Early Roman Settlement, Late Roman Burials and an Anglo-Saxon Enclosure at 119 Tiddington Road, Stratford-upon-Avon, Warwickshire

Stuart C Palmer

with contributions from Catherine Coutts, Jerry Evans, Malin Holst, Phil Mills, and Nicholas Palmer, and with illustrations by Candy Stevens

Report 1050

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Summary

Archaeological excavations at 119 Tiddington Road, Stratford-upon-Avon, in advance of and during the construction of a replacement dwelling, revealed at least two early-mid 1st- century AD pits containing large storage jars, a 1st-century boundary sequence, and a group of later Roman burials. The boundary was replaced by a larger ditch in the early Anglo-Saxon period which probably defined an enclosure constructed outside the defended part of the Roman village. The work largely confirms the results of the work on the adjacent sites. There are reports on the pottery, four of the inhumations, stone and metal objects and animal bone.

1 Introduction

Planning permission was granted by Stratford-upon-Avon District Council (05/01876/FUL) for the construction of a replacement house at 119 Tiddington Road, Stratford-upon-Avon. The re-development site lies within a Romano-British settlement, parts of which are protected as a Scheduled Ancient Monument (Warwickshire 184) under the Ancient Monuments and Archaeological Areas Act of 1979.

An archaeological field evaluation involving two trenches (T1 and T2) carried out in September 2005 (TG05) recorded some Roman burials on the south side of the existing house but little evidence for activity to the north (Warwickshire Museum 2005a). It was therefore recommended that a programme of excavation be carried out within the footprint of the new buildings after the demolition of the existing structures with additional observation of the groundworks associated with the development in order to record any archaeologically significant deposits that might be disturbed.

A programme of fieldwork, in accordance with a Brief prepared by the Warwickshire Planning Archaeologist was commissioned from the Warwickshire Museum Field Archaeology Projects Group and carried out over the course of 2006 and early 2007. This report presents the results of that work. The project archive will be stored at the Warwickshire Museum under the site codes TG05 (evaluation) and TG06.

2 Location

The re-development site is located at national grid reference SP 173 572 in the parish of Stratford-upon-Avon. It lies on the crest of the north facing slope on the south side of the Avon Valley, on the edge of the Avon's 2nd Terrace (British Geological Survey 1974).

3 Archaeological and Historical Background

The earliest datable find from the area is a rare form of stone implement, a possible leaf point of Upper/Final Upper Palaeolithic date (*c*.40,000-8,000 BC), the period in which modern humans (*Homo sapiens*) began to colonise the part of the continental landmass that is now the British Isles. It was found in about 1930 during the construction of no 80 Tiddington Road (Warwickshire Historic Environment Record Number MWA 893). It is one of only two finds of this period known from the entire county and the paucity of finds of this date in Britain suggests that there was only a very small population at this time.

After the last Ice Age had ended *c*.10,000 years ago, the region was sporadically visited by growing numbers of Mesolithic (*c*.8000 BC – 4000 BC) hunter gatherers. No finds of this date are known in Tiddington but it is certain that they would have travelled along the Avon Valley during this time. At the beginning of the Neolithic period *c*.4000 BC, domesticated cattle and sheep along with domesticated cereals such as wheat and barley began to arrive from the continent and the indigenous people slowly adopted a new world view which included the construction of ceremonial and funerary monuments and the inevitable, but piecemeal adoption of agriculture. Thin scatters of flint tools and waste flakes of this date have been found in fields to the east of Tiddington suggesting the locale was visited but no concentrations are dense enough to suggest settlement. The technology for working metals such as copper and tin was imported from the continent around *c*.2500 BC in the Early Bronze Age. There are sporadic flint finds of this date in the area and a number of cropmarks around Tiddington represent ring-ditches or ploughed out burial mounds of Neolithic or Bronze Age date (not shown on plan).

Permanent settlement of this part of the Avon Valley probably originated in the Late Bronze Age *c*.1000 BC. Cropmarks to the east of Tiddington represent boundary features that define land-units that may well have remained in existence throughout the Iron Age (*c*.800 BC – AD 43) and later.

The earliest dated settlement evidence in the area is Middle to Late Iron Age (*c*.400 BC – AD 43) and was excavated at the NFU site in the early 1980s (Fig 1). This was probably one of a number of small farmsteads in this part of the Avon Valley, which is likely to have been heavily exploited by this time (Palmer 1983).

One or more of the Iron Age farmsteads probably developed into what has been described as a large village (HER MWA 4469; Palmer 1983), during the Roman period (AD 43 – 410). The impetus for this development may well have been a location at a putative crossroads: a road along the south side of the river, a precursor to the modern Tiddington Road, met another running south-east to north-west down to a ford. The ford was probably at the place where Roman coins and brooches were dredged out of the river in 1982.

The settlement grew rapidly through the late 1st and 2nd centuries, serving as a market for the farms in the vicinity. It was linked by Roman roads to the main Roman towns in the area at Alcester and Chesterton-on-Fosse. The main road from the Fosse to Alcester by-passed Tiddington using another ford downstream by Clopton Bridge; and it seems to have been the rise in importance of this, the "Straet-ford", which led to the demise of the Tiddington site and the development of medieval Stratford on the opposite side of the river. Recent finds of early Anglo-Saxon pottery from features overlying the Roman settlement indicate that some form of settlement probably continued into the post-Roman period at Tiddington (Palmer & Palmer 1988; Biddulph 2005).

The first modern indications of the existence of the Roman settlement came in the 18th and 19th centuries when large numbers of Roman coins were collected from the fields at Tiddington. Systematic investigation by F C Wellstood of the Shakespeare Birthplace Trust began in the 1920s when housing development spreading along the Tiddington Road uncovered Roman remains. In 1923 a cemetery of 220 burials was encountered under 77 Tiddington Road (HER WA 1014). These excavations also produced some Iron Age pottery (HER WA 1064) [but the suggestion that there were also Anglo Saxon finds (HER WA 6268) is unsubstantiated]. In 1925-7 the construction of the golf course revealed more Romano-British burials and the remains of buildings (Fieldhouse *et al* 1931). Further excavation work was carried out by Wellstood in 1937-8 at 102 Tiddington Road and in 1939 at 84 (HER WA 1072).

In 1980-1 a large scale excavation was carried out in advance of the construction of new offices for the NFU Mutual and Avon Insurance on a 4ha site on the east side of the settlement. This revealed dense Roman occupation from the 1st century AD to the 4th century when a large defensive ditch was dug round the south-east corner of part of the settlement. Many settlements were fortified at this time, a corollary of the uncertain times at the end of the empire, but the extent of the defended area at Tiddington remains unknown. The houses in the settlement were mostly of timber with thatched roofs, although one large stone house was also found. The plots also contained outbuildings, corn-drying ovens, wells and rubbish pits, and there were streets paved with gravel. Outside the settlement, areas of cemetery, rubbish pits and field system were located. In 1983 a small excavation in advance of the construction of Tiddington Court on Knights Lane, adjacent to the NFUMAI site, traced further rubbish pits and a corn-drying oven/malting kiln alongside a trackway running eastwards from the settlement.

In 1982 another large area, within the settlement to the north of the Tiddington Road, was excavated in advance of the building of the Reading Court sheltered housing. Here also dense Roman occupation dating from the 1st century AD to the mid-3rd century was found. The earliest buildings were timber roundhouses surrounded by animal enclosures. In the 2nd century paved roads were laid out accompanied by more timber buildings, now rectangular, of a more Romanised form. Two pottery kilns, one late 1st-century, the other early 2nd-century were also found. After the early 3rd century no further buildings were constructed, but the roads continued in use and some late (4th-century) burials were deposited alongside them.

In 1988 in advance of the building of 117 Tiddington Road more late 1st- and 2nd-century activity was identified along with two late Roman burials and an enclosure of early Anglo-Saxon date (Palmer & Palmer 1988). Further work to the north of this site conducted in 2005 revealed a few sporadic features (Warwickshire Museum 2005b). To the east, an evaluation in 2001 followed by the excavation of two new house plots in 2003 at 121 Tiddington Road revealed further evidence for 1st- and 2nd-century activity followed by a period of abandonment before the cutting of the large enclosure ditch identified at no 117 (Biddulph 2005).

Evaluation and salvage recording on the south side of Tiddington Road prior to the rebuilding of no 124 revealed pits and ditches as well as a child burial but no evidence for the continuation of the 4th- century defensive ditch (Warwickshire Museum 1999, 2000).

The excavation of a new service trench from the Tiddington Road towards the Rayford Caravan Park in 2008 revealed 1st- and 2nd- century occupation spreading down the terrace edge, but nothing of the 3rd or 4th centuries, largely confirming theories that the settlement contracted in the later Roman period. The work also recorded some Anglo-Saxon activity (Palmer 2010).

4 Methods

Trial trenching in 2005 revealed a number of Romano-British pits and two inhumation burials on the south side of the existing house whilst the trench on the north side was archaeologically sterile. A small assemblage of pottery dated from the mid/late 1st to the 4th century and included large parts of a large storage jar from one pit.

The existing house had been demolished and the former swimming pool had been grubbed out prior to an archaeological presence on site. The footprints of the new buildings were marked out by the client's construction project manager including a

1m wide buffer zone around the actual size to provide space for the laying of drainage runs.

The development programme required that the individual areas proposed for investigation had to be tackled in sequence rather than simultaneously. The garage block (Area 1) and the house block (Area 2) were excavated first. Once the garage and house foundations had been laid and the superstructures built, the footprint of the new swimming pool was excavated (Area 3). The excavation of the footprint of the bin store on the street frontage (Area 4) was later followed by the observation of a service trench around the house. A large rectangular hole (Area 5) was excavated between the house and the garage for the sewage pump housing and the service trench to the south of this. A drainage trench was excavated from the front of the house to the street (T6 and further soakaway pits were excavated to the west (T7) and north (T8) of the swimming pool (Area 3).

Topsoil and former plough soils in Areas 1 and 2 were removed using a JCB type digger loader with a 1.5m wide ditching bucket. A tracked 360° excavator was used in the remaining areas with a variety of toothless buckets. All archaeological features were identified as cuts in the geological natural and excavated by hand, with the exception of features identified in the service trenches which would not be disturbed.

5 Excavation Results

The excavations revealed an early Roman enclosure sequence, and a group of later Roman burials, including two decapitated burials, in an area that was later occupied by an Anglo-Saxon enclosure ditch (Figs 2, 3, 4).

Phasing

The exact chronology of the occupation of the area is difficult to determine given the frequency of inter-cutting features with homogenous fills and the absence of any artefactual dating evidence. The following description has been divided into phases based on the stratigraphic relationships observed, augmented by pottery dating evidence from individual contexts.

Geological Natural

The underlying geology varied little across the excavated areas. The majority of the features south of Area 3 cut reddish-yellow sandy gravel (**153=306=402**). Part of Area 1 covered a sandy patch in the gravel terrace (**154**).

Handmade Iron Age type sherds were found residually in later phased contexts (**122, 211** and **212)** but are not thought to represent any particularly significant activity.

Phase 1: (Early -) Mid-1st Century AD

This phase is represented by two unusual pits that contained large storage jars (Cover; Plates 1 & 2). In Trench 1 sub-rectangular pit **113** was 1.10m long by 0.74m wide with steep sloping sides and an irregular base. It was filled with dark brown sandy loam (**114)** along with a few heat-cracked pebbles. 5.7m to the north-east in Area 5, pit **504** was circular with vertical sides 0.80m in diameter, a flat base 0.15m deep (Fig 4, Section I) and was filled with greyish-brown sandy loam (**505**).

Phase 2: Mid–Late 1st Century

This phase consisted of a sequence of east to west aligned gullies in Area 2 (Fig 2). The exact chronology of the sequence is difficult to determine given the frequency of re-cuts and the morphological differences between the two excavated sections it can be reasonably supposed that they got progressively later as they were recut towards the north.

Undated gullies **234** and **235** seem likely to have been early elements in the sequence (Fig 4, Section E), although they contained the same homogenous fill of reddish-brown sandy loam (**231**) which prevented their relationship from being ascertained. Both had shallow sloping sides and a rounded base, respectively 0.25m and 0.35m deep. Gully **220=204** (Fig 4, Sections E & F) cut along the northern edge of the earlier alignment, and was considerably more substantial, being at least 2m wide and between 0.80m and 1.20m deep. A primary fill of dark greyish-brown silty sand (**222**) was dated to the mid-late 1st century AD. A deposit of dark reddish-brown sandy loam (**230**) appeared to tip down the southern side of the gully and this was overlaid by reddish-brown silty sand (**221**). No distinction in the fill of the cut **204** could be discerned (**224** reddish-brown silty sand). To the north gully **227** had sloping sides up to 1.20m wide and a rounded base 0.50m deep and was filled with dark brown silty sand (**215**) and (**232**).

Phase 3: Later 2nd – Mid-3rd Century

In this phase there appears to have been a reorganisation of the area. Although some gullies appear to follow the east-west alignment of the earlier phase in Area 2, at least one curves to form a corner and aligns with features aligned north to south in Area 1.

Gully **203** (Fig 4, Section F) was aligned south-east to north-west and crossed the Phase 2 cuts before turning south-west within the confines of the westernmost section as **226** (Fig 4, Section G). It had a V-shaped profile at least 1m wide by 0.95m deep and was filled with reddish-brown silty sand (**223**) and brown silty sand (**225**). To the north gully **216** was slightly curved and became increasingly shallow to the east where it was probably cut by **205**. It had moderately sloping sides at least 0.70m wide and a flattish base a maximum of 0.40m deep and was filled with brown silty sand (**217**). On its north side gully **218** was also slightly curved and faded out to the east. It had steep sloping sides 0.35m wide, a flattish base 0.20m deep and was filled with brown silty sand (**219**).

In Area 1 gully **132** was aligned north to south becoming progressively wider and shallower (Fig 4, Sections A & B). It was filled with very dark brown sandy loam (**140**).

To the east of **132**, ditch **147** was 1.05m deep with an exceptionally steep sloping eastern side and a stepped base (Fig 4, Section B): its width could not be established. A channel in the base **151**, contained compacted reddish-brown sandy loam (**152**) was overlaid by a similar deposit of reddish-brown sandy loam (**149**). Cutting **147** immediately to the west, ditch **145** was 1.11m deep with a moderately sloping western side and a stepped base: alike **147** its width could not be established but it contained a primary fill of compacted reddish-brown sandy loam (**150**). A single undifferentiated fill of brown sandy loam (**148**) overlay the earliest fills and this was cut by a large shallow sloped ditch **155** which was 3.42m wide by 0.80m deep. It contained a single fill of brown sandy loam (**146**). None of these ditches were evident in the service trench to the north.

Area 1 Irregular Features/Root Disturbance (Table 1)

A curious arrangement of features in the north-west corner of Area 1 could perhaps have formed the corner of an irregular enclosure; originally a shallow gully but later widened by pitting along its length, although the homogenous nature of the fills meant that individual cuts and relationships could not be ascertained. North-west/south-east gully **137** conjoined with pit **136** which abutted pit **135** to the west.

A group of interlinked pits and gullies (**119, 121, 123, 130, 133**) in the south-west corner were extremely difficult to excavate and characterise due to the homogenous nature of their fills. Pit **123** which was cut by **133**, may have been a root hole.

Table 1: Irregular features in Area 1

No	*Feature*	*Dimensions (m)*	*Fills*
135	Sub-circular pit with moderate sloping sides and flattish base	0.45 wide x 0.14 deep	**142** Brown sandy loam
136	Sub-oval pit with moderate sloping sides and uneven base	1.40 x 0.80 wide x 0.20 deep	**143** Brown sandy loam
137	Gully with sharp sloping sides and a rounded base	2.50 x 0.85 wide x 0.30 deep	**144** Brown sandy loam
119	Oval pit with irregular sloping sides and rounded base	0.98 x 0.60 x 0.23m deep	**120** Reddish-brown sandy loam with occasional charcoal flecks
121	Sub oval pit with irregular sloping sides and flattish base (Fig 4, Section C)	1.97 x 0.50 deep	**122** Greyish-brown sandy loam with occasional charcoal at base
123	Sub oval pit with sloping sides and flattish base	0.30 deep	**123** Reddish-brown sandy loam
130	Amorphous pit	0.64 wide	**131** Dark brown sandy loam
133	Irregular gully/pit (Fig 4, Section D)	0.81 wide x 0.18 deep	**134** Dark brown sandy loam

Phase 4: Late 3rd – 4th Century

A small scatter of insecurely dated inhumations has been included in this broad phase because of their affinity with the more securely dated graves on the Reading Court site and the presence of two decapitations which is recognised as a later Roman burial custom (Plates 3- 6).

A total of six definite inhumations were identified in Area 1 (**124, 127, 138**), Trench 1 (**104**, **110**) and Area 5 (**502**), and a further two could be represented by unexcavated or partially excavated features in Trenches 1 (**108**) and 6 (**602**). Five of the graves were certainly aligned north to south (**124, 127, 138, 104, 502**), as was one possible grave (**602**). One grave was aligned north-east to south-west (**110**) as was one possible grave (**108**).

The three burials in Area 1 contained wooden coffins, evident by the pattern of iron nails around their edges.

Table 2: Graves and possible graves

Grave	*Dimensions (m)*	*Skeleton*	*Fill*	*Finds*	*Treatment*
124	1.98 x 0.66 wide x 0.20 deep	**125**	**126** brown sandy loam with	7 coffin nails 34 hob nails	Lifted (Plate 3)
127	1.80 x 0.50 wide x 0.30 deep	**128**	**129** brown sandy loam	10 coffin nails iron figure 8 loop	Lifted (Plate 5)
138	2.40 x 0.73 wide	**141**	**139** brown sandy loam	15 coffin nails 16 hob nails quern stone	Lifted (Plate 4)
104	0.70 wide x 0.40 deep	**117**	**105** dark yellowish-brown sandy loam		Left in situ
110	0.70 wide	**111**	**112** brown sandy loam		Left in situ
502	0.86 wide x 0.40 deep	**507**	**503** reddish-brown sandy loam	29 hob nails	Lifted (Plate 6)
108	0.80 wide	?	**109** dark brown sandy loam		Left in situ
603	0.25m deep	?	**602** reddish-brown sandy loam		Left in situ/ destroyed

Phase 5: Undated but likely Phases 1, 2 or 3

In Trench 1 undated pit **106** was sub-circular 0.45m in diameter with steep sloping sides and a flat base. It was filled with dark yellowish-brown sandy loam with occasional small pebbles (**107**). Pit **115** at the southern end of the trench was at least 0.72m wide and contained dark brown sandy loam (**116**) at surface level. In Trench 6, gully **604** had sloping sides 0.80m wide, a flat base 0.12m deep (Fig 4, Section J) and was filled with reddish-brown sandy loam (**605**).

Phase 6: Anglo-Saxon

Ditch **205** (Fig 4, Sections E & F; Plate 7) which crossed Area 2 from east to west and was 4.2m wide with moderately sloping sides and a rounded base 1.25m deep. Primary and secondary fills brown/reddish-brown silty sand (**214=210**) and dark reddish-brown silty sand (**213=209**), were devoid of pottery but contained animal bones, also including a human tibia shaft and tooth, which perhaps then can be attributed to an aceramic phase. Overlying very dark brown silty sand layers (**212** and **208**) and then dark brown silty sand layer (**207=211**) all yielded Saxon pottery, although the equivalent fill in the service trench to the west (**233**) produced only 1st-century pottery.

Phase 7: Medieval and Modern

A *c* 0.30m deep layer of brown sandy loam soil (**201=103=501**) covered all the earlier phase features. This was likely a former plough soil which developed in the medieval period as the uppermost occupation levels were churned over by ploughing. The ridge and furrow system thereby created was subsequently levelled by modern ploughing and a further 0.30m of dark greyish-brown sandy loam modern topsoil (**102=118=200**) developed.

The former dwelling was represented by a number of modern features including foundations **206** (Fig 4, Section F) and drain **228**.

6 The Romano-British and Anglo-Saxon Pottery by Dr Jeremy Evans and Dr Philip Mills with a contribution by Dr Gwladys Monteil

Introduction

Some 550 sherds of pottery, ceramic building materials (CBM) and fired clay were submitted for analysis. Around 544 sherds of pottery were recovered from stratified Roman and Anglo-Saxon contexts (8.94 Kg), including 5 sherds of samian. Table 4 shows a breakdown of the major fabric classes from the stratified assemblage. The assemblage is from a site adjacent to a number of archaeological interventions which have produced significant assemblages including the NFU site (TD81), the Reading Court site (TR82), 117 Tiddington Road (TM88) and the1925-1938 excavations by F C Wellstood (TW) (Booth 1996). The pottery has been coded according to the Warwickshire Type Series.

Chronology

Graph 1 (Appendix A) offers an overall date distribution plot of datable rim sherds from the site by minimum vessel (MV). The Anglo-Saxon material, always much less common than the Roman, is by dint of the imprecision of its datable qualities, spread across a date range of nearly three centuries giving a weaker impression of this activity than perhaps if it were more precisely datable. However, it is clear that the site is dominated by activity of the early-mid 1st century, which suffers a rapid decline by the Flavian period. There is a further peak in the late 2nd to early 3rd. A small blip in the late 4th to early 5th century is probably due to an overlap between the small amount of late Roman material with the Saxon pottery, which is exaggerated by the small sample size. This graph should be treated with caution as it is relying on a small sample.

The earliest activity on site is in fact denoted by the presence of a small amount of late Iron Age pottery sherds found residually in (**122**), (**211**), and (**212**). A large presence of Iron Age pottery has previously been reported from Tiddington (Booth 1996). The main thrust of the 1st-century activity is shown by the clear dominance of Class E 'Belgic' wares, as well as a sizable component of calcareously tempered wares, mainly the pre-Flavian Malvernian Palaeozoic Limestone tempered ware (C22). There is an almost complete example of the distinctive C22 storage jar from (**114**; Fig 11/1), and interestingly, a Class E copy (E11) from (**149**; Fig 11/2).

Flavian material is represented by South Gaulish samian in (**146**) and (**603**). There is also a base dish sherd of a BB1 vessel, with interlinking circle decoration giving a date of 120+ in context (**503**), and a body sherd of a 2nd-century or later Mancetter-Hartshill mortarium from (**211**). The evidence of 2nd- century activity also includes the Central Gaulish samian, and for the early/mid 3rd, the East Gaulish fabric noted by Monteil below. There are also two Severn Valley ware tankards from (**103**) and (**211**), residually with later pottery, which would date from the 2nd to early 3rd century.

Later 3rd- to 4th-century activity is attested to by a single sherd of Pink Grogged ware (G11) in context (**103**). There are a number of Saxon vessel rims associated with (**207**), (**208**) and (**212**) in ditch **205**.

It is also possible to look at the pottery distribution by phase group. The amount of material from each phase is shown in Table 3.

The date distributions by RE for phases 3, 4 and 5 are shown in Graphs 2, 3 and 4 (Appendix A). In Phase 1 there is a peak of Pre-Flavian activity. In Phase 3 whilst

there is a clear distribution around the late 2nd to early 3rd centuries, there is an even stronger peak representing the large quantity of residual Pre-Flavian material. This presumably enters this phase as storage pits are dug up in the cutting for graves. In Phase 4 there is a concentration of residual material of second to later 3rd-century date. The heavy residual presence of the early vessels is also shown in the date distribution of the Anglo-Saxon phase, Phase 6. The lack of any noticeable residual material from the Flavian period to the onset of the 5th century is of note.

Table 3: Pottery quantities by phase

Phase		No	Weight	Minimum Vessel (MV)	Rim Percentage (RE)	Base Percentage (BE)
1	Early-Mid 1st century	19.67%	42.12%	5.71%	8.00%	22.69%
2	Mid–Late 1st century	4.60%	3.51%	0.00%	0.00%	4.54%
3	Late 2nd-Mid 3rd century	41.73%	31.10%	54.29%	57.82%	52.27%
4	Late 3rd-4th century	12.68%	7.43%	5.71%	7.27%	5.88%
5	Anglo-Saxon	16.91%	14.19%	25.71%	21.82%	9.08%
6	Modern	4.41%	1.66%	8.57%	5.09%	5.55%
	N	**544**	**9030**	**35**	**275**	**595**

Supply

The proportion of the stratified major ware groups are shown in Table 4 and Graph 5 (Appendix A). It is clear from Graph 5 that the assemblage is dominated by Class E at 51%, followed by Class C at 16%, Class R at 11% and Class O at 7%. This rather underlines the pre-Flavian date of the majority of the pottery. In terms of the proportion of E wares, this compares best with site TR82 (Booth 1996), adjoining the north-west of the current excavations, although it should be noted that none of the sites in Booth's (1996) archive report have any assemblage with C wares greater than around 5%. This is partly explained by the presence of two largely complete storage jars from the site, one from (**505**) in E11 comprising some 30 body and base sherds (probably truncated by later ploughing) and a Malvernian Palaeozoic Limestone tempered storage jar (C22) in context (**114**), comprising some 80 sherds and having an RE of 19%. The survival of almost complete pots could be taken to indicate the presence of ritual deposits. However, both these vessels would appear to have had a more functional reason for surviving: as partially buried storage vessels. The major ware proportions without these two vessels are shown in Table 4. This has the effect of reducing the importance of the C wares to 1% of the total, aligning much better with the values given for TR82 (Booth 1996), especially allowing for the inclusion of Anglo-Saxon sherds in the data presented here.

The full fabric breakdown is given in Appendix B and fabric proportions by phase are tabulated in Appendix C. The results are discussed in detail within the respective ware groups below.

Black Burnished ware (B11) only represents 0.2% of the assemblage, a dish/bowl base from context (**503**) decorated with interlocking burnished circles.

Calcareous tempered wares comprise 15.6% of the assemblage. The commonest fabric is Malvernian Palaeozoic limestone tempered ware (C22) at 14.7%. This fabric was not much noted from the earlier excavations. The large quantity from this site comes from the almost complete storage jar from (**114**; Fig 11/1).

Table 4: Proportions of major ware groups in the stratified assemblage

Fabric Class	Ware Group	Number	Weight	Minimum Vessel (MV)	Rim Percentage (RE)
B	Black Burnished	0.18%	0.20%	0.00%	0.00%
C	Shell	15.63%	24.96%	2.86%	6.91%
E	Belgic	51.47%	47.64%	45.71%	41.09%
F	Fine	0.18%	0.17%	0.00%	0.00%
G	Gritted	0.74%	0.39%	0.00%	0.00%
M	Mortaria	0.18%	3.10%	0.00%	0.00%
O	Oxidised	7.35%	5.11%	11.43%	13.45%
P	Iron Age	2.39%	0.72%	0.00%	0.00%
R	Reduced	11.21%	9.86%	25.71%	24.73%
S	Samian	0.92%	0.37%	0.00%	0.00%
W	Whiteware	0.18%	0.03%	0.00%	0.00%
AS	Anglo-Saxon	9.56%	7.46%	14.29%	13.82%
	N	**544**	**9030**	**35**	**275**

Table 5: Proportion of major groups (excluding almost complete storage vessels)

Ware Group	Number	Weight	Minimum Vessel (MV)	Rim Percentage (RE)
B	0.25%	0.38%	0.00%	0.00%
C	1.25%	0.51%	0.00%	0.00%
E	56.64%	53.62%	47.06%	44.14%
F	0.25%	0.32%	0.00%	0.00%
G	1.00%	0.75%	0.00%	0.00%
M	0.25%	5.98%	0.00%	0.00%
O	9.77%	8.88%	11.76%	14.45%
P	3.01%	1.32%	0.00%	0.00%
R	13.03%	13.07%	26.47%	26.56%
S	1.25%	0.70%	0.00%	0.00%
W	0.25%	0.06%	0.00%	0.00%
AS	13.03%	14.39%	14.71%	14.84%
N	**399**	**4683**	**34**	**256**

Other shell tempered wares consisted of C12 at 0.6% and C14 at 0.4%. C12 is a shell and organic tempered ware, probably from Northamptonshire, dating from the early 2nd century AD (Booth 1996). It was present in very small quantities at TD81, TR82 and TW, with most pieces coming from TR82. C14 is tempered with abundant shell and dates from the late 1st to 2nd century AD (Booth 1996). It was only previously noted at TR82, at 0.2% by Nosh.

As noted above Class E fabrics comprise 51.5% of the assemblage. Comparison of this class of fabrics with Booth's report is somewhat problematical because of the fabric definition being based on the fabric colour, which is not as well controlled on vessels in this group as would be the norm for most Romano-British pottery. Kiln 1 at TR82 is known to have produced E15 and E16 and probably E12. However, the abundance of other E fabrics suggests they are all produced locally (Booth 1996).

The breakdown of the different class E fabrics is shown in Table 6. A more useful analysis of the fabric groupings is by main inclusion types. The overall breakdown of this, including class P fabrics, is shown in Table 6. The developments by phase are shown in Table 7. Whilst it is recognised that much of the material after phase 1 is residual, there is an interesting shift to using tempers other than grog, or mixing grog with sand over time.

Table 6: Class E and P fabrics by main inclusion type

Inclusion	Number%	Weight%	Minimum Vessel MV%	Rim Percentage RE%
Calcareous	0.3%	0.1%	0.0%	0.0%
Grog	50.5%	75.1%	43.8%	39.8%
Sand	34.1%	17.1%	56.3%	60.2%
Sand and Grog	15.0%	7.7%	0.0%	0.0%
N	**293**	**4367**	**16**	**113**

There is a single example of a red colour coat F71 base sherd from context (**146**), amounting to 0.2% of the assemblage. This context has a spot date of mainly Flavian, with a small component of 2nd-century material.

Table 7: Class E and P fabrics by main inclusion type by phase

Phase	Inclusion	Number%	Weight%	Minimum Vessel MV%	Rim Percentage RE%
1	Grog	88.5%	99.5%	0.0%	0.0%
1	Sand	3.8%	0.2%	100.0%	100.0%
1	Sand and grog	7.7%	0.3%	0.0%	0.0%
	N	26	1571	1	3
Phase	**Inclusion**	**No%**	**Wt%**	**MV%**	**RE%**
2	Grog	28.6%	18.0%		
2	Sand	23.8%	37.3%		
2	Sand and grog	47.6%	44.7%		
	N	21	217	0	0
Phase	**Inclusion**	**No%**	**Wt%**	**MV%**	**RE%**
3	Calcareous	0.5%	0.3%	0.0%	0.0%
3	Grog	54.5%	70.3%	54.5%	46.0%
3	Sand	33.6%	22.9%	45.5%	54.0%
3	Sand and grog	11.4%	6.5%	0.0%	0.0%
	N	211	2349	11	87

There was a single sherd of Milton Keynes pink grog tempered ware (G11) amounting to 0.7% of the assemblage and dating from the late 3rd to 4th century AD. It was found in context (**103**). There were also two examples of possible 'Savernake' fabric G25 from context (**129**) and (**219**).

Mortaria were very poorly represented, with none of 1st-century date and with a single body sherd of Mancetter-Hartshill M22 fabric from context (**211**) amounting to just 0.2%.

Oxidised wares comprised 7.4% of the assemblage. Most were Severn Valley wares, 4.2%. There were two second to mid 3rd-century tankard rims and a necked jar in this group. The only other oxidised ware of note is the small quantity of Tiddington

kiln manufactured in the mid 2nd century from Tiddington Kiln 2, 0.4%. At TR82 it comprises some 2.9% of the assemblage, the level here reflecting the low level of observed activities in the area of excavation for the mid 2nd century.

Reduced greywares are remarkably infrequent, amounting to only 11.2% of the assemblage. The commonest fabric was the handmade organically tempered storage jar fabric R31 at 3.3%. This has pre-Flavian origins and is found across the region as far as Ariconium in early assemblages, along with the Malvernian Palaeozoic Limestone tempered ware. However, R31 seems to continue in use into the 2nd century. The second commonest fabric was R01/R11 at 2.2%. This matches the range of Mancetter and North Warwickshire coarse sandy greywares and could be from those sources. The third commonest reduced fabric was the early greyware R32, with common fine vegetable temper voids, which probably dates from the Flavian period at least. Also of note is the single sherd of Nene Valley grey ware (R28) from (**149**), with a 2nd-century date. There is a single whiteware sherd of fabric W23 amounting to 0.3% of the assemblage.

Class S, Samian wares, 0.92% by G Monteil

Five sherds of plain samian ware were recovered. Each sherd was examined, after breaking, under a x 20 binocular microscope in order to identify the fabric. Since the average size and weight of the fragments are quite small, the dating has to remain broad.

Three fabrics are represented in this small group. Two fragments of South Gaulish samian ware were identified, one of them from a dish form Dragendorff 18. They need not be early and are most likely Flavian in date. Two sherds are from the Central Gaulish industry of Lezoux (AD 120-200). The last sherd is probably from one of the Eastern Gaulish industries; it is unfortunately too abraded and small to permit further comment.

Table 8: The incidence of samian ware

Context	Fabric	Form	Number of Sherds	Weight (g)	Base EVEs	Diam (mm)
146	South Gaulish samian	DR18	1	6		
211	East Gaulish samian		1	1.5		
211	Central Gaulish samian		1	1.5		
233	Central Gaulish samian	Dish	1	10		
603	South Gaulish samian	Dish	1	14	0.15	110

Functional analysis

The breakdown of the whole Roman assemblage by function is given in Table 9. As would be expected the majority of the vessels are jars. This result is very close to the 75.1% from TR82. Storage jars have been described as not common at Tiddington, but Booth (1996) noted that their presence at 2.8% for TR82 was twice that at TD81. Their high presence here, as well as the presence of the buried almost complete storage jars, would suggest that this area had an emphasis on storage in the early-mid 1st century AD. This is supported by the high concentration of R31 on this site, already noted by Booth as used almost exclusively for storage jars, and present in TR82 but virtually absent from TD81.

Table 9: Functional composition of the Roman pottery

	Jars	Storage Jars	Beakers	Tankards	Bowls	Number
Minimum Vessel	69.44%	8.33%	11.11%	5.56%	5.56%	30
Rim Percentage	70.9%	11.4%	8.9%	3.4%	5.5%	237%

Beakers are important in the assemblage, much more important than at TR82 where they were only present at 2.1%. Tankards seem closer to the levels seen in TD81 and about two to three times the value at TR82. Bowls are twice as common as TR82, but about a quarter as common as at TD81. The jar to bowl ratio places the assemblage at the deeply rural end of the basic rural site range (Evans 2001), as does the lack of amphora and finewares from the site.

Taphonomy

The distribution of collected pottery by feature type is given in Table 10. Two additional measures are presented: mean percentage of rim (M%R) and mean sherd weight (MSW). This shows that the most important source of pottery for this site is from pits and ditches, but with a significant proportion coming from graves. The largest fragments are from pits, which also had the second highest M%R. The high level of this value for the graves is probably a distortion due to the low numbers of rims from graves.

Table 10: Proportions of pottery from different feature types

Context type	No	Weight	MV	RE	M%R	MSW
Layer	5.51%	3.60%	8.57%	5.09%	4.67	10.83
Pit	36.76%	52.76%	31.43%	38.18%	9.55	23.82
Gully	0.92%	0.25%	2.86%	2.55%	7.00	4.60
Ditch	45.77%	36.73%	51.43%	46.91%	7.17	13.32
Grave	11.03%	6.66%	5.71%	7.27%	10.00	10.02
N	**544**	**9030**	**35**	**275**	**Av 7.86**	**Av 16.60**

Table 11: Proportions of pottery from different feature types by phase

Phase	Context	No	Wt	MV	RE	MSW	M%R	*Nno*	*Nwt*	*Nmv*	*Nre*	*Nbe*
1	Pit	100.00	100.00	100.00	100.00	35.54	11.00	107	3803	2	22	135
2	Layer	44.00	59.94			17.27	0.00	25	317	0	0	27
2	Ditch	56.00	40.06			9.07	0.00	25	317	0	0	27
3	Pit	35.24	31.66	47.37	52.20	11.11	9.22	227	2808	19	159	311
3	Ditch	61.67	67.13	47.37	43.40	13.46	7.67	227	2808	19	159	311
3	Gully	2.20	0.82	5.26	4.40	4.60	7.00	227	2808	19	159	311
3	Grave	0.88	0.39	0.00	0.00	5.50	0.00	227	2808	19	159	311
4	Pit	11.59	8.49	0.00	0.00	7.13	0.00	69	671	2	20	35
4	Ditch	4.35	3.58	0.00	0.00	8.00	0.00	69	671	2	20	35
4	Grave	84.06	87.93	100.00	100.00	10.17	10.00	69	671	2	20	35
5	Ditch	100.00	100.00	100.00	100.00	13.92	6.67	92	1281	9	60	54
6	Layer	79.17	90.00	100.00	100.00	7.11	4.67	24	150	3	14	33
6	Pit	20.83	10.00	0.00	0.00	3.00	0.00	24	150	3	14	33

The breakdown of the feature presence by phase is shown in Table 11. The presence of pottery only in pits, with high MSW and M%R is a reflection of the storage vessels from this phase. What material there is in phase 2 would seem to be stray refuse finding its way mainly to ditches. Phase 3 sees the insertion of the graves. The MSW is similar to ditches and pits, a reflection of the major residual component in the assemblage from this phase. The much lower MSW in pits in this phase compared to that in phase 1 is a product of the different functions for the pit cuts in these two phases. The Saxon phase 6 is only suggested by material deposited in ditch fills.

Complete vessels and profiles

There were two almost complete storage jars from the site. They are listed in Table 12. Normally the survival of complete vessels would suggest ritual activity. However, both vessels here appear to be storage jars which were partially buried, facilitating their long term survival after disuse, although their upper bodies were probably damaged by subsequent ploughing.

Burnt sherds

There are 6.3% burnt sherds in the assemblage, or 4.6% for Roman pottery only.

Table 12: Largely complete vessels

Illustration	Fabric	Context Type	Context No	No of Sherds	Weight	MV	Rim %	Rim Dia	Base Dia	BE
11/1	C22	Pit	**114**	21	1525	1	19	39	21	35
cover	E11	Pit	**505**	many	1222	1	0	0	23.5	100

As might be expected (cf Evans 1993) the 'cooking pot' fabrics are generally those with the highest levels of burning and Saxon sherds are also more frequently burnt.

FORM CATALOGUE

No	Fabric	Description	Period	No	Weight	MV	Rim %
1	C22	A Malvern Palaeozoic lime-stone tempered storage jar.	C1-ec2	21	1525	1	19
2	E11	A grog tempered copy of a Malvern Palaeozoic lime tempered jar.	E-MC1	1	480	1	8
3	E12	A bowl with curving walls and simple slightly everted thickening rim.	M-LC1	1	41	1	9
4	E41	A jar with a slightly beaded rim.	E-MC1	1	22	1	7
5	E421	A jar with a stubby everted rim.	E-MC1	1	17	1	9
6	O73	A necked jar with a tapering, rising rim.		2	29	1	22
7	R31	A jar with an everted rounded undercut wedge rim	LC1-C3	1	54	1	8

Anglo-Saxon pottery

The Anglo-Saxon pottery was all from secondary fills (or a re-cut) of ditch **205**. There were five handmade jars, in three forms.

FORM CATALOGUE

No	Fabric	Description	Period	No	Weight	MV	Rim %
8	AS1	A handmade barrel jar with inturning simple rim.	C5-C7	1	13	1	5
9	AS1	A handmade jar with a vertical rim.	C5-C7	2	19	1	8
Not Illustrated	AS1	A handmade jar with a slightly thickening everted rim.	C5-C7	1	1	1	4
10	AS1	A handmade necked jar with an everted undulating rim.	C5-C7	1	26	1	15
11	AS1	A handmade necked jar with an everted undulating rim.	C5-C7	1	33	1	6

Tile and Fired Clay

There were 4 fragments of CBM in the assemblage, in fabric T11, which is also noted at Salford Priors (Evans 2000, 153). This small quantity should be seen as the normal background scatter of reused material which can be found in locations a long way from any structures.

There was also a sizable quantity (23 fragments) of fired clay/ daub which may relate to late Iron Age structures, and included a planking impression of a piece from context (**140**).

Discussion

This is a relatively small assemblage mainly made up of 1st-century 'Belgic' type wares, with some later 2nd-century activity, a very small amount of late Roman material, and some Anglo-Saxon material from a boundary ditch. The assemblage fits well with previous results from Tiddington, especially the nearby Reading Trust (TR82). Whilst there is apparently some scatter of material from the kilns at TR82, it seems to be less common than at TR82. There is some evidence of a specialised area for storage in the 1st century. The evidence could suggest a layout of storage jars, half buried in pits, with G class storage jars dominating TD81, E class and R32 storage jars important in TR82 and E and C class and R31 storage jars continuing into the area currently investigated.

The next stage of activity suggested is in the later 2nd to 3rd centuries, perhaps when the area becomes used as a cemetery for the settlement.

7 Querns by Nicholas Palmer (Geological identifications by Dr Jon Radley)

The site produced three quern fragments all from Area 1, Phase 3 and 4 contexts: no 1 from **129**, the fill of Grave **127**; no 2 from **139**, the fill of Grave **138**; and no 3 from **146**, the fill of ditch **145**.

No 1 (Fig 12) represents the only known example from Tiddington of a quern in Hertfordshire Puddingstone. This is a rock type commonly used for querns in Hertfordshire and neighbouring counties (Eg Verulamium, Frere 1972, 158, fig 59 nos 251-2; Gadebridge Park, Neal 1974, 193, fig 84 nos 697-8; and Gorhambury, Neal, Wardle & Hunn 1990, 167, fig 147 no 1057-8), but Warwickshire lies beyond their normal distribution. Its 'beehive' form suggests a 1st-century AD date (cf Neal, Wardle & Hunn 1990, 167, fig 147 no 1057 from Gorhambury) so it is probably residual in its context.

No 3 is a small fragment of Millstone Grit, probably from Derbyshire, while no 2 is of uncertain provenance but possibly also Millstone Grit. Millstone Grit is the second commonest source of querns at Tiddington (*c* 35% of about 240 recorded) after Old Red Sandstone from the Forest of Dean area (*c* 51%).

CATALOGUE

1. Upper stone fragment, Hertfordshire puddingstone, 'beehive' quern with curved sides and almost vertical-sided hopper. Possibly 1st-century AD (cf Neal, Wardle & Hunn 1990, 167, fig 147 no 1057 from Gorhambury). Top diam *c*.110mm, Ht over 104mm. (**129**, SF 5)

2. Lower stone fragment, medium-coarse grained sandstone, provenance uncertain, but possibly Millstone Grit, angle of grinding surface uncertain, outward sloping side and roughish bottom. Max Th 53mm. (**139**, SF 15)

3. Small fragment (4 joining fragments), Millstone Grit, with flat grinding surface. Th over 32mm. (**146**, SF 46)

8 Metalwork by Nicholas Palmer

Metalwork from the excavations included an iron writing stylus, a figure-8 chain link/loop, 37 timber nails, *c* 79 hobnails from iron-shod footwear, and a small unidentifiable fragment of copper alloy (Phase 3, **134**, SF 14). The material was examined with the aid of radiographs.

Ironwork

While most of the ironwork was from graves, the writing stylus came from the fill of Anglo-Saxon ditch **205** where it was probably residual. The stylus was plain, round-sectioned with a shouldered, wedge-shaped eraser, and a slight thickening before point, Manning (1985, 85) Type 1. L. 125mm, diam 5.5mm (211, SF 1). An example of the plainest type of stylus, it can be added to the comparatively large total of 24 (including six of Type 1) and seven probable fragments known from elsewhere in the settlement (Mould forthcoming nos 69-99). Unfortunately most come from undated contexts but there are examples of Type 1 from early 2nd- and late 4th-century contexts. This number suggests a degree of literacy in the Romano-British population even in a minor settlement.

The other non-grave ironwork consisted of five timber nails (from Phase 4, **603**, SF 51 x2; Phase 3, **131**, SF 45; Phase 3, **134**, SF 13; and Phase 3, **146**, SF 28). Like all the classifiable nails from the site these were of the commonest Romano-British type, Manning (1985, 135) Type Ib with flat, sub-rectangular or round heads.

Four of the six definite graves found on the site produced ironwork (**104** and **110** did not, but these were not fully excavated).

GRAVE 124

The fill of grave **124**, of a young adult of uncertain gender, contained seven coffin nails (**126**, SF 3, SF 6, SF 7, SF 8, SF 9, SF 11, SF 16) in two groups of three at the foot end and four at the head end. There were three Type Ib and four headless shanks; the three complete examples ranging from 45 to 66mm long (av 55mm). There were also 34 dome-shaped hobnails (**126**, SF 10) found in two clusters by the left and right

feet; judging by their proximity to the feet these were probably in the coffin but this is not certain.

GRAVE 127

The fill of Grave **127**, of a decapitated burial of young to middle-aged female, contained ten coffin nails (**129**, SF 4, SF 19, SF 21, SF 22, SF 23, SF 24, SF 25, SF 43, SF 44, SF 48), two at the foot end, two in the centre and a row of five along the head end (one was unlocated). They comprised seven Type Ib, one uncertain and two shanks. Four were bent, and the six complete ones ranged from 30-83mm long (av 56mm).

Unlocated in the grave was a figure-8 link with loop probably, from the end of a chain, with flattish, rectangular section. 12mm x 6mm, L. 71mm. There were mineralised wood impressions on either side (**129**, SF 47). Visible wear on the loop suggests that the link is probably from a chain rather than a rope, strap or belt. The wood impressions on either side make no functional sense and are probably post-depositional.

GRAVE 138

The fill of grave **138**, with a decapitated burial of an adolescent of uncertain gender, contained a coffin with fifteen coffin nails (**139**, SF 26, SF 29, SF 30, SF 31, SF 32, SF 33, SF 34, SF 35, SF 36, SF 37, SF 38, SF 39, SF 40 x 2, SF 42), noticeably larger and better preserved than those in the other graves. They comprised two groups of seven, around the head end and around the foot end, with a single one in the centre. Fourteen were of Type Ib, one was a shank; two were bent. The thirteen complete ones ranged from 54-103mm in length (av 81mm).

There was also a group of *c*.16 dome-headed hobnails (**139**, SF 41) within the coffin in the area of the right foot.

GRAVE 502

Grave **502**, of an older adult male, contained no coffin nails, but there were two contiguous groups of dome-headed hobnails over the feet, *c* 12 over the right (**503**, SF 49) and *c* 17 over the left (**503**, SF 50).

The mixture of coffined and uncoffined graves in this group is similar to that of the two other nearby clusters of late Roman burials at Tiddington: of the group of sixteen found to the south-west in 1982 and 1988 eight had coffins suggested by nails; and of the group of ten (including a decapitation), recorded to the south in 1925, four had groups of coffin nails. This also accords with general late Roman practice: eg in the late Roman cemetery at Lankhills, Winchester 338 out of 408 intact or partially excavated graves (Clarke 1979, 332-6) contained coffin nails.

Similarly the presence of hobnailed footwear in three of the graves is also common in this period. Three out of fourteen graves in the 1982/1988 Tiddington cluster to the south-west also contained hobnails, although none were recorded in the 1925 group. At Lankhills hobnails were found in 144 out of 375 intact graves (Clarke 1979, 153-5).

The presence of coffins in the decapitation graves **127** and **138** suggests that some care was taken with these burials and argues against them being the graves of outcasts or persons of no consequence. At the late Roman cemetery at Lankhills, Winchester two out of seven decapitations were also coffined (Clarke 1979, 141-2, 192-3). The presence of hobnailed footwear in grave **138** also argues against the

theory that the rite was designed to lay the spirit and prevent it wandering. Again at Lankhills two of the seven decapitation graves also contained hobnails (*Ibid*).

9 Other Finds

Flint

A total of four humanly worked flints were recovered from the excavations. A single diagnostic piece, a crested blade from Phase 3 gully **226** is probably Neolithic. The remainder were two flakes from Phase 3 ditch fill **146** and an unstratified retouched chunk from All four were in local river gravel flint. The occurrence of such pieces is entirely unsurprising on a gravel terrace.

Slag

Two small lumps of fuel-ash slag were recovered from Phase 4 grave fill **126**. Little can be said about these finds other than they were derived from the base of a fire rather than any metalworking process.

10 Osteological Analysis by Malin Holst

Introduction

The skeletal material from four graves was sent to the writer for analysis. The aim of the analysis was to determine the age, sex, and stature of the skeletons, as well as to record and diagnose any skeletal manifestations of disease and trauma.

Table 13: Summary of the skeletal remains examined

Skeleton No	*Position*	*Orientation*	*Anomalies*	*Grave Goods*
125	Supine extended	North to south	-	7 coffin nails and 34 hob nails
128	Supine extended	North to south	Head on lower legs	10 coffin nails and iron figure-8 loop
141	Supine extended	North to south	Head on lower legs	15 coffin nails, 16 hob nails, quern fragment
507	Supine extended	North to south	Cervical vertebrae in chest area	29 hob nails

In addition, human bone fragments were recovered by Catherine Coutts residually from Phase 6 Anglo-Saxon contexts, including:

- A tooth (upper incisor, worn but in good condition) from ditch fill **212**
- Two adjoining shaft fragments from the distal part of an adult sized tibia (no epiphyses present) from ditch fill **213**

Osteology

Osteological analysis is concerned with the determination of the identification of a skeleton, by estimating its age, sex and stature. Robusticity and non-metric traits can provide further information on the appearance and familial affinities of the individual studied. This information is essential in order to determine the

prevalence of disease types and age-related changes. It is crucial for identifying gender dimorphism in occupation, lifestyle and diet, as well as the role of different age groups in society.

PRESERVATION

Skeletal preservation depends upon a number of factors, including the age and sex of the individual as well as the size, shape and robusticity of the bone. Burial environment, post-depositional disturbance and treatment following excavation can also have a considerable impact on bone condition. Preservation of human skeletal remains is assessed subjectively, depending upon the severity of bone surface erosion and post-mortem breaks, but disregarding completeness.

Preservation was assessed using a grading system of five categories: very poor, poor, moderate, good and excellent. Excellent preservation implied no bone surface erosion and very few or no breaks, whereas very poor preservation indicated complete or almost complete loss of the bone surface due to erosion and severe fragmentation.

The preservation of the skeletons ranged from moderate to very poor, with considerable erosion on some parts. The bones were also fragmentary, especially in the case of Skeleton **125** (Table 14), making identification of the bone elements difficult.

Table 14: Summary of osteological and palaeopathological results

Skeleton No	*Preservation*	*Completeness*	*Age*	*Sex*	*Stature*	*Pathology*
125	Very poor	35%	17-25	-	-	-
128	Moderate	65%	26-35	Female	-	Dejenerative Joint Disease (DJD) in hips, enthesopathy
141	Poor	30%	13-18	-	-	Bone excavation
507	Moderate	90%	46+	Male	174.5cm	Fracture of hand phalanx and of right clavicle, osteoarthritis in left hip and spine, DJD in right hip, both hands, left wrist, clavicles, right scapula, right ulna and spine, os acromiale in right scapula, cribra orbitalia, bone excavations, enthesopathies, arachnoid granulations, periostitis on left tibia, Schmorl's nodes

Completeness of the skeletons ranged from 30% to 90%, with Skeleton **507** being the most complete individual (see Table 14). The incomplete nature of the other three skeletons was caused in part by the poor soil conditions, which had resulted in the loss of most of the spongy bones, such as the joints and the vertebrae.

ASSESSMENT OF AGE

Age was determined using standard ageing techniques, as specified in Scheuer and Black (2000a; 2000b) and Cox (2000a). Age estimation relies on the presence of the pelvis and uses different stages of bone development and degeneration in order to

calculate the age of an individual. Age is split into a number of categories, from foetus (up to 40 weeks in *utero*), neonate (around the time of birth), infant (newborn to one year), juvenile (1-12 years), adolescent (13-17 years), young adult (18-25 years), young middle adult (26-35 years), old middle adult (36-45 years, mature adult (46+) to adult (an individual whose age could not be determined more accurately as over the age of seventeen). The categories defined here should perhaps be taken as a general guide to the relative physiological age of the adult, rather than being an accurate portrayal of the real chronological age; no doubt many of those aged '46+' would in actuality have been in their sixties, seventies or eighties when they died.

It was not possible to determine age accurately in Skeleton **141**, because of the fragmentary nature of the bones and the lack of ageing characteristics. However, it was possible to suggest that this individual was an adolescent, aged between thirteen and eighteen years from the development of the third molar (wisdom tooth).

The age of Skeletons **125** and **128** was based solely on dental wear. Teeth are not as accurate age indicators as the pelvis, but in this case no other ageing characteristics survived. Skeleton **125** was a young adult, aged between 17 and 25 years, while Skeleton **128** was a young middle adult, between 26 and 35 years old.

Skeleton **507** was more complete and thus, age determination was based on a variety of criteria, which suggested that this individual was older than 46 years.

SEX DETERMINATION

Sex determination was carried out using standard osteological techniques, such as those described by Mays & Cox (2000). Assessment of sex in both males and females relies on the preservation of the skull and the pelvis and can only be carried out once sexual characteristics have developed, during late puberty and early adulthood.

It is not possible to determine sex Skeletons **141** and **125**, as the former individual was too young for sex characteristics to have developed and in the latter individual, none of the criteria used for sex determination were present. The skull of Skeleton **128** indicated that this individual was a female, while sex estimation was based both on the pelvis and the skull in the case of Skeleton **507**, which was a male.

METRIC ANALYSIS

Stature depends on two main factors, heredity and environment; it can also fluctuate between chronological periods. Stature can only be established in skeletons if at least one complete and fully fused long bone is present, but preferably using the combined femur and tibia. The bone is measured on an osteometric board, and stature is then calculated using a regression formula developed upon individuals of known stature (Trotter 1970). Leg measurements were obtained from the femora and tibiae and used to calculate robusticity (*meric* and *cnemic* indices).

Stature could only be calculated for Skeleton **507** (see Table 2) and was 174.5cm. This was much taller than the stature calculated for Roman males (169.0cm) by Caffell (1997), but the individual height fitted within the Roman male stature range, which runs from 155.7cm to 181.3.cm.

The *meric* index is a method of calculating the shape and robusticity of the femoral shaft. It was not possible to calculate the indices for Skeleton **125**, as the bones were too eroded. The femora fell into the *platymeric* (broad and flat) and the *eurymeric* (more rounded) range. The *cnemic* index of the tibiae was calculated in order to

establish the degree of tibial shaft flatness. The tibiae were *eurycnemic* (not flattened) or *mesocnemic* (flatter).

The surviving skulls were too fragmented for measurements to be taken.

NON-METRIC TRAITS

Non-metric traits are additional sutures, facets, bony processes, canals and foramina, which occur in a minority of skeletons and are believed to suggest hereditary affiliation between skeletons (Saunders 1989). The origins of non-metric traits have been extensively discussed in the osteological literature and it is now thought that while most non-metric traits have genetic origins, some can be produced by factors such as mechanical stress (Kennedy 1989) or environment (Trinkhaus 1978).

A total of thirty cranial (skull) and thirty post-cranial (bones of the body and limbs) non-metric traits were selected from the osteological literature (Buikstra & Ubelaker 1994, Finnegan 1978, Berry & Berry 1967) and recorded. The disarticulated bones were also scanned for non-metric traits.

Few non-metric traits were observed on the skull. These were anomalies that would not have affected the individual. Cranial traits are more likely to be genetic in origin than those noted on the remaining part of the skeleton, which can often be affected by mechanical stress.

Cranial non-metric traits observed included *mastoid foramen extrasutural* in Skeleton **128**, *double anterior condylar canal* (a small hole at the base of the skull) in Skeletons **141** and **507** and *ossicle at asterion* (an additional bone in the suture at the side of the head), *mastoid foramen extrasutural* (a hole behind the ear) in Skeletons **128** and **507** and foramen of Huschke (a hole in the joint between the jaw and skull) in Skeleton **507**. These minor anomalies were probably genetic in origin.

Post-cranial traits were only observed in Skeletons **151** and **507** and included *hypotrochanteric fossa* (a groove at the attachment of the *gluteus maximus* muscle at the back of the thigh bone). It is likely that this trait was caused by mechanic stress rather than genetics. Similarly, the lateral tibial squatting facet observed in Skeleton **125** is thought to be related to repeated squatting. Other post-cranial traits observed were only seen in Skeleton **507** and are listed in Appendix E.

CONCLUSION

The skeletal remains were largely poorly preserved and incomplete. Loss of spongy bones meant that the joints and vertebrae were only preserved in a small number of cases. Osteological investigation has shown that the site contained a wide age range, extending from adolescence to mature adulthood. Sex could only be established in two individuals, including a male and a female. The living height of the male mature adult was high for the Roman period, at 174.5cm.

Pathology

Pathological conditions (disease) can manifest themselves on the skeleton, especially when these are chronic conditions or the result of trauma to the bone. The bone elements to which muscles attach can also provide information on muscle trauma and excessive use of muscles. All bones were examined macroscopically for evidence of pathological changes.

Little pathology was observed in the skeletons, with the exception of mature male adult Skeleton **507**.

METABOLIC CONDITIONS

Skeleton **507** suffered from fine pitting in the right eye orbit, termed *cribra orbitalia* (see Table 2). The lesions were moderate. The condition tends to develop during childhood and often recedes during adolescence or early adulthood. It is thought to be related to iron deficiency anaemia, which was one of the most common metabolic conditions in the past. Symptoms of iron deficiency anaemia include gastro-intestinal disturbance, shortness of breath, fatigue, pallor and palpitations (Roberts & Manchester 1995, 167).

The causes of iron deficiency anaemia are complex, as factors affecting the development of anaemia include environment, hygiene, and diet (Stuart-Macadam 1992, 160). All of these factors can affect the pathogen load (bacteria) in a population, which often contributes to a high prevalence of iron deficiency (*Ibid*). In single individuals, other causes of iron deficiency include severe blood loss following injury and destruction of red blood cells (Kent 1992, 2), cancer and parasitic gut infection (Roberts & Manchester 1995, 166).

INFECTION

Evidence for infection was observed in Skeleton **507**, which was characterised by superficial inflammatory lesions on the surfaces of the right tibia. Tibiae are the most likely bones to show evidence for inflammation because they are more vulnerable to knocks than other parts of the body. The type of skeletal lesion (lamellar bone) on the skeletons' shin bones suggested that the inflammation was receding.

Inflammatory lesions on human bones can be indicative of infectious diseases, such as leprosy and syphilis, and of non-specific localised infection, such as varicose veins, leg ulcers or trauma to the shins. However, the lesions only form in the bone if the inflammation is chronic and long-standing (Roberts & Manchester 1995, 125). Evidence for infection was common before the introduction of antibiotics and is therefore frequently observed in populations derived from archaeological contexts.

TRAUMA

Fractures

The mature adult male, Skeleton **507**, had suffered from a clavicle fracture (Plate 9); these fractures are amongst the most common fractures in modern patients (Dandy & Edwards 1998, 181). Many are caused by landing on an outstretched hand or by direct impact against a bone, as is caused by being thrown off a horse and landing on the ground. The oblique fracture had occurred at the central shaft of the right clavicle. It was well-healed, and as clavicles take around six weeks to heal (*Ibid*, 182), this injury was at least this old. However, mal-alignment at the fracture site caused moderate overlap of the fractured bone ends, which resulted in shortening of the clavicle by 21mm compared with the left bone. The clavicle is also misshapen, exhibiting a twist and kink at its centre.

Fractured clavicles are commonly observed in populations from archaeological backgrounds, including those from the Roman period, such as Skeleton 2005 from Brough, East Yorkshire (Holst 2007).

A central intermediate hand phalanx showed evidence for a possible fracture, which was well-healed. Twisting, or angular forces are often the cause of phalanx fractures and are usually treated by strapping two fingers to one another (Dandy & Edwards 1995, 227).

Activity-related trauma

Activity-related trauma can be observed occasionally in skeletons from archaeological contexts. The right shoulder blade of Skeleton **507** exhibited *os acromiale*, while the left acromion was fused and therefore normal. *Os acromiale* is characterised by non-fusion of the acromion process of the scapula to the spine of the scapula. This developmental anomaly is thought to be caused by severe stress to the rotator cuff muscles during growth, preventing natural fusion of the bones. In modern populations, *os acromiale* was noted in two boxers, where it was attributed to their intensive training during adolescence (Hershkovitz *et al* 1996, 170). Stirland (1984) and Knüsel (2000) have argued that this condition might be linked to archery in skeletal populations from the *Mary Rose* and from Towton (1461).

Bone is a dynamic material which can change its morphology, size and robustness in response to prolonged activity (Knüsel 2000, 383). As a result, greater activity and mechanical stress causes the bone to become shapelier, with ridges and depressions caused by muscle action. Constant stress can cause *enthesopathies* (bony processes) or cortical bone defects at the site of muscle or ligament attachments when they lose the capacity to properly absorb the stress imposed (Hawkey & Merbs 1995, 329). *Enthesopathies* are frequently caused by constant microtrauma, but may also be the result of inflammatory disease, endocrine or degenerative diseases as well as severe sudden trauma (Resnick & Niwayama 1983).

Muscle trauma was noted in the adolescent, Skeleton **128** in the form of a mild bone excavation at the attachment site of *pectoralis major* on the right humerus, one of the rotator cuff muscles that is responsible for movement of the arm at the shoulder (Stone & Stone 1990). Skeleton **507**, the mature adult male, had considerable bone excavations for the same muscle at the right humerus as well. This individual also exhibited bone excavations at the attachment site of *supraspinatus* on both humeri, which another rotator cuff muscle (*Ibid*).

Skeleton **128**, the young middle adult female, exhibited a slight *enthesopathy* for *gluteus maximus* (involved in abduction and rotation of the thigh and extension of the thigh and trunk) on the right femur (Stone & Stone 1990). Skeleton **507** had an *enthesopathy* for *rectus femoris* (extends the leg at the knee joint and flexes the thigh at the hip joint), which was located on the left patella (*Ibid*).

DEGENERATIVE JOINT DISEASE

The term joint disease encompasses a large number of conditions with different causes, which all affect the articular joints of the skeleton. Factors influencing joint disease include physical activity, occupation, workload and advancing age, which manifest as degenerative joint disease and osteoarthritis. Alternatively, joint changes may have inflammatory causes in the *spondyloarthropathies*, such as sceptic or rheumatoid arthritis. Different joint diseases affect the articular joints in a different way, and it is the type of lesion, together with the distribution of skeletal manifestations, which determines the diagnosis.

The most common type of joint disease observed tends to be degenerative joint disease (DJD). DJD is characterised by both bone formation (osteophytes) and bone

resorption (porosity) at and around the articular surfaces of the joints, which can cause great discomfort and disability (Rogers 2001).

Skeletons **128** and **507** showed evidence for DJD (see Table 2). Skeleton **128**, the young middle adult female, had mild degenerative joint disease in both hips in the form of central osteophyte formation. DJD at this age is relatively unusual, as it tends to be caused by age-related wear and tear. However, as her age was based on dental wear alone, which is a relatively unreliable age indicator, it is possible that she was slightly older than estimated.

As expected, Skeleton **507**, who was a mature adult male had much more severe and widely distributed DJD lesions. These were noted in the both hands, including the joints of the palm and fingers, the left wrist (scaphoid), the right scapula and both clavicles (the shoulders), the right proximal ulna (elbow) and both hips. The lesions were mild in all cases except the right hand, where they were moderate. Porosity and marginal osteophyte formation were the most common expressions of DJD in this skeleton. The former is evidence for joint degeneration, while the latter characterises an attempt by the joint to compensate for the bone deterioration.

The intervertebral discs are the 'shock absorbers' of the spine, but these can degenerate as a result of gradual desiccation, which then causes transmission of the stress from the vertebral discs to the articular facets and ligaments (Hirsh 1983, 123). Spinal osteophytes (outgrowths of bone) form in response to the constant stress that is placed on the spine as a result of human posture (Roberts & Manchester 1995, 106) to compensate. Increasing stress or activity can therefore lead to increased size and prevalence of osteophytes (*Ibid*).

Skeleton **507** had DJD lesions in all of the vertebrae (Plate 10). These were characterised by mild porosity in the majority of cases, with occasional mild osteophyte formation, which affected only the vertebral bodies, with the exception of the facets of the central cervical (neck) vertebrae.

Osteoarthritis

Osteoarthritis is a degenerative joint disease characterised by the deterioration of the joint cartilage, leading to exposure of the underlying bony joint surface. The resulting bone to bone contact can produce polishing of the bone termed 'eburnation', which is the most apparent expression of osteoarthritis. Osteoarthritis can be the result of mechanical stress and other factors, including lifestyle, food acquisition and preparation, social status, sex and general health (Larsen 1997, 179).

Skeleton **507** showed evidence for osteoarthritis in the form of eburnation in the articular facets of the third and fourth cervical (neck) vertebrae. It is possible that age or trauma had contributed to the onset of this condition. Modern studies have found no correlation between the expression of osteoarthritis and the severity of pain (Cockburn *et al* 1979). It is therefore not clear, whether this individual would have suffered discomfort as a result of the lesion in his neck. Further evidence for osteoarthritis was noted in the left hip of this mature man (Plate 11). It is likely that these lesions would have caused discomfort, especially the changes in the femoral head, which had become 'mushroom'-shaped as a result of the extensive marginal osteophyte formation. Today, osteoarthritis of the hip is often treated by hip replacements (Dandy & Edwards 1995, 381).

Schmorl's Nodes

A different condition which affects the spine is Schmorl's nodes. Schmorl's nodes are

indentations in the upper and lower surfaces of the vertebral bodies, most commonly in the lower thoracic vertebrae (Hilton *et al* 1976). Schmorl's nodes can result from damage to the intervertebral discs, which then impinge onto the vertebral body surface (Rogers 2001), and may cause necrosis (death) of the surrounding tissue. Rupture of the discs only occurs if sufficient axial compressive forces are causing pressure on the central part of the discs; frequent lifting or carrying of heavy loads can cause this.

Schmorl's nodes were observed in the three lower thoracic vertebrae of Skeleton **507**, which might be attributed to the physical stresses this individual underwent in his daily activities.

MISCELLANEOUS PATHOLOGY

Arachnoid granulations are small, well-defined depressions on the inner (endocranial surface) of the skull. They tend to cluster at the frontal and parietal, especially at the border between the three skull parts (Mann & Murphy 1990, 26). They are common in all populations and have a tendency to increase in number and depth with advancing age; older females tend to be most affected, especially following menopause. The cause for the formation of arachnoid granulations is not yet understood. Skeleton **507**, the mature male adult, had evidence for arachnoid granulations on the endocranial surface of the frontal bone and the right parietal.
10.48 There were small hollows at the distal joint margins of the right first metacarpal and the proximal hand phalanx of Skeleton **507**. It is not clear, whether the lesions were the results of a type of joint disease or were due to other causes.

CONCLUSION

Little pathology could be observed in this cemetery assemblage, possibly because the bones were so fragmented and eroded. The adolescent exhibited mild strain to the rotator cuff muscles of the right arm, while the young adult female had slight degenerative joint disease in the hips, which was relatively unusual for her age. However, the mature male, Skeleton **507**, was riddled with pathology. This individual had suffered from iron deficiency anaemia during childhood. In adulthood, he had broken his right clavicle and a finger; the latter probably through a twisting injury; both were very well healed. He had degenerative joint disease in the hips, spine, left wrist, both hands both shoulders and the right elbow, which was probably caused by age-related to wear and tear. He also suffered from osteoarthritis in the left hip to the degree that would prompt a hip replacement today. Osteoarthritis was also observed in the vertebrae of his neck. Osteoarthritis can be age-related or secondary to trauma. Evidence for strenuous activities was noted in three vertebrae, which suggested that he had carried heavy loads, while trauma to muscle attachments suggested that he had placed strain on the rotator cuff muscles.

Dental health

Analysis of the teeth from archaeological populations provides vital clues about health, diet and oral hygiene, as well as information about environmental and congenital conditions.

Despite the poor preservation, teeth were recovered from all four burials. A total of 67 teeth were found and there were 92 tooth positions (Table 15). In total, twelve teeth had been lost post-mortem.

Table 15: Summary of dental pathology

Skeleton No	*Number of teeth present*	*Calculus*	*Caries*	*Abscesses*	*DEH*	*Infractions*	*Wear*	*Periodontitis*
125	6 teeth	3	1	-	-	-	Moderate	-
128	13 teeth (8 lost post-mortem)	8	2	-	2	-	Moderate	Considerable
141	32 teeth	4	-	-	-	-	None	-
507	16 teeth (4 lost post-mortem, 12 lost ante-mortem)	4	2	1	4	1	Severe	Considerable

A total of thirteen of the teeth had been lost ante-mortem, most of which belonged to Skeleton **507**. The causes of ante-mortem tooth loss (the loss of teeth during life) include periodontal disease. Once the tooth has been lost, the empty socket is filled in with bone. Skeleton **128**, who also had severe periodontitis had lost one tooth ante-mortem. Overall 14.1% of the teeth were lost ante-mortem (see Table 3), which was identical to the Roman average of 14.1% reported by Roberts and Cox (2003).

Dental wear tends to be more common and severe in archaeological populations than in modern teeth. Severity of the dental wear was assessed using a chart developed by Smith (1984): each tooth was scored using a grading system ranging from 1 (no wear) to 8 (severe attrition of the whole tooth crown). The dental wear was directly related to the age of the individual. The wear was mild in the adolescent (Skeleton **141**), moderate in the young adult (Skeleton **125**) and young middle adult (Skeleton **128**) and severe in the mature adult (Skeleton **507**).

Calculus is commonly observed in archaeological populations whose dental hygiene was not as rigorous as it is today: calculus mineralises and forms concretions on the tooth crowns, along the line of the gums. Slight to moderate calculus was present on 21 teeth (18.2%; see Table 3). The prevalence rates of calculus seen at Tiddington Road were higher than those given for the Roman period in Britain with 43.4% of teeth affected (Roberts & Cox 2003).

Skeletons **125** and **128** had dental caries, affecting the posterior molars (see Table 3). Dental caries (tooth decay) forms when bacteria in the plaque metabolise sugars in the diet and produce acid, which then causes the loss of minerals from the teeth and eventually leads to the formation of a cavity (Zero 1999). Simple sugars can be found naturally in fruits, vegetables, dried fruits and honey, as well as processed, refined sugar; since the latter three contain the most sucrose they are most cariogenic. Complex sugars are usually less cariogenic and are found in carbohydrates, such as cereals. However, processing carbohydrates, including grinding grains into fine powders or cooking them, will usually increase their cariogenicity. The prevalence of caries at Tiddington Road was 7.5%, which was the same as the Roman average (Roberts & Cox 2003).

Skeleton **507** had a dental abscess, which was well-healed at the time of death (Plate 11). Dental abscesses occur when bacteria enter the pulp cavity of a tooth causing inflammation and a build-up of pus at the apex of the root. Eventually, a hole forms in the surrounding bone allowing the pus to drain out and relieve the pressure. They can form as a result of dental caries, heavy wear of the teeth, damage to the teeth, or periodontal disease (Roberts & Manchester 1995), and heavy tooth wear seems to be the likely cause here. The prevalence rate of abscesses at Tiddington Road (1.1%) was also lower than the Roman mean, which lies at 3.9% (Roberts & Cox 2003).

Dental enamel hypoplasia (DEH) was only observed in six teeth of Skeletons **128** and **507**. DEH is the manifestation of lines, grooves or pits on the crown surface of the teeth, which represent the cessation of crown formation. The defects are caused by periods of severe stress during the first to seventh year of childhood, including malnutrition or disease. A total of 8.9% of teeth were affected by DEH lesions at Tiddington Road; this figure was almost identical to the 9.1% of Roman teeth reported by Roberts and Cox (2003).

The dental evidence from Tiddington Road suggests that the population enjoyed relatively good dental health compared with the Roman average, with a low rate of dental abscesses and mineralised plaque. However, the rate of ante-mortem tooth loss and cavities was comparable to the Roman norm and so was the prevalence of dental enamel hypoplasia lines observed in the teeth.

Funerary Practice

The excavated skeletons lay in an orderly manner, in supine extended positions and uniform orientations, with the heads to the north and the feet to the south (see Table 13). One skeleton that was not lifted (grave **104**) was orientated with the head to the north-east and the feet to the south-west, suggesting that not all of the burials complied with this order.

The burial ritual at Tiddington Road corresponds with that frequently observed during the later Roman period. The majority of burials during this period tend to lie on their backs, with extended legs and the arms in a variety of relatively orderly positions (Clarke 1979, 352). The direction of orientation varies considerably between different cemeteries.

The skulls of Skeletons **128** (a young middle adult female) and **141** (a teenager), had been placed onto their shins, facing towards their chests. Unfortunately in neither case had the vertebrae survived and it was therefore not possible to determine whether the individuals had been decapitated before or after death, or whether their heads had been moved after decomposition.

Although the Roman period is regarded as a separate entity from the ritual practices of the Iron Age, continuation of certain rituals can be observed. Examples in mortuary practice include partial dismemberment of bodies after death, as well as the continued significance of the skull. Both of these trends are reflected in a burial ritual, which occurs in cemeteries throughout Roman Britain and consists of the removal or displacement of the skull. The skull is often placed between the legs or by the feet of the dead individual, but may be placed back in the correct anatomical position (Taylor 2003, 18).

Quensel-von-Kalben (2000, 218-219) carried out a study of ten British Roman cemeteries of different size and setting. Of these, three contained individuals that had been decapitated; the prevalence of decapitated individuals in these cemeteries varied from 1% to 7%. The decapitations occurred in all cases in urban cemeteries that dated to the late 3rd and 4th century AD (*Ibid*). Clarke (1979, 374), however, observed that decapitated skeletons could also be found in isolated graves and suggested that they were, in fact, more common in rural cemeteries.

Clarke (1979) examined the available data from Roman cemeteries at the time of his publication for evidence of decapitations. He found numerous examples, which were widely distributed throughout southern England, East Anglia, the Midlands and western England. Recent work at Driffield Terrace in York (Antoni pers comm) has shown that decapitation can also occur in the north-east of England. In fact, 75% of skeletons from this cemetery were decapitated (Mason pers comm).

The majority of decapitated individuals in Roman cemeteries were adults of both sexes and all ages, although a small number of decapitated children have also been found (Merrifield 1987, 72). A further example of a decapitated adolescent comes from Ashchurch, Gloucestershire (Holst 2004).

In some cases, cut marks are obvious on the vertebrae of the neck. Occasionally, these cut marks are noted on the front of the neck, suggesting that the head was removed once the person was dead (Taylor 2003, 19). Clarke (1979, 415) found that all skulls at Lankhills, Winchester, had been removed from the front, with a careful cut using a knife, severing the windpipe and jugular vein. It has been suggested that such a cut could only be carried out after death (Taylor 2003).

In other instances, no such evidence for beheading can be observed (Melikian 2004, pers comm; Barber & Bowsher 2000, 89) and it is presumed that the head was removed after the body was at least partly decomposed (Taylor 2003, 18). In some cases, the skull was removed while some of the vertebrae and the mandible were still attached (*Ibid*). In other cases, as at Watling Street, the skull of a male was removed after decomposition without the mandible and placed on his chest (Mackinder 2000, 15). It is now thought that graves were often kept open for some time after disposal of the dead person to allow mourners to be able to visit the corpse (Barber & Bowsher 2000, 310). It is possible that the skull was only removed after the body had been viewed and was therefore partly decomposed.

In common with many other Roman decapitation burials, the dismembered skulls at Tiddington Road were placed on the lower legs of the skeletons. Clarke (1979, 373-374) found that the majority of skulls were placed by or over the feet, or between the knees.

Interpretations for Roman decapitations have ranged from criminal execution to religious or superstitious motives. Execution of criminals through decapitation was a punishment in the Roman Empire, although it was apparently reserved for Roman citizens – the better rank of criminal (Taylor 2003, 19). At Lankhills, Winchester, a decapitated man with his skull placed on his knees had been buried above an empty coffin. This was interpreted as a substitute for a proper burial of the individual whose body could apparently not be recovered (Merrifield 1987, 67). It has also been suggested that individuals were decapitated, so that their recently deceased family members or leader could be provided with their dependents or relatives (Clarke 1979, 415). Other instances of decapitation have been interpreted as the dead person not being able to sever links with the world of the living (*Ibid*, 71) and this may clarify why the decapitation was sometimes carried out after decomposition. This might also be explained by the belief that the soul was thought to live in the head and the decapitation was a ritual separation of the body, which might have ensured that the individual could not return (*Ibid*, 74-76). The position of the head between the legs has been interpreted as a possible rebirth ritual, with the head 'being born' (Robinson pers comm).

The continuation of the importance of the skull in ritual practice from the Iron Age to the Roman period can be observed in the number of separate skulls observed in unusual contexts. This includes the placement of the skull of a six year old onto the knees of an articulated eleven year old juvenile at America Street, London (Melikian 2004, pers comm). A number of examples of skulls in Roman wells have been observed, including Queen Street and Cannon Street in London and Headington in Oxfordshire (Merrifield 1987, 45-46). An interesting amalgamation of these two rituals was noted at the Camomile Street bastion in London, where the head of the elaborate tombstone of a soldier was broken off and placed between the ankles (*Ibid*, 104-105).

Judging by the quantity of nails recovered from the graves, it is likely that the skeletons were interred in coffins. It appears that three of the four individuals wore hobnail shoes. In ten Roman cemeteries studied by Quensel-von-Kalben (2000, 218-219), eight contained individuals with hobnails. Of these, the prevalence of individuals with hobnails varied from 1% to 33%. The highest percentages were found in urban cemeteries that dated to the 4th century (*Ibid*).

It is thought that the dead were provided with or wore their shoes so that they were equipped for their journey into the underworld (Wardle 2000, 29). At Cirencester, a probable hobnail shoe makers was located at one of the cemeteries, suggesting that they might have been making the shoes especially for burial (Salway 1981, 705-706).

The presence of shoes with decapitated individuals means that the theory that shoes were provided for the walk to the other world does not correspond with the hypothesis that individuals were decapitated in order to stop the spirits from wandering after death (Clarke, 419).

Discussion

The osteological analysis of the skeletal remains has provided a glimpse into the lives of the people buried there. Four individuals were recovered from the cemetery, although unfortunately most were incomplete and the bones were moderately-to-severely eroded, which limited the amount of information possible to retrieve. The small group consisted of an adolescent, a young adult of undetermined sex, a young middle adult female and a mature adult male.

Like many other Roman cemeteries, the Tiddington Road graves were buried in an orderly fashion, adhering to the same orientation, with the head to the north and the feet to the south. However, one skeleton that was left *in situ* was found to have been interred north-east to south-west, suggesting that not all burials complied with the norm. All skeletons were buried in extended and supine positions and appeared to have been buried in coffins; this is typical of burial rituals that became more common throughout the 3rd century AD (Philpott 1991).

It appears that the graves respected the presence of other burials, which may imply that the location of the graves was marked in some way, or simply that the mounds of soil covering the burials were still visible when later graves were dug.

An adolescent and a young adult female had been buried in an unusual manner: their heads had been removed from the trunk and had been placed on their shins, facing their chests. Unfortunately, the loss of all their vertebrae meant that it was not possible to identify the manner of head removal. The reasons for decapitation are not clear, but it is known that this does occur in a small proportion of graves in many Roman cemeteries and is therefore not an uncommon practice.

Little pathology was observed in this population, perhaps as a result of the relatively poor preservation, particularly in the adult of undetermined sex (Skeleton 125). However, it was possible to determine that the adolescent (Skeleton 141) has suffered muscular trauma to the rotator cuff muscles of the right arm.

The young middle adult female (Skeleton **128**) had slight degenerative joint disease in her hips, which is unusual for someone of such a young age. This joint bears the weight of the body and its degeneration is often seen with age. However, as her age was based solely on dental wear, which is not a very reliable age indicator, it is possible that she was older than estimated.

Unlike the three other skeletons, the mature adult male (Skeleton **507**) was riddled with pathology. This individual, as well as the female, had suffered from malnutrition or disease during early childhood, which caused all their resources to concentrate on survival rather than growth, as observed from lines on the teeth. The male also suffered from iron deficiency anaemia during childhood, again implying poor childhood health.

Evidence for physical strain was noted in the form of muscular trauma, especially to the rotator cuff muscles, as well as non-fusion of the acromion process of the right shoulder blade, which is thought to be caused by severe stress to the rotator cuff muscles during growth. The man also had lesions in the lower spine indicating damage to the vertebral discs as a result of bending and lifting in adolescence. He had also sustained two fractures, which were well-healed at the time of death. One of these was a right clavicle fracture, which often occurs when falling on an outstretched hand. The other fracture was of a finger, frequently resulting from a twisting injury.

The individual also suffered from mild receding inflammation of the left tibia, which is commonly observed in archaeological populations. This may have been caused through infection, or low-grade trauma to the shins, or possibly varicose veins or leg ulcers.

In older age he developed degenerative joint disease, which affected his hips, shoulders, the right elbow, the left wrist and the hands. The spine was also heavily involved, with degeneration of both the bodies (primarily at the points of the spine where there is most stress) and the facets between the vertebrae in the neck. Osteoarthritis was noted in his neck vertebrae, as well as the left hip. The changes to the hip joint were so bad that today he would have undergone hip replacement. It is possible that the osteoarthritis could have been associated with injuries, particularly those that had altered the normal configuration of the joint or had changed the stresses imposed, but no evidence for such injuries was found and it is more likely that this was caused by age-related wear and tear.

A relatively low frequency of all dental diseases was observed, compared with the Roman average. Relatively good oral hygiene seems to have been common, which meant that mineralised plaque deposits were only observed on few teeth. This meant that the prevalence rate of dental abscesses was also lower than the Roman norm. Notably, periodontal disease was severe in two cases, which probably led to ante-mortem tooth loss, which corresponded with the Roman average, as did the quantity of cavities found.

11 Animal bone by Catherine Coutts

Some 182 fragments of animal bone (including joining fragments) were recovered weighing 1645g (Table 16) and of these just over half (131) could be identified to species with the majority being cattle (68%), and most of the rest sheep/goat (25%). A significant amount of the bone was broken, adjoining fragments and very few complete elements were recorded. The majority of the bones identified were either jaw and teeth, or fragments from the lower parts of legs. Most of the bones belonged to adult animals.

The majority of the bone comes from the Phase 6 ditch contexts. This is not surprising as these were by far the larger contexts and contained a significant proportion of the other finds. However, it is noteworthy that the aceramic primary fill **213=209** yielded only animal bone and a human tibia, whilst the overlying 'Saxon fill' **212=208** produced a human tooth. This would tend to suggest that both fills

included residual bone, although the possibility that the human remains post-dated the Phase 4 burials cannot be ruled out.

Table 16: Animal bone summary

Phase	***Context***	*Context type*	*No of fragments*	*Species*	*Element*
2	**215**	Gully fill	1	cattle	molar
2	**222**	Gully fill	4	unidentified	3 small fragments, 1 possible ulna from mid-sized mammal
2	**224**	Gully fill	10	6 sheep	teeth and mandible fragments
				2 cattle	adjoining metatarsal fragments
				1 cattle	humerus, distal epiphysis
				1 small mammal	long bone shaft (humerus?)
3	**122**	Pit fill	1	small mammal	humerus shaft, burnt
3	**146**	Ditch fill	1	cattle	maxilla
3	**149**	Ditch fill	4	1 cattle	tooth
				3 pig	mandible and 2 teeth
3	**152**	Ditch fill	4	3 cattle	metatarsal, adjoining fragments
				1 unidentified	fragment
3	**223**	Gully fill	3	1 pig	adult mandible
				1 ?cattle	long bone fragment
				1 unidentified	small fragment
3	**226**	Gully fill	3	small mammal	humerus? sheep/goat
4	**129**	Grave fill	3	unidentified	?long bone surface flakes
4	**139**	Grave fill	3	2 cattle	molar (from same tooth - maxilla)
				1 sheep	molar (from mandible)
6	**207**	Ditch fill	1	?cattle	?single metatarsal, very fragmented
6	**208**	Ditch fill	25	17 cattle	11 mandible fragments, 1 vertebra, 1 rib, 4 fragments of adjoining long bone
				8 unidentified	fragments
6	**209**	Ditch fill	2	unidentified	scapula
6	**211**	Ditch fill	21	2 cattle	teeth, 1 juvenile
				1 sheep	radius
				1 sheep	tibia
				1 cattle	rib
				1 cattle	metatarsal
				1 cattle	metacarpal
				2 ?cattle	tibia shaft frags
				6 cattle	fragmentary phalanges
				4 unidentified	(from 3 phalanges) mid size long bone shaft
				1 cattle	ulna
				1 sheep	tooth
6	**212**	Ditch fill	90	22 sheep	5 loose teeth from mandible, 1 mandible, 5 loose teeth from maxilla, 1 mandible with 2 teeth, 5 fragments of mandible bone, 2 radii, 3 ribs
				34 cattle	19 x maxilla/mandible fragments and teeth, 2 fragments of skull, 5 rib fragments, 1 phalanx, 2 metacarpal (proximal) 1 metacarpal (distal), a metapodial, 1 calcaneum
				1 bird	large bone
				1 cat sized	rib
				1 sheep?	scapula fragment
				31 unidentified	small fragments, four of which were burnt
6	**213**	Ditch fill	1	cattle	adjoining fragments of one metatarsal

12 General Discussion

The excavations and observations at 119 Tiddington Road have enhanced our understanding of the development of part of Tiddington Roman settlement and augmented the data regarding the transition to Anglo-Saxon settlement. The work largely corroborates that undertaken either side at no 117 (Palmer & Palmer 1988) and no 121 (Biddulph 2005), whereby this part of the settlement was intensively settled in the 1st and 2nd centuries AD, only to witness shrinkage in the later Roman period and the use of the area for burials.

As in the previous excavations in the area a small number of humanly worked flints were recovered. These residual finds indicate that the locale was visited in the earlier prehistoric period but there is yet no evidence for a concentration sufficiently dense to indicate a settlement site. To date, the frequency along the terrace suggests that activity was more intense than the 'sporadic and infrequent' which is commonly evident as residual assemblages on excavated sites along some of the Avon's tributaries like the Arrow, the Itchen (Palmer 2000, 2004, 2006) and the Dene (Thompson & Palmer 2006) and the Dunsmore plateau (Palmer 2002a). Presumably this is a reflection of the importance of the Avon in this early period for navigating the region. The nearby monument complexes at Wasperton and Charlecote probably represent cult foci that would have attracted large numbers of semi-nomadic adherents, many of whom would surely have travelled along the valley stopping at intervals to make temporary camps.

A small number of late Iron Age type sherds in the excavated features probably attest to some undefined activity preceding the Roman conquest. This is not surprising given that Middle – Late Iron Age settlement was uncovered at the nearby NFU site (TD81), south of the Tiddington Road (Palmer 1982), but could conceivably relate to an otherwise unknown settlement focus on the north side of the Tiddington Road. Iron Age pottery is very rarely found other than on settlement sites in Warwickshire (Palmer 2002b), although it is possible that such pottery was in use during the 1st century AD.

Phase 1 activity at 119 Tiddington Road relates to the burial of at least two early-mid 1st-century AD storage jars. Quite how this activity relates to any putative Late Iron Age activity remains uncertain. Similar pottery was recorded at 117 but was absent at 121. It is not precisely datable, but the jars may have been buried in the pits before the Roman invasion. Unfortunately no evidence survived to enable a determination of what was stored in the jars although it is possible that their locations were marked on the surface and that they were deliberately avoided by later development.

Phase 2 consisted of a sequence of successive east/west aligned gullies in Area 2 that were re-cut to the north. This sequence directly relates to that on both the adjacent sites which clearly form the northern arm of a series of late 1st-century AD enclosures. It is notable that the multiple shallow re-cuts observed in Section E bear obvious comparison to those at no 117 whilst the larger cut(s) in Section F can more easily be related to the ditch at no 121. The function of this enclosure is difficult to determine given that so little of the internal space was excavated, although with a projected internal width of over 50m it could easily have contained a farmstead. The finds from the gully fills were certainly domestic in character but no evidence for buildings was recovered.

Phase 3 sees the Later 2nd-mid 3rd century division of the enclosure by means of north/south aligned gullies. No obvious reason for this was apparent within the areas excavated although one can imagine that internal partitions were used to divide areas of activity.

We may well envisage a period of abandonment in this part of the settlement after Phase 3, as was apparent both at 121 and 117. The almost total absence of later Roman pottery in this area suggests that occupation foci were some distance away at this time.

The Phase 4 burials are not accurately dated but have been allocated to this later Roman period because decapitations are most commonly later Roman and similar burials found on the TR82 site contained later pottery. The burials were all relatively similarly aligned and spatially distinct suggesting a continuity of burial rite which included surface markers. Although the sample was small, the bone analysis hints at an impoverished community who were required to work hard from a young age.

The Phase 6 ditch contained Anglo-Saxon pottery that dates between the later 5th and 7th century AD. The earliest ditch fills were sterile and seem likely to represent an initial period of silting before any occupation debris was deposited but the Anglo-Saxon material was well mixed with later Roman detritus despite its absence from anywhere else on the excavated site. It is therefore possible that the ditch represents a 5th/7th-century recut of a Roman feature that was entirely removed by the later cut, but equally might have been cut in an aceramic (5th/6th-century) period. The implications for this are extremely important as it could be construed as evidence for settlement continuity from the late Roman to the Anglo-Saxon period.

It is extremely difficult to demonstrate a continuity of occupation on settlement sites not least due to the collapse of the Roman industries which produced datable artefacts in the later 4th century which culminated in a total absence by *c*.430 AD (Esmonde Cleary 1989) and the absence of any building forms which have left a recognisable trace. The earliest Anglo-Saxon cultural markers in the region are those from later 5th-century inhumations but the domestic pottery has proven more difficult to date very precisely. There is therefore a hiatus in the settlement record that has traditionally been ascribed to settlement dislocation or even the mass exodus of the British population in advance of the threat from waves of marauding Germanic invaders (Higham 1992). Whilst there is some circumstantial evidence to suggest 5th-century population decline due to famine and plague, it is now widely accepted that the majority of the rural population would have continued much as they had under Roman dominion, with the peasantry even fairing better (Higham 1992).

Archaeological evidence for British settlement during the 5th century then is extremely rare and requires exceptional preservation qualities. The ditch which extends under 117, 119 and 121 Tiddington Road is undoubtedly a candidate for such and it remains to be seen if there is any surviving evidence between the houses and the road for the occupation features which it enclosed.

Given that the Anglo-Saxon enclosure appears to have been created over part of the area containing 3rd/4th-century burials, and locally there is a tradition of burial continuity from the late Roman into the Anglo-Saxon period (Crawford 1981, 1982; Ford 2002; Carver *et al* 2009) it is possible that the enclosure defined a cemetery. Although no Anglo-Saxon burials have been found at Tiddington, surface markers could have ensured that earlier burials need not be disturbed by later burials if the enclosed area was sufficiently large for the population. Against this, there is little corroborative evidence for enclosed cemeteries in either the late Roman or early Anglo-Saxon period. At Wasperton the Romano-British burials *sensu stricto* seem largely but not wholly to have been constrained by an earlier enclosure system which contained agricultural features such as corn driers and a possible granary, but this was not adhered to by the Anglo-Saxon burials (Crawford 1982, 1983). Curiously two possible Anglo-Saxon sunken floored buildings amidst the cemetery hint at contemporary domestic activity. There is no evidence for cemetery enclosure at any

of the other known Roman (Booth 1996b) or Anglo-Saxon cemetery sites in Warwickshire (Ford 1996).

Since the site at 119 was excavated, to the south-west an electricity cable trench to Rayford Caravan Park revealed Anglo-Saxon period activity in the form of a sequence of probable enclosure boundary gullies, probably associated with discrete, perhaps seasonal, activity on the lower and wetter First Terrace (Palmer 2010). This suggests that Anglo-Saxon settlement may in fact have been more widespread along the northern edge of the 2nd terrace and the former Romano-British settlement than has hitherto been considered; and the activity in the vicinity of 119 may reflect a thriving farming community. Only future research will be able to demonstrate whether this was continuous development from the late Roman period, or re-settlement after a period of abandonment.

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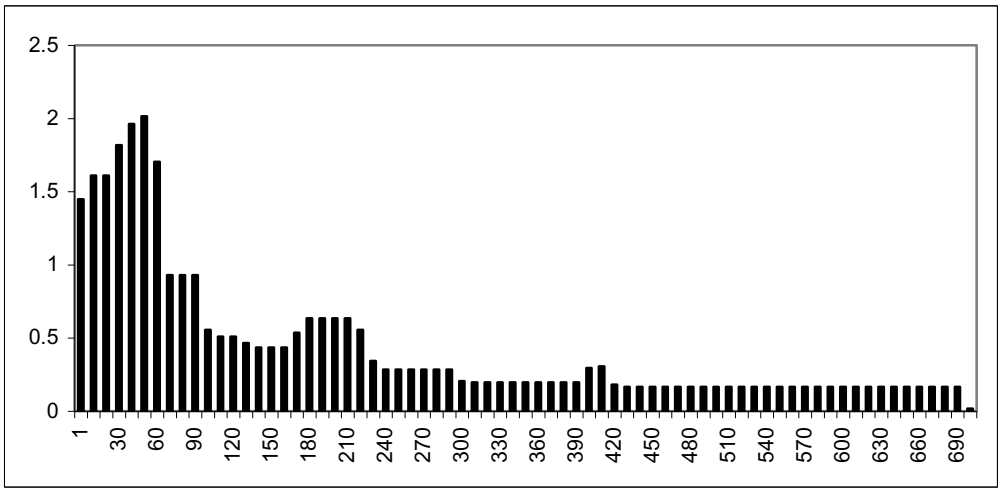
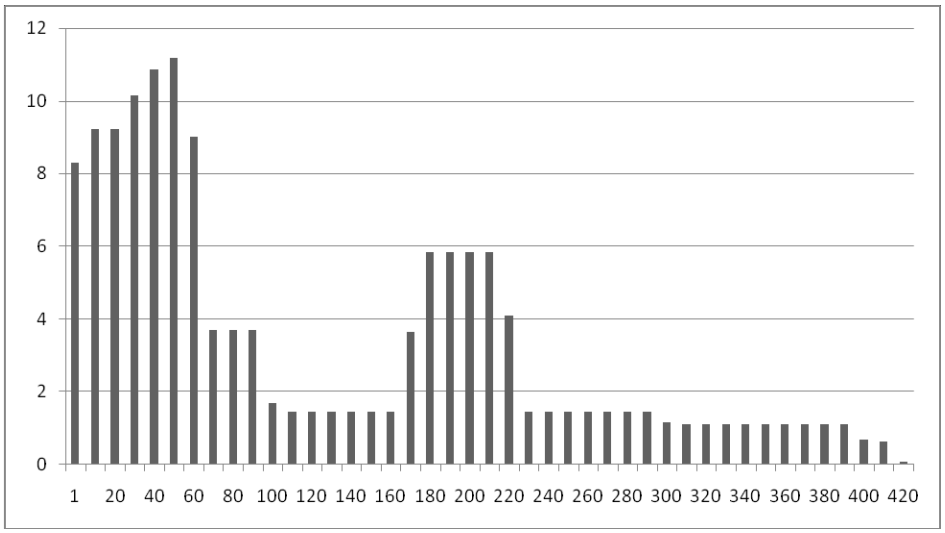
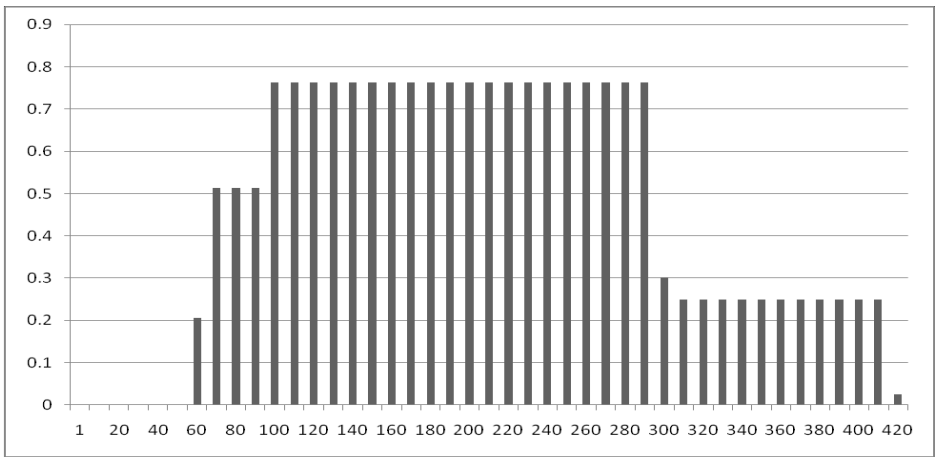
Appendix A: Pottery Graphs 1-5



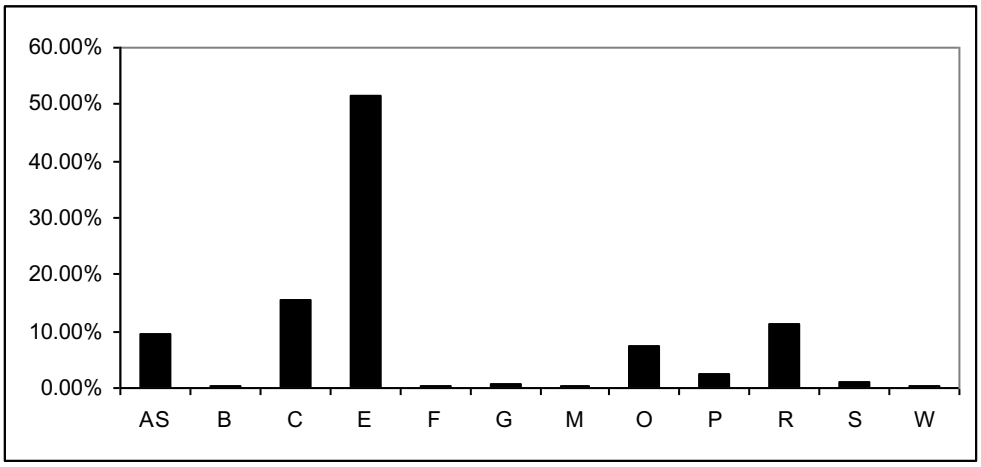
Graph 1: Date distribution by minimum no of vessels (MV)



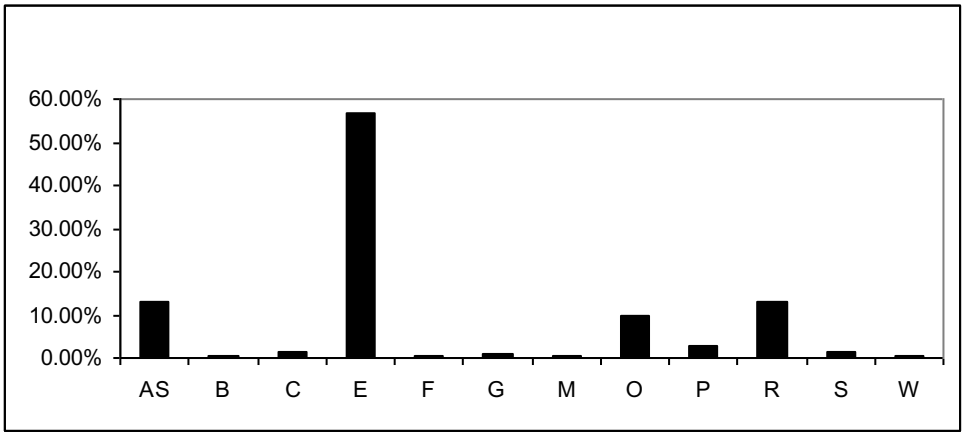
Graph 2: Date distribution by RE for Phase 3



Graph 3: Date distribution by RE for Phase 4



Graph 4: Proportions of major group wares by number of sherds



Graph 5: Proportions of major group wares, excluding almost complete vessels, by number of sherds

Appendix B: Pottery fabric proportions (totals)

Fabric	No%	Wt%	MV%	RE%	BE%
AS1	9.56	7.46	14.29	13.82	2.52
B10	0.18	0.20	0.00	0.00	0.84
C12	0.55	0.21	0.00	0.00	
C14	0.37	0.06	0.00	0.00	
C22	14.71	24.70	2.86	6.91	5.88
E11	7.72	24.88	5.71	4.73	17.98
E111	0.18	0.48	0.00	0.00	
E12	5.51	2.99	5.71	5.09	13.45
E14	0.18	0.31	0.00	0.00	
E15	2.76	0.95	8.57	6.91	
E16	1.47	0.75	0.00	0.00	
E21	0.37	0.02	0.00	0.00	
E23	1.47	2.12	0.00	0.00	
E24	0.55	0.20	0.00	0.00	
E25	0.18	0.01	0.00	0.00	
E26	0.37	0.17	0.00	0.00	
E27	1.65	0.24	0.00	0.00	
E28	0.18	0.11	0.00	0.00	
E31	0.74	1.57	0.00	0.00	
E32	0.74	0.14	0.00	0.00	
E33	0.37	0.09	0.00	0.00	
E39	7.72	3.69	0.00	0.00	5.38
E41	9.56	4.98	11.43	12.36	24.71
E42	7.35	2.64	8.57	6.55	
E421	2.02	1.01	5.71	5.45	
E43	0.18	0.07	0.00	0.00	
E71	0.18	0.22	0.00	0.00	
F71	0.18	0.17	0.00	0.00	5.88
G11	0.37	0.18	0.00	0.00	
G25	0.37	0.21	0.00	0.00	
M22	0.18	3.10	0.00	0.00	3.19
O11	0.37	0.09	0.00	0.00	
O16	0.18	0.02	2.86	2.55	
O21	0.18	0.32	0.00	0.00	
O231	0.55	0.23	0.00	0.00	3.53
O24	0.18	0.13	0.00	0.00	
O27	0.18	0.06	2.86	1.45	
O271	0.74	0.18	0.00	0.00	
O28	0.55	0.34	0.00	0.00	
O36	0.37	0.34	2.86	1.45	
O51	0.37	0.02	0.00	0.00	
O62	0.18	0.50	0.00	0.00	
O65	0.18	0.16	0.00	0.00	
O72	1.29	0.34	0.00	0.00	0.84
O73	0.37	0.32	2.86	8.00	
O83	0.74	0.44	0.00	0.00	
O86	0.18	0.03	0.00	0.00	
O92	0.74	1.57	0.00	0.00	
P11	2.02	0.61	0.00	0.00	
P27	0.18	0.08	0.00	0.00	
P43	0.18	0.03	0.00	0.00	
R01/11	2.21	1.48	5.71	5.82	6.89
R111	0.74	0.21	5.71	4.36	
R18	0.37	0.22	2.86	2.91	
R21	0.37	0.09	0.00	0.00	
R28	0.55	0.22	0.00	0.00	
R31	3.31	5.04	5.71	7.27	2.52
R311	0.37	0.09	2.86	1.82	
R32	1.29	0.73	0.00	0.00	
R34	0.18	0.31	0.00	0.00	
R41	0.37	0.91	2.86	2.55	
R51	0.55	0.11	0.00	0.00	
R52	0.37	0.12	0.00	0.00	
R55	0.18	0.04	0.00	0.00	
R72	0.18	0.20	0.00	0.00	3.87
R82	0.18	0.08	0.00	0.00	
S10	0.37	0.22	0.00	0.00	2.52
S20	0.37	0.13	0.00	0.00	
S30	0.18	0.02	0.00	0.00	
W23	0.18	0.03	0.00	0.00	
N	***544***	***9030***	***35***	***275***	***595***

Appendix C: Pottery fabric proportions by phase

Phase 1

Phase	Fabric	No%	Wt%	MV%	RE%	BE%
1	C22	74.77	58.64	50.00	86.36	25.93
1	E11	20.56	40.70	0.00	0.00	74.07
1	E12	0.93	0.39	0.00	0.00	
1	E39	1.87	0.13	0.00	0.00	
1	E41	0.93	0.08	50.00	13.64	
1	R32	0.93	0.05	0.00	0.00	
	N	***107***	***3803***	***2***	***22***	***135***

Phase 2

Phase	Fabric	No%	Wt%	MV%	RE%	BE%
2	E12	20.00	8.83			
2	E26	4.00	3.47			
2	E39	40.00	30.60			
2	E41	20.00	25.55			100.0
2	O86	4.00	0.95			
2	R31	8.00	5.68			
2	R41	4.00	24.92			
	N	***25***	***317***	***0***	***0***	***27***

Phase 3

Phase	Fabric	No%	Wt%	MV%	RE%	BE%
3	C12	1.32	0.68	0.00	0.00	
3	C14	0.88	0.18	0.00	0.00	
3	E11	8.37	24.82	10.53	8.18	2.25
3	E111	0.44	1.53	0.00	0.00	
3	E12	8.81	7.09	5.26	5.66	25.72
3	E14	0.44	1.00	0.00	0.00	
3	E15	3.96	2.28	10.53	5.66	
3	E16	3.52	2.42	0.00	0.00	
3	E21	0.44	0.04	0.00	0.00	
3	E23	3.52	6.80	0.00	0.00	
3	E24	1.32	0.64	0.00	0.00	
3	E25	0.44	0.04	0.00	0.00	
3	E27	3.96	0.78	0.00	0.00	
3	E28	0.44	0.36	0.00	0.00	
3	E31	0.88	4.95	0.00	0.00	
3	E32	1.76	0.46	0.00	0.00	
3	E33	0.88	0.28	0.00	0.00	
3	E39	7.05	4.10	0.00	0.00	10.29
3	E41	11.01	7.94	10.53	18.24	35.37
3	E42	12.78	6.27	15.79	11.32	
3	E421	2.64	2.31	5.26	5.66	
3	E43	0.44	0.21	0.00	0.00	
3	E71	0.44	0.71	0.00	0.00	
3	F71	0.44	0.53	0.00	0.00	11.25
3	G25	0.44	0.43	0.00	0.00	
3	O11	0.44	0.25	0.00	0.00	
3	O16	0.44	0.07	5.26	4.40	
3	O21	0.44	1.03	0.00	0.00	
3	O231	1.32	0.75	0.00	0.00	6.75
3	O24	0.44	0.43	0.00	0.00	
3	O28	1.32	1.10	0.00	0.00	
3	O62	0.44	1.60	0.00	0.00	
3	O72	3.08	1.10	0.00	0.00	1.61
3	O73	0.88	1.03	5.26	13.84	
3	O83	1.32	1.39	0.00	0.00	
3	O92	1.76	5.06	0.00	0.00	
3	P43	0.44	0.11	0.00	0.00	
3	R01/11	3.52	2.67	10.53	10.06	6.75
3	R111	1.76	0.68	10.53	7.55	
3	R18	0.44	0.46	0.00	0.00	
3	R21	0.44	0.14	0.00	0.00	
3	R28	1.32	0.71	0.00	0.00	
3	R31	2.20	4.06	5.26	5.03	
3	R32	0.44	0.18	0.00	0.00	
3	R41	0.44	0.11	5.26	4.40	
3	S10	0.44	0.21	0.00	0.00	
	N	***227***	***2808***	***19***	***159***	***311***

Phase 4

Phase	Fabric	No%	Wt%	MV%	RE%	BE%
4	B10	1.45	2.68	0.00	0.00	14.29
4	E11	1.45	0.30	0.00	0.00	
4	E12	1.45	1.19	0.00	0.00	
4	E31	2.90	0.45	0.00	0.00	
4	E39	10.14	5.37	0.00	0.00	
4	E41	24.64	15.95	0.00	0.00	
4	E42	15.94	9.24	0.00	0.00	
4	E421	5.80	3.13	0.00	0.00	
4	G25	1.45	1.04	0.00	0.00	
4	O271	4.35	1.04	0.00	0.00	
4	O36	1.45	4.32	0.00	0.00	
4	O51	1.45	0.15	0.00	0.00	
4	O83	1.45	0.15	0.00	0.00	

4	R18	1.45	1.04	50.00	40.00	
4	R21	1.45	0.60	0.00	0.00	
4	R31	15.94	48.14	50.00	60.00	42.86
4	R32	1.45	0.60	0.00	0.00	
4	R51	1.45	0.89	0.00	0.00	
4	R55	1.45	0.60	0.00	0.00	
4	R82	1.45	1.04	0.00	0.00	
4	S10	1.45	2.09	0.00	0.00	42.86
	N	***92***	***1281***	***9***	***60***	***54***

Phase 6

Phase	Fabric	No%	Wt%	MV %	RE%	BE%
5	AS1	56.52	52.62	55.56	63.33	27.78
5	E15	3.26	1.25	11.11	16.67	
5	E26	1.09	0.31	0.00	0.00	
5	E39	7.61	6.25	0.00	0.00	
5	E41	2.17	2.11	11.11	3.33	
5	E421	1.09	0.39	11.11	10.00	
5	M22	1.09	21.86	0.00	0.00	35.19
5	O11	1.09	0.08	0.00	0.00	
5	O27	1.09	0.39	11.11	6.67	
5	O271	1.09	0.70	0.00	0.00	
5	O51	1.09	0.08	0.00	0.00	
5	O65	1.09	1.09	0.00	0.00	
5	P11	11.96	4.29	0.00	0.00	
5	P27	1.09	0.55	0.00	0.00	
5	R01/11	1.09	3.12	0.00	0.00	37.04
5	R32	3.26	3.67	0.00	0.00	
5	S20	2.17	0.90	0.00	0.00	
5	S30	1.09	0.12	0.00	0.00	
5	W23	1.09	0.23	0.00	0.00	
	N	***92***	***1281***	***9***	***60***	***54***

Appendix D: Pottery fabric descriptions

WMA Fabric Code	*National Fabric Code*	*HWCC Fabric Code*	*Description*
AS1			A handmade reduced fabric with common sub-angular quartz *c*0.3-1.5mm and occasional organic temper voids up to 2mm long
B10	DOR BB1?		(Dorset) Black Burnished Ware 1, (cf. Tomber & Dore 1998, 127); *c*AD 110-400
C12			Shell tempered ware, handmade, source unknown, with a dark grey core and brown margins with common fine shell temper *c*0.3 0.5mm and occasional shell *c*2-3mm long
C14			A wheelmade shell-tempered ware with a black core, margins and surfaces, with abundant shell temper *c*0.5-2.5mm long
C22	MAL RE A		Malvernian Palaeozoic limestone tempered ware; a soft hand-made reduced fabric with abundant rounded limestone inclusions c0.3-3mm
D00			Fired clay
E11			A handmade, 'soapy', oxidised fabric with a grey core and orange-brown margins and surfaces, with common, angular grey grog inclusions *c*0.5-2mm in a fairly 'clean' matrix
E111			A handmade, 'soapy', reduced fabric with grey core, margins and surfaces, with some angular grey and black grog *c*0.5-2mm and common fine silver mica. E12 – A wheelmade oxidised fabric with a grey core and orange-brown margins and surfaces with common red and grey grog inclusions *c*0.3-0.5mm and common coarse quartz *c*0.5mm
E14			A handmade oxidised fabric with blue-grey core and orange-brown surfaces, with common orange and grey angular grog *c*0.3-0.5mm and occasional sand *c*0.3-0.6mm
E15			Tiddington kiln fabric. An oxidised, wheelmade fabric with yellow-brown core, margins and surfaces, with common-abundant sub-rounded sand *c*0.3mm
E16			A handmade, oxidized fabric with grey core and brown margins and surfaces, with common brown and grey grog *c*0.5-1mm. As fabric G27
E21			A wheelmade reduced fabric with dark grey core, margins and surfaces, with common sand *c*0.3-0.5mm and common red and grey grog *c*0.5-2mm
E23			A reduced wheelmade fabric with a grey core, brown margins and brown-black surfaces, with common grey and red angular grog *c*0.5-1mm and some moderate sand *c*0.3mm
E24			A wheelmade reduced fabric with orange-brown core and dark grey margins and surfaces, with some moderate sand temper *c*0.3mm, common rounded grog *c*0.3-0.5mm, and occasional organic inclusions *c*0.5-2mm
E25			A reduced wheelmade fabric with black core, margins and surfaces, with angular orange and red grog *c*0.3-0.8mm in a fine, 'clean' matrix
E26			A handmade, 'soapy', reduced (?) fabric with a dark grey core and brown margins and surfaces, with common angular brown and grey grog inclusions *c*0.5-2mm, poorly levigated
E27			A reduced wheelmade fabric with common rounded brown-grey grog *c*0.5-1mm, and some organic temper voids *c*1-3mm
E28			A reduced wheelmade fabric with dark grey core, brown margins, and black surfaces, with more angular pale grey grog inclusions *c*0.5-1mm and some rounded red? grog *c*0.5-1mm and occasional sand *c*0.3-0.5mm
E31			A reduced, wheelmade fabric with mid grey core, margins and surfaces, with common angular grey and black grog *c*0.3-0.5mm and occasional organic temper voids
E32			A wheelmade reduced fabric with dark-grey core, grey-brown margins, and dark-grey surfaces, with common, sub-rounded sand, *c*0.3-0.7mm
E33			A wheelmade, reduced fabric with dark grey core, brown margins and surfaces, with common moderate sand *c*0.3-0.5mm
E39			A reduced wheelmade fabric with mid grey core, margins and surfaces, with common angular sand *c*0.3-0.7mm and some angular red grog *c*0.3-0.5mm
E41			A reduced wheelmade fabric with a black core, orange-brown margins and black surfaces, with common moderate sand *c*0.3-0.5mm
E42			A wheelmade reduced fabric with a dark-grey core, brown margins and

			black surfaces, poorly levigated, with some sand temper *c*0.5mm and common grey grog *c*0.5-1mm
E421			A wheelmade reduced fabric with blue-grey core, pale grey margins, and dark grey surfaces, with common coarse sand *c*0.3-0.5mm and some fine organic temper voids *c*1mm in length
E43			A reduced handmade fabric with black core, margins and surfaces, with some fine angular white calcareous (?) inclusions *c*0.1-0.5mm and some coarse sand *c*0.5mm
E71			A wheelmade greyware with a brown core, orange margins and brown surfaces, with some sub-rounded sand *c*0.2-0.5mm and very occasional large ironstone up to 4mm in a poorly levigated matrix
F71			An oxidized fabric with a red slip, orange core and margins, with some fine sand and some fine ironstone *c*0.1mm
G11			Pink grogged ware, Milton Keynes area (Booth & Green 1989). A hand-made fabric with grey core, buff-brown margins and common angular grog temper *c*0.5-3mm. Cirencester fabric 140
G25			A reduced handmade fabric with pale grey core and mid grey margins and surfaces, poorly levigated, with common angular black grog *c*0.2-1mm. Possibly Savernake ware
M22	MAH WH	32	Mancetter-Hartshill mortaria; white fabric with red and brown grog trituration grits
O11			Mancetter (?) oxidised ware. An oxidised fabric with an orange core, margins and surfaces, 'soapy' with occasional fine sand *c*0.1mm and common fine silver mica >0.1mm
O16			Mancetter (?) oxidised ware. An oxidised fabric with abundant moderate sand temper *c*0.3mm
O21	SVW OX	12.2	Severn Valley ware; often with grey core and orange-brown margins, with abundant organic temper voids *c*0.3-3mm
O231	SVW OX	12	Severn Valley ware; similar to O23, generally pale yellow-orange in colour, sometimes with a pale grey core, with a 'soapy' texture, and with surfaces which have a finely micacous appearance. There are occasional brown ironstone inclusions *c*0.5-1mm and sometimes some rounded siltstone *c*0.5-2mm
O24	SVW OX	12	Severn Valley ware; some moderate sand temper *c*0.3mm and brown siltstone *c*0.2-0.4mm and some ironstone *c*0.3-2mm
O27	SVW OX	12.6	Severn Valley ware; visually very similar to products of the Great Buckman's Farm and Newlands kilns in the Malvern Link complex. Common fairly fine white inclusions c0.1-0.3mm
O271	SVW OX		Severn Valley ware with orange core, margins and surfaces, with common rounded limestone(?) sand *c*0.1mm and some fine organic temper voids *c*0.3-1mm
O28	SVW OX		Severn Valley ware; common coarse sand temper *c*0.3-0.4mm and common small organic temper voids c1-2mm
O36	SVW OX		Severn Valley ware; similar to fabric O21, but with less organic tempering. Some-common organic temper voids *c*0.3mm and sometimes some white ?calcareous inclusions or grog inclusions
O51			A hard oxidised fabric with common angular sand temper *c*0.3-0.5mm. (The type sherd is from the Tiddington kiln)
O62	SVW OX		Severn Valley ware; a grey core and orange-brown margins and surfaces, with common pale and ark grey grog *c*0.2-1mm
O65			A wheelmade(?) oxidized fabric with a blue-grey core and orange-brown margins and surfaces with common moderate sand *c*0.3mm and some limestone sand *c*0.1-0.2mm
O72	SVW OX		A coarse Severn Valley ware with common large grog temper *c*1-5mm and some organic voids
O83			A fine oxidised fabric with a greyish core and orange margins and surfaces, with abundant fine sand *c*0.05mm
O86			A soft, fine oxidized fabric, with a 'clean' matrix with occasional fine red ironstone *c*0.3mm
O92			A handmade oxidized fabric with mid grey core and orange-brown margins and surfaces, with common coarse sand *c*0.3-0.5mm and some angular grey and black grog/clay pellets *c*0.3-1mm
P11			A handmade reduced fabric with a black core, margins and surfaces, with common-abundant angular sand *c*0.4-0.6mm and occasional dark stone *c*2-3mm
P27			A handmade reduced fabric with some quartz *c*0.3-1mm, occasional fine organic voids *c*0.5mm and some red ironstone *c*0.5-1mm
P43			A reduced handmade fabric with a black core, margins and surfaces,

			with abundant large angular grey grog *c*0.3-3mm
R01/R 11		15	This is a reduced greyware, with a dark red core. It is hard with a fine fracture and gritty feel. It has inclusions of poorly sorted rounded white quartz at 0.2 - 0.4mm
R111			A reduced 'sandwich' fabric with grey core, oxidised margins and black surfaces, with common moderate sand temper *c*0.3mm
R18			A reduced fabric with brown core, grey margins and black surfaces, with occasional vegetable temper voids and some fine limestone/chalk sand
R21			A greyware with a dark grey core, margins and surfaces, occasional with sandwich core and margins, with common translucent sand at *c*0.2-0.3mm and sometimes some fine organic temper voids at *c*0.3-0.5mm. Similar to fabric group R41. Tiddington kiln 2 *c.* AD120-160
R28	LNV RE		A greyware with a white core and pale margins and surfaces, with abundant translucent sub angular sand *c*0.3-0.5mm in a' clean' white matrix. Possibly Nene Valley greyware, C2?
R31			A hand-made reduced ware with common vegetable voids *c.*0.5-2mm
R311			A soft greyware with a mid-grey core, margins and surfaces, with abundant fine carbonized organic inclusions *c.*0.3-1mm and some angular grey grog *c.*0.5-1mm
R32			A reduced fabric with common small vegetable voids *c*0.3-0.5mm and occasional to some moderate sand temper *c.*0.3mm. This group here may well form a continuum with fabric group R34, although in southern Warwickshire these do seem to be two separate groups
R34			A reduced fabric with some/common moderate sand temper *c*0.3mm and common fine organic temper voids up to *c.*2mm
R41			A reduced fabric with some moderate sand temper *c*0.3mm and occasional brown moderate ironstone
R51			A reduced fabric with some moderate sand temper *c*0.3mm and occasional grey grog(?) inclusions *c.*0.5-2mm, and occasional rounded white inclusions *c.*0.3mm
R52			A reduced fabric with some moderate sand temper, occasional black ironstone inclusions and some grey grog inclusions *c.*1-3mm
R55			A reduced fabric with a dark grey core, margins and surfaces, with common sand *c.*0.3mm, occasional rounded white inclusions *c*0.2mm and some fine organic temper voids up to 1-5mm long
R72			A hard reduced fabric with common black ironstone inclusions *c*1-3mm and white angular quartzite *c.*0.5-2mm and some moderate sand
R82			A greyware with a pale blue-grey core and mid grey surfaces, with common fine sand temper *c.*0.05mm and occasional angular grey grog *c*0.5mm
T11			This is an oxidized tile fabric. It is red, hard with an irregular fracture and a sandy feel. It has inclusions of common sub rounded quartz at 0.3-0.4mm and moderate red ironstone (cf Cheer & Booth 1991 Fabric 2)
W23			A whiteware, sometimes with a pink core, with common fine sand temper *c.*0.1mm and some rounded red ironstone *c*0.3mm

Appendix E: Human bone skeletal inventory

Key to abbreviations:
Present - Tooth presence; am - ante-mortem tooth loss; pm - post-mortem tooth loss; p - tooth present; p (u) – tooth present but unerupted: - - jaw not present
Caries - Calculus; F - flecks of calculus; S - slight calculus; M - moderate calculus; H - heavy calculus; a - all surfaces; b - buccal surface; d - distal surface; m - mesial surface; l - lingual surface; o - occlusal surface
DEH - dental enamel *hypoplasia*; l - lines; g - grooves; p - pits
Caries - caries; s - small lesions; m - moderate lesions; l - large lesions
Wear - dental wear; numbers from 1-8 - slight to severe wear

Skeleton Number	**125**
Preservation	Very poor
Completeness	35%, only parts of skull, left humerus, femora, tibiae, right fibula and tali present
Age	Young adult, 17-25
Sex	Undetermined
Non-Metric Traits	Lateral tibial squatting facet (left)
Pathology	None
Dental Health	6 teeth, 3/6 with calculus, 1/6 with caries

	Right Dentition								Left Dentition							
Present	-	-	-	-	-	-	-	-	-	-	-	-	-	P	P	P
Calculus	-	-	-	-	-	-	-	-	-	-	-	-	-	Fm	-	-
DEH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3
Maxilla	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Mandible	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Present	P	P	P	-	-	-	-	-	-	-	-	-	-	-	P	P
Calculus	Sb	Fb	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DEH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caries	So	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	3	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-

Skeleton Number	**128**
Preservation	Moderate
Completeness	65%, parts of all except spine, right hand and feet
Age	26-35, young middle adult
Sex	Female
Non-Metric Traits	Mastoid foramen extrasutural (bilateral), ossicle at pterion (right)
Pathology	DJD in hips
Dental Health	13 teeth, 1 tooth lost ante-mortem, 8 teeth lost post-mortem, 8/13 teeth with calculus, 2/13 teeth with caries, 2/13 teeth with DEH, severe periodontitis

	Right Dentition								Left Dentition							
Present	-	-	-	-	PM	P	P	P	P	P	P	P	AM	-	-	-
Calculus	-	-	-	-	-	-	Fb	Fb	Sb	Mb	Sb	-	-	-	-	-
DEH	-	-	-	-	-	L	-	-	-	L	-	-	-	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	-	-	-	-	-	5	5	5	5	5	4	7	-	-	-	-
Maxilla	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Mandible	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Present	-	-	-	PM	PM	PM	PM	PM	P	P	PM	P	PM	P	P	P
Calculus	-	-	-	-	-	-	-	-	-	-	-	-	-	Sa	Fa	Mo
DEH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Mm	Lb
Wear	-	-	-	-	-	-	-	-	5	5	-	5	-	5	4	2

Skeleton Number	**141**
Preservation	Poor

Completeness	30%, parts of skull, right shoulder and all long bones except the fibulae															
Age	13-18, adolescent															
Sex	-															
Stature	-															
Non-Metric Traits	Double anterior condylar canal (left), hypotrochanteric fossae (bilateral)															
Pathology	Bone excavation for pectoralis major on right humerus															
Dental Health	32 teeth, 4/32 with calculus															
	Right Dentition								Left Dentition							
Present	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Calculus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DEH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	1	1	1	1	1	1	2	3	2	1	1	1	1	1	1	1
Maxilla	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Mandible	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Present	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Calculus	-	Sl	-	-	-	-	-	Sb	Sb	-	-	-	-	-	Sl	-
DEH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	1	1	1	1	1	1	2	3	3	2	2	2	2	1	1	1

Skeleton Number	**507**															
Preservation	Moderate															
Completeness	90%, all except most of feet															
Age	46+, mature adult															
Sex	Male															
Stature	174.5 ± 3.27cm															
Non-Metric Traits	Ossicle at asterion (bilateral), foramen of Huschke (right), mastoid foramen extrasutural (bilateral), double anterior condylar canal (right), circumflex sulcus (bilateral), hypotrochanteric fossa (right), exostosis in trochlea fossa (right)															
Pathology	DJD in all vertebral bodies, hips, clavicles, right glenoid, right proximal ulna, left scaphoid, right metacarpals and right and left hand phalanges, osteoarthritis in left hip and facets of C3 and C4, os acromiale in right scapula, periosteal inflammatory lesions on left tibia, well-healed fracture of right clavicle and of proximal joint of intermediate central hand phalanx, cribra orbitalia, enthesopathies for rectus femoris on left patella, bone excavation for patellar ligament on left tibia, for pectoralis major on right humerus and for supraspinatus on both humeri, arachnoid granulations on skull, small hollow lesions at joint margins of first metacarpal and first proximal hand phalanx															
Dental Health	16 teeth, 12 teeth lost ante-mortem, 4 teeth lost post-mortem, 4/16 teeth with calculus, 2/16 teeth with caries, 4/16 teeth with DEH, severe periodontitis															
	Right Dentition								Left Dentition							
Present	AM	AM	P	P	PU	P	PM	PM	AM	AM	PM	P	AM	AM	AM	AM
Calculus	-	-	-	-	-	-						-	-	-	-	-
DEH	-	-	-	-	-		-	-	-		-	-	-	-	-	-
Caries	-	-	Mb	-	La	-	-	-	-	-	-	-	-	-	-	-
Wear	-	-	8	6	-	7	-	-	-	-	-	8	-	-	-	-
Maxilla	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Mandible	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Present	P	P	AM	PM	P	P	P	P	P	P	P	P	AM	AM	AM	P
Calculus	Hl	Ml	-	-	-	Sb	-	-	-	-	-	-	-	-	-	Fa
DEH	-	-	-	-	L	L	-	-	-	-	L	L	-	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	2	5	-	-	5	5	6	7	7	6	5	4	-	-	-	2

Plate 1: Storage jar revealed in pit **504**

Plate 2: Pit **504** during excavation

Plate 3: Grave **124**, skeleton 125

Plate 5: Grave **127**, skeleton 128

Plate 4: Grave **138**, skeleton 141

Plate 6: Grave **502**, skeleton 507

Plate 7: Section through Anglo-Saxon enclosure ditch **205**

Plate VIII: Iron stylus

Plate 9: Fractured right clavicle of Skeleton **507**

Plate 10: DJD in lumbar vertebra of Skeleton **507**

Plate 11: Osteoarthritis in left femoral head of Skeleton **507**

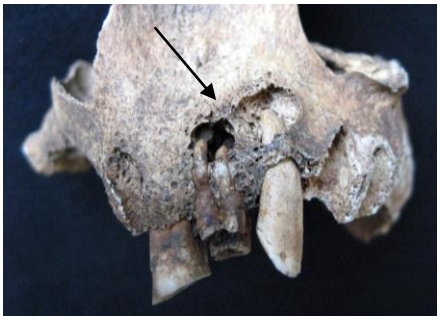


Plate 12: Abscess in maxilla of Skeleton **507**