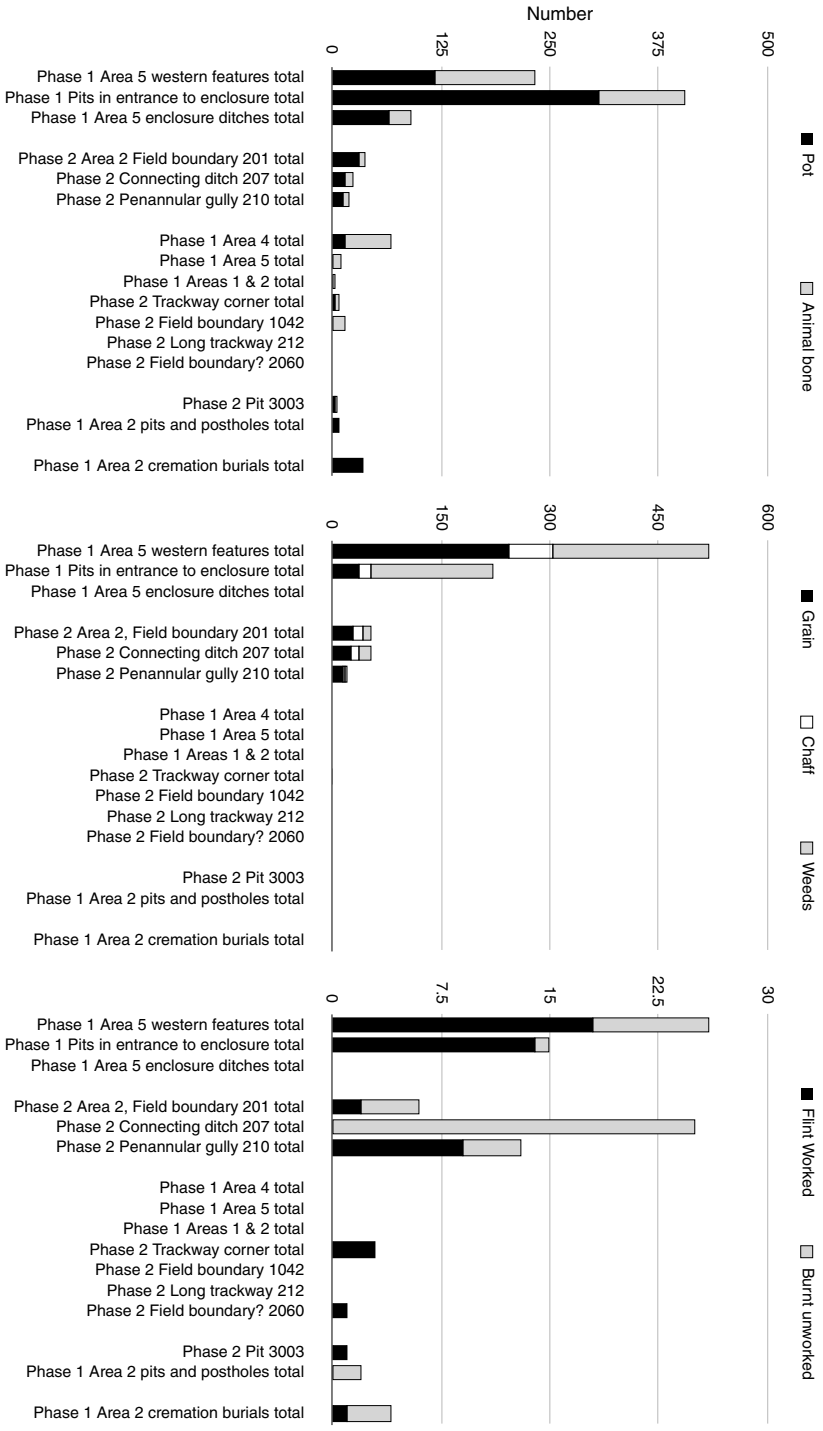

Figure 9: Summary of overall quantities of finds from the Phase 1 and 2 excavations

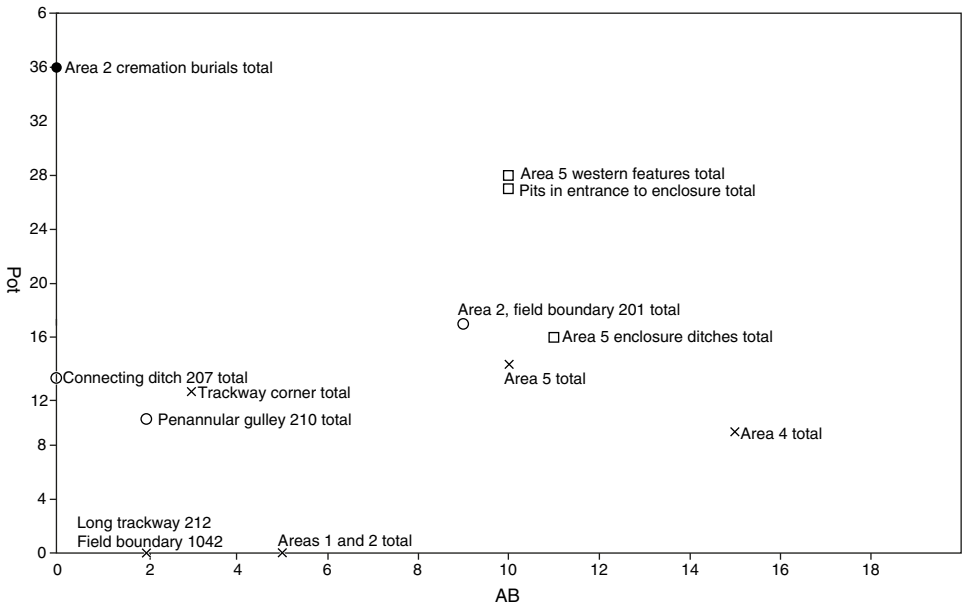

Figure 10: Scattergrams showing mean sherd weight against mean weight of bone fragments from selected groups of features in the Phase 1 and 2 excavations

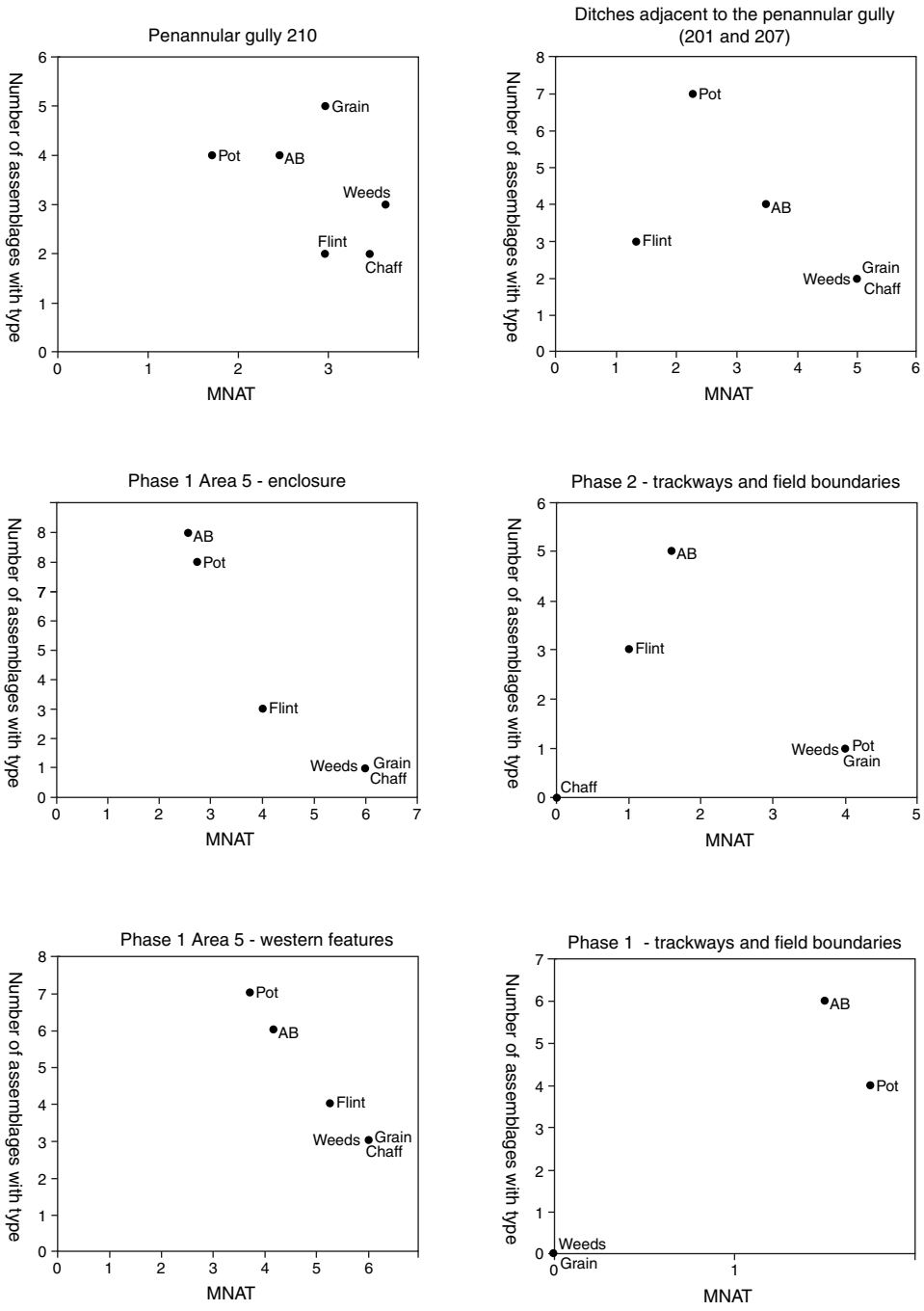

Figure 11: Scattergrams showing mean number of associated types against number of assemblages containing types for artefacts from from selected groups of features in the Phase 1 and 2 excavations

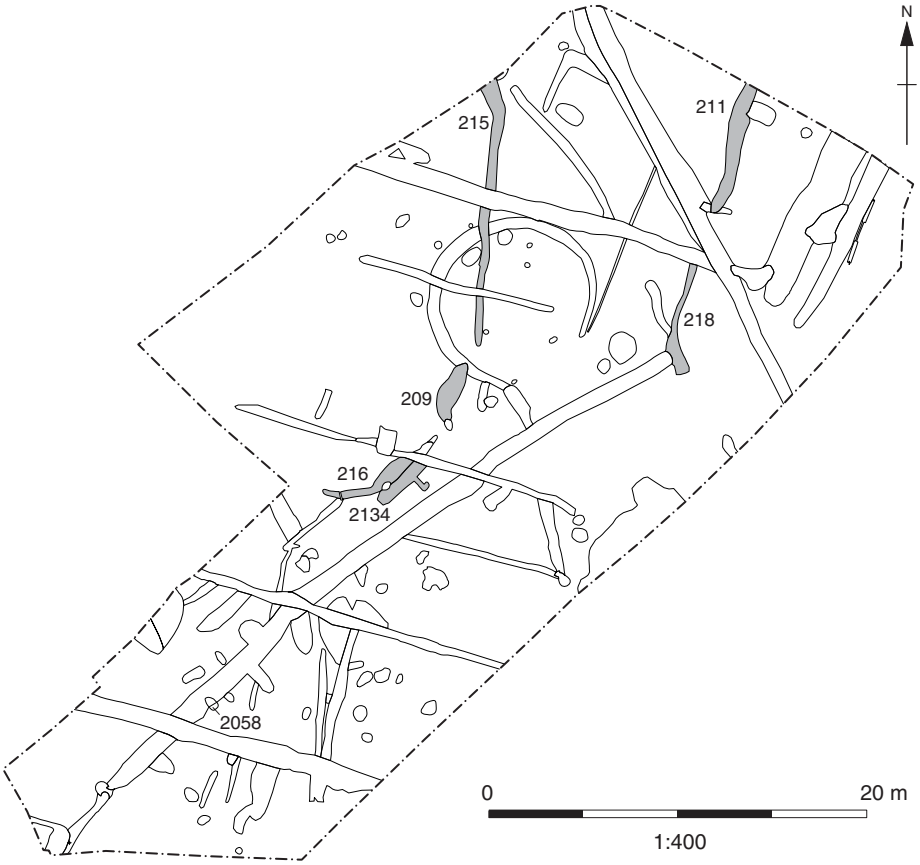

Figure 12: Features lying stratigraphically between the middle Bronze Age and the Roman period

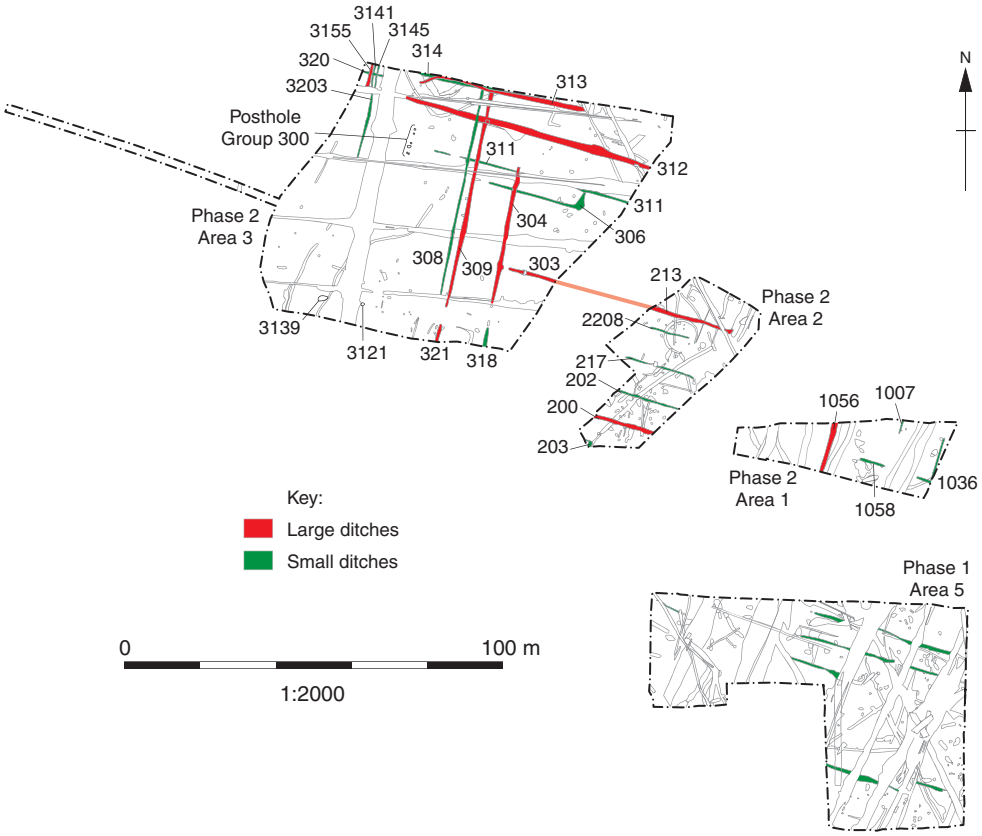

Figure 13: Overall plan of Roman features in the Phase 2 excavations, showing the classification of ditches by size

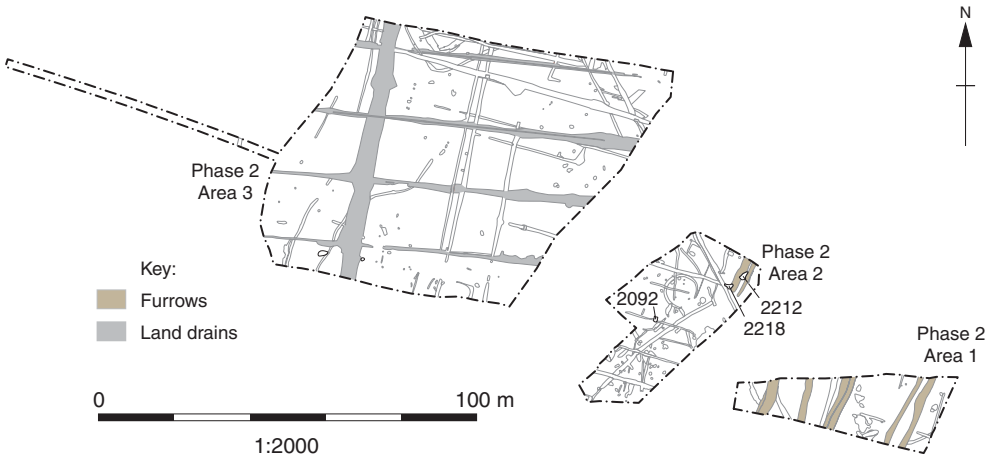

Figure 14: Overall plan of furrows, land drains, tree-throw holes and burrows

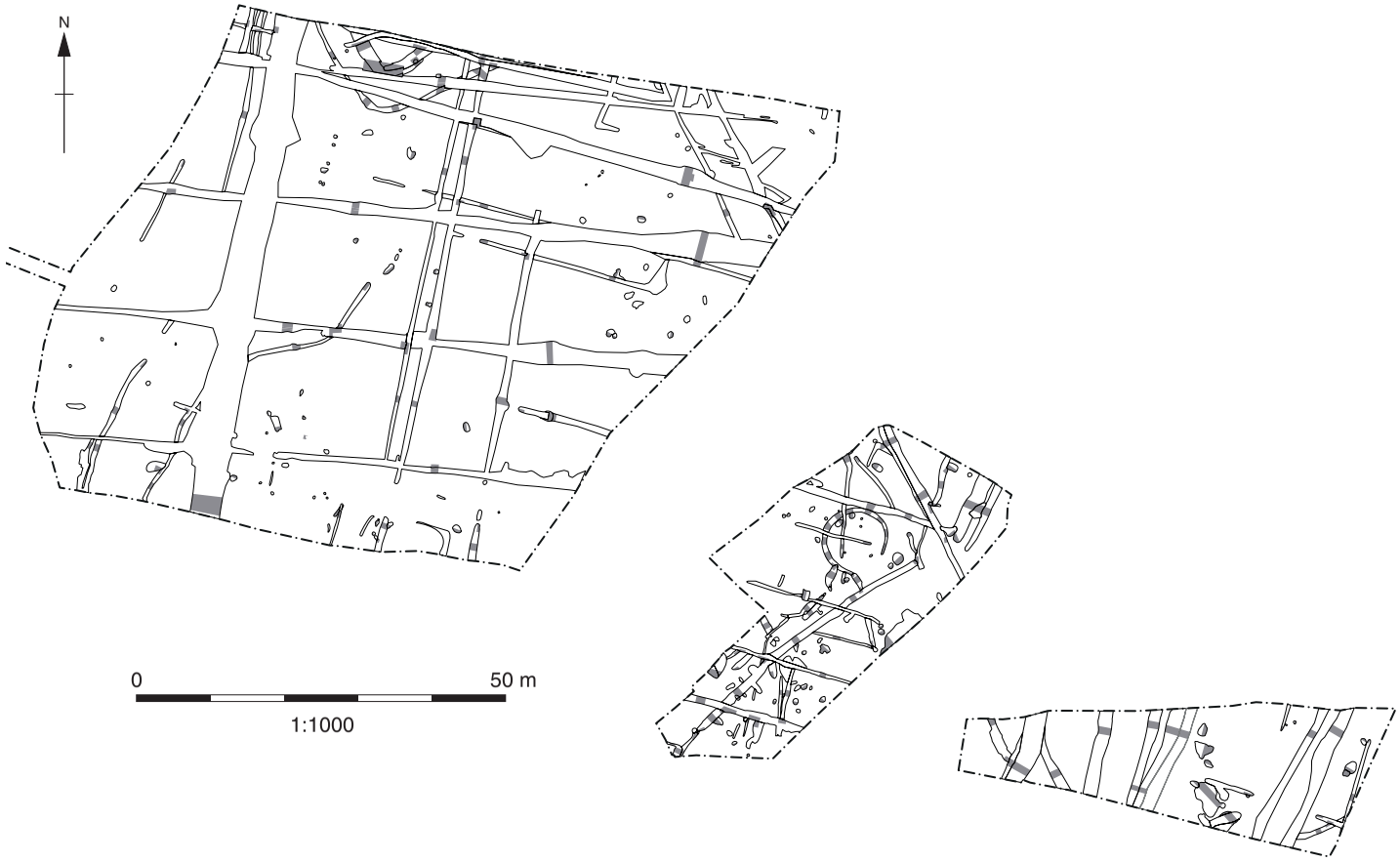

Figure 15: Phase 2 excavation with the excavated interventions shaded

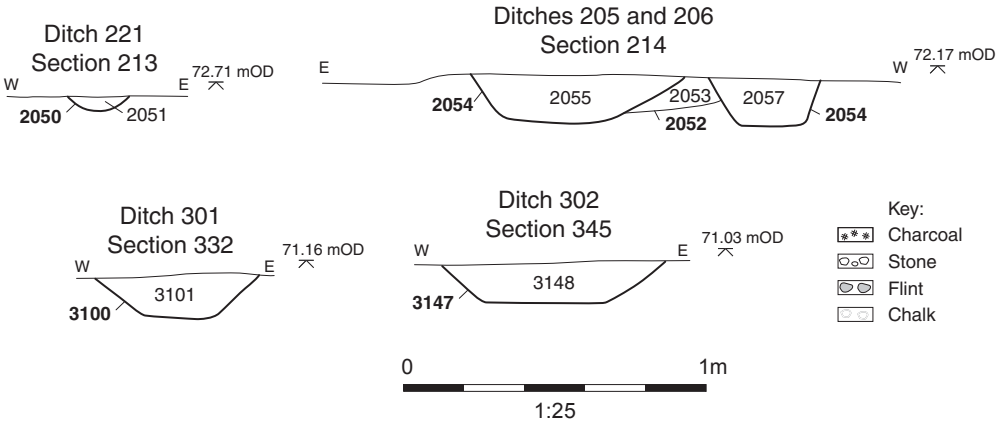

Figure 16: Selected sections of stratigraphically early features

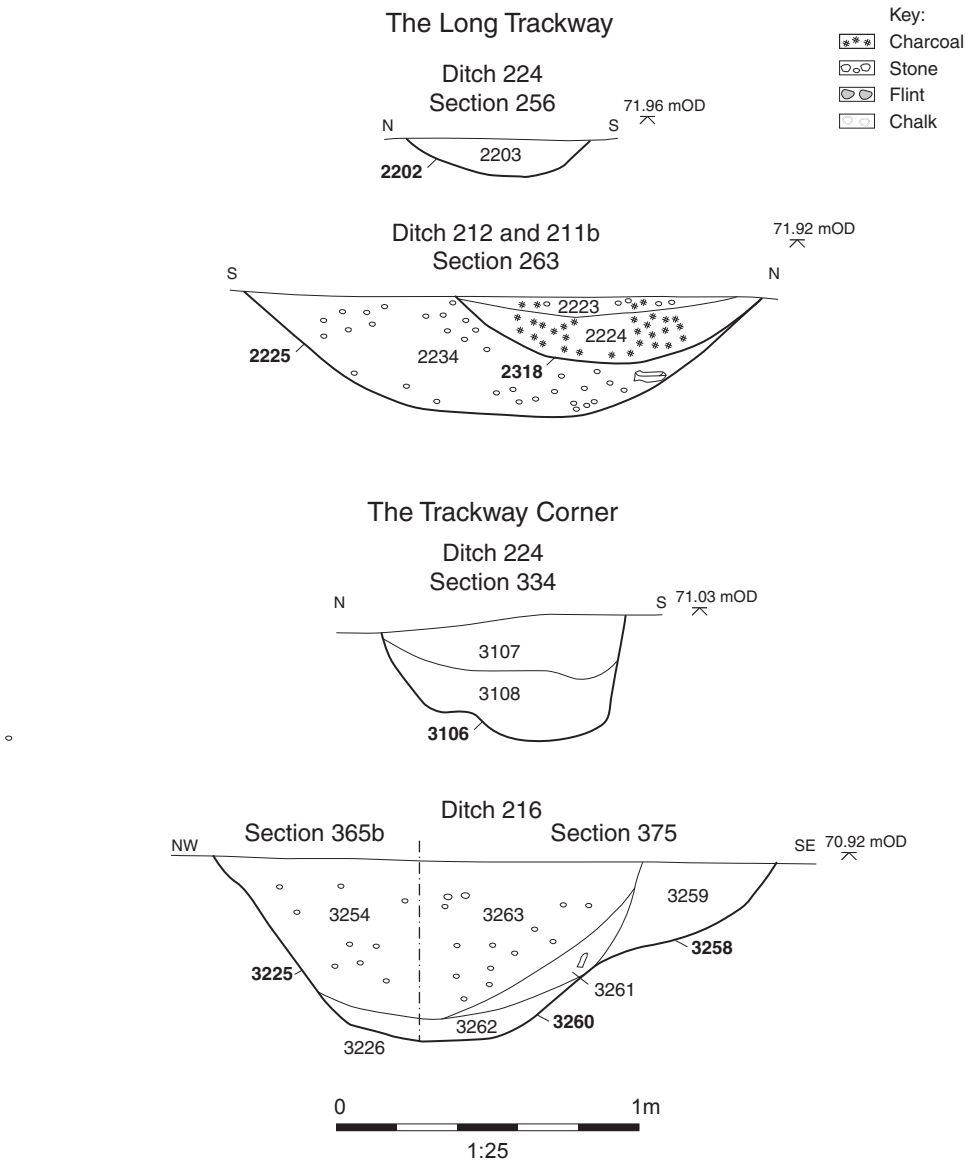

Figure 17: Selected sections across the long trackway and the trackway corner

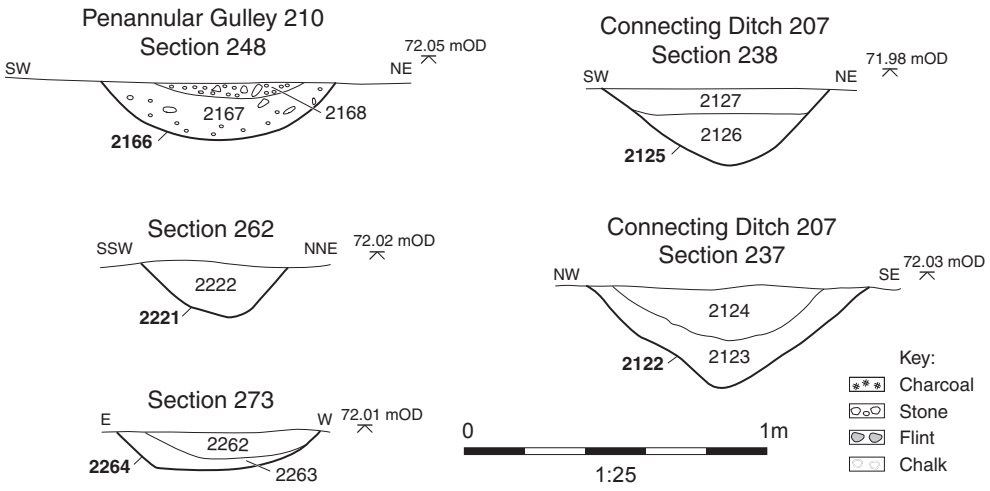

Figure 18: Selected sections of the penannular gulley and related features

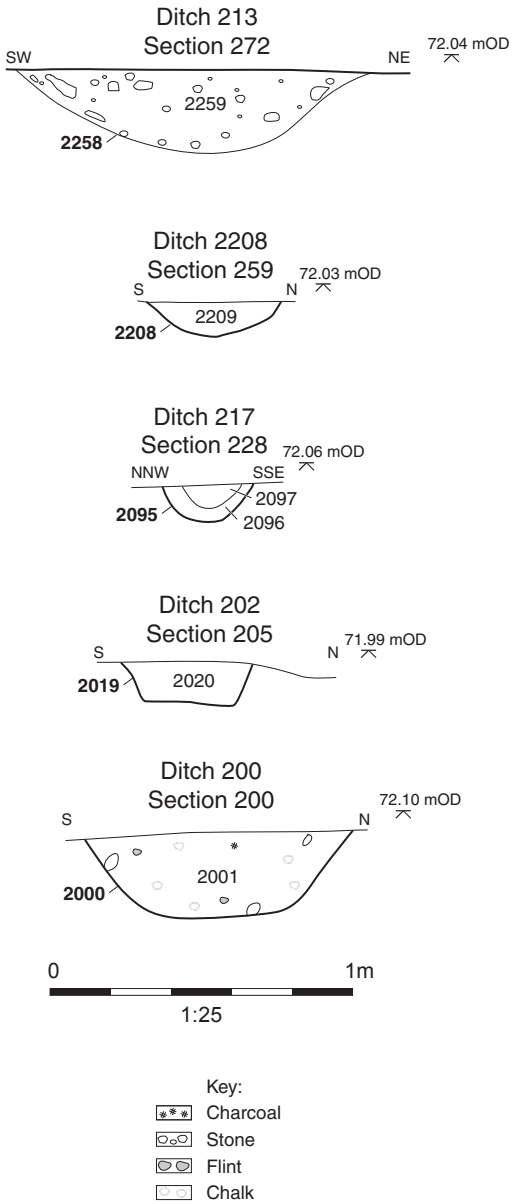

Figure 19: Selected sections of the Roman field system ditches

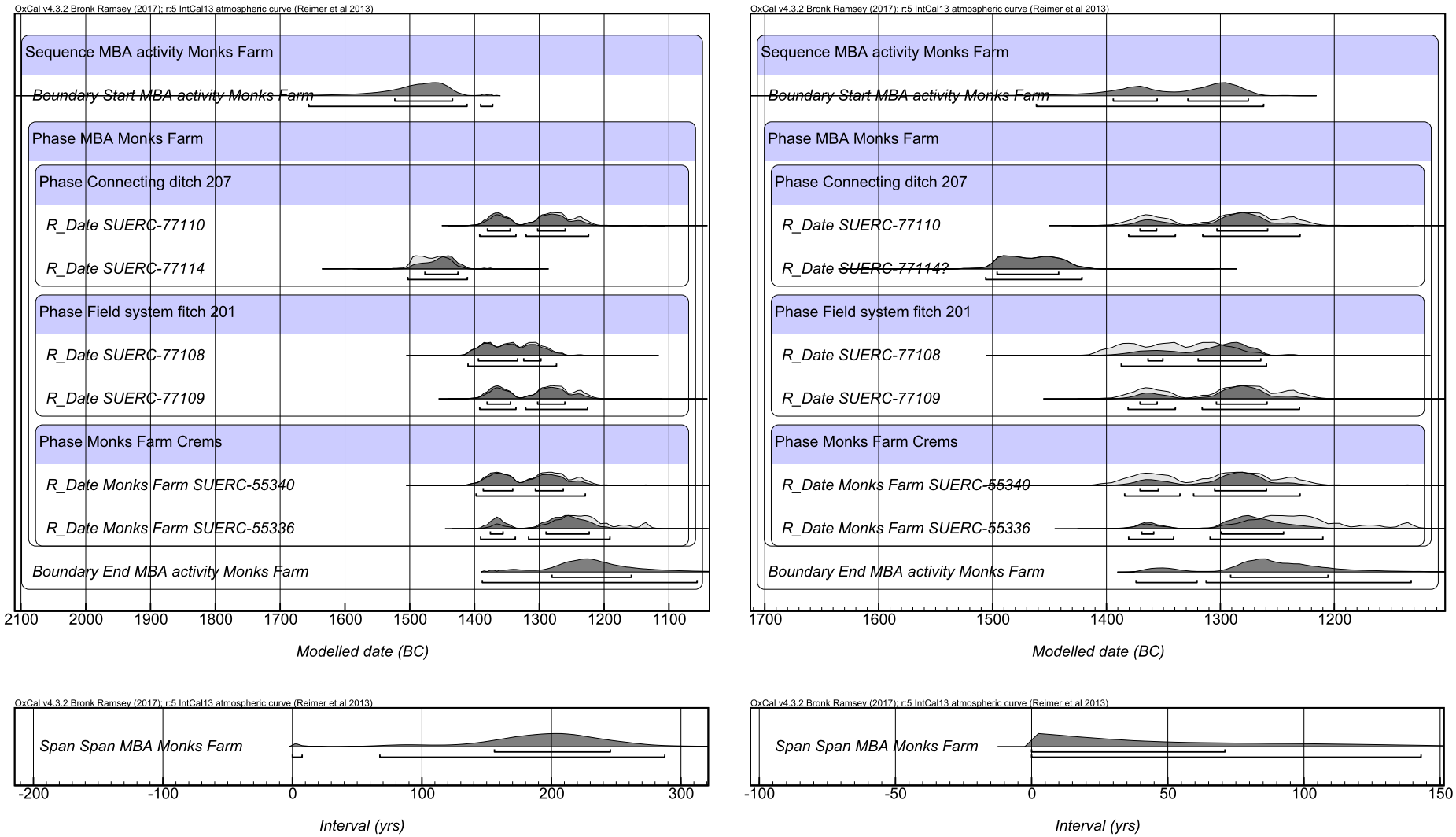

Fig. 20 Radiocarbon dates, left: model 1, including all dates; right: model 2: excluding the early date (SUERC-77114)

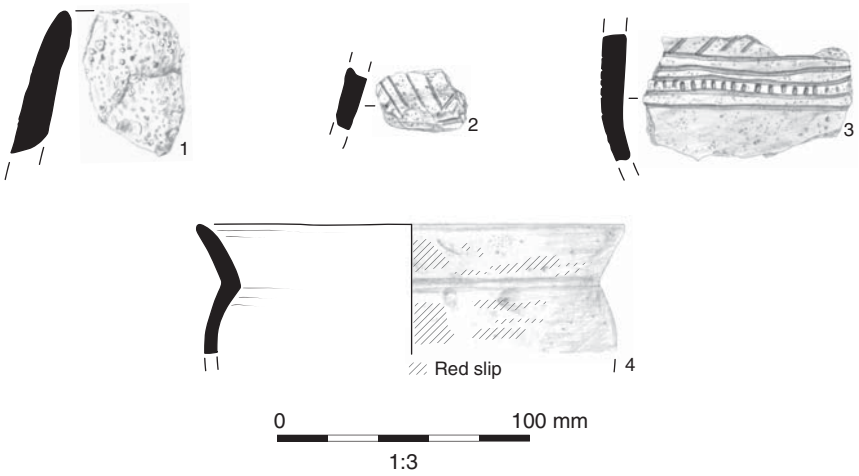

Figure 21: Selected prehistoric pottery

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