Aylesbury Berryfields MDA

Post Excavation Assessment and Project Design

July 2017

Client: Berryfields Consortium

Issue No: 2
OA Job No: 6347
NGR: 479350, 215900

oxfordarchaeology south

Client Name:	Berryfields Consortium
Client Ref No:.	
Document Title:	Aylesbury Berryfields MDA
Document Type:	Post-excavation assessment and project design
Report No.:	
Grid Reference:	Centred on NGR: 479350, 215900
Planning Reference:	
Site Code:	AYLBER07, AYLBER10, AYLBER14, AYLBER16, QAVC12
Invoice Code:	AYLBERPX, QAVCPX
Receiving Body:	Buckinghamshire County Museum
Accession No.:	AYBCM:2007.165/AYBCM:2012.44
OA Document File Location:	
OA Graphics File Location:	
Issue No:	2
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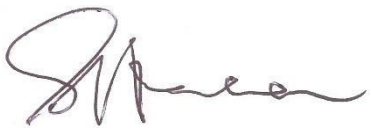

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Aylesbury Berryfields MDA

Post-Excavation Assessment and Project Design

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Summary

Excavations between 2007 and 2016 to the north-west of Aylesbury and to the north and south of the modern A41 were conducted by Oxford Archaeology (OA) prior to the construction of residential and related infrastructure within the Berryfields Major Development Area (MDA).

The excavation revealed evidence of middle Iron Age settlement, consisting of roundhouses, enclosures and a possible trackway. By the 1st century the focus of activity had shifted to the south-east to either side of the newly constructed Roman road (Akeman Street), where several phases of a field system and a network of trackways were recorded.

The agricultural use of the landscape continued into the middle Roman period, with new enclosures constructed and pottery of this date found in waterholes and the upper fills of earlier roadside and field ditches. This activity appears to have been related to a ladder settlement that had been identified by previous work, and has been preserved *in situ*.

A very large pit, cut into a roadside pond, yielded a remarkable waterlogged assemblage of artefacts and environmental remains, including complete or near-complete pottery vessels, a millstone, coins, leather shoes, wooden tools, a basket or tray, animal bones, plant remains, insects, and a complete egg. Preliminary analysis of the stratigraphic sequence and material evidence suggests that the pit functioned as a tank, possibly associated with an agriindustrial process, before being made available for ritual deposition. Two human burials were situated close to the pond (one cremation and one inhumation) and these further suggest a ritual aspect to the feature. The feature has much potential for further work.

Two large timber piles salvaged immediately outside the MDA to the south of the River Thame may represent the remains of a Roman river crossing. The timbers are presently not dated, but are potentially a rare and significant find, and highlight the importance of the Roman site at a crucial location for trade and related economic activity.

Activity on either side of the Roman road ceased by the late Roman period, although the ritual pit remained a focus for deposition. Agricultural activity resumed in the medieval period, with evidence for ridge and furrow identified over the whole site. This is most likely to be related to the medieval settlement and scheduled monument at Quarrenden. Very limited post-medieval activity was recorded in the form of drainage ditches of 19th to 20th century date.

This assessment presents the preliminary findings of the fieldwork, specifies what further post-excavation recording and analysis are required, and assesses the potential of the results to address research questions and contribute to a better

understanding particularly of the region's Iron Age and Roman-period landscape. A programme of analysis and publication is proposed.

1 DESCRIPTION OF THE PROJECT

1.1 Introduction

1.1.1 Archaeological investigations were undertaken on the site of Aylesbury Berryfields Major Development Area (MDA) by Oxford Archaeology (OA) in several phases between 2007 and 2016. The site, covering an area of approximately 195 hectares (centred on NGR: 479350, 215900), is situated on what had been agricultural land along the north and south sides of the A41 and north-west of Aylesbury (Fig. 1).

1.1.2 The investigations, commissioned by the Berryfields Consortium (Taylor Wimpey South Midlands Ltd, Martin Grant Homes, Kier Living Ltd), were undertaken as a condition of planning permission relating to the mixed residential, retail and community development of the site.

1.1.3 Following a brief prepared by Buckinghamshire County Council (BCC 2005), acting as archaeological advisors to Aylesbury Vale District Council (AVDC), a generic Archaeological Mitigation Strategy (AMS) was produced by Waterman CPM (2008). This set out BCC's requirements for the archaeological work necessary to discharge the planning condition.

1.1.4 Phases of investigation by OA have included an excavation undertaken in 2007 and 2010-12 across the main areas of the MDA (AYLBER07/10), a watching brief in 2012/13 which monitored development work in the same area, an excavation in 2013 along the Western Link Road, an excavation at the District Centre site in 2014 (AYLBER14), and, most recently, excavation in 2016 west of Paradise Orchard SMS excavation area (AYLBER16). Further evaluation trenching has been undertaken in the eastern part of the MDA (AYBF16) (Fig. 2). All excavation has been strip, map and sample (SMS).

1.1.5 In addition to this work, an SMS excavation was carried out at the site of Aylesbury Vale Parkway for Aylesbury Vale Parkway Ltd in 2007/8. This work has been reported on fully, though remains unpublished (Simmonds and Biddulph 2010). Excavation and geophysical survey were also undertaken on the Aylesbury Vale Academy site for BAM Construction in 2012. The results of this work are assessed in this current document.

1.1.6 The AMS (Waterman CPM 2008) states that the results of the fieldwork outlined above 'will be subject to suitable post-investigation analysis and assessment, leading to appropriate publication of the results'. This has been reiterated in successive written schemes of investigation produced by OA and approved by BCC (eg OA 2012), which state that the results of the various investigations 'will be included within an overall post-excavation analysis and reporting programme for the Berryfields MDA area as a whole on completion of substantive field investigations'.

1.1.7 In July 2016, a proposal prepared by OA for the post-excavation assessment, analysis and publication of the archaeology of the MDA was approved by the Berryfields Consortium. This document represents the conclusion of the first stage of that programme: a post-excavation assessment and project design that summarises the

preliminary findings of the fieldwork commissioned by the Berryfields Consortium (and also incorporating the work at Aylesbury Vale Academy), assesses the significance of the results, and presents recommendations and a programme for further analysis leading to final publication and archive deposition.

1.2 Archaeological background

1.2.1 Aylesbury Berryfields MDA is situated within a complex landscape of Iron Age and Roman activity.

1.2.2 The course of the Roman road (Akeman Street) that connects the Roman urban centres of London and *Corinium* (Cirencester) via *Verulamium* (St Albans) and Alchester near Bicester, and which to some extent follows the course of the A41, extends across the south-western part of the site. The centre of what is thought to be a Roman 'small town' or nucleated roadside settlement lies to the west of the Berryfields MDA at Fleet Marston (Radford and Zeepvat 2009). A road (Viatores 162) is known to extend from Fleet Marston to Thornborough, some 25km north of Aylesbury, where Roman-period burial mounds, a temple and evidence of rural settlement (a villa?) are attested. The scheduled medieval settlement of Quarrendon and a designed landscape and site of a mansion dating to the Tudor period are situated to the east of the site. Ridge and furrow earthworks and platforms survive adjacent to the scheduled site.

1.2.3 A programme of fieldwalking and evaluation trenching was carried out at Billingsfield in an area of land to the south of the A41 by AC Archaeology in 1997 in connection with an earlier planning proposal (Cox 1997). The evaluation recorded only a small amount of prehistoric pottery and worked flint, but was more productive of Roman remains. The line of Akeman Street was confirmed, lying parallel to and 20m south of the alignment indicated on Ordnance Survey mapping. Evidence for a possible settlement, in the form of humic soil spreads, cremation burials, quarry pits and enclosure or field boundary ditches, were recorded close to the line of the road, with the greatest concentration occurring on the highest part of the area, immediately south-east of Aylesbury Vale Parkway.

1.2.4 Fieldwalking across the MDA was carried out by Foundations Archaeology in 1999, and a geophysical survey was undertaken by GSB Prospection in the same year. In 2002, a programme of evaluation trenching by OA in 2002 identified an area of Bronze and Iron Age activity, including two ring ditches and a small enclosure in the west of the site (Site D). A large complex of features was recorded in the northern area of the MDA (Site B), and a Roman-period ladder settlement was recorded in the central part of the site (Site C). In the east of the site, evidence for medieval activity that extended from the scheduled medieval area was encountered (Site E). Sites B, C and E were preserved *in situ* (Fig. 2).

1.2.5 OA's excavation in 2007 and 2008 at Aylesbury Vale Parkway was situated immediately north of Akeman Street. A ditch recorded in the southern part of the site may be an outer roadside ditch. Early- and mid-Roman ditches and pits were uncovered, and a

cremation burial was tentatively assigned to the early Roman period. The landscape in the later 3rd or 4th century was marked by a system of enclosures and boundaries. Hammerscale and a concentration of mainly late Roman coins hint at significant roadside activity. Two late Roman inhumation graves were also recorded. The work revealed evidence of medieval and post-medieval agricultural activity.

1.2.6 The putative 'small town' or roadside settlement at Fleet Marston is known mainly from surface finds, including tegulae and pottery of 2nd-4th century date, and according to Ordnance Survey records, Roman building materials and foundations were removed by a farmer in 1941. The extent of the settlement has not been defined, but cropmark evidence indicates that a complex of ditched enclosures extended between the road and the site of the modern Fleet Marston farm (Pre-Construct Archaeology 2009). The date of these features has not, as yet, been confirmed by excavation, but it is likely that they represent elements of the Roman settlement.

1.2.7 A number of prehistoric, Roman and medieval sites were encountered during a watching brief by Network Archaeology along the route of a 43m-long gas pipeline between Westcott to the north-west of Aylesbury and Steppingley in Bedfordshire (Network Archaeology 1999). Two sites (sites 7 and 8) were located in the parish of Fleet Marston. Ditches and gullies were recorded in site 7, with associated pottery suggesting deposition from the 1st century AD. Part of a metalled Roman road that extended north-west from Akeman Street was recorded in site 8. Another site, *c* 2km north of Aylesbury (site 9), contained quarry pits used, it is suggested, to extract clay for pottery production in the Roman period, and finds evidence that hinted at highstatus occupation nearby.

1.2.8 Other sites of particular relevance to the understanding of the archaeology at Berryfields MDA include Bierton, where later Iron Age settlement and a Roman villa are known (Allen 1986) and the Aston Clinton bypass, where late Iron Age and Roman settlement and aspects of villa-like occupation have similarly been recorded (Masefield 2008). Excavations on the bypass also exposed part of Akeman Street. In addition, Iron Age and Roman occupation, the latter including evidence for ironworking and possibly a trading function, is attested at Walton Court, *c* 4km southeast of the MDA (Farley *et al.* 1981). Occupation at Weedon Hill, 2km east of the MDA, also served a specialist function, with evidence for a Roman-period 'malting house' (Wakeham and Bradley 2013).

1.2.9 Activity in the Saxon period in and around the MDA is of an uncertain character. There is documentary evidence for a royal palace at Quarrendon to the east of the MDA, and according to legend, St Osgyth was born there in the 7th century. Early-mid Saxon archaeological remains are, however, sparse and limited to chance finds, such as pottery at Quarrendon and a brooch found near Fleet Marston (although the latter may point to the presence of a cemetery). Quarrendon is listed in the Domesday Book as Querendone, which may mean 'Quern-place' and refer to a Saxon mill there. The medieval settlement of Quarrendon is a scheduled site, and associated ridge and furrow earthworks surround the settlement (Farley 2009).

1.2.10 The landscape at Quarrendon was significantly altered in the 16th century with remodelling of the manor house by the landowner, the Lee family. Earthworks relating to the mansion and formal gardens that were established still survive. During the postmedieval period, Quarrendon was known for its fine grazing lands. Berryfield [sic] was recorded in the middle of the 17th century as pasture, which, as the Victoria County

History notes, was let 'for £800 yearly, the tenant not complaining of his bargain' (BHO, nd).

1.3 Archaeological description

1.3.1 The results of the investigations have been assessed and preliminary spot dating and finds and environmental assessments have enabled the site to be divided into phases of activity. These phases are preliminary but considered to provide an accurate view on current evidence of the sequence of activity on the site.

1.3.2 Features into which more than one intervention was dug (mostly ditches) have been given a subgroup number (SG) for ease of analysis and description. In all other cases, the intervention or cut number has been used as the principal feature reference.

1.3.3 The main features considered to represent activity in each phase are described and shown on plans (Figs 4-6). For the purpose of this assessment other features are discussed broadly but not necessarily mentioned or labelled by number.

1.3.4 Figure 3 shows a plan of the whole site with activity foci and significant landscape features identified.

Phase 1: Natural

1.3.5 The underlying geology is the Jurassic and cretaceous clay of the Denchworth Soil Associates (SSEW 1983), sealed beneath clay soils and fine loam.

Phase 2: Prehistoric (Fig. 4)

1.3.6 Evidence for later prehistoric settlement was encountered almost exclusively in the western part of the investigated area (Site D). Much of the later prehistoric pottery recovered from the investigation was recovered from features in this part of the site. Features located in this area not dated by pottery are also likely to belong to this phase of activity by association and the virtual absence here of material of any other date.

1.3.7 Activity provisionally dated to the Bronze Age or early Iron Age in Area D is attested by pottery recovered both from the excavation and the 2002 evaluation. Two sherds from the evaluation were recovered from a ditch recorded in Trench 21.

1.3.8 Three ring ditches (SG 8094, 8093, 8100) and an oval enclosure (SG 8095) were identified and dated broadly to the middle Iron Age by pottery recovered from their fills. There were at least two phases of construction, demonstrated by the intercutting of two of the ring ditches, suggesting an extended episode of settlement. The three ring ditches

clearly represent roundhouses, with entrances in the east and associated postholes which would have supported porch or doorway structures.

1.3.9 Part of another possible enclosure was partially revealed at the southern boundary of this area. SG 8111 was not dated by pottery and its shape was not uniformly circular pointing to an enclosure, rather than a roundhouse.

1.3.10 Two parallel but fairly irregular ditches (SG 8115, 8104) aligned west to east extended through the middle of this part of the site and may represent a prehistoric trackway. This trackway cut through ring ditch SG 8100 and extended for *c* 100m before petering out, probably owing to later truncation. The line of the ditch continued further to the

east, suggesting a significant route-way linking the settlement area to the wider landscape.

1.3.11 Various ditches to the south of the trackway suggest the presence of prehistoric enclosures. Some were ephemeral and their extents unclear and remain undated. Ditch SG 8105 defined an enclosure extending from the south side of the trackway. Pottery recovered from the ditch dated to the middle Iron Age. This was truncated by the ditch of a much larger enclosure defined by ditches SG 8108 and SG 8109. The interior of this enclosure contained many pits, postholes and tree throw holes.

1.3.12 A single ring ditch was located in the southern part of the site, just north of the Roman road (Fig. 5). Ditch SG 8028 remained as two segments with gaps in the south-east and north-west. Just to the north-east was a short length of ditch and may represent the ephemeral remains of an enclosure ditch. Pottery from both features was spot dated to the later prehistoric period.

1.3.13 Another ring ditch was recorded within the central part of the site in the Academy site. This is likely to represent another roundhouse, though no pottery was recovered from the ring ditch or associated features.

Phase 3 and Phase 4: LIA to Early Roman (Fig. 5)

1.3.14 Phase 3 encompasses a period spanning the Roman conquest. It should be noted that features assigned to this phase were not necessarily in use during the transitional period from Iron Age to Roman. Pottery recovered from Phase 3 features was characterized by a high proportion of grog tempered pottery, which was manufactured from the later 1st century BC to the late 1st century AD. Without other dating indicators, it is difficult to date deposition to one side of the conquest or the other with certainty. For the purpose of this assessment, however, Phase 3 is described with

Phase 4, to which features have been dated more certainly to the early Roman period.

1.3.15 Phase 3/4 features mainly comprise field ditches and trackway or roadside ditches. Part of the Roman road of Akeman Street was revealed in the southern part of the site. A wide compacted surface with twin flanking ditches on either side were recorded.

1.3.16 The outermost ditches (SG 8018 and SG 8016) were very similar, both having wide upper profiles and a very narrow concave base. The northern ditch recut an earlier undated ditch and was recut in Phase 4. The upper fill of an intervention through the southern ditch contained pottery dated to *c* AD 43-70. A human burial (3340) was recovered from the upper part of the outer northern roadside ditch and is also considered to date to this early Roman period.

1.3.17 The two inner ditches (SG 8017 and SG 2684) were situated *c* 15.3m apart. The earliest fill of the southern ditch contained pottery dated up to AD 100.

1.3.18 The road surface consisted of a layer of compacted gravel (2708) and limestone in a sandy silt matrix which overlay a compacted soil layer. The surface measured 0.1m in thickness and spanned almost the whole area between the inner roadside ditches, being *c* 15m in width. Pottery recovered from the layer dated to up to *c* AD80.

1.3.19 It was clear by analysis of spatial alignments in the southern part of the site that there were at least three phases of field system. The earliest alignment consisted of a long boundary ditch (SG 8025) aligned WNW-ESE that extended for *c* 110 m and continued beyond the eastern site boundary. One ditch (SG 8021) extended south and terminated at ditch SG 8019. The majority of the pottery from these ditches dated broadly to the late Iron Age/early Roman period, although the ditches were on a similar alignment to the road and roadside ditches, suggesting that the road already existed when the field system was established.

1.3.20 Two short posthole alignments were located within the westernmost 'field' in this area. Only one posthole contained pottery for dating (*c* 50 BC-AD 100), but the alignment most closely fits the first phase of early Roman field system.

1.3.21 The second phase of field system was aligned slightly more to the NE-SW axis and constituted a possible trackway, defined by ditches SG 8022 and SG 8023. Several field ditches extended to the east of the trackway, overlaying the earlier field system.

1.3.22 The third phase of early Roman field system was on an alignment that had rotated further on a NE-SW axis. Ditches SG 8020 and SG 8024 may define a trackway, with a new layout of fields extending to the east.

1.3.23 On the south side of the Roman road, ditches defined the four fairly regularly sized fields. There were very few features within the fields and only one of these was dated, pit 3008. A large pottery assemblage dated to *c* AD 43-70 was recovered from its fill.

1.3.24 This early Roman field system was extensive, continuing in an area up to 750m north of the Roman road and *c* 800m from east to west.

1.3.25 In the area excavated under QAVC12, in the north of the site, an enclosure was defined by ditch SG 8062 and this appears to be situated just north of a trackway extending to the north-west (SG 8058 and SG 8060) (Fig. 3). Parts of field ditches extended off the trackway to the north.

1.3.26 Another possible early Roman trackway extended to the far north-east, defined by fragments of ditches belonging to this phase, including SG 8044 and 8045 (Fig. 3). These ditches are on the same alignment as the nearby early Roman field ditches and may represent a precursor to a later more substantial trackway (see below).

1.3.27 There were very few isolated features located within the wider field system and none dated to this phase.

Phase 5: Middle Roman

1.3.28 The roadside ditches in the south of the site continued to be receive cultural material in this phase – pottery in the upper fills dated to AD 250-350 – which may reflect continued use of the road and occupation of the area. A few ditches and enclosures were established during the middle Roman period, most notably within the AYLBER16 excavated area, where two enclosures were defined by ditches SG 8139 and SG 8141 (Fig. 3). These enclosures are aligned with the ditches, preserved *in situ*, of the ladder settlement to the west and may be part of the same episode of activity.

1.3.29 Some of the ditches of the early Roman field system continued to be infilled during this phase, and at present it is not clear if the ditches were still in use as field boundaries or if the material was deposited into the ditches of essentially abandoned fields and enclosures.

1.3.30 A trackway through the centre of the ladder settlement (Fig. 3) was revealed by the excavations to the north-east of the area preserved *in situ*. The trackway was defined by a ditch on either side and measured *c* 13.5m in width. It could be traced through the site for over 1km from the south-west, where it would have extended as far as Akeman Street, through the preserved ladder settlement, and towards the north-east, where it continued beyond the limit of excavation. All the pottery recovered from the roadside ditches has been dated only broadly to the Roman period at present, but judging by its alignment and stratigraphic relationships it seems most likely that the trackway dated to the middle Roman period. An area of metalled surface was recorded, and a possible stone structure (4118) also appears to be associated with the trackway.

1.3.31 A smaller track similarly extended through the preserved ladder settlement, and was traced in QAVC12 area, but could not be closely dated.

1.3.32 Few isolated features dated to this phase, but two waterholes (3993 and 3924) (Fig. 3) situated to the west of the trackway appear to date to this phase and may be set within roadside enclosures here.

1.3.33 A particularly significant feature dated to this phase was located just to the south of the Roman road in the south of the site. A pond (3062) was located *c* 30m south of the southern roadside ditch. An oval feature (3067) was cut into the pond when the pond had infilled or silted up.

1.3.34 The pond, which may have been fed by a natural spring, measured 16m in length and 15.2m in width. It contained four deposits of mid blueish grey silty clay, the upper of which (3066) contained pottery dated to *c* AD 120-160. A coin from the earliest fill (3063) dated to the 1st to 2nd century.

1.3.35 This dating provides a *terminus post quem* for the excavation of pit 3067 through the upper fill in the southern part of the pond.

1.3.36 Pit 3067 contained six waterlogged fills from which an abundance of artefacts and ecofacts were recovered (Fig. 6). The feature measured *c* 8.8m in length and 6.6m in width and 1.75m in depth. The pottery from the earliest fill of the circular feature dates to *c* AD 180-200. A large number of coins ranging in date from early 2nd to the mid 4th century were also recovered, including from the lowest fill, though these may represent deposition into soft soil over an extended period of time.

1.3.37 A remarkable assemblage of finds was recovered from the pit. A number of complete or near complete vessels were found. These were accompanied by the well-preserved remains of a wooden basket (Fig. 7), leather shoes, wooden tool handles, a wooden plank that may have formed part of a platform by the side of the pit, at least three eggs, many disarticulated animal bones, and abundant plant remains and insects. Moss and oak leaves were also observed by the excavators.

1.3.38 A rectangular area of laid flat stone (3276), 2m in length and 1.5m in width, was seen just to the east of the pond and may relate to the use of the pond (Fig. 8). The stone 'paving' was set within a construction cut, and pottery associated with the feature included amphorae and mortaria that pointed to an early or middle Roman date. A ditch or gully extended from here to the pond.

Phase 6: Late Roman

1.3.39 Feature 2635 was a possible tree throw hole in the far south of the site and south of the Roman road. Three sherds of a flanged bowl within it dated to the 4th century.

1.3.40 One of the ditches on the northern side of the road contained an ceramic assemblage dated to AD 270-410, showing that the roadside ditch remained available for deposition into this period.

Unphased Roman

1.3.41 A number of ditches contain pottery of a broad Roman date, but could not be phased more closely.

1.3.42 Two parallel ditches were found in the north west of the site (SG 8122 and 8123) (Fig.4) and may have formed a trackway leading from the Roman road towards the east. The alignment is different from the other Roman alignments on the site so it has not been possible at this stage to more closely relate this feature to other activity.

1.3.43 Another section of possible trackway (SG 8037 and SG 8039) (Fig. 3) was identified to the east of the main middle Roman trackway and may have extended from it. The

pottery recovered from its fills has presently only been broadly dated to the Roman period.

1.3.44 A sub-rectangular enclosure (Fig. 3) was situated to the east of the middle Roman trackway and truncated the trackway defined by ditches SG 8037 and SG 8039. It was defined by a ditch that appears to have been recut on at least two occasions (SG 8040, SG 8041, SG 8042) and the interior appears to have been subdivided into two by ditch SG 8038. Only one feature was identified within the interior of the enclosure (a pit) and two large pits just to the west of it. None of these contained pottery and all remain unphased.

1.3.45 A human inhumation (3003) had been placed on the north side of the pond (Fig. 5). An urned cremation burial (2994) with two ancillary vessels was found close by. None of the pottery vessels could be closely dated within the Roman period.

1.3.46 Two large timber piles were salvaged during machining by a third-party contractor to the south of the MDA (Fig. 3). They were found on the southern side of the present course of the River Thame at the point where the route of Akeman Street crosses the river, and it remains a possibility that the piles form part of a bridge. Initial examination suggests they are Roman in date, but a medieval or post-medieval date cannot at this point be completely discounted.

Phase 7: Anglo-Saxon

1.3.47 No material of Anglo-Saxon date was found and no features were attributed to this phase.

Phase 8: Medieval

1.3.48 Despite the proximity of the excavated areas to the Quarrendon medieval settlement very little of medieval date was recovered from the site.

1.3.49 The site was traversed by the remains of ridge and furrow on a WNE-ESE and perpendicular alignment relating to agricultural activity in the fields around the settlement. No other features were found.

Phase 9: Post-medieval

1.3.50 A series of parallel ditches (SG 7004) (Fig. 3) extended through the north-eastern part of the site. They followed a sinuous route but were broadly NW-SE aligned. There were at least three ditches and they followed the line of field boundaries outside the site and can be seen on historic mapping. These ditches may define a post-medieval trackway or have a purely drainage function related to the post-medieval field system.

1.3.51 Ditch SG 8064 (Fig. 3) was the only other feature of this date identified within the excavated areas. It was aligned ENE-WSW and extended west from Collington Road, which ran through the site.

1.4 Statement of potential

Stratigraphy

1.4.1 While a good understanding of the stratigraphic sequence and chronology has been gained, there is potential for greater resolution of the site phasing with the application of additional dating evidence, principally from full recording of the ceramics and radiocarbon determinations.

1.4.2 Analysis of the stratigraphic sequence will focus on the development, morphology and function of the Iron Age settlement and subsequent Roman-period field systems, enclosures and trackways. This will allow questions of the site's character and its place within the landscape to be addressed.

Pottery

1.4.3 Some 7800 sherds of pottery weighing 78kg were recovered from the Aylesbury Berryfields MDA and the associated Aylesbury Vale Academy sites. The assemblage was dominated by pottery of late Iron Age/early Roman date, though middle Iron Age pottery is also well represented. Middle and late Roman pottery is present, including complete vessels, though in much lower quantities.

1.4.4 The prehistoric pottery has been rapidly scanned to characterise the assemblage. It is necessary to record the pottery in more detail in order to confirm or refine the dating, and to identify forms and fabrics to a greater resolution. Macro- and microscopic examination of the fabrics will potentially point to source, and stylistic comparisons with contemporaneous pottery in the region may allow cultural affinities to be identified.

1.4.5 Completion of the detailed recording of the late Iron Age and Roman pottery will allow the dating of context groups and the site sequence to be refined and finalised.

1.4.6 The pottery will also contribute to questions of site status and function. Key measures include the ratio of dishes and bowls against jars (cf. Evans 2001), decorated samian ware as a proportion of the samian assemblage (Willis 2004), and the relative proportions of fine and specialist wares (Booth 2004). Comparative data will be sought from a range of local and regional sites, including Bierton (Parminter 1986), Walton Court (Farley *et al.* 1981), the Aston Clinton bypass (Slowikowski 2008) and Thame (Booth forthcoming), among others, as well as roadside settlements and higher-status sites in the wider region.

1.4.7 Comparison of forms and fabrics from a range of sites will allow the assemblage from Aylesbury Berryfields to be located within its cultural zone and trading networks. Does the site form part of a zone that includes Milton Keynes (Marney 1989), or are its affinities elsewhere? To what extent was pottery supply defined by the Thame river, Akeman Street and the Chilterns? Recent work by Stephen Rippon (forthcoming) on the distribution of pottery in eastern England (including Buckinghamshire) has pointed

to the existence of socio-economic zones, and suggested that pottery trade and exchange were socially embedded. Pottery supply to Aylesbury Berryfields will be considered in the light of these results.

1.4.8 Particular attention will be given to evidence of 'local' pottery production, such as the presence of wasters or 'seconds' among the assemblage. Distinctive fabrics, identified through microscopic examination, that may be tied to local geologies will also be described.

1.4.9 The extensive area of excavation is amenable to an investigation of zoning and deposition patterns. For example, analysis of mean sherd weights across the site may identify core and peripheral areas of activity within the site and point to modes of waste dispersal. Analysis of the distribution of forms and fabrics across the site may reveal differences in status and function. Special attention will be given to the pottery from pit 3067 in order to better characterise the nature and date of deposition and the character of the assemblage.

1.4.10 A note will be made of perforated vessels, worn surfaces, burnt sherds, graffiti and the like, which can contribute to questions of vessel use.

Ceramic building material

1.4.11 The assemblage comprises a small quantity (86 fragments, 3226g) of tile of Roman and post-Roman date. The Roman tile comprises a standard suite of roofing, brick and flue tile, whilst the post Roman consists exclusively of roof tile predominantly of late 15th to 17th century date.

1.4.12 The assemblage of ceramic building material is small, and while it can provide dating evidence for some features lacking other datable material, it has limited potential to add to the interpretation and understanding of the site. It is unlikely to represent structures within the area of the site, but during both the Roman and post-Roman periods it is probable that most of the tile was introduced into the area as a result of agricultural activities such as manuring, field drainage or maintenance of farm tracks.

Clay pipe

1.4.13 A single fragment of post-medieval clay pipe was recovered. No further work is required.

Fired clay

1.4.14 The assemblage comprises a small quantity (254 fragments, 2326g) of fired clay consisting of portable oven furniture identified as triangular perforated bricks and oven or hearth plates. There was little evidence for structural oven or hearth fired clay. The fired clay was made in three fabrics including organic tempered and sandy.

1.4.15 The fired clay has potential to inform our understanding of the site and activities undertaken. The fired clay assemblage is probably indicative of domestic activity,

though some element of industrial activity cannot be ruled out. The assemblage is broadly of late Iron Age-early Roman date. The briquetage is significant as evidence of trade in salt, an essential item, which often remains invisible in the archaeological record.

Coins

1.4.16 Some 200 coins were recovered from the excavations. These include finds from hand excavation and associated metal-detecting activity (excluding at present a metaldetecting rally in the field surrounding Akeman Street south of the A41 in the 1990s, the records of which have yet to be located). The total also includes seven medieval and post-medieval coins and tokens, leaving 193 coins of Roman date.

1.4.17 The coins are of value for dating, even if only of a limited number of contexts. More importantly, the overall coin loss profile provides information on the chronological trajectory and, by way of comparative analysis, general character of the Berryfields settlement. Examination of these aspects will be enhanced if data can be obtained for metal-detected collections from the near vicinity. The coins are particularly important for understanding of the potential ritual activity in and around pond 3062. Detailed analysis of evidence relating to the distribution of coins within this feature compared with distributions of other material will contribute to enhanced understanding of this activity. Rapid analysis of the distribution of coins in deposit 3082 may also shed light on changing patterns of activity across a larger area. All these analyses can be usefully set in a wider regional context of patterns of coin use and deposition.

Other metal finds

1.4.18 A total of 394 metal objects were submitted for assessment, of which 70 are of copper alloy, 47 are of lead, and 272 are of iron. There are also single finds of aluminium, pewter and bronze.

1.4.19 The assemblage of metal finds has good potential to contribute to our understanding of activity at Aylesbury Berryfields. Most of the assemblage is undiagnostic or nails, but a range of functional categories are represented, with personal items such as brooches, bracelets, beads and buttons all represented. There is also a selection of household/industrial items such as weights and spindle whorls. A number of these finds can help with dating (eg brooches) and will be useful for considering status (personal items in particular) and activity (tools and fittings).

Iron slag and related high-temperature debris

1.4.20 A small quantity of iron slag (2.3kg) was recovered. Of this, 1.7kg is represented by the two smithing hearth bottoms. The rest of the material is heat-magnetised grit, small stones, sand and occasional fired clay.

1.4.21 The assemblage is of no significance except to demonstrate a lack of iron making and iron working in past periods on this site or – as in the medieval period – possible oneoff

episodes after which the slag was discarded and dispersed by re-deposition. No recommendations are made for further work other than that a geologist should examine the pieces of slag flagged up in the comments column of the quantification table as possibly being iron ore. The assemblage could, if space is at a premium, be discarded.

Flint

1.4.22 The excavations brought to light a small assemblage of 114 flints as well as 209 pieces of burnt unworked flint weighing just 351g. The assemblage included material dated to the early Mesolithic, late Neolithic-early Bronze Age and mid-late Bronze Age.

1.4.23 The assemblage from Aylesbury Berryfields has very little potential to inform us further as regards prehistoric activity in the excavation area. The assemblage is very small and too dispersed to merit more detailed analysis, although the assessment report will need to be edited and updated for publication.

Worked stone

1.4.24 Worked stone, including querns, processors and a millstone, was recovered from eight contexts. The stone has reasonable potential to add to our understanding of the site. Most of the stone indicates domestic activity – querns represent the processing of grain and processors could indicate a range of activities. The millstone, however, represents the organised and centralised processing of grain somewhere in the near vicinity. How this relates to activity on the actual site will need further consideration.

Leather

1.4.25 The two nailed shoes from waterlogged pit 3067 show that 'Romanised' footwear was being worn. The information adds to the small but growing body of evidence for the extent of the use of vegetable tanned leather in civilian south-east Britain, and illustrates the degree of 'Romanisation' adopted by a small rural community in the south east of the country. Relatively little is known about Romano-British leatherworking in civilian rural Britain in comparison to military and urban contexts, and the information is scattered with much residing in 'grey literature'. A summary of the assemblage should be included in the final publication/narrative to make the data gathered available to a wider audience and allow further research by others.

Wood

1.4.26 An assemblage of wooden objects was recovered from pit 3067. In general, the assemblage is of small to medium size in national terms. It is undoubtedly of local importance, adding to the corpus of wooden objects in the region and enhancing understanding the site and aspects of local woodworking traditions at the time. The material is also given greater meaning by its likely ritual associations.

1.4.27 Two of the worked wood items are of national importance. The part spelk (fine oak lath) and part wicker basketry tray (SF2687) seems to be a unique sample of the Romano-British basket makers' craft, unique both for its degree of preservation and use of mixed materials and techniques (Fig. 7). It also has potential to inform our understanding of activity at the site, particularly that of ritual character.

1.4.28 The unique dumped remains of a saw baulk with two conjoined planks (SF2685) is of considerable technical importance for understanding the variations in woodworking that was possible in Roman Britain.

1.4.29 The salvaged piles are at least of regional significance if demonstrated to represent a Roman-period crossing of the Thame. The piles are also interesting from a technical viewpoint. We can note that the piles fall towards the very largest end for Roman bridge piles known to woodworking specialist Damian Goodburn, and they appear to be more 'Romanised' than the woodworking traditions evident on the wood from pit 3074. The piles are certainly worthy of brief, focused comparison with woodwork from other Roman road bridge sites investigated in Britain. However, while a Roman date for the piles seems likely, this has yet to be confirmed. It is therefore imperative that a radiocarbon date is obtained from the outer rings of sapwood on pile B.

1.4.30 The unworked material could provide some additional information on the nature of the local environment in the area.

Human remains

1.4.31 The assemblage of human remains is small with limited information surviving. It comprises one possible prime or middle adult of unknown sex from a discrete grave, disarticulated bones representing a minimum of three adults (one unsexed adult; a possible female young adult and a possible prime adult of unknown sex) from three non-grave features, and a single cremation burial. Some pathology was present and is extremely common in archaeological assemblages.

1.4.32 No further analysis is required for skeleton 3004 (grave 3003) and disarticulated bones 2623 and 3073. It is recommended that the bones from 3340 are analysed with reference to the site records to confirm: a) whether they represent the remains of one or more individuals; b) age at death; and c) the nature of the deposit, for example, whether it is a disturbed inhumation or redeposited bone.

1.4.33 It is recommended that cremation deposit 2999 (grave 2994) undergo full osteological analysis, following published guidelines (McKinley 2004). The results of the analysis should be discussed alongside the other human remains recovered from Aylesbury Berryfields and compared with contemporary assemblages from the Buckinghamshire region.

1.4.34 Radiocarbon samples will be collected from graves 3003 and 2994 in order to obtain more secure dates for the burials, so that all of the human remains may be interpreted

with reference to contemporary human bone assemblages from Aylesbury and the wider region.

Animal bone

1.4.35 A total of 12,554 animal bones were recovered from the site, mostly from contexts associated with the middle Iron Age and late Iron Age/early Roman activity.

1.4.36 With the site straddling the Iron Age and Roman periods, there are several research questions to which this assemblage may be able to contribute information. The assemblage provides an unusual opportunity to observe changes in farming practices between the Iron Age and Roman periods on one site in Buckinghamshire. There appears to be a high degree of continuity between the late Iron Age and the Roman periods in the region but further evidence would help to substantiate this, so sites such as this which cover both periods are crucial for doing so. The agricultural economy in claylands and heathlands in the region, including the Vale of Aylesbury, remains poorly understood compared to the chalklands.

1.4.37 Some specific changes do seem to occur to livestock in the Roman period, and this assemblage has potential to contribute to investigations of changes to livestock size and husbandry strategy, in particular whether the proportions of livestock vary through time. Although the potential for using biometric data from the site to observe changes in livestock size is limited, with over half of the bones complete enough for measuring dating from the middle Iron Age, it may be possible to combine this data with other sites in the region for an overview of any changes.

1.4.38 A significant feature of the assemblage is the high proportion of horse from the middle Iron Age to the Roman period. In each phase of occupation, horse is one of the three most common animals on the site (excluding the enormous number of frogs and toads recovered through environmental sampling). A fundamental question therefore concerns the role of horses at the site. The assemblage will be compared to published faunal assemblages from contemporary sites such as Ashville Trading Estate (Wilson *et al.* 1978), Farmoor (Wilson 1979), forthcoming reports Gill Mill (Strid 2015) and Didcot Great Western Park (Strid 2016), and with reference to datasets by Hambleton (2009) and the recently published Roman rural settlement project (Allen *et al.* 2016).

1.4.39 Additionally, the use of animals in ritual and religion during the Roman period is an area of considerable interest. The assemblage from waterlogged pit 3067 will be considered with regard to the possible votive interpretation of the feature.

1.4.40 The Iron Age environment is locally variable in the region and further work is needed to develop understanding in this regard. Alongside other types of environmental investigation, such as pollen analysis and geoarchaeology, micro mammals recovered from the site that occupy an ecological niche may be able to provide some indication of general trends.

1.4.41 Finally, several possibly significant features of the assemblage include a possibly early domestic fowl specimen. The date of domestic fowl introduction into Britain has

recently been reviewed but continues to be a topic of considerable interest. If securely phased, a fowl bone that potentially dates from the middle Iron Age would be of considerable interest and so it is recommended that this bone is radiocarbon dated. If confirmed as Phase 2, the black rat bone should also be radiocarbon dated, as these animals are thought to have been a Roman introduction.

Fish remains

1.4.42 A small number of fish bones were recovered from the residues of three soil samples from pit 3067. No further work is required, but the report should be included in the final publication.

Eggshell

1.4.43 The discovery of the remains of at least three Roman-period eggs from pit 3067 – assumed to be chickens' eggs – is extremely rare in a British context, and certainly merits publication. Samples of eggshell are currently being examined at the University of Bournemouth, where it is anticipated that the eggs will be identified. The conclusion and any other observations will be incorporated into the analysis stage and publication report.

1.4.44 Further examination of the stratigraphic records will be necessary to clarify as far as possible the nature of deposition and number of eggs represented. Do the eggs represent a 'basket' of eggs ceremoniously placed in the pit or a handful of eggs thrown away as waste?

Insects

1.4.45 The three samples from pit 3067 that produced large insect assemblages all have a high potential for full analysis: samples 193 and 228 from the primary fill 3074, and sample 227 from context 3073. Ideally two samples should be analysed in conjunction with plant remains: sample 193 to provide information on aquatic and terrestrial conditions, and land use associated with the original tank; and sample 227 to help elucidate conditions following the placing of the basket of eggs and other finds in the feature.

1.4.46 In addition, a detailed scan of sample 228, which was taken specifically from the upper part of 3074, together with a scan record of incremental samples taken from the lower part of 3074 after plant remains have been extracted, can be used to address the possibility that depositional conditions may have changed during the accumulation of the primary fill, specifically whether the feature was originally fed by a spring or running water.

Molluscs

1.4.47 Molluscs from contexts 3073 and 3074 of pit 3067 were very well preserved and abundant. Full analysis has the potential to clarify local environments of deposition

and the hydrological conditions within and adjacent to the feature, for example determine if it was a closed or open system fed by springs, where the banks were eroding bare earth, muddy pools, or under stable vegetation such as long grass or reeds.

Charred plant remains, waterlogged plant remains and charcoal

1.4.48 A total of 124 dry and 27 wet (waterlogged) flots were scan-recorded and assessed. Flots have been recommended for full analysis based on the results of the preliminary assessment and their potential to provide evidence of socio-economic activities being undertaken on the site (crop husbandry, diet, living conditions of communities, exploitation of woodlands for fuel, woodland management). In addition, the results will allow the composition of the local flora and woodlands from charred plant remains, waterlogged plant remains and charcoal to be inferred. The value of the material to address research questions posed in local and regional research agendas has also been considered.

1.4.49 Generally, the dry flots were disappointing, containing relatively few identifiable charred plant remains, and potentially identifiable charcoal was even scarcer. To some extent this paucity of material is probably a reflection of the types of contexts: around one third of samples came from postholes and unproductive pot fills, many of which remain unphased. However, even 30-40 litre samples from ditch and pits frequently contained poor assemblages, with limited scope for analysis and probably representing at least secondary deposition.

1.4.50 The two lower fills of pit 3067 contained well preserved assemblages of waterlogged plant remains and insects, but also charred plant remains. The analysis of these assemblages should form the focus of further work, together with analysis of a limited number of flots from other features.

1.4.51 The following samples are considered to have potential to contribute to the research themes listed below (1.5.31).

1.4.52 Posthole 1637 (sample 143) contained abundant fragments of charred hazelnut shell as well as a large quantity of oak (*Quercus*) charcoal. Although this feature is currently unphased, deposits of charred hazelnut shell are often of early prehistoric date (Moffett *et al.* 1989, Robinson 2007) and if an early date can be established, ideally by radiocarbon dating, both charred plant remains and charcoal from this sample should be fully analysed. The sampling of Neolithic contexts from the south of England is considered to be a research priority, owing to the paucity of information regarding early prehistoric crop cultivation and subsistence in this region (Campbell and Straker 2005, 10).

1.4.53 The assemblage from grave 3003, sample 186, has been phased as early to mid Roman and is the only sample from this phase. The flot contains charred remains consistent with redeposited waste material from nearby crop processing activities, but as grave

backfill the deposit cannot be considered to be securely phased, and a radiocarbon date would be warranted.

1.4.54 The lowermost fills of mid Roman pit 3067, in particular contexts 3072, 3075, 3073 and 3074, all contain large numbers of charred plant remains, in particular abundant well preserved glumes of spelt wheat. The absence of weed seeds from contexts 3073 and 3074 suggests the presence of a cleaned crop, but weed taxa commonly found in Roman arable assemblages, such as stinking chamomile (*Anthemis cotula*) and dock (*Rumex* sp.), are relatively frequent in contexts 3072 and 3075.

1.4.55 Many of the wheat grains in pit 3067 have sprouted, a characteristic also seen in sample 264 (QAVC) and sample 9006 (AYLBER16). There are also frequent detached coleoptiles in the pit fills. These were present sparsely in a number of other samples at the site, but were notably frequent in samples 172 and 174. These three types of evidence – glumes, sprouted grain and detached coleoptiles – have been increasingly interpreted as the remains of malting activities. They will be a focus for further analysis of the samples from the four lower fills of pit 3067 and incremental sample 224 from the very base of the pit. Identification of specialised agricultural activities, such as production of malt, has been identified as a research priority for the Solent-Thames region (Fulford 2014).

1.4.56 The two lowermost fills of pit 3067, contexts 3073 and 3074 also show excellent preservation of waterlogged plant remains derived from plants growing both within and surrounding the pit. Analysis of plant macrofossils from each of the 1L incremental samples through these fills (two from 3073 and nine from 3074), in conjunction with the analysis of insects and pollen, will provide a multi-proxy picture of the surrounding environment and conditions within the feature during its use and subsequent infilling. Additionally, the lowermost sample from overlying context 3071 (sample 209) is worth analysis: although this shows poorer preservation and a more limited range of taxa it will provide a comparison to the earlier fills.

1.4.57 As demonstrated by the charred macrofossils and artefacts, pit 3067 was used for the deposition of material beyond that growing locally, and consequently there is potential for these samples to include items such as leaves, fleshy fruits and flowers. Food items such as leafy vegetables, herbs and spices may be preserved in such contexts. These elements of the Roman diet, and by inference, patterns of trade and social access associated with these foods, are less well understood than staples such as cereals owing to the relatively low number of waterlogged samples that have been excavated compared to those that are charred (van der Veen *et al.* 2008). In particular, suitable waterlogged contexts are present at very few rural sites dating to the Roman-period period (van der Veen *et al.* 2007). There is also potential for the recovery of plant remains which have been ritually placed into the pit. The presence of the placed eggs, the abundance of coins and the woven basket all suggest that the pit held a deeper significance to the people who lived nearby; many plants are known to have ritual connotations in the Roman period and deliberately deposited plant remains are known from similar contexts in Britain (eg Lodwick, 2015).

1.4.58 Dated to the late Roman period, sample 174, from ditch fill 2636, contains frequent charred cereal grain and abundant spelt glume bases/spikelet forks, and a number of detached coleoptiles and embryos. Although preservation is not ideal, as the only sample with interpretable evidence of late Roman arable farming it is recommended for further analysis. Sample 172 from context 2278 contains similar material but more abundant weed seeds. Although currently unphased this ditch fill may be contemporary with 2636 if confirmed as such would also be worthy of analysis.

1.4.59 Finally, sample 264 from ditch fill 4012 was the only sample from QAVC12 that contained charred plant remains suitable for further analysis. Cereal grain is common, with a mixture of wheat, barley and oat present, although many of the grains are poorly preserved and it may therefore be difficult to ascertain the proportions of the different cereal types present. Several detached coleoptiles and embryos were noted, and some of the grain has sprouted. Unfortunately, there is currently uncertainty over the stratigraphy of this feature, but if clarified, and it can be shown that the material

in sample 264 is secure, analysis of this sample as it would provide a valuable comparison to the material from Berryfields.

Pollen

1.4.60 The only potential for further work is from deposit 3073 and the lower half of context 3071 from waterlogged pit 3067. The sub-samples from this context produced sufficient and well preserved pollen to enable counts of up to 500 grains to be achieved. The number of deteriorated grains within the sub-samples from these deposits is also considerably less than from other contexts within the pit, and there is little or no evidence for reworking. This could be an important context to analyse, as it is within these sediments that many finds occurred, including eggs, leather, coins and worked wood. An analysis of the pollen would further secure the suggested interpretation based on assessment, but may not add anything new to the interpretation.

1.5 Research aims and objectives

1.5.1 The research questions presented here derive from the potential of the data established above, and are framed where possible with reference to regional and thematic research frameworks (eg Hey and Hind 2014; Kidd 2009; Radford and Zeepvat 2009).

Prehistoric

- Archaeological investigation has generally pointed to sparse occupation of the study area before the 1st millennium BC. To what extent does the evidence of worked flint and pottery add to or revise our understanding of early prehistory in the area? Can posthole 1637, which contained abundant fragments of charred hazelnut shell, be attributed to the early prehistoric period?
- Can we refine the date and sequence of the middle Iron Age settlement? Was occupation continuous or episodic?

- Do the two roundhouses located away from the Iron Age settlement belong to the same phase or to later, late Iron Age or Roman, occupation?
- What was the economic basis and environmental context of the settlement?
- Can a middle Iron Age date for the fowl and black rat bones be confirmed? How does this evidence contribute to current understanding of the introduction of those species into Britain?
- What does the pottery reveal about the settlement's cultural connections and affinities?
- What evidence is there for the extent, arrangement and continuity of pre-Roman field systems?

Late Iron Age/early Roman

- Can phases 3 and 4 be more clearly defined? Is there a distinct pre-Roman late Iron Age phase of occupation at the site (cf. Fulford 2014, research aim 12.2)?
- To what extent to the use of the early Roman field systems continue into the mid Roman period?
- Fulford (2014, research aim 12.6.2) has highlighted the Vale of Aylesbury as a priority area for settlement characterisation. How does the arrangement and size of the field systems and apparently polyfocal character of settlement in the study area conform to regional settlement patterns and to existing models and classifications for rural settlement (eg Taylor 2007; Smith *et al.* 2016)?
- What do we know of structural evidence at the site? From where do the indications of high-status buildings – eg flue tiles and a stone tessera – derive?
- What do the postholes recorded in the field as cremation burials represent? Are they structural or funerary-related?
- What is the economic basis of the early Roman site? How do the fields and enclosures relate to evidence of the animal bone and plant remains? For example, does the strong representation of horse in the period identify the site as a horse market, with the field system defining paddocks?
- How did farming practices change from the Iron Age to the Roman period? Do the plant remains and animal bones represent evidence for continuity or change in farming practices (Fulford 2014, research aim 12.3.3)?
- Is there any evidence for local pottery production? Radford and Zeepvat (2009, 63) have highlighted a paucity of known kiln sites in Buckinghamshire, so this is a clear research priority.

Mid Roman

- Can we establish with any more precision the earliest use of pond 3062? How was it fed? What function did it serve – as a general source of water, a waterhole, or an industrial function? The discovery of a millstone from pit 3067 raises the possibility that the pond served as a mill pond.

- What is the economic basis of the mid Roman occupation? Plant remains from pit 3067 suggests that malting took place in the area. Such evidence can contribute to much-needed research into malting and brewing (Fulford 2014, research aim 12.4.3). The proportions of the main species of animal bone suggests a degree of continuity from the early Roman period.
- What was the function of pit 3067, which was cut into the silted-up pond? Did it have an agricultural or industrial use (eg tank) before being made available for ritual deposition? Was the area of stone 'paving' related to the use of the pit or the pond?
- Can a sequence of deposition for the artefacts in pit 3067 be demonstrated, or has this been affected by the nature of waterlogged contexts (soft boggy ground with artefacts sinking through the fills)? When did votive deposition into the pit cease?
- What do the objects selected for deposition reveal about beliefs of the community and the function of the pit? What evidence is there for organic votive offerings, eg flowers or food items (cf. Fulford 2014, research aim 12.8.1)? Can the basketry be paralleled?
- How did the pit relate to the rest of the roadside site?
- Given the roadside location of the pit, to what extent did the pit attract passers-by or people from surrounding settlements? How do the stakes and planks found within the pit relate to the features, eg as part of a superstructure?

Late Roman

- When did Roman occupation of the area come to an end? How does this compare with other settlements in the region?

General

- How does the evidence from the roadside ditches in the MDA fit with development of Akeman Street (cf. Copeland 2009)? What do deposits recovered from the roadside ditches reveal about the use of the road?
- Can a date for the salvaged piles be established? Do the timbers relate to a bridge across the river Thame? What does the putative bridge and material culture from the site reveal about riverine communication?
- How do the trackways connect to settlements in the wider landscape? How far can we reconstruct the network of roads and trackways in the area?
- To what extent are the range and distribution of the coins a product of site's function and/or roadside location?
- What does the pottery and other artefactual evidence (eg the briquetage and metalwork) reveal about site status, function and economic connections? How did this change over time?
- How does the MDA site relate to the putative nucleated roadside settlement or 'small town' at Fleet Marston?
- What do the human burials at the site (including those at Aylesbury Vale Parkway) contribute to our understanding of rural burial practice in the region?

Post-Roman

- Can the apparent lack of Saxon-period evidence be confirmed? What does this tell us about the post-Roman landscape?
- To what extent can we refine the dating of the medieval ridge and furrow and identify a sequence of development?

1.6 Scope of the project

1.6.1 The post-excavation analysis and publication will encompass the stratigraphic, artefactual and environmental data generated by strip-map-and-sample (SMS) and watching brief (WB) fieldwork carried out across the Berryfields MDA (AYLBER07/10/14/16) and the current assessment. The post-excavation programme will also include the Aylesbury Vale Academy site (QAVC12).

1.6.2 A publication report for the Aylesbury Vale Parkway (ABPR07/08) site has already been produced (Simmonds and Biddulph 2010) and only now requires to be integrated into the final publication report for the Berryfields MDA.

1.7 Interfaces

1.7.1 Where relevant to the understanding and interpretation of the site, the results of evaluations carried out by OA across the MDA in 2002 and more recently (AYBF16) will be considered. Reference to publication and other reports of sites in the vicinity of the Berryfields MDA, for example Billingsfield (Cox 1997), Bierton (Allen 1986), the Aston

Clinton bypass (Masefield 2008), Weedon Hill (Wakeham and Bradley 2013) and the Aylesbury to Steppingley gas pipeline (Network Archaeology 1999) will be essential.

1.7.2 Synthetic accounts of the region in the prehistoric and Roman period (eg Jill and Hind 2014; Kidd 2009; Thorpe 2009; Farley 2010) will provide a useful entry-point when considering the site's place within its local, regional and wider context. In this regard, reference to a recent major study of rural settlement in Roman Britain (Smith *et al.* 2016) will be critical.

1.8 Communications and project review

1.8.1 The project team will communicate by email and through face-to-face discussions. Post-excavation project manager Edward Biddulph will track progress of the project programme on a weekly basis and ensure that work is being carried out to time and budget. The post-excavation programme will be monitored by Leo Webley, head of post-excavation at OA South. Progress updates and details of emerging results will be provided by Edward Biddulph to overall project manager Stuart Foreman to pass on to the Berryfields Consortium with payment applications.

2 RESOURCES AND PROGRAMMING

2.1 Project team structure

2.1.1 The project team is set out in Table 2.1.

Name	Organisation	Role
Leigh Allen	OA South	Finds Manager
Enid Allison	External	Insects
Edward Biddulph	OA South	Project management, report writing, editing, Roman pottery
Paul Booth	OA South	Coins, copy-editing
Tom Booth	OA South	Finds assistant
Matt Bradley	OA South	Head of Geomatics
Kate Brady	OA South	Stratigraphic analysis, report writing, liaison with specialists
Lee Broderick	OA South	Animal bone
Lisa Brown	OA South	Prehistoric pottery
Michael Donnelly	OA South	Worked flint
Stuart Foreman	OA South	Project management, client liaison
Mark Gibson	OA South	Human remains
Dana Goodburn-Brown	External	Conservation
Damian Goodburn	External	Worked wood
Illustrator	OA South	Illustrations
Lynne Keys	External	Iron slag and related high-temperature metalworking debris
Louise Loe	OA South	Head of Heritage Burial Services
Julian Meen	OA South	Plant remains and charcoal
Rebecca Nicholson	OA South	Environmental manager, radiocarbon dating coordinator, fish bone
Cynthia Poole	OA South	CBM and fired clay
Susan Rawlings	OA South	Archiving
Mairead Rutherford	OA North	Pollen
C14 lab, eg SUERC	External	Radiocarbon dating
Nicola Scott	OA South	Head of Archives
Ruth Shaffrey	OA South	Metal objects, worked stone
Liz Stafford	OA South	Head of Geoarchaeology, molluscs
Magdalena Wachnik	OA South	Graphics Office manager
Helen Webb	OA South	Human remains
Leo Webley	OA South	Head of post-excavation; project monitoring
Tim Young	External	Identification of iron ore

Table 2.1: Project team

2.2 Methods statement

Stratigraphy

2.2.1 The existing GIS model and site plan will be revised in the light of any corrections or additions to the stratigraphic data or phasing. Features shown on the GIS model will be tagged with group numbers.

2.2.2 Radiocarbon dates will be sought to clarify the site sequence and date selected features that remain undated.

2.2.3 A narrative of the site sequence, based on the description in section 1.3, will be written. This will be accompanied by plans and selected section drawings. A series of interpretative plans that illustrate the site sequence and function will be prepared, and the spatial distribution of key categories of artefactual material will be investigated in order to identify zones of activity and deposition.

Pottery

2.2.4 Pottery which was scanned for this assessment will be fully recorded. OA's standard guidelines (Booth 2014), which is consistent with national standards (PCRG, SGRP, MPRG 2016), will be used. A range of analytical tools will be used, including statistical analyses (eg mean sherd weights, descriptive statistics, regression analysis, spatial analysis, correspondence analysis), with the results expressed through graphical outputs (eg charts and plots). The pottery report and analysis will be supported by summary data tables.

2.2.5 A selection of pottery will be illustrated by photography and/or line drawings. This will include pottery from pit 6067, intrinsically interesting pottery, and decorated samian. Some 50 vessels are anticipated. Decorated samian will be presented as scanned rubbings (Biddulph 2014).

Ceramic building material

2.2.6 The ceramic building material has been fully recording in accordance with guidelines set out by the Archaeological Ceramic Building Materials Group (ACBMG 2007) during the assessment and as such no further analysis is envisaged. A brief publication report will be produced describing the assemblage and discussing spatial distribution of the material in relation to the site. The quality of the assemblage does not justify a wider regional analysis.

Fired clay

2.2.7 The fired clay has been fully recorded at the assessment stage. It is recommended that a more detailed analysis of the data be undertaken in relation to the site and its features to identify any concentrations or activity areas and associations with other

materials which may be significant in enhancing our understanding of the function of the assemblage. A publication report should be written describing the material and discussing the assemblage in relation to the site and a comparison made with material from neighbouring sites.

Coins

2.2.8 The coins therefore merit full publication and discussion, with the latter taking account of regional comparanda. Necessary tasks are:

- Some 15 coins are indicated as requiring cleaning by a conservator (with a further 20 possible examples, though in these cases there is less certainty that formal cleaning would produce significant additional information).
- Refinement of existing provisional identifications taking account of results of X-ray and cleaning and the need to revisit existing provisional identifications based purely on the initial rapid scan.
- Collation and tabulation of data.
- Short report with discussion based on the general outline of the present assessment.
  • Identification of 3 medieval and later silver (hammered) coins
- Illustration (photographs) of 5-6 pieces of intrinsic interest, including possible variant readings

Other metal finds

2.2.9 The metal finds were briefly scanned during the assessment stage and entered into an Access database. The finds have been identified where possible, quantified and allocated to functional categories. Quantification is generally by object count, with a note of fragmentation were necessary. Nails are quantified by head and fragment counts. Small undiagnostic fragments are quantified by fragment count only and will not require further analysis.

2.2.10 A total of 95 items will need full recording at publication stage and some of these will require identification with the aid of x-rays. Diagnostic items such as brooches, beads and tools will need to be compared to published typologies in order to date them (where possible) and to determine how unusual they are/their provenance and what they indicate about status. A number will require illustration; five have been selected during the scanning process, but an estimate of ten is suggested for the final publication.

Slag and related high-temperature debris

2.2.11 No further work is required, except for a geologist to examine the two pieces of possible iron ore.

Flint

2.2.12 The assessment report will be edited for publication. This will be accompanied by illustrations of up to six flints: a microlith, two scrapers, two end truncations, and a scraper-knife complex tool.

Worked stone

2.2.13 All the worked stone has been recorded at assessment stage and no further analysis of the items is recommended. A short publication report should describe the objects and discuss them in relation to other objects on the site and in the local and regional context. The millstone is of particular interest and further work should investigate where a mill might have been located. A consideration of where other millstones have been found would be very valuable in order to work out where this mill might have been and whether it relates directly to this particular site or more broadly to the local area.

Leather

2.2.14 A basic record has been made, within the constraints of the condition of the material (Appendix B.10). Working drawings of the principal components of both shoes have been made. These will be used as the basis for publication illustrations and will form part of the site archive.

2.2.15 Any summary in the site narrative should include details of the nailing types and the presence and absence of the constructional thonging to enable data gathering by other researchers.

2.2.16 The wet leather cannot be stored indefinitely. Without conservation the leather will deteriorate and is potentially hazardous to health being liable to fungal and bacterial infection. Wet leather presents difficulties with short-term storage, transportation, study and illustration (English Heritage 1995, 6; 2012). Buckinghamshire County Museum will be consulted regarding its discard and retention policy for wet organic material. If the leather is to be retained, it is recommended that the wet leather be conserved. English Heritage Guidelines (2012) provides advice on the conservation options available. If freeze-drying is not available, in this case, it may be considered appropriate for the leather to be allowed to air dry under controlled conditions. The leather should be fully photographed to provide a permanent record should this be undertaken.

Wood

2.2.17 Following the completion of the microscopic wood species work and other environmental archaeological studies, it is clear that marrying up the original site records and the detailed timber records will throw more light on the appearance and use of the ritual pool in the first instance.

2.2.18 Further practical study of the evidence provided in the abandoned saw baulk will also be possible and allow consideration of logistics and the function of the unusually fine boards.

2.2.19 The two piles from the probable Roman bridge are worthy of further comparative analysis against information from other bridge sites. A radiocarbon date will be sought from pile B.

2.2.20 Apart from drawings, some of the objects will be photographed. It is also worth photographing and identifying the species of the broken handle (SF228). The small roundwood from the large pit fill (3074) could also be microscopically identified for local environmental reconstruction.

Human remains

2.2.21 The unburnt human remains require no further recording. Time will, however, be allocated for analysis, comparative research and reporting.

2.2.22 Cremation burial 2999 will be fully recorded following standard methods (McKinley 2004) and to gather information on skeletal elements, the minimum number of individuals represented (MNI), age/sex, non-metric traits or pathological lesions, and pyre technology. The 2-0.5mm residues should be rapidly scanned to look for identifiable fragments.

Animal bone

2.2.23 The animal bone assemblage was recovered principally through hand-collection, although environmental samples were also taken and animal bone extracted from them. The whole assemblage was recorded at this assessment stage with the aid of the Oxford Archaeology reference collection and standard identification guides. Bones were recorded using the diagnostic zones described by Serjeantson (1996) for mammals, Strid (2012) for mammal mandibles and Cohen and Serjeantson (1996) for birds. Some further work is recommended, but is principally confined to analysis of the biometrical and ageing data together with the checking of tentative identifications. A report will be written for publication.

Eggshell

2.2.24 The findings of scientific examination of the eggshell (currently at the University of Bournemouth) will be incorporated into the publication report. A photograph of the complete egg will be sought. Analysis of the context of the egg deposit will be carried out as part of the stratigraphic analysis.

Insects

2.2.25 Further work will comprise the analysis of two samples (193 and 227) from pit 3067, a detailed scan of sample 228, and paraffin flotation and scanning of three incremental samples from context 3074. A final report will be produced.

2.2.26 Based on a rapid scan of the charred and waterlogged flots, up to ten charred flots and twelve waterlogged flots have been selected for further analysis of charred and waterlogged plant remains and a single sample is recommended for charcoal analysis. This will comprise sorting, identification of macrofossils, tabulation and reporting.

Molluscs

2.2.27 Nine samples from 3073 and 3074 of pit 3067 contained abundant shell. Given the assumed low species diversity it is recommended that 4-5 samples are initially chosen across these contexts. Should significant change be observed then further intervening samples should be analysed to a maximum of 9 samples. Methodologies will follow those of Evans (1973). The samples selected for analysis will derive from 2 litres of sediment processed on to 0.5mm mesh and air-dried.

2.2.28 The residues will require multiple flotations to ensure that as much shell as possible has been collected in the flot. Dried flots and remaining residues may require splitting with a riffle box if the concentration of shell is too high. Flots and residues for a single sample will be split in corresponding equal proportions.

2.2.29 Both flots and residues will be picked under a low power binocular microscope for identifiable apical, aperture fragments and whole shells. Shells will be identified and counted with the aid of a modern reference collection to a maximum of 800 shells per sample. Operculae will also be extracted, along with slug plates. Nomenclature will follow Anderson (2005). The final report will be illustrated with a molluscan percentage histogram and species diversity indices (H-HB') as appropriate.

Charred plant remains, waterlogged plant remains and charcoal

2.2.30 Charred plant remains from up to ten samples will be sorted, fully recorded and analysed. These will include:

- Sample 143 (1638) posthole fill 1637, if an early prehistoric date is established by radiocarbon dating
- Sample 186 (3003), early to mid Roman grave fill, again if securely dated
- Five samples from mid Roman pit 3067, selected from samples 193, 222, 224, 227, 228 and 220
- Sample 174 (2636), late Roman ditch 2635, or if confirmed as late Roman, sample 172 (2278), fill of ditch 2281

2.2.31 The potential for charcoal analysis to examine changes in woodland composition and selection of woods for fuel through time is low since few flots includes more than a few identifiable (>2mm) fragments.

- Sample 143 (1638) should be analysed if an early (prehistoric) date is confirmed
- The charcoal from deposits confirmed as cremations, although not abundant, should be recorded, since the selection of woods may reflect deliberate selection

2.2.32 The following 12 samples from pit 3067 have excellent preservation of both waterlogged plant remains and insects and should be sorted and recorded: sample 209 (3071); samples 210 and 211 (3073); samples 212, 213, 214, 215, 216, 217, 218, 219, 220 (3074).

2.2.33 If required, a selection should be chosen ensuring coverage of the three distinct zones within the context identified in the assessment: 0.00-0.15m, 0.15-0.25m, and 0.250.45m below the second step of the stepped excavation.

Pollen

2.2.34 Four new sub-samples will be processed and analysed to add to the three already processed.

2.3 Tasks

2.3.1 The list of tasks required to undertake and complete the analysis and publication of the investigation at Aylesbury Berryfields is provided below (Table 2.2).

Task no.	Task	Name	Unit (days unless otherwise specified
1001	Project management/client liaison	S Foreman	4
1002	Project management	E Biddulph	9
1003	Project monitoring	L Webley	1
1004	Finds management	L Allen	5
1005	Environmental management	R Nicholson	5
1006	Graphics management	M Wachnik	1.5
1007	Geomatics management	M Bradley	0.5
1008	Burials management	L Loe	1
1009	Archives management	N Scott	2
1010	Specialist liaison	K Brady	2
2001	Radiocarbon dating - management and submission	R Nicholson	1
2002	Radiocarbon dating (6 samples)	C14 lab	6
2003	Stratigraphic analysis	K Brady	10
2004	Stratigraphic narrative	K Brady	15
2005	Report figures - drawing brief	K Brady	3
2006	Report figures - GIS	G Jones	7
2007	Report figures - graphics office	Graphics office	7
3001	Prehistoric pottery recording and reporting	L Brown	5
3002	Prehistoric pottery illustration	Graphics office	2

3003	Roman pottery recording	E Biddulph	10
3004	Roman pottery analysis and reporting	E Biddulph	8
3005	Roman pottery illustration	Graphics office	7
3006	Ceramic building material	C Poole	1.5
3007	Fired clay	C Poole	4
3008	Fired clay illustration	M Wachnik	0.25
3009	Metal objects X-raying and coin cleaning	D Goodburn-Brown	2
3010	Coins identification, analysis and reporting	P Booth	5
3011	Coins illustration	M Wachnik	0.5
3012	Other metal finds recording, analysis and reporting	R Shaffrey	10
3013	Metal finds illustration	Graphics office	2
3014	Iron ore identification	T Young	0.5
3015	Flint – edit and update report	M Donnelly	1
3016	Flint illustration	Graphics office	1
3017	Worked stone	R Shaffrey	3
3018	Worked stone illustration	Graphics office	0.5
3019	Leather illustration	Graphics office	1
3020	Leather conservation	D Goodburn-Brown	1
3021	Wood: update report	D Goodburn	4
3022	Wood illustration	Graphics office	3
3023	Wood conservation	D Goodburn-Brown	1
3024	Human remains: unburnt bone	M Gibson	2.75
3025	Human remains: cremation burial	H Webb	2.5
4001	Animal bone: Museum visit to verify identification of dormouse	L Broderick	1
4002	Animal bone: analysis and report writing	L Broderick	6
4003	Animal bone: photography	M Wachnik	0.25
4004	Egg: photography	M Wachnik	0.25
4005	Insects: analysis and report of two samples	E Allison	2
4006	Insects: scan and report of one sample	E Allison	1
4007	Insects: flotation, scan and report of three samples	E Allison	3
4008	Molluscs: process and sort flots and residues	J Meen	14
4009	Molluscs: identification	L Stafford	9
4010	Molluscs: reporting	L Stafford	3
4011	CPR: sorting flots	J Meen	4.5

4012	CPR: identification and recording	J Meen	4.5
4013	CPR: reporting	J Meen	2
4014	Charcoal	J Meen	2.5
4015	WPR: sorting flots	J Meen	12
4016	WPR: analysis	J Meen	12
4017	WPR: reporting	J Meen	2
4018	Pollen: process samples	M Rutherford	0.5
4019	Pollen: counting	M Rutherford	5
4020	Pollen: Analysis and reporting	M Rutherford	3
5001	Introduction, research and discussion	K Brady	10
5002	Research and discussion	E Biddulph	10
5003	Illustrations for discussion text	Graphics office	7
5004	Compile and edit report	E Biddulph	15
5005	Submit report to client, BCC and academic reader	E Biddulph	0.25
5006	Academic reader	External	1
5007	Public dissemination (website, social media etc.)	E Biddulph	0.5
5008	Write and submit Current Archaeology article	E Biddulph	1
5009	Post-referee corrections	K Brady	4
5010	Copy edit	P Booth	15
5011	Final corrections	K Brady	2
5012	Cover design	Graphics office	3
5013	Submit final draft to client and BCC	E Biddulph	0.25
5014	Typesetting	External	1
5015	Production: proofreading	E Biddulph	5
5016	Indexing	R Shaffrey	4
5017	Publication	External	1
6001	Final security copying	S Rawlings	2
6002	Preparation of digital and paper archive	S Rawlings	10
6003	Preparation of finds archive	Technician	10
6004	Transport	Technician	2
6005	Archaeology Data Service deposition	ADS	1
6006	Archive deposition charge	Bucks County Museum	1

Table 2.2: Tasklist for post-excavation analysis, publication and archiving

2.4 Publication proposal

2.4.1 It is proposed that the final report be published as an Oxford Archaeology monograph series. The report will be generously illustrated, and have an anticipated length of *c* 70-80,000 words.

2.4.2 If space does not permit full publication within the volume, specialist data will be made freely available as digital downloads from the OA Library (http://library.thehumanjourney.net/).

2.4.3 There is likely to be significant public and professional interest in the results of the analysis. In order to meet this demand, an article of *c* 2000 words will be submitted to *Current Archaeology*, a popular archaeology magazine with a national reach. The monograph text and graphics will form the basis of the magazine article. There will be further public dissemination, for example of key findings and images, through OA's website and social media accounts.

2.5 Archive

2.5.1 The project archive will be prepared in accordance with current professional practice and deposited with Buckinghamshire County Museum under accession codes AYBCM:2007.165 and AYBCM:2012.44.

2.6 Budget

2.7 Timetable

2.7.1 The programme for post-excavation analysis and publication is anticipated to begin in July 2017. A Gantt chart summarising the programme is appended at the end of this report. Principal stages are as follows:

- The first stage of work – radiocarbon dating, ceramic dating and stratigraphic analysis – will begin in July 2017 and be completed by December 2017.
- Finds and environmental analysis, to a large extent dependent on completion of the site phasing and stratigraphic narrative, will be carried out over a seven-month period between August 2017 and March 2018.
- Production of the overall discussion and preparation of the report for publication will commence in April 2018.
- It is anticipated that the report will be submitted for typesetting in September 2018 with the aim of having a printed monograph by the end of December 2018, coinciding with the final invoice in January 2019.
- Archiving will commence in January 2019 with a view to museum deposition by 29th March 2019.

APPENDIX A RISK LOG

A.1 Risk log

No.	Description	Probability	Impact	Countermeasures	Estimated time / cost	Owner
1	Unavailability of specialist staff at required point in programme	20%	Medium	Source alternative internal or external expertise. Programme has flexibility built in	Should be none within overall project timescale. Some knockon effects to submission of project possible	SPM
2	Hardware or software failure	5%	High	OA IT team to ensure repair or replacement within 24 hours	None. Will be initially be covered by warranty or replaced by OA under existing IT protocols	SPM
3	Specialist reports late	30%	Medium	Project 'pauses' to wait for reports/carry on with other aspects of project until reports received. Programme has flexibility built in	Slight delay in submission of final project report possible	SPM

Table A.1.1: Risk log. SPM = Senior Project Manager

APPENDIX B FINDS ASSESSMENTS

B.1 Pottery

By Edward Biddulph and Kate Brady

Introduction

B.1.1 Some 7800 sherds of pottery weighing 78kg were recovered from the Aylesbury Berryfields MDA and the associated Aylesbury Vale Academy site (Table B.1.1). A proportion of the pottery (57% by sherd count) was fully recorded, dated and quantified by sherd count, weight and estimated vessel equivalents (EVE). This includes material from AYLBER10 and all the pottery from QAVC12. The remainder of the assemblage was quantified by sherd count and weight only and rapidly scanned to identify diagnostic forms and fabrics, allowing each context group to be provisionally spot-dated.

Code	Site	Sherd count	Weight (g)
AYLBER07	Aylesbury Berryfields MDA	1316	11454
AYLBER10	Aylesbury Berryfields MDA main excavation	6030	61655
AYLBER14	Aylesbury Berryfields MDA District Centre	162	1308
AYLBER16	Aylesbury Berryfields MDA West of Paradise Orchard SMS and Further Trenching	160	1246
QAVC12	Aylesbury Vale Academy	168	2582
Total		7836	78245

Table B.1.1: Quantification of the pottery by site

B.1.2 All the pottery was recorded using OA's standard guidelines for later Iron Age and Roman pottery (Booth 2014). Fabrics and forms were given OA codes, and codes relating to treatment, condition and decoration were also assigned to the pottery recorded in detail. Form identifications were supplemented where possible by regional or industry typologies, notably the Camulodunum series (Hawkes and Hull 1947), Thompson's (1982) typology of 'Belgic' pottery, and series relating to the samian industries (cf. Webster 1996).

Prehistoric

B.1.3 Some 18% of the assemblage by sherd count is prehistoric in date. Almost all the pottery from AYLBER07 and about 1% of the pottery from AYLBER10 belongs to this ceramic phase. The majority of the pottery dates to the middle Iron Age (*c* 400-100/50BC), and is characterised by jars and bowls in dark grey or black sandy fabrics. A small amount of flinttempered pottery was also present and likely to be of Bronze Age or early Iron Age date.

Late Iron Age/early Roman

B.1.4 Nineteen per cent of the assemblage comes from groups dated by pottery to the late Iron Age or early Roman period (*c* 100/50BC-AD100). The ceramic phase is dominated by grogtempered ware (E80). Given the absence of definite Roman-period material, and the fact that fabric E80 continued in use into the late 1st century AD, it is not possible on current

evidence to determine which side of the Roman conquests these context groups fall. While they may suggest significant activity in the late Iron Age, most of not all the groups could potentially be of post-conquest date. Forms present in fabric E80 include high-shouldered necked jars (type CE), medium-mouthed necked jars (type CD), necked jars with rilled bodies (Cam 260), globular jars (CG), storage jars (CN), carinated bowls (HA) and butt-beakers (EA). Smaller quantities of pottery in sand-tempered (E20/E30) and shell-tempered (C10) fabrics were also recorded.

Early Roman

B.1.5 Pottery from groups spot-dated to the early Roman period (*c* AD43-120) amounted to 47% of the assemblage by sherd count. Grog-tempered ware (E80) remains predominant, with copies of Gallo-Belgic platters (Cam 28 and 32), globular beakers (ED) and lids (L) adding to the range of forms. Fabric E80 was found alongside grey wares of post-conquest date. These included fine, medium and coarse sandy wares (R10, R30 and R20). Necked jars (C unspecified and CD) were the most common types present, but a wide-mouthed jar (CM) and a Cam 26 platter and were also recorded. The wares are of uncertain source; most occurrences are no doubt of local origin, though a proportion of R20 is likely to be Verulamium grey ware. Smaller quantities of oxidised wares (O10 and O20) were available as flagons and beakers. White ware pottery included a Hofheim-type flagon from Verulamium (W21) and butt-beakers probably from North Gaul. Both forms point to deposition before AD70/80, as do the several examples of Drag. 29 bowls and a Drag. 24/25 cup in South Gaulish samian ware (S20) present. Fragments of South Spanish olive oil amphorae (A11) were also recorded.

Mid Roman

B.1.6 Just 5% of the assemblage by sherd count belonged to groups spot-dated to the mid Roman period (*c* AD120-250). However, this ceramic phase is the most diverse with regard to fabrics present. Amphora fabric A11 was joined by Gaulish amphora fabric A14. Blackburnished ware, both handmade from Dorset (B11) and wheel-made (B20) possibly from Essex or Kent, was recorded, as were Nene Valley colour-coated ware (F52) and colour-coated ware (F60) possibly from Colchester. The Oxford-region industry was represented by white ware mortaria (M22), and pink-grogged ware storage jars (O81) arrived from the Stowe area. Fine sandy grey ware from Much Hadham (R40) may be among the reduced wares, and grey ware from Verulamium continued to reach the site. The Verulamium-region was also responsible for white ware (W21), including an amphora. A Drag. 33 cup in Central Gaulish samian ware (S30) was identified. Other pottery characteristic of the period includes plainrimmed and bead/flange-rimmed bowls and dishes in reduced wares (R10 and R30).

Late Roman

B.1.7 Pottery from context groups dated to the late Roman period (c AD 250-410) accounted for 3% of the assemblage by sherd count. A proportion of the pottery comprising E wares was obviously residual, but pottery diagnostic of the period included a flanged bowl in fabric F52, a mortarium (Young 1977 type M18) in fabric M22, and a storage jar in Alice Holt grey ware

(R39). A flange-necked bottle or flagon in a sandy oxidised fabric (O20) is also consistent with this period.

Pond 3062/pit 3067

B.1.8 Much of the pottery assigned to the mid Roman period belonged to a single feature, pit 3067, which cut infilled pond 3062. Some 237 sherds (5685g) were recovered from the pit, while 11 sherds (126g) came from the pond. The pit assemblage included several nearcomplete or complete vessels, among them an indented beaker, two jars and a bowl, all in fabric R30. Other notable pottery included a plain-rimmed dish with a groove below the rim in fabric R30, a Drag. 31 bowl in fabric S30, a funnel-necked or indented beaker in fabric F52, and colour-coated beaker possibly from Colchester. What is more, the pottery is generally in very good condition, having well-preserved surfaces and a relatively high mean sherd weight of 24g.

B.1.9 The pit assemblage as a whole is likely to have been deliberately deposited (as opposed to the material being deposited incidentally within other material, for example from a midden). Determining the nature of the deposition – that is, being of a special or ritual character or more prosaic – is a matter for further consideration.

B.1.10 Overall, the pottery dates span the period c AD 170/80-200/250, and the assemblage contains nothing that must date to the late Roman period. This contrasts with the coin evidence, which points to a 4th-century date for deposition, the latest coins dating after c 360. Clearly this presents a chronological conflict that will need to be addressed with further analysis.

Pottery supply and settlement status

B.1.11 The assessment has shown that the Berryfields site received pottery from a range of regional and continental sources, pointing to a settlement with good trade connections and knowledge of Roman-style food preparation and dining. The assemblage is consistent with pottery from medium- to high-status roadside settlements. Most of the pottery, comprising grog-tempered ware and reduced wares, cannot readily be assigned to a source, though is presumably of local or fairly local origin. There are known kilns in the Milton Keynes area and Berkhamstead, but it is probable that there are sites of pottery production closer to Aylesbury Berryfields. Several vessels, including a Drag. 38 copy in fine oxidised ware (O80) and vessels in fabrics E30 and R20, contained greensand or glauconitic inclusions. These may have derived from the band of Upper Greensand that passes immediately south and south-east of Aylesbury and hint at relatively local production. Close examination of courseware fabrics may reveal other possible local sources.

Aylesbury Vale Park and Ride

B.1.12 A total of 1436 sherds, weighing 14280g, was recovered during excavations at Aylesbury Vale Park and Ride (ABPR07/08). This assemblage, as with that described above, saw a relatively high level of activity in the early Roman period and a drop in the level of activity during the 2nd and early 3rd century. There was, however, a significant increase in

the amount of pottery deposition from the late 3rd century onwards. An Oxford red colour-coated bowl points to occupation after AD 325, and it is possible that pottery deposition continued well into the late 4th century.

B.2 Ceramic building material

By Cynthia Poole

AYLBER07, AYLBER10, AYLBER14, QAVC12

Introduction

B.2.1 A small assemblage of ceramic building material (CBM) amounting to 86 fragments (3226g) was recovered from all areas of excavation with slightly over half from AYLBER10. The assemblage comprises mainly post-medieval roof tile recovered from subsoil layers, the fills of furrows and ditches, together with a small quantity of Roman tile from a trackway and ditch. A fragment of asbestos sheet (14g) found in a phase 3 ditch must be intrusive. The material is all fragmentary with no complete objects recovered. The mean fragment weight (MFW) of 37g is low though not unexpected for a group dominated by medieval/postmedieval roof tile. The MFW of the Roman tile was 90g, in contrast to that of the post-Roman tile of 24g, reflecting the variation in size of the original forms of each period.

Methodology

B.2.2 The assemblage has been fully recorded on an Excel spreadsheet in accordance with guidelines set out by the Archaeological Ceramic Building Materials Group (ACBMG 2007). The record includes quantification, fabric type, form, surface finish, markings and evidence of use/reuse (mortar, burning etc). The terminology for Roman tile follows Brodribb (1987). Fabrics were characterised with the aid of x20 hand lens.

The Roman CBM

B.2.3 The Roman tile amounts to 17 fragments (1530g) and comprises the most common standard forms of tegula, imbrex, brick and box flue. The plain tile fragments were classified as Roman on the basis of fabric and finish. Whilst the suite of material is typical of Roman masonry buildings, including evidence for a heated room, it is unlikely these occurred nearby and it is probable the tile reached the site fortuitously as the result of other activities, such as manuring of fields. The Roman tile was recovered largely from field and enclosure ditches and trackways, some of which have been phased to the Roman period, but it is possible some of the material is residual in later features.

The Post-Roman CBM

B.2.4 The post-Roman tile amounted to 70 fragments (1710g) and consisted entirely of postmedieval roof tile of 16th-19th century date. All was flat tile, probably peg tile, though only three pieces had evidence of a peghole measuring 9, 11 and 12 mm in diameter. Most tiles were neatly made with even regular surfaces and fairly angular arrises, apart from a few slightly rougher that may date to the earlier post-medieval period or possibly late medieval in one or two cases. The tiles measured 13-15mm thick, apart from one 11mm thick.

B.2.5 All the roof tile was made in the same orange-red sandy fabric containing moderate densities of medium quartz sand up to 0.5mm (fabric Q).

B.2.6 The tile was recovered from a range of contexts including subsoil layers, the fills of furrows ditches, hollows and pits. Those features that have been phased were of Roman date, suggesting that many of these features had not fully infilled before the medieval or postmedieval. The presence of post-medieval tile in unphased features suggest these are likely to be of post-medieval date.

AYLBER16

B.2.7 A total of 19 fragments (1081g) of CBM was recovered from the AYLBER 16 excavation and this material has been rapidly scanned for quantification and to assess potential. All of the material was probably Roman in date and included two combed box flue tile fragments, roof tile and flat tiles and two probable imbrex fragments. These fragments were all retrieved from enclosure and field system ditches of broad Roman or Middle Roman date.

B.3 Clay pipe

By Kate Brady

B.3.1 A single fragment (13g) of clay pipe was recovered from a plough furrow (2823) in the central part of the site. The piece is a 'Turk's Head Bowl' a fairly common type of moulded clay pipe depicting a human head. These date to the mid to late 19th century.

B.4 Fired clay

By Cynthia Poole

Introduction

B.4.1 A small assemblage of fired clay comprising 254 fragments weighing 2326g was recovered from all excavation areas by hand excavation and from sieved samples. The assemblage has a fairly low mean fragment weight of 9g reflecting the fragmented character of the assemblage and few firmly identifiable forms, though abrasion is predominantly low.

B.4.2 The material was found in a wide variety of features including enclosure and field ditches, trackways, pits, quarries, postholes, hollows and a cremation. The majority of these features are phased to the late Iron Age and Roman periods and it is probable that all the fired clay belongs to these periods. Fired clay is only intrinsically datable in the case of a small number of diagnostic objects and therefore much of the assemblage is dependent on associated dated artefacts for its phasing.

B.4.3 The assemblage has been fully recorded on an Excel spreadsheet and includes quantification, fabric type, form, surface finish, dimensions, impressions and general condition (abrasion, degree of firing etc). There are no specific guidelines for the recording of fired clay but the methodology has adopted appropriate practice based on recommendations available for ceramic building material (ACBMG 2007) and prehistoric pottery (PCRG 2016).

Fabrics were characterised on the basis of macroscopic features and with a x20 hand lens for finer inclusions.

Count	A	Ac	AV	AVc	B	Q	X1
Oven furniture (TPB/OP/FB)	25			20			
Plate			5	2		1	
TPB	43	11		1			
Indet (furn/structure)	75	2	37		2	23	
Briquetage							5
Total (count)	***143***	***13***	***42***	***23***	***2***	***24***	***5***
Weight (g)	**A**	**Ac**	**AV**	**AVc**	**B**	**Q**	**X1**
Oven furniture (TPB/OP/FB)	454			242			
Plate			79	89		10	
TPB	601	267		32			
Indet (furn/structure)	304	12	91		29	72	
Briquetage							6
Total (weight)	***1359***	***279***	***170***	***363***	***29***	***82***	***6***

Table B.4.1: Quantification of fired clay (count and weight) tabulated by form and fabric

Description of the fired clay

B.4.4 The assemblage is dominated by portable oven or hearth furniture, comprising triangular perforated bricks and flat plates. None was complete and all were very fragmentary with many pieces lacking diagnostic features and assigned to these categories only tentatively. The triangular perforated bricks (frequently referred to as loomweights) take the form of triangular blocks with a perforation piercing each corner. The plates take the form of flat slabs 18-33mm thick with two moulded surfaces, but little evidence for the edges survives. Other material classified as oven furniture is on the basis of surface finish and are likely to derive from either of these two forms, although other items such as firebars are a possibility, though considered unlikely. The oven furniture was made almost exclusively in a fine smooth clay, which was sometimes tempered with chaff.

B.4.5 The remaining material was classified as indeterminate, and may include structural material from ovens or hearths, though no pieces had features distinctive of structures. It is possible that all the fired clay derived from portable items. However, a significant proportion of the indeterminate material is made in a sandy fabric that does not appear to have been used for the furniture; these pieces may be structural.

B.4.6 Five small sherds of briquetage (6g) in a chaff tempered fabric were found in a phase 4 curvilinear gully 8061. The sherds are probably fragments of salt moulds that remained attached to the salt blocks during transportation.

Discussion

B.4.7 The fired clay assemblage is consistent with the Iron Age-Roman date indicated by the phasing of the features. The triangular bricks first appear in the early Iron Age and continue in use into at least the early Roman period. The portable plates are more typically late Iron Age-Roman in date. The precise function of both items is uncertain, though both are likely to have served as oven or hearth furniture. Such items are also found in association with pottery kilns, though the lack of other evidence for such activity on the site, suggests this assemblage is most probably domestic in character.

B.4.8 The presence of briquetage is significant in indicating trade in this essential item. The nearest production sites and likely source are on the Essex coast.

B.5 Coins

By Paul Booth

B.5.1 Some 200 coins were recovered from the excavations of sites AYLBER07, AYLBER10, AYLBER14, AYLBER16 and QAVC12. These include finds from hand excavation and associated metal-detecting activity. The total also includes seven medieval and post-medieval coins and tokens, leaving 193 coins of Roman date (Table B.5.1). None of the post-Roman pieces was meaningfully stratified and they are not considered further here.

Site	Roman	Medieval	Post-medieval	TOTAL
AYLBER07	4			4
AYLBER10	173	1	2	176
AYLBER14	4			4
AYLBER16	7		1	8
QAVC12	5	1	2	8
TOTAL	193	2	5	200

Table B.5.1: Numbers of coins by site and broad period

B.5.2 The coins were scanned rapidly with the principal aims of providing dating for the site sequence and characterisation of the assemblage as a whole, in turn informing interpretation of the site. Relatively close attention was given to coins from a pond (feature 3062) and, in particular, those from a pit (3067) that cut the pond, in view of the potential of these features to contain special deposits. The condition of the coins was very variable, ranging from very good to very poor (including some from features 3062 and 3067, see further below). The coins had not been X-rayed at the time of examination, and manual cleaning was undertaken by the specialist to facilitate identification, with a note made of requirements for further more formal cleaning by a conservator. Detailed identifications were made where this was readily possible, with notes of obverse and reverse types and mintmarks, and standard references (to volumes of RIC or LRBC) were recorded where possible. Wear was recorded (approximately) using the categories defined by Brigstock (2004), but these have to be treated

with extreme caution. All the coins were listed in an Excel spreadsheet. The degree of security of the identifications is indicated in the spreadsheet; some are still very tentative at this stage.

The Roman assemblage

B.5.3 The 193 coins certainly or probably of Roman date are all of copper alloy apart from a single worn denarius (SF 2664). They can be broken down in chronological terms, using issue periods and analytical phases as defined by Reece (eg 1991).

Date	Reece Period	Total coins	Phase total	% of coins assigned to phase
96-117	5	1		
117-138	6	1		
138-161	7	8		
161-180	8	1		
180-192	9	1		
193-222	10			
222-238	11			
238-260	12	2		
Phase A	Uncertain	16	30	17.1
260-275	13	14		
275-296	14	22		
Phase B	Uncertain	19	55	31.4
296-317	15	3		
317-330	16	7		
Phase C	Uncertain	1?	11	6.3
330-348	17	22		
348-364	18	13		
364-378	19	22		
378-388	20	1		
388-402	21	9		
Phase D	Uncertain	12	79	45.1
3-4C/unassigned		18		
TOTAL		193	175	

Table B.5.2: Quantification of coins by issue period and phase

B.5.4 Some 127 coins (65.8% of the total) were assigned to specific issue periods with varying degrees of confidence (see above). Further coins could be assigned to one of the four main phases of issue defined by Reece, leaving a relatively small proportion of the assemblage (mainly of completely eroded and/or encrusted coins of 3rd or 4th-century date) unassigned. Coins of Phase D (AD 330 onwards) form the largest phase group, but they do not dominate the assemblage in the manner that is typical of Romano-British rural sites (including roadside and other minor nucleated settlements). Overall the assemblage spans much of the Roman period, but coins of 1st-century date are absent amongst the identified material, though it is possible that some of the undated (and for the most part undatable) coins of Phase A are of the 1st century rather than later. The earliest securely dated coin is a sestertius of Trajan (SF 2641) dated AD 103-111. Other identified Phase A coins are mostly of Antoninus Pius and Faustina II. The Severan period is not represented, and the latest Phase A coins are probable issues of the joint reign of Gallienus.

B.5.5 The later 3rd century is well-represented in this assemblage. Period 13 issues include further coins of Gallienus, and Victorinus and the Tetrici. Regular issues of period 14 comprise one of Tacitus, four certain (and one probable) of Carausius and a quinarius of Allectus. Irregular ('barbarous') radiates have been assigned, somewhat arbitrarily, to Period 14. The significant number of uncertain coins of Phase B will have included further irregular issues, but also regular ones.

B.5.6 Coins of Phase C were not numerous but are still well-represented in comparative terms (of Reece's '140 sites' 85 have lower percentages for coins of this phase than Berryfields, and 55 have a higher figure (Reece 1991, 64)). Most notable was a large AE2 (SF 2533) of Constantius I as Caesar, with the reverse type SACRA MONETA AVGG ET CAESS NOSTR, from the north Italian mint of Ticinum. Described by the authors of RIC VI as common, this must nevertheless be very rare as a site find in Britain; for example, the 1998 publication of coins from Cirencester lists no examples amongst the 3785 coins from excavations, or in the corresponding Cirencester Museum collection, of over 6600 coins (Reece 1998),

B.5.7 Among the intrinsically unremarkable Phase D coins, Periods 17 and 19 are equally represented. In Period 17 most of the characteristic reverse types were present, and the equally characteristic importance of supply by the Trier mint in this period was also noted. The Period 17 coins include an uncertain number of irregular issues (perhaps as many as 8 of the 22 coins assigned to this period were provisionally identified as irregular). The following period, however, was dominated by small irregular Fel Temp Reparatio issues, albeit that a few of these were identified solely on criteria of size (typically around 8-9mm in diameter) and general character. The principal type in Period 19 was Securitas Reipublicae (16, as opposed to 5 examples of Gloria Romanorum and a single Gloria Novi Saeculi). The poor representation of Period 20 is typical, but there was a respectable showing of coins of Period 21 (AD 388-402), the last period of regular import of Roman coins to Britain. How long such coins remained in circulation after the end of the 5th century remains debatable; the poor

and apparently worn condition of many of these coins cannot necessarily be taken as a clear indication of extended use.

Site contexts

B.5.8 Many of the coins were not significantly stratified. Much the largest single context group (79 coins) was from context 3082, but this was a widespread layer. It is notable that this deposit contained only a single early Roman coin, the rest dating from the later 3rd century up to the end of the Roman period, including 8 of the 9 coins assigned to Period 21. Layer 3082 also produced the Ticinum coin noted above.

B.5.9 Most remarkable in the context of the site is the material from pond and pit features 3062 and 3067. The former produced only two coins, from fill 3063. Assigned a single small find number (3635), these were originally corroded together but had separated (and one effectively disintegrated) before they were examined. Unfortunately, their condition does not allow identification beyond the fact that both are dupondii/asses of 1st-2nd-century date.

B.5.10 Pit 3067, which cut the fills of pond 3062, produced 46 Roman coins. These came from several fills, but the majority (31 coins) were from the basal fill 3074. Coins from this feature were in very variable condition as a result of periodic waterlogging and, in some cases, probably long-term burial in anaerobic conditions. Iron panning was also a characteristic of some of the fills. As a result, the coins range from examples in good condition, to ones with extremely bright brassy surfaces (though often with eroding and etching), to ones completely corroded into black lumps representing exfoliating surfaces. In some cases, the brassy surfaces are overlain with black encrustation.

B.5.11 The coins from fill 3074 range in date from the earliest identified piece (the sestertius of Trajan mentioned above) through the 2nd and later 3rd centuries, terminating with single coins of AD 348-350 (SF 3632) and 364-378 (SF 2668), but including a further five coins only assigned a broad late 3rd-4th-century date, so that more 4th-century material might have been present. The broad 2nd-4th-century date range is reflected in the coins from the other fills of the pit, with the latest pieces two further issues of the House of Valentinian from context 3071, a middle fill.

B.5.12 The number of coins and the (presumably) watery nature of the fill of pit 3067 suggest votive deposition, but the significance of the chronological range of the material is uncertain. The quantity of early Roman coins is sufficient to indicate that deposition was ongoing in the 2nd century, if not earlier, and the later 3rd century is well-represented. It is less clear that the 4th-century coins indicate continued votive activity, but the fact that they occur in the lowest fill as well as further up the sequence may be significant.

Local and regional context

B.5.13 The Berryfields assemblage is an important addition to the corpus of Roman coins from the area, since relatively few rural settlement sites have produced significant collections. The settlement context, perhaps a minor nucleated settlement with roadside elements, is reflected in the relatively diverse coin assemblage. The importance of the earlier Roman

period might be unusually enhanced by the presence of votive element (while pit 3067 produced only 23.8% of the total coins from the site it contained 60% of the coins assigned to Phase A). Deposition of this character can be paralleled at sites such as Westhawk Farm (Kent), where, however, the 2nd-century emphasis of deposition in a roadside waterhole was more closely defined (Guest 2008).

B.5.14 Significant quantities of Roman coins have been recovered in metal-detecting at Quarrendon and other closely adjacent locations. These may complement the data from Berryfields. Further afield relatively few substantial assemblages are known from the area. Rural assemblages in the Thames Valley are more than 25km distant (eg King 2007; Booth 2010), while 'small town' assemblages from Alchester and Dunstable are slightly closer, roughly equidistant to west and east, and Verulamium is some 35km distant.

B.6 Other metal finds

By Ruth Shaffrey

Description of metal objects

B.6.1 A total of 373 metal objects from AYLBER07, 10, 14 and QAVC12 were submitted for analysis. Of these, 66 are of copper alloy, 44 are of lead, 261 are of iron and two are of modern plastic. Of the 44 lead objects, 36 are undiagnostic or queries which will need further investigation. The remaining 8 objects consist of a musket ball, five household objects comprising small weights and spindle whorls, another weight that might be industrial and a piece of strap. Most of these are from unstratified or unphased contexts.

B.6.2 The copper alloy objects include one socketed axe from buried soil 3082, one postmedieval horse bell from the ditch fill 7006, one awl (unstratified), three miscellaneous fittings and three other items. Sixteen items are undiagnostic or queries requiring further consideration. The largest category of finds is personal and this consists of 35 items. Three of these are bracelets of which one is of 1st century AD date (3082). Two are beads (2503 and unstratified). Eleven are brooches of Roman date, with one dating to the 1st/2nd century AD (road surface 2708), one being of early Roman or late Iron Age type (3082, SF 2075) and one being a Hod Hill brooch (2725 SF 2601).

B.6.3 Personal items also include buckles (7), buttons (2), finger rings (1), hairpins and pins (4) and decorative pieces or strap fittings (4).

B.6.4 The iron assemblage includes 189 nails (of which 11 are hobnails). There are also 67 items of an undiagnostic nature or queries requiring further analysis pending x-rays. Identifiable objects consist of two horseshoes (5135 and unstratified), a modern spike (3082), a decorative stud fitting (3701) and a blade from the same context, a handle (2725), a spud (5592) and a probable knife (1704).

Category	Number
Arms	2
Fitting	7

Hobnails	11
Horse	1
Household	5
Industrial	1
Miscellaneous	1
Nails	179
Other	4
Personal	35
Query	56
Tool	5
Transport	2
Undiagnostic	64
Grand Total	**373**

Table B.6.1: Summary of metal objects

Provenance

B.6.5 Most of the metal finds were recovered from unphased contexts. Three iron tools including two probable knife blades were found in Phase 2 contexts (1471, 1704). Five objects were recovered from Phase 4 contexts including four pieces of ironwork that need x-raying and a brooch (road surface 2708).

AYLBER16

B.6.6 A total of 21 metal objects were found during the AYLBER16 phase of fieldwork. These comprise three objects of lead, one of aluminium, one of bronze, one of pewter, four of copper alloy and 11 of iron. The aluminium fragment is a piece of modern pipe (9008) and the pewter is a small button (9139). The lead includes a piece of sheet and a fragment of pipe (9001) as well as a flat weight (9211). There is also a piece of bronze pipe/rod (9001). Four pieces of copper alloy are all fragments of sheet (9001, 9149, 9211) or rod (9001) and are not diagnostic. The iron finds comprise horseshoes of relatively modern date (9001, 9057), nails and rods. One diagnostic item is an axe hammer (9209), which will need cleaning further before it can be dated.

B.7 The iron slag and related high-temperature debris

By Lynne Keys

Introduction and methodology

B.7.1 A small quantity of material (2.6kg.), initially identified as slag, was recovered by hand on site and from soil samples processed after excavation. Most of the material from the samples was heat-magnetised natural grit, stones, or sand; very occasionally some fired clay and charcoal was present.

B.7.2 For this report, the material was examined by eye and tested with a magnet. The material was categorised on the basis of morphology; a magnet was used to test for iron-rich material and detect smithing micro-slags in the soil adhering to slags. Each slag or other material type in each context was weighed except for smithing hearth bottoms, which were individually weighed and measured for statistical purposes.

Explanation of terms

B.7.3 Activities involving iron can take two forms, smelting or smithing. Smelting is the manufacture of iron from ore and fuel in a smelting furnace. The products are a spongy mass called an unconsolidated bloom consisting of iron with a considerable amount of slag still trapped inside, and slag (waste). No diagnostic smelting slags were present in the Berryfields assemblage.

B.7.4 The diagnostic slags recovered were those of smithing. Smithing involves the hot working (using a hammer) of the bloom to remove excess slag (primary smithing) or, more commonly, the hot working of one or more pieces of iron to create or to repair an object (secondary smithing). As well as bulk slags, including the smithing hearth bottom (a planoconvex slag cake which builds up under the tuyère hole – hottest part – where the air from the bellows enters the hearth), smithing generates micro-slags; these can be hammerscale flakes from ordinary hot working of a piece of iron (making or repairing an object) and/or tiny spheres from bloom smithing or high temperature welding used to join or fuse two pieces of iron.

B.7.5 Hammerscale, because of its tiny size, is usually only recovered by taking soil samples from fills and deposits but it is very magnetic and its presence can be detected using a magnet. It is most prevalent (thickest) in archaeological contexts in the immediate area of smithing, that is, in the vicinity of the anvil and between it and the smithing hearth. Virtually no hammerscale was recovered from the site.

B.7.6 Slag described as undiagnostic cannot be assigned to smelting or smithing either because of morphology or because it has been broken up during deposition, re-deposition or excavation. Other types of debris in an assemblage may derive from variety of high temperature activities, including domestic fires, and cannot be taken on their own to indicate iron-working was taking place. These include fired clay, vitrified hearth lining, cinder and fuel ash slag. If found in association with iron smelting and/or smithing slag they are almost certainly products of the process.

Slag type	Wt (g)	Process
cinder	2	not diagnostic
hammerscale	0	smithing
iron-rich undiagnostic	605	smelting or smithing
smithing hearth bottom	839	smithing
undiagnostic	877	smelting or smithing

Total weight =	2323	

Table B.7.1: Slag types in the assemblage

Discussion of the assemblage

B.7.7 The amount of slag recovered was small: just 2.3kg of which 1.7kg is represented by the two smithing hearth bottoms. The rest of the material is heat-magnetised grit, small stones, sand and occasional fired clay, all of which had been recovered from samples. Fragments of possible iron ore were recovered from contexts 1425 and 1554.

B.7.8 It is in Phase 3 that small quantities of slag appear: 245g from Group 8016 (ditches 2675 and 2743). No focus of activity is represented by the material and it was probably generated by one-off activity.

B.7.9 Phase 8, the medieval period, is of most interest for slag. The group 5587 (ditch 5581, context 5582) is diagnostic evidence of smithing and all 1.6kg of the slag probably originated from the same forge.

B.8 Flint

By Michael Donnelly

Introduction

B.8.1 The excavations at Berryfields brought to light a small assemblage of 114 flints, as well as 209 pieces of burnt unworked flint weighing just 351g. The assemblage was very dispersed, with the 114 flints being spread across 71 contexts, only three of which contained five or more flints. The largest assemblage of 15 flints originated from tree-throw fill 1978, there were seven flints from (phase 2) pit fill 2775 and five from pit fill 1502. Other than these, the remaining contexts contained very few flints with no obvious concentrations. The flint assemblage included material dated to the early Mesolithic, late Neolithic-early Bronze Age and mid-late Bronze Age. In addition to this, numerous early blade forms were recovered that could date to any period between the Mesolithic and the early Neolithic.

CATEGORY TYPE	Count
Flake	65
Blade	15
Bladelet	14
Blade index	30.85% (29/94)
Irregular waste	3
Chip	1
Sieved chip	2
Core rejuvenation flake	1
Core multi-platform flake	1
Scraper end	1

Scraper side+end	2
Microlith	1
Awl	1
End truncation	2
Retouched bladelet	1
Retouched flake	2
Retouched other	1
Retouched miscellaneous	1
Total	114

No. burnt (%)	19/114 (16.67%)
No. broken (exc. chips) (%)	33/112 (29.46%)
No. retouched (exc. chips) (%)	12/112 (10.71%)

Table B.8.1: The flint assemblage

Raw material and condition

B.8.2 The flint originated from a wide range of sources, as could be seen from the very varied cortex recorded in the assemblage. This included good quality material with thick chalk cortex through to very weathered chalk, rolled river gravel and thermal/recorticated sources. The flints were generally in good condition but only 23% had fresh surfaces and most displayed light or moderate edge damage (70.8%). The assemblage also generally displayed light or moderate levels of cortication with only a very few uncorticated or heavily corticated examples. Overall, the assemblage would appear to represent a mix of contemporary material deposited in pits or tree-throws alongside residual material that had not moved far from its primary depositional context.

Condition	Total	%	Cortication	Total	%
Fresh	26	23.01%	None	5	5.32%
Light	60	53.10%	Light	60	63.83%
Moderate	20	17.70%	Moderate	19	20.21%
Heavy	6	5.31%	Heavy	7	7.45%
Rolled	1	0.88%	Iron stained	3	3.19%
	113			94	

Table B.8.2: Flint by condition and cortication

The assemblage

B.8.3 The assemblage contained 65 flake blanks and 29 blade/let blanks, giving a high blade index of 30.85% indicating an assemblage where blade production was important. Since the assemblage was in fact made up of numerous smaller sets of flint, some of these may have

been very blade heavy and most probably date to the Mesolithic or Neolithic period. The flake assemblage also included many thin regular examples of likely early date alongside a few thick squat hard-hammer flake of probable mid-late Bronze Age date.

B.8.4 Only one core was recovered, a complex multi-platform flake producing example worked from a very small nodule with thin rolled cortex. This highlights the fact that the knappers at Aylesbury may not have always had access to good quality flint. In keeping with the lack of cores, only one core rejuvenation flake was recovered.

B.8.5 Tools were extremely common at 10.7%, a figure that strongly suggested that the assemblage was selective in nature. Tools are more easily identified than standard waste flakes and chips, especially if the surrounding soils contain flint pebbles or cobbles. However, such selective assemblages usually also contain large numbers of cores as they are also fairly obvious. Since only tools are common here, the assemblage may actually be a true reflection of flint use on site. High tool numbers are usually associated with domestic settings in which tool production occurred elsewhere or with very selective burial environments such as some burials or tool caches.

B.8.6 The tools recovered spanned a range of dates and consisted of one definite and one possible microlith fragment. The definite example was recovered as a stray find in ditch 3596 and consisted of an obliquely blunted microlith of early Mesolithic date (Clark A1a? (1933), Jacobi 1a? (1978)). The extreme tip and the base were missing and this piece could actually date to slightly later in the Mesolithic period as it may have been an example of a point with basal retouch (Saville 1981; Connellor *et al.* 2016). The possible microlith fragment was recovered from pit 1502; its form could not be determined and it may in fact have been a different tool altogether, probably a broken end truncation. In either case the date for this tool would be early. Two more end truncations were recovered, one from pit 2775 and another from tree-throw 1978. Both were fashioned on blade blanks and these pieces are usually dated to the Mesolithic to earlier Neolithic periods. One retouched bladelet was also recovered and was also likely to be early in date. This piece was discovered in ditch 3364.

B.8.7 One irregular, snapped heavy awl was recovered from inhumation fill 3340. This piece was quite crude in form and may well be later prehistoric in date but it was unlikely to represent a formal grave good and was most likely residual. Four scrapers were recovered from four separate contexts. These were generally quite complex in form and many are likely to be Neolithic or early Bronze Age in date. One end scraper on a long regular flake from ditch 1826 was very heavily rolled and was definitely residual to that feature. Another fairly elongated example was recovered from tree-throw 1093 and had quite crude distal scraper retouch that continued along its entire left side, becoming more knife-like towards the proximal end. Two side-and-end scrapers were also recovered, one of which was undiagnostic, but the second example from ditch 2952 had been formed on a re-used core tablet and was probably Neolithic, or less likely Mesolithic in date. Finally, two undiagnostic retouched flakes were recovered, one from posthole 1037 and another from pit 2768.

B.8.8 None of the tools appeared to be later prehistoric in date but limited activity from those periods was identified and consisted of a few typically squat flakes. These were usually hard-

hammer struck with little or no platform preparation and often had failed terminals, simple flaking patterns and cortical or thermal platforms. The lack of such flintwork may indicate very little later Bronze Age activity or it may be that a lack of local flint nodules meant that some other material was used for producing simple flakes and tools here.

Key contexts

B.8.9 Pit fill 1502 from pit 1501 contained five flints including a broken tool that was most likely a microlith or end truncation. The pit also contained two narrow bladelets and a trimming flake. The assemblage could easily be of mixed date but all the artefacts including both the options of the tool fragment would readily belong in a Mesolithic context. If the tool fragment was not a microlith then an alternate early Neolithic date for the entire assemblage would also be appropriate.

B.8.10 Context 1978 was located in tree-throw 1982. It contained 15 flints, 12 of which were flakes with two blade forms and a single end truncation. As with pit 1501, this tool would most likely date to the Mesolithic or earlier Neolithic period. The flake assemblage from the treethrow did not contain examples that would be considered later prehistoric in form, but did contain several thin and/or soft hammer flakes that are probably early. However, the assemblage was not particularly fresh and may relate to several different episodes of flint use that were subsequently incorporated into the tree-throw, rather than a specifically knapped or placed assemblage.

B.8.11 Fill 2775 of pit 2774 contained seven flints: one blade, four flakes, an irregular piece of waste and an end truncation. The blade form and one flake also displayed signs of probable use as serrated tools. As with tree-throw 1982, the assemblage could either belong to a single early prehistoric knapping episode and be contemporary with the pit, or, represent mixed material incorporated into the pits backfill. The flints were in better condition than those from tree-throw 1982 and were largely complete, perhaps suggesting that they are contemporary with the pit.

Discussion

B.8.12 Prior to excavations at Berryfields, very little prehistoric archaeology had been identified in the immediate area, although one small scale flint scatter had been identified 500m to the east (Cox 1997). Despite numerous phases of excavation, very little flintwork has been found to alter that view. The quantity, quality and perhaps more importantly, the lack of any concentrations of flint does seem to suggest very little activity here during the earlier parts of prehistory. The near total lack of cores and related core preparation and maintenance debitage is also important. These pieces are usually over-represented in residual flint assemblages from later prehistoric landscapes and their absence here strongly suggests limited flint-related activity.

B.8.13 Diagnostic flint artefacts are rare but those identified also suggest very sporadic activity in the early Mesolithic and late Neolithic/early Bronze Age. It is also likely that some of the numerous dispersed blade forms relate to activity in the late Mesolithic and/or early

Neolithic. The three key contexts described above most probably also belong to this same broad phase of early prehistory, but the features are very dispersed and are unlikely to relate to the same group of people or contemporary site.

B.8.14 One obvious absence is a distinct lack of typically mid Bronze Age and later flintwork, with just the recovery of a few flakes from these periods. Flint use in these periods is sometimes difficult to identify, and is often characterised by very expedient flint use, with *ad hoc* tools being produced when needed and then discarded. This, though, does not work well when there is a lack of suitable flint nodules or older cores/tools around for scavenging. It may be the case that materials other than flint fulfilled the need for these expedient tools during the later Bronze and Iron Ages.

B.9 Worked stone

By Ruth Shaffrey

Introduction

B.9.1 A total of 79 fragments of stone were retained for analysis from projects AYLBER07, 10, 14 and QAVC12, most of which was unworked. Worked stone was recovered from eight contexts only (Table B.9.1). These comprise lava quern fragments from two contexts (QAVC12.44: 3826 and 4117), a Hertfordshire puddingstone quern (AYLBER10: 3390, SF 2776) and half a Millstone Grit millstone (AYLBER10: 3075, SF 2674). Two pieces of stone can be classified as processors. One is a crudely shaped stone with a flat smoothed end, presumably used for rubbing (AYLBER10: 3397). The other is a flat rounded cobble with distinctive double chamfered wear on one end (AYLBER10: 5602). A single tessera of a white sandstone was also found in context 3368 (AYLBER10).

B.9.2 The Hertfordshire puddingstone quern was found in a late Iron Age to early Roman context (Phase 3), which is in keeping with what we know about their production. In contrast, the Millstone Grit millstone is later in date, being from a Phase 5 feature (AD120-250), but this is also to be expected, both in terms of the material and the use of a millstone. The lava is from unphased contexts but could be of any Roman date.

Site_Code	Context	SFNO	Function	Notes	Size	Lithology
QAVC12.44	3826		Probable rotary quern fragments	6 frags of friable rounded and non diagnostic lava	Measures	Lava
QAVC12.44	4117		Probable rotary quern fragments	3 frags of friable rounded and non diagnostic lava	Measures	Lava

AYLBER10	3390	2776	Upper rotary quern fragment	Slightly angled but nearly flat grinding surface. Circumference chipped all round near the grinding surface. Sloped upper face curves round to the top. Conical eye / hopper. Lowest 2cm is cylindrical. Pecked grinding surface	Measures 280mm diameter x 106mm high	Hertfordshire puddingstone
AYLBER10	3075	2674	Millstone, probably an upper	Flat disc type. One face is roughly tooled/worked, the other has obvious rotational grooves. The eye is large, so probably an upper stone, but is not circular. Edges are vertical and straight and dressed	Measures approx 780mm diameter x 69mm thick	Millstone Grit
AYLBER10	3397		Rubbed stone	Hand sized crudely shaped stone that has a flat smoothed face at each end, presumably used for rubbing	Measures 91 x 66 x 59	ferruginous sandstone
AYLBER10	5602		Pebble hone/rubber	Flat rounded cobble. Both faces are flat and very smooth but it is the wear on the surviivng end that is distinctive with the rounded end having a double chamfer. Must have been used to rub rounded things	Measures >69 x 57 x 16mm	Fine grained grey sandstone
AYLBER10	3368		tessera	Small and shaped from an unusual material	Measures 11 x 13 (x 17)	white fine grained sugary quartz sandstone

Table B.9.1: Stone objects

B.10 Leather

By Quita Mould

Methodology

B.10.1 The following assessment is based on examination of the wet leather on 12th January 2017; the leather had been recovered from the excavations in 2011. A small amount of additional washing was required prior to examination. A basic record of the material has been made noting all the diagnostic features present, measurement of relevant dimensions, and species identification where possible. Working drawings have been made of the principal items.

B.10.2 All measurements are in millimetres (mm). Leather species were identified by hair follicle pattern using a low-powered magnification. + indicates an incomplete measurement. Any shoe sizing has been calculated according to the modern English Shoe-Size scale from the measurement of the insoles of shoes of multi-part constructions. No allowance for shrinkage

has been made. The shoe terms employed are those in common use in the archaeological literature; seams, constructions and nailing patterns are fully described by van Driel-Murray in Goubitz, van Driel-Murray and Groenman-van Waatering 2001 and constructional thonging by Mould (1997, 328-31).

Condition of the material

B.10.3 The leather has been washed and is currently packed wet in double, self-sealing polythene bags. It is delicate, tears easily, prone to further fragmentation, and liable to tear and break during handling.

Summary and dating

B.10.4 The remains of two shoes of nailed construction, the mostly commonly recovered shoe construction in use throughout the Roman period, were found in the lower fills of a large pit (3067) during excavations in 2011.

B.10.5 A shoe (SF2616), possibly worn on the right foot, was found in fill 3073; another (SF2628), for the left foot, was found in 3074. The shoes were incomplete, being represented primarily by their bottom units. The shoes were not a pair, though of similar size and estimated as small adult size, but they had differing constructional features and so were clearly of different styles. One shoe (SF2616) was more heavily nailed (type 2B) with a double row of hobnails around the edge of the sole and no constructional thonging; the other (SF2628) was more lightly nailed with a single row around the edge (type 1C) and had constructional thonging (type 2) holding the bottom components in place. This more lightly nailed shoe (SF2628) had a small heel stiffener, 30mm high, and an area of the lasting margin of its upper of sheep/goatskin, likely to be goatskin, preserved between the lower face of the insole and the upper face of the midsole. The feature in which they were found is dated to the 2nd-4th century. The shoes are compatible with this dating. As the shoe bottom units were incomplete and they lacked well preserved uppers, more precise dating is not possible.

B.10.6 More than forty coins of were present in the pit, along with complete and near complete pottery vessels, articulated animal skeletons, three complete eggs and a basket or tray. This array of contents may suggest a ritual deposit potentially a rite of closure, and the two shoes may have been deliberately placed in the pit as part of this ritual assemblage, rather than simply being the result of domestic rubbish disposal.

Basic record

SF 2628 Context 3074 Leather nailed shoe, left foot, adult size

B.10.7 Bottom unit of nailed construction with insole, midsole, middle packing, heel stiffener and lasting margin of upper present. Toe area, left side of upper tread area and sides of the bottom unit broken off. What remains appears straight but wear and the shape of the heel stiffener suggest it was worn on the left foot. Natural tread shape tapering slightly to the seat, with no distinct waist. The seat area has been moulded around the foot by wear. Constructional thonging visible at the insole seat and can be seen criss-crossing the tread area

on the underside of the insole: constructional thonging type 2, thong 5mm wide. Midsole, of similar size to the insole, with a second fragment broken from the tread area. Folded tongueshaped piece used as middle packing, with impression from bracing thread. No hobnails present but some iron staining visible, nailing CVDM type 1C with a single row around the edge, infilling at the tread and seat, and a single nail at the waist. Complete heel stiffener present *c* 30mm high at centre back, grain side inward to the foot, of cattle hide. Small area of broken upper survives on the left side at the waist area and adhering to the lower part of the outside of the heel stiffener, surface is worn with no grain pattern visible. Part of the upper lasting margin is preserved on the underside of the insole tread area with elliptical holes along the edge with oblique impressions of the narrow thong, 3mm wide, with which it was stitched to the underside of the insole. Upper lasting margin leather sheep/goatskin. Surviving insole length 238+mm, width tread 67mm, 'waist' 52mm, seat 57mm. Estimated no smaller than adult size 3 (35.5).

Context 3074 from sample 193

B.10.8 Likely to be broken from SF2628 above.

- Bag 1: 7 small fragments broken from a nailed shoe bottom unit, 2 with nail holes present
- Bag 2 from >10mm sieve: 3 fragments broken from a nailed shoe bottom unit with nail holes present, one fragment coming from the edge.

SF 2616 Context 3073 Leather nailed shoe, foot uncertain, adult size

B.10.9 Bottom unit of nailed construction, now broken into two parts, with insole, midsole, sole. The toe and part of the tread area broken off. Natural shaped tread tapering slightly to the seat with no distinct waist, foot uncertain possibly for the right foot. Insole of bovine leather, midsole and sole with clear impression of hobnail heads but no hobnails present. Nailing CVDM 2B with a double row around the edge, clearly visible down left side and waist and seat area of the right side, infilling at the tread and seat, with an unnailed area at the waist. No constructional thonging. Surviving insole length 202+mm, width tread 76+mm, waist 56mm, seat 53mm. Estimated small adult size

B.11 Wood

By Damian Goodburn, with a contribution by Kate Brady

Introduction

B.11.1 This report summarises the range and character of the early historic waterlogged woodwork found and assess both its wider importance and potential for further study. This writer was not involved on-site and can make little contribution to any stratigraphic understanding of the context of discovery of the woodwork described here. The woodwork was recovered largely from the waterlogged fills of pit 3067, which had been cut into pond 3062. Some material was additionally collected from pit 3309, and two very large, clearly

ancient, pile timbers were salvaged from a contractor's machine excavations in deposits on the line of the Roman road (Akeman Street), where it crossed the route of the river Thame.

Methodology and quantification

B.11.2 While it was not practicable for this writer to assist with lifting and recording of the woodwork on site, a brief verbal description of the nature of the pond and pit was provided by OA finds manager Leigh Allen and conservator D Goodburn-Brown, who attended the site to lift the basketry remains. Copies of deposit sheets with brief references to the worked timbers and roundwood found were passed to this writer together with simplified digital plans of the waterhole and its setting with the major finds groups located, including the woodwork which was treated as small finds and given a small find number.

B.11.3 A total of 50 items of worked wood in 37 bags (counting the basket as one item) were passed on to this writer for detailed off-site recording. The writer began with cleaning adhering silt and clay and in some cases a hard sandy concretion. Then the best preserved and most diagnostic material (12 items including the basket) was drawn to scale on gridded film and pro-forma timber sheets. For brevity, the small fragments and repetitive items were more rapidly recorded on an annotated timber lists with basic features and dimensions recorded. Selected timber sheets were made out for the more structural type material, such as clear stakes or planks.

B.11.4 A total of 17 wood species samples were taken for microscopic identification, 0some to confirm visual identifications, such as part of the probably ash mallet head (3074, sample 2678). It should also be noted here that some of the lifted sections of cleft and trimmed poles of ash appear to have been sections of stakes that could not be fully excavated and lifted (eg 3074, SF 2690 and 2689).

Comparative corpus

B.11.5 What must be the largest archive of recorded Roman-period woodwork in the northwestern empire lies just to the south in London, where many thousands of individual items of woodwork have been recorded. The items relate to heavy engineering, domestic carpentry, boat building, machinery, furniture, cooperage, fencing, drainage woodwork and treen. More recently, work in the suburban and quite distant rural hinterland of Londinium has produced material, some of which has a less regular and 'Romanised' aspect where timbers were rarely worked to the regular, standard dimensions expected in Roman work. This writer has wide first-hand experience of both the published and unpublished parts of this archive and the comments offered here are made from that stand point.

The key items and groups of woodwork

B.11.6 The best preserved and most diagnostic material found preserved in the anaerobic silts and clays of the pond/pit sequence are briefly described to illustrate their potential for further analysis.

Context 3074, pit 3067, SF2685. Two conjoined, rejected sawn planks

B.11.7 A very unusual piece of worked timber was item 2685, which was found lying on face, running N-S across the east end of the feature. It appeared to be one plank 1.88m long and *c* 200mm wide. It was much covered in sticky clay and concretion, but after cleaning off-site, it could be seen that rather than being one plank with an irregular lump on the end it was in fact two unusually thin sawn oak boards joined together at one thicker end. In other words, the timber is an abandoned section of a baulk that had been marked out and sawn length ways into many boards *c* 15-19mm thick. However, what had been the felled base of the parent tree was still left un-sawn over a length of *c* 0.3m. This thicker felled end was up to 70mm thick and 215mm wide with many clear axe marks from the felling and traces of a third plank. Normally the end of the saw cuts would be extended by splitting the last sections using a wedge, as it had for the other boards produced from this baulk. The two thin planks or boards had been carefully sawn but included a bad 'shake' or natural split that ran along the pith of the parent tree. This damage was clearly considered serious enough for this part worked saw baulk to be relegated for use as a duck board to stand on and laid across part of the ritual feature.

B.11.8 The Romans introduced sawing technology to Britain and by careful observation of the tool marks we have been able to reconstruct the use of three different methods. This find provides a rare glimpse of the work of Roman sawyers or *sectores materiam* using small timber in a rural setting. Most Roman sawn planks found have been much thicker and wider. The pattern of saw marks stopping in a block that had to be split through to separate the planks indicates that a version of sawing with the timber set on one tripod was used where all the saw cuts or 'kerfs' were made up to the point at which the timber was bound on to the long leg of the tripod. The sawing was thus prevented from continuing to the end. This was not the most common type of sawing method used in Roman Britain, but examples of its use have been found at Regis House in London, Whitehall Farm villa in Northamptonshire and another site in Nottinghamshire. A virtually identical system survived in France until well into the 20th century. During the analysis phase, this material can be discussed in more detail and the logistics reconstructed. We cannot know for sure what boards *c* 190mm wide by *c* 1718mm thick would have sawn for, but their lightness suggests furniture. On many Roman sites, such thin boards were produced by controlled splitting from large logs of oak which produces stronger, less split-prone material. Possibly large oak logs were in short supply in the area at the time, or some form of property rights prevented access to them.

Context 3074, pit 3067, SF2678. A broken mallet head

B.11.9 Although broken in recent times this object, was clearly recognisable as a carefully made and balanced, roughly square, mallet head of ash(?), a fairly tough dense timber. It had a light roundwood handle 25mm in diameter that had been charred at one end.

Context 3074, SF 2731. Carved wooden vessel fragment

B.11.10 Two small fragments of a curved, carved wooden vessel were found and lifted. The two pieces refitted along the lines of an old split which also had three small nail holes either side and a strip of unabraded surface, showing that the split had once been covered by a repair patch that had disappeared. The nails and repair sheet were probably of iron. The

vessel was *c* 28mm thick, 110mm wide and 0.125m long. It could have been part of a rounded vessel or scoop to collect water or possibly as a container for some form of offering.

Context 3074, pit 3067, simple ash tool handle

B.11.11 This item, which had been bagged with four other objects labelled 3074, had a pointed roundwood stake end that has been identified as a small handle. It had been cleft and shaved from an ash billet. The tapered end had been trimmed to fit a socketed small tool of some kind. It was 140mm long and up to 28mm in diameter.

Context 3074, pit 3067, SF2684. Radially cleft oak stake timber

B.11.12 The digital plan seen by the writer appears to show what may be fallen or displaced stakes at both the east and west ends of the feature, but it is unclear at which end the cleft oak stakes were found.

B.11.13 The largest radially cleft oak stake, SF2684, survived to a length of 1.64m, a width of 75mm, and thickness of 50mm thick, and was a cleft quarter of a small moderately straight oak. The sapwood and bark had been left on, as it had in the other stakes made this way. Most of the other stakes were cleft down to smaller sections, such as 1/8ths or 1/16ths. If they were used in wattle fencing to enclose the feature (or part of it) to prevent stock and unwary folk stepping into it, the impression given would have been very rustic. Two stakes of this form were sampled with complete sapwood, but had only marginally enough heartwood rings.

Pit 3067. Small roundwood 'stakes' SF2661 (context 3074) and SF2617 (context 3073)

B.11.14 A small number of very small roundwood cut ends were found and labelled 'stakes', such as SF2661, which was 0.16 m long with a smooth chisel form end, but only 15mm in diameter. It may be that this item was actually a horizontal 'rod' or weaver end in wattle work, as it is of such a small diameter. Item SF2617 is of a similar length, but at 35mm diameter would have been a stronger stake, perhaps from a section of disturbed wattle fence.

Context 3074, pit 3067, SF228. A small worn broken handle

B.11.15 This appears to be a broken handle with one intact pierced end, as if for suspension, whilst the other end has a recent break. The total surviving length is 104mm, with an irregular cross section of *c* 18 by 18mm. The surface of the object is very polished, as if from long use, and there is a hard black deposit on part of one face. The object was clearly made from a small section of a log but the grain is hard to see clearly, as is the species. A microscopic species identification of the wood used would be interesting, as the wood may be unusual, possibly a fruitwood. It is tempting to see the object as the handle of a small knife.

Miscellaneous worked wood

B.11.16 Apart from the items specifically noted above, other material included several small fragments of cut oak roundwood that could have been lath fragments or wood chips from fine axe hewing. Some material may have been simply domestic debris, such as a partially burnt fragment of cleft oak (context 3074, SF2732), which must have been left over firewood.

Small roundwood and twigs with no clear working

B.11.17 Three small sample bags of washed material collected from fill 3074 were examined by the writer. Though very little evidence of working was found, the principal value of this material is for the reconstruction of the range of trees growing in the area in the Roman period. The volume of material was halved and re-bagged for possible botanical analysis.

- SF193: small fragments of small roundwood and twigs *c* 3-11mm in diameter. Some stripped of bark, thus possibly fragments of peeled basketry willow.
- SF228: assorted small roundwood fragments from *c* 10mm to 30mm in diameter, none obviously worked.
- SF193: Broken fragments of woodworking hewing debris, ie broken lath-like fragments.

Context 3309, pit 3308, SF2712. Ash pole section, examples of several partially excavated ash stakes

B.11.18 Several sections of small ash poles cleft in half or trimmed boxed heart were found broken at both ends, implying that they may have been stakes that were not fully excavated. These are likely to have been fencing elements.

Two salvaged oak timber piles

B.11.19 The two large timbers, salvaged during contractor machining to the east of the site, were examined at Oxford Archaeology by this writer. The following summary is based on notes and measured sketches made at the time and scale drawings and photographs made by OA staff at the request of this writer after the visit. Advice was also provided, during that visit, as to the viability of the timbers for possible tree-ring dating. Samples were then taken, but unfortunately could not be matched to reference chronologies by dendrochronologist D Miles (L Allen pers. com.). The longer pile is termed here 'Pile A' and the shorter 'Pile B'.

B.11.20 Both piles were of oak. The piles were rather machine damaged but some original tool marks and fragile sapwood had survived. They had both been moderately accurately hewn to rectangular sections from whole logs with axes.

B.11.21 The larger pile, pile A, survived to a length of *c* 2.6m from its near complete tip to its machine broken top. The tip had a well preserved square section and was axe hewn. The widest axe stop marks were up to 80mm wide. Both these characteristics are typical of Roman civil engineering work in timber. In cross section, it was originally *c* 450mm by 400mm. The 450mm value is close to the Roman cubit, a common dimension for large Roman civil engineering timbers found in Britain. The oak log used for the pile was rather knotty, suggesting that it came from either the upper parts of a tall tree or the lower parts of an open grown oak. The latter type of parent tree might be found in a fairly open farmed landscape in managed woodland or even a hedgerow or wood pasture setting.

B.11.22 The less well preserved smaller oak pile, pile B, survived to a length of 1.85m from its broken tip to its machine scraped top. It was much damaged by the machine excavation, but near complete, soft sapwood survived on one corner and part of one face. In cross section it

was *c* 430 by *c* 370mm but was originally larger. The parent log was a little knotty but less so than that used for pile A.

B.11.23 From the quick visual inspection of this writer it appeared that the timber used in both piles was of medium growth rate and they had around 100 annual rings or so and pile B had much sapwood. As only *c* 50 rings of the sequence are needed to match a reference chronology such as the copious Roman examples based on timbers found in London, it could be considered particularly unlucky that no match could be made.

B.11.24 The approximate location of the piles on the Akeman Street Roman road, their form, tool marks, and condition suggest that a Roman date is very likely. However, though we can exclude a prehistoric, or Saxon dating on the grounds of form and size, a later medieval or even early post-medieval dating is not completely impossible. There are no technological features such as jointing that might be more tightly diagnostic of date range.

B.11.25 The form of the piles suggests to this writer that they were probably piles used to support a bridge trestle of some type, robust enough to support a metalled timber decking for the roadway. A lesser possibility might be that they were driven uprights for some kind of gateway posts. In size they slightly resemble the largest piles used in the Roman trestle bridge found at Aldwincle in Northamptonshire. The piles are larger than those used in several of the smaller road bridges known from the London area in Southwark and the City.

Wooden basket by Kate Brady (based on notes by Dana Goodburn-Brown)

B.11.26 A woven wooden basket base (SF2687) was recovered from the lower fill (3074) of pit 3067, a roadside pit with a probable ritual function, where it was found with numerous items including eggs. The eggs may have been placed in the pit within the basket, as they were found in close proximity, with the basket overlying the eggs.

B.11.27 The basket was recorded *in situ* before being lifted by conservator Dana Goodburn-Brown and transported for conservation and further work (Fig. 7).

B.11.28 The basket measured 0.8m in length and 0.78 in width. The southern and western sides appeared intact and the northern and eastern sides had been disturbed/ damaged. The basket appeared to have had a wide shallow tray-like form woven from thin laths (spelk). The sides were constructed of wicker of which only a height of around 0.1 had survived.

B.12 Human remains

By Mark Gibson, Lauren McIntyre and Helen Webb

Introduction

B.12.1 The human remains comprised a discrete articulated inhumation (3004) of unknown date and three deposits of disarticulated bone. The disarticulated bones included those from context 2623 witin boundary ditch 2620, provisionally dated to the late Iron Age/early Roman period, context 3073 from pit 3067, and context 3340 from roadside ditch 3324, provisionally dated to the middle Roman period. A single cremation burial (context 2999, grave 2994) was also recorded.

B.12.2 Analysis was undertaken in accordance with the guidelines set out by Brickley and McKinley (2004) and Mays (2002). Pathology and trauma were described and differential diagnoses, explored with reference to standard texts (eg Aufderheide and Rodríguez-Martín 1998; Ortner 2003). The minimum number of individuals (MNI) represented by the disarticulated bone was estimated for each context and was based on the repetition of elements, taking into account age and morphology (Buikstra and Ubelaker 1994).

Results

Articulated skeleton 3004 (grave 3003)

B.12.3 The skeleton was between 51 and 75% complete with all major elements represented. All elements were highly fragmented and incomplete. Bone surfaces had moderate, patchy erosion, consistent with grade 2 of McKinley's schema (McKinley 2004, 16). These observations considered together, the skeleton was judged to be in a fair condition overall.

B.12.4 The skeleton was that of an adult. However, no indicators were sufficiently preserved for a more precise age to be estimated with confidence. A partially preserved auricular surface exhibited a course, granular, surface, consistent an age of between 25 and 44 years (Lovejoy *et al.* 1985). Thus, the skeleton was possibly a prime (26-35 years) or middle (36-45 years) adult.

B.12.5 The sex of the skeleton could not be estimated because it was too fragmented and because diagnostic landmarks were missing. It was also not possible to estimate stature or skeletal indices for the same reasons. No non-metric traits were observed on the surviving elements.

B.12.6 Dental disease was present in the form of calculus, caries and dental enamel hypoplasia. Slight deposits of calculus were observed on 19 of the 22 observable tooth crowns (a 23rd tooth was present, but the crown broke post-mortem and had not been recovered). Dental calculus, colloquially known as plaque, is an extremely common disease. It has been linked to diets high in protein and/or carbohydrates (Hillson 1996, 254) and may, therefore, be an indication of diet, as well as of oral hygiene practices (or lack thereof).

B.12.7 A medium size carious lesion was observed on the mesial aspect of the left maxillary first molar. Carious lesions develop when acid from the bacteria in dental plaque destroys the enamel, dentine and cement, resulting in cavities in the crowns and/or tooth roots (Hillson 1996, 269).

B.12.8 Dental enamel hypolasia (DEH) was present on six teeth. The condition refers to disruption to the growth of the tooth during childhood, as a result of physiological stress, such as a period of nutritional deficiency or disease, for example measles (Aufderheide and Rodríguez-Martín 1998, 405; Roberts and Manchester 1995, 58). The disruption may be identified as lines, pits or grooves in the enamel. In skeleton 3004 the condition was observed as lines (on three of the first premolars and mandibular canines) and pits (on the left maxillary third molar). The position of all of these defects suggested that the periods of physiological stress occurred between 2 and 4.9 years of age (Primeau *et al.* 2015).

B.12.9 Skeletal pathology included slight osteophyte (new bone growth) on the margin of the left glenoid (shoulder joint) and fused toe bones. Osteophyte is extremely common and without associated lesions (as was the case here) can refer to age related change. The fused toe bones involved the left intermediate and distal phalanges, probably from the fifth digit, which were joined at the joint, consistent with the congenital condition, symphalangism. Symphalangism is inherited and involves fusion of one or more of the interphalangeal joints without trauma to or infection or degeneration of the joint (Austin 1951).

Disarticulated human bone, contexts 2623, 3070 and 3340

B.12.10 The disarticulated bone was in a fair condition being fragmentary with bone surfaces which had suffered patchy or moderate surface erosion. Deposits 2623 and 3070 each comprised one individual, represented by the remains of an incomplete skull and mandible respectively. The size and morphology of the skull (frontal bone only) were consistent with those of an adult, but there were no surviving indicators which could be observed to estimate the individual's sex. The mandible was preserved with three of its left molars which exhibited attrition consistent with an 18-25 year old (young adult; Brothwell 1981). However, this estimate is tentative because it assumes that the occluding maxillary molars had been present in life. The morphology of the mandible fragment was possibly female (White and Folkens 2000). No pathology or abnormality were observed on the skull and slight calculus, as defined above, was present on the teeth.

B.12.11 Deposit 3340 comprised the remains of skull, teeth, pelvis, arm and leg bones and unidentified long bone fragments. They apparently represent one individual, provisionally estimated to have been 26-35 years of age based on dental attrition (Brothwell 1981). A more detailed inventory of the bones is required to confirm these observations. No pathology or abnormality were observed.

Cremation deposit 2999, grave 2994

B.12.12 A single deposit of cremated bone (2999), dated to the Roman period, was submitted for osteological assessment. The remains, which were recovered from an urn (2998) within grave 2994, were excavated in two spits (spit 1, sample 178; spit 2, sample 179).

B.12.13 Overall, the deposit is large, with a total sorted fraction weight (>10mm and 10-4mm) of *c* 890g. In addition, there is *c* 220g of 4-2mm material which is unsorted. A significant proportion of the total bone weight comprises large fragments (>10mm). As such, there is high potential for identification of skeletal elements, including indicators of age and sex.

APPENDIX C ENVIRONMENTAL ASSESSMENTS

C.1 Animal bone

By Lee Broderick

Introduction

C.1.1 A total of 12,554 animal bones were recovered from the site, mostly associated with contexts associated with phase 2 (excluding undated material), with phases 5, 4 and 10 also

containing over 1,000 specimens (Table C.1.1), much of them from environmental samples. Forty-three per cent of the material was hand-collected, with 57% resulting from environmental sampling (Table C.1.2). Environmental sampling particularly increased the number of indeterminate, micro mammal (mouse sized mammals), bird and amphibian bones recovered. This is typical of such sampling strategies (Payne 1972) and we should expect that the numbers of these groups of species would increase were all the excavated material to be sieved in the same way.

Phase	2	3	4	5	9	10	11	12	undated
domestic cattle	173	3	22	39		14			59
domestic cattle?	17	1	2	1					7
caprine	135	15	15	9	2	6	1		70
caprine?	37	7	3			5	1	1	11
caprine/roe deer	1								
sheep	37	6	6	4		4			24
pig	21	10	2	7		2			20
pig?	3	1							4
horse	116	48	14	27		12			57
horse?	1							1	
dog	7	1	2	36					2
dog?									1
red deer						2			1
European hare						2			
rabbit	1								1
small rodent	5			1		2			1
black rat	1								
black rat?						1			
wood mouse	1								2
wood mouse?	1								1
harvest mouse	1								

house mouse	1						1		1
water vole	3			1		1			5
bank vole/field vole/ common vole				5					
field vole	5			2		9			2
field vole?	1					2			
dormouse?			3						
common shrew	1					1			
European mole			1			7			
micro mammal	25	2	30	23		49			16
small mammal	37	1	2			12	3		9
medium mammal	259	23	5	231	1	2	3		116
large mammal	755	80	448	222	1	57			610
Total mammal	1097	106	489	485	2	145	7	0	764
amphibian			4	257					3
common frog/ common toad	14		7	74		462			1
common frog	4		2	59		111			1
common toad				8		79			
Total amphibian	18	0	13	398	0	652	0	0	5
bird	1			2					2
swan	1								
domestic fowl	1								
Total bird	3	0	0	2	0	0	0	0	2
NISP	1118	106	502	885	2	797	7	0	771
NSP	3017	504	1388	1478	2	1034	168	18	3809

Table C.1.1: Total NISP (Number of Identified SPecimens) and NSP (Number of SPecimens) figures per period from the site

C.1.2 The bones were generally in moderate condition (Lyman 1996, stage 3) but varied from this at the pond feature (see phase 5 discussion, below), where condition varied between stages 1 (excellent) and 5 (awful). Some 3,487 hand-collected specimens were recovered from ditches and a further 1,041 from pits, together accounting for 82.6% of the assemblage. Contexts of particular interest will be highlighted below.

	Sieved	Unsieved
Amphibian	1086	0
Bird	5	2

Micro Mammal	212	2
Small Mammal	48	69
Medium Mammal	151	959
Large Mammal	83	2707
indet.	5551	1679
Total NISP	1585	3739
Total NSP	7136	5418

Table C.1.2: Number of specimens recovered from sieved environmental samples and handcollected (unsieved samples). Higher proportion highlighted

	Butchery marks	Pathologies	Gnawed	Burnt	Ageing data	Biometric data
domestic cattle	21	4	48	2	129	31
domestic cattle?	2		4	1	5	
caprine	4		41	3	59	24
caprine?	1		16	4	7	
sheep			1		75	
pig	3		2	13	16	2
pig?			2	3	1	
horse	7	3	40		69	30
horse?					1	
dog					16	5
dog?					1	
red deer					2	1
European hare					1	2
rabbit					1	1
small rodent					3	
black rat?					1	1
wood mouse					1	
water vole					1	
field vole					6	
dormouse?					1	
European mole					3	3
micro mammal					2	
small mammal				2		
medium mammal	2		3	17		
large mammal	8		11	8	1	

bird				1		

Table C.1.3: Number of specimens recorded with taphonomic, ageing or biometric data

Phase 2 (prehistoric/middle Iron Age)

C.1.3 Although a broad base of species might have been present on the site in this phase, the assemblage was dominated by just three species – caprines (sheep – *Ovis aries* and goats – *Capra hircus*), followed by domestic cattle (*Bos taurus taurus*) and horse (*Equus caballus*). It was possible to identify 37 of the caprine specimens (mandibles and mandibular teeth) as being specifically sheep. Forty-five per cent of the specimens recovered from this phase were identified only as far as 'large mammal' so it may be supposed that cattle and horses may have been the most common species on the site at the time and, taking into account their relative size, made by far the greatest contribution to the diet of the inhabitants.

C.1.4 Caprines and cattle are the two most common species found on archaeological sites of this period in Britain but the presence of horse in such high numbers requires more investigation and explanation. It is possible that horse contributed a major part of the diet at the site or that the high number of horse bones recovered is related in some way to the function of the site, for example religious or horse-ranching. Further statistical analysis of relative part abundances and comparison of differences of treatment with the similarly sized cattle bones may help to clarify this issue.

C.1.5 This was also the only phase in which domestic birds were recorded. Domestic fowl (*Gallus gallus*) begin to appear in the British Isles in the Middle Iron Age, this find is thus one of the earlier examples found so far.

C.1.6 As might be expected of the phase with the largest number of samples, this phase contained the broadest range of species recorded as present on the site. For the most part this is micro-fauna that might be considered principally as intrusive burrowing species, an interpretation supported by the generally good condition of the bones and the presence of a rabbit (*Oryctolagus cuniculus*) metacarpal. This species was a much later introduction to the British Isles (generally thought to be associated with the Normans). The black rat (*Rattus rattus*) is also currently unknown from Britain before the Roman period, and a specimen of that date would be unusual on a rural site. Both species are represented by single bones recovered via environmental samples from contexts recorded as posthole fills, and may be intrusive.

Phases 3 and 4 (late Iron Age and early Roman period)

C.1.7 Although smaller assemblages, the finds from phases 3 and 4 on the site broadly continued the trend observed in phase 2 but with horse making up an even greater proportion of the total NISP. Phase 3 is the only phase on the site when pig (*Sus scrofa domesticus*) is among the three most common species present. Given that this still only amounts to a total of ten specimens, though, little significance can be attached to the fact.

C.1.8 Phase 3 also features a cremation burial (3337) from which 19 indeterminate and one medium mammal calcined specimens were recovered. The other cremation burials on the site remain undated at present.

C.1.9 Three possible edible dormouse (*Glis glis*) specimens were also identified from this phase of the assemblage. These specimens (two tibias and a pelvis, none of which was complete) came from context 3807, a ditch fill. Given the notoriety, from written sources, of edible dormouse as a Roman delicacy, these identifications should be treated cautiously and checked against modern reference specimens.

Phases 5 and 10 (mid Roman/Roman)

C.1.10 Phases 5 and 10 represent the mid Roman and Roman phases of activity on the site and are considered together here owing to the similarity of their composition.

C.1.11 Among the larger fauna, horse and cattle are again the most common species recorded across the two phases. In phase 5, the second most common species by NISP is dog (*Canis familiaris*). Most of these specimens come from a single ABG (Associated Bone Group), the context of which (3310) was described as an 'animal burial' by the excavators. This was situated near to a human burial, but there is no direct relationship between the two contexts.

C.1.12 Both the mid Roman and Roman assemblages are dominated by a large number of common frog (*Rana temporaria*) and common toad (*Bufo bufo*) specimens. These came from the environmental samples and it is likely that the large numbers result from mass fatalities during hibernation. In particular, the phase 5 amphibians all come from contexts associated with waterlogged pit 3067, which it has been suggested may have been a focus for some ritual activity. Disarticulated bones from cattle, horse, caprine, pig and dog also came from the fills of this feature (Table C.1.4).

domestic cattle	*Bos taurus taurus*	37
domestic cattle?	cf. *Bos taurus taurus*	7
caprine	*Ovis aries/Capra hircus*	70
caprine?	cf. *Ovis aries/Capra hircus*	11
sheep	*Ovis aries*	24
pig	*Sus scrofa domesticus*	5
horse	*Equus caballus*	21
dog	*Canis familiaris*	2
small rodent		1
field vole	*Microtus agrestis*	2
micro mammal		4
medium mammal		1
large mammal		167

	Total Mammal	175
amphibian		257
common frog/ common toad	*Bufo bufo/Rana temporaria*	74
common frog	*Rana temporaria*	59
common toad	*Bufo bufo*	8
	Total Amphibian	398
	Total NISP	573
	Total NSP	573

Table C.1.4: Total NISP (Number of Identified SPecimens) and NSP (Number of SPecimens) figures from contexts associated with the pond (contexts (3066) and (3068) to (3047)) . Three most common species highlighted

C.1.13 Phase 10 contains the only wild mammal specimens that could possibly have resulted from food remains – European hare (*Lepus europaeus*) and red deer (*Cervus elaphus*). These are represented by a humerus and radius and two metatarsals, respectively. It is also worth noting that several specimens of the European mole (*Talpa europea*) were identified in the sieved samples from Phase 10. These were in very good condition and are considered to be very likely intrusive.

Phases 9, 11 and 12 (Post-medieval and broadly Roman)

C.1.14 These three phases together provided a total NISP of just 15 and so contribute little to our knowledge of the site. Phase 9 reflects the post-medieval phase on the site and contained caprine as well as one large mammal specimen. Phases 11 and 12 were early-mid Roman and mid-late Roman, respectively. Nothing in these assemblages alters the interpretations made for phases 3, 4 and 5 (above). Context 3005 was the fill of a phase 11 grave and contained a caprine pelvis.

Undated

C.1.15 The currently undated fraction of the assemblage made up the largest proportion overall by NSP (4,065) and the second largest by NISP (1,027), of which almost half were indeterminate fragments of calcined bone from cremation burials. The trends observed follow that of the site as a whole – caprines, cattle and horse are the most common species, with pig being the fourth most frequently occurring taxon and micro-fauna also present.

Conclusions

C.1.16 In each phase where more than two caprines were identified, it was possible to say that sheep were definitely present but goats were not identified.

C.1.17 The middle Iron Age phase on the site raised a number of questions. Firstly, the site contains an early find of domestic fowl. This species is not unheard of on middle Iron Age sites in southern Britain but it remains rare; dating it more precisely would help to identify just how significant the find is. The black rat specimen is, like the rabbit specimen, considered intrusive but it would also be very significant if proved to be of this age. There is some evidence that the species was accidentally introduced many times (mainly in ports) before becoming locally extinct again, only finally establishing itself during the late medieval period.

C.1.18 In general, a variety of micro mammals were observed in the assemblage, including three different species of mouse and at least two different species of vole. The presence of mole specimens in some of the environmental samples means that their correlation with the site phases has to be treated cautiously, but they may aid in identifying the presence of different types of landscapes locally in the Iron Age.

C.1.19 The question of the role horses played on the site is introduced in the middle Iron Age phase, the earliest phase on the site for which we have any faunal data, and continues into the Roman period. In each phase of occupation, horse is one of the three most common animals on the site (excluding the enormous number of frogs and toads recovered through environmental sampling from some phases) and answering this question may go some way towards identifying the types of activity carried out at the site. Clearly, any interpretation needs to be made not just on the faunal evidence (including comparisons with other sites) but with other evidence from the site borne in mind as well.

C.1.20 The potential for using biometric data from the site to observe changes in livestock size is limited, with over half of the bones complete enough for measuring dating from the middle Iron Age. Nevertheless, it may be possible to combine these data with other sites in the region for an overview of any changes.

C.1.21 In summary, it is highly recommended that the faunal remains from deposits phased as Iron Age and Roman are fully analysed and reported for publication.

C.2 Fish remains

By Rebecca Nicholson

C.2.1 A small number of fish bones were recovered from the residues of three soil samples: sample 173 from Phase 3 ditch fill 2622, sample 193 from fill 3074 of the large, middle Roman, pit 3067, and sample 247 from undated context 3416. Additionally, a fossil, probably a large fish molar tooth, came from sample 221, fill 3068 in pit 3067.

C.2.2 The bones all came from small fish likely to have been caught in local rivers or ponds. Three eel (*Anguilla anguilla*) vertebrae, two of which are burnt, came from sample 173 while a small pike (*Esox lucius*) vertebra came from the residue of sample 247. The only fish bone recovered from the large pit 3067 is a charred vertebral centrum fragment, unidentifiable but possibly pike.

C.2.3 Fish remains are not commonly found on Roman rural sites and are conspicuously absent from Iron age sites in England (Locker 2007; Dobney and Ervynck 2007). Where present, assemblages typically comprise small numbers of freshwater fish remains, usually dominated by the catadromous eel, sometimes with small numbers of flatfish or herring bones (Locker 2007). Similar to the Berryfields assemblage, a small number of fish bones were recovered from Roman contexts at Didcot Great Western Park, Oxfordshire, with eel again the most frequent taxa and perch, cyprinid also present, together with herring which must have been imported (Nicholson forthcoming). The few fish bones from Iron Age and Roman contexts at Barton Court Farm, Abingdon, included eel and pike as well as perch and cyprinid (Wheeler 1984), again indicating small-scale fishing of local rivers or streams.

C.3 Eggshell

By Edward Biddulph and Rebecca Nicholson

C.3.1 The remains of at least three eggs were recovered from contexts 3073 and 3074 within pit 3067. The precise location of the eggs is uncertain. It is assumed that the eggs had originally been placed in the basketry tray also found within the feature, but the eggs do not appear to have been found *in situ*. Excavators noted that the eggs, three of which were initially complete, floated to the top of the water-filled feature as it was being excavated. Two of the eggs disintegrated before they could be recovered (releasing, it was noted, a sulphurous odour in the process). However, the third was recovered complete, and eggshell fragments were recovered from samples collected from the feature.

C.3.2 The complete egg and a number of eggshell fragments have been sent to Dr Julia Best of the Department of Archaeology at the University of Bournemouth for examination, and a report is awaited.

Sample	Context	No. boxes/bags	Comments
	3073	1	Broken egg SF 2613
193	3074	2	Eggshell from >10mm and 10-4mm sieved residues (4g 25+frags)
227	3073	2	Eggshell from 10-4mm and >10mm residues (5g, 25+frags)
228	3074	1	Eggshell from >10mm residue (1g, 5 frags),

Table C.3.1: Eggshell samples sent to Bournemouth University for examination

C.4 Insects

By Enid Allison

Introduction

C.4.1 The samples submitted for insect assessment came from the fills of a waterlogged pit (3067), dated on finds evidence to the mid-late Roman period, and which had been cut through the fills of an earlier pond (3062). The pit may have initially functioned as a water

tank, but at a later stage a number of structured deposits were placed into it, possibly to mark its disuse.

C.4.2 The insect samples had volumes of 5 litres. They were received having been wet-sieved to 0.25mm. Paraffin flotation to extract insect remains was carried out following the methods of Kenward *et al.* (1980) with recovery on 0.3mm mesh. The paraffin flots were scanned in industrial methylated spirits (IMS) for the presence of insects and other invertebrates using a low-power stereoscopic microscope (x10 – x45). The flots from three samples have volumes of 60-80ml (ie quite large for a paraffin flot) and all are rich in insect remains. Therefore, a proportion of each has been scanned for the purposes of this assessment (Table C.4.1). The rest were scanned in their entirety. The abundance of identifiable beetles (Coleoptera) and bugs (Hemiptera) in each sample was estimated, the state of preservation of remains recorded, and the potential to provide environmental data assessed. Nomenclature for Coleoptera in Table C.4.1 follows Duff (2012). Ecological codes used in the table are based the categories of Kenward *et al.* (1986). The paraffin flots are currently stored in IMS.

Sample	Cont-ext	Sample volume	Paraffin flot volume	Est. no. beetles and bugs	State of preserv-ation	Comments on the beetle and bug assemblages	Taxa noted during scanning. Identifications are provisional	Potential for analysis
223	3070	5L	<5ml	2	Moder ate t o poor	Very low numbers	?Earthworm egg capsule fragments; trace beetle cuticle; beetle mandible	NONE
225	3071	5L	5ml	30	Very poor; fragme ntation high, erosion high; most fragme nts very pale	Aquatics common and dominated by Helophorus spp.; suggestions of moist waterside litter and grassland habitats	Earthworm egg capsules; Auchenorhyncha (oa-p); Hemiptera nymph; Haliplus [oa-w]; Agabus bipustulatus [oa-w]; Colymbetes fuscus [oaw]; Helophorus grandis [oa-w]; Helophorus sp. [oa-w]; Laccobius [oa-w]; Cercyon/Megasternum [u]; Aleocharinae [u]; Aphodius spp. [ob-rf]; Elateridae spp. [ob]; Alticini [oa-p]; Gymnetron/Mecinus [oa-p]; Tychius [oa-p]; Sitona [oa-p]	LOW

227	3073	5L	80ml	400+	Good; fragmentation moderate, many larger sclerites broken; erosion low	~FIFTH OF FLOT SCANNED Aquatics abundant; terrestrial taxa from both damp and drier ground; insects found on grassland plants present; Aphodius dung beetles perhaps more common than in other samples	Water flea ephippia; ostracods; earwigs; Pentatomoidea [oa-p]; Lygaeidae [oa-p]; Delphacidae [oa-p]; Auchenorhyncha [oa-p], Hemiptera nymphs; Diptera puparia; Formicidae; Noterus [oa-w]; Agabus bipustulatus [oa-w], Agabus or Ilybius [oaw], Colymbetes fuscus [oa-w], Hydroporinae [oa-w], Bembidion spp. [oa]; Harpalus ?rufipes [oa]; Carabidae spp. [ob]; Helophorus aquaticusor grandis [oa-w]; Helophorus spp. [oa-w]; Anacaena [oa-w]; Berosus [oa-w]; Hydrobius fuscipes [oa-w]; Laccobius [oaw]; Hydrophilinae spp. [oa-w]; Cercyon haemorrhoidalis [rfsf]; Cercyon spp. [u]; Megasternum concinnum s.l. [rt]; Hydraena testacea [oa-w]; Limnebius [oa-w]; Ochthebius cf minimus [oa-w]; Ochthebius ?bicolon [oa-w]; Lesteva [oa-d]; Tachinus [u]; Tachyporus [u]; Anotylus rugosus [rt]; Anotylus sculpturatus gp [rt]; Xantholinus [rt]; Staphylininae spp. [u]; Aphodius ater [oa-rf]; Aphodius contaminatus [oa-rf]; Aphodius [ob-rf]; Cyphon [oad]; Byrrhidae [u]; Elateridae spp. [ob]; Anobium punctatum [l-sf]; Enicmus [rd-sf]; Prasocuris phellandrii [oa-p-d];	HIGH

							Chrysomelidae spp. [oa-p]; Apionidae spp. [oa-p]; Scolytinae [l]; Ceutorhynchinae spp. [oa-p]; Sitona [oa-p]; Curculionidae spp. [oa-p]; Coleoptera spp. [u]; mites	
222	3072	5L	5ml	5	Moderate to very poor; fragmentation high, erosion high	Very low numbers aquatic and terrestrial taxa	Earthworm egg capsules; Diptera sp(p) fragments; obviously modern Diptera abdomen; Cercyon indet. [u]; Ochthebius minimus [oa-w]; Aleocharinae [u]; Elateridae [ob]; Curculionidae [oa-p]	VERY LOW

224	3075	5L	5ml	2	Very poor; fragmentation high, erosion high	Very low numbers aquatic and terrestrial taxa	Earthworm egg capsule fragments; Carabidae (small) [oa]; Helophorus [oa-w]	NONE
228	3074	5L	60ml	400+	Good; fragmentation moderate, erosion low	~THIRD OF FLOT SCANNED Aquatics abundant; terrestrial taxa from both damp and drier ground; insects found on nettles, Brassicaceae and grassl and plants; possible synanthropic component	Ostracods; earwigs; Heterogaster urticae [oa-p]; Corixidae [oa-w]; Gerris [oa-w]; Saldidae [oa-d]; Heteroptera sp. [u]; Delphacidae [oa-p]; Auchenorhyncha [oa-p], Hemiptera nymphs; Formicidae; Hymenoptera Parasitica; Gyrinus [oa-w]; Haliplus [oa-w]; Agabus bipustulatus [oa-w], Agabus or Ilybius [oa-w], Colymbetes fuscus [oa-w], Hydroporinae spp. [oa-w], Carabus [oa]; Trechus obtusus/quadristriatus [oa]; Bembidion [oa]; Pterostichus [ob]; Agonum [oad]; Harpalus ?fuscipes [oa]; Harpalini [oa], Carabidae spp. [ob]; Helophorus spp. [oa-w]; Hydrobius fuscipes [oa-w]; Laccobius [oa-w]; Hydrophilinae [oa-w]; Cercyon spp. [u]; Megasternum concinnum s.l. [rt]; Histeridae [u]; Hydraena [oa-w]; Limnebius [oa-w]; Ochthebius minimus[oa-w]; Lesteva longoelytrata [oa-d]; Mycetoporini [u]; Tachinus [u]; Tachyporus [u]; Aleocharinae spp. [u]; Anotylus nitidulus [rtd]; Platystethus cornutus gp [oa-d]; Stenus [u]; Xantholinini [u]; Staphylininae spp. [u]; Aphodius [ob-rf]; Elateridae [ob]; Cantharidae [ob]; Anobium punctatum [l-sf]; Brachypterus [oa-p];	HIGH

							Orthoperus [rt]; Latridius minutus gp [rd-st-h]; Corticaria [rt-sf]; Corticariinae [rt]; Phyllotreta spp. [oa-p]; Longitarsus]oa-p]; Chaetocnema concinna/picipes [oa-p]; Oxystoma [oa-p]; Apionidae spp. [oa-p]; Tanysphyrus lemnae [oa-p-w]; Mecinus ?pascuorum [oa-p]; Sitona [oa-p]; Curculionidae [oa-p]; Coleoptera spp. [u]; mites	

193	3074	5L	40ml	400+	Good; fragmentation moderate, many of the larger sclerites are torn; erosion low	~THIRD OF FLOT SCANNED Aquatics abundant and they include a group characteristic of clean, clear, running water; possible synanthropic component	Water flea ephippia; ostracods; Pentatomoidea [oa-p]; Lygaeidae [oa-p]; Tingidae/Piesmatidae [oa-p]; Anthocoridae [u]; Corixidae [oa-w]; Gerris [oa-w]; Saldidae [oa-d]; Delphacidae [oa-p]; Auchenorhyncha [oa-p], Hemiptera nymphs; Diptera puparia; Formicidae; Hymenoptera Parasitica; Haliplus [oa-w]; Agabus bipustulatus [oa-w], Agabus or Ilybius [oa-w], Colymbetes fuscus [oa-w], Hydroporinae spp. [oa-w], Brachinus crepitans [oa]; Bembidion spp. [oa]; ?Stomis pumicatus [oa]; Pterostichus [ob]; Chlaenius [oa-d]; Paradromius [oa]; Carabidae spp. [ob]; Helophorus grandis [oa-w]; Helophorus spp. [oa-w]; Hydrobius fuscipes [oa-w]; Laccobius [oa-w]; Hydrophilinae spp. [oa-w]; Cercyon [u]; Megasternum concinnum s.l. [rt]; Hydraena testacea [oa-w]; Hydraena [oa-w]; Limnebius [oa-w]; Ochthebius minimus [oa-w]; Ochthebius (Asiobates) [oa-w]; Acrotrichis [rt]; Cholevinae [u]; Lesteva longoelytrata [oa-d]; Sepedophilus [u]; Tachinus [u]; Tachyporus [u]; Cypha [u]; Anotylus rugosus [rt]; Carpelimus spp. [u]; Stenus [u]; Lathrobium [u]; Staphylininae spp. [u]; Aphodius contaminatus [oa-rf]; Aphodius [ob-rf]; Oulimnius [oa-w]; Elmidae spp. [oa-w]; Elateridae [ob]; Anobium punctatum [l-sf]; Latridius minutus gp [rd-st-h]; ?Enicmus [rd-sf]; Corticariinae [rt]; Typhaea stercorea [rd-ssh]; Phyllotreta spp. [oa-p];	HIGH
							Altica [oa-p]; Psylliodes [oa-p]; Chrysomelidae spp. [oa-p]; Apionidae spp. [oa-p]; Tanysphyrus lemnae [oa-p-w]; Ceutorhynchus [oa-p]; Sitona [oa-p]; Curculionidae [oa-p]; Coleoptera spp. [u]; mites	

Table C.4.1: Insects and other invertebrates from the fills of pit 3067. The deposits are arranged in stratigraphic order. Ecological codes shown in square brackets are as follows: d-

damp ground/waterside, house/building, l -wood/timber, oa- outdoor insects not found within buildings or in accumulations of decaying matter, ob - probable outdoor insects, p - plant-associated, rd - dry decomposers, rf - foul decomposers, rt - eurytopic decomposers, ss - strong synanthropes, st - typical synanthropes, u - uncoded, w - aquatic. Many taxa are uncoded pending closer identification

Results

C.4.3 The results of scanning individual samples are shown in Table C.4.1. Identifications of beetles (Coleoptera) and bugs (Hemiptera) should be regarded as provisional.

Context 3074 – the primary fill of pit 3067 (samples 193 and 228)

C.4.4 Two samples were examined. Larger beetle sclerites are fragmented in both, but preservation is otherwise good. It is estimated that several hundred aquatic and terrestrial beetles and bugs are represented in each of the samples.

C.4.5 *Helophorus* species which invade many types of water body, even if small or temporary, were the most abundant among a wide range of aquatic beetles. Water boatmen (Corixidae) and ostracods were noted in both samples, and water flea ephippia (Cladocera: resting eggs) in sample 193. While many of the aquatic beetles are eurytopic or typical of still water, a group of riffle beetles (Elmidae: three species) in sample 193 is indicative of an input of clean, clear running water. It is possible that this relates to the presence of a spring or running water channel feeding into the feature. No riffle beetles were noted during scanning a similar quantity of the flot from sample 228. This raises the possibility that depositional conditions may have changed during the accumulation of the primary fill but this would require further investigation.

C.4.6 Terrestrial insects in both samples have a good potential for analysis to provide details of habitats and vegetation in the vicinity of the feature and they may indicate local land use. They include waterside/damp ground taxa, ground beetles, plant-feeders found on particular groups of plants, dung beetles, and decomposers. There are good indications for grassland habitats from a range of beetles, while some of the phytophagous taxa feed on crucifers (Brassicaceae) suggesting disturbed ground. In sample 228, the presence of *Heterogaster urticae* (nettle ground bug) and *Brachypterus* that stands of nettles (Urtica) grew close to the pit. Duckweed (*Lemna*) growing on the water surface was indicated by the tiny aquatic weevil *Tanysphyrus lemnae*. The eurytopic decomposer component appears to be relatively small but in both samples there were small hints of a fauna characteristically associated with litter from within buildings (*Typhaea stercorea*, *Latridius minutus* group). However, this element was certainly not large enough to indicate direct dumping of such material in the feature.

Contexts 3072 and 3075 – fills of pit 3067 (samples 222 and 224)

C.4.7 Both these samples from what may be equivalent deposits had a much higher mineral content that the primary fills and the overlying context 3073. Both produced only a few poorly preserved insect fragments with a very low or negligible potential for further analysis.

Context 3073 – fill of pit 3067 (sample 227)

C.4.8 The basket, eggs and other finds were recovered from this deposit. A very large, wellpreserved insect assemblage consisting of several hundred beetles and bugs was produced. Aquatic beetles are abundant and water flea ephippia and ostracods also present. Terrestrial taxa are from both damp and drier ground. Plant feeding taxa include *Prasocuris phellandrii* which is associated with waterside Ranunculaceae. There were hints from a bark beetle (Scolytinae) that trees or shrubs may have been growing close to the feature. Subjectively, *Aphodius* dung beetles appear to be more common than in the primary fills suggesting that nearby grassland may have been used for grazing, at least seasonally.

Contexts 3071 – fill of pit 3067 (sample 225)

C.4.9 A small, very poorly preserved insect assemblage was recovered. Aquatics were dominated by *Helophorus* spp. Terrestrial taxa provided suggestions of moist waterside litter and grassland habitats.

Context 3072 – fill of pit 3067 (sample 223)

C.4.10 The sample produced only traces of beetle cuticle.

C.5 Charred plant remains, waterlogged plant remains, charcoal and molluscs

By Julia Meen and Elizabeth Stafford

Introduction and methodology

C.5.1 This assessment concerns the plant macrofossils taken from three phases of fieldwork at Aylesbury Berryfields (AYLBER07, AYLBER10 and AYLBER16) and from fieldwork at Aylesbury Vale Academy (QAVC12). A total of 124 samples were assessed for their potential for charred plant remains and charcoal, and 27 samples were assessed for their potential for waterlogged plant remains.

	Prehistoric	Late Iron Age/ Early Roman	Early Roman	Early-Mid Roman	Mid Roman	MidLate Roman	Late Roman	Roman	Unphased
AYLBER07									
Ditch	11								8
Pit	4								9
Posthole	9								16
Tree Throw									2
Other	1								
AYLBER10									
Ditch		2	3		3		1		1

Pit		1	1		8				
Tree Throw		1							
Pot Fill		2	1					2	
Cremation		5	2					1	7
Other				1	1	1			
AYLBER16									
Ditch					1			1	
Pit									1
Posthole									4
QAVC12									
Ditch			3					1	
Posthole				1					4
Pot Fill									2

Table C.5.1: Distribution of samples of plant remains

C.5.2 Bulk samples for the recovery of charred plant remains and charcoal were taken from a representative selection of features covering the main phases of activity at the sites. Table 1 shows a breakdown of bulk samples from each phase of fieldwork, ordered by feature type and chronological period.

C.5.3 Each bulk sample was processed by water flotation using a modified Siraf style flotation machine. Processed volumes are shown in Table C.5.2. Where sample volumes were small (less than 5L) they were floated by hand using the 'wash-over' technique. Each flot was collected on a 250µm mesh and the heavy residues were sieved to 500µm, after which both flots and residues were dried in a heated room. The residues were sorted by eye for artefacts and ecofactual remains (plant remains, bones, snails etc).

C.5.4 Several of the fills of mid-Roman pit [3067], discovered during the AYLBER10 phase of work, contained preserved organic items, including whole eggs and a woven wooden basket. Owing to the high potential for preservation of organic material, bulk samples from these contexts were subsampled for waterlogged remains. In addition, a sequence of 25 incremental samples was taken at 5cm intervals vertically through the fills for the recovery of waterlogged plant remains, insects and molluscs in order to understand changing environmental conditions within and surrounding the feature throughout the life of the pit.

C.5.5 A 1L sub-sample of the 25 incremental samples, and a 1L sub-sample from two pit fills not covered by the incremental sequence, were processed for the recovery of waterlogged plant remains using the 'wash-over' technique. Flot and residue for each sample were collected separately onto 250µm meshes and retained wet to prevent desiccation.

C.5.6 Flots processed for both charred and waterlogged plant remains were examined using a LEICA EZ4D stereo microscope at x10-40 magnification. For the charred material, five main categories of charred macrofossils (cereal grain, cereal chaff, legumes, weed seeds and fruit/nut stones) were characterised. Assessment was made of the quantity and preservation of charcoal and, where charcoal was sufficiently well preserved, a selection of representative charcoal fragments was examined to assess the range of wood taxa present. The transverse sections of charcoal fragments were examined at low magnification to provide a provisional identification only.

C.5.7 For the waterlogged flots, assessment focused on the presence and range of plant remains present, predominately seeds but also noting presence of woody material, plant stem material and other indicators of deposition conditions. Presence and condition of insect remains was also assessed, and a brief assessment was made of the abundance of molluscs within the waterlogged flots, with a list of the main taxa present included in the flot description.

C.5.8 Material was scored using the following system:

- * 1-10 items
- ** 11-24 items • *** 25-49 items
- **** 50-99 items
- ***** 100 or more items

C.5.9 Charred plant remains, charcoal, waterlogged plant remains and insects were then rated A to D using the following criteria:

- A – High potential on archaeobotanical grounds, ie rare or interesting plant taxa and range of material, or exceptional preservation; or high potential of archaeological grounds due to scarcity of information from this type of material or deposit and period
- B – Good potential due to the quantity and range of material present and its reasonable preservation; i.e. the assemblage can provide a useful amount of information.
- C – Some identifiable plant material but in low concentrations or very poorly preserved
- D – No identifiable material or so little that this has already been fully identified/recorded (eg a few cereal grains/seeds, or where wood charcoal is from a single taxon such as oak [*Quercus*])

C.5.10 Plant identifications were made with reference to the comparative collection held at OA South and with reference to published guides. Charcoal was identified with reference to keys in Schweingruber (1990). Plant nomenclature follows Stace (2010) and molluscan nomenclature follows Anderson (2005).

Charred plant remains and charcoal

C.5.11 Results for the charred plant remains and charcoal from Aylesbury Berryfields and Aylesbury Vale Academy are shown in Table C.5.2.

Prehistoric (AYLBER07)

C.5.12 All 25 of the samples from Aylesbury Berryfields that have been phased to the prehistoric period are from the 2007 phase of fieldwork. All are consistently poor for both charred plant remains and charcoal. Flots are small and predominately composed of modern roots, and where charred remains are present they are mostly poorly preserved indeterminate cereal grains and glume base fragments, which will add little to the interpretation of the site. Charcoal is usually highly fragmented, and most items of sufficient size to allow identification to species have been examined in the assessment, so there is no scope for further work on this material.

C.5.13 However, unphased posthole 1637 (sample 143) contained abundant fragments of charred hazelnut shell as well as a large quantity of charcoal, of which all examined items were oak (*Quercus*). Deposits of charred hazelnut shell have been found in Neolithic pits in England, and wild foods such as hazelnuts are thought to have formed an important part of the diet at this time (Moffett *et al.* 1989; Robinson 2007). For example, large quantities of charred hazelnut shell were recovered from pits and ditches associated with the early Neolithic causewayed enclosure at nearby Thame in Oxfordshire (Wyles and Cobain 2016). There is therefore a possibility that this posthole represents much earlier activity on the site. Ascertaining the date of this material should be a priority for the next phase of work.

Late Iron Age/early Roman (AYLBER10)

C.5.14 Five samples were taken from supposed cremations dating to this phase. Of these, only sample 238 contains a significant quantity of charcoal, and appears to be a mixture of types including oak, blackthorn/cherry type (*Prunus* sp) and ash. However, these deposits have since been discounted as human cremations, and therefore analysis of the charcoal from this sample is of low priority.

C.5.15 Of the remaining samples dating to this phase, only two samples (from ditch fill 2622 and pit fill 3390) contained any charred plant remains, and in both cases these were limited to small numbers of cereal grains and occasional cereal chaff. Neither sample has potential for further analysis. The sample from 2622 does contain some charcoal of identifiable size, of which most examined fragments were oak (*Quercus*), but as a secondary context this is not recommended for further work.

Early Roman (AYLBER10)

C.5.16 Sample 187, from a deposit excavated as a cremation, produced frequent charcoal. All examined pieces were oak. However, this has since been discounted as a human cremation and is of low priority for analysis.

C.5.17 None of the remaining sample from this phase produced charred plant remains or charcoal which are suitable for further analysis; where present, charred remains were mostly

limited to poorly preserved cereal grains and chaff fragments, with occasional seeds restricted to a small range of common arable weeds such as stinking chamomile (*Anthemis cotula*) dock (*Rumex* sp) and bedstraws (*Galium* sp.). Charcoal is present in low quantity or is absent.

Early to mid Roman (AYLBER10)

C.5.18 A single sample dates from this phase: sample 186, the backfill of the grave 3003. Despite the unpromising context, it contains abundant charred plant remains, including well preserved glume bases and weed seeds, suggesting that the backfill incorporates redeposited waste material from non-contemporary crop processing activities. In the absence of other suitable samples from this period at the site it would be worthy of further analysis but only if securely dated.

Mid Roman (AYLBER10)

C.5.19 The majority of bulk samples dating to this phase are from pit 3067. Of the remainder (three fills of ditch 3324 and an animal burial), none contained identifiable charred plant remains or charcoal. The eight bulk samples from pit 3067 covered the main fills, in reverse order of infilling: 3068, 3070, 3071, 3073, 3072 and 3075, and an upper and lower sample from 3074. The final backfill deposit, context 3068, contained no identifiable charred plant remains or charcoal. The sample from context 3070 contains a moderate quantity of cereal grains and glume bases, but mostly in a poor state of preservation. Samples from contexts 3071, 3072 and 3075 all showed signs of waterlogged preservation, with some non-charred seeds present mostly from a limited range of weed taxa. However, samples from contexts 3073 and 3074 show excellent waterlogged preservation and the flots from the bulk floated samples were kept wet for assessment, since there is high potential for larger waterlogged items such as fruit stones, which might be missed in 1L incremental samples, to be recovered from these larger samples (see waterlogged plant remains assessment, below). The lowermost fills, particularly contexts 3072, 3075, 3073 and 3074, all contain large numbers of charred plant remains, in particular abundant well preserved glumes of spelt wheat. Grains of wheat are common, often frequently sprouted or with a visible groove, and detached coleoptiles occurred fairly frequently. Caryopses of oat (*Avena* sp) are also frequent. Weed seeds are absent from the samples from contexts 3073 and 3074, suggesting a cleaned crop, but were relatively common in the samples from contexts 3072 and 3075, especially stinking chamomile (*Anthemis cotula*), grasses (Poaceae) and dock (*Rumex* sp.), all weed taxa frequently found in Roman arable assemblages.

C.5.20 Assessment of the incremental sequence taken through the pit for the recovery of waterlogged remains (see below) shows that charred remains, particularly spelt wheat chaff, are common throughout the fills of the pit, from a depth of 0.62m onwards (around the top of context 3071). The final incremental sample (220) from 0.40-0.45m below the top of the stepped excavation contains charred cereal remains in an excellent state of preservation: glume bases and whole glumes of spelt wheat, sprouted wheat grains – either with evidence of root growth, a groove or in many cases with a sprout still attached running the full length of the grain – detached coleoptiles and oat caryopses. This incremental sample of only 2L appears to show a localised concentration of remains at the very base of the pit.

C.5.21 Many of the wheat grains in the pit have sprouted, a characteristic also seen in sample 264 (QAVC) and sample 9006 (AYLBER16). There were also frequent detached coleoptiles in the pit fills; these were present sparsely in a number of other samples at the site, but were notably frequent in samples 172 and 174, both ditch fills from the 2010 phase of Berryfields. The most dominant type of remain in pit 3067 were the well preserved glumes of spelt wheat.

C.5.22 These three types of evidence – glumes, sprouted grain and detached coleoptile – have been increasingly interpreted as the remains of malting activities. Evidence from an increasing number of sites (eg Catsgore villa, Somerset (Hillman 1982), Northfleet villa (Smith 2011), Springhead, Kent (Stevens 2011), and Tiddington, Warwickshire (Moffett 1986)) suggests that spelt wheat was the favoured grain for the production of beer in the Roman period in Britain, and that grains were malted still encased within their spikelets. The spikelets would be soaked in water in order to initiate germination and the start the process of converting the grains' starch reserves into fermentable sugars. The grains would then be dried in a low heat in order to halt germination and arrest further growth of the shoots. The malt that was produced would then be carefully rubbed to remove the glumes and the sprouts, or 'coleoptiles', and this waste may have been burnt as fuel alongside any sprouted grains still caught up in the material. This waste material, known as 'comings,' has been identified from a number of sites in Britain. Just over 2km from Berryfields, at Weedon Hill, what is thought to be a Romanperiod 'malting house' has been excavated, an oven believed to have been used for the drying of malt contained abundant germinated spelt grains, while waste from the dehusking of malted spelt was recovered from several contexts (Stevens 2013).

C.5.23 The material from Aylesbury Berryfields, particularly the charred remains dumped into pit 3067, may derive from malting activity, and some of this material should be analysed further. However, as the material represents waste material that may have accumulated over a large number of dumping events, understanding the origin of the remains from the pit will be more difficult.

Mid to late Roman (AYLBER10)

C.5.24 A deposit described as 'pyre debris' from a ditch was the only sampled feature from this period, but contained no identifiable charred plant remains or charcoal.

Late Roman (AYLBER10)

C.5.25 Sample 174 from ditch fill 2636 contains frequent cereal grain and abundant spelt glume bases/spikelet forks, and a number of detached coleoptiles and embryos. Preservation was mixed, with many of the cereal grains not identifiable, although wheat and oat are certainly present. Although preservation is not ideal, as the only sample from the late Roman phase it is recommended for further analysis. Sample 172 from context 2278 contains very similar material, and although it is currently unphased, this ditch fill may be contemporary with fill 2636 and contains slightly more frequent weed seeds.

Roman (AYLBER10)

C.5.26 Samples 178 and 179, the two excavated spits of a cremation rich in burnt human bone, contained neither identifiable charcoal nor charred plant remains, and samples 180, 181 and 182, from associated pot fills, were similarly poor.

Roman (QAVC12)

C.5.27 Sample 264, from ditch fill 4012, is the only sample from Aylesbury Vale Academy which contains charred plant remains suitable for further analysis. Cereal grain is common, with a mixture of wheat, barley and oat present, although many of the grains are poorly preserved and it may therefore be difficult to ascertain the proportions of the different cereal types present. Abundant spelt wheat (*Triticum spelta*) glume bases and spikelet forks are present and comprise almost the entirety of the 2-1mm fraction of the flot; this fraction requires riffling prior to analysis. Several detached coleoptiles, approximately the length of a cereal grain, plus detached embryos were noted and some of the grain has sprouted, or has sprouting grooves.

C.5.28 Unfortunately, however, the provenance of 264 is currently unclear. Site records note that during excavation it was initially thought that there was one ditch, filled by context 4012 from which this sample was taken, but that as excavation progressed it was found that there were multiple ditches with possibly several fills. The implication is that this sample may be a mixture of several different fills, and this may be one reason why the cereal grain shows a mixture of states of preservation. The sample would only be worthy of further work if it can be shown that the material in the sample is from a single, phased, deposit.

C.5.29 None of the eleven samples from Aylesbury Vale Academy produced charcoal suitable for further analysis. Where charcoal was present, it is generally of very small size and unsuitable for species identification. A small number of identifications were attempted and the charcoal fragments examined were either of oak (*Quercus*) or ash (*Fraxinus* – provisionally identified in the three drip gully samples).

Roman (AYLBER16)

C.5.30 Almost all of the samples from the 2016 phase produced extremely poor flots for both charred plant remains and charcoal. Only sample 9006 from the fill of Roman ditch 9223 contains identifiable charred plant remains in any quantity, but even these were quite poorly preserved. The most common remains were grains of wheat, many of which were sprouted or had root development, and oat caryopses, as well as frequent glume bases of spelt wheat. It is doubtful that much valuable information would be gained from full analysis of this sample.

Unphased

C.5.31 The currently unphased material from the 2007 and 2016 phases of Aylesbury Berryfields and from Aylesbury Vale Academy have been discussed previously in this report. The remaining unphased samples from the 2010 phase of Berryfields consist of a number of possible cremations, none of which contained identifiable charred plant remains but several of which (samples 237, 249, 250, 300, 302 and possibly 303) contained charcoal with potential for identification and analysis. However, the bone recovered from each of these cremations

has been examined and found to not be human, and as such none of these samples are a high priority for further analysis.

Waterlogged plant remains, insects and molluscs from pit 3067

C.5.32 Results for the waterlogged plant remains, insects and molluscs from pit 3067 are shown in Table C.5.3.

C.5.33 0.00-0.46m below ground surface: the uppermost part of the sequence, encompassing contexts 3068 and 3069, showed no preservation of waterlogged plant remains or insects. This probably represents backfill deposits which are unlikely to have been permanently waterlogged.

C.5.34 0.46-0.79m (contexts 3069, 3070 and the top of context 3071): these contexts show limited waterlogged preservation of plant remains. Small yellow degraded seeds are common; many waterside and aquatic plants produce seeds similar to these (eg *Typha*, *Juncus*, *Lemna*) and their poor condition makes them difficult to identify, but they are often found in this state in formerly waterlogged deposits that have undergone partial desiccation. Notable is the dominance of celery-leaved buttercup (*Ranunculus sceleratus*), particularly between 0.690.84m where the seeds number into the thousands, often to the exclusion of any other taxa. This species is found in marshy fields and ponds.

C.5.35 0.79-0.89m (context 3071): Waterlogged seeds are more diverse, mostly plants of damp ground such as marshworts (*Apium* spp), sedges (*Carex* sp.) and rush (*Juncus* sp), and open or waste ground taxa such as buttercup (*Ranunculus acris*/*repens*/*bulbosus*), nettle (*Urtica dioica*) and plantain (*Plantago* sp.). A wider range of organic material is preserved, including woody fragments and plant stems.

C.5.36 0.92-1.02m (context 3073): this context is notably lighter in colour than the surrounding deposits, and contains less wood derived material. It is the context from which the eggs, wood and leather artefacts were recovered. For the first time in the sequence, molluscs are preserved, mostly *Gyraulus crista* with proportions of *Radix balthica* increasing with depth. The plant assemblage is dominated by marshworts (*Apium* spp) which is in agreement with the pollen assemblage from this context. Sedge, nettle, thistle (*Cirsium* sp.) and pondweed (*Potamogeton* sp.) are also present in the macrofossil assemblage.

C.5.37 0.00-0.25m below top of stepped excavation (context 3074): This context is notably darker in colour, with an increase in woody, organic material. Seeds of grasses (Poaceae) are common. The seed assemblage is fairly consistent throughout this part of the sequence: perianths and fruits of dock (*Rumex* sp.) are common, nettles (*Urtica dioica* and *U. urens*), thistles (*Cirsium* sp and *Sonchus asper*, sowthistle), stitchwort (*Stellaria* sp.), plantain (*Plantago* cf *major*), dandelion (*Taraxacum* sp.), knapweed (*Centaurea* sp), marshworts (*Apium* spp) and knotgrass (*Polygonum* sp) are all present. This compares well with the pollen assemblage from context 3074. A charred seed which appears to be opium poppy, *Papaver somniferum*, was noted. This plant, cultivated for its oil-rich seeds, is believed to have been introduced to Britain by the Romans (van der Veen *et al.* 2008), although it has been recovered from late Iron Age contexts at Silchester (Lodwick 2016). Molluscs are frequent

throughout the top of this context, but are absent entirely between 0.15-0.25 below the top of the step. Although plant remains continue to be abundant in this 10cm band, they have a yellow staining, and larger wood remains are more abundant. This band may result from hydrological changes which caused a lower pH and thus inhibited preservation of molluscs.

C.5.38 0.25-0.45m below top of stepped excavation (context 3074): in the lowermost fills of the pit, molluscs are again preserved, and show a greater diversity than found in the higher fills. *Radix balthica* and *Gyraulus crista* are joined by *Gyraulus albus*, *Galba truncatula*, *Psidium* spp (bivalves) and *Lymnea stagnalis*. This last taxon is commonly found in large, permanent bodies of standing water (Kerney 1999). The plant assemblage also gives an indication that there was standing water at the base of the pit shortly after it was first dug: seeds of crowfoot (*Ranunculus* subgenus *Batrachium*), spiked water-milfoil (*Myriophyllum* cf *spicatum*) and both pondweed and horned pondweed (*Potamogeton* sp and *Zannichellia palustris*) are all aquatic taxa which occur frequently. Pollen from this context corroborated the presence of Potamogeton and Myriophyllum. However, the continued presence of taxa such as grasses, docks, nettles and sedges suggests that, while the flora growing within the pit itself was different, the plants growing nearby were much the same as at later periods: those of damp, open, waste ground.

QAVC12																
Cut	**Context**	**Sample No.**	**Floated Vol.**	**Charred**					**Charcoal**						**Potential CPR**	**Potential Charcoal**
				Grain	**Legume**	**Seed**	**Chaff**	**Fruit/nut**	**Flot charcoal >4mm**	**Flot charcoal 2-4mm**	**Res charcoal >4 mm**	**Molluscs**	**Comments Charred Plant Remains**	**Comments Charcoal**		
Early Roman																
Ditch Fills																
3729	3802	254	40L	*	*					39			Flot composed predominately of fine roots and charcoal flecks. Occasional ostracods present. 5x indeterminate cereal grains (incomplete/diagnostic characteristics burnt away), 6x 2mm legumes. Uncharred fruit of Polygonaceae recovered from residue - presumably modern intrusion.	Charcoal mostly very fragmentary. Identified pieces on cusp of being of identifiable size so identifications very provisional: 4x cf *Quercus*, 1x cf *Fraxinus*, 2x ring porous.	D	D
3733	3807	255	40L	**	*	*	*			15			Abundant fine roots, small flot. Small number of poorly preserved, indeterminate cereal grains. 4 partial 2mm legumes, lacking diagnostic features. 9 glume bases/spikelet forks of glume wheat. Small number of seeds including 1x cf *Cerastium* sp, 1x *Rumex* sp and several *Trifolium/Medicago/Melilotus* type.	Charcoal very sparse and all of small size. Identification could only be attempted on a small number of fragments: 1x Fraxinus, 1x Quercus, 3x ring porous (including 1x cf Fraxinus)	D	D

3731	3804	256	40L	*	*	**	*			9			Small flot, frequent fine roots. Small number of poorly preserved cereal grain, where identifiable to genus are cf *Triticum* sp. 3 abraded fragments of wheat glume base. Contains a small number of 1-2mm legumes and fragments, mostly missing outer coat but two better preserved and possibly identifiable - one 1.5mm cubed shaped with distinctive hilum, possibly *Lathyrus nissolia*. 3x *Montia fontana*, 2x large, 1x medium and 2x small Poaceae, 1x *Rumex* and 1x other Polygonaceae (may be inside of *Rumex* fruit), occasional *Trifolium/Medicago/Melilotus*, 1x *Juncus* sp	Charcoal extremley scarse and small. Identification attempted on 5 pieces: 3x *Quercus*, 1x cf *Fraxinus*, 1x indet.	C/D	D
Early to Mid Roman - *Posthole*															

3763	3834	257	40L	***	**	***	***			5			Small flot, frequent fine roots. Cereal grain occurs fairly frequently, although is often poorly preserved and lacks diagnostic characteristics. However better preserved items are *Triticum* sp, and a small number of oat/brome grains are present. *Avena* awns also occur rarely. Wheat glume bases frequent, although generally fragmentary. Legumes fairly frequent - several *Trifolium/Medicago/Melilotus* seeds, plus numerous *Vicia/Lathyrus* type seeds including some with preserved outer coats and hilums which may well be identifiable - at least 2 or 3 types seem to be present, including possible *Lathyrus nissolia.* Frequent wild seeds, most common *Rumex* sp, also *Montia fontana*, cf *Anthemis cotula*, cf *Tripleurospermum* sp, *Juncus* sp, cf *Ranunculus* sp, *Carex* sp, *Chenopodium* type, small/medium Poaceae. Occasional cereal/grass culm.	Very little charcoal present - no identifications possible.	C	D
Roman - *Ditch Fill*															

3997	4012	264	30L	**** *		****	**** *		1				Flot contains abundant chaff of Triticum spelta, often very well preserved. Also frequent cereal grain - mixed preservation, mixture of wheat, barley and oat. Fragments of oat awn present. Some grains sprouted and occasional detached coleoptiles/embryos. Weed seeds quite frequent and dominated by Rumex, Anthemis cotula and grasses also common, plus occurences of cf Fallopia convolvulus and Juncus sp.	Only one fragment of charcoal present.	A	D
Unphased															
Postholes															
3715	3816	258	40L	**	*	**	*						Small flot, much of which is composed of fragments of charred cereal grain and small charcoal fragments. Small number of complete cereal grains but poorly preserved; where identifibale to genus are *Triticum* sp. Small number 1-2mm legumes, quite poorly preserved/fragmented. Seeds include *Montia fontana*, *Rumex* sp, *Carex* sp, *Juncus* sp, *Persicaria* sp, *Galium* sp, cf *Ranunculus* sp, Asteraceae seed middle, medium Poaceae. Small number of wheat glume bases and a single fragment of *Avena* awn.	No identifiable charcoal in flot. Charcoal extracted from residue actually appears to be mineralised material and is not identifiable	D	D
3757	3824	259	40L	*	*								Very small flot, primarily composed of modern fine roots. Very small number of poorly preserved indeterminate cereal grains. 1x 3mm legume.	Only two identifiable fragments of charcoal present - both Quercus.	D	D
3761	3829	260	6L	*	*	*	*		4	60			Small flot, predominately composed of charcoal fragments. Single poorly preserved cereal grain, 4 well preserved glume bases *Triticum spelta*, one 2mm legume, one *Persicaria* (modern), 2x *Aphanes* sp.	Charcoal frgments quite frequent, but many are vitrified/minerlaised/concreted, making identification more difficult. Identification attempted on 5 pieces: 1x *Quercus*, 1x cf *Quercus*, 3x indet.	D	D
3753	3822	261	7L	*	*	*			4	100			Flot mostly composed of very small fragments of charcoal. 2 poorly preserved cereal grains. 1x 3mm legume, half a 2mm legume and 1x 1mm legume. 1 seed cf *Stellaria* sp.	Charcoal mostly highly fragmentary; of 6 examined items, 2 were *Quercus* and 4 cf *Quercus*.	D	D
Pot Fills (Possible Cremations)															

Pot 2788	3858	262	3.5L	*		*	**			1			Flot primarily composed of fine modern root. 3x poorly preserved indet cereal grains, 2x charred seeds of Asteraceae (in one case just the inner part), numerous fragments of glume bases/spikelet forks, although too abraded to be able to distinguish species.	Only one fragment of charcoal of potentially identifiable size present, but was too mineral encrusted for identification to be possible.	D	D
	3859	263	2L				*						Very small flot, mostly modern root. Contains two highly abraded fragments of glume base.	No charcoal of identifiable size.	D	D

AYLBER07

Prehistoric															
Ditch Fills															
1228	1229	106	6L				*						Small flot, abundant modern roots and sand. 4 small fragments of wheat glume base, but too fragmentary to be identifiable	No charcoal of identifiable size recovered from either flot or residue.	D	D
1230	1231	107	7L										Very small flot, composed of sand. No identifiable charred plant remains.	Charcoal highly fragmentary, no potential for identification.	D	D
1388	1389	114	38L							1			Small flot, dominated by fine modern root. No identifiable charred plant remains.	Charcoal highly fragmented and with low potential for further identification.	D	D
1400	1401	115	17L							1			Flot predominately composed of fine modern roots and sand. No identifiable charred plant remains.	No charcoal with potential for further identification.	D	D
1408	1409	117	20L	*	*	*				12			Flot predominately composed of modern roots and fine sand/silt. 4 indet fragments of poorly preserved cereal grain, 6x *Galium* sp, 1x 1mm legume, 1x 3mm legume	Many of the small number of fragments were mineral encrusted and/or vitrified, making identification more difficult, especially at low magnification. Of 7 examined items, 1x *Quercus,* 2x diffuse porous (incl 1 roundwood), 1x diffuse porous cf Pomoideae and 3x indet (incl 1x roundwood).	D	D
1493	1494	130	10L										Flot composed of fine modern roots and fine sand/silt. No identifiable charred plant remains.	No charcoal of identifiable size.	D	D

1529	1530	134	12L			*	*						Rooty flot. Two tiny abraded fragments of indet glume base, 1 seed *Tripleurospermum* sp.	No charcoal of identifiable size present.	D	D
1545	1546	138	39L										Flot composed only of modern roots and sand. No identifiable charred plant remains.	No charcoal present.	D	D
1097	1098	100	39L	*	*	*	*				15		Modern root. Flot very sandy. 7 cereal grains present, mostly poorly preserved/distorted, only one can be identifed as *Triticum* sp. 3x 1mm legumes, 2x 3mm legumes, 2x *Galium* sp. 3 fragments of glume base present, but none have sufficiently well preserved diagnostic features to say whether *T. spelta* or *T. diccocum*.	Potentially identifiable charcoal recovered from residue only, flot only contained highly fragmented charcoal. 6x *Quercus*, 2x Pomoideae/*Prunus*. Low potential for further work as most identifable pieces examined for assessment.	D	D
1110	1111	102	27L	*		*				1	2		Flot very sandy and with modern root. 4 cereal grains cf *Triticum* sp. 1 fragment oat/brome grain. 1 seed *Rumex* sp.	1x *Quercus*, 1x cf Pomoideae, 1x diffuse porous. No other potentially identifiable charcoal available for further analysis	D	D
1749	1750	169	30L	*	*	*		*	1	1			4 small fragments hazel nutshell, 1 grain *Triticum* sp, 1x half 2mm legume, 1x *Galium* sp.	Very little charcoal of potentially identifiable size.	D	D
Pits																
1537	1536	137	9L										Small flot, composed only of sand and modern root.	No charcoal present.	D	D
1583	1584	162	10L										Very small flot, mostly silt. No identifiable charred plant remains.	No charcoal of identifiable size present.	D	D
1312	1313	111	5L							5			Small flot, containing no identifiable charred plant remains.	Frequent charcoal fragments, but very few of a size great enough to allow identification.	D	D
Postholes																
1374	1375	112	20L	*									Flot composed of modern root and fine sand. Charred plant remains limited to 2 grains of *Triticum* sp.	No charcoal present.	D	D

1429	1430	119	4L			*							Very small flot, frequent modern roots. Charred plant remains limited to a single seed of *Galium* sp.	Frequent charcoal flecks, but no fragments of identifiable size.	D	D

1431	1432	120	13L							2			Flot mostly composed of fine sand/silt and modern roots. No identifable charred plant remains	Only two fragments potentially suitable for identification - both diffuse porous but could not be further identifed at low magnification	D	D
1433	1434	121	8L										Small flot, mostly fine modern root. Contains a single fragment of indet poorly preserved cereal grain. No other identifable material present.	No charcoal of identifiable size.	D	D
	1436	122	11L			*					1		Small flot, heavily dominated by sand and modern roots. One small Poaceae seed and one seed Cyperaceae.	No charcoal of identifiable size in flot. One fragment extracted from residue - *Prunus*/*Acer*/Pomoideae.	D	D
1418	1419	125	4L				*			2			Flot predominately silt. One wheat spikelet fork base.	Flot contained 2 fragments of identifiable size: 1x *Quercus*, 1x indet	D	D
1424	1425	128	13L	*	*		*						Flot very small and contains frequent modern root. Contains a small number of indet fragments of poorly preserved cereal grain, half a legume and two very abraded indet fragments of glume base.	No charcoal of identifiable size present.	D	D
1519	1520	132	18L			*				2	3		Flot predominately composed of modern root. One small grass seed present.	3x cf *Quercus*, 1 x indet vitrified.	D	D
1472	1473	129	20L	*						8			Flot predominately composed of modern roots. A single charred cereal grain present.	Of 4 examined small charcoal fragments, 3x cf Pomoideae/*Prunus*, 1x indet.	D	D
1559	1560	142	4L	*						4			Flot mostly composed of charcoal fragments, but mostly of too small a size for identification. One incomplete, poorly preserved indet cereal grain.	2x cf *Prunus*, 1x cf *Quercus*, 1x cf Pomoideae	D	D
Spread																
	1535	136	10L										Very small flot, composed only of modern root.	No charcoal present.	D	D
Unphased																
Ditches																

1149	1150	103	10L								2		Very small flot, mostly composed of sand. No identifiable charred plant remains.	No charcoal in flot. 2 fragments recovered from residue - 1x *Acer/Prunus*, 1x *Quercus* (heartwood).	D	D

1151	1152	104	4L			*			1				Flot predominately composed of fine sand. Charred plant remains limited to a single charred seed of *Carex* sp.	Only a single fragment of charcoal of identifable size present in flot - *Quercus* heartwood, partially vitrified.	D	D
1283	1284	110	20L				*	*		1			Small number of fragments of wheat glume base, although too poorly preserved to allow further identification. Also a small fragment of hazel (C*orylus avellena*) nut shell.	Charcoal frequent but highly fragmented. Single piece large enough to attempt identification: diffuse porous, possibly *Betula* but will require examination at higher magnification.	D	D
1406	1407	116	11L	*		*	*			1			Flot composed predominately of modern roots. Contains 3 poorly preserved indet cereal grains, a single charred wild seed and an indet fragment of wheat glume base.	Only one fragment of charcoal large enough to attempt identification: Pomoideae type.	D	D
1525	1526	133	15L	*	*	*							Root dominated flot. Several terrestrial molluscs (*Vallonia* sp., *Vertigo* sp, *Pupilla* sp.). Two partial poorly preserved indet cereal grains, 1x *Galium* sp, 1x fragment of legume.	No charcoal of identifiable size present.	D	D
1547	1548	139	20L	*									Small flot, containing a single poorly preserved cereal grain. Flot otherwise composed of modern roots and sand.	No charcoal of identifiable size present.	D	D
1663	1664	144	30L	*		*	*	*			4		One grain Triticum sp, one partial glume base, one seed *Galium* sp. amnd one small fragment of hazelnut shell.	No charcoal of identifiable size in flot	D	D
1224	1225	105	8L										Small flot, frequent modern root. No identifiable charred plant remains.	Frequent small charcoal fragments, but no pieces of great enough size to allow identification.	D	D
Pits																
1041	1042	158	20L										Flot has had moss/green algae growing in it and this makes up the bulk of the flot. No identifiable charred plant remains.	No charcoal of identifiable size present.	D	D

	1043	160	20L									Very small flot, containing much sand and modern moss. No identifiable charred plant remains.	Frequent charcoal flecks, but no fragments of identifiable size present.	D	D
1195	1196	155	20L	*	*		*				1	Two abraded fragments of glume base, two halves of 2mm legume (appear to belong to same legume), two poorly preserved fragments indet cereal grain.Flot otherwise composed of sand and modern roots.	No charcoal of identifiable size present.	D	D
1020	1021	156	10L									Very small flot, composed only of modern roots and other intrusive material. No identifiable charred plant remains.	Charcoal flecks present occasionally, but no fragments of identifable size.	D	D
1032	1033	157	20L									Very small flot. Charred plant remains limited to a single fragment of glume base; remainder of flot composed of modern roots and sand.	No charcoal of identifiable size in flot	D	D
1501	1502	161	30L									Flot compacted into a solid mass of moss and other presumably intrusive material. No identifiable charred plant remains.	No charcoal present.	D	D
1340	1341	163	30L									Small flot, very green and silty. A half of a 1mm legume noted.	Frequent charcoal flecks, but no fragments of identifiable size.	D	D
1410	1411	118	38L							1		Flot predominately composed of modern roots. No identifiable charred plant remains.	Only one fragment of identifiable charcoal: indet softwood (possibly not yew or pine)	D	D
Postholes															
1540	1538	135	10L									Small flot, composed of modern root and fine sand/silt. No identifiable charred plant remains.	No charcoal of identifiable size present.	D	D
1038	1039	164	5L									Very small flot, composed of silt with most material stuck together and turned green. No identifiable charred plant remains.	No charcoal of identifiable size present.	D	D
	1040	165	20L							1		Flot mostly composed of fine root and sand. No identifiable charred plant remains.	Frequent charcoal flecks, but no fragments of identifiable size.	D	D
1376	1377	113	13L									Very small flot, composed of modern roots and sand. No identifiable charred plant remains.	No charcoal of identifiable size.	D	D
1414	1415	123	3L									Flot mostly composed of fine modern roots. No identifiable charred plant remains.	No charcoal of identifiable size.	D	D

1416	1417	124	4L										Small flot, mostly composed of fine root and sand/silt. No identifiable charred plant remains	No charcoal of identifiable size.	D	D
1420	1421	126	3L							1			Flot predominately composed of fine sand/silt. No identifiable charred plant remains.	1 fragment of charcoal in flot of potentially identifiable size; cannot identify further than cf ring porous at low magnification	D	D
1422	1423	127	15L	*						2			Flot predominately composed of modern root. One poorly preserved indet cereal grain and three fragments.	Identification could only be attempted on two charcoal fragments: 1x *Quercus,* 1x indet.	D	D
1553	1554	140	6L										Small flot, composed of modern roots and sand/silt. No identifiable charred plant remains.	No charcoal of identifiable size present.	D	D
1557	1558	141	15L							7	12		No identifiable charred plant remains.	2x cf *Prunus,* 1x cf *Fagus*, 3x cf Pomoideae, 1x indet	D	D
1637	1638	143	35L		*		*	****	400	1000	50		Large, charcoal dominated flot, with abundant fragments of charred hazelnut shell (>2mm fragments extracted). Rare abraded glume bases and fragments of small legume. Possibly very early?	Abundant charcoal. 10x *Quercus*	B	B
1036	1037	154	21L										Flot composed only of modern roots and sand. No identifiable charred plant remains.	No charcoal of identifiable size present.	D	D
1557	1558	159	30L				*		8	42			Flot green and compacted in a solid mass. Two highly fragmented glume bases present but no other identifiable charred plant remains.	1x *Corylus/Alnus*, 1x Pomoideae, 2x *Prunus* sp, 4x *Prunus spinosa*	D	C
1181	1182	167	8L				*	*					Small flot, mostly modern root and sand. Contains one tiny fragment of hazelnut shell and 7 glume bases	No charcoal of identifiable size present.	D	D
1099	1100	101	38L	*		*	*						Very sandy flot, with frequent modern root. Frequent seeds of *Chenopodium* type but at least some of these can be seen to be modern. 2x grains *Triticum* sp, possibly free-threshing? 1x *Anthemis cotula*, 1x *Stellaria* sp. 1x poorly preserved fragments of what appear to be free threshing wheat rachis. Possibly some intrusive material?	No charcoal of identifiable size recovered from either flot or residue.	D	D
1292	1293	109	10L										Very small flot, composed only of sand and modern root. No charred plant remains present.	No charcoal present of identifiable size.	D	D
1706	1707	168	40L	*				*					Flot almost entirely composed of modern roots. Also contains one very poorly preserved indet cereal grain and a fragment of charred hazelnut shell.	No charcoal of identifiable size present.	D	D

Tree Throws																
1240	1241	108	10L										Very small flot, composed only of sand and modern root. No charred plant remains present.	No charcoal present.	D	D
1051	1052	166	5L								1		Very small flot, composed of sand and fine charcoal flecks.	A single charcoal fragment was recovered from the heavy residue, but this was vitrified and could not be identified to species.	D	D

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Late Iron Age/Early Roman																
Cremations (check them all, some dubious)																
3336	3337	236	10L	**		*	**			1	5		Small flot. Small number of cereal grains, mostly *Triticum* although 1x *Avena* sp and one possible rye. Occasional glume bases and spikelet forks, two deatched coleoptiles and a fragment of *Avena* awn. Weed seeds rare - a *Rumex,* a *Carex* and a Poacaeae noted.	Little charcoal of identifiable size.	C/D	D
3372	3442	238	8L						19	100	16		Small flot. Frequent modern root. No charred plant remains present.	5x *Quercus*, 1x diffuse porous, 1x *Prunus*/Pomoideae, 1x cf *Prunus*, 1x cf *Fraxinus*, 1x indet.	D	B
3364	3367	242	20L	*	*	*	*		1	7	1		Small flot, frequent modern root. Rare poorly preserved cereal grains, occasional fragments of glume base, 4x 2mm legume, 3x Poaceae, 1x *Galium* sp, *Avena* awn fragments, 2x partial oat/brome grains.	Rare charcoal of sufficient size for identification.	D	D
	3368	243	20L	*	**	**	**		1	13			Small number of cereal grains, preservation mixed; mostly *Triticum* sp where identifiable but also *Avena* sp. Numerous legumes 1-3mm, several likely to be identifiable as have outer coat preserved. Weed seeds present in fairly low number, mostly Poaceae of a range of sizes but also *Juncus*, *Carex* sp, *Rumex* sp. Occasional glume bases.	Small number of fragments of potentially identfiable size	C/D	D

	3369	244	20L	**	*	*		*		12	2		Small number of cereal grains, where identifiable are *Triticum* sp. No cereal chaff. Few weed seeds: includes *Carex* sp, *Galium* sp, small Poaceae. 1x cf *Pisum sativus* plus 1x 2mm legume.Two fragments of hazelnut shell extracted from residue.	Little charcoal of identifiable size.	C/D	D
Pot Fills (Possible cremations)															
3364	3367	251	0.7L		*				1	3			Very small flot. 2 halves of 2mm legume (probably from same seed) - flat, could possibly be *Lens*.	Little charcoal of identifiable size. 2x *Quercus*, 2x diffuse porous.	
	3368	252	3L	*				*					Very small, rooty flot. Single poorly preserved wheat grain and 5 small hazelnut shell fragments present. Further three small fragments of charred hazelnut shell recovered from residue.	No charcoal of identifiable size.	D	D
Ditch Fills															
2620	2622	173	40L	**	*	*	**		11	50	2	**	Frequent modern root. Occasional terrestrial snails (*Vallonia*, *Pupilla*, *Vertigo*). Small number of cereal grains, quite poorly preserved, several identifiable as *Triticum* sp but at least one cf *Hordeum* noted, also several *Avena* grains. Small number of wheat glume bases/spikelet forks. One seed *Rumex* sp, half a legume. Couple of what appear to be bases of cereal culm.	6x *Quercus*, 1x cf *Quercus*, 1x *Corylus/Alnus*	C	C
2675	2679	177	40L						4	2		***	Frequent modern roots. Snails quite frequent, typical damp ditch fauna mix of terrestrial and aquatic/swamp taxa. Single fragment of cereal grain present.	Most charcoal very fragmentary and not of identifiable size. 6 items examined; 4x *Quercus*, 2x indet	D	D
Pit Fills															
3388	3390	245	10L	*	*	*					2		Frequent modern root. Small number of cereal grains, where identifiable are *Triticum* sp. No cereal chaff. Occasional legumes, including a possible pea (*Pisum sativus*). One large grass seed present.	Frequent charcoal, but almost all is highly fragmented and is not suitable for identification.	C/D	D

Tree Throws															

1982	1978	170	10L						2	8			Very small flot, frequent modern root. No identifiable charred plant remains.	Small number of items of potentially identifiable size, but all examined items were vitrified/concreted and could not be identified to species.	D	D
Early Roman																
Cremations (check)																
3270	3444	239	2L							1	1		Small flot. No identifiable charred plant remains present.	Flot composed of highly fragmented charcoal, little of potentially identifiable size.	D	D
3020	3020 (incorrect?)	187	20L	*		*	*		7	100	1		Flot contains much modern root. Few charred plant remains present: two fragments of indet cereal grain, a glume base, a medium grass seed and the inside of a small Asteraceae seed.	5 fragments of charcoal examined: 4 *Quercus*, 1 indet	D	B/C
Ditch Fills																
2249	2250	171	1L										Very small flot, composed of sand and fine charcoal fragments. No identifiable charred plant remains.	Charcoal mostly highly fragmented and with low potential for identifiaction.	D	D
2554	2555	175	40L	**		*	*		4	60	3		Frequent modern root. Small number of poorly preserved cereal grains: *Triticum* sp, cf *Hordeum*, *Avena* sp. Single glume base *T. spelta* noted. Rare weed seeds: *Galium* sp, *Rumex* sp, small Asteraceae and a *Carex* sp.	Some charcoal present of potentially identifiable size.	C/D	C
2661	2667	176	30L	*			*						Very small flot, comtaining a single cereal grain, a fragment of glume base and a detatched coleoptile.	No charcoal present.	D	D
Pit Fills																
3270	3275	226	40L	**		*	***			2			Small flot, mostly composed of modern roots. Cereal grains low in number, and all poorly preserved; where identifiable mostly *Triticum* but also occasional *Avena* sp. Weed seeds rare, a single *Anthemis cotula* noted and 2 seeds *Rumex* sp. Frequent wheat chaff, although often fragmentary.	Little charcoal of identifiable size present.	C/D	D
Pot Fills																

3270	3275	234	3L	*		*	**/** *						Very small flot, frequent modern roots. Glume base fragments quite frequent although many are fragmentary. One grain *Avena* sp, 1 seed *Anthemis cotula*, 1 medium Poacaeae, 1 *Juncus* sp. Occasional detached coleoptile.	No charcoal of identifiable size.	D	D

Early to Mid Roman - *Grave Backfill*															
3003	3005	186	10L	***	*	****	**** *						Abundant well preserved glume bases/spikelet forks *T. spelta*. Frequent weed seeds, strongly dominated by *Rumex* sp and *Anthemis cotula*. Cereal grains fairly common although preservation mixed, where better identified generally appear to be *Triticum* sp, with one grain cf rye. Occasional oat awn fragments. Rare small legumes. Frequent detached embryos/coleoptiles.	Little charcoal present, and none of identifiable size.	B	D
Mid Roman															
Animal Burial															
3310	3310	230	20L										Flot composed of modern root. Identifiable charred plant remains limited to a single fragment of wheat glume base.	Only small charcoal flecks present.	D	D
Ditch Fills															
3324	3325	246	10L							1	2		Frequent modern root. Charred plant remains poor - limited to a poorly preserved cereal grain, a fragment of glume base, and 3 fragments of indet legume.	Charcoal almost all highly fragmentary and not suitable for identification.	D	D
	3416	247	5L									***	Small flot, but frequent snails - *Galba truncatula*, *Vallonia* sp, *Vertigo* spp, *Pupilla* sp, *Trochulus* sp. Very poor for charred plant remains.	All charcoal highly fragmented; none suitable for identification.	D	D
	3417	248	8L									*	Very small flot, containing occasional snails including *Vallonia* sp, *Pupilla* sp, *Galba truncatula.* No identifiable charred plant remains.	Charcoal flecks, but none of identifiable size.	D	D
Pit Fills															

3067	3074	193	40L	****			*****					*****	Flot retained wet as contains abundant waterlogged material. Highly abundant molluscs, mostly *Radix balthica* but also *Cochlicopa*, *Vallonia*, *Gyraulus crista*. Abundant well preserved spelt glume bases and spikelet forks, frequent wheat and oat grains, some with evidence of sprouting, also some detached coleoptiles, occasional culm and barley rachis. Waterlogged: frequent *Rumex* perianths, *Apium* sp, also *Cirsium* sp, *Potomogeton* sp, *Urtica dioica* and *U. urens*, *Ranunculus sceleratus*, *Stellaria* sp, *Eleocharis* sp, *Carex* sp, Poaceae.	Small number of fragments of potentially identfiable size	A	C
	3068	221	40L										Very small flot, composed only of sand and modern roots.	No charcoal present	D	D
	3072	222	30L	****	*	****	*****			2	6		Highly abundant spelt glume bases and spikelet forks. Rare barley rachis. Frequent cereal grain, predominately *Triticum* in mixed states of preservation, some seen to have sprouted. *Avena* sp grains also common. Occasional detached coleoptiles. Legumes rare. Wild seeds common and dominated by *Anthemis cotula*, also *Rumex*, *Galium* and Poaceae. Also a 6mm long thin partially charred seed - possibly the inside of a Centaurea, or perhaps a small apple pip?	Charcoal sparse.	B	D
	3070	223	30L	**		*	****				3		Small flot. Small number of poorly preserved cereal grains, mostly cf *Triticum*. Frequent wheat glume bases (spelt where identifiable) but often highly fragmented and found in <1mm fraction. Occasional oat grain and awn. Weed seeds sparse - *Anthemis cotula* and *Rumex* sp.	Charcoal sparse and generally fragmentary.	C	D

	3075	224	28L	****	*	***	****		1	20	11		Abundant well preserved glume bases and spikelet forks of *Triticum spelta*. Cereal grain common, preservation mixed but often very well preserved - mostly Triticum but also *Avena* sp. Also occasional waterlogged remains - eg seeds of *Carex* sp, *Urtica dioica*, *Ranunculus* subgenus *Batrachium*, occasional snails *Succinea*/*Oxyloma* (inhabit waterside vegetation). Legumes rare, includes a *Vicia/Lathyrus* and a *Trifolium/Melilotus/Medicago*. Weed seeds small in number, mostly medium sized Poaceae seeds, plus occasonial *Rumex* sp, *Anthemis cotula* and *Tripleurospermum* sp; seeds rare in <1mm fraction. Occasional detached embryos/coleoptiles.	6x *Quercus*, 1x cf *Acer*, 1x *Fraxinus*, 1x indet.	B	C/D
	3071	225	30L	**		**	****				10		Exceptionally abundant waterlogged seeds of *Ranunculus sceleratus.* Occasional waterlogged seeds *Carex* sp. Also frequent fine roots and insect egg cases. Charred glume bases/spikelet forks of *Triticum spelta* common. Cereal grains infrequent and often quite poorly preserved (*Triticum* where identifiable). Rare charred weed seeds, with medium Poaceae and *Anthemis cotula* noted. Single detached coleoptile noted. Flot rewetted and stored in water to disaggregate waterlogged material.	Frequent charcoal flecks, but rarely of identifiable size.	C	D

	3073	227	30L	***			****					**** *	Flot retained wet as abundant waterlogged material. 4-2mm fraction: highly abundant molluscs. Frequent waterlogged seeds : *Carex* spp most dominant, but see WPR assessment. Charred wheat grain fairly common, preservation mixed, also *Avena* grain; spelt glume bases, well preserved, occaisonal detached coleoptiles; barley rachis.		B	C

	3074	228	30L	****			*****					*****	Flot retained wet as abundant waterlogged material. Charred: Abundant well preserved spelt glume bases, detached coleoptiles, also rare free-threshing wheat rachis and rare barley rachis, frequent wheat grains, frequently sprouted/with visble groove, also frequent oat grain. Waterlogged: abundant *Apium* sp, also *Ranunculus sceleratus*, *Sambucus nigra*, *Rumex* (perianth and fruits), leaf fragments, *Cirsium*sp, *Carex* sp, Poaceae, *Stellaria* sp, *Sonchus asper*, *Ranunculus acris/repens/bulbosus*, *Urtica dioica*, *Potomogeton* sp. Frequent molluscs: mostly *Radix balthica*, *Gyraulus crista*, *Succinea/Oxyloma*.	No charcoal observed.	B	C
Mid to Late Roman - *Pyre debris in ditch*															
3026	3028	189	6L							5			Small flot, mostly composed of modern roots. No identifiable charred plant remains.	Little charcoal present of identifiable size.	D	D
Late Roman - *Ditch Fill*															
2635	2636	174	30L	****		**	****						Abundant modern root which charred remains are quite tightly caught up in - needed careful pulling apart. Cereal grain common but preservation very mixed, oftyen poorly preserved indet, but better preserved examples dominated by Triticum with occasiuonal Avena/Bromus. Avena awns occasionally present. Abundant glume bases/spikelet forks T. spelta - better preserved than the grains. Weed seeds infrequent, limited to small seeds of arable weeds: Rumex and small Asteraceae including Anthemis cotula and Tripleurospermum cf inodurum. Number of detached embryos and coleoptiles observed. Differences in preservation suggest material from different burning episodes?	Very little charcoal present.	B	D
Roman															
Pot Fills															

2994	2997	180	1L				*						Very small flot, composed of modern root, a single glume base and a spikelet fork base.	No charcoal present.	D	D

3003	3001	181	1L			*	*						Very small flot, mostly composed of modern roots. Three glume base fragments and a seed of *Anthemis cotula* present.	No charcoal present.	D	D
Cremation																
2994	2995	182	10L										Flot composed of modern root and other intrusive material. Fragment of glume base noted but otherwise no identifiable charred plant remains.	No charcoal of identifiable size.	D	D
Unphased																
Ditch Fills																
2281	2278	172	10L	****	*	***	***						Frequent cereal grain, although generally poorly preserved and missing outer coat. Number of detatched embryos present (18 counted). Grains often difficult to identify but many appear to be *Triticum* sp. Chaff occurs quite frequently, mostly glume wheat (better preserved examples *T. spelta*) but a single fragment of barley rachis also observed. Occasional cereal awn. Rare 2mm legumes. Wild seeds quite common, consisting of *Rumex* sp, *Galium* sp, *Tripleurospermum* sp and indet small Asteraceae, small Poaceae, *Juncus*, Montia fontana, *Ranunculus* and *Stellaria* sp.	No charcoal present.	B	D
Cremations																
3338	3339	237	6L	*						52	200		Flot almost entirely composed of charcoal. Single poorly preserved cereal grain present.	10 items of >4mm charcoal examined; most appear to be diffuse porous Pomoideae/*Acer* type, but generally concreted and further identitication will require higher magnification.	D	B
3345	3346	249	32L						11	200			Flot is composed predominately of fragmentary charcoal. No identifiable charred plant remains.	4x *Quercus*, 1x cf *Quercus*, 1x cf *Fraxinus*, 1x indet.	D	B/C
3347	3348	250	4L						8	100			Flot predomiantely composed of fragmentary charcoal. Charred plant remains limited to a single Cyperaceae seed and a spikelet fork base.	3x *Quercus*, 3x cf *Quercus*, 1x requires checking at higher magnification.	D	B/C

5609	5608	302	14L	*			*		125	300-500	31		Flot predominatly composed of charcoal. One fragment of cereal grain and very sparse glume bases/spikelet forks.	Abundant charcoal. 9x *Quercus,* 1x indet	D	B
	5610	303	19L	*	*		*		15	52	4		Small flot. 3 fragments of poorly preserved cereal grains and 4 partial glume bases. One fragment of legume.	6x *Quercus*, 3x cf Pomoideae, 1x ring porous roundwood	D	B/C
5607	5603	300	18L						12	133	7		Small flot, predominately composed of fragmentary charcoal. Contains a single poorly preserved cereal grain cf wheat, plus 9 glume bases/spikelet forks.	3x *Quercus*, 1x indet	D	B/C
	5606	301	20L							10	12		No identifiable charred plant remains present.	Little charcoal of identifiable size.	D	D

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Roman																
Ditch Fills																
9223	9224	9006	26L	***		**	****						Frequent modern root. Charred plant remains are generally quite poorly preserved. Wheat grains are common but often missing outer coat but many have root growth or can be seen to have sprouted. Also oat caryopses. Spelt wheat glume bases/spikelet forks common, often fragmentary. Low numbers weed seeds, mostly *Anthemis cotula* and *Rumex* sp, also *Centaurea* sp. and Poaceae.	Little charcoal present.	B/C	D
9090	9092	9001	28L						1	4	3		Flt predominately composed of modern root. No identifible charred plant remains.	Small quantity of charcoal of potentially identifable size.	D	D
Unphased																
Pit Fill																
9040	9041	9000	7L										Very poor flot, consisting exclusively of modern root and sand.	Occasional charcoal flecks but none of identifiable size.	D	D
Posthole Fills																
9192	9193	9002	16L	*									Flot pedominately composed of modern root. One partial wheat grain.	No charcoal of identifiable size.	D	D
9194	9195	9003	12L										Contains only modern material: roots, beetles, seeds, straw.	No charcoal present.	D	D
9196	9197	9004	8L				*						Small flot, predominately composed of modern roots. 2 fragments of wheat glume base noted.	No charcoal of identifiable size.	D	D

9214	9215	9005	20L										Flot composed solely of fine roots and other modern material. No identifiable charred plant remains.	No charcoal present.	D	D

Table C.5.2: Charred plant remains

Context	Sample No.	Depth	Floated Vol	Waterlogged Material/Insects/Molluscs											
				Wood	Plant Stems	Charcoal	CPR	Seeds	Fruit/nut	Insect	Molluscs	Comments Waterlogged Plant Remains	Comments Insects	Potential WPR	Potential Insects
3068	196	0.00-0.05m BGL	1L			*					*	Small flot, mostly composed of fine modern roots and sand. Occasional charcoal flecks. Single *Succinea*/*Oxyloma* shell. Very few waterlogged seeds present, and condition suggests that they may be intrusive.	No insects present.	D	D
3068	197	0.05-0.10m BGL	1L			*					*	Small flot, composed of fine modern roots and sand. No waterlogged plant remains present. Rare charcoal flecks. Small number of *Gyraulus* shells.	No insects present.	D	D
3068	198	0.10-0.15m BGL	1L									Very small flot, consisting solely of fine modern roots. Single ostracod present.	No insects present.	D	D
3068	199	0.15-0.20m BGL	1L			*		*				Small flot, mostly composed of fine modern roots. Very small number of waterlogged seeds, although often degraded. Includes *Stellaria* sp. and *Apium* sp. Occasional charcoal flecks. Charophyte oogonia.	No insects present.	D	D
3068	200	0.20-0.25m BGL	1L			*						Very small flot, composed of sand and fine root. Occasional fine charcoal flecks.	No insects present.	D	D
3068	201	0.25-0.30m BGL	1L			*						Flot dominated by sand. Modern root. Occasional charcoal flecks. Waterlogged seeds rare/possibly intrusive.	No insects present.	D	D
3069	202	0.41-0.46m BGL	1L			*						Very small flot, composed of sand and fine root. Occasional fine charcoal flecks.	No insects present.	D	D

3069	203	0.46-0.51m BGL	1L			*		*		*		Charcoal flecks, charophyte oogonia. Small number of waterlogged seeds, mostly *Apium* sp, plus one other, smaller Apiaceae.	Occasional insect remains, mostly fragmentary, but one or two items potentially identifiable.	C/D	C/D
3070	204	0.57-0.62m BGL	1L			***	**	**				Abundant charophyte oogonia. Frequent charcoal flecks. Highly abundant small yellow fruits/seeds. Occasional charred glume bases. Frequent *Ranunculus sceleratus*.	Frequent insect egg cases - actual insect remains are rare.	C/D	D
3070	205	0.62-0.67m BGL	1L			***	**	*** **				Abundant charophyte oogonia. Highly abundant *Ranunculus sceleratus*. Abundant tiny yellow seeds. Frequent charred glume base fragments, and charcoal flecks. One charred cereal grain. Also frequent root, and frequent brown fragmented material which looks a little like egg casing but is too fragmentary to say for sure.	No insects present.	C	D
3071	206	0.69-0.74m BGL	1L			***	***	*** **				Highly abundant seeds of *Ranunculus scelaratus* and rare *R. acris/repens/bulbosus*. Abundant charophyte oogonia. Frequent charcoal flecks. Some plant stem. Frequent charred glume bases/spikelet forks and a fragment of charred *Avena* awn. Frequent tiny yellow seeds, although fewer than in overlying unit - some cf Juncus sp.	Frequent insect/earthworm eggs. No insect remains.	C	D
3071	207	0.74-0.79m BGL	1L			**	*	*** **				Highly abundant seeds of *Ranunculus scelaratu*s. Other waterlogged seeds occur rarely, including *Hyoscyamus niger*. Plant stem material. Abundant charophyte oogonia. Occasional tiny yellow seeds. Occasional fine charcoal flecks and infrequent charred glume bases.	Insect/earthworm egg cases. Daphnia egg. Otherwise no insect remains.	C	D
3071	208	0.79-0.84m BGL	1L	**	**	***	**	*** **		*** *		Highly abundant *Ranunculus sceleratus*. Other waterlogged seeds include frequent *Apium* sp, *Carex* sp, *R. acris/repens/bulbosus*, *Sonchus asper*, cf *Potentilla* sp, and *Urtica dioica*. Frequent charcoal flecks and frequent charred glume bases. Leaf fragments. Moderate quantity of small wood fragments and also plant stem. Frequent charophyte oogonia.	Frequent insect/eartworm egg cases. Insect remains (Coleoptera) quite fequent, although quite fragmentary.	B	C

3071	209	0.84-0.89m BGL	1L	***	***	***	**	*** **		*** *		Highly abundant cf *Juncus*. Abundant charophyte oogonia. Abundant *Ranunculus sceleratus*. Other waterlogged seeds moderately common, and include *Apium* sp (frequent), *Carex* sp, *Urtica dioica*, *Ranunculus acris/repens/bulbosus*, *Plantago* sp and *Cirsium* sp. Frequent wood fragments and plant stem material. Frequent charcoal flecks and charred glume bases, plus a charred seed of *Tripleurospermum* sp. and a fragment of charred cereal grain.	Frequent insect remains (Coleoptera), many well preserved.	B	B

3073	210	0.92-0.97m BGL	1L	*		*		*** **		*** **	*** *	Flot 150ml. Highly abundant charophyte oogonia; molluscs (*Gyraulus crista* common, *Succinea*/*Oxyloma* occasional), ostracods also present. Frequent *Ranunculus sceleratus*, although in far fewer numbers than in overlying samples. Flot much lighter in colour than overlying layers, much less wood derived material and instead pale tissues. Seeds Juncus sp fairly common, also several Juncus seed heads containing numerous seeds. Well preserved, frequent waterloged seeds. Frequent cf *Apium* sp, also *Carex* sp and *Eleocharis* sp, *Urtica dioica*, *Alisma* sp, *Cirsium* sp and *Potamogeton* sp. Occasional charcoal flecks.	Mites frequent; well preserved Coleoptera remains common.	A	A
3074	211	0.97-1.02m BGL	1L	**	**	**	*	*** *		*** **	*** **	Flot 200ml. Frequent molluscs, mostly *Radix balthica* and *Gyraulus crista*. Also ostracods. Abundant charophyte oogonia. Absence of the tiny yellow seeds/fruits seen higher up in the sequence. Waterlogged seeds frequent but slightly less commonthan in increment directly above, and include *Ranunculus sceleratus*, *Apium* sp, *Sonchus asper, Cirsium* sp, *Urtica dioica*, *Carex* sp and *Potamogeton* sp. Charcoal flecks and occasional charred glume bases. Some plant stem and woody material, but background material mostly pale, almost fossil like material.	Mites frequent; well preserved Coleoptera remains common.	B	A

3074	212	0.00-0.05m from top of step	1L	**	**	***	**	*** **		*** **	*** *	Flot 200ml. Flot much darker in colour than overlying increment. Frequent *Radix balthica*, *Gyraulus crista*, single *Cochlicopa* and *Vallonia* cf *pulchella*. *Ranunculus sceleratus*, *Rumex* perianths quite frequent, *Stellaria* sp, *Apium* sp very common, *Urtica dioica* common, *Papaver* cf *somniferum* (charred), *Cirsium* sp, *Plantago* cf *major*, *Sonchus asper*, *Chenopodium* sp, Poaceae and others. Charcoal flecks. Occasional small twigs and plant stems, and frequent broken down plant matter. Occasional charred crop processing waste: grain *Triticum* and *Avena*, glume bases/spikelete forks, culm node, detached embryos/coleoptiles, *Anthemis cotula* and *Tripleurospermum* sp.	Well preserved insect remains - Coleoptera, mites.	A	A

3074	213	0.050.10m from top of step	1L	***	***	***	**	*** **	*	*** **	***	Dark, organic flot. 4 pieces of roundwood, will be identifiable. Frequent charcoal flecks. Frequent molluscs - Gyraulus crista, Radix balthica, plus a single Cochlicopa noted. Waterlogged seeds include various Apiaceae, Stellaria sp, Ranunculus acris/repens/bulbosus, Chenopodium sp, Poaceae, Carex sp, Sonchus asper, Centaurea sp, Urtica dioica, Taraxacum sp, Rumex (fruit + perianth), Potamogeton sp, Urtica urens . Charred material includes wheat grain, free threshing wheat rachis, Tripleurospermum sp, glume bases, detached embryo/coleoptiles.	Well preserved insect remains - Coleoptera, mites.	A	A
3074	214	0.10-0.15m below top of step	1L	***	***	***	*** *	*** **	*	*** **	***	Flot 150ml. Frequent *Gyraulus crista*, *Radix balthica*, one *Cochlicopa* sp noted. Occasional charophyte oogonia, ostracods. Plant stem, wood fragments, piece of potentilly identifiable roundwood. Leaf fragments. Charcoal flecks Frequent *Apium* sp, *Ranunculus sceleratus*, Poaceae common, *Potomogeton* sp, *Chenopodium* sp, *Stellaria* sp, *Cirsium* sp, *Rumex* sp, *Carex* sp, *Sonchus asper*, *Urtica dioica*, *Urtica urens*, *Ranunculus acris/repens/bulbosus*, *Prunella vulgaris*, *Polygonum*, cf *Plantago* sp. Charred glume bases *Triticum spelta,* wheat grains, deatched coleoptiles and occasional seeds *Anthemis cotula* and *Tripleurospermum sp*.	Abundant well preserved insect remains - Coleoptera, mites	A	A

3074	215	0.15-0.20m below top of step	1L	*** *		*** *	***	*** **	*	*** **	*	Flot 100ml. Contains a single mouth cf Radix balthica, but otherwise molluscs absent. Flot increasingly woody, also abundant charcoal flecks. Presumably increasing peatyness creating too acidic conditions for snails? Occasional charophyte oogonia. Many items have a strong yellow staining as if oxidised. Glume bases, mostly charred but non-charred also observed, also non-charred cereal culm, plus charred wheat and Avena grains and detached coleoptiles/embryos, fragment of barley rachis. Rumex perianth and fruits, Ranunculus sceleratus, frequent Apium sp, frequent Poaceae, Sonchus asper, Chenopodium, Urtica dioica, Urtica urens, Stellaria, Anthemis cotula (uncharred), Ranunculus acris/repens/bulbosus, nutshell fragments, Papaver (not somniferum), others in tube to ID.	Frequent insect remains - Coleoptera, Mites	A	A

3074	216	0.20-0.25m below top of step	1L	*** *		*** *	***	*** **		*** **		Flot 150ml. Yellow oxidised stain on much material. Occasional charophyte oogonia. Abundant woody fragments and charcoal flecks very frequent. No molluscs. *Apium* sp common. *Rumex* perianths and fruits, *Stellaria* sp, *Ranunculus sceleratus* and *R. acris/repens/bulbosus*, *Urtica dioica* and *U. urens*, frequent Poaceae, *Anthemis cotula* (both charred and uncharred), *Cirsium* sp, *Eleocharis* sp, *Chenopodium* sp, *Potentilla anserina*, cf *Viola* sp. Glume bases - one is partialy charred, detached coloeptiles, rachis (possible rye?) charred *Tripleurospermum* sp, charred wheat and oat grain. Occasional small twigs.	Frequent insect remains - Coleoptera, mites.	A	A
3074	217	0.25-0.30m below top of step	1L	***	***	**	***	*** **		*** ***	*** *	Flot volume 150ml. Frequent *Radix balthica* and *Gyraulus crista*, single *Cochlicopa* sp, ostracods. Excellent preservation of waterlogged material: frequent *Apium* spp, *Ranunculus sceleratus* and *R. subgenus Batrachium*, frequent Poaceae, frequent *Rumex* perianths and fruits, *Carex* sp, *Chenopodium* sp, , *Sonchus asper*, *Polygonum*sp, *Potamogeton* sp, *Zannichellia palustris*, *Juncus* sp, *Stellaria* sp. Leaf fragments, wood fragments, frequent charred glume bases.	Excellent preservation of insects (Coleoptera, mites)	A	A

3074	218	0.30-0.35m below top of step	1L	***	***		***	*** **		*** **	*** *	Flot volume 200ml. *Radix balthica* and *Gyraulus crista* common, plus rare *Cochlicopa, Anisus leucostoma*, *Gyraulus albus*, plus another snail to ID., ostracods. Frequent *Potamogeton* sp, *Zannichellia palustris* also present, frequent *Apium* spp, *Juncus* sp, frequent *Ranunculus* subgenus *Batrachium* and occasional *R. sceleratus*, *Rumex* perianths quite common, Poaceae, Carex sp, *Cirsium* sp, *Stellaria* sp, *Urtica dioica*, *Myriophyllum cf spicatum*. Charred glume bases, also occasional charred wheat awns. Plant stem common.	Frequent well preserved insect remains - mites, Coleoptera.	A	A
3074	219	0.35-0.40m below top of step	1L		*** **	***	***	*** **0		*** **	**/ ***	Abundant fragments plant stem. Snails present in quite low number: *Gyraulus albus* and *G. crista*, *Radix balthica*. Ostracods. Frequent charophyte oogonia. *Urtica dioica* and *Apium* sp common. *Juncus* sp, *Ranunculus*: *R.* subgenus *Batrachium* most common, followed by *R. scelarata*s, *R. acris/repens/bulbosus* rare. *Potomogeton* sp. *Anthemis cotula* (both charred and uncharred). *Rumex* (perianth and fruit), *Eleocharis* sp, *Polygonum* sp, *Carex* sp, Poaceae, *Stellaria* sp, *Chenopodium* sp, *Sonchus asper*, *Aphanes* sp, *Zannichellia palustris, Myriophyllum cf spicatum.* Rare charred wheat grain and detached coloeptiles. Charred glume bases and charoal flecks common.	Frequent well preserved insect remains - mites, Coleoptera.	A	A
3074	220	0.40-0.45m below top of step	2L			***	*** **	*** **		***	*** **	Snail flot (dried out) assessed as no separate WPR sample for this increment. *Lymnea stagnalis*, *Radix balthica*, *Galba truncatula*, *Gyraulus albus, Gyraulus crista*, *Valloniasp*, Psidium, ostracods. Fish bone, scales. Excellent preservation of charred plant remains:, charred glume bases/whole glumes, charred oat caryopses, sprouted wheat grain(roots/groove/sprout in place, full length of grain), detached coleoptiles common, *Hordeum* rachis, small number of charred seeds *(Thaspi* sp, *Rumex*, 2mm legume). Dried out waterlogged seeds frequent: most common *Ranunculus* subgenus *Batrachium*, also *Rumex* perianth and fruits, *Carex* sp, *Ranunculus acris/repens/bulbosus*, *Sonchus asper, Apium* sp, *Potamogeton* sp, *Polygonum aviculare*, *Myriophyllum cf spicatum*.	Frequent insect remains, but dried out so not ideal for analysis.	B	C

3072	222	Black deposit within pit - not covered by incrementals	1L			***	*****	***				Abundant charred plant remains (see CPR table). *Ranunculus sceleratus* common, *Juncus* sp. Frequent tiny yellow seeds/fruits.	Poor for insect remains	C	D
3075	224	Context not covered by incrementals	1L				*****	**				Abundant charred plant remains (see CPR table). *Ranunculus sceleratus* common, tiny yellow seeds/fruits. Frequent charophyte oogonia. One *Hyoscyamus niger* seed, occasional others.	Poor for insect remains	C	D

Table C.5.3: Waterlogged plant remains, insects and molluscs

C.6 Pollen

By Mairead Rutherford

Introduction

C.6.1 Sixteen sub-samples were taken from monolith samples from a site at Berryfields. One of the features, a waterlogged pit 3067, comprised fills that contained artefacts dated to the Roman period. Monolith samples through prehistoric ditch enclosure fills were not subsampled, as the sediments comprise very hardened clays, disaggregated into rubble, and therefore impossible to sub-sample with any accuracy. Sub-samples were selected at OA North for palynological assessment.

Quantification

C.6.2 Volumetric samples were taken from sixteen sub-samples and one tablet containing a known number of Lycopodium spores was added so that pollen concentrations could be calculated (Stockmarr 1972). The samples were prepared using a standard chemical procedure (method B of Berglund and Ralska-Jasiewiczowa 1986), using HCl, NaOH, sieving, HF, and Erdtman's acetolysis, to remove carbonates, humic acids, particles >170 microns, silicates and cellulose, respectively. The samples were then stained with safranin, dehydrated in tertiary butyl alcohol, and the residues mounted in 2000cs silicone oil. Slides were examined at a magnification of 400x by ten equally-spaced traverses across at least two slides to reduce the possible effects of differential dispersal on the slides (Brooks and Thomas 1967) or until at least 100 pollen grains were counted. Pollen identification was made following the keys of Moore *et al.* (1991), Faegri and Iversen (1989), and a small modern reference collection. Identification of non-pollen palynomorphps (NPP) follows van Geel (1978). Plant nomenclature follows Stace (2010). The preservation of the pollen was noted and an assessment was made of the potential for further analysis.

Results

C.6.3 A description of the lithologies and samples selected for pollen assessment is presented in Table C.6.1 below.

Feature	Sample Number	Context Number	Lithology depth (m)	Sub-samples depth (m)
Roman pit [3067]	192	*3074*	0-0.5m: Dark grey/black, medium soft, silty clay.	0.47-0.48 0.35-0.36 0.11-0.12
	191	*3073*	0.225-0.37: Dirty pale yellow / grey, fine sandy silt.	0.35-0.36 0.23-0.24
		3071	0.02-0.225: Dark grey/black, sticky silty clay. Wood at 0.19-0.21m.	0.19-0.20 0.04-0.05
	190	*3070*	0.47-0.59: Dark brownish grey, hard, crumbly clay.	0.51-0.52

		3069	0.35-0.47: Reddish brown/grey crumbly soil/clay.	0.39-0.40
		3068	0-0.35: Grey with brown/red mottling, very hard clayey soil.	0.31-0.32 0.19-0.20
				0.03-0.04
Pond associated with Roman pit [6062]	195	*3063*	0.46-0.70: Stiff grey clay and orange/red staining. 0.70-0.96: Very stiff grey clay.	0.91-0.92 0.51-0.52
	194	*3066*	0- 0.38: Stiff grey clay, rubbly, disaggregated from 0-0.15m 0.38-0.50: Stiff grey clay and red (iron) staining.	0.27-0.28 0.15-0.16
Prehistoric ditch [1088]	145	*1090*	0-0.19: Very dry, hardened light brown/grey clay, broken and crumpled.	Not suitable for pollen sub-sampling.
		1089	0.19-0.50: Dry, hardened light brown/grey clay, broken and crumpled.	Not suitable for pollen sub-sampling.
Ring ditch [1097]	148	*1098*	0-0.28: Stiff, medium brown clay, dried, rubbly.	Not suitable for pollen sub-sampling.
		1105	0.28-0.50: Light brown clay, dry, hardened.	Not suitable for pollen sub-sampling.
Prehistoric ditch [1385]	151	*1383*	0-0.30: Stiff, medium brown clay, dried, rubbly.	Not suitable for pollen sub-sampling.
		1384	0.30-0.50: Light brown clay, dry, hardened.	Not suitable for pollen sub-sampling.

Table C.6.1: Pollen. Lithologies and sub-sampling

C.6.4 Where possible, the boundaries between each context were sub-sampled for pollen. Where a thicker deposit was present, sub-samples were also taken from within the context. Pollen preservation was generally poor in most of the sub-samples. However, the preservation of assemblages from monolith sample 191, in particular from context 3073, was good. The pollen data are described by sample, from each feature.

Pit 3067: sample 192

C.6.5 Three overlapping monoliths were taken through a series of clay and silty/clay deposits, to sample the fills of a Roman waterlogged pit (Table C.6.1). Three sub-samples from the deepest monolith sample, 192 (3074), yielded poor pollen counts, less than half than would

be statistically valid for a full assessment. Nevertheless, it is possible to gain some palaeoenvironmental information from these sub-samples. All three sub-samples contained a herb-rich assemblage, dominated by grasses (Poaceae). Relatively richer pollen assemblages were recovered from the sub-samples at 0.35-0.36m and 0.11-0.12m, including pollen of the carrot family (Apiaceae, a broad group including plants such as pignuts, burnet-saxifrages and fool's parsley), the goosefoot family (Amaranthaceae, formerly Chenopodiaceae, comprising plants such as fat-hen, good king henry and many seeded goosefoot) and the cabbage family (Brassicaceae, another large group, including plants such as mustards, radishes and cabbages). In addition, pollen of dandelion-type (*Taraxacum*-type), buttercup-type (Ranunculaceae), ribwort plantain (*Plantago lanceolata*), sedges (Cyperaceae), cornflower (*Centaurea cyanus*), common knapweed (*C. nigra*), and pollen of the pinks family (Caryophyllaceae, including pollen from plants such as stitchworts, mouse-ears and campions), was recorded.

C.6.6 Pollen of aquatic plants, including lesser bulrush (*Typha angustifolia*), pondweed (*Potamogeton*) and alternate water-milfoil (*Myriophyllum alterniflorum*) was also present. Fungal spores included relatively high counts of *Chaetomium* (HdV-7A), with occurrences also of *Glomus* (HdV-207), *Sordaria* (HdV-55A/B) and a single reocrd of *Sporomiella* (HdV-113). Microcharcoal particles were commonly recorded. Many deteriorated pollen grains were present, either concealed, crumpled or broken. Reworking was evident throughout, and included pollen, dinoflagellate cysts, acritarchs and green algae; identifiable taxa indicate an age of early Cretaceous - Jurassic, consistent with the age of the underlying bedrock in the area (www.bucksgeology.org.uk).

Interpretation

C.6.7 The pollen assemblages, although poor, suggest pollen derived from potentially open, grassy areas, for example, areas of rough or waste ground, such as trackways or perhaps meadow land. This is supported from the counts of pollen of grasses, buttercup-types, daisytypes, ribwort plantain and dandelion-types. The presence of pollen of cornflower may suggest nearby areas of cultivation, as cornflower naturalised in corn fields (Stace 2010). However, there is no record for the presence of cereal-type pollen. Indications for the occurrence of wet areas may be inferred from the presence of pollen grains of aquatic plants including lesser bulrush, known to occur in reed swamps, lakes, ponds, slow rivers and ditches (Stace 2010). Of interest is the relatively high count for the fungal spore *Chaetomium* (HdV7A); *Chaetomium* species are cellulose-decomposing fungi occurring on a variety of substrates, including plant remains, fibres, dung, and also appear to be linked to archaeological sites where settlements may have provided substrates such as damp straw, clothing and leather (van Geel and Aptroot 2006).

Pit 3067: Sample 191

C.6.8 Four sub-samples were assessed for pollen, two from 3073 and two from 3071. The assemblages were similar throughout and largely similar to those described from the underlying context 3074 (see above). The best recovery was from 3073 because the number of deteriorated grains counted was negligible. Grasses significantly dominated the

assemblages, with pollen of weeds such as dandelion-type, buttercup-type and pollen of the daisy family (Asteraceae, a large group including plants such as burdocks, hawkbits and daisies), common knapweed (*Centaurea nigra*) and ribwort plantain, recorded. Within the upper part of 3073, pollen of the carrot family comprised in excess of 30% of the pollen counted and was present along with pollen of cereal-types (possibly wheat/oats (*Triticum*/*Avena*)) and cornflower. Very rare arboreal pollen included occurrences of alder (*Alnus*), hazel-type (*Corylus*-type) and oak (*Quercus*). Microcharcoal was present in moderate amounts. Sub-samples from 3071 contained very similar assemblages to those just described; pollen of cereal-type (wheat/oats) and pollen of knotgrass (*Polygonum aviculare*) was also present within this context. Abundant microcharcoal particles were recorded within this context.

Interpretation

C.6.9 The derivation of the pollen assemblages is likely to be from similar source areas to those outlined above for sample 192. However, it is possible that cereal waste and associated domestic waste (for example, microcharcoal, possibly food waste (for example, maybe vegetable matter (carrots)) were deposited in the pit/waterhole. Sedimentologically, deposit 3073 looks very different to the deposits either side of it, containing more silt than clay and of a yellow rather than dark grey or black hue. Although rich pollen assemblages were present in the overlying deposit, 3071, the large number of deteriorated grains, especially within the upper part of the context, suggests the pollen counted may not be a true reflection of the pollen deposited at the site.

Pit 3067: Sample 190

C.6.10 The only pollen sub-sample to produce a reasonable count was from context 3070. The assemblage from this deposit contained mainly grass pollen grains, along with sedges, dandelion-type, daisy-type, buttercup-type, pollen of the goosefoot family, carrot family and ribwort plantain. Rare tree pollen included occurrences of hazel-type, oak and birch (*Betula*). Pollen of the aquatic plant, lesser bulrush, was also present. Microcharcoal particles were present in relative abundance. Similar assemblages were recorded in the overlying contexts 3069 and 3068, but the numbers of grains dwindled to approximately 30 and then to fewer than 5 in the upper 0.02m of context 3068.

Interpretation

C.6.11 The interpretation is based on pollen derived from deposit 3070. The assemblage is dominated by pollen of grasses, dandelion-types and sedges, suggesting derivation from an open, relatively damp, grassy area, for example, waste or rough ground. Tree pollen may have been derived from regional woodlands and could have been transported by wind, water, animals or people. Microcharcoal may have been deposited in the pit as a result of waste associated with settlement (eg fires).

Pond 6062: Sample 194

C.6.12 Very little pollen was recorded from two samples taken from context 3066. The record included grains of hazel-type, dandelion-type and pollen of the goosefoot family. The fungal spore, *Glomus* (HdV-207) was also present. The pollen record is insufficient to suggest any interpretation.

Pond 6062: Sample 195

C.6.13 The two sub-samples were barren of *in-situ* pollen. A reworked assemblage, consistent with an early Creataceous-Jurassic age, was recorded from the deeper sub-sample.

Sample Number		**190**	**190**	**190**	**190**	**190**	**191**	**191**	**191**
Context		***3068***	***3068***	***3068***	***3069***	***3070***	***3071***	***3071***	***3073***
Preservation		**poor**	**poor**	**poor**	**poor**	**poor**	**poor**	**good**	**good**
Potential		**NO**	**NO**	**NO**	**NO**	**Poss**	**Poss**	**YES**	**YES**
Depth (m)		**0.03-0.04**	**0.19-0.20**	**0.31-0.32**	**0.39-0.40**	**0.51-0.52**	**0.04-0.05**	**0.19-0.20**	**0.23-0.24**
Trees/Shrubs									
Alnus	Alder						2	1	1
Betula	Birch					1		2	
*Corylus avellana*type	Hazel-type			3	1	2	2	1	1
Pinus	Pine						1	1	
Quercus	Oak				1	2	11	2	1
Crops									
Cerealia	Cerealtype/grasses			1				1	2
Herbs									
Amaranthaceae	Goosefoot family		1	3		3	1	1	1
Apiaceae	Carrot family				5	5	6	11	39
Asteraceae	Daisy family				1	5	16	1	6
Brassicaceae	Cabbage family		1	9			3	1	
Centaurea cyanus	Cornflower								1
Centaurea nigra	Common knapweed			1				1	1
Cirsium-type	Thistles						1	1	
Cyperaceae	Sedges			5	2	16	2	3	

Plantago lanceolata	Ribwort plantain				1	3	3	4	4
Poaceae	Grass Family	2		5	8	27	28	65	53
Polygonum aviculare	Knotgrass						2		
Potentilla-type	Cinquefoils				1				
Ranunculaceae	Buttercup family					2	2	5	1
Rumex-type	Docks/Sorrels							1	
Taraxacum-type	Dandelions	1	2	4	8	21	16	5	1
Unknown herbs				1	1	2	4	1	
	Total land pollen	**3**	**4**	**32**	**29**	**89**	**100**	**108**	**112**
	Number of traverses	10	10	10	10	10	5	5	1
Lycopodium spores	Exotic	8	6	8	8	6	14	6	4
Aquatics									
Typha angustifolia	Lesser Bulrush					1			
Ferns and Mosses									
Polypodium	Polypodies		1				1		
Pteridium aquilinum	Bracken						1		
Pteropsida (monolete)	Fern spores(monolete)	1		1	1		1	1	
Sphagnum	Moss spores								
Broken grains				7	1	1	4	3	3
Concealed grains		1		22	24	19	59	10	3
Crumpled grains				9	11	6	9	2	
Microscopic charcoal		+	++	++	+++	+++	+++ +	+++ +	+++
Fungal spores/NPP									

Glomus HdV-207				1	1	5	4		1
Spirogyra (HdV-130)							1		
Fungal spores (undiff.)								1	1

Reworking									
Reworked pollen					1	1		2	
Reworked algae					1	1			
Sample Number		**191**	**192**	**192**	**192**	**194**	**194**	**195**	**195**
Context		***3073***	***3074***	***3074***	***3074***	***3066***	***3063***	***6063***	***6063***
Preservation		**good**	**poor**	**poor**	**poor**	**poor**	**poor**	**poor**	**poor**
Potential		**YES**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
Depth (m)		**0.35-0.36**	**0.11-0.12**	**0.35-0.36**	**0.47-0.48**	**0.15-0.16**	**0.27-0.28**	**0.51-0.52**	**0.91-0.92**
Trees/Shrubs									
Alnus	Alder	1							
Corylus avellana-type	Hazel-type	2					2		
Crops									
Cerealia	Cerealtype/grasses	1							
Herbs									
Amaranthaceae	Goosefoot family		3	5		1	1		
Apiaceae	Carrot family	4	5	4	1				
Asteraceae	Daisy family	1		2					
Brassicaceae	Cabbage family		1	1					
Caryophyllaceae	Pink family		1						
Centaurea cyanus	Cornflower			2	1				
Centaurea nigra	Common knapweed			1					
Cyperaceae	Sedges			3					
Plantago lancolata	Ribwort plantain	1		1					
Plantago spp.	Plantains			1					
Poaceae	Grass Family	105	29	21	6				
Ranunculaceae	Buttercup family	2		3					
Taraxacum-type	Dandelions	2	1	3	1	1	1		
Unknown herbs		1		2			1		
	Total land pollen	120	40	49	9	2	5	0	0
	Number of traverses	2	10	10	10	10	10	10	10
Lycopodium spores	Exotic	2	2	9	2	7	3	5	2

Aquatics									
Myriophyllum alterniflorm	Alternate water milfoil			6					
Potamogeton	Pondweed			1					
Typha angustifolia	Lesser bulrrush				1				
Algae									
Botryococcus HdV766	Colonial alga			1	1				
Ferns and Mosses									
Polypodium	Polypodies					1	1		
Pteridium aquilinum	Bracken		1						
Pteropsida (monolete)	Fern spores(monolete)		1						
Broken grains		2	1	8	2				1
Concealed grains		4	11	42	7			3	7
Crumpled grains			15	11	1				5
Microscopic charcoal		+++	+++	+++ +	+++	+	+	+	+++
Fungal spores/NPP									
Chaetomium HdV-7A			15	8					
Glomus HdV-207			2	1	2		1		
Sordaria HdV-55A/B			5	1					
Sporomiella HdV-113				1					
Fungal spores (undiff.)			16	2					
Reworking									
Reworked algae		1	4						2
Reworked dino-cysts			5	1					7

Reworked pollen			5	8					10

Table C.6.2: Raw pollen counts. The quantity of microscopic charcoal is shown by a symbol, +, where + = present, ++ = frequent, +++ = common and ++++ = abundant.

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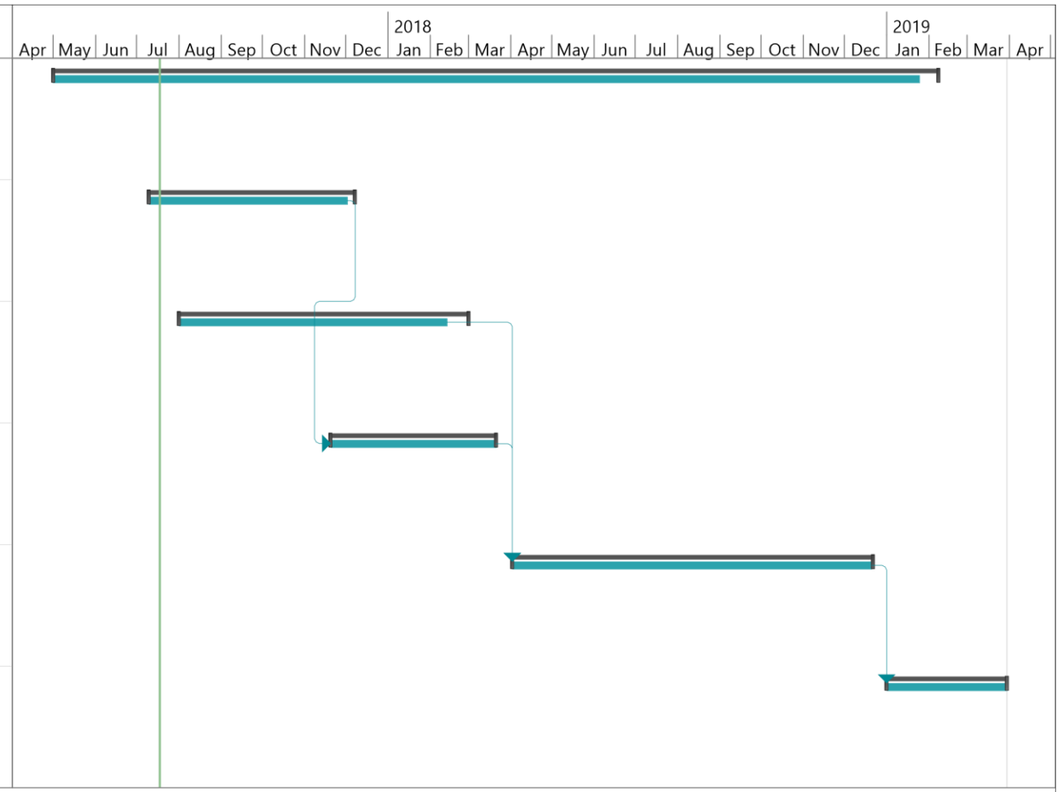
1	**Management**	**464 days**	**Mon 01/05/17**	**Thu 07/02/19**	
12	**Dating and stratigraphy**	**109 days**	**Mon 10/07/17**	**Thu 07/12/17**	
22	**Finds analysis and reporting**	**152 days**	**Tue 01/08/17**	**Wed 28/02/18**	
46	**Environmental analysis and reporting**	**87 days**	**Mon 20/11/17**	**Tue 20/03/18**	
67	**Report production and publication**	**190 days**	**Mon 02/04/18**	**Fri 21/12/18**	
86	**Archiving and museum deposition**	**64 days**	**Tue 01/01/19**	**Fri 29/03/19**	



Project: AYLBERPX_analysis_pub
Date: Tue 18/07/17

Task	Project Summary	Manual Task	Start-only	Deadline	
Split	Inactive Task	Duration-only	Finish-only	Progress	
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress	
Summary	Inactive Summary	Manual Summary	External Milestone		

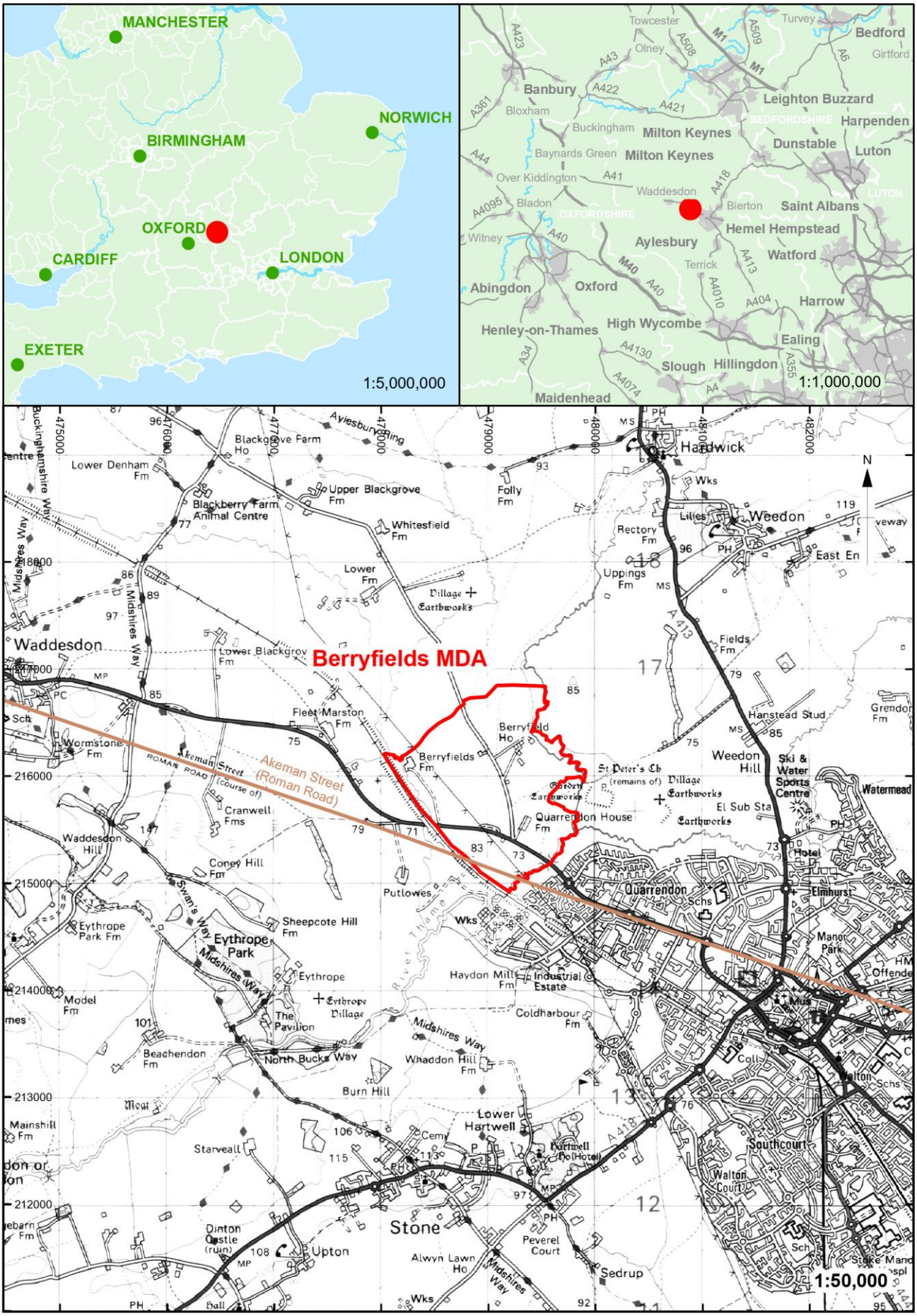


Figure 1: Site location

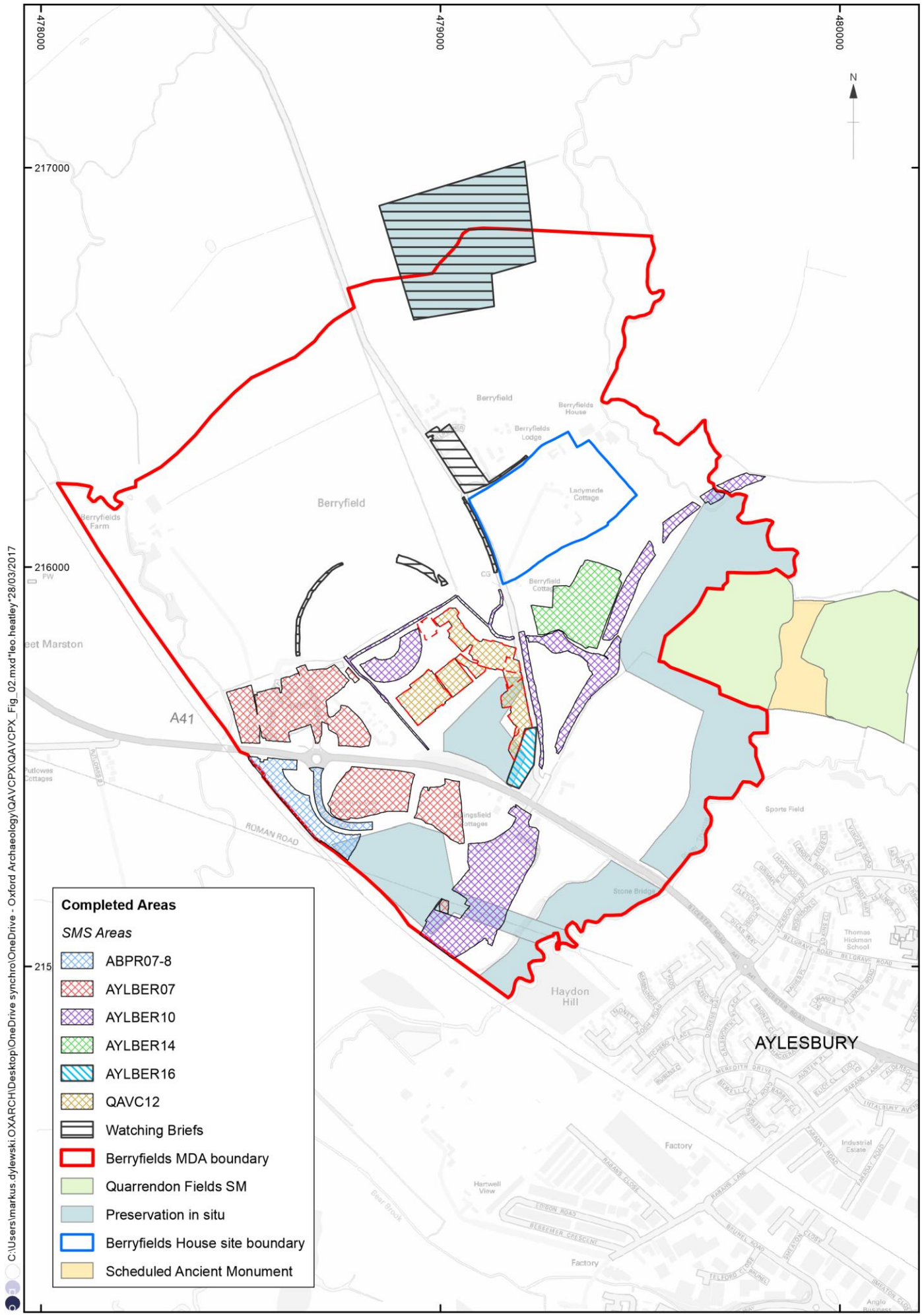


Figure 2: Investigation areas

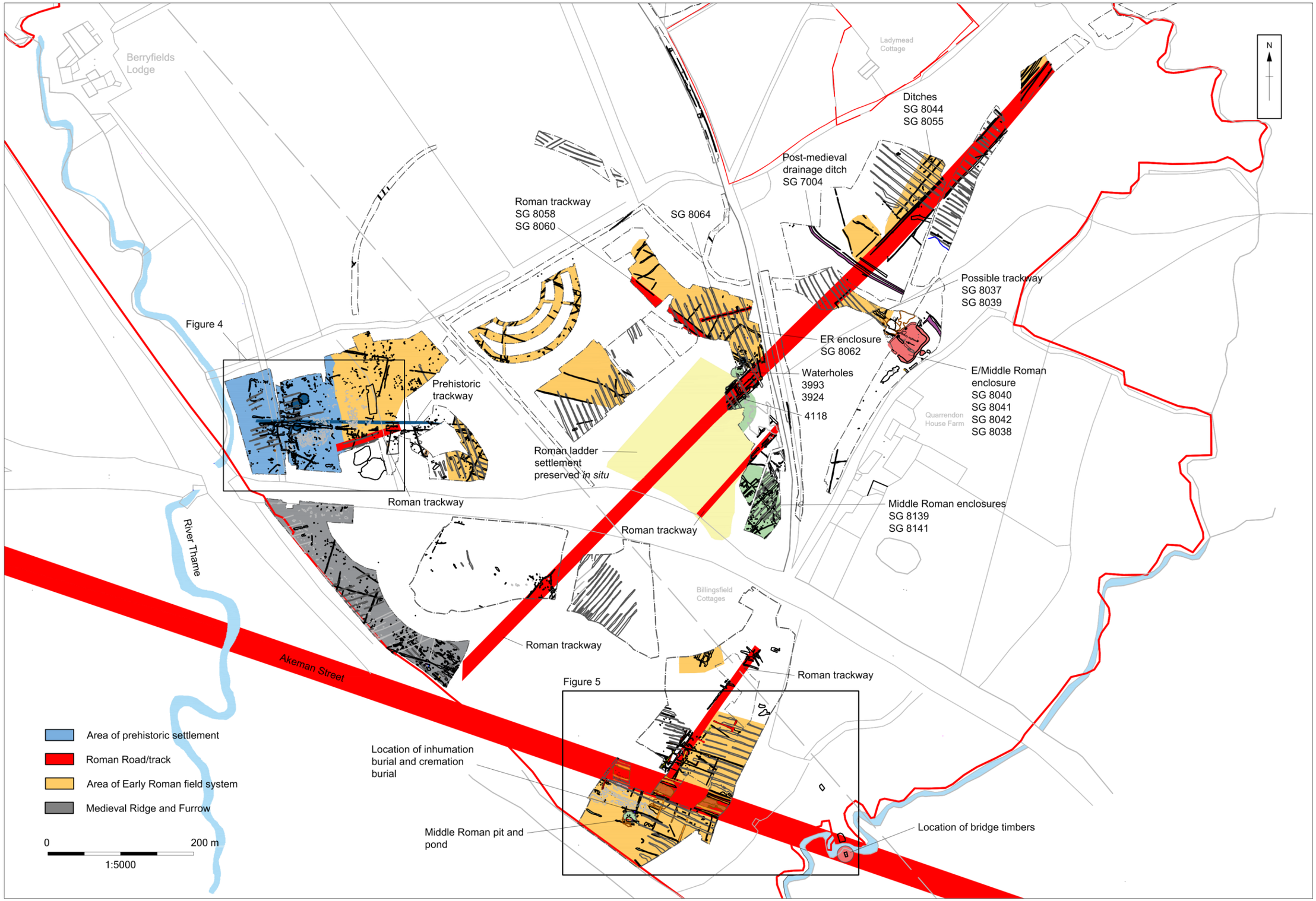


Figure 3: Summary of archaeology

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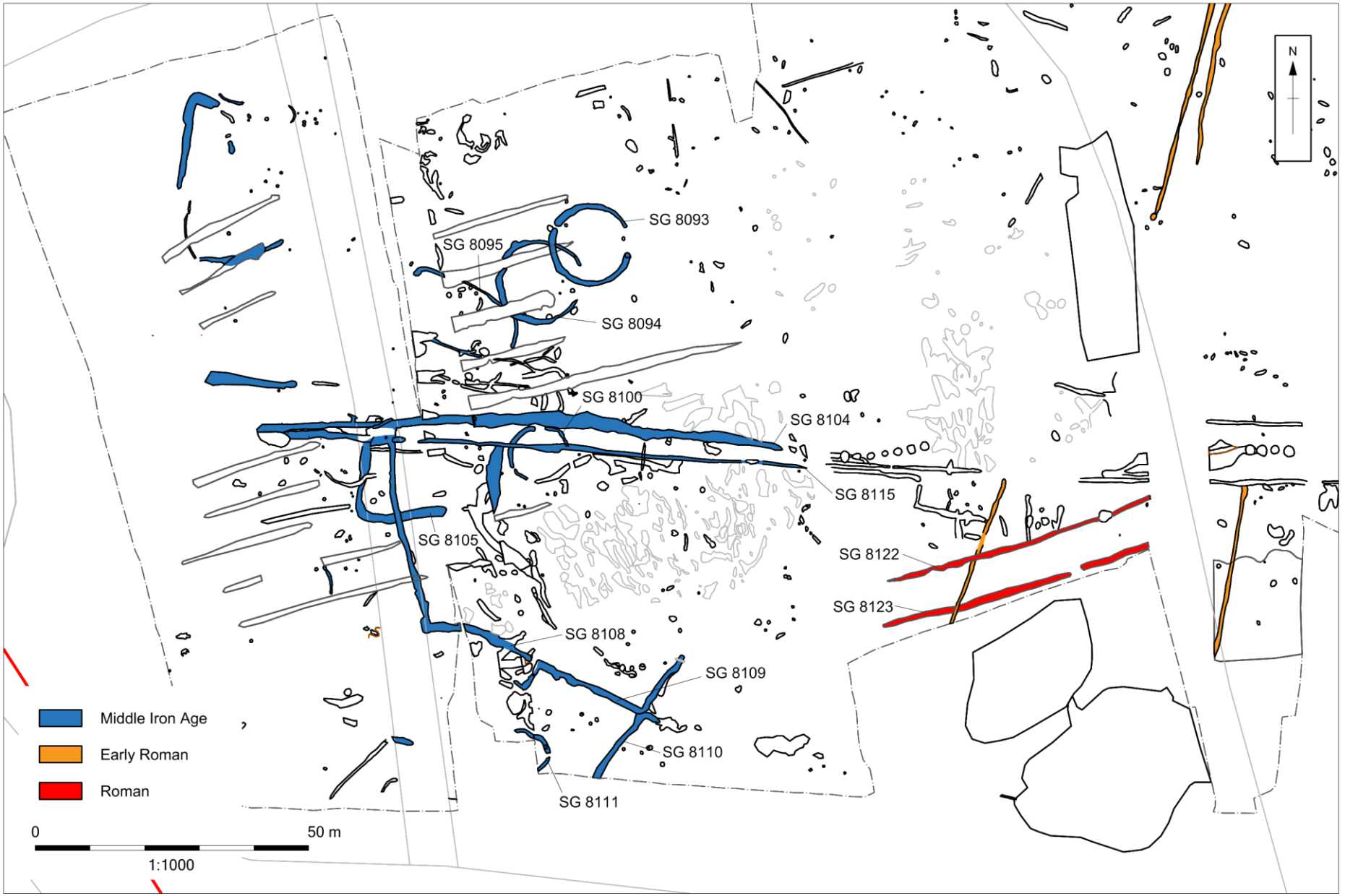

Figure 4: Iron Age settlement area

Iron Age
Early Roman I
Early Roman II
Early Roman III
Middle Roman
Metalled surface

N

SG 8023
SG 8022
SG 8024
SG 8028
SG 8025
Posthole alignment
SG 8020
SG 8021
SG 8019
Akeman Street
Roman Road
SG 8018
SG 8017
2684
SG 8016
Pit 3008
Cremation burial 2994
Inhumation burial 3003
Figure 6
Pond 3062
Pit 3067
Stone structure
3276
River Thame

0
50 m
1:1000

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Figure 5: Roman road and roadside features

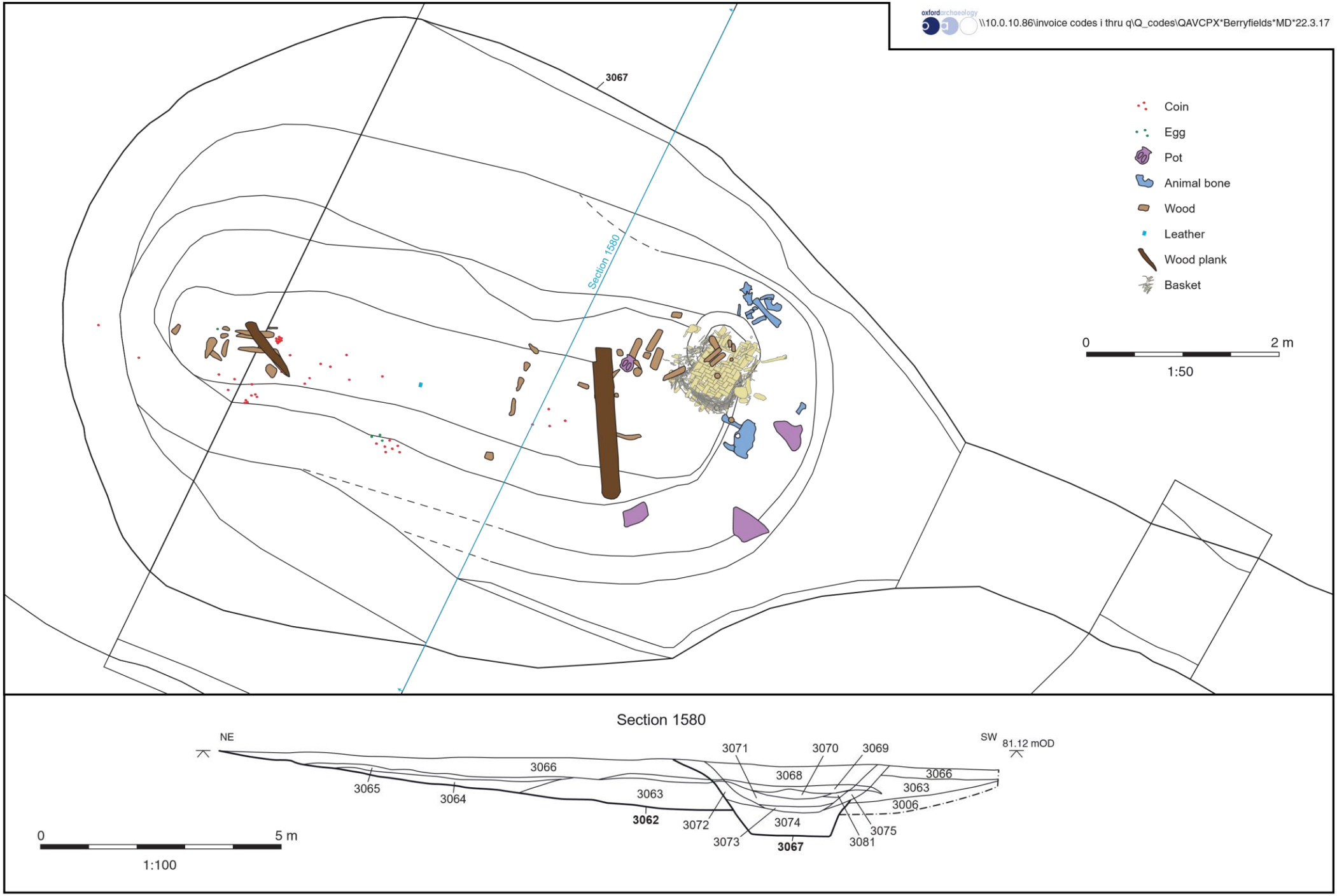

Figure 6: Pit 3067 and small finds distribution

Figure 7: On site lifting and conservation of basket

Figure 8: Recording stone structure 3276

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